SWAG Meeting Comments #1

ID (#)	Date Received	Commenter/ Organization	Chapter or Section Title	Provided Comment	Response to Comment	Revision to GSP
1	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	HCM; 2.3. Physical Characteristics	The median transmissivity value from aquifer testing in the basin plain was 1,900 ft2/day, while the median value from specific capacity tests was 14,700 ft2/day. What is the cause of the discrepancy? How does the 7.5x uncertainty in transmissivity affect the application of groundwater model results?	As discussed in *Section 2.3.7. Hydrogeologic Conceptual Model Data Gaps*, limited well-specific aquifer property data are available. The transmissivity value of 1,900 ft2/day is a single value from a single test result. The estimated transmissivity from specific capacity is based on 42 tests and an empirical relationship reported in Driscoll (1995). The groundwater model will be calibrated based on the best available data and information. Transmissivity estimates from aquifer tests and specific capacity tests are considered along with other data types and sources (e.g. texture, other models, literature values, etc.) as part of model calibration.	None anticipated. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
2	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	HCM; 2.3. Physical Characteristics	The base of fresh groundwater for the basin is based on a map from 1973 that was a large-scale study and has relatively few data points within the Cosumnes Subbasin. Also, the base of freshwater could have changed in the last 50 years. Is there more detailed or updated information available? The California Geologic Energy Management Division, US Geological Survey California Water Science Center, and Sacramento State Geology Department have a project determining the depth of the base of freshwater in the southern Central Valley using resistivity logs from well drilling records. A similar method could be applied to recently drilled deep wells in the Cosumnes Subbasin to create a more detailed map, or at least verify that the base of freshwater has not changed.	TM#6 was developed based on the best available data and science [CCR §351(h)]. To the best of our knowledge Berkstresser 1973 represents the best available data for the Basin at this time.	None anticipated. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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3	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	HCM; 2.3. Physical Characteristics	Given the highly variable nature of groundwater elevation in the foothill area and Anona's comment about productive and dry wells occurring 100 ft from each other, water in the foothills is governed by fracture flow, not porous media flow, and thus behaves very differently from the basin plain. How do you justify modeling and managing the two areas as a single aquifer?	Anona's comment was given in the spirit of a colorful anecdote. All available evidence (e.g., boring logs, data from the *Dunn Environmental, 2012 Groundwater Supply Study and Integrated Regional Groundwater Management Plan for the Lake Camanche Water Improvement District No. 7* report, etc.) show some hydrogeologic complexity associated with areas near the Eastern Basin boundary and outcropping of the Carabas Paleo-Ridge; however, all are within the context of a porous media (not fractured) aquifer system. See also response to Comment 5, below.	None anticipated. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
4	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	HCM; 2.3. Physical Characteristics	The statement on page 26 that "areas of exposed Laguna Formation and Mehrten Formation are likely important for recharging downslope wells extracting water from these formations" is in conflict with the idea that there is one principal aquifer. This statement implies that vertical recharge through overlying formations is restricted.	The Basin is potentially recharged from multiple exposed Formations. This and the vertical exchange of water between formations is consistent with the conceptualization of a single principal aquifer system.	None anticipated. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
5	8/4/2020	Amelia Vankeuren, Ph.D./ California State	HCM; 2.3. Physical Characteristics	Even within the basin plain, the evidence presented to justify a single principal aquifer is not compelling. - Spatial distribution of both shallow and deep wells across the basin demonstrates that both	Per 23-California Code of Regulations §351(aa) *"Principal aquifers" refer to aquifers or **aquifer systems** that store, transmit, and yield significant or economic quantities of groundwater to wells, springs,*	Results of TSS Grant and Proposition 68 efforts will be incorporated into the GSP.

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		University, Sacramento		shallow and deep groundwater is usable, not that they are connected - Vertical gradient values in Fig-GWC-03 do not allow you to conclude there is a single aquifer: only sites 1 and 4 even potentially indicate that there may be a single aquifer. o The Site 2 value of 0.25 is a large vertical gradient and suggests separate aquifers in that location o The Site 3 wells are both within the Laguna Formation and thus can't be used to tell if different formations host different aquifers o Given the variability of water level elevation in the foothills and the fact that those wells are likely fed by fractured rock flow, Sites 5-8 are not relevant to conditions in the basin plain that makes up most of the subbasin area - Water quality (based on the Stiff diagrams) does not prove a single aquifer. Laguna Formation wells have lower solute concentration than Merhten Formation wells. Additionally, similar solute concentrations can occur in separate aquifers if the rock type is similar. While the subbasin may act as a single principal aquifer, that must be demonstrated by evaluating water level records from co-located shallow and deep wells to verify that a) the water level elevation in the wells are the same at the same time point and 2) that the water level elevation in the wells behave similarly over time. I recognize that co-located wells are in short supply and recommend the installation of several nested monitoring wells with screened intervals in each of the main formations to truly demonstrate a single principal aquifer system.	*or surface water systems*. There are no barriers to vertical flow between formations indicating they comprise a single aquifer system. Based on the available data there is no compelling reason or benefit to basin management to delineate multiple principal aquifers in the Basin. As discussed in *Section 2.3.7. Hydrogeologic Conceptual Model Data Gaps*, limited well-specific aquifer property data are available. As part of TSS Grant and Proposition 68 funding, geophysical investigations are being conducted to better understand subsurface properties and nested wells ("co-located wells") are being installed to better characterize the vertical and horizontal gradients.	The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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6	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	Current and Historical Groundwater Conditions; 3.2. Change in Groundwater Storage	The estimate of decline in water storage is about ½ that calculated by Faunt et al. (2009) for the basin. What accounts for the difference? How does uncertainty in the change in groundwater storage affect decisions on the management of the basin?	See *Section 3.2 Change in Groundwater Storage* where a review was conducted on change in storage estimates reported by others over a similar time period, including Faunt et al (2009). EKI's estimate falls within range of other studies and will be improved as information becomes available. Moreover, the work by Faunt focuses on multiple basins and subbasins that span the entire Central Valley, whereas TM#6 completed detailed analysis with focus exclusively on the Basin.	The water budget estimates will be refined once the model is completed.
7	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	Current and Historical Groundwater Conditions; 3.4. Groundwater Quality Concerns	Groundwater quality data are very sparse. There needs to be a plan for better monitoring going forward to ensure that groundwater quality is preserved throughout the basin.	A SGMA-compliant monitoring network for the Basin is in development. As discussed in *Section 2.3.7. Hydrogeologic Conceptual Model Data Gaps* and *Section 3.7.1. Groundwater Conditions Data Gaps*, water quality data are limited spatially. It is expected that through development of the SGMA monitoring network additional data will be compiled and trends can be analyzed.	The GSP text will reflect the final monitoring network and identify data gaps.
8	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	Current and Historical Groundwater Conditions; 3.4. Groundwater Quality Concerns	The percent of wells with exceedances in manganese is concerning. Though manganese does not have an enforceable maximum contaminant level, recent studies have demonstrated health effects and other states do regulate it in drinking water (e.g., https://www.health.state.mn.us/communities/environment/water/docs/contaminants/mangnsefctsht.pdf) Manganese should be monitored over time to ensure that groundwater management does not cause increases in manganese particularly in domestic wells used for drinking water as the	Manganese is monitored by the California Regional Water Quality Control Board and over half of the wells producing samples that exceeded the secondary MCL are from shallow monitoring wells and do not supply water for beneficial use. Basin management pursuant to SGMA is not expected to impact or increase the presence of naturally-occurring manganese.	None anticipated. Available data are already included and discussed.

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				water from those wells is generally not treated or blended to ensure it complies with drinking water standards.		
9	8/4/2020	Amelia Vankeuren, Ph.D./ California State University, Sacramento	Current and Historical Groundwater Conditions; 3.6. Interconnected Surface Water Systems	While the groundwater system is clearly disconnected from the Cosumnes River for much of the sub basin, it is critical to determine the downstream extent of that disconnection so we can understand where groundwater management might alter river flow. Fig-GWC-14 demonstrates that as far upstream as the McConnell stream gaging station, the river could be connected. There is at most a 20 ft difference between stream stage and water level in the upstream well. During storm events, there is less than 5 ft difference between water level and stream stage, and for the year of 2017, there was less than 15 ft difference. Also, both observation wells are too far from McConnell (over 2 miles) to directly compare water level elevation to that in the stream. It should be determined if the new monitoring wells that Laura Folia mentioned will be sufficient to determine level of hydraulic connection, or if new monitoring wells should be installed. Furthermore, to determine the level of hydraulic connection between groundwater and a stream, the groundwater elevation should be compared to that of the river bed, not the river stage (the top of the river water surface). The McConnell station has flow data for 1940-1985 and river stage data post 1985. Why don't you use a stream rating curve to combine those data into a longer timeseries? There would be some uncertainty in the calculated values, but the longer dataset would be valuable.	See Figures GWC-1 and GWC-2 where dashed lines represent areas of most uncertainty which include the areas near the Cosumnes River to account for the incision of the stream bed and lack of well data. As discussed in *Section 3.7.1. Groundwater Conditions Data Gaps*, shallow wells near surface features and stream gauges are limited in the Basin. As part of TSS Grant and Proposition 68 funding the GSAs are planning on installing additional wells, including a well near a gauging station to develop additional data for interconnected groundwater and surface water evaluation.	Results of the TSS Grant and Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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10	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	1. Cosumnes Basin Data Management System	In addition to those data sources listed in Table DMS-1 it is recommend that reasonable effort is taken to review the following sources for additional data not already included in the DMS that may increase the spatial and/or temporal resolution of information presented in the study: i) California Groundwater Observatory - http://ucwater.org/gw_obs/ ii) Groundwater-quality data in the Mokelumne, Cosumnes, and American River Watersheds Shallow Aquifer Study Unit, 2016-2017 - https://www.sciencebase.gov/catalog/item/5a57c638e4b01e7be245cf12 iii) Data from "Domestic Well Vulnerability to Drought Duration and Unsustainable Groundwater Management in California's Central Valley" (Pauloo et al. 2019) - https://datadryad.org/stash/dataset/doi:10.25338/B8Q31D iv) Cosumnes Research Group - https://watershed.ucdavis.edu/doc/cosumnes-research-group	TM#6 was developed based on the best available data and science [CCR §351(h)]. Source i) was used in the development of TM#6. There are wells in the SGMA monitoring network from this dataset. Source ii) was used in the development of TM#6 and data are in the DMS. The data are also being used as part of the Proposition 68 funded Isotopic Recharge Characterization Study. Source iii) was published after TM#6 was released, but will be reviewed and incorporated as applicable. Data from source iv) will be considered during the Proposition 68 Groundwater Dependent Ecosystem (GDE) Verification task.	Results of Proposition 68 efforts and review of Source iii will be incorporated into the GSP.

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11	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	2.1.2 Lateral Basin Boundaries	The document states, "The eastern boundary of the Basin is the only boundary with a structural restriction to groundwater flow, caused by thinning sediments abutting low-permeability crystalline rocks and the Foothills Fault System." It is agreed the low storage and hydraulic conductivities typically envisioned for low-permeability crystalline rocks can act to restrict groundwater flow, however there is alternative research suggesting that subsurface inflow of groundwater to lowland aquifers from mountain blocks may be significant especially from fractured crystalline systems (Markovich et al. 2016, 2019). Please provide additional information to support the conclusions made in the document regarding the eastern boundary of the Basin.	The Markovich articles are conceptual modeling studies and do not provide Basin-specific data to support their hypothesis. TM#6 was developed based on the best available data and science [CCR §351(h)] and assumptions regarding recharge can be reviewed as part of model calibration, water level and water quality data collection over time.	A reference to this document will be incorporated into the draft GSP.

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12	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	2.1.4 Principal Aquifer and Aquitards	This section presents the case for a single Principal Aquifer within the Basin. The arguments for a single aquifer system are well presented however, it is recommended that characterization and discussion of shallow perched aquifers in the Basin be included as such information is presently absent from this section of the document. These perched aquifers are known to be associated with the heterogeneous sedimentary units, such as clay-rich aquitards, formed by fluvial deposits common to the various river networks in the Basin (Fleckenstein et al., 2004, 2006; Niswonger & Fogg, 2008; Rhode et al., 2019). The relationship between these shallow units and the deeper principal as well as other hydrologic processes should be contextualized as they are informative of the broader hydrogeologic conditions in the Basin required to be discussed pursuant to SGMA (e.g. how fluctuations in the principal aquifer may interact with these features, river seepage/leakage interactions, and ecological significance of these units). We respect that it is fair to acknowledge that these features may be unproductive and what that means for their management under SGMA regulations.	Per 23-California Code of Regulations §351(aa) *"Principal aquifers" refer to aquifers or aquifer systems that store, transmit, and* ***yield significant or economic quantities of groundwater*** *to wells, springs, or surface water systems*. SGMA is focused on the management of Principal Aquifers. Perched aquifers, if they exist in the Basin, are not part of the Principal Aquifer, and there is no known data available to delineate them. Proposition 68 funding is supporting GDE verification and geophysical studies, and any evidence of perched aquifers will be documented as part of that effort.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed on perched aquifers, it will be incorporated into future updates of the GSP (e.g., with respect to monitoring and potentially aquifer testing to assess connectivity, if any, to the Principal Aquifer).
13	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	2.2 Cross Sections	On page 19 the document states, "The cross-sections depict materials that comprise the Principal Aquifer and all materials that could reasonably be tapped for groundwater supply." It is recommended that reasonable effort be made to identify locations in these sections with a high probability for shallow perched aquifers.	As discussed in *Section 3.7.1. Groundwater Conditions Data Gaps*: few shallow wells are located within the Basin. None of the well log data we have reviewed in developing the cross sections indicated presence of a perched aquifer. That being said, Proposition 68 funding is supporting GDE verification and geophysical studies, and any evidence of perched aquifers will be documented as part of that effort.	Results of Proposition 68 efforts will be incorporated into the GSP. To the extent that information is developed on perched aquifers, it will be incorporated into future updates of the GSP.

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14	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	2.2 Cross Sections	On page 19 sources used to generate the cross section are listed. It is recommended that land surface elevations extracted from the USGS 10-meter digital elevation model (DEM) be supplemented with other high resolution elevation data including but not limited to: i) LiDAR data available in the Basin from: https://viewer.nationalmap.gov/basic/ ii) Flood-inundation map and water-surface profiles for floods of selected recurrence intervals, Cosumnes River and Deer Creek, Sacramento County, California - https://pubs.er.usgs.gov/publication/ofr98283 iii) Topographic surveys of the Cosumnes River and floodplain available from: https://watershed.ucdavis.edu/doc/cosumnes-research-group/data-access iv) River profiles from FEMA Flood Insurance Study Number 06067CV001D available from: https://www.fema.gov/flood-maps/products-tools	We appreciate the identification of these additional sources of potential information. TM#6 relies on tools and sources suggested by DWR and consistent for the entirety of the basin. The USGS 10-meter DEM was used as recommended by DWR in Section 7 of their HCM Best Management Practices for Sustainable Management of Groundwater (DWR, 2016).	Uncertainties associated with use of the DEM data will be described, and the potential ability to improve estimated land surface elevations at well locations, stream bed elevations, and so forth, if the data are available, can be considered to improve inferred groundwater depths and gradients. It is anticipated that the cross-sections will be improved with additional data as part of the 5-year update, including more precise elevation data, as appropriate.

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15	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	2.2 Cross Sections; Cosumnes River Focused Cross-Sections	On page 22 within the discussion of the Cosumnes river cross sections it is recommended that additional historic hydrological context be provided regarding the projected groundwater elevations and referenced hydraulic disconnect. We respect that data are limited and these may be the only measurements available for the given analysis. Further, we understand their use to document "current" conditions. However, the groundwater elevations shown were measured in Fall 2018 a period representing a seasonal low at the end of an extremely dry period as noted in Sections 3.1.1 and 3.1.2, respectively and feel such information is relevant to readers and stakeholders.	Comment noted.	Additional explanation of groundwater trends will be provided.
16	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	2.3.4 Groundwater Recharge and Discharge Areas	Determinations of watershed processes (e.g. runoff, infiltration, and recharge) from Hydrologic Soil Group, such as those made in this section, are often uncertain. For example surface runoff through infiltration excess overland flow (Hortonian overland flow) as suggested on page 25 is rare in many environments with the exception of highly arid, disturbed, or urbanized environments (Beven, 2006; see also Brighenti et al., 2019 and Huang et al., 2013). Similarly, recharge potential is poorly described by soil class alone (Maples et al. 2020). It is recommended that the authors consider making updates to this section accordingly. In analyzing GW recharge potential Maples et al. (2020) present a proxy parameter related to upscaled vertical saturated hydraulic conductivity and unsaturated-zone thickness that reasonably corresponds to simulated recharge. The	We appreciate the identification of these additional sources. Hydrologic Soil Groups of the NRCS soil surveys were used as recommended and provided in Section 5 of the HCM Best Management Practices for Sustainable Management of Groundwater (DWR, 2016). The UC Davis SAGBI dataset has already been incorporated into the GSP work effort. The boring data set relied on by Maples et al. (2020) was provided to EKI and considered in development of the DMS and TM#6. The Maples (2020) document was published six months after TM#6 was released, but can be reviewed and incorporated as applicable.	Information from Maples et al. (2020) will be incorporated to the extent applicable. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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				UC Davis SAGBI dataset (available at https://casoilresource.lawr.ucdavis.edu/sagbi/) offers another index for recharge potential that is more informative than soils data, though its utility still requires further field verification.		
17	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.1.1 Groundwater Elevation Contour Maps	Please indicate how Spring 2018 and Fall 2018 groundwater contours were generated. For example, what was the method of interpolation? How many points were used in the contouring process and what was the spatial density? It is also recommended that uncertainty in the mapped groundwater contours be reported or at the very least addressed. For example the Kriging interpolation method has the benefit of addressing uncertainty through calculation of standard errors associated with predicted values which can be used to generate prediction confidence intervals. Such uncertainty is critical when using hard thresholds to define or characterize resources in the Basin and its inclusion would make such analyses more robust and associated decision making more defensible. Where possible please indicate how comparison contours were generated (i.e. North American Subbasin Alternative, DWR GICIMA, and Eastern San Joaquin Subbasin Draft GSP). It is highly recommended the method for generating the GICIMA contours be discussed as these data are used in subsequent sections of the document (3.6 and 3.7).	Spring 2018 and Fall 2018 groundwater contours were generated by using the contouring and 3D surface mapping software program Surfer® from Golden Software, LLC. First, the default Kriging gridding method was used with a cell size of 500 ft x 500 ft to create the groundwater elevation grid across the Basin from the available water level elevation data. Then, groundwater elevation contours were created from the Basin wide groundwater elevation grid. Contours were smoothed out by using the "high smoothing" option within the Surfer® software. Development of the Basin contours was also informed by review of available data and contour maps in the adjacent basins.	A footnote will be added to the GSP to describe the contouring method.

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18	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.1.1 Groundwater Elevation Contour Maps; Depth to Groundwater	It is recommended that depth to water (DTW) estimates are updated using the additional datasets described in comments to Section 2.2 above. Uncertainty in DTW estimated should also be reported where feasible pursuant to comments to Section 3.1.1 above. Further, it is recommended that Spring 2018 data be used to produce additional DTW estimates for that time period corresponding to shallower water levels. These data should be used to supplement further analysis (e.g. Section 3.6 and 3.7).	The data from the additional datasets described in comments to Section 2.2 were considered for TM#6; please see response to Comment 10. DTW maps are not required by SGMA but were included in TM#6 to support additional analysis and evaluation of potential GDEs in the Basin. TM#6 reports that DTW can range about 10 feet between the highest water levels in the spring and lowest water levels in the fall. Hence, as noted in TM#6, the area underlain by water within 30 ft bgs is therefore likely greater under spring conditions.	None anticipated as data are already incorporated.
19	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.1.1 Groundwater Elevation Contour Maps; Depth to Groundwater	Please describe how depth to water contours from DWR's GICIMA were generated, namely the source of the land surface elevations and as previously mentioned the GW interpolation method.	Depth to water contours were downloaded from DWR's GICIMA website and used directly for qualitative comparison to the contours in Figures GWC-4 & GWC-15.	None.

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20	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.1.1 Groundwater Elevation Contour Maps; Depth to Groundwater	Please address or otherwise call out that DEM elevations along river corridors are unlikely to accurately represent channel bed elevations. Such inaccuracies may be due several factors, not limited to: i) The DEM resolution of 10 m is not capable of accurately mapping many stream channels in the Basin, particularly those narrower than this scale, thus leading to interpolation errors. ii) Methods used to produce the DEM do not include bathymetric surveys of the channel bed and thus likely represent water surface elevations resulting in overestimation of the land surface in such locations. If such considerations have already been addressed in the DEM please describe the actions taken. If no future action is taken to update the DEM along stream corridors please address the comment above and consider further action to make reasonable estimates of the magnitude of uncertainty, which the authors of this document are happy to discuss separately.	Comment noted.	Acknowledge limitations of DEM in characterizing stream channel dimensions.

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21	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.6 Interconnected Surface Water Systems	This section of the document presents the case for the entirety of the Cosumnes River within the Basin as well as all other surface waters in the Basin being classified as **not** being interconnected surface waters. Similar findings documenting contemporary disconnection between the Cosumnes River and the underlying aquifer have been reported by others (Fleckenstein et al. 2004; Robertson-Bryan, 2006). Historically, Cosumnes flows were regularly supplemented through connection to the regional GW table. This association served to sustain the Cosumnes particularly during summer and fall. Supplementing of these dry season flows had critical ecological importance to the fluvial-riparian ecosystem, especially migrating fall-run Chinook salmon. Disconnection of the Cosumnes initiated in the mid 1940's due to increased GW withdrawals and lowering of the GW table. Increased GW pumping in subsequent decades has exasperated this issue further, resulting in continued lowering of the regional GW table and increasing the disconnect with the River. This disconnection has proved particularly impactful to the health of chinook fishery amongst other organisms and ecosystem processes. While the findings from the document and the above referenced sources discuss the rivers contemporary disconnection, several studies and datasets provide an alternate scenario supporting that in recent times portions of the river remain hydraulically connected to aquifer (Fleckenstein et al. 2006; Niswonger, 2006, Niswonger & Fogg, 2008; unpublished analysis by	TM#6 findings are consistent with the work of multiple other researches, which indicate that the Cosumnes River flows are disconnected from underlying groundwater along most of its reach within the Basin; a finding that is supported in your Comment 9. TM#6 does not make the case that "the entirety of the Cosumnes River within the Basin as well as all other surface waters in the Basin … as **not** being interconnected surface waters". However, we appreciate the identification of these additional sources and will review them. As discussed in *Section 3.7.1. Groundwater Conditions Data Gaps*: few shallow wells are located near surface water features and few to none of the wells are located adjacent to an existing river/stream gauging station. This continues to represent a data gap in the evaluation of riparian GDEs as well as interconnected groundwater and surface water. As part of TSS Grant and Proposition 68 funding, geophysical investigations are being conducted to better understand subsurface properties along the Cosumnes River, nested wells ("co-located wells") are being installed to better characterize shallow conditions and two stream gauges are being installed.	Results of TSS Grant and Proposition 68 efforts will be incorporated into the GSP, as will relevant information from the modeling and the identified sources. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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				Larry Walker and Associates, 2020). Findings from these sources are summarized below. Near river SW-GW interactions are strongly influenced by various scales of localized subsurface heterogeneity. Such heterogeneity is often described by the arrangement of hydrofacies which possess highly variable conductivities amongst other physical properties. Spatial variability in hydrologic processes due to hydrofacie organization can result in localized mounding of GW or formation of perched water tables near the active channel bed and within the extent of paleochannels and associated floodplain surfaces (Niswonger & Fogg, 2008). These localized effect can serve to reduce or even reverse flow gradients between SW and GW and have been documented to facilitate GW-SW interconnection in several Californian Rivers thought to be disconnected from their regional GW tables, a list which includes the Cosumnes (Fleckenstein et al., 2006; Niswonger 2005; Niswonger & Fogg, 2008). For instance, conducting multiple simulations with a ground water–surface water model along the Cosumnes with several equally likely geostatistical simulations of aquifer heterogeneity Fleckenstein et al. (2006) identified several locations that exhibited local reconnection between the river bed and GW levels that could even serve to create gaining conditions. These simulation findings were corroborated by observations of shallow local saturated zones below the river channel during the wet season. The difficulty in representing the complex lithology of alluvial sediments along river channels means it is not uncommon for such conditions to be inaccurately quantified. For example, such		

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				connections could be missed by monitoring networks (e.g. wells) where observed GW levels instead measure heads of the deeper aquifer rather than water levels immediately below the river (Fleckenstein et al., 2006). Common modeling (GW or coupled GW-SW) strategies (e.g. those that use mean monthly flows, simplified river geometry, calibrated conductivities of bed, and uniform laterally extensive aquifers) also have been found to be inappropriate when considering the ecological dynamics of river-aquifer systems (Fleckenstein et al., 2006). In light of the information presented above and contained in the referenced studies we kindly recommend this information be addressed as it provides strong support of the fact that portions of the river should be classified as an interconnected surface water per the definition provided in the document pursuant to SGMA. We further recommend that historical SW-GW interconnection in the Basin be discussed to provide context of current conditions.		

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22	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.6 Interconnected Surface Water Systems	It is recommended that the complete set of shallow well maintained by the UCD groundwater observatory (http://ucwater.org/gw_obs/) be used in the analysis of the SW-GW interconnection along the Cosumnes. These wells should be coupled with nearby channel bed elevations rather than stage elevations as the latter does not represent the actual elevation for a potential SW-GW connection and is an inadequate means of characterizing such a connection (as is suggested at the bottom of page 46 ["This water level elevation differential suggests that there is a significant unsaturated aquifer zone beneath the river in this portion of the Basin"] and by Figure GWC-14). Channel bed elevation data is available from sources (ii and iii) identified in comments to Section 2.2. Description of methods for the recommended analysis is outside the scope of this comment document and can be discussed separately.	The UCD groundwater observatory wells, that fall within the Basin, and their data, are already included in the Basin DMS. Please see response to Comment 10. As discussed in *Section 3.7.1. Groundwater Conditions Data Gaps*: few shallow wells are located near surface water features and few to none of the wells are located adjacent to an existing river/stream gauging station. This continues to represent a data gap in the evaluation of riparian GDEs as well as interconnected groundwater and surface water. As part of TSS Grant and Proposition 68 funding, geophysical investigations are being conducted to better understand subsurface properties along the Cosumnes River, nested wells ("co-located wells") are being installed to better characterize shallow conditions and two stream gauges are being installed.	Results of the TSS Grant and Proposition 68 efforts will be incorporated into the GSP. The relationship between the water levels and the riverbed will be clarified. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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23	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.6 Interconnected Surface Water Systems	In many years the Cosumnes and other Basin rivers run dry during summer and fall. The use of high-resolution satellite imagery should be explored for identifying locations along the river that have water present as this is a strong indicator of locations with sustained SW-GW interconnection. Imagery products such as data from the Copernicus Sentinel-2 mission (https://sentinel.esa.int/web/sentinel/missions/sentinel-2) are freely available. Other sources such as Planet (https://www.planet.com/) should also be explored. Description of methods for the recommended analysis is outside the scope of this comment document and can be discussed separately.	As discussed in *Section 3.7.1. Groundwater Conditions Data Gaps* there are data gap in the evaluation of riparian GDEs as well as interconnected groundwater and surface water. As part of TSS Grant and Proposition 68 funding, geophysical investigations are being conducted to better understand subsurface properties along the Cosumnes River, nested wells ("co-located wells") are being installed to better characterize shallow conditions and two stream gauges are being installed.	Results of Proposition 68 efforts will be incorporated into the GSP. Use of the tools noted herein will be mentioned in the GSP as a potential means to address the data gap as part of GSP implementation. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
24	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.6 Interconnected Surface Water Systems	DTW contours were used as an indicator for a lack of SW-GW connection (page 47), principally for surface waters where no other information was available. It is recommended that the DTW data be updated pursuant to the comments made to Section 3.1.1 above (e.g. include uncertainty estimates in DTW data, update land surface elevation where better data is present,	As discussed in *Section 3.7.1. Groundwater Conditions Data Gaps*: few shallow wells are located near surface water features and few to none of the wells are located adjacent to an existing river/stream gauging station. This represents a data gap in the evaluation of riparian GDEs as well as interconnected groundwater and surface water. That being said, the best data	Results of TSS Grant Proposition 68 efforts will be incorporated into the GSP, as well as an uncertainty discussion with respect to interconnected surface waters.

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				contextualize that DTW contours are based on Fall 2018 condition which is a seasonal low at the end a dry period). Further, use of this one dataset to conclude that Dry Creek or other surface water features in the Basin are not interconnected is considered inadequate given the definition of interconnectedness provided, the points made in the beginning of this section, the potential for other analyses (e.g. bullet point two above), and the lack of uncertainty characterization.	available suggest that water levels in the Principal Aquifer in the vicinity of Dry Creek and other surface water features within the Basin are as much as 130 feet below ground surface– strongly suggesting a disconnect. Historical data suggest about a 10 foot fluctuation between seasonal highs and lows within the Basin, which does not change this conclusion (see Figures GWC-14 and GWC-4). As part of TSS Grant and Proposition 68 funding, geophysical investigations are being conducted to better understand subsurface properties along the Cosumnes River, nested wells ("co-located wells") are being installed to better characterize shallow conditions and two stream gauges are being installed.	The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
25	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.6 Interconnected Surface Water Systems	It is recommended that coordination be made with the South American Subbasin (5- 21.65) GSP to ensure consistency in how the shared boundary of the Cosumnes River is defined regarding its status as an interconnected SW. Similarly, there should be coordination/consistency with the Eastern San-Joaquin Basin (5-022.16) GSP how the shared boundary of Dry Creek is defined.	Three of the Basin GSAs manage areas north and south of the Cosumnes River (Sacramento County, Sloughhouse and Omochumne-Hartnell GSAs), facilitating coordination with the South American Subbasin. Coordination with the ESJ Subbasin included regular attendance at monthly meetings, meeting with representatives to discuss modeling and water budget results, and review and feedback on the ESJ Draft GSP. Additionally, as part of Proposition 68 funding a facilitated Surface Water Adivsory Group (SWAG) has been created	All coordination and stakeholder efforts are being tracked and will be documented in the GSP.

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					from Basin stakeholders, includes neighboring Basin representatives, to focus on surface water, groundwater and GDE management in the Basin. The Cosumnes and adjacent basins are coordinating in model development as well (i.e., the CoSANA model).	
26	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	On page 47 of the document it states, "The NCCAG dataset was used in conjunction with depth to water measurements, both contours and point values at wells, to identify potential GDEs in the Basin." Please be explicit about the source and date of the "contours and point values" used.	Figure GWC-15, which shows the NCCAG datasets, depth to water measurements, and contours, shows that the contours represent Fall 2018 conditions.	None anticipated.
27	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	The use of multiple datasets spanning 2011-2018 (page 48) in the analysis of GDEs is appreciated but should be supplemented further (e.g. Spring 2018 DTW data per comment to Section 3.1.1. and next bullet point).	Figure GWC-15 includes Spring 2018 DTW. Proposition 68 funding is supporting GDE verification studies which will be conducted following TNC Guidance documents and available water level data from the DMS.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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28	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	It is recommended that additional data sources identified in comments to Section 1 be used to update the GDE analysis. Specifically the complete set of shallow wells maintained by the UCD groundwater observatory (http://ucwater.org/gw_obs/) as well as domestic well data from Pauloo et al. (2019) should be used. The complete temporal resolution of the data can be simplified to the shallowest water level recorded for each well. Where data shows DTW<30', GDE's associated with that well (e.g. within 3.1 miles) should not be eliminated from the dataset. If any water level data indicate DTW<30' the GDE should not be removed from the dataset.	Please see response to Comment 10. We also note that the UCD wells cover only a small portion of the Basin near the river; most of the wells are in the South American Subbasin. Pauloo et al. (2019) and TM 6 both rely on the Well Driller Reports (WDRs) compiled by DWR. Figure GWC-15 maps potential GDEs, and the mapping exercise included identifying the range in DTW<30' delineated by spring (seasonal high) and fall (seasonal low) water levels in the Primary Aquifer during the period 2011 through 2018. All potential GDEs overlying the resulting range in areas with DTW<30' are included in Figure GWC-15. Proposition 68 funding is supporting additional GDE verification studies.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
29	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	It is recommended that the DTW data used in the GDE analysis be updated using the additional datasets described in this comment document where feasible and appropriate (e.g. both land surface and groundwater levels). Estimates of uncertainty in DTW should be addressed as suggested by this document or otherwise discussed. Where uncertainty in DTW exceeds the 30' threshold (e.g. 95% confidence interval shows DTW<30') GDE's should not be removed from the dataset.	Figure GWC-15 maps potential GDEs, and the mapping exercise included identifying the range in DTW<30' delineated by spring (seasonal high) and fall (seasonal low) water levels in the Primary Aquifer during the period 2011 through 2018. All potential GDEs overlying the resulting range in areas with DTW<30' are included in Figure GWC-15. Proposition 68 funding is supporting additional GDE verification studies.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be

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						incorporated into future updates of the GSP.
30	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	Please include discussion of the assumptions and scientific basis for the 3.1 mile search radius (page 48). It would seem there are several implicit assumptions that must hold in order for this distance to be relevant and allow GW elevations to be constant between well and GDE as appears to be the case described in the document (e.g. terrain is flat or constant water level slope, homogeneity of subsurface properties). Following such discussion it is recommended that the analysis be updated to account for circumstances where the underlying assumptions may not be true, for instance along river corridors and within the historical extent of paleochannels and floodplain surfaces where a complex subsurface is present. One option would be to exclude DTW data if the well is located in a different lithology than the potential GDE being evaluated (Figure HCM-2)	Figure GWC-15 maps potential GDEs, and the mapping exercise included identifying the range in DTW<30' delineated by spring (seasonal high) and fall (seasonal low) water levels in the Primary Aquifer during the period 2011 through 2018. All potential GDEs overlying the resulting range in areas with DTW<30' are included in Figure GWC-15. Proposition 68 funding is supporting additional GDE verification studies.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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31	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	When comparing DTW data for wells within 3.1 miles of a potential GDE were differences in land surface elevation between the well and the potential GDE accounted for? For instance, if the DTW at the well location is 39' but the difference in land surface between the well and the GDE is 10' it may be reasonable to conclude that DTW at the GDE is 29' and thus below the 30' threshold. Please discuss and update analysis where appropriate.	Figure GWC-15 maps potential GDEs, and the mapping exercise included identifying the range in DTW<30' delineated by spring (seasonal high) and fall (seasonal low) water levels in the Primary Aquifer during the period 2011 through 2018. All potential GDEs overlying the resulting range in areas with DTW<30' are included in Figure GWC-15. Proposition 68 funding is supporting additional GDE verification studies.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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32	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	Consider the following data sources for use in mapping and describing the ecological relevance of GDEs: • California Aquatic Resource Inventory (CARI) (available at https://www.sfei.org/cari) includes aggregated data from sources that may not have been used in the NCCAG dataset and conceptually could be used to help validate GDE presence/absence. • The South Sacramento Habitat Conservation Plan (https://www.southsachcp.com/) includes an aquatic resources inventory for the Cosumnes and Deer Creek and land cover mapping (https://www.southsachcp.com/uploads/4/8/8/9/48899225/appendix_i_arp_vol_ii_appendices.pdf [page 103] and https://www.southsachcp.com/uploads/4/8/8/9/48899225/appendix-e-1_land_cover_type_mapping_report.pdf). Depending on availability of geospatial data these resources could conceptually be used to help validate GDE presence/absence.	These resources will be considered as part of the Proposition 68 funded GDE verification effort.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
33	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	3.7 Groundwater Dependent Ecosystems	SGMA defines GDEs as, "ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface." Dependence in this definition has largely been interpreted as the resource(s) in question having physical access to GW. Given California's Mediterranean climate any period of	Figure GWC-15 maps potential GDEs, and the mapping exercise included identifying the range in DTW<30' delineated by spring (seasonal high) and fall (seasonal low) water levels in the Primary Aquifer during the period 2011 through 2018. All potential GDEs overlying the resulting range in areas with DTW<30' are included in Figure GWC-	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs are planning to address data gaps as part of GSP

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				physical access indicates a dependency. For many GDEs present in today's landscape physical access to GW that historically existed has been lost. This begs the question of whether the resource(s) in question are GDEs or not. The severing of access to GW does not change the fundamental nature of the resource. The resource is still dependent on GW even if this dependency cannot be satisfied. The consequences of the loss of connection are complex depending on numerous ecological, hydrologic, and societal variables rendering the ecological trajectory of the resource difficult to predict. For instance, if GW dependence was necessary to support regeneration, the resource may continue to persist but in a state of continued decline until a shift in ecological regime occurs, while under other circumstances the health at GDE may not be significantly impaired. In this vein identification of GDEs truly requires both a long historic perspective to evaluate the physical access of GW to these resources and that the resources are still present on the landscape (e.g. biotic communities, hydrogeomorphic indicators). Under SGMA, it may be argued that GDEs meeting the above criteria but whose contemporary physical access to GW no longer exists are still GDEs in that their fundamental nature hasn't changed, it is simply that they are not subject to SGMA requirements and outside the scope of management under SGMA. There is inherent ecological value in this distinction and how society describes the resources being analyzed that is worth addressing. It is recommended that reasonable effort be made to use existing historic	15. Proposition 68 funding is supporting additional GDE verification studies.	implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.

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				water levels elevations to better understand GDEs in the Basin.		
34	8/7/2020	Melinda Frost-Hurzel, ECOS, The Nature Conservancy, and Cosumnes Coalition	General Comments	How do you envision the use of modeling (e.g. CoSANA model) to update or inform the findings above?	The model will be used to support water budgeting, evaluation of sustainability criteria, and evaluation of projects and management actions.	The GSP will be updated to reflect modeling results.
35	8/2/2020	Bill Myers, Sheldon Community Association		In reference to our little discussion about use of remote sensing technology, it occurs to me that a leading and easily approachable authority on the topic is Rosie Yacoub, who runs a GIS program of this type for the Dept of Fish and Game (website: Vegetation Classification and Mapping Program). Her email address is rosalie.yacoub@wildlife.ca.gov. My understanding is that this program provides public access to a number of existing maps, plus a variety of remote sensing tools quite capable of identifying areas of plant growth associated with groundwater dependent ecosystems, although I understand they demand trained expertise to apply and interpret correctly. They do not necessarily tell you the source of water on which they draw however, such as discriminating between growth drawing directly on groundwater and similar growth drawing moisture from alternative sources. I would think that consultants working on the gsp probably are aware of these maps and at least some of the tools, but my question is whether they are making use of the most recent and sophisticated tools available. I'm not sure the state	This information has been provided to the Basin GSAs.	None anticipated.

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				necessarily owns all these tools, but I would think that Rosie would be aware of them.		
36	8/8/2020	Ted Rauh, Sacramento Central Groundwater Authority		I read with interest the comments submitted to you by Melinda. I understand these comments reflect technical expertise and personal knowledge of individuals who have responsibility for, or work in, the geographical area of concern. I find the suggestions they make and the technical citations and studies they reference add additional depth to the analysis of this region. I look forward to the technical team's review of these suggestions and hope that the data and studies can be incorporated into the ongoing analysis. The addition of pertinent analysis will afford us all a greater understanding of the connectivity between the Cosumnes and the underlying subbasins, improve the modeling of the subbasin boundary, and improve our understanding of GDE's along its reach.	Comment noted.	None anticipated.

SWAG Meeting Comments #2

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1	10/9/2020	Bridget Gibbons, California Department of Fish & Wildlife	Proposed Monitoring Network	Proposed Monitoring Network: The update regarding the monitoring network for ISW, including wells with confirmed access and those planned with TSS funding, is appreciated. Suggested that figures representing the monitoring network also identify the location of stream gauges. Additional monitoring wells that can be used to monitor the lateral gradient between near-stream groundwater levels and locations where significant pumping occurs may be helpful in identifying drivers of any ISW depletions for management actions.	Updated figure(s) will include the locations of the Representative Monitoring Wells that GSAs have secured access to for monitoring Depletions of Interconnected Surface Water (RMW-ISW), Representative Monitoring Gauges (RMG), and Groundwater Level Monitoring Wells (RMW-WL) that track water level and gradient changes in response to pumping. Updated table(s) will include well completion information, to the extent available. The GSAs continue to reach out to well owners to expand the number and distribution of supplemental monitoring wells.	Updated figure(s) and tables will be included as part of Monitoring Network description.
2	10/9/2020	Bridget Gibbons, California Department of Fish & Wildlife	Sustainable Management Criteria	Sustainable Management Criteria: In the process identified for developing sustainable management criteria, the “Check” step states that SMCs will be developed to avoid negatively affecting beneficial users, such as domestic well users. SMCs should be developed to be demonstrably protective of all beneficial users, including groundwater dependent ecosystems and environmental beneficial users of interconnected surface waters, and should be stated in the narrative.	Groundwater Dependent Ecosystems (GDEs) and domestic well users are being considered as beneficial users and identified as required by SGMA regulations.	Discussion of Sustainable Management Criteria (SMC) development and checks against interferences with beneficial users including GDEs and domestic well users will be included in the GSP. On-going monitoring will also be discussed.

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3	10/9/2020	Bridget Gibbons, California Department of Fish & Wildlife	Sustainable Management Criteria	Sustainable Management Criteria: Please clarify if and how the GSP is distinguishing shallow or perched groundwater areas from the "principal aquifer," and identify planned management actions for these areas within the basin, as they may provide significant support to groundwater dependent ecosystems. Consider identifying shallow or perched groundwater areas as a second "principal aquifer" that provides significant yield to GDEs.	Per 23-California Code of Regulations §351(aa) *"Principal aquifers" refer to aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems*. SGMA requires management of the Principal Aquifer(s), and perched aquifers, if they exist, do not store, transmit or yield significant or economic quantities of groundwater in the Cosumnes Subbasin. Proposition 68 funding is supporting GDE verification and geophysical studies, and evidence of perched aquifers will be documented as part of that effort.	Results of Proposition 68 efforts will be incorporated into the GSP. The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed on perched aquifers, it will be incorporated into future updates of the GSP (e.g., with respect to monitoring and potentially aquifer testing to assess connectivity, if any, to the Principal Aquifer).
4	10/9/2020	Bridget Gibbons, California Department of Fish & Wildlife	Sustainable Management Criteria	The presented possible approach for developing SMCs for interconnected surface waters outlines two sets of MOs and MTs for river reaches that are determined to be connected or disconnected from groundwater. Due to the current data gap related to identification of the location, timing, and quantities of depletion of interconnected surface waters, it is possible that areas identified as disconnected may prove to be connected as additional monitoring takes place. There is also likely to be uncertainty around the precise location of the transition from connected reaches to disconnected, or vice versa. As improved monitoring and data may prompt reclassification of a reach's connectivity status, adaptive management will be necessary in order to change	The exact location at which the Cosumnes River becomes disconnected is unknown and has been identified as a data gap. As part of Technical Support Services (TSS) Grant and Proposition 68 funding the GSAs are planning additional monitoring wells within the "transitional" zone of the Cosumnes River to improve characterization of interconnected groundwater and surface water in the Cosumnes Subbasin.	Results of TSS and Proposition 68 monitoring infrastructure development will be incorporated into the GSP. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information

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				the SMC and associated management strategy. Additionally, it should be demonstrated that the SMCs for the disconnected reaches will not unreasonably impact nearby or downstream connected reaches. SMCs should be protective of environmental beneficial users of ISWs.		is developed on the location of the transitional zone, it will be incorporated into future updates of the GSP.
5	10/12/2020	Amelia Vankeuren, Ph.D.; Assistant Professor of Geology, Sacramento State; Elk Grove Resident; Member of the Greater Sheldon Rural Estates Homeowners Association	SGMA monitoring network	It is vital that the groundwater elevation monitoring network include a distribution of wells both spatially and with depth, including wells at the typical depth of domestic wells. If most or all monitoring wells are deeper public supply or irrigation wells, there could be locally confined conditions that would cause monitoring wells to show a higher groundwater elevation than domestic wells actually have. Thus domestic wells could reach groundwater elevations lower than the sustainable management criteria without the monitoring network catching the problem and triggering a response.	The Representative Monitoring Well for Chronic Lowering of Groundwater Levels (RMW-WL) network includes 20 wells across the Cosumnes Subbasin with completed depths ranging from 15 ft bgs to 1,654 ft bgs and includes monitoring, irrigation and public supply well uses. Additionally, the GSAs are working on developing a supplemental monitoring network of domestic wells. As part of establishing SMCs for chronic lowering of groundwater levels an in-depth domestic well impact analysis is being conducted.	An updated description of the RMW-WL network, supplemental monitoring wells, and summary of the domestic well impact analysis will be included in the GSP. The GSAs plan to address data gaps as part of GSP implementation, which include missing well construction information of supplemental monitoring wells. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into

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						future updates of the GSP.
6	10/12/2020	Amelia Vankeuren, Ph.D.; Assistant Professor of Geology, Sacramento State; Elk Grove Resident; Member of the Greater Sheldon Rural Estates Homeowners Association	SGMA monitoring network	It is critical that the groundwater quality monitoring network also include a distribution of wells both spatially and with depth, including wells at the typical depth of domestic wells. If all wells used for monitoring groundwater quality are for public supply (as would be the case with wells from the Public Water System), they may not catch changes to groundwater quality that occur in the shallower portion of the aquifer. For instance, nitrate is often at higher concentration in shallower wells since it is typically transported from the surface to depth.	The Representative Monitoring Well for Degraded Water Quality (RMW-WQ) network includes 12 wells across the Cosumnes Subbasin with completed depths ranging from 135 ft bgs to 890 ft bgs and includes monitoring, irrigation, and public supply well uses. Three sites have been constructed with multiple depth monitoring wells using TSS Grant and Proposition 68 funding, and the GSAs plan for a fourth site has recently been approved by DWR.	An updated description of the RMW-WQ network and its distribution of monitoring depths will be included in the GSP. The GSAs plan to address data gaps as part of GSP implementation, which include identifying missing well construction information and quantifying monitoring depths. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
7	10/12/2020	Amelia Vankeuren, Ph.D.; Assistant Professor of Geology,	SGMA monitoring network	It is necessary to be able to determine the location at which the Cosumnes River becomes disconnected. I am concerned that the network used to determine depletions of interconnected surface water is not sufficiently dense where the river is expected to shift from disconnected to	The exact location at which the Cosumnes River becomes disconnected is unknown and has been identified as a data gap. As part of TSS Grant and Proposition 68 funding the GSAs are planning additional	Data gaps will be identified in the GSP, as will results of the Proposition 68 evaluation of GDEs.

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		Sacramento State; Elk Grove Resident; Member of the Greater Sheldon Rural Estates Homeowners Association		connected to the river. While the groundwater elevation contours in TM6 figures GWC-01 and GWC-02 showed dashed lines indicating the groundwater elevations near the river are uncertain, figure GWC 15 does not take into account that level of uncertainty; it instead suggests that the possible locations of GDEs only extend slightly farther upstream than the Cosumnes Preserve, not as far upstream as the McConnell Station. The new monitoring network would benefit from more well/river stage monitoring pairs, particularly in the region where the river likely connects between the McConnell station and the most downstream monitoring point.	monitoring wells within the "transitional" zone of the Cosumnes River to improve characterization of interconnected groundwater and surface water in the Cosumnes Subbasin. Dashed lines in Figures GWC-01 and GWC-02 represent uncertainty of the groundwater elevation near the Cosumnes River resulting from the incision of the stream bed and lack of shallow wells near surface features in the Cosumnes Subbasin. Figure GWC-15 maps potential GDEs, and the mapping exercise included identifying the range in depth-to- water (DTW) at <30 ft bgs delineated by spring (seasonal high) and fall (seasonal low) water levels in the Principal Aquifer during the period 2011 through 2018. All potential GDEs overlying the resulting range in areas with DTW <30 ft bgs are included in Figure GWC-15. As part of TSS Grant and Proposition 68 funding the GSAs are constructing additional wells and gauging stations to increase available data for interconnected groundwater and surface water.	The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
8	10/12/2020	Amelia Vankeuren, Ph.D.; Assistant Professor of Geology, Sacramento State; Elk Grove	Sustainable Management Criteria	It is essential that domestic well users still have access to groundwater at the level of the GSP Measurable Objective. I am concerned that if that level is set to the 2015 water level, there may be tens or hundreds of domestic wells that go dry. As Anona mentioned, the community well survey showed that close to 200 domestic wells may have gone dry in 2015 as a result of the drought, which is about 6% of domestic wells in the subbasin.	The GSAs are conducting specific analysis on the potential well impacts as SMCs are developed. The well impact analysis includes evaluation of all wells that have well completion reports in Department of Water Resource's Online System of Well Completion Reports (OWSCR) database which is the most complete inventory of wells available. Analysis to date suggests	A summary of the domestic well impact analysis and associated data gaps will be included in the GSP.

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		Resident; Member of the Greater Sheldon Rural Estates Homeowners Association		While I recognize that some of those wells may not have been in use, some of them (or other wells) may have. The fact that no one has heard anecdotal evidence of wells going dry does not prove that they did not. 200 stakeholders filling out a survey on well conditions is a good start, but if there are close to 3,000 wells in the subbasin then clearly we have not heard from everyone. I have many neighbors with domestic wells who do not have a clue about SGMA or the GSP process. This suggests that there may be other domestic well owners who are not tuned into the process and don't know who to tell that their well went dry. There should be efforts to track down the wells that may have gone dry and connect with the well owners to verify the status of their wells during the drought. If the wells did go dry, that may necessitate altering the measurable objective.	that only a small percentage of wells in the subbasin are expected to be impacted at current SMCs. One of the questions on the stakeholder survey, which was sent to all residents within the Cosumnes Subbasin, was whether the stakeholder's well has gone dry before. Out of the 213 responses received, two respondents indicated that their wells had gone completely dry and had to be deepened and six stakeholders responded that they have had to drop pumps. The GSAs recognize the importance of engaging stakeholders and the broader public in discussions related to GSP development and implementation. The GSA's stakeholder outreach and public engagement plan can be found on the homepage of the Cosumnes Subbasin website: http://cosumnes.waterforum.org/sustainable-groundwater-management-act-sgma	The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
9	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Monitoring Network	It is clear that the monitoring network is being designed to meet SGMA requirements. A few points for feedback/consideration: The Cosumnes River flow is affected by diversions (both in the reach of concern and upstream), groundwater pumping, return flows from agricultural operations and wastewater, precipitation amount and timing, and geology affecting groundwater storage/flow rate. Impacts of flows and groundwater levels vary with timeline. Opportunities for multi-benefit management	These points are appreciated and will be considered by the GSAs as part of projects and management actions development. The numerical groundwater-flow model utilized the best available data to estimate diversions, return flows, groundwater pumping, and geologic conditions and will be employed to evaluate potential interferences between SMCs for each Sustainability Indicator.	Projects and Management Actions will be described in the GSP. Data gaps that limit model reliability will be identified, and guide GSA plans to address them as part of GSP

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				require insight to all of these factors, some of which will be monitored in compliance with SGMA. Management actions that address SGMA obligations may find funding in multi-benefit projects.		implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
10	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Monitoring Network	The Environmental Defense Fund (EDF) white paper Addressing Regional Surface Water Depletions in California is a resource with respect to monitoring network design that offers some recommendations for monitoring interconnected surface water (ISW). Key points include: • Maintain the gradient between the aquifer and the stream at January 2015 level; • There is a need for both longitudinal (streamwise) and laterally spaced monitoring locations. Monitoring wells within 2,000 feet of a river or stream are valuable for documenting near-stream conditions but are not useful for determining whether or not interconnected surface water is being depleted due to influence of stream flow on levels in this zone; and, • Ideally, there will be a monitoring well at an intermediate location between pumping centers and a stream to determine the gradient between the stream and aquifer. • The current ISW monitoring network appears to be limited to near-stream wells	The EDF white paper and other documents that provide guidance for monitoring network design were reviewed and applied to specific conditions in the Cosumnes Subbasin. The existing infrastructure for monitoring is limited, and guidance provided by documents like the EDF white paper cited can provide a framework for identifying data gaps and recommendations for network improvements. Prop 68 funding is being applied to expand monitoring network capabilities, and remaining network limitations will be identified for resolution as part of GSP implementation. In response to the specific questions, the Working Group provides the following information: Half of the current interconnected surface water monitoring wells are located within 2,000 feet of the Cosumnes River, and the remaining half are located more than 2,000 feet from the River.	An updated description of the monitoring network and the supplemental monitoring wells will be included in the GSP. Data gaps and monitoring network limitations will be identified and summarized in the GSP. The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into

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				and thus inclusion of additional lateral wells is recommended in a manner consistent with the document. • Monitoring wells should be spaced at cross-sections every 4-6 miles along the stream corridor. Please verify if the current network achieves this goal. The monitoring network should also account for geomorphic breaks along the corridor such as the presence of large man-made structures, major tributary confluences, and substantial longitudinal changes in valley width, bed slope, bed material type, and/or lithology, such that each 'geomorphic reach' has at least one monitoring cross-section.	The longitudinal spacing between sites is at most 7 miles (one site), with the remaining six sites range from 6 miles to 0.5 mile. In regards to monitoring between geomorphic breaks along the corridor (e.g. large man-made structures , major tributary confluences, etc.) the current monitoring network includes the following: the first site is 2 miles below the Arkansas Creek/Cosumnes River confluence, the second site is 2 miles south of the FSC, the third and fourth sites are 1.5 and 2 miles north of the Deer Creek/Cosumnes River confluence, there are no sites between the Deer Creek/Cosumnes River confluence and the Badger Creek/Cosumnes River confluence, the fifth and sixth sites are 1 and 1.5 miles south of the Badger Creek/Cosumnes River confluence, the seventh site is 0.5 miles north of the Laguna Creek/Cosumnes River confluence, there are no sites between the Laguna Creek/Cosumnes River confluence and the Cosumnes River/Mokelumne River confluence, and the eight site is located along Dry Creek. Proposition 68 funding the GSAs are planning additional monitoring well and stream gauge construction.	future updates of the GSP.
11	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The	Monitoring Network	Propose designing monitoring network with both SGMA compliance and grant funded projects (that require adaptive management) in mind. Congratulations on taking advantage of the DWR Technical Services Grant and installing a well with screening at multiple levels in the OHWD	Three sites have been constructed with multiple depth monitoring wells using TSS Grant and Proposition 68 funding, and the GSAs plan for a fourth site that has recently been approved by DWR.	An updated description of the monitoring network and the supplemental monitoring wells will

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		Environmental Defense Fund & Cosumnes Coalition		jurisdictional area, providing important insights to groundwater flow behavior that affect both GDEs and water supply.	The GSAs will continue to identify monitoring network gaps and formulate plans to address those gaps as part of plan implementation.	be included in the GSP. Data gaps and monitoring network limitations will be identified and summarized in the GSP. The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
12	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Monitoring Network	Suggest ensuring both vertical and horizontal heterogeneity are captured in the monitoring design.	Three sites have been constructed with multiple depth monitoring wells using TSS Grant and Proposition 68 funding, and the GSAs plan for a fourth site that has recently been approved by DWR. Two of the four sites are located near surface water features (one near the Cosumnes River and one near Dry Creek). The GSAs will continue to identify data gaps and formulate plans to address those gaps as part of plan implementation.	An updated description of the monitoring network and the supplemental monitoring wells will be included in the GSP. Data gaps and monitoring network limitations will be identified and summarized in the GSP.

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						The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP.
13	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Monitoring Network	Suggest developing a joint monitoring network in coordination with the South American Subbasin GSA working group that goes beyond minimal SGMA requirements and allows for monitoring of GDE health.	As part of the Proposition 68 funding, monitoring wells and stream gauges are being installed in coordination with the South American Subbasin GSP consultants.	Coordination efforts with the South American Subbasin will be described.
14	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Monitoring Network	Suggest that the Cosumnes Working Group continue to work closely with other entities working in the river corridor currently or in the past: UC Davis Watershed Center, S. American Subbasin GSAs, Reg San, Cosumnes River Preserve, Omochumne Hartnell Water District, Cosumnes Coalition, Sacramento Area Flood Control Agency. Consider a coordinating outreach e-mail or meeting on a regular basis to gather info on current projects or monitoring resources added to avoid duplication and to take advantage of	Using Proposition 68 funds, the Cosumnes Working Group developed the Surface Water Advisory Group (SWAG). SWAG input is being considered as part of GSP development, and the Working Group agrees to continue communication and information sharing as part of GSP implementation can be valuable and maximize returns from resources invested in the Cosumnes Subbasin.	The Surface Water Advisory Group (SWAG) will be described, and its potential role to support plan implementation and reporting will be explained in the GSP.

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				resources available to improve the regional data available.		
15	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Monitoring Network	Suggest coordinating closely with the S. American Subbasin to take advantage of opportunities for sharing monitoring resources and strategies, such as satellite imagery to refine understanding of river connection behavior, gaging station installation and maintenance, and so on.	As part of the Proposition 68 funding the South American Subbasin and Cosumnes Subbasin technical consultants are actively sharing data, including satellite imagery, to improve monitoring infrastructure (monitoring well and stream gauge construction) and characterize interconnected surface water and groundwater conditions for the Cosumnes River.	Inter-basin coordination activities will be described and their role in GSP implementation explained in the GSP. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP, including the 5-year update as suggested.
16	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	It appears that the proposed approach for developing SMCs for interconnected surface water will not actually result in sustainability; that is, groundwater levels won't be required to be in reach of root systems. If GDEs are unable to survive or reproduce, it won't be possible to attract multi-benefit funding to sustain these resources. • Suggest that MOs should be set at a level that are demonstrably sustainable for ISWs/GDEs based on evidence/analysis, or suggest using an average groundwater level from the 2005-2015 time period. • Suggest tracking gaging station flows for this first five years of SGMA and using that data to develop better informed MOs for surface water/groundwater interaction.	Proposition 68 funding is being used to support a GDE verification study, and results will be considered to develop SMCs. As required by SGMA, the SMCs will be selected to protect beneficial users of interconnected surface water. Per 23-California Code of Regulations §354.24 *Each Agency shall establish in its Plan a sustainability goal for the basin that culminates in the absence of undesirable results within 20 years of the applicable statutory deadline.* GSAs are not responsible for undesirable results that occurred prior to 2015.	Results of Proposition 68 efforts will be incorporated into the GSP. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP, including the 5-year update as suggested.

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				• Suggest defining perched aquifer areas to inform management actions.	As part of Proposition 68 funding the GSAs are also investigating perched water with geophysical studies.	
17	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	If 2015 groundwater levels will be used to define the MO, it is necessary to provide evidence that these groundwater levels are not adversely impacting ISWs, GDEs, or other beneficial uses. For example, a GDE or specific species may have been capable of surviving under 2015 groundwater levels for a period of time due to drought management attributes, however in the long term these groundwater levels may still lead to crown dieback, lack of sapling recruitment, decreasing returns of anadromous fish, etc. In this case, these groundwater levels would be unsustainable.	Beneficial users will be considered during SMC development and SMCs for the finalized monitoring networks will be protective of all other Sustainability Indicators. Per 23-California Code of Regulations §354.24 *Each Agency shall establish in its Plan a sustainability goal for the basin that culminates in the absence of undesirable results within 20 years of the applicable statutory deadline.* GSAs are not responsible for undesirable results that occurred prior to 2015.	Discussion of SMC development and checks against interferences with beneficial users including GDEs will be included in the GSP. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP, including the 5-year update as suggested.
18	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	Two approaches for SMCs were presented in the 9/16 Working Group meeting brief depending on if a river reach is determined to be interconnected or disconnected. If this strategy is identified as the preferred methodology please address the following comments: • This strategy relies on discrete mapping of reaches as interconnected vs disconnected and that these boundaries remain stationary through time. It may be difficult to clearly identify boundaries of interconnection and it is likely such boundaries are subject to fluctuation through time (see next comment).	A conservative approach can apply the interconnected strategy also to the transitional reaches, and the disconnected strategy to reaches where water level depths in the Principal Aquifer are more substantial and it is not reasonable to assume water level increases that establish temporary interconnected conditions. This approach will require adequate data, and where data gaps exist the numerical model or other analytical functions and models can be employed to select SMCs based on the best available data. Additionally, the numerical groundwater-flow model will be	Discussion of SMC development and checks against interferences with beneficial users including GDEs will be included in the GSP. Data gaps will be identified and summarized in the GSP.

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				• Having two management strategies may create challenges at transitions from interconnection-to-disconnection (or visa-versa) as it creates a step change in MO/MT criteria. It may be necessary to create buffer regions between management units where interconnectedness is less clear to ensure management in disconnect reaches does not result in significant and undesirable impacts to interconnected reaches through propagation of declining groundwater levels that results in surface water depletions. In these buffer regions a separate management strategy may be needed with linear, sigmoidal, or other functional transitions between reaches (see concept figure below). In the absence of or even with this consideration in mind it must be shown that the SMCs for disconnected areas which allow continued lowering of GW tables will not impact nearby ISWs or the ability to achieve interconnected SMCs (Boulton & Hancock, 2006).	employed to evaluate potential interferences between SMCs for each Sustainability Indicator, including the potential interactions between SMCs recommended for Interconnected/Transitional and Disconnected strategies. Data gaps identified during the evaluation will be summarized in the GSP and utilized to identify monitoring network improvements.	The GSAs plan to address data gaps as part of GSP implementation. To the extent that additional information is developed as part of GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP, including the 5-year update as suggested.
19	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	The SMCs for interconnected reaches, as proposed, provide no safeguard that existing seasonal interconnections would be maintained despite the potential for climatic forcing and consumptive trajectories that are likely to increase GW level declines and put pressure on hydrologic processes that maintain these important connections. Further, there is as of yet no analysis, beyond hydro-statistical underpinnings, from a scientific basis for how ISW SMCs would avoid significant and unreasonable changes to beneficial uses (e.g.	The SMCs are based on observed seasonal interconnections because of historical climatic conditions and groundwater use. SGMA requires the GSP show sustainability over a 50-year planning horizon that considers projected climate change effects and demand for water. These projections will be made using the numerical groundwater-flow model.	Discussion of SMC development and checks against interferences with beneficial users including GW-SW connections will be included in the GSP.

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				fluvial-riparian ecosystems and associated hydrogeomorphic processes and organisms that utilize these habitats) (see other comments above and below on this matter).		
20	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	SMCs for Interconnected reaches should ensure the maintenance of existing spatial and temporal GW-SW connections as evidence supports that any increase in SW depletion constitutes a significant and unreasonable impact due to the importance of these connections as well as to the uncertainty of ecosystem and biological responses to an increase in any amount of disconnection (see EDF report as well as Bogan et al., 2019; Boulton & Hancock, 2006).	The SMCs are designed to maintain spatial and temporal GW-SW connections relative to a baseline defined by 2015 conditions consistent with SGMA regulations.	Discussion of SMC development and checks against interferences with beneficial users including GW-SW connections will be included in the GSP.
21	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	Specifying ISW SMCs based on short-term records may be problematic (see slide 24 for example) as such periods may not adequately reflect baseline conditions or may otherwise be unrepresentative of the region's hydro-climatic variability. It is understood that data limitations exist and model simulations may be used to supplement historic measurements. Will a minimum period of record such as 2005-2015, be set when establishing SMCs?	The target period of record analyzed to establish SMCs is 1999-2018, and as required by SGMA the GSP shall show sustainability – as defined by the SMCs – over a 50-year planning period that includes potential climate change effects.	Discussion of SMC development, including consideration of climate change, will be included in the GSP.
22	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Sustainable Management Criteria – Interconnected Surface Water	The SMCs for disconnected reaches allow for groundwater levels to decline for a period before P&MAs result in the conceptualized 'V' shaped recovery toward MO's. The impact of these continued declines may have uncertain consequences along the river corridor particularly on riparian communities, GDEs, and channel morphology. For example, if continued GW lowering results in mortality to riparian tree communities this could enhance bank instability and erosion. Such issues should be researched to	The numerical groundwater-flow model will be employed to evaluate potential effects of the glide path toward MO's ("V" shaped recovery"), including interferences between SMCs for each Sustainability Indicator and potential interactions between SMCs recommended for Interconnected/Transitional and Disconnected river reaches.	Discussion of SMC development and checks against interferences with beneficial users including GDEs will be included in the GSP. To the extent that additional information is developed as part of

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				have a conceptual level understanding of the consequences of these trajectories. Many of these communities may also be GDEs to which there are additional comments in this document.		GSP implementation and other coordinated efforts, it will be incorporated into future updates of the GSP, including the 5-year update as suggested.
23	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	Undesirable Result	What represents an Undesirable Result? How would you define a "significant and unreasonable" change in the system? We suggest that part of the answer to this question is based on what we hope to accomplish with our partners in this basin. If these goals are not being achieved, then it is very likely that impacts are "significant and unreasonable." Goals for the Cosumnes subbasin should include: • Sustain water supply for agricultural, residential, and municipal use; • Create fall flow conditions that allow salmon migration for spawning • Sustain outgoing flow conditions for juvenile salmon migration • Sustain/improve groundwater levels in riparian corridor to support existing GDEs from highway 16 to highway 99; and • Sustain/improve groundwater levels for riparian forest and associated GDEs from highway 99 to highway 5 as necessary (groundwater levels are higher in this area).	The GSAs have not yet defined Undesirable Results and appreciate stakeholder articulation of goals for the Cosumnes Basin for the Working Group to consider when finalizing those definitions for the GSP.	Undesirable Results will be defined in the GSP.
24	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy,		In addition, when addressing undesirable result "6," depletions of interconnected surface water [Water Code §10721(w)(6)], any additional depletions beyond January 2015 levels should be deemed "significant and unreasonable" and,	The GSAs appreciate stakeholder's sharing recommended definitions for Undesirable Results, and the reasons put forward to justify those recommendations. The GSAs will consider these recommendations when	Undesirable Results will be defined in the GSP.

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		The Environmental Defense Fund & Cosumnes Coalition		therefore, an undesirable result. This is due to the history of overdraft in the subbasin, the massive public investment in the Cosumnes River Preserve (in excess of $100 million), and the State Water Resources Control Board's (State Water Board) designation of the Cosumnes River and other streams in the subbasin as "fully appropriated streams" (FAS). The Cosumnes is a FAS from July 1st to October 31st, the South Fork Cosumnes River is from April 15th to October 31st, and Deer Creek is from May 1st to October 31st (see Order WR 98-08). Due to these factors, the GSP should assume that any further depletions of interconnected surface water are impacting beneficial uses and are, therefore, "significant and unreasonable." For a more detailed discussion of this topic see EDF's white paper "Addressing Regional Surface Water Depletions in California."	finalizing their definitions for Undesirable Results for the GSP.	
25	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition		It is possible that during normal, above normal, and wet water year types there will be "excess" water flowing in the Cosumnes River and other streams in the subbasin. In this case, some depletions of interconnected surface water may be reasonable, but much more detailed hydrologic analysis will be required to determine when there is truly excess water available before the GSP allows further depletions. The State Water Board's guidance for diversion of surface water to underground storage may be a useful standard in the interim for determining if a depletion of interconnected surface water is reasonable. This guidance suggests that when stream flows exceed 90% of historical average daily flow between December 1st and March 31st it is safe to divert additional surface water for the purpose of groundwater recharge. We acknowledge this guidance is intended for a different purpose than assessing	The GSAs appreciate stakeholder guidance for the determination of depletions that results from potential Projects and Management Actions. The Working Group will consider these recommendations, as well as available data and results from the numerical groundwater-flow model to estimate depletions and evaluate their potential influence on SMCs and Basin sustainability.	The sustainability goal of the Cosumnes Subbasin will be defined in the GSP.

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				depletions of interconnected surface water, but believe it is a good rule of thumb until a more thorough analysis of the existing demands and beneficial uses along the streams of the subbasin is completed.		
26	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition		Lastly, several currently proposed SMCs cite 2015 water levels as the MO. As discussed in the section above it is possible this water level was already impacting beneficial uses (domestic wells/GDEs/ISWs) in the Basin. Please provide an analysis of the impact of this water level on these uses relative to a reasonable alternative baseline condition (e.g. average from 2005-2015 or longer period of record). This could be in the form of plots of incremental (i.e. 1 ft) water level declines from baseline vs resource metrics. Resource metrics could include: i) percentage of domestic wells that are dry; and ii) percent area of GDEs that become disconnected. The shape of such plots may be useful in understanding and classifying impacts (e.g. a liner response is much different than a sigmoidal response where a clear threshold of increased impact is present – see conceptual figure below).	The GSAs appreciate stakeholder guidance suggestions for data analyses to explore potential Undesirable Results that may occur due to the 2015 minimum baseline established by SGMA. The Working Group will consider these recommended analyses as part of their evaluation of SMCs and definition of Undesirable Results.	Undesirable Results will be defined in the GSP.
27	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund &	Sustainability	Recognizing that arresting the long-term decline in groundwater levels in this Basin will require significant resources, what ideas does this group have for how sustainability can be achieved? Note that groundwater levels can be maintained higher at some locations; it is not necessary to increase groundwater elevations across the entire basin to improve undesirable results at other locations.	The GSAs are currently evaluating a substantial number of potential Projects and Management Actions to arrest the historical decline in groundwater storage and achieve sustainability. The Working Group appreciates the offering of conceptual projects and agree future success can benefit from collaboration, information sharing, and coordinated efforts to obtain funding.	Projects and Management Actions will be described in the GSP. Inter-basin coordination activities will also be described and their role in GSP implementation explained in the GSP.

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		Cosumnes Coalition		Suggest a combination of demand side management (strategic fallowing, water conservation) and multi-benefit projects (flood MAR, reclaimed water for reuse, incentives, water markets, GW banking, floodplain re—connection). Increase coordination with the South American Subbasin GSA working group to identify opportunities for technical collaboration, coordinated funding proposals, and general information sharing.		
28	10/9/2020	Melinda Frost-Hurzel; ECOS, The Nature Conservancy, The Environmental Defense Fund & Cosumnes Coalition	SMCs	General comments on approaches to designate SMCs for groundwater level lowering, ISWs, and GDEs. In setting SMC criteria for GDEs please consider the following factors: • There is variability in groundwater requirements for the various ecologic components that make up a GDE (e.g. response/requirements of different vegetation; seasonal requirements; life-history requirement of biota that inhabit GDEs) (Easmus & Froend, 2006); • There may be a lagged response of GDE health to alteration of GW conditions requiring conservative approaches to what GW alterations are acceptable (Easmus & Froend, 2006); • GDE health responds differently depending on the rate and magnitude of GW decline. Vegetation appears to be more resistant/resilient to low rates and magnitudes of GW declines compared to more rapid and larger declines which could force GDEs over a 'tipping point' toward an alternative ecological state (Easmus & Froend, 2006; Froend & Sommer, 2010; Kath et al., 2014); and	The GSAs appreciate the considerations offered for selecting SMCs. The Working Group will evaluate these considerations as they finalize SMCs for the GSP. While SMCs are based on historical conditions, SGMA requires the GSP show the SMCs ensure sustainability over a 50-year planning horizon that considers projected climate change effects and potential changes in water demand.	Discussion of SMC development and checks against interferences with beneficial users will be included in the GSP

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				• GDE recovery after a 'tipping point' is exceeded may be uncertain or unlikely (Kath et al., 2014). In setting MT criteria, the use of linear fits to extrapolate future conditions is sensitive to the period of record. It is recommended that a standardized or minimum period of record be used if this is the selected approach to setting MTs. The period should be sufficient to capture long-term GW trends and regional hydroclimatic variability that includes inter-decadal processes. Current MTs for many sustainability indicators allow for continued declines in GW levels that appear to assume stationarity in the processes driving GW declines. The ability to achieve MOs based on future declines following these trajectories should be thoroughly analyzed and built into interim measurable objectives with associated management actions should future trajectories not follow these patterns, which could be the case given non-stationarity in GW trends and increased withdrawals and GW declines from climate change related factors.		

SWAG Meeting Comments #3

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1	12/4/2020	ECOS, TNC, and Cosumnes Coalition	Hydrogeologic Conceptual Model (HCM): 3.7 Groundwater Dependent Ecosystems (GDEs)	Valley Oaks are a key species to focus on as part of the GDE verification study. There are numerous stands of Valley Oaks throughout the Cosumnes River Preserve that are likely groundwater dependent. Metrics for assessing the health of Valley Oak stands (and GDEs in general) were developed and described in Rohde et al., 2019, including growth, diversity, recruitment, structure, native plant dominance, and survivorship. TNC can provide access to the Cosumnes River Preserve, as well as guidance for locating Valley Oak stands.	Proposition 68 funding is supporting GDE verification which plans to include Valley Oaks in the analysis, assuming access can be secured. The GDE verification study is considering the reference provided, and the GSAs appreciate the input and offer to assist with gaining access to sites identified for detailed inspection.	Results of the Proposition 68 efforts will be incorporated into the GSP. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.
2	12/4/2020	ECOS, TNC, and Cosumnes Coalition	HCM: 3.7 GDEs	In addition to Valley Oaks, willow and cottonwood riparian communities along the Cosumnes River and Dry Creek are also of high ecological value and should be considered in the field evaluation program. While focus on Valley Oaks, willow and cottonwood riparian communities is warranted 25 other vegetative communities supporting phreatophytes, not including various wetland types, are also mapped by the NC dataset in the basin. A stratified random sampling by different vegetative community types applied within accessible lands may be a good option to ensure equal effort in surveying these other communities. In addition to Rhode et al., (2019) there are many riparian survey protocols that provide detailed survey methods (Cooper & Merritt, 2012; Merritt et al., 2017; Winward, 2000).	Proposition 68 funding is supporting GDE verification which plans to include riparian communities and other vegetative communities in the analysis, assuming access can be secured. The GSAs appreciate the input on potential species and have provided these comments and reference suggestions to the GDE consultant to consider as part of finalizing their study plan.	Results of the Proposition 68 efforts will be incorporated into the GSP. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.
3	12/4/2020	ECOS, TNC, and Cosumnes Coalition	HCM: 3.7 GDEs	It is requested that when survey strategies and assessment approaches are finalized such information is shared with the SWAG where feasible. For example, slide 6 notes the strategy may include an approach to "Decide whether feature appears to be a GDE and whether it might be sensitive to regional groundwater and/or drought conditions". Our members have an interest in better understanding this approach if possible.	The GSAs are utilizing the SWAG and Working Group meetings as means to communicate strategies and approaches. We encourage attendance and input at these meetings. Efforts will be made to share protocols for GDE related work when possible. Protocols developed by our sub-contractors can be made available to SWAG members and will be documented in their	Results of the Proposition 68 efforts will be incorporated into the GSP. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.

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4	12/4/2020	ECOS, TNC, and Cosumnes Coalition	HCM: 3.7 GDEs	It is agreed there is value in verification of the NC Dataset through field surveys. There is also value in conducting field based vegetation assessments particularly as part of long term monitoring. However, much of the value of vegetation assessment and certain metrics only emerge from repeat surveys. Such repetition can document trends and through confirmed correspondence (e.g. correlation) with alternative survey methods such as remote sensing provide a sense of validation and confidence in those metrics. Further trends can be correlated with physical conditions (groundwater) to better understand system dynamics and ecohydrologic response. Is continued assessment (e.g. annual, bi-annual) anticipated as part of SGMA implementation? SWAG members are happy to discuss this matter further.	Proposition 68 funding is supporting a single field survey to verify select GDE populations and areas. GSAs welcome the opportunity to identify partners and funds to continue surveys in the future. They will be helpful in assessing any changes in GDEs. Based on these initial results, the GSAs will consider how future SGMA monitoring activities will address GDE's identified as impacted by conditions in the principal aquifer, or otherwise recommended for additional study or monitoring.	GSAs will assess the need and frequency of repeat surveys or other monitoring and data collection when finalizing the SGMA-compliant monitoring plan for the GSP.
5	12/4/2020	ECOS, TNC, and Cosumnes Coalition	SMC: 14.6 Minimum Threshold for Depletions of Interconnected Surface Water (ISW) SMC: 15.6 Measurable Objective for Depletion of ISW	It is good to see consideration of MO/MT criteria for 'transitional reaches'.	Comment noted and we thank the SWAG for their input into the MO/MT development process.	The GSP will document the GSA's development of MO/MTs for the interconnected, transitional, and disconnected reaches of the Cosumnes River.
6	12/4/2020	ECOS, TNC, and Cosumnes Coalition	Monitoring Network: ISW Monitoring Network and Sustainable Management Criteria (SMC)	Cosumnes Working Group Consultants talk about a significant movement of Groundwater from the Cosumnes Subbasin to the South American Subbasin. SCGA's consultant's preliminary analysis indicates some groundwater movement from the Cosumnes subbasin to the South American Subbasin. However, years of groundwater elevation data taken from wells along the subbasin boundary as well as SCGA modeling indicates that groundwater is moving under the Cosumnes from the South American Subbasin into the Cosumnes Subbasin. Consultants from both GSP efforts should coordinate and share information to fully establish the baseline conditions for both	All previous investigations have actually <u>not</u> concluded that groundwater movement is from the South American Subbasin to the Cosumnes Subbasin. For example, a previous study evaluated water quality, stable isotope, and groundwater report, elevations, and concluded that flow from the Cosumnes to the South American subbasins likely occurs (RMC, December 16, 2015, Technical Memorandum to the Sacramento Central	The GSP will describe all inter-basin coordination efforts, including coordinated model development. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.

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				Subbasins.	Groundwater Authority, "Recharge Mapping and Field Study"). The GSAs in both subbasins are coordinating the development of a numerical model (i.e., the CoSANA model) to support both GSPs, including development of the baseline conditions. If there is data that will assist the Cosumnes WG and SCGA consultants in the modeling flows, please provide it so it can be evaluated and considered in our analysis. It is the intent that both subbasins will be relying on similar conclusions regarding flows across basin boundaries. Proposition 68 funding is supporting refinement of the CoSANA model along major surface water reaches to increase the model's reliability to determine cross-boundary flows between subbasins.	
7	12/4/2020	ECOS, TNC, and Cosumnes Coalition	Monitoring Network: 1.1.6. Monitoring Network for Depletions of ISW. HCM: 3.7. GDE	Can the Cosana model be used to predict what the impacts will be on surface water/groundwater interaction and GDEs when the basin returns to the 2015 storage level? Can the model be used to help select recharge areas that improve GDE and surface water interactions? If so can these runs be done now so that the analysis can be included as part of the management actions selection process.	The CoSANA model will be employed to project changes in groundwater levels and the effects of those changes on surface water flows. The application of these results to specific sites depends on the site location, site area, and existing data gaps. The model results will be used to determine the efficacy of Project and Management Actions (P/MAs) to meet the specified sustainable management criteria (SMC).	Projected model results will be summarized and presented in the GSP along with proposed P/MAs that were refined based on the model results.

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8	12/4/2020	ECOS, TNC, and Cosumnes Coalition	SMC- Undesirable Results	With regard to information/examples on relationships between GW levels in the principal aquifer and the timing and magnitude of Cosumnes flows to support juvenile/adult migration and adult spawning (or other life stages such as embryo incubation which could benefit from groundwater discharges) and/or support for GDEs and riparian forest west of 99 we recognize there are data gaps that we hope the GSP can help to fill with future monitoring and modeling.	These topics will be considered when developing GSP implementation and will be included in the data gaps section.	Data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.
9	12/4/2020	ECOS, TNC, and Cosumnes Coalition	SMC- Undesirable Results Available Data and Data Gaps	To our knowledge possible information sources in addition to sources provided in previous comment letters include the aforementioned study by Rhode et al. (2019); Mount et al. 2001 (see Appendices I & II for well locations and simulation results that show potential GW levels within rooting depths of potential GDEs); gage measurements from UC Davis (https://watershed.ucdavis.edu/doc/cosumnes-research-group/data-access - data is notably limited to mostly wet season flows) and possible inferences on groundwater discharges for similar head conditions, if they could be documented, as those simulated by Niswonger (2006)/Niswonger & Fogg (2008) from the perched aquifer near the Hwy 99 crossing.	Thank-you for the cited references and potential data sources. Information from these sources were considered for inclusion into the Basin DMS, development of TM6 (Hydrogeological Conceptual Model and Groundwater Conditions), CoSANA model development, and current interconnected surface water evaluations.	Appropriate data from these sources will continue to support GSP development.
10	12/4/2020	ECOS, TNC, and Cosumnes Coalition	13.6 Undesirable Results for Depletions of ISW; 14.6 Minimum Threshold for Depletions of ISW; 15.6 Measurable Objective for Depletions of ISW.	In considering SMCs and undesirable results for ISWs it would be beneficial to be presented with a hydro-statistical analysis of GW-SW interconnections in the lower basin. For instance, using simulated and available monitored GW levels and streambed elevations what are frequencies of any connections, what are the GW level exceedance probabilities, what are the summary statistics for the annual timing and duration of any interconnections along the river? Similarly, how do such metrics vary by water year and are there temporal trends in the metrics? Such metrics could serve as a valuable reference frame and working from the assumption that periods of connection are important to beneficial uses it could be	Thank-you for the suggested analytical approach. It will be considered relative to the quantity and frequency of available data and model limitations.	If appropriate, results from the analysis will be summarized and included in the GSP. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.

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				construed that significant deviation from this reference frame in the future would be an undesirable result. The degree of this deviation requires further consideration and discussion. Revaluation of metrics could be conducted during each 5-year review as part of adaptive management and with understanding of P&MA lag times. It is understood that data limitations exist toward this analysis, 2015 conditions may still serve as an official baseline for GW-SW connections, and GSAs are not responsible for undesirable results that occurred prior to 2015.		
11	12/4/2020	ECOS, TNC, and Cosumnes Coalition	13.6 Undesirable Results for Depletions of ISW	The approach to defining and monitoring undesirable results for GDEs should be based on modeling and well elevation data that translates to appropriate plant colony root zones. It is not sufficient to use the 30' elevation associated with full grown trees because this level will not allow for any replacement grown or natural understory growth.	Proposition 68 funding is supporting GDE verification. The outcome of this study, model results, and available data, will be used, as appropriate, to determine appropriate SMCs when defining undesirable results in regard to interconnected surface water and their associated effects on GDEs, as applicable. The Cosumnes Working Group would appreciate information from the SWAG on recommended water table depths to protect against undesirable results in the context of the issue raised here regarding Cosumnes Subbasin GDEs.	Results of Proposition 68 GDE verification study will be summarized in the GSP and used, as appropriate, in defining undesirable results, as applicable. Remaining data gaps will be identified in the GSP, and the GSAs plan to address data gaps as part of GSP implementation.
12	12/4/2020	ECOS, TNC, And Cosumnes Coalition	Projects and Management Actions	In situations where GDEs are or have been sustained by a shallow aquifer, recharge projects that both contribute to the shallow and deep aquifers should be given preferential treatment as management actions	Many factors need to be balanced when determining recharge project locations. For example, physical conditions, cooperative landowners, and existing projects on the So American Subbasin side of the Cosumnes River. The	Results of Proposition 68 GDE verification study will be summarized in the GSP and used in defining undesirable results, as applicable.

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					Cosumnes Working Group welcomes information from the SWAG identifying potential locations for multi-benefit recharge projects. The P/MAs are being developed to maintain the long-term sustainability of the Basin as defined by undesirable results and identified using SMCs. Undesirable results include interconnected surface-water and its associated effects on GDEs, as applicable.	
13	12/4/2020	ECOS, TNC, and Cosumnes Coalition	Projects and Management Actions	The proposed GSP Projects and Management Actions represent an important step towards sustainable groundwater management for the basin. We look forward to hearing more details regarding implementation.	The GSAs appreciate the active engagement and input provided by the SWAG.	The GSP will summarize the planned P/MAs.
14	12/4/2020	ECOS, TNC, and Cosumnes Coalition	Projects and Management Actions	Conservation Landowners are willing to work with the GSAs to identify any Conservation Lands that can effectively serve as recharge areas and contribute as multi-benefit management projects.	Good suggestion. We are interested in exploring opportunities for partnership with conservation landowners, and some GSA members have already initiated discussions with SWAG members regarding these opportunities. The GSAs appreciate the active engagement and input provided by the SWAG.	The GSP will summarize the planned P/MAs.

SWAG Meeting Comments #4

[No Comments Received]

Stakeholder Comments Received During Public Review

Responses to Public Comments

Overview Statement

(text provided by GSAs)

A large number of comments received on the Draft Cosumnes Subbasin Groundwater Sustainability Plan (GSP) pertain to the feasibility, timing, and goals of the Projects and Management Actions (PMAs) identified in the GSP. This introduction provides an overview of the challenges, uncertainties, and expected benefits from the planned PMAs.

Current groundwater consumption levels in the Cosumnes Subbasin are not sustainable, and to reach sustainable conditions the Cosumnes GSAs' goal is to reduce a projected annual groundwater deficit (withdrawals exceeding deposits) by about 10,000 acre-feet per year. This deficit reflects recent modeled trends for the historical 20-year budget period (1999 to 2018) and the projected conditions under the American River Basin Study (ARBS) Central Tendency 2070 climate change scenario. Water budget modeling indicates that as groundwater levels in the Cosumnes Subbasin rise in response to deficit reduction efforts, inflows to the basin from rivers and streams and from neighboring basins will decrease. As a result, for every 10 acre-feet of water added to the basin , approximately 5 to 6 acre-feet will be needed to compensate for reductions in river and stream infiltration and cross boundary flows in response to the rising water levels. This means in order to achieve a deficit reduction rate of 10,000 acre-feet per year, the PMAs must be able to reduce groundwater demand and/or augment groundwater supplies at a rate of 20,000 to 25,000 acre-feet per year.

The GSP identifies two possible demand reduction measures – land repurposing, which includes voluntary land fallowing, and water conservation. The voluntary repurposing project (PMA #5) focuses particularly on groundwater irrigated pasturelands because they use some of highest water volumes per acre of applied irrigation water in the subbasin. Water use efficiency (or conservation) is identified as an "other PMA" requiring more evaluation during GSP implementation. For example, without a well metering program it is unclear how the benefits of conservation can be tracked and quantified. However, it has the potential to be a valuable part of our PMAs and significant resources have been set aside to explore the feasibility of this and other projects in 2022-24.

The GSP identifies several "wet year" water supply augmentation measures. These include the following:

- Managed aquifer recharge in the OHWD (PMA #1) based on diverting winter flood flows in the Cosumnes River onto vineyards, croplands, and vacant land along the north side of the Cosumnes River;
- Managed aquifer recharge on the above lands and lands south of the Cosumnes River using diverted winter floodwater from the American River when it is available from the Folsom South Canal as part of Sacramento Area Flood Control Agency's (SAFCA) proposed regional Flood-MAR program (PMA#2); and

- Recharge resulting from augmenting flows in the Cosumnes River during late October through December using water from the American River delivered down the Folsom South Canal when such flows are available (PMA #3).

The GSP also identifies water supply augmentation based on using treated wastewater (recycled water) for seasonal crop irrigation (in lieu of pumping groundwater) and winter-time recharge. This measure involves expansion of the City of Galt's current program in the southern portion of the Cosumnes Subbasin (PMA #4) and implementation of the Sacramento Regional Sanitation District's Harvest Water Project in the South American Subbasin. Modeling indicates the Harvest Water Program will significantly raise groundwater elevations along portions of the Cosumnes River upstream and downstream of Highway 99 and contribute to a general rise in groundwater elevations throughout the western portion of the Cosumnes Subbasin (the Basin Plain).

Taken together, the GSP estimates that these measures could reduce the Cosumnes Subbasin deficit by an average of about 8,800 AF per year, with PMA #2 - the SAFCA Flood-MAR program - accounting for over 75 percent of this reduction. In order to generate revenue to fund the cost of implementing PMA#2, the GSP includes a PMA involving banking and sale of stored water (PMA #6). Under this PMA, the water saved by voluntarily fallowing about 2,000 acres of groundwater irrigated pastureland in the basin could be sold to an urban water purveyor for dry year augmentation for an amount 4 or 5 times greater than the amount paid to the pastureland owner. This mark-up, reflecting the relative value of dry year water to urban users versus agricultural users, could fund the cost to implement PMA #2, thereby helping to reduce GSP fees on Cosumnes Subbasin landowners. The GSP notes that sale of water from the Subbasin under PMA #6 would be governed by a 'leave behind policy' under which exports would be allowed only if they had no net negative impacts on groundwater storage in the basin. This might take the form of establishing a ratio of 3 acre-feet of groundwater entering the Subbasin for every acre foot sold, or other protective criteria that will be developed under PMA #6 (Groundwater Banking and Sale).

There are physical and institutional challenges that create uncertainties with PMA #2. PMA #2 relies on storage of excess American River flood water in Folsom Dam in space that is currently designated for flood control. This will require modification of the dam's current water control manual that will likely need policy approval from Congress. Use of the water created by this modification will require an agreement with the U. S, Bureau of Reclamation and resolution of water rights issues that may be raised by others outside the South American and Cosumnes Subbasins. Delivery of this water down the Folsom South Canal will need regional support from the participants in the Regional Water Authority, the Sacramento Water Forum, and others. Because this water will be available only in wet years, extensive and costly infrastructure will be required to infiltrate large volumes of water into the South American and Cosumnes Subbasins in a limited timeframe. In order to account for the impact of this water on groundwater management in these subbasins, a regional groundwater banking system will need to be established in concert with the Regional Water Authority.

Reliance on PMA#6 to help cover the cost of operating and maintaining all of the physical and institutional infrastructure will in turn require the Cosumnes GSAs to forge a partnership with an interested urban purveyor; develop a credible and enforceable 'leave behind policy,' among other

necessary water banking criteria; and comply with current state law which discourages exports from the groundwater basins underlying the Sacramento Valley.

Addressing and resolving the above physical and institutional challenges will not be straightforward or occur quickly. The GSAs anticipate that it will take at least the first 5 years following adoption of the GSP for the Cosumnes GSAs working with SAFCA and others in the region to determine whether aquifer recharge with winter flood water can be implemented as envisioned in the GSP. If so, implementation of this program will become the practical focus of the GSP when it is updated in 2027. If this program cannot be implemented as envisioned, the GSAs must be prepared to use the required 5-year update to examine alternatives, which may include more extensive demand reduction measures that are within the CGA's control**.**

In order to better reflect these circumstances, additional language has been added to the Plan Implementation section of the GSP describing the activities that will occur during the first five years of the GSP. This language makes it clear that some important deficit reduction measures will be undertaken during this period, particularly OHWD's Cosumnes River recharge project, the Sacramento Regional Sanitation District's Harvest Water project, and the first phase of voluntary land repurposing (land fallowing) in the Cosumnes Subbasin. However, the language also underscores that implementation of PMA #2 and PMA #6 will not occur during this initial five-year phase. Rather, the GSAs will use this time to evaluate PMA feasibility and address the associated uncertainties with the intent of using the required five-year update of the GSP as the springboard for PMA #2 and PMA #6 implementation.

The GSAs have carefully reviewed all comments received during the public comment period. Comments and GSAs' responses related to the GSP are presented in the table below. Full versions of comments can be viewed at https://cosumnes.waterforum.org/draft-gsp-comment-period

ID (#)	Date Received	Commenter / Organization	Chapter / Section Title	Provided Comment	Response to Comment	Revision to the Groundwater Sustainability Plan (GSP)
1	08/26/21	Christian Harrison	PMA/ Implementation 18 & 19	Will I need to let my decades old pond dry up every summer thereby killing the abundant wildlife that depend on it? If we are metered and charged per gallon of water I will not be able to pay that.	No, the Cosumnes GSP does not call for drying up of local ponds and other surface water features. The formation of a Citizens' Advisory Committee (CAC) to guide GSP implementation is anticipated. This will be a forum for constituents to provide direct feedback on numerous aspects of GSP implementation including how a long-term funding program may be developed. At this time the Cosumnes Subbasin (Basin) has not considered using meters to determine individual water use.	No change to the GSP.
2	08/29/21	Ralph Hofmeier	Topic not a component of the GSP	To have an 20 year groundwater plan and call it sustainable is gaslighting . At this climate change you can't! Do it like the Germans in Berlin. With still water in the ground they now they can't continue five more years digging for water. To be sustainable for the next 5-20 years you need an sustainable water source , the atmosphere. The municipality where the Tesla Giga around Berlin ordered for the start an 2,6million gallon/day water supply system. It will be extended to 6 million gallon and additional 10M w/h . Wondering why the Germans call on US Corporation to stay sustainable but US municipalities don't ?	The 20 year deadline for sustainable conditions is established in the three-bill legislative package that comprises the Sustainable Groundwater Management Act (SGMA), including AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), and subsequent statewide Regulations.	Add clarifying text and updated information from the Cosumnes Projects & Management Actions (PMA) Committee to Section 18 "Projects and Management Actions" and Section 19 "Plan Implementation" that describes how PMA development requires multiple steps (e.g., feasibility studies, engineering, securing agreements, construction, stakeholder outreach, and so forth) and the approximate timing and sequencing of these steps.
3	09/15/21	Tish Espinosa	Water Budget/ PMA 10.2.3 & 18	The plan you have been working on for years has no real projects planned for the foreseeable that would recharge our aquafer. You are piggy backing on projects in other basins however you indicate we only get 3% seepage from other basins.	The first 5 years of GSP implementation will be focused on working with farmers to develop the fallowing program, conducting feasibility studies, exploring options for small scale, local projects, and establishing the Cosumnes Groundwater Authority (CGA). The other projects are scheduled to be implemented in phases during the next 5 years. Table WB-5 reports the historical (1999-2018) water budget and indicates that the 20-year average "Net Subsurface Flow from Adjacent Watersheds" is 4,800 acre-feet per year (AFY) and represents 3% of Total Inflows to the Basin. This is only one component of subsurface flow and contributes water primarily to the Foothill Subarea. Subsurface flows from the Eastern San Joaquin and South American subbasins are reported in Table WB-5 as "Net Subsurface Flow between Adjacent Basins," and indicates there was -7,300 AFY on average of net flow out of the Cosumnes Subbasin to these other subbasins. Table WB-10 indicates under the Projected Conditions Baseline (PCBL) Scenario the loss of groundwater from the Cosumnes Subbasin to the adjacent subbasins continues for 50-years into the future but at a lower rate (-4,200 AFY). With projects and management actions (PMAs), the net loss of groundwater decreases from -4,200 AFY to -100 AFY, which represents a 4,100 AFY increase of inflow to the Cosumnes Subbasin. Table WB-11 indicates that most of this change (almost 90%) is attributed to flow from the South American subbasin, which increases as a result of PMAs from 3,200 AFY to 6,800 AFY.	No change to the GSP.

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4	09/15/21	Tish Espinosa	Plan Area/ PMA/ Implementation 5.5, 18 & 19.1.4	You never asked for input from Ag community but yet irrigated agriculture is footing the bill this first year. Irrigated agricultural lands are where potential projects in OUR basin can be developed, their input does matter to the success of this plan!	The Cosumnes Subbasin Groundwater Sustainability Agencies (GSAs) agree that the Agricultural (Ag) community is a critical stakeholder in this effort. We have partnered with organizations like the Sacramento County Farm Bureau to disseminate information as well as to receive feedback from agriculturalists. There are Ag community members serving on the Cosumnes Subbasin SGMA Working Group (Working Group) who are members of the Farm Bureau and actively involved outreach partners. Additionally, a significant portion of the GSAs' Board of Directors are locally elected individuals representing agriculture and agricultural residential interests. The GSAs have engaged, and will continue to engage, this stakeholder group in the following ways with the intention of informing and involving the Ag community to foster sustainable management of groundwater and consider viability of agricultural economy: ▪ Public Workshops and Community Meetings ▪ Meetings of GSAs and ad-hoc committees open to the public ▪ Informational emails sent via the Interested Parties list ▪ Direct mailing and stakeholder survey to landowners within the subbasin jurisdiction ▪ Direct communications with GSAs, Technical advisors, and consultants working to support GSP development The formation of a Citizens' Advisory Committee (CAC) to guide GSP implementation is anticipated. It will include representation from the Ag community. Please see Section 5.5 "Notice and Communication" in the GSP and review the Cosumnes Communication and Engagement Plan (contained in Appendix D of the GSP) for additional detail.	No change to the GSP.
5	09/15/21	Tish Espinosa	Implementation 19.2	Info on the past, current & proposed budget	The budget for GSP development is included in the Final Cosumnes Cost Share Agreement: https://cosumnes.waterforum.org/wp-content/uploads/2018/08/4-Cosumnes-Cost-Share-Agmt-52450-Revised-Draft-2018-08-10.pdf The planned allocation of funds for the Prop 68 Grant used to support GSP development is provided in Slide 5 of the October 2019 presentation available from the website https://cosumnes.waterforum.org/wp-content/uploads/2019/10/Draft_EKI-Prop-68-101619.pdf. The estimated costs to implement the GSP are found in Table PI-1. These costs have been updated as part of on-going efforts by the Working Group.	Update Table PI-1.

The GSAs have carefully reviewed all comments received during the public comment period. Comments and GSAs' responses related to the GSP are presented in the table below. Full versions of comments can be viewed at https://cosumnes.waterforum.org/draft-gsp-comment-period

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6	09/15/21	Tish Espinosa	Plan Area; Implementation 5.5 & 19.1.4	Outreach is subpar. You are utilizing old data bases with outdated information. All well users were not notified & asked for input (Just those you thought were irrigators & were going to get money out of) even though the plan will affect all well users.	In January 2019, the GSAs sent direct mailings of a Basin Fact Sheet and a Stakeholder Survey to all landowners in the Basin (mailing list included: 2,772 addresses in SRCD GSA, >7,000 addresses in City of Galt GSA, 2,055 addresses in GID GSA, and 33 addresses in Clay Water District GSA). The Fact Sheet summarized SGMA mandates, provided a map of the GSA boundaries, provided contact information for each GSA, and described how stakeholders can acquire additional information. The Stakeholder Survey included questions that helped the GSAs gain additional knowledge on Basin stakeholders. SGMA does not apply to *de minimis* extractors, "a person who extracts, for domestic purposes, two acre-feet or less (of groundwater) per year." Most private domestic well users generally use less than 2 AFY and therefore fall within the SGMA definition of a *de minimis* extractor. The GSAs and consultants strive to maintain the most accurate lists of contact information for interested parties, landowners, well users and other beneficial users in the subbasin. More current information or any change to contact information is gratefully accepted at any time, and can be shared with Cosumnes Subbasin Public Information Officer, Austin Miller at austin@sloughhousercd.org. Please see Section 5.5 "Notice and Communication" in the GSP, and review the Cosumnes Communication and Engagement Plan (contained in Appendix D of the GSP) for additional detail.	No change to the GSP.
7	09/15/21	Tish Espinosa	Water Budget/ PMA 10 & 18.2.3	If there's a deficit of 10,000 af/y we have no business even talking about selling water in a sustainability plan when there is nothing planned to bring our aquafer even into balance. If this plan has to be updated every 5 years selling water can be addressed at a later date if we have put in ground water recharge projects in our basin & there is an excess monitored in our aquafer.	See response to comment #3. PMA #5 (Voluntary Land Repurposing) includes a land fallowing program that is considered the most readily implemented project. It will be the mechanism to fund development of the other PMAs. The water considered available for "sale" is water that otherwise would have been extracted and consumed if not for the fallowing program. Moreover, the recovery of fallowed water will be limited by a leave-behind policy that ensures more water remains in the Basin than is extracted for sale. For example, a leave-behind policy could be 10%, meaning that 10% of the water saved by fallowing is left in the Basin, thereby providing a net gain to groundwater relative to conditions without the fallowing program. The revenue generated by the sale of saved groundwater will offset the SGMA implementation costs that otherwise would be borne by landowners and pumpers within the Basin. The Working Group estimates the landowner and pumper costs to fund SGMA implementation will decrease from $25 per acre-foot (AF) to $3.50 per AF as a result of the fallowing program.	No change to the GSP.
8	09/15/21	Tish Espinosa	Monitoring Network 17.1	Maps indicating where the monitoring wells & stream gages are located. As well as which are actually in service & being used. Maps of these monitoring devices in relation to the cone of depression.	SGMA and the GSP Regulations require that data from the Representative Monitoring Network be reported annually to the Department of Water Resources (DWR). Maps of the Representative Monitoring Network can be found in Figure MN-1 (Water Level), Figure MN-2 (Water Quality), and Figure MN-4 (Interconnected Surface Water wells and stream gages). Information on the status of the wells and stream gages can be found in Table MN-2 (RMW-WL), Table MN-3 (RMW-WQ) and Table MN-4 (RMW-ISW). These maps are at the same scale and readily compared to maps showing the cone of depression in Figure GWC-1 (GWE Contours - Spring 2018) and Figure GWC -2 (GWE Contours - Fall 2018).	No change to the GSP.

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9	09/15/21	Tish Espinosa	Agency Information/ Implementation 3 & 19	Representation from all of the GSA's	The GSAs have voiced from the outset the importance of respecting each GSAs autonomy within its jurisdiction, while creating a Basin-wide body. This applies to representation as well. To that end, each GSA identifies and names its representatives to the Working Group and committees. All GSAs are afforded equal representation. The GSAs continue to support these principles for governance as its efforts move into the implementation phase. While each GSA is independently responsible for representing and engaging with their constituents, the Working Group has ensured that all mailers have been sent and other outreach efforts have been to constituents throughout the Basin.	No change to the GSP.
10	09/15/21	Teresa Flewellyn	PMA 18.2.3	Selling water. I dont understand why the option of selling our water will be included in the Plan at this time. The presentation shows an est deficit of -10,000 acre feet for the next 3+ years. No water retention/recharge projects completed in the next 5 years, it doesnt seem appropriate to me to even consider including language allowing excess water sales given the fact that the currently declining aquifer is the reason the Plan is being mandated by the State. I'm open to water sales IF we ever reach a state of excess. But making sure all stakeholders in the Subbasin have adequate water is what I understand to be the reason for State mandates protecting public health.	See responses to comment #7.	No change to the GSP.
11	09/16/21	Teresa Flewellyn	PMA 18	Planned projects for recharge in our basin.	As described in Section 18 “Projects and Management Actions,” the currently planned recharge projects located in the Basin include PMA #2 SAFCA Flood-MAR and PMA #4 City of Galt Recycled Water Project. The Cosumnes River Flow Augmentation Project (PMA #3) occurs on the Basin boundary. Additional projects may be identified and developed as part of adaptive management of the Basin and are described in Section 18.2.4 “Other PMAs”. For example, local stormwater capture projects potentially using retention basins, swales, or dry wells.	Add to Section 18.2.4 “Other PMAs” local stormwater capture projects potentially using retention basins, swales, or dry wells.
12	09/16/21	Teresa Flewellyn	Implementation 19.2	Info on the past, current & proposed budget	See response to comment #5.	No change to the GSP.
13	09/16/21	Teresa Flewellyn	Monitoring Network 17.1	Maps indicating where the monitoring wells & stream gages are located. As well as which are actually in service & being used. Maps of these monitoring devices in relation to the cone of depression.	See response to comment #8.	No change to the GSP.
14	09/16/21	Teresa Flewellyn	Agency Information/ Implementation 3 & 19	Representation from all of the GSA's	See response to comment #9.	No change to the GSP.
15	09/28/21	Sherry Burch [transcribed by S Horii]	Implementation 19	Once plan is approved, need to look at individual ways for farmers + homeowners can help improve their sites.	The formation of a Citizens’ Advisory Committee to guide GSP implementation is anticipated. This will be a forum for different groundwater users and interested members of the public to provide direct feedback on GSP implementation and project development. Additionally, it is the intent of GSAs to explore grants and other funding mechanisms to implement groundwater conservation projects of all scales to help the Basin work toward our sustainability goals.	No change to the GSP.
16	09/28/21	Neva Hayden [transcribed by S Horii]	Topic not a component of the GSP	Thank you to all of you for your time + info	Comment noted.	No change to the GSP.
17	09/28/21	Bill Pritchett [transcribed by S Horii]	Topic not a component of the GSP	Thanks for having this workshop	Comment noted.	No change to the GSP.

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18	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	Plan Area/ HCM/ SMC 5.1.3, 8.1.3 & 15.1.2	The identification of Disadvantaged Communities (DACs) and drinking water users is incomplete. The GSP provides information on DACs, including identification by name and location on a map (Figure PA-10), and identifies the population of each identified DAC. The GSP sufficiently identifies and maps tribal lands within the subbasin in Section 5 of the GSP. However, the GSP fails to include the population dependent on groundwater as their source of drinking water in the subbasin. While the plan provides a density map of domestic wells in the subbasin, the GSP fails to provide depth of these wells (such as minimum well depth, average well depth, or depth range) within the subbasin. These missing elements are required for the GSA to fully understand the specific interests and water demands of these beneficial users, and to support the consideration of beneficial users in the development of sustainable management criteria and selection of projects and management actions. Recommendations •Identify the sources of drinking water for DAC members, including an estimate of how many people rely on groundwater (e.g., domestic wells, state small water systems, and public water systems). •Include a map showing average well depth across the subbasin.	Except for in the City of Ione, Rancho Murieta, and a small area within JVID, groundwater is the sole source of drinking water within most of the Basin. Hence, the SDAC and DAC populations are all dependent on groundwater as their source of drinking water. Section 5.1.3 reports the SDAC and DAC populations (3,130 and 5,133 respectively), and per § 354.8(5) the locations of these communities are mapped on Figure PA-10. Most of this population is located in the City of Galt, which supplies treated groundwater to its residents through its municipal water supply distribution system. The well statistics are provided in Figure HCM-7 "Summary of Production Well Depths." The frequency plot shows that production wells range from 100 to 1,800 feet in depth, and the average depth of well completion is 300 to 400 feet below groundwater surface (ft bgs). Per § 354.8(5), well density maps by type across the Basin are included in Figure PA-12. Table SMC-4 reports there are 2,349 domestic wells in the Basin based on the best available data (i.e., the OSWCR database). The domestic well impact analysis described in Section 15.1.2 concludes the projected incremental impact under conditions where water levels reach the Minimum Thresholds (MTs) at all Representative Monitoring Sites is less than 2% and significantly below the expected natural replacement rate for wells based on age and lifespan alone (26%). Comparisons between Figure PA-10, which shows the distribution of areas identified as SDAC and DAC populations, and Figure SMC-2 which shows the PLSS sections estimated to have partially and fully dewatered wells if water levels reach MTs in all Representative Monitoring wells reveals that only one PLSS section within the mapped DAC population area could include one or more fully dewatered wells. In that single PLSS section, the OSWCR database indicates all but one well are constructed deeper than the MT. Moreover, almost 60% of the area within that PLSS section is within the boundaries of the City of Galt, and therefore receives treated groundwater through Galt's municipal supply distribution system. Nevertheless, groundwater model results for that specific area shows that future water levels are not projected to reach the MT, and routine monitoring will confirm whether water levels in the Basin are maintained to avoid Undesirable Results.	Include figure of model results from the Projected Conditions Baseline (PCBL) scenario and the scenario that combines the PCBL, Central Tendency climate change, and PMAs. See also revision to the GSP in response to comment #53.

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19	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	GWC 9.6.2	The identification of Interconnected Surface Waters (ISWs) is insufficient, due to lack of supporting information provided for the ISW analysis and clear conclusions drawn about the presence of interconnected surface water. The ISW section of the GSP presents a summary of the locations of groundwater wells used in the analysis and their screen depths, and describes the temporal (seasonal and interannual) variability of the data used. In Section 9.6.2, the GSP also presents conclusions drawn from use of the groundwater - surface water model, however no figure is presented which summarizes the conclusions about which reaches are interconnected or disconnected. The GSP states (p. 124): "Data are not available to directly compare stage and groundwater levels along Dry Creek or other surface water features in the Basin. However, the depth to groundwater (DTW) contours mapped for the Basin indicate that groundwater in the Principal Aquifer is typically encountered at depths substantially greater than 30 ft bgs, suggesting that surface water flows and groundwater are likely disconnected across most of the Basin (Figure GWC-4 [Calculated Depth to Groundwater Fall 2018])." Using depth to groundwater contours from one point in time is not sufficient evidence to state that reaches are not connected to groundwater. In California's Mediterranean climate, groundwater interconnections with surface water can vary seasonally and interannually. Recommendations •Correlate explanation in the GSP text to a map of stream reaches in the subbasin, with reaches clearly labeled as interconnected or disconnected. On the stream reach map, include reaches with data gaps as potential ISWs.	In Section 9.6.2, the GSP concludes based on available data (shallow monitoring wells, stream gauges, and streambed elevations), "the actual relationships between surface water and the underlying Principal Aquifer are complex and remain a data gap." The GSP therefore identifies reaches of the Cosumnes River that are conservatively assumed to have interconnected surface water (for example, see Figure SMC-7). Similar data are not available for Dry Creek. As described in Section 9.1 and 9.6. and revealed by comparing Figure HCM-22 and Figure GWC-4, the depths to groundwater in the Principal Aquifer are 50 feet or more beneath almost all surface water features, except for the most westerly portion of the Basin underlying the Cosumnes River and Dry Creek. Figure GWC-17 shows the 30-ft depth to groundwater contours for multiple points in time (spring and fall conditions during 2011-2018) that capture seasonal and annual variability. The range in contour locations are fully contained within the assumed interconnected reaches of the Cosumnes River. Plans have been developed to address the data gap in the westernmost portion of the Basin by constructing a monitoring well site and re-activating the stream gauge on Dry Creek to improve understanding of the relationships between shallow groundwater and surface water flows.	Add stream traces to Figure GWC-04 (Calculated Depth to Groundwater 2018), update text to note Prop 68 monitoring well construction plans, and identify data gaps/assumed interconnected reaches that includes the westernmost portions of Dry Creek.
20	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	GWC/ SMC 9.1.1, 9.6 & 14.6	•Further describe the groundwater elevation data and stream flow data used in the ISW analysis. Ensure depth-to-groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) are used to determine the range of depth and capture the variability in environmental conditions inherent in California's climate. We recommend the 10-year pre-SGMA baseline period of 2005 to 2015. •Overlay the subbasin's stream reaches on depth-to-groundwater contour maps to illustrate groundwater depths and the groundwater gradient near the stream reaches. Show the location of groundwater wells used in the analysis. •For the depth-to-groundwater contour maps, use the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a Digital Elevation Model (DEM) to estimate depth-to-groundwater contours across the landscape. This will provide accurate contours of depth to groundwater along streams and other land surface depressions where GDEs are commonly found.	See response to comment #19. California Water Code (CWC) §10727.2(b)(4) "*The plan may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015…., a groundwater sustainability agency has discretion as to whether to set measurable objectives and the timeframes for achieving any objectives for undesirable results that occurred before, and have not been corrected by, January 1, 2015.*" As such, per SGMA, the GSAs have determined that groundwater at 2015 levels does not constitute an Undesirable Result. This decision notwithstanding, the GSAs did utilize pre-2015 water level data when calculating the Sustainable Management Criteria (SMCs) for the Depletions of Interconnected Surface Water (ICS) Sustainability Indicator (see Section 15 "Minimum Thresholds for the Depletion of Surface Water" and Section 16 'Measurable Objectives for the Depletion of Surface Water"). Section 9.1.1 describes the approach to construct depth to groundwater maps which is identical to the best practices cited in Attachment D of the commentor's letter (see subsection of 9.1.1 "*Depth to Groundwater*"). Figure GWC-4 shows depth to groundwater contours across the Basin and the groundwater wells used to construct the contours.	No change to the GSP.

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21	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	GWC 9.7	The identification of Groundwater Dependent Ecosystems (GDEs) is insufficient. The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset) and other sources. The GSP states (p. 125): "Detailed investigation of the NCCAG data set included a desktop evaluation to identify potentially missing GDEs, followed by on- and off-site (remote) study of select sites for vegetation type, health, species composition, ecosystem change, geomorphic setting, inferred source aquifer, and man-made modifier (Appendix L)." However, we found that mapped features in the NC dataset were improperly disregarded, as described below: NC dataset polygons were incorrectly removed based on the assumption that they are supported by the shallow, perched water table. However, shallow aquifers that have the potential to support well development, support ecosystems, or provide baseflow to streams are principal aquifers, even if the majority of the subbasin's pumping is occurring in deeper principal aquifers. If there are no data to characterize groundwater conditions in the shallow principal aquifer, then the GDE should be retained as a potential GDE and data gaps reconciled in the Monitoring Network section of the GSP. NC dataset polygons were incorrectly removed based on the presence or proximity of surface water. However, partial reliance on surface water does not necessarily prove that the plants and animals do not access groundwater. Many GDEs often simultaneously rely on multiple sources of water (i.e., both groundwater and surface water), or shift their reliance on different sources on an interannual or inter-seasonal basis. Recommendations •Use depth-to-groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) to determine the range of depth to groundwater around NC dataset polygons. We recommend that a pre-SGMA baseline period (10 years from 2005 to 2015) be established to characterize groundwater conditions over multiple water year types. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer. •Refer to Attachment B for more information on TNC's plant rooting depth database. Deeper thresholds are necessary for plants that have reported maximum root depths that exceed the averaged 30-ft threshold, such as valley oak (Quercus lobata). We recommend that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to-groundwater threshold of 80 feet should be used instead of the 30-ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.	SGMA requires the GSA to characterize, monitor, manage and report on the Principal Aquifers in a basin. Per § 351 (aa), principal aquifers are "*aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems*". Per § 351 (m), Groundwater Dependent Ecosystems (GDEs) are defined as "*ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface*." The distribution and extent of perched groundwater conditions in the Basin is uncertain, but the best available data suggest that perched water bearing zones are encountered less than 50 ft bgs and are at much shallower depth than the water supply wells (the average production well in the Basin is 300-400 feet deep; see Figure HCM-7). The hydraulic connectivity between the perched aquifers and deeper Principal Aquifer is a data gap and addressed in Section 19.1.2 "Data Gap Filling Efforts." It is noteworthy that the GDE verification effort conducted as part of GSP development conservatively identified assumed GDEs and retained polygons that overlay a water table within 50 ft bgs to account for annual and seasonal variability in perched or Principal Aquifer conditions (see Appendix L). Furthermore, GDEs were not removed solely on the basis of their proximity to surface water; rather GDEs were removed that are located near surface water and where the water table is more than 50 ft bgs (see Appendix L). Lastly, the water levels in ISW wells that monitor conditions associated with assumed GDEs lack the seasonal variability observed in wells located adjacent to the Cosumnes River. TNC's "*Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act Guidance for Preparing Groundwater Sustainability Plans*" guidelines suggest that natural communities are disconnected from the Principal Aquifer where depth to water is greater than 30 ft bgs (TNC, 2018). The MTs for wells in the assumed GDE areas were therefore conservatively set to a depth of 20 ft bgs, which is 10 ft higher than the lower limit recommended by TNC. One well (RMW-ISW9) has a well depth of only 15 ft bgs, and the MT was therefore set at the historical low in measured water levels, which is shallower than the MTs for the other wells. See response to comment #20 regarding a 2005-2015 baseline. The 80-feet rooting depth assumption for valley oak is not justified given conditions encountered in the Basin. The study by Lewis and Burgy (1964) is not applicable because while the study clearly demonstrates that blue and live oaks can have rooting depths greater than 70 feet, generalizing this finding to valley oaks in an alluvial basin like the Cosumnes Subbasin is likely invalid because: (a) valley oaks were not included in the 1962-63 studies, and (b) depth of water in that study was at most 42 ft bgs. Because species had rooting depths up to 42 ft bgs doesn't mean that valley oak roots would extend to 70+ ft bgs. As explained above, a water table depth of 50 ft bgs was conservatively used to screen for potential GDEs (8 feet deeper than the maximum depth in the Lewis and Burgy study) which is an appropriately conservative approach (see Appendix L).	Incorporate language in the GSP that underscores that the GSAs recognize the importance of GDEs and their intention to maintain consideration of GDEs during GSP implementation.

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22	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	Plan Area/ Water Budget 5.1.4 & 10	Native vegetation and managed wetlands are water use sectors that are required,to be included into the water budget. The integration of these ecosystems into the water budget is insufficient. The water budget did explicitly include the current, historical, and projected demands of native vegetation, but did not include the current, historical, and projected demands of managed wetlands. Managed wetlands are not mentioned in the GSP, but are present in DWR's statewide cropping dataset. The omission of explicit water demands for managed wetlands is problematic because key environmental uses of groundwater are not being accounted for as water supply decisions are made using this budget, nor will they likely be considered in project and management actions. Recommendation •Discuss and map the presence of managed wetlands in the subbasin. Quantify and present all water use sector demands in the historical, current, and projected waterbudgets with individual line items for each water use sector, including managed wetlands.	Per §354.18 (b) (3), SGMA requires documentation of outflows from the groundwater system by water use sector. Per §351 (al), "Water use sector" is the "categories of water demand based on the general land uses to which the water is applied, including urban, industrial, agricultural, managed wetlands, managed recharge, and native vegetation". Hence, native vegetation is included as part of the water budget (see for example Table WB-4), but managed wetlands are not separately reported. The DWR land use categories include "Native Water," which includes "managed wetlands" but it's not possible to distinguish between lakes, ponds, etc. The aggregated land use in the water budget calculations call these uses "riparian," which would be considered part of "native vegetation" in the water budget summaries.	Add clarifying text to GSP that water budgets for "Native Vegetation" includes Native Water, Managed Wetlands, and Riparian land uses. Add clarifying text to GSP that the delineation of Managed Wetlands be considered part of land use verification activities by the GSAs Annual Reporting and 5-Year updates.
23	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	Implementation 19.1.4	Stakeholder engagement during GSP development is incomplete. SGMA's requirement for public notice and engagement of stakeholders is not fully met by the description in the Public Communication & Engagement Plan (Appendix D). The GSA's outreach activities include inviting DAC contacts to subscribe to the Interested Parties list and attend meetings, press releases and/or news articles to advertise public workshops, stakeholder surveys for all landowners in the subbasin, posting bilingual SGMA documents to the website and making the website available in multiple languages, public webinars posted to YouTube, mailing notices to all landowners about workshops, and convening a Citizens Advisory Committee to inform GSP implementation. We also note the GSA's specific outreach activities with tribal and environmental stakeholders, including a Tribal Outreach Committee, preparing background materials related to Native American tribal outreach and engagement, contacting tribal primary points of contact regarding formal communication for the SGMA and tribal interests, expanding monitoring networks, entering project partnerships with environmental stakeholders, promoting information tools and sharing, and sharing updates with the Surface Water Advisory Group. However, we note the following deficiency with the overall stakeholder engagement process. While outreach is well described for DACs, tribes, and environmental organizations during GSP development, there are no detailed outreach methods described for the GSP implementation process. Recommendation •In the Public Communication & Engagement Plan, describe active and targeted outreach to engage DAC members and environmental stakeholders throughout the GSP implementation phases. Refer to Attachment B for specific recommendations on how to actively engage stakeholders during all phases of the GSP process.	During GSP development the Sacramento County GSA sent physical mailers to every address within their GSA area (where the majority of the Subbasin's DACs are located) to inform them of major public workshops and engagement opportunities. The GSAs appreciate the acknowledgment of outreach efforts to support GSP *development* and concur with the finding that the Communication and Engagement (C&E) Plan was prepared to support the development phase. An updated C&E Plan addressing GSP *implementation* is under development. It will incorporate the suggestions provided by Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists. The C&E Plan will continue to be updated throughout GSP implementation, specifically during the preparation of Annual Reports and 5-year updates. Additionally, the formation of a Citizens' Advisory Committee to guide GSP implementation is anticipated. Specific solicitation to join the CAC will be made to DACs, tribes, environmental organizations, as well as other beneficial users.	No change to the GSP.

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24	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	SMC 12, 14, 15 & 16	The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is insufficient. The consideration of potential impacts on all beneficial users of groundwater in the basin are required when defining undesirable results and establishing minimum thresholds. The GSP does not however, sufficiently describe or analyze direct or indirect impacts on DACs or tribes when defining undesirable results, nor does it describe how the existing minimum threshold groundwater levels are consistent with avoiding undesirable results to DACs and tribes in the subbasin. Furthermore, there is no explanation of the correlation between "natural well replacement" and those that will be dewatered (e.g., it is possible all dewatered wells could be far from their replacement date). Recommendation •Describe direct and indirect impacts on DACs and tribes when describing undesirable results and defining minimum thresholds for chronic lowering of groundwater levels (in addition to describing impacts to drinking water users).	See response to comment #18. As noted in Section 15.1.2 "Domestic Well Impact Analysis" and Figure SMC-2, the domestic well impact analysis excluded wells more than 40-years. Hence, only wells younger than the assumed replacement age was considered impacted by partially or fully dewatered conditions. The Domestic Well Impact Analysis provided a baseline estimate of potential impacts to domestic wells, which the GSAs recognize can be refined by addressing several data gaps (e.g., well age and use, verification of well activity, and so forth). Section 19.1.2 "Data Gap Filling Efforts" lists as the first data gap "*verify well use, status, construction and density within the Basin by confirming active wells through implementation of well census and well inventory projects*."	No change to the GSP.

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25	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	GWC/ SMC 9.4, 12, 14, 15 & 16	The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is insufficient. The consideration of potential impacts on all beneficial users of groundwater in the basin are required when defining undesirable results and establishing minimum thresholds. For degraded water quality, the GSP states that arsenic, nitrate, and TDS have been identified as constituents of concern (COCs) in the subbasin. The minimum thresholds for degraded water quality are set for arsenic and nitrate at their respective primary maximum contaminant levels (MCLs) and the minimum threshold for TDS is set to the secondary upper limit MCL. The GSP states (p. 207): "Certain other constituents with Secondary MCLs (including chloride, sulfate, iron and magnesium) have been measured in wells in the Basin at concentrations exceeding their respective Secondary MCLs. Since these constituents do not pose risks to human health, and because monitoring TDS serves as an indicator of general drinking water quality, SMCs were not developed for these other constituents." However, SMC should be established for all COCs in the subbasin that may be impacted and/or exacerbated by groundwater use or management. Naturally occurring COCs can be exacerbated as a result of groundwater use or groundwater management within the subbasin. The GSP only includes a very general discussion of impacts to drinking water users when defining undesirable results and evaluating the impacts of proposed minimum thresholds. The GSP does not, however, mention or discuss direct and indirect impacts on DACs or tribes when defining undesirable results for degraded water quality, nor does it evaluate the cumulative or indirect impacts of proposed minimum thresholds on DACs or tribes. Recommendations •Describe direct and indirect impacts on drinking water users, DACs, and tribes when defining undesirable results for degraded water quality. For specific guidance on how to consider these users, refer to "Guide to Protecting Water Quality Under the Sustainable Groundwater Management Act." •Evaluate the cumulative or indirect impacts of proposed minimum thresholds for degraded water quality on drinking water users, DACs, and tribes. •Set minimum thresholds and measurable objectives for all water quality constituents within the subbasin, including naturally occurring constituents that can be exacerbated as a result of groundwater use or groundwater management. Ensure they align with drinking water standards.	See response to comment #24. As described in Section 9.4, considerations for evaluating water quality concerns in the Basin were done so in accordance with the GSP regulations and DWR's BMP #2. Impacts on all drinking water users, including DACs and tribes, are described in Table SMC-1 under the column "Potential Effects on Beneficial Users". The MTs for Degraded Water Quality were developed based on their respective Maximum Contaminant Levels (MCLs), as the MCLs are the water quality standards for the most sensitive beneficial use (i.e., drinking water). The SMCs are established for identified constituents of concern (COCs) as described in Section 9.4 where necessary to mitigate "significant and unreasonable degraded water quality." Further, setting SMC criteria for all water quality constituents within the Basin is not reasonable, or required, as many constituents show decreasing trends, are not affecting drinking water, were detected mostly in monitoring wells not utilized for drinking water, or have only aesthetic impacts to drinking water.	No change to the GSP.

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26	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	SMC/ Monitoring Network 15.6.1, 15.7 & 17.1.6	The GSP only considers GDEs with respect to the depletion of interconnected surface water sustainability indicator, but not the chronic lowering of groundwater levels sustainability indicator. No analysis or discussion is provided in the GSP that describes impacts to GDEs or establishes SMC for GDEs that are directly dependent on groundwater. This is problematic because without identifying potential impacts to GDEs, minimum thresholds may compromise these environmental beneficial users. Since GDEs are present in the subbasin, they must be considered when developing SMC for chronic lowering of groundwater levels. For depletion of interconnected surface water, the GSP established minimum thresholds and measurable objectives in GDE areas (Table SMC-7). However, no analysis or discussion is presented to describe how the SMC will affect GDEs, or the impact of these minimum thresholds on GDEs in the subbasin. Furthermore, the GSP makes no attempt to evaluate the impacts of the proposed minimum threshold on environmental beneficial users of surface water. The GSP does not explain how the chosen minimum thresholds and measurable objectives avoid significant and unreasonable effects on surface water beneficial users in the subbasin, such as increased mortality and inability to perform key life processes (e.g., reproduction, migration). Recommendations •When defining undesirable results for chronic lowering of groundwater levels, provide specifics on what biological responses (e.g., extent of habitat, growth, recruitment rates) would best characterize a significant and unreasonable impact to GDEs. Undesirable results to environmental users occur when 'significant and unreasonable' effects on beneficial users are caused by one of the sustainability indicators (i.e., chronic lowering of groundwater levels, degraded water quality, or depletion of interconnected surface water). Thus, potential impacts on environmental beneficial uses and users need to be considered when defining undesirable results in the subbasin. Defining undesirable results is the crucial first step before the minimum thresholds can be determined. •When establishing SMC for the subbasin, consider that the SGMA statute [Water Code §10727.4(l)] specifically calls out that GSPs should include "impacts on groundwater dependent ecosystems". •When defining undesirable results for depletion of interconnected surface water, include a description of potential impacts on instream habitats within ISWs when minimum thresholds in the subbasin are reached. The GSP should confirm that minimum thresholds for ISWs avoid adverse impacts to environmental beneficial users of interconnected surface waters as these environmental users could be left unprotected by the GSP. These recommendations apply especially to environmental beneficial users that are already protected under pre-existing state or federal law.	Throughout the Basin water levels are typically too deep to sustain GDEs as shown on Figure GWC-4. As part of this GSP, GDEs are addressed as part of ISW Sustainability Indicator (SI), not the Chronic Lowering of Groundwater Level (GWL) SI. As described in Section 15.6.1 and 17.1.6, the ISW monitoring network and SMCs are defined explicitly to address GDEs. In other words, the GSP provides a specific monitoring network and set of SMCs that address ISW and GDEs. Further, the interaction between all SMCs and SIs were considered as described in Section 15.7. The approach for selecting MTs is that, if groundwater levels are maintained above the MTs, the associated rate of depletion of ISW will theoretically be less than the rate prior to the 1 January 2015, the effective date of SGMA. The GSAs note that analyses performed in conjunction with the Harvest Water Project concluded significant increases in the depth to groundwater in the area west of Highway 99 and will likely provide significant benefit to GDEs Available data are currently insufficient to directly calculate surface water depletions from streamflow measurements or estimate depletions from a surface water budget. This information is needed to assess the relationship between GSP implementation, changes in the depletion of interconnected surface water, and instream habitats. The lack of a surface water budget was identified as a data gap, and Section 19.1.2 "Data Gap Filling Efforts" includes the need to inventory surface water diversions and return flows to support water budget calculations and quantify surface water depletions. See also response to comment #21.	No change to the GSP.

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27	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	Water Budget 10.4	The integration of climate change into the projected water budget is incomplete. The GSP incorporates climate change into the projected water budget using DWR change factors for 2030 and 2070, and also considers multiple climate scenarios (e.g., the 2070 drier with extreme warming and wetter with moderate warming) in the projected water budget. The GSP also includes climate change into key inputs (e.g., precipitation, evapotranspiration, and surface water flow) of the projected water budget and calculates a sustainable yield based on the projected water budget with climate change incorporated. However, imported water, while accounted for in historical and current water budgets, is not included in the projected water budget with climate change incorporated. If the water budgets are incomplete, including the omission of climate-adjusted imported water inputs, then there is increased uncertainty in virtually every subsequent calculation used to plan for projects, derive measurable objectives, and set minimum thresholds. Plans that do not adequately include climate change projections may underestimate future impacts on vulnerable beneficial users of groundwater such as ecosystems, DACs, and domestic well owners. Recommendations •Incorporate climate change into imported water inputs for the projected water budget. •Incorporate climate change scenarios into projects and management actions.	Imported water from the City of Ione and Rancho Seco (SMUD) make up <2% of surface water inflows to the Basin. Moreover, their sources are from managed lakes and reservoirs and less susceptible to annual variations in runoff. Because the amounts of imported surface water are small, and the future annual variability in surface water is anticipated to be similarly insignificant to Basin-wide groundwater conditions, the variability in future deliveries is not explicitly reported. The regulations state for PMAs "*If overdraft conditions are identified through the analysis required by Section 354.18 [Water Budget], the Plan shall describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft.*"§ 354.44. The GSP regulations do not specifically require an assessment of PMAs under climate change, but rather require GSAs to describe how they will trigger implementation of PMAs should climatic conditions materialize that require an adaptive response by the GSAs.	See planned GSP modifications described for comment #18.
28	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	Monitoring Network/ Implementation 17 & 19.1.1	The consideration of beneficial users when establishing monitoring networks is insufficient, due to lack of specific plans to increase the Representative Monitoring Wells (RMWs) in the monitoring network that represent water quality conditions and shallow groundwater elevations around DACs, domestic wells, and tribes in the subbasin. Figure MN-1 (SGMA Monitoring Network for Chronic Lowering of Groundwater Levels) and Figure MN-2 (SGMA Monitoring Network for Degraded Water Quality) show that no monitoring wells are located across portions of the subbasin near DACs, domestic wells, and tribes (see maps provided in Attachment E). Beneficial users of groundwater may remain unprotected by the GSP without adequate monitoring and identification of data gaps in the shallow aquifer. The Plan therefore fails to meet SGMA's requirements for the monitoring network . Recommendations •Provide maps that overlay current and proposed monitoring well locations with the locations of DACs, domestic wells, and tribes to clearly identify potentially impacted areas. Increase the number of RMWs in the shallow aquifer across the subbasin as needed to adequately monitor all groundwater condition indicators. Prioritize proximity to DACs, drinking water users, and tribes when identifying new RMWs. •Describe the biological monitoring that can be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the subbasin. The GSP states that GDE monitoring and assessments are further discussed in Section 19.1.6, but this discussion is not provided.	There are four RMW-WLs and one RMW-WQ located in, or less than a quarter mile away from areas with identified DACs. Additionally, a monitoring well is planned for construction in the area identified having DAC population. Tribal lands cover a much smaller portion of the Basin (132 acres) as shown on Figure PA-9; however, a RMW-WL is at most 2 miles away and a RMW-WQ is at most 3 miles away from each of the various tribal lands in the Basin. Moreover, see response #66 below that describes the supplemental monitoring well network to confirm RMWs appropriately characterize spatially variable conditions in the Basin. The current monitoring networks are therefore considered to sufficiently represent water quality conditions and shallow groundwater elevations near DACs and tribes. See also response to comment #18. As described in Section 19.1.1, on-going GDE monitoring and assessment will include use of climatic and groundwater level data, satellite imagery (e.g., the GDE Pulse tool), and information regarding the timing and magnitude of Cosumnes River flow, as well as that of other surface water features in the Basin to the extent the information is available. See response to comment #50 and planned GSP modification to include process to evaluate monitoring data to develop triggers as part of 5-year update.	No change to the GSP.

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29	10/15/21	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, and Union of Concerned Scientists	PMA 18	The consideration of beneficial users when developing projects and management actions is insufficient, due to the failure to completely identify benefits or impacts of identified projects and management actions to key beneficial users of groundwater such as GDEs, aquatic habitats, surface water users, DACs, and drinking water users. Therefore, potential project and management actions may not protect these beneficial users. Groundwater sustainability under SGMA is defined not just by sustainable yield, but by the avoidance of undesirable results for all beneficial users. The GSP recognized that up to 83 domestic wells (3.5% of domestic wells in the subbasin) could be impacted at minimum thresholds, and argues that because this percentage is less than the assumed natural well replacement rate of 26%, this impact cannot be considered significant and unreasonable. However, the GSA does not provide a comprehensive definition of what they mean by well rehabilitation, nor does the GSA recognize that drilling a deeper well entails additional cost than is required to replace a well at the same depth. To an individual well owner whose well has been impacted (e.g., requires rehabilitation, requires a deeper well, or experiences dewatering for a portion of the year), these impacts should be considered 'significant and unreasonable. For this reason, we strongly recommend inclusion of a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Recommendations •For DACs and domestic well owners, include a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Refer to Attachment B for specific recommendations on how to implement a drinking water well mitigation program. •For DACs and domestic well owners, include a discussion of whether potential impacts to water quality from projects and management actions could occur and how the GSA plans to mitigate such impacts. •Recharge ponds, reservoirs, and facilities for managed aquifer recharge can be designed as multiple-benefit projects to include elements that act functionally as wetlands and provide a benefit for wildlife and aquatic species. For guidance on how to integrate multi-benefit recharge projects into your GSP, refer to the "Multi-Benefit Recharge Project Methodology Guidance Document". •Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.	The Sustainability Goal is described in Section 2 and identifies the beneficial users and uses of groundwater as "*urban, domestic, agricultural, industrial, environmental and others.*" The PMAs were selected to achieve the sustainability goal and avoid Undesirable Results. The quantitative criteria for determining Undesirable Results are the exceedance of MTs established for the Basin, which considers beneficial uses and users. The evaluation of potential domestic well impacts was conservative and considered the unlikely situation where water levels in all RMWs are at the MT. Note that the definition of Unreasonable Results is when the depth to water exceeds the MT in only 25% of the RMWs. The "impact" on 83 domestic wells is partial dewatering, which does not require drilling a deeper well. See Section 15.1.2 "Domestic Well Impact Analysis" which states that individual GSAs may consider the need for additional studies and possible measures (depending on need, funding availability and landowner support) as part of GSP implementation if negative effects to domestic wells occur because of SGMA-related groundwater management activities. Section 9.4 "*Groundwater Quality Concerns*" reports that the limited spatial extent and temporal frequency of available data obscure identification of any nexus between water quality, groundwater management actions, and possible future changes owing to GSP implementation (for example, changes in well extractions, groundwater elevations, and storage). Project-specific evaluations of potential water quality impacts would be required as part of project development and CEQA requirements as noted in Table PMA-1 "*Projects and Management Actions – Sustainability Benefits and Implementation Process*" under the column "*Permitting and Regulatory Process Requirements*." See also response to comment #53.	Add language recommending multi benefit projects including Flood Plain projects to Section 18.2.4 "Other PMAs."

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30	10/13/21	Bobbi Jo King	Topic not a component of the GSP	I was unable to find if I am affected by this. I do hold a college degree so it wasn't simple for the average person.	If you are a water user residing within the Basin, the implementation of SGMA will affect you in some way. Many informational resources are provided on the project website: https://cosumnes.waterforum.org/ The "Brochure Read" (30 mins) is suggested for information on SGMA, the GSP, and the PMAs that will help the Basin achieve groundwater sustainability within the next 20 years. https://cosumnes.waterforum.org/wp-content/uploads/2021/09/Cosumnes_10page-Brochure-vFinal-WEB-2021.09.10.pdf The GSAs strive to make the implementation of SGMA in the Basin as easy to understand and track as possible – an outreach committee focuses specifically on this issue – and will continue to find ways to make it easier for water users and others to be involved. We welcome suggestions for improving our efforts. The formation of a Citizens' Advisory Committee to guide GSP implementation is anticipated and will be a forum for the GSAs to engage directly with the "average person" living in the Basin. Through this public comment period on the Draft GSP we have heard directly from stakeholders on how we can improve the Plan and make it more understandable. We appreciate the guidance in helping to draft a document that will impact all of us in the Basin.	No change to the GSP.
31	10/15/21	ECOS	Executive Summary	The document's Executive Summary (ES) does not adequately include the impacts and importance of climate change as a factor affecting CS groundwater sustainability. It is noted as an example of uncertainty in the Sustainable Yield modeling process, and it refers to "wetter" and "drier" years. However, the Executive Summary needs to discuss the pivotal importance of climate change as it could compromise the GSAs' long term best efforts. During the 1999-2018 interval, thirteen out of twenty years were recorded by the California Department of Water Resources in its Water Year Type classification system as Below Normal, Dry, or Critical (Dry) for precipitation. There is no indication that the next twenty to thirty years will have a greater number of wetter years, or years that would be considered "normal".	The extent of climate change considerations is limited to uncertainty in the Water Budget per § 354.18. Water Budget (c)(3)(a) "*The projected hydrology information shall also be applied as the baseline condition used to evaluate future scenarios hydrologic uncertainty associated with projections of climate change and sea level rise*". Three climate change scenarios were provided by DWR and utilized and analyzed in this GSP according to the DWR-Provided Climate Change Data and Guidance for Use During Groundwater Sustainability Plan Development (DWR, 2018). The depletion of groundwater storage in the ARBS Central Tendency Climate Change Scenario (2070) was similar to the average annual rate of depletion in the 20 year Historic Water Budget Period (1999-2018), each showed an average annual decline in model-calculated groundwater storage of approximately 10,000 AFY deficit. The model-calculated impacts of the PMAs indicate they reverse the long-term decline in storage, resulting in a long-term accretion in groundwater storage ranging from 500 AFY to 7,100 AFY with and without climate change, respectively. See Table WB-10 for details.	No change to the GSP.

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32	10/15/21	ECOS	GWC 9.4.3	Please revise this section to reflect that Manganese is a constituent of concern (COC) and identify management strategies. Manganese needs to be managed as a COC on the basis of its probability of occurrence, neurotoxicity, SWRQC notification requirement, and the likelihood that concentrations will be impacted by future water resource management decisions. Per Title 22, the California Secondary Drinking Water Standard for manganese is 0.05 mg/L. See also SWRCQ requirements for regulation of manganese as a neurotoxin – Drinking Water Notification Level for Manganese. The RWQCB monitoring referenced in the GSP regulates the monitoring at the Galt Wastewater facility but does not monitor the quality of domestic wells – nor does any other regulatory body. The GSP reports that "most of the exceedances occur in monitoring wells", but this is only true because the report has not evaluated all data available for the area. Data for the same hydrogeochemical setting in the valley show consistently high Mn in domestic and public supply wells alike. Specifically, it has long been known that the groundwater in large western basins with long residence times is oxic near the mountain front recharge areas and becomes progressively more anoxic down the valley axis Manganese is insoluble under oxic conditions but highly soluble under anoxic conditions, hence the high concentrations in the Galt public wells, which are near the center of the valley. Any water management decision that results in increasing the water table elevation (and groundwater storage), such as enhanced recharge, may result in more anoxic conditions, higher manganese concentrations, and a greater risk of neurodevelopmental impacts on children in the basin. Additional manganese data for both public and domestic wells are available. The GAMA program – a SWQCB statewide groundwater quality assessment program conducted jointly with the United States Geological Survey (USGS) California Water Science Center – has data for both public and domestic wells in the GSP area. Appendix F cites the USGS GAMA data mapper webpage, but states that the website has "No downloadable data". Actually, all of the data shown on the mapper is downloadable from the individual USGS reports as well as GAMA databases; for the Cosumnes, the relevant link https://ca.water.usgs.gov/projects/gama/SU/nsjv.htm provides access to a Data Series Report, a Fact Sheet, and an interpretive report ("Scientific Investigations Report").	The State Water Resources Control Board (SWRCB) states that "manganese is regulated by a 0.05-mg/L secondary maximum contaminant level (MCL) (see drinking water regulations), a standard established to address issues of aesthetics (discoloration), not health concerns." The SWRCB requires reporting manganese concentrations greater than the notification level (0.5 mg/L) to local city and county governing bodies. It is recommended to notify customers when levels are above the notification level. Removal of manganese when levels are ten times the notification level is recommended. Manganese is a required nutrient, and the World Health Organization finds that typical western diets include manganese intakes of "0.7 to 10.9 mg/day" (WHO, 2004). Furthermore, previous adverse effects reported in humans were from inhalation in occupational settings (EPA, 2004), and there are very few examples associating oral exposure of manganese to neurological effects (EPA, 2004). In contrast, an article released by the manganese Subcommittee of the American Water Works Association stated recent evidence suggests 0.1 mg/L in drinking water could be cause for concern such as "intellectual impairment and poorer neurobehavioral function related to memory, attention, motor function and hyperactivity" in school-age children (AWWA, 2021). The secondary MCL, 0.05 mg/L, is half of this recommended value. In 2019, EKI accessed available water quality data from numerous sources (e.g., California Data Exchange Center, United States Geologic Survey (USGS) National Water Inventory System, DWR National Water Quality Monitoring Council (NWQMC) Water Quality Portal (WQP), SWRCB via NWQMC WQP, Environmental Protection Agency National Aquatic Resources Survey via NWQMC WQP, Department of Health Services via Groundwater Ambient Monitoring and Assessment (GAMA) Groundwater Information System (GIS), DWR via GAMA GIS, USGS via GAMA GIS, GeoTracker, NWQMC WQP, and Safe Drinking Water Information System). EKI researched the manganese data sources provided and reports the following. The information at the provided link: https://ca.water.usgs.gov/projects/gama/SU/nsjv.htm includes results from a limited sampling period (12/13/2004 through 2/18/2005). According to information provided on the website, samples were collected from 67 wells located in the North San Joaquin Study Unit for a variety of water quality parameters. From the Data Series Report "*California GAMA Program: Ground-Water Quality Data in the Northern San Joaquin Basin Study Unit, 2005*" only one (1) well was located in the Basin and sampled for manganese. The result is in the Basin Data Management System (DMS) and was considered when developing the GSP. The Scientific Investigations Report 2010-5175, "*Status and Understanding of Groundwater Quality in the Northern San Joaquin Basin, 2005: California GAMA Priority Basin Project*" includes 11 wells sampled for manganese in the Basin but reports results for only nine (9) of the wells. The samples from 5 wells were below 0.05-mg/L, and of the samples from the four (4) remaining wells, manganese concentrations ranged from 0.055 mg/L to 0.200 mg/L. Only samples from one of these wells are available from the GAMA portal, and they are included in the Basin DMS. Samples from another well are likely also included in the DMS, but due to inconsistency in well names and the lack of well location data, they cannot be confirmed. The samples from the remaining 7 wells in the report had concentrations that range from below detection to 0.200 mg/L, but these results are found only in this report and are not available from the other sources.	Additional data that is verified will be included in the DMS for consideration as part of the 5-Year update as appropriate.

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32 (cont.)					Contemporary access of the GAMA GIS provide data not available when accessed by EKI in 2019. A recent download from the portal provided 1158 samples from 172 wells. EKI compared the recently available GAMA GIS data with data in the DMS. Of the 172 wells, EKI was able to match 122 wells based on either the GAMA GIS Well ID or GAMA GIS Alternate Well ID with either a Well ID, Sample ID, or alternate Well ID in the DMS. These comparisons were further confirmed by checking both the sample result and dates. Of the wells that could not be matched (50 wells, 557 samples), the concentrations range from below detection to 2.36 mg/L (the 2.36 mg/L result is clearly an anomaly because all the remaining samples are less than 0.37 mg/L). All samples above the secondary MCL are either municipal or monitoring wells. The City of Galt municipal wells make up 80% of the samples over the secondary MCL, and the water produced by these wells are treated for manganese before entering the distribution system.	
33	10/15/21	ECOS	GWC 9.7	We acknowledge that the GSPD presents a comprehensive assessment of both interconnected surface water (ISW) and Groundwater Dependent Ecosystems (GDE) based on SGMA requirements and historical literature. However, new information was presented recently (see attached white paper) updating the root depth analysis used for GDEs. Please include this information in the final GSP to update GDE analysis. In addition, please add the following info to this section: recent monitoring has identified shallow perched aquifer areas that supply water to GDEs in the corridor between Deer Creek and the Cosumnes. The vegetation in this area is groundwater dependent (though not regulated by SGMA) riparian forest, contributing resource to multi-benefit projects that contribute to both water security and ecological uplift.	See response to comment #21	Note in GSP that the vegetation in the areas that reportedly rely on perched groundwater can represent an opportunity where multi-benefit projects can contribute to both water supply reliability and ecological support. Add language recommending multi benefit projects including Flood Plain projects to Section 18.2.4 “Other PMAs”.
34	10/15/21	ECOS	Water Budget 10.1.1	This bullet item refers to SMUD's decommissioned Rancho Seco nuclear facility and its use of imported surface water. Please explain why the decommissioned facility still requires a regular water supply. For your information, SMUD began operating its 600 megawatt, natural gas-fired Cosumnes Power Plant, which is adjacent to the Rancho Seco facility, in 2006. See https://www.smud.org/en/Corporate/Environmental-Leadership/Power-Sources. Please describe the current water supply source for the operating power plant, and its principal water needs (e.g., turbine cooling).	The USBR previously delivered water to the SMUD Rancho Seco nuclear facility, which required a cooling water supply amongst other water uses. The facility has since been decommissioned; however, under the USBR contract, SMUD was still entitled to deliveries. In 2006 the SMUD Cosumnes Power Plant, now known as the Cosumnes Power Plant, came online. The Plant requires a water supply for the condensing stream turbine and two heat recovery steam generators. Water is delivered via a 0.4 mile connection to a water line from the Folsom South Canal. The average annual delivery (1999-2018) was about 1,200 AFY based on USBR reporting and SacIWRM (South Basin GWP, 2011, Robertson-Bryan & WRIME).	No change to the GSP.
35	10/15/21	ECOS	PMA 10.3.2	The CS GSPPD addresses one major option for demand reduction, through Project/Management Action #5 which involves creation of a Voluntary Land Fallowing program. o Please discuss contingency options and timeframes for demand reduction measures if the Voluntary Land Fallowing program does not result in the anticipated groundwater savings. o Please discuss any existing public or water purveyor groundwater conservation programs in the Cosumnes and Greater Sacramento regions, and the benefits, if any, of adding them to the GSPPD's Project/Management Action set. o If there are any promising groundwater conservation program examples in the Western States which have experienced extended drought conditions and climate change, discuss those possibilities and their potential for being helpful in the Cosumnes region.	Starting in 2022, the GSAs will assess interest among farmers to participate in the Volunteer Fallowing Program, including evaluating the location/acreage of relatively higher water demand land uses that rely on groundwater, compensation to farmers, and developing a reliable accounting system. In 2024, the GSAs plan to begin program implementation. If it becomes clear that there is a lack of interest or other impediments to implementation, other demand reduction practices will be implemented. This could include an across-the-board water use reduction and development of the associated accounting system. See also response to comment #2. A preliminary analysis suggested that an 8% reduction in water use through implementation of a conservation program covering 8,000 acres of irrigated land throughout the Basin would result in a relatively modest saving of groundwater (<500 AFY). As a result, a conservation element was not further explored during GSP development and therefore not included in the PMAs analyzed. Approximately $300,000 has been earmarked in the budget for GSP implementation to investigate additional PMAs including conservation practices.	Add specifics about PMA plan implementation, Section 19, including plans to explore conservation more thoroughly.

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36	10/15/21	ECOS	Water Budget 10.4	The section states: "All six scenarios are used to project the 50-year water budget for the Basin (e.g., WY 2022-2072), and provide insight into the sensitivity of the water budget to uncertainty in climate and land use conditions." These key scenarios used for Water Budget formulation warrant elaboration for the reader. o Please provide more detail on how the six scenarios were used in the Water Budget future projection and prediction process. o We are particularly interested in how climate change was considered, and the weight given to the "central tendency" climate forecasts vs. the "extreme" climate forecasts. o Please discuss the strengths and weaknesses, and credibility of each scenario for the Cosumnes GSP region. oPlease discuss how each scenario, if applicable, addressed land use conditions. o Please summarize any relevant research studies (e.g., American River Basin Study).	The six different scenarios used for the projected Water Budget were developed in accordance with § 354.18 (c) and the Best Management Practices for the Sustainable Management of Groundwater: #4 Water Budget BMP (BMP #4). See Section 10.4.2 for more information on the scenarios. Data for the Climate Change scenarios were utilized as described in the DWR guidance document for Climate Change Data Use During Groundwater Sustainability Plan Development (DWR, 2018). The Climate Change data was integrated into the Water Budget as described in the BMP #4. There was no weighting between climate change scenarios. Please see Other PMAs (18.2.4) for additional PMAs that could be implemented if needed. See response to comment #31 for additional information on climate change. Land use was held the same for the two current Conditions Scenarios while the four Projected Conditions utilized future land use conditions as described in Section 10.4.2. For more information on each of the relevant climate change studies please see the following source materials: 1. American River Basin Study - The ARBS study documentation will be submitted as a reference with GSP submission (Bureau of Reclamation, 2020, American River Basin Study Interior Region 10 -California Great Basin, dated August 2020). 2. DWR 2030 Central Tendency, 2070 Central Tendency, 2070 Dry, Extreme Warming, and 2070 Wet, Moderate Warming: https://data.cnra.ca.gov/dataset/sgma-climate-change-resources.	No change to the GSP.
37	10/15/21	ECOS	Plan Area/ Water Budget 5.3.2, 5.3.3 & 10.4.2	Per the GSP Regulations 23-CCR §354.18(c)(3)(B) the projected water budgets must include “projected changes in local land use planning, population growth, and climate.” o Please summarize the anticipated population growth in the Cosumnes Subbasin region for the GSP interval, and where the new growth will likely occur. o Given the expectation of new population growth, discuss the implications for increased groundwater use. o Given the possibility of expanded agricultural activity, discuss the implications for increased groundwater use.	Projected changes incorporated into the model are discussed in Section 5.3.1 and Section 5.3.2, and Section 10.4.2. The implications for increased groundwater use and expanded agricultural activity are described in Section 5.3.2. Readers interested in the implications of increased groundwater use are referred to Table WB-10 which reports pumpage changes (agricultural and developed areas) and effects on water budget components.	No change to the GSP.
38	10/15/21	ECOS	SMC 14.6	We have a conceptual concern regarding interconnected surface water criteria and other undesirable results: “Undesirable Results occur when MTs are exceeded in one or more RMW- ISW (1 of 9), because of SGMA-related groundwater management, for two (2) consecutive non-drought years…” In effect the document seems to say that we can drop below 2015 levels for an unlimited amount of drought years before any action is taken. Given climate change scenarios, delaying action until we have a wet year is not prudent.	Per CWC § 10721 (1), “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 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”. Nevertheless, the GSAs decided to remove the two-drought-year qualifier to make the definition of Undesirable Results more conservative. Water budget uncertainty due to climate change was considered both with and without PMAs (see Table WB-10), and additional PMAs identified in Section 18.2.4 “Other Projects” do help guide the GSAs adaptively manage groundwater conditions.	Remove “two (2) consecutive non-drought year” qualifier from definitions of Undesirable Results.

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39	10/15/21	ECOS	SMC/ Implementation 15.1.2 & 19	We support the concept of a Shallow/Vulnerable Well protection Program and Well Permit Coordination actions. We suggest that the program should be focused on shallow wells (domestic and agricultural) that become dry resulting from MT exceedance, and should not apply to localized dry well conditions. We support efforts to engage local agricultural and residential landowners in the development of the program. We suggest that the GSPPD's initial focus include voluntary, private well owner data gathering and coordination. We recommend that the GSPPD include enough information about the effort to support any subsequent funding opportunities from outside sources. The tie between shallow wells and conjunctive use/recharge should also be assessed as part of program development and implementation. Additionally, with enhanced private well owner monitoring, these well owners will have information they can use to carry out their own water conservation efforts.	The monitoring and modeling information evaluated for the GSP considered impacts on shallow wells in relation to the PMAs. While the GSP evaluates impacts to shallow wells (Section 15.1.2 and SMC Tables 1 and 2), the GSAs also recognize that more monitoring information is needed to quantitatively project and verify potential impacts to shallow wells. Enhanced monitoring will provide valuable information to guide GSP implementation. The formation of a Citizens' Advisory Committee to guide GSP implementation is anticipated and will be a forum for the GSAs to engage directly with constituents to develop processes to gather more data from vulnerable wells. Anyone that is interested in providing data relevant to groundwater conditions can contact the Cosumnes Subbasin Watershed Coordinator, Stephen Julian as Stephen@WackmanConsulting.com.	Note plans for outreach efforts to well owners to identify changes in groundwater conditions.
40	10/15/21	ECOS	PMA 18	P/MA #1 and P/MA #2 both involve Flood-MAR (Managed Aquifer Recharge) projects. There are references to winter water diversions and "excess" winter water. These potential resources are described as a Cosumnes River winter diversion, and winter flood water deliveries from the American River and/or the Folsom Reservoir. o Please explain how the Cosumnes River diversion would work, and when. o Discuss how the excess status for each "Wet Year" water source is determined, and by whom. o Explain where excess water, if any, currently goes. o Discuss contingency plans if the anticipated wet years do not occur. o Summarize the legal/water rights status of the water considered excess. o Particularly for the Flood-MAR projects, discuss the coordination that has occurred between the GSA decision makers in the Greater Sacramento region, to ensure that the water supply resources are not being double or triple counted in the Project/Management Action development and accounting processes.	Cosumnes River diversion: OHWD has received a temporary permit from the SWRCB to divert winter water when flows in the Cosumnes River exceed 76 cubic feet per second. Water will be spread on 1,200 acres of primarily vineyards. Starting in 2027, American River water could be diverted to cover 1,800 acres of farmland. Excess status: The SWRCB has determined the minimum flows on the Cosumnes that are required before diversions can take place. Currently, "excess" water released from Folsom Dam to the American River moves through the system into the SF Bay; there is no storage. It is assumed that releases from Folsom will need to meet flow requirements for the American River and the Delta, but a similar determination has yet to be made for the American River. If the wet years do not occur, other PMAs will be relied upon like demand reduction to meet GSP objectives, see Section 18.2.4 "Other PMAs". No legal or water rights determination has been made at this time for winter storm flows released to the American River. This question is a key issue to resolve during the first 5 years of plan implementation. Another key issue to address is the modification of Folsom Dam operations and the operation of other upstream reservoirs to allow flood water to be held in Folsom Lake. The GSAs did not identify double counting of water resources, and there are several mechanisms to prevent it from occurring. First, water availability estimates allocated to Basin were provided by an outside agency (the Sacramento Area Flood Control Agency [SAFCA]). Secondly, intra-basin coordination occurred during GSP development and will continue during implementation and including PMA development and planning (see Section 5.5.5 "Interbasin Coordination"). Lastly, the North American, South American, and Cosumnes subbasins are all using a single regional numerical groundwater flow model to support the coordination of hydrologic assessments and reduce the possibility of errors like the double-counting of available surface water sources.	See planned GSP modifications described for comment #2.

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41	10/15/21	ECOS	PMA 18.2.3	Regarding P/MA #1, please explain in terms the informed layperson can understand, how Phase I is anticipated to yield 1,200 acre-feet/year (AFY), while Phase 2 is anticipated to annually yield 20,000 AFY. There is an order of magnitude difference between Phase 1 and Phase 2 yields, which warrants confirmation and discussion. o Similarly for PM/A #1, explain how groundwater storage levels are expected to improve by 700 AFY, and how this number relates to the 20,000 AFY figure above.	Per Section 18.2.1, Phase 1 is not anticipated to yield 1,200 AFY of water, but rather 1,200 AFY of water will flood 1,200 acres of dormant vineyards, orchards, etc. Similarly, in Phase 2, there is not an anticipated 20,000 AFY yield, but rather 20,000 AFY of excess winter water will be used to flood 1,800 acres of dormant vineyards, orchards, etc. The yields in terms of groundwater storage changes are inferred from water budget changes calculated by the numerical groundwater model (See Table WB-10 and Table WB-11).	No change to the GSP.
42	10/15/21	ECOS	Implementation 18.2	We propose that the GSPPD's Project/Management Actions section be expanded to include specific lists of work, studies, and monitoring system improvements referenced within the GSPPD, including the responsible GSA(s). The GSAs may find it difficult to plan and budget for these Actions unless they are called out in the final GSP that is approved by the GSAs. We believe the GSPPD's Management Actions section should be expanded to include a climate impacts assessment that results in revised climate impact inputs for the five-year GSP update. This new climate impacts assessment should build upon relevant research, such as the soon to be published American River Basin Study. This study is purported to include over 60 climate forecasts and the amalgam that is currently being relied upon is based on climate information and forecasts that we believe do not reflect the region's recent climate experience and more recent climate forecasts. Fortunately, the local agencies who helped fund the study have briefed the Water Forum and others on its findings and have indicated that the American River Basin Study does have climate data that is more reflective of current conditions and these newer forecasts. The study's project managers have advised that the study's forecasting models can be run with that information. Given the importance of the impacts of climate change on basin management, it makes sense to plan for and conduct a new assessment so that it is available in time for a future annual update to DWR or, by the latest, the next plan update in five years. To that end, the GSAs should reach out now to the other subbasin GSAs, RWA and the Water Forum to develop an agreement to perform the work so that it can be included in the region's three GSP updates.	See response to comments #27 and #36. The GSAs are in the early stages of project development for the PMAs listed within the GSP. As they gain more information, detailed lists of activities needed to implement the projects will be developed and shared. To model impacts of climate change, recommendations from DWR were followed (e.g., BMP #4, and DWR, 2018). While the central tendency is used in our planning, more extreme tendencies were also evaluated. The GSAs will be in coordination with neighboring subbasins and other relevant agencies to further our groundwater sustainability planning efforts. Interbasin coordination has occurred during GSP development and will continue into implementation. See Section 5.5.5 "Interbasin Coordination".	Clarify and expand description of PMA implementation in Chapters 18 and 19.
43	10/15/21	ECOS	PMA/ Implementation 18.2	In addition, a Management Action is needed to develop a policy and procedure for reviewing, formally commenting on, and approving (when appropriate) groundwater transfers, water banking activities including the accounting framework, and conjunctive use operations. The document should include GSA ongoing monitoring and management responsibilities in each area, and how costs for these activities are recovered. The policy and procedure should lay out how water banking and recharge programs will be implemented in the CS including governance, water accounting, banking and recharge operations, and CS banking premiums of water left in the CS over and above deposits to adjust for natural storage loss, environmental premiums, and basin supply enhancement.	A formal water banking and water transfer policy will be addressed during the first 5-year implementation period and before any sale of water occurs. See response to comment #62.	See revision to the GSP in response to comment #62.

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44	10/14/21	CDFW	GWC 9.6.2	The narrative explanation within the GSP lacks specificity in its description of the volume and timing of depletions of surface waters in the subbasin. The GSP identifies the long-term average annual depletion of the interconnected and disconnected reaches of the Cosumnes River (page 124), and it displays a graph of historical monthly depletions in Figure GWC-16; however, a table presenting the long-term average monthly depletions, in both the interconnected and disconnected reaches, would improve clarity. Quantifying depletions by month and reach will improve understanding of depletions in the context of the proposed sustainable management criteria for interconnected surface waters and facilitate evaluation with respect to environmental beneficial users that may rely on the surface waters during specific portions of the year.	In Section 9.6.2, the GSP concludes based on available data that "the actual relationships between surface water and the underlying Principal Aquifer are complex and remain a data gap." The information presented in Figure GWC-16 is a combination of measured and model-calculated results for two lengths of river (each ~700 feet in length). These river sections are adjacent to shallow monitoring wells whose water level data were used to classify them as "seasonally disconnected" and "assumed interconnected." This is explained in Figure GWC-16, but not repeated in the text. The text will be modified accordingly. The requested table can be provided, but the results are limited to just two small stretches of river.	Modify to explain the reach lengths represented in Figure GWFC-16. Calculate monthly average depletion for the two river reaches shown on Figure GWC-16 and report in table.
45	10/14/21	CDFW	GWC 9.6	The GSP identifies portions of the Cosumnes River west of its confluence with Deer Creek to be interconnected during portions of the year, while west of Highway 99 the river is more regularly connected. Figure GMC-16 uses labels to identify the interconnected and disconnected portions of the Cosumnes River, but it is unclear at which point the GSP has identified the transition.	See response to comment #19.	No change to the GSP.
46	10/14/21	CDFW	GWC 9.7	The GSP does not classify as GDEs approximately 2,430 acres of vegetation that "obtains moisture from surface water and/or perched water." Additional clarification is needed to understand how and which potential GDEs were identified as reliant on surface waters and therefore removed as potential GDEs. If potential GDEs were eliminated based on proximity to surface waters or irrigated lands without consideration of the depth to groundwater in the area, the method may disregard a GDE's adaptability and opportunistic approach to accessing water in which the vegetation may rely on both surface water and groundwater between seasons and years. The GSP also removes potential GDEs that depend on areas of perched groundwater within the subbasin. The GSP fails to adequately characterize the relationship between these perched groundwater areas and the identified Principal Aquifer, including the impacts of pumping or seasonally elevated groundwater levels within the Principal Aquifer on the perched waters. The GSP identifies the lack of shallow groundwater monitoring wells as a data gap, particularly as it relates to areas of perched groundwater and the ability of the vegetated root zone to access water from the Principal Aquifer. Additional information is necessary prior to removing these 2,430 acres of vegetation from consideration as GDEs.	See response to comment #21.	No change to the GSP.
47	10/14/21	CDFW	GWC 9.7	The GSP removes potential GDEs with a depth to groundwater greater than 30 feet; however, as stated in able GWC-6, mature Valley Oak (Quercus lobata) can access groundwater up to 80 feet below the ground surface (Howard 1992, Lewis & Burgy, 1964). Despite the study's focus on trees growing in shallow soils with fractured rock, the research represents the current best available science for determining the potential maximum rooting depth for mature Valley Oak until site-specific data shows otherwise. The use of a 30-foot threshold may incorrectly exclude Valley Oak communities within the subbasin from further consideration as a GDE.	See response to comment #21.	No change to the GSP.

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48	10/14/21	CDFW	GWC 9.7	The GSP includes lists of species on the Federal Endangered Species list, California Endangered Species list, and a list of 243 other species that may be present in the basin in Appendix K. However, the GSP does not include information related to the species' potential groundwater dependence or spatial extent within the subbasin. While the GSP also discusses the importance of the Cosumnes River to fall-run Chinook salmon Oncorhynchus tshawytscha) and how low flows have been identified as an inhibitor to migration (page 129), the GSP fails to adequately discuss the potential impacts that would occur to groundwater dependent ecosystems, interconnected surface waters, and the species present within the subbasin as it relates to identified sustainable management criteria.	TNC provided a list of freshwater species located within the Basin to evaluate species reliant on surface water. The list provided by the TNC was acknowledged and incorporated into the GSP. However, as stated in the GSP Section 9.7, additional work supported by wildlife surveys is needed to both confirm the presence of the species on the list provided by TNC and determine reliance on groundwater and/or interconnected surface water. See also responses to comments #20 and #26.	Include information at the beginning of Appendix K on the dataset provided by the TNC and a link to the TNC database.
49	10/14/21	CDFW	GWC/ SMC 9.1.1, 9.6 & 14.6	Minimum thresholds (MTs) and measurable objectives (MOs) for depletions of interconnected surface water are not likely to prevent undesirable results for environmental beneficial uses and users of groundwater and interconnected surface water, including groundwater dependent ecosystems. For interconnected areas, the proxy groundwater elevation MTs are set at the highest seasonal low of a below-normal water year that occurred prior to 2015, with the rationale that associated depletions would therefore not be worse than what occurred prior to 2015 and undesirable results would be avoided. The MT for disconnected areas is the projected 20-year water level based on the long-term negative groundwater level trends (page 211), allowing for continued groundwater decline beyond historical lows. The MOs for interconnected areas are determined by adding the range in measured seasonal-low groundwater elevations over the period of record through 2015 to the MT, and for both disconnected areas and assumed GDE areas of the subbasin the MOs are the model-calculated Fall 2015 water level (page 220). The GSP fails to contextualize the seasonal or historic low groundwater levels used to establish the sustainable management criteria in terms of the effects that environmental beneficial uses and users of groundwater and interconnected surface waters likely experienced under these hydrologic conditions. While GDEs and environmental users of interconnected surface waters are adapted to survive fluctuations in groundwater conditions and brief periods of lowered groundwater levels, managing to these historic lows will likely lead to adverse impacts. The reasoning that conditions that have occurred previously cannot have resulted in undesirable results is insufficient for determining SMCs; GSPs must first characterize significant and unreasonable impacts to beneficial uses and users, determine at what groundwater levels those impacts would occur, and then set minimum thresholds accordingly.	See response to comment #20.	No change to the GSP.
50	10/14/21	CDFW	GWC/ Monitoring Network/ Implementation 9.7, 17 & 19.1.1	For interconnected surface waters and assumed GDE areas, the GSP establishes "trigger thresholds" halfway between the MO and MT values. If groundwater levels fall below those triggers, a management response will be considered (page 220-221). While the GSP states that other indicators of GDE health will be monitored in the subbasin (e.g., Normalized Difference Vegetation Index (NDVI)), it is unclear how those metrics will be used by the Working Group to determine if a management response is needed, because no 'trigger threshold' is defined.	See responses to comments #21 and #28.	Add task to assess monitoring data to evaluate possible triggers as part of a 5-year update.

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51	10/14/21	CDFW	SMC 15.6 & 16.6	While ground surface elevations are included in Table MN-4 (page 241) for the wells included in the monitoring network for the depletion of interconnected surface waters, the hydrographs presented in Figure SMC-6b include only feet above mean sea level. Without a ground surface elevation reference, it is difficult to determine the depth to groundwater below the ground surface for evaluation of potential impacts to groundwater dependent ecosystems.	Comment noted.	Add numeric value of ground surface elevation to the explanation in each hydrograph.
52	10/14/21	CDFW	SMC 15.6	Existing shallow groundwater monitoring wells may not be sufficient to characterize groundwater level trends as they relate to potential GDEs within the subbasin. The GSP identifies a data gap related to groundwater levels in the Basin Foothills area but contends that as the vegetation was "only conservatively assumed to be GDEs," the *data gap is not a priority* and GSP implementation is not expected to influence vegetation in these areas (page 238). Without groundwater level information near these GDE communities or identified metrics such as NDVI to characterize the GDE health, there is insufficient information to determine that these areas will not be affected throughout the SGMA implementation period and do not warrant further monitoring for potential impacts to the beneficial users.	See response to comments #21 and #28. Figure SMC-7 shows three (3) shallow wells in the Foothill Subarea utilized to monitor groundwater conditions as they relate specifically to the assumed GDEs area. These three wells represent conditions for most of the assumed GDEs, which will be monitored for groundwater levels and metrics such as NDVI to characterize GDE health. The data gap cited is the area not represented by the existing monitoring wells (less than 14% of the entire area of assumed GDEs). Because groundwater use in the Foothill Subarea is limited, and water level trends suggest no long-term change in groundwater storage, it is unlikely GSP implementation will have an impact on these assumed GDEs. Hence, the need for additional monitoring wells in these areas will be evaluated as part of the 5-year update.	No change to the GSP.
53	10/14/21	CDFW	Water Budget/ PMA 10.4 & 18.2.4	According to the presented water budget, the planned PMAs may result in an almost 9,000 acre-feet per year (AFY) increase in annual change in groundwater storage relative to the projected baseline conditions scenario (page 168, Table WB-10). However, two of the scenarios with projected conditions and climate change (ARBS CT 2070 Climate Change and DWR Extreme I 2070 Climate Change) show modeled changes in groundwater storage of -10,000 AFY and -18,600 AFY. It is unclear how the climate change scenarios may impact the realized groundwater benefits of the implemented PMAs, but assuming that the groundwater storage benefits are similar to the 9,000 AFY modeled with the projected baseline conditions, additional PMAs may be necessary to meet subbasin sustainability objectives under an uncertain climate future.	See response to comment #27. The model was utilized to simulate the PCBL with PMAs scenario with the Central Tendency climate change scenario and results indicated the average annual storage change decreased from 7,100 AFY (without climate change) to 500 AFY (with climate change). SGMA requires periodic monitoring and reporting in Annual Reports and 5-Year Assessments. SGMA relies on information from these reports to assess current conditions and adaptively manage the Basin. Should climate change result in overdraft conditions even with the implementation of planned PMAs, the GSP describes additional PMAs that could be further researched and implemented. These additional PMAs are described in Section 18.2.4.	Include model results from scenario that combines PCBL, Central Tendency climate change, and PMAs in Table WB-10. See also revision to the GSP in response to comment #18.
54	10/14/21	CDFW	PMA 18.2.4	The Department recognizes that the GSP discusses additional PMAs that are less thoroughly developed but may need to be implemented within the subbasin. The GSP details potential unforeseen conditions that could limit the effective implementation or realized benefits of PMAs #1-6. Though the plan references a "ramp up" for these other potential PMAs, the GSP would be strengthened by including a discussion of metrics and timelines that would trigger the implementation of additional PMAs. Particularly as the GSP analysis uses the long-term trend to project continued groundwater decline prior to groundwater levels recovering to the measurable objective levels once the PMAs become operational, there is little flexibility to encounter additional delays if the ramp up plan for additional PMAs is not triggered early enough within the implementation period, or if the ramp up process is extended and the additional PMAs cannot quickly become operational.	The schedule has PMAs starting within 3 or more years, whereas the ramp up period is 10 years. Within the first 5-year GSP update period, it will be determined whether the water augmentation PMAs (the SAFCA Flood-MAR project) can be implemented as described in Section 18.2.1 "Groundwater Augmentation from Wet Year Supplies." The additional PMAs provide flexibility to the Basin to adaptively address changed conditions. Interim milestones have been defined to track water level trends toward meeting Measurable Objectives (MOs) and reaching sustainability goals. A description of progress towards implementing the GSP, including achieving interim milestones, and implementation of PMAs is a requirement of the Annual Report (§ 356.2. Annual Reports [c]).	No change to the GSP.

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55	10/14/21	CDFW	GWC 9.7	The GSP relies on the distinction between perched groundwater and the Principal Aquifer to eliminate up to 2,430 acres of potentially groundwater dependent ecosystems from further consideration within the GSP (See Comment 2(i)). However, the GSP fails to present evidence demonstrating that the groundwater levels or pumping within the Principal Aquifer are independent from groundwater stored in these perched areas. The plan states that aquifer pumping tests and monitoring are needed to fully characterize the connectivity and interrelatedness of these areas of potentially perched groundwater with the Principal Aquifer, but that this monitoring will be completed "as opportunities arise."	See response to comment #21. The hydraulic interaction, if any, between perched groundwater and pumped depth intervals of the Principal Aquifer can be elucidated from water levels in variable depth monitoring wells. There is currently one multi-well cluster site in the Basin, and two more planned for construction (one of the two is planned specifically within a suspected area of perched groundwater). This data will be collected and evaluated accordingly as part of the monitoring program. Pumping tests can also provide insight into possible hydraulic connections between depth intervals. As described in the GSP, these tests could be conducted when opportunities arise like new well construction, PMA feasibility assessments, and so forth.	Add clarifying text on using existing and planned multiple depth monitoring well sites to evaluate possible perched groundwater conditions as part of monitoring program.
56	10/04/21	NOAA	GWC/ SMC/ Appendix I 9.1.1, 9.6, 9.7 & 14.6	The draft Final GSP does not specifically investigate or analyze whether past, current or future groundwater management has impacted, or will impact, beneficial uses of surface water. The only analysis or reasoning provided for minimum threshold justification concerns GDEs and tree rooting depth. Using Valley Oak rooting depth to inform impacts resulting from streamflow depletion is inappropriate and not supported by best available science. Streamflow depletion impacts ESA listed salmonids and their habitat by degrading aquatic habitat. Analyzing whether groundwater levels support Valley Oak trees (*i.e.*, occur within some depth threshold below ground surface) has no informative value with regard to how streamflow depletion may impact identified beneficial uses of surface water (*e.g.*, spawning and rearing of ESA-listed fish[1]). If information to inform potential impacts to surface water beneficial uses is currently unavailable, we recommend the GSA develop and commit to undertaking future studies that investigate the relationship between groundwater levels, streamflow depletion rates, and significant and unreasonable impacts to beneficial uses of surface water, especially as those beneficial uses pertain to ESA-listed salmonids and their critical habitat, including EFH.	See responses to comments #20 and #21. A GDE verification study was conducted as part of GSP preparation (see Appendix I) with input and cooperation from the Surface Water Advisory Group (SWAG) members. The GDE verification study in Appendix I concluded the average annual NDVI shows an increasing overall trend since 1985, and riparian/wetland areas within the Basin remain healthy overall. As a result of the study, the monitoring program was significantly revised and improved. Moreover, the GSAs have committed to extensive monitoring and analysis related to ISW across the GSP implementation timeline (see comment #50), and the data collected should improve the quantitative characterization of streamflow depletions.	No change to the GSP.
57		NOAA	GWC/ SMC/ Monitoring Network/ PMA/ Implementation 9.1.1, 9.6, 9.7, 14.6, 17, 18.2.3 & 19.1.1	We recommend the GSA adequately address the following requirement for minimum thresholds as spelled out in the SGMA regulations: "The relationship between the minimum thresholds for each sustainability indicator, including an explanation of how the Agency has determined that basin conditions at each minimum threshold will avoid undesirable results for each of the sustainability indicators." (CCR 23 §354.28(b)(2)) According to DWR (2021), "it is up to GSAs to define in their GSPs the specific significant and unreasonable effects that would constitute undesirable results and to define the groundwater conditions that would produce those results in their basins." The final Draft GSP attempts to use the same sustainable management criteria for streamflow depletion as what is proposed for "Chronic Lowering of Groundwater Levels", without any justification as to how those criteria avoid significant and unreasonable impacts to surface water beneficial uses. The GSA should qualitatively describe what conditions within the subbasin would constitute an undesirable result with regard to streamflow depletion, ensuring that the description accounts for impacts to instream habitat that support ESA-listed salmon and steelhead. If a lack of available data prevents such an effort, NMFS recommends the GSA follow guidance from California Department of Fish and Wildlife (2019) and develop conservative streamflow depletion thresholds as a cautionary principle until the surface flow/groundwater dynamic in the Cosumnes subbasin is better studied and understood.	See responses to comments #19, #20, #41, and #50.	No change to the GSP.

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58	10/04/21	NOAA	GWC/ SMC 9.1.1, 9.6 & 14.6	If the GSA intends to propose groundwater elevations as a minimum threshold for streamflow depletion, the GSA should provide an explanation, with supporting evidence, for why groundwater levels are a reasonable proxy for interconnected surface water depletion, as well as why those levels are sufficient to avoid streamflow depletion that significantly impacts surface water beneficial uses. The analysis should correlate instream habitat quantity and quality with groundwater elevations (and, by extension, streamflow depletion rates) so that a thorough understanding of how groundwater pumping impacts surface water beneficial uses is developed.	See response to comment #20.	No change to the GSP.
59	10/04/21	NOAA	GWC/ SMC/ Monitoring Network/ Implementation 9.1.1., 9.6, 9.7, 14.6, 17 & 19.1.1	The draft Final GSP contains the following minimum threshold for the streamflow depletion undesirable result: "MT set at the highest seasonal low elevation during below-average rainfall years from the start of monitoring through 2015." (Table SMC-1) Proposing groundwater elevations from the 2011-2016 period as streamflow depletion minimum thresholds and measurable objectives is likely inappropriate for avoiding significant impacts to ESA-listed salmonids and their habitat. Basic hydraulic principles dictate that groundwater flow is proportional to the difference between groundwater elevations at different locations along a flow path. Using this basic principle, groundwater flow to a stream or, conversely, seepage from a stream to the underlying aquifer is proportional to the difference between water elevation in the stream and groundwater elevations at locations away from the stream. Minimum thresholds and measurable objectives consistent with groundwater elevations seen during California's recent historic drought, such as those proposed in the draft Final GSP would likely create historically high streamflow depletion rates and result in instream conditions that negatively affect ESA listed salmonids and their critical habitat. If a lack of data prevents the development of appropriate sustainable management criteria, the GSA should design and implement studies that better inform appropriate minimum thresholds and measurable objectives for streamflow depletion. follow guidance by the California Department of Fish and Wildlife (2019) that recommends conservative sustainability management criteria be established to ensure groundwater dependent ecosystem protection.	See response to comments #20 and #50. As stated in CDFW's "Fish & Wildlife Groundwater Planning Considerations", CDFW recognizes there are current data gaps surrounding ISW and GDEs. When managing the Basin, CDFW encourages setting conservative SMCs as these thresholds "have a higher likelihood of avoiding adverse impacts"; however, as described in response to comment #20, the GSAs are not required to manage the Basin to pre-2015 conditions. Furthermore, the CDFW guidance document also sites that adaptive management will be done through monitoring, prioritized resource allocation (monitoring well for ISW), and multi-benefit approaches (PMA #1, PMA #2, and PMW #3).	No change to the GSP.

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60	10/04/21	NOAA	GWC/ SMC 9.1.1, 9.6 & 14.6	The draft Final GSP includes the following criteria defining the undesirable result of streamflow depletion: "Undesirable Results occur when MTs are exceeded in one or more RMW- ISW (1 of 9), because of SGMA-related groundwater management, for two (2) consecutive non-drought years, as determined by DWR's San Joaquin Valley Water Year Hydrologic Classification Index." (Table SMC-2) The above definition is not appropriate for avoiding significant and unreasonable impacts to surface water beneficial uses because it is completely disconnected from ecological principles that govern how those beneficial uses are impacted. Aquatic organisms, including ESA-listed salmonids, require adequate instream habitat in all water-year types, not just non-drought years. Similarly, requiring two consecutive years of exceeding the minimum threshold does not recognize that organisms live or die depending on the habitat conditions at a moment in time. If streamflow depletion contributes to a creek drying up during a drought year, the fish that reside in that creek will perish and an impact to surface water beneficial use will have resulted. Requiring two consecutive years of conditions impacting surface water beneficial uses is incongruous with ecological processes that govern those uses, and is therefore inappropriate.	The definition of Undesirable Results strictly limit the number of wells that can exceed their MT to one (1). Requiring two consecutive non-drought years of MT exceedances provides confirmation that the exceedances are not drought related, consistent with the definition of Undesirable Results in CWC 10721(x)(1). Nevertheless, the GSAs decided to remove the two-drought-year qualifier to make the definition of Undesirable Results more conservative. See also response to comment #38. See the response to comment #20 regarding the use of 2015 as the baseline for identifying Undesirable Results.	No change to the GSP.
61	10/04/21	NOAA	GWC/ SMC/ Monitoring Network/ Implementation 9.1.1., 9.6, 9.7, 14.6, 17 & 19.1.1	The draft Final GSP contains the following statement: "Nevertheless, water levels are considered the best available (and reasonably effective) criteria for this sustainability indicator because they can be utilized to help maintain conditions and instream flows in the interconnected reaches that support environmental water users like fish." (Page 211) The final Draft GSP offers no analysis or scientific reasoning as to why maintaining "past conditions and instream flows … support environmental users like fish." Were studies conducted in the past? Were there past field observations that bolster this assertion? An explanation is especially required since, as explained above, streamflow depletion rates, and the resultant impacts to instream habitat quality and quantity, were likely historically severe at the groundwater elevation minimum thresholds chosen by the GSA.	See responses to comments #20, #21, #26 and #50.	Change text to read "…water levels are considered a reasonably effective criteria… because they can be utilized to help maintain conditions and instream flows in the interconnected reaches at levels no worse than 2015."

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62	09/15/21	Tish Espinosa	PMA 18.2.3	The biggest concern is the sale of water to pay for the program and/or ground water recharge projects. If the goal of SGMA is to manage the long-term sustainability of the groundwater basin by balancing the amount of groundwater pumped with the amount that is replenished annually either by nature or human involvement; with no projects directly in our basin listed in the plan for the foreseeable future (at least the next 5 years) I believe it will be close to impossible to bring our basin into balance. Listing Water banking and the Sale of Water as a project is not a project and a big Gamble especially when we are surrounded by high priority basins and a critically over-drafted basin to the south. The groundwater basin is not a closed system so the water that you are supposably "banking" is not a guarantee it is there. It is not like a bucket, it leaks and seeps to other areas! Yes, you can measure the water levels and monitor where they are at, but all we need is a dry winter and a hot summer and we are right back to where we were, no water! The "banked water" (called excess) in this so called "leave behind model" is just that. It is a model! You can feed whatever parameters into it and it will give you the answer you are looking for. It's a model, not a guarantee the water is there for the residents of the Cosumnes subbasin whom are being charged for the use of their well and responsible for any repairs to it or even dug deeper since the water was sold out from under us.	The sale of water was added to the GSP to lower costs for landowners. The cost estimates will be refined and clarified as part of the 5-year update of the GSP, and the GSAs will determine whether landowners prefer to sell water for export from the Basin - presumably with restrictions on the amount and timing of such sales relative to imports – or to pay higher fees and avoid such sales. In order to inform this decision, the GSAs anticipate that during Phase 1 a "leave-behind policy" will be developed to establish the terms and conditions under which water sales could occur. This policy will include a verifiable system of accounting that tracks the measured volumes of water imported and exported from the Basin. To protect the Basin from depleting groundwater, a leave-behind policy will be put in place. This policy does not rely on model results but will have a verifiable system of accounting that tracks the measured volumes of water imported and exported from the basin. Moreover, the volume of groundwater available for extraction and sale is physically constrained by the MTs for groundwater levels. The definition of Undesirable Results for declining groundwater levels is when 25% or more of the RMW-WL monitoring wells exceed the MT because of SGMA-related groundwater management, which includes the storage and sale of groundwater. Hence, physical limits defined by the volume of water added to the Basin and the minimum water levels allowed in the Basin control the volume of water that can be sold, thereby protecting wells in the Basin from experiencing significant and unreasonable results. These constraints, among other potential considerations that form the water banking and selling policy for the Basin, will be used by the GSAs to approve potential future sales. A fully developed policy will be developed after the GSP is submitted in January 2022. The Working Group anticipates it will take 3-4 years to establish the process/policy that would support sale of water beginning in 2027. Additional information related to PMAs is provided in the responses to comment #7. See Section 15.1.2 "Domestic Well Impact Analysis" and the response to comment #18 regarding the evaluation of potential impacts to existing extraction wells under the unlikely conditions where groundwater levels fall below the MT at all RMWs under the worst-case scenario and one that the PMAs have been designed to avoid.	Add text that clarifies the physical constraints on the sale of water provided by the GSP and the leave behind and banking policy developed as part of PMA #5.
63	09/15/21	Tish Espinosa	PMA 18 & 19	The plan the Cosumnes Sub Basin or EKI & has been working on for years has no real projects planned for the foreseeable future that would recharge the aquafer we are sitting over. Our rural lifestyle is dependent on our wells and the ground water they pump. The Cosumnes Subbasin is piggy backing and relying on projects in other basins. The plan states we only get 3% seepage from other basins but yet we give 4% to other basins?? Go Figure out how projects in other basins will help us here?? If there's a current deficit of 10,000 af/y we have no business even talking about selling water in a sustainability plan until there is an excess to discuss. When there is nothing planned to bring our aquafer into balance, and we are depending on the projects in other basins that will seep into our basin we will not even have enough water to sustain our own use. If the water is to be sold the money needs to be put into a fund to repair and deepen our wells as a result of the selling of water to other areas. It is not our problem to provide water to other municipalities! We need to take care of ourselves first! This plan has to be updated every 5 years selling water can be addressed at a later date if we have put in ground water recharge projects that provide us with an excess.	There are multiple PMAs that will be initiated in the first 5 years of the GSP implementation plan. Many focus on feasibility or pilot-scale projects to confirm expected benefits and ensure success of the full-scale projects. During the first 5 years the GSAs will also develop the capacity and administrative structure that is essential to support the complex negotiations and projects earmarked to start in 2027. See also responses to comments #3, #7 and #40.	No change to the GSP.

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64	09/15/21	Tish Espinosa	Implementation 19.1.4	The Agricultural community in our area has never been specifically asked for their input, but yet irrigated agriculture is footing the bill this first year. All fingers are pointing to the Ag community as the big water users. Some of the literature produced by the subbasin points out Ag as the user of most water, however there is a failure to also mention they provide food and fiber for the world! They are just water users. Yes, I forgot, they get their food from the store, not the agriculture of California that surrounds them. Our area of south Sacramento County is unique in that it is one of the only portions of the county where agricultural lands are still predominate. These irrigated acres are not of large scale like further south in the valley, none the less it is still Agriculture and their input is worthy in this plan. It is the agricultural areas where small recharge project can be developed. Every project helps! The ripped and planted ground in the basin does provide better water penetration and infiltration back to the aquafer. Both winter rainwater and irrigation water goes down through the soil profile eventually making its way back to the aquafer. Unlike other lands where it runs across the surface and into the network of roadside ditches.	See response to comment #4. Regarding groundwater extraction, the Basin is currently (average WY2015-2018 in Table WB-5) pumping more groundwater than it is replenishing (groundwater storage is declining on average by 7,400 AFY). Agriculture uses approximately 89% of the total groundwater pumped annually. It is essential to implement PMAs, such as water demand reduction and the recharge projects mentioned, to reverse this trend to achieve sustainability and ensure the livelihood of agriculture in the Basin. Please see Section 18.2 “Projects and Management Actions” of the GSP for additional detail.	No change to the GSP.
65	09/15/21	Tish Espinosa	PMA/ Implementation 18.2.3 & 19.2	I would like to see some information on where the estimated 3.5 million dollars of grant money was spent to date. Irrigated ag is being charged this first year and All parcels with a well will be charged next year. This basin plan captures all well users but yet all parcels with wells have not been notified about this plan. Only those parcels that were tagged as irrigators have been notified since that is where the money was to come from. So my next question is those small parcels (AG-Res 5 acres) that were tagged as irrigators and charged $10.00 per irrigated acre. These acres are not really ag. They are hobby farming or have a few livestock and/or horses they irrigate a pasture for. They were lumped as AG to make the big water user numbers look even bigger. Are these acres being double counted as Ag and then also AG-Res?	See response to comment #5. The Cosumnes Subbasin received Proposition 1 and Proposition 68 grant funds to fund significant portions of GSP development. A final report for those grants will be provided to DWR in the Spring of 2022. The Cosumnes Subbasin Fee Program reviewed irrigated acres data (provided by DWR), and acres are not double counted.	No change to the GSP.
66	09/15/21	Tish Espinosa	Monitoring Network 17.1.1 & 17.1.6	At a few of the Zoom meetings it was mentioned that not all the monitoring wells and/or stream gages were in working order. Looking forward to seeing the maps Steven mentioned that indicate where all the wells are located within the subbasin. Seems to me they were along the edges of the basin but nothing through the middle or around the Herald area where there appears to be a big gap in data collection. I don’t believe there are any monitoring wells along Laguna Creek or any of the other smaller tributaries where we do get water infiltration during the rainy months.	The monitoring network was largely developed from existing wells made accessible by the well owners. The wells located along the north border of the Basin are specific to the ISW monitoring network. The Representative Monitoring Network for ISW was selected to characterize conditions in the Principal Aquifer near the surface water features and/or near areas of GDEs. The ISW/GDE network was developed in accordance with guidance provided by TNC (Identifying GDEs under SGMA, Best Practices for using the NC Dataset, 2019) and the Environmental Defense Fund (Addressing Regional Surface Water Depletions in California, 2018) In contrast, the Representative Monitoring Network for Water Quality spreads across the Basin as shown on Figure MN-2. Similarly, as shown on Figure MN-1, the monitoring network for the Chronic Lowering of Groundwater Levels covers most of the Basin in accordance with the recommended well density from the DWR Monitoring Networks and Identification of Data Gaps BMP (BMP #2) , and RMW-WL5 and RMW-WL6 are located near the cone of depression. Section 17.1.1 explains how the SGMA Monitoring Network for Chronic Lowering of Groundwater Levels consists also of a network of supplemental wells and planned wells distributed across the Basin. The SMCs are not established for the supplemental wells, but the data collected are used to confirm the representativeness of each RMS and support the wider understanding of the Basin’s hydrology and response to PMAs.	No change to the GSP.

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67	10/20/21	Kathleen Beasley	PMA 18.2.2	In the case of the Cosumnes Subbasin, we have an unparalleled opportunity to reach for a huge win. The Sacramento Area Flood Control Agency (SAFCA) has offered to partner with our area on its Flood-Managed Aquifer Recharge (Flood-MAR) program because we have existing infrastructure (the Folsom South Canal), an attractive proposition for the federal government to store needed water in our subbasin, a feasible route through local fees and state/federal grants to fund the project – and most importantly, a source of actual, unsubscribed water. Long-range computer modeling indicates that in four years out of 10, the American River will generate an excess 125,000 acre-feet of winter water that will flow to the ocean unless captured and diverted by a project like Flood-MAR. Injecting that water into our subbasin and retaining a significant portion of it to offset our overdraft situation, which currently drops the water level about a foot a year, is the only solution in the entire Cosumnes Subbasin GSP that comes even close to meeting our sustainability goals.	Comment noted.	No change to the GSP.
68	10/21/21	Kathleen Beasley	PMA 18.2.4	I was heartened to learn that money is budgeted for additional projects and management actions – but then, dismayed to read the wording in the Technical Summary that puts a heavy emphasis on demand control rather than supply enhancement. The summary says: "Supplementary PMAs are also under consideration, including expanded land fallowing, development of groundwater allocations, low impact development requirements, conservation efforts and participation in regional water banking projects (e.g., in adjacent basins). The available information on these conceptual projects is insufficient to estimate implementation costs and benefits at this time." Frankly after 40 years of persistent focusing on "less," many of us are ready to fight for "more." Regulatory-imposed conservation measures across all fronts since the first Jerry Brown administration have made Californians among the most efficient per capita users in the U.S. of water, energy and other resources. But they have also driven prices sky high and contributed to scarcity of resources at a time when California has grown to a population of 40 million. No one is suggesting that we jettison conservation. But the Cosumnes Subbasin water overdraft will not be solved by cutting usage without changing our rural lifestyle in ways that will be unacceptable to many of us	Comment noted.	No change to the GSP.
69	10/20/21	Kathleen Beasley	Implementation 19	The "greater good" is not a concept that comes easily to people or agencies who are intent on protecting their interests. Yet the very essence of a Joint Powers Agreement (JPA) is to give up some level of control in return for advancing the ability to take unified action for the greater good. From my perspective, the seven GSAs have struggled for years to bring together a final plan at virtually the last moment possible. Similarly the JPA has come together just in the nick of time. We have yet to see if it is an effective agreement for implementing the full GSP. While I lack faith, I do have hope. One of the key decisions to be made is who will lead the implementation of the GSP. Will the person chosen as Executive Director be someone who has the expertise and demonstrated experience to represent the Cosumnes Subbasin as we partner with SAFCA, negotiate with state and federal agencies, pursue multi-million-dollar grants, and build the public support needed to implement the plan? Or will it be someone who the JPA participants expect to control, direct and quite possibly restrain from functioning fully to advance our greater-good interests? Will it be someone who is looking over his/her shoulder with every action to make sure he/she still has the support of key people in each of the GSAs, or will it be someone who has been handed a mission and is focused on implementing that mission with strategic actions that he/she has confidence will succeed?	The GSAs, who are planning to work collaboratively through the Cosumnes Groundwater Authority, are responsible for the implementation of the GSP. It is the GSAs' intent to employ the best qualified individuals to help accomplish regulatory requirements and assist in implementing the GSP. It is anticipated that all employees/agents of the CGA will be at will.	No change to the GSP.

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70	10/20/21	Teresa Flewellyn	PMA 18	I object to any language allowing for the "sale of excess water" to be included in the current Cosumnes Subbasin Draft Plan. Data provided by the private consultants, EKI, shows the Cosumnes Subbasin is projected to be at an estimated (negative) -10,000 acre feet of water each year, over the next 5 years. Until monitoring results show a consistent increase, and actual excess water remains in the Subbasin, I, as a stakeholder, and domestic well user who relies on the aquifer for the sole source of my drinking water, do not want the sale of water to be an option in this Plan. I do not disagree with selling excess water in the future. But until Cosumnes Subbasin is fairly, and adequately monitored to give a true and full picture of the Subbasin's entire aquifer, any language stating the sale of excess water does not belong in this current Plan. It is deeply concerning to me that the Governing Boards throughout the Cosumnes Subbasin seem to be dead-set on having the sale of water included in this Plan, and have continued to push the "sale of excess water" as a necessity in the Plan. Sale of excess water is not a required criteria per the State Mandate. Approved Plans will be reviewed every 5 years, amended if needed, and re-submitted for State approval. Language showing the "sale of excess water" can be included in future plans. Further, I think any decsion to "sell excess water" should be approved by a vote of the stakeholders of that Subbasin. The groundwater does not belong to the Governing Boards, it belongs to All Stakeholders. All stakeholders should have a vote in any decision to sell Our Water, and how the proceeds will be used to improve the Cosumnes Subbasin, as well as protect the water rights of All Stakeholders within the Subbasin.	See response to comments #3, #7 and #40. Regarding the view that a vote of all stakeholders should be taken to approve such a sale, this idea is encoded in the law, which states: California Water Code Section 1220: (a) No groundwater shall be pumped for export from within the combined Sacramento and Delta-Central Sierra Basins, as defined in the Department of Water Resources' Bulletin 160-74, unless the pumping is in compliance with a groundwater management plan that is adopted by ordinance pursuant to subdivision (b) by the county board of supervisors, in full consultation with affected water districts, and that is subsequently approved by a vote in the counties or portions of counties that overlie the groundwater basin, except that water that has seeped into the underground from any reservoir, afterbay, or other facility of an export project may be returned to the water supply of the export project.	No change to the GSP.
71	10/20/21	Teresa Flewellyn	Monitoring Network 17.1.1 & 17.1.6	The Plan shows a current and marked lack of monitoring sites in a large area in the center of the basin, from the Amador County Line, west to the City of Galt, especially throughout the areas of Herald and Galt. The majority of the current monitoring activies in the Cosumnes Subbasin are clustered along the Cosumnes River. As discussed during the 10/20/2021 Cosumnes Subbasin Working Group meeting, the newest monitoring site is being added at the far west end of our Subbasin, again within close distrance to the Cosumnes River and identified "wetland" Preserves. Without true, and fair, montoring throughout the Entire Subbasin, it would be easy to show "excess water" from test results in "normal" rainfall years when the natural waterways and "wetlands" flow, or hold water year round. Having the majority of the monitoring sites near a year-round waterway may not Adequately reflect the true conditions throughtout the entire Subbasin, especially in the Cone of Depression in the Herald and Galt areas. Flawed monitoring data could then be used as the basis for a decision to "sell excess water", that in fact, may not actually exist throughout the entire Subbasin. Time spent investigating the addition of active, and operational, monitoring sites dispersed fairly throughout the Subbasin should be a first priority in the current Plan so All Stakeholder water rights are acknowledged, and that local-obtained, real-time data is included in all Plans and Projects.	See response to comment #66.	No change to the GSP.

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72	10/20/21	Teresa Flewellyn	PMA	The Galt Wastewater Recycle project, item #4, appears to be the only project option shown in our Plan that exists entirely within the Cosumnes Subbasin (not including possible Fallowing and Water Banking). Options 1-3 are not entirely within the Cosumnes Subbasins boundaries, and it is very concerning that projects the Governing Boards are representing as beneficial to the Cosumnes Subbain, would not be within the control of the Cosumnes Subbasin. The stakeholders will be asked to fund these, and any future projects with added fees/taxes/bonds. That investment from the stakeholders should be used to initiate projects within the Cosumnes Subbasin, allowing the Cosumnes Subbasin to work toward self-sustainability, and to not be reliant upon neighboring Subbasins for our project locations, management, and the decisions of how the water resources will be used, or Sold.	See responses to comments #3 and #7. The City of Galt Recycled Water project (PMA #4) is relatively straightforward because it only involves local landowners near the City's wastewater treatment plant. Other projects, such as the Sacramento Area Flood Control Agency (SAFCA) Flood-MAR project (PMA #2) , are more complex and involve negotiations with local, regional, state, and federal agencies in addition to local landowners. Consequently, these projects will take more time to implement. Funding is planned to support exploration of additional projects, such as conservation efforts. All of these projects described above are located within the Basin.	No change to the GSP.
73	10/20/21	Teresa Flewellyn	Water Budget/ PMA 10.2.3 & 18	I specifically do not see how the proposed Harvest Water Project using wastewater from the Sacramento Regional Water Treatment Facility on Franklin Blvd in Elk Grove will create a definable benefit to the entire Cosumnes Subbasin. This project is shown to be on the north side of the Cosumnes River, within the South American Subbain, between Highway 99, and Interstate 5. While some of the northwest portions of the Cosumnes Subbain between Cosumnes River and Interstate 5 are included in this project, it is a very minor amount of the Cosumnes Subbasin, and far west of the identified Cone of Depression in the Herald and Galt areas. It does appear this project could benefit the natural wetlands and the Sacramento River since the aquifer naturally moves westward into those areas from the proposed project location. It is unclear to me how a project in this location will benefit the majority of the Cosumnes Subbasin, especially the Cone of Depression, and I question its representation as such.	See response to comment #3. The reverse in flow directions, from net subsurface flow leaving the Basin to the south to net subsurface flow entering the Basin from the north, is attributed to reduced groundwater extractions and increased recharge associated with the Harvest Water Project. This reversal in flow direction reduces groundwater losses from the Basin and therefore benefits the entire Basin.	No change to the GSP.
74	10/20/21	Teresa Flewellyn	PMA 18.2.3	Representing Fallowing of Land as an actual project, with identifiable benefits, does not make sense to me. A large part of the Cosumnes Subbain consists of land already in crop, only currently irrigated pasture/hay growing lands could potentially be included in Fallowing. We have seen a big increase in the development of former irrigated pasture/hay growing land into Nut and Grape crops. The infrastructure and finanacial cost of developing these crops would not allow a landowner to abandon those improved plots of land in favor of voluntary Fallowing. The idea of Fallowing as a project that will create measurable benefits to the aquifer has not been shown to provide adequate benefits to consider it a viable, and successful project that will help our Subbasin come into sustainability.	See response to comment #7. The Voluntary Land Repurposing project (PMA #5) includes land fallowing to reduce groundwater extractions and consumptive use by agriculture. The fallowing action decreases groundwater use by removing a small fraction of the approximately 11,000 acres of pasture, alfalfa, and corn irrigated solely with groundwater based on DWR's most current (2015) land use information. In Phase 1 (2022-2027), approximately between 750 and 1,000 acres of active farmland are assumed to be voluntarily fallowed (7-9% of all candidate areas), and as many as 2,000 acres (about 18% of all candidate areas) are assumed fallowed during Phase 2 (2028-2042).	Include additional information on the total acreage of candidate lands for fallowing.
75	10/20/21	Teresa Flewellyn	Implementation 19.1.4	The current mailing list used by the Cosumnes Subbasin consultants is outdated, and has been proven to not be effective in reaching out to All stakeholders as intended, and required by the State Mandate. The majority of the public meetings, online and in-person I've attended have had a very low rate of attendance by the public. The time of day the Boards meet is, I believe is a contributing factor - meetings held before 2 pm does not always allow most stakeholders the opportunity to be present. It would seem fair that alternating between daytime and evening meetings could be an easy way to allow All stakeholders the opportunity to attend meetings, learn about the State Mandate requiring groundwater sustainability, and participate in decisions affecting their groundwater. Continuing to rely on the same type of notification process, mailings, that have consistently shown they are not effectively engaging All stakeholders has been a disservice to our Subbasin. In my opinion, the Cosumnes Subbasin has not fully engaged the stakeholders in the Plan process when compared to the South American Subbasin meetings I've attended, where stakeholder outreach and engagement was actively practiced and sought out.	See response to comment #6. Several agencies working in the Cosumnes Subbasin are also GSAs in the South American Subbasin, including: Omochumne-Hartnell Water District, Sacramento County, and Sloughhouse Resource Conservation District. These members applied their experience and expertise engaging stakeholders in the South American Subbasin to the Cosumnes Subbasin. The South American Subbasin C&E Plan will be reviewed to ensure the Cosumnes C&E Plan includes all applicable outreach methods. An updated C&E Plan addressing GSP *implementation* is under development. Suggestions for additional and/or innovative outreach methods to better engage stakeholders in the Cosumnes are welcome at any time and can be incorporated into future updates to C&E Plan as it is considered a living document.	No change to the GSP.

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76	10/20/21	Teresa Flewellyn	Implementation 19.1.4	I feel the Govenerning Boards within Cosumnes Subbasin have misled the stakeholders by using the "scare tactic" of a State well fee as a means to discourage the stakeholders from comparing the option of involvement by the State or Local government authorities in the development of our Plan. I don't understand how having the exisiting water resource departments at Local Gov't level handling the initiating of our Subbasins Plan would have been disadvantageous to the Cosumnes Subbasin stakeholders.	SGMA supports local control of groundwater resources by requiring the creation of local agencies, known as GSAs, to develop plans for groundwater sustainability. Seven local land use and/or water agencies within the Basin formed GSAs pursuant to SGMA in 2017 in order to initiate and guide GSP development for the Basin. SGMA requires the adoption of local plans that will bring groundwater supply and demand into balance. If the local GSAs are unable to implement a Plan that meets state requirements, the SWRCB has the authority to step in and develop a plan to manage the subbasin. If this occurs, the State could charge up to $300/well/year for all groundwater extractors and up to $55/acre-foot of water pumped. The Basin GSAs are working hard to avoid State Intervention and these high costs. Making sure the public is aware of all aspects of SGMA – including the potential for state intervention – is essential to stakeholders fully understanding and critiquing the GSAs implementation strategy. More information on the SWRCB fees for probationary Subbasins can be found here: https://www.waterboards.ca.gov/water_issues/programs/sgma/reporting_and_fees.html	No change to the GSP.

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77	10/20/21	Teresa Flewellyn	Implementation 19.1.4	Looking at the quality of the Plan developed by Sacramento County for the South American Subbasin, utilizing the already existing government resources availalbe to them, has allowed Sacramento County to put forth a fully comprehensive plan for those stakeholders, one that includes a proposed "Trust Fund" of $100,000.00 for those well owners who are negatively affected by the drop in groundwater levels.	Agencies supporting the development of GSPs in the South American Subbasin and the Cosumnes Subbasin have varying levels of financial resources and fiscal responsibilities. The Cosumnes Subbasin GSAs actively sought and secured state grant and proposition funding to help cover the costs of GSP development and will continue to seek grants and partners to cover a portion of the costs for GSP implementation. This includes providing compensation to growers willing to take land temporarily out of production (voluntary fallowing). Individual GSAs may consider the need for additional studies and possible measures (depending on need, funding availability and landowner support) as part of GSP implementation if negative effects to the wells occur because of SGMA-related groundwater management activities. Moving forward, a funding plan that spreads costs for PMAs and overall GSP implementation among users without creating a heavy burden for any one party is under development and will be shared in a public workshop and local agency hearings in early 2022. The GSAs are in the process of developing a Citizens Advisory Committee for the public to provide advice on how to develop a fee program that is reasonable and fair. Interested parties are encouraged to attend. Additionally, the South American Subbasin GSP has been developed by 5 GSAs (Sacramento Central Groundwater Authority (SCGA), North Delta GSA, and 3 GSAs that also serve as GSAs in the Cosumnes Subbasin: County of Sacramento, Omochumne-Hartnell Water District, and Sloughhouse Resource Conservation District). As mentioned above, the GSAs in the South American Subbasin, namely SCGA who is serving as the administrative agency, have significantly different capacity to implement projects. Finally, at this time, the South American Subbasin GSP does not include funding for a well protection plan, but rather indicates that more information is needed in this area. This is a very similar approach being taken in the Cosumnes Subbasin.	No change to the GSP.
78	10/20/21	Teresa Flewellyn	Implementation 19.1.4	Sacramento County to put forth a fully comprehensive plan for those stakeholders, one that includes a proposed "Trust Fund" of $100,000.00 for those well owners who are negatively affected by the drop in groundwater levels.	See response to comment #77	No change to the GSP.

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79	10/20/21	Teresa Flewellyn	Implementation 19.1.4	Cosumnes Subbasin has spent tens of thousands of dollars for consultants and purchased data that has, to date, not provided the level of service, transparancy, and engagement that Sacramento County has shown to their stakeholders in the South American Subbasin.	The public agencies and consultants supporting the development of the GSP work for the people of our community. The GSAs efforts will ensure that groundwater in the Basin continues to be a long-term resource for beneficial users and uses including urban, domestic, agricultural, industrial, environmental and others. This includes a robust stakeholder engagement effort, and efforts to ensure public transparency. More than 10 public meetings/workshops have been held since 2017 throughout the course of GSP development. A listing of past meetings and materials can be found on the website here: https://cosumnes.waterforum.org/meetings. Furthermore a library of SGMA and Cosumnes-specific informational resources is available on the website, interested parties are able to sign up for the mailing list, and request a briefing for their organization. Please see section 5.5 Notice and Communication in the GSP and review the Cosumnes C&E Plan (contained in Appendix D of the GSP) for additional detail. See response to comment #77.	No change to the GSP.
80	10/20/21	San Joaquin County Department of Public Works	PMA 18.2	The GSP discusses use of “excess” winter flows, specifically the option of diverting excess American River winter flood water from the Folsom Reservoir via the Folsom South Canal (“FSC”) for conjunctive use, recharge, water banking and sales within the Basin. The GSP anticipates, even relies on, the opportunity to reduce a deficit by using floodwater from the American River for groundwater recharge in the Basin. The County wishes to point out, however, that it proposed this same concept in its pending American River water rights application (“Application A029657”). The County filed Application A029657 with the State Water Resources Control Board (“SWRCB”) in 1990. Application A029657 originally proposed to divert above-normal and wet year American River flows down the FSC to the County place-of-use for purposes of groundwater recharge and storage. This is the same physical facility and operational concept that is now part of a PMA #2 Sacramento Areas Flood Control Agency (SAFCA) Flood-MAR project included in the GSP. Amendments made to Application A029657 moved the point of diversion for American River water to the Freeport Project point of diversion to further protect lower American River fishery resources, operational constraints at Folsom Dam and FSC. Essentially, the County was mandated to move the point of diversion in Application A029657 to the Freeport Project. This proposal in Application A029657 was met with vigorous protests by, among others, the Sacramento County Water Agency (“SCWA”). In that proceeding, the County provided a Water Availability Analysis, which it later revised in response to SCWA’s comments. Here, the GSP provides neither a water availability analysis nor a more general analysis of water available for A029657, the GSP appears to promote an infeasible plan.	Some PMAs identified in the GSP are conceptual and require further exploration and pilot studies prior to implementation. The PMAs that rely on uncertain surface water supplies are subject to legal requirements beyond the scope of this GSP and will be evaluated as part of GSP implementation. This GSP does not take a position on Application A029657 and any expressed position of an individual GSAs concerning A029657 is within the right of that governing entity.	No change to the GSP.

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81	10/20/21	San Joaquin County Department of Public Works	PMA 18.2.1	SCWA is a partner in the GSP. However, the GSP depends on the very use of wet-year flood waters that SCWA claims are unavailable in Application A029657. According to SCWA's own letters, there is no water from the American River available for recharge. Tellingly, the GSP hints at this uncertainty throughout the document. As the County has indicated throughout proceedings in Application A029657, if there is a viable option to use American River flood flows diverted via FSC, the County is interested in joining such efforts for the benefit of the overdrafted groundwater basins. The County has approached SCWA on this very issue, yet SCWA opposes the County's efforts to use the water in the same type of project under the Sustainable Groundwater Management Act. These concerns were explained to the San Joaquin Area Flood Control Agency, the agency promoting the Cosumnes project concept, and the SCWA representative in verbal communications, as well as to the Cosumnes Subbasin SGMA Working Group at one of its meetings.	See response to comment #80.	No change to the GSP.
82	10/20/21	San Joaquin County Department of Public Works	PMA 18.2.1	The GSP states it will address potentially applicable permitting and regulatory requirements or constraints or describe the sources of water for the PMA #2 SAFCA Flood-MAR project. But it does not appear that the analysis follows the GSP's "Guiding Principal: Groundwater Augmentation from Wet Year Supplies: Preference for supply sources available during wet years." The GSP describes "excess flood flows" but provides no substantive documentation that such excess flood flows are available consistent with water rights and entitlements, nor any analysis of hydrologic diversions and water available for recharge. The County knows first-hand that challenges exist in securing permits and agreements for water sales and deliveries by way of the FSC (PMA #2 SAFCA Flood-MAR and PMA #3 OHWD Cosumnes River Flow Augmentation). We would like further information on the water rights and detailed operations for PMA #3. Both projects seek to use FSC and American River water, and potentially change Folsom Reservoir operations.	See response to comment #80.	No change to the GSP.
83	10/20/21	San Joaquin County Department of Public Works	PMA 18.2.1	We would like to review any current evidence supporting the proposed PMA #2 and demonstrating the project feasibility and cost effectiveness, and also explaining how the proposal is any different from that which the County has proposed since filing Application A029657 in 1990. Specifically: Analysis documenting there is water available for recharge and any water availability analysis consistent with SWRCB requirements. This later information needs to evaluate any impacts to existing water rights, fishery, aquatic or riparian resources. Clear description of the operational concepts that document proposed use of FSC and any analysis prepared for procurement of a contract for use with the U.S. Bureau of Reclamation. Documentation of the water rights that are proposed for diversion Without such information, PMA #4 appears to be infeasible when similar criteria to those applied to Application A029657 are applied to the evaluation of this alternative. We do not believe that the Working Groups and GSAs were fully informed regarding the feasibility, costs, impacts, constraints, and benefits of the GSP. Your GSAs must be realistic and informed regarding the constraints you may experience. They must also be aware of the opportunities that may be available through inter-regional partnerships to further advance the concept and document feasibility of the use of FSC and diversion of wet-year flows.	See response to comment #80.	No change to the GSP.

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84	10/20/21	Delores Gregorio	PMA 18.2.3	As a Landowner, I believe it is inappropriate to discuss the sale of water when you are asking landowners to fallow and conserve water. I understand the purpose as "revenue generating" however, the plan should read clearly that water will only on be sold once the basins are balanced.	See response to comment #7.	No change to the GSP.
85	10/20/21	Delores Gregorio	PMA 18.2.4	I am concerned about the lack of projects in our Consumnes Basin versus the South American Basin. It is my understanding that without any projects we will not be able to benefit from available grant money because "no projects were identified" during our first plan. If this is true, we will have to wait until our next plan update 5 years from now in order to be eligible for any grant money. Why would we not have created projects? Could we still identify projects prior to submitting this plan? It is my understanding that all funds, approximately 4 million dollars of grant money have been spent on the development of the GSP. Unlike the Consumnes Basin, some Basins were able develop projects or provide for feasibility studies for future projects which enables them to avail themselves of potential grant money. Because we have no projects, it is my understanding we are not eligible for available grants. If we have "no projects" what will staff be responsible for implementing? I understanding that "water sales" will generate revenue to implement projects. However, if you cannot sell water until the basins are balanced when will we generate revenue to pay for water conservation projects which will allow us to apply for grant money? This is a circular argument. Is there a reason why we can't put several projects in this plan so that we can be eligible for potential grants which may be available. Why could we not reach out to NRCS and FSA and see if there are any current conservation projects in our basin which we could add to our plan and use to potentially build upon in the future.	There are multiple PMAs proposed for the Basin (see Section 18.2 "*List of Projects and Management Actions*") that will be implemented in the first 5 years. While some of the projects are located in the South American Subbasin, they provide direct benefits to the Cosumnes Basin. Failing to recognize these benefits would produce inaccurate information for the Cosumnes Subbasin water budget. See response to comment #3. Overall, the major aquifer recharge project (PMA #2 "Sacramento Area Flood Control Agency (SAFCA) Flood MAR) is complex and requires negotiations between local, regional, state, and federal agencies, and have the potential to provide major benefits to the Cosumnes Subbasin. See response to comment #5 regarding allocation of grant funds to develop GSP. See response to comment #7 regarding sale of fallowed water. Conservation as a potential PMA for the GSP is scheduled for evaluation in years 2 and 3 of plan implementation; $310,000 has been set aside to conduct this evaluation.	See revision to the GSP in response to comment #2.
86	10/20/21	Delores Gregorio	Implementation 19.2.2	I understand it is a great undertaking to identify irrigated acreage throughout our subbasin. Is there a reason why we have not partnered with other Agencies in order to minimize costs. For example the Farm Service Agency has county aerial photos and slides (slides are taken annually). They also have a planimeter used to measure crop acreage. Why are we not partnering with this Agency rather than being duplicative? FSA has current ownership records, irrigation records and it works wtih NRCS to implement Irrigation Conservation Programs. Why are we not working with this agency to assist us in developing conservation programs to benefit our Subbasin? We can stretch our funds and minimize costs to landowners by working together rather than individually.	Throughout the development of the Cosumnes Subbasin GSP, the GSAs have relied on the best available data. Engaging with organizations that have similar objectives as the Basin continues to be a priority. The Cosumnes GSAs previously have not had the capacity or plans to implement basin wide programs and are still in the early stages of program development. The GSAs plan to continue to solicit support from other public, private, non-profit, and tribal entities.	No change to the GSP.

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87	10/20/21	Delores Gregorio	Implementation 19.1.4	As a stakeholder, I should receive a timely notification regarding meetings and accurate updates regarding decisions being made. I believe decisions regarding "water" should be limited to stakeholders in the basin.	To be compliant with SGMA requirements and to ensure public engagement and transparency, the GSAs worked to develop a framework for accurate and timely information sharing, including meeting notifications. Notifications are shared to the interested parties email listserv in advance. Additionally, upcoming meetings are listed on the project webpage here: https://cosumnes.waterforum.org/meetings. In some cases, other means of notification are used such as post-card mailers, flyer distribution, and announcements at external organizations' gatherings. The Boards of Directors for the seven local GSAs within the Cosumnes Subbasin will ultimately decide whether to adopt the GSP. Additionally, the formation of a Citizens' Advisory Committee to guide GSP implementation is anticipated. This will be a forum to get direct feedback from constituents on how we can effectively engage with other stakeholders. Please see section 5.5 Notice and Communication in the GSP, and review the Cosumnes C&E Plan (contained in Appendix D of the GSP) for additional detail.	No change to the GSP.

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88	10/20/21	Tish Espinosa	Plan Area/ Implementation 5.5 & 19.1.4	SGMA requires a significant element of stakeholder outreach to ensure that beneficial uses and users of groundwater are given the opportunity to provide input into GSP development and implementation process." It is of my opinion & the opinion of other stakeholders in the basin that outreach was limited to irrigators and not all ground water well dependent land owners that this 20 year plan will affect. All committees & their members appear to be a selective chosen group of individuals & not outreached to the actual stakeholders in the basin.	In January 2019, the GSAs sent direct mailings of a Basin Fact Sheet and a Stakeholder Survey to all landowners in the Basin (mailing list included: 2,772 addresses in SRCD GSA, >7,000 addresses in City of Galt GSA, 2,055 addresses in GID GSA, and 33 addresses in Clay Water District GSA). The Fact Sheet summarized SGMA mandates, provided a map of the GSA boundaries, provided contact information for each GSA, and described how stakeholders can acquire additional information. The Stakeholder Survey included questions that helped the GSAs gain additional knowledge on Basin stakeholders. Additionally, the GSP planning process employed a variety of outreach methods that make public participation easy and accessible to all beneficial uses and users of groundwater, including: ▪ Holders of overlying groundwater rights, including Agricultural users and domestic well owners ▪ Municipal well operators ▪ Public water systems ▪ Local land use planning agencies ▪ Environmental users of groundwater ▪ Surface water users, if there is a hydrologic connection between surface and groundwater bodies ▪ The federal government, including, but not limited to, the military and managers of federal lands ▪ California Native American tribes ▪ Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems ▪ Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency ▪ Neighboring GSAs The GSAs and consultants strive to maintain the most accurate lists of contact information for interested parties, landowners, well users and other beneficial users in the Basin. More current information or any change to contact information is gratefully accepted at any time, and can be shared with Cosumnes Subbasin Public Information Officer, Austin Miller at austin@sloughhousercd.org. Please see section 5.5 Notice and Communication in the GSP, and review the Cosumnes C&E Plan (contained in Appendix D of the GSP) for additional detail.	No change to the GSP.
89	10/20/21	Tish Espinosa	PMA 18.2.3	If the Sustainability Goal is to ensure that groundwater in the Basin continues to be a long-term resource for the beneficial users, how can you even suggest land fallowing as a project. Irrigators in the basin are beneficial user of the ground water and to ask them to fallow land so you can sell the water or have money available fo buy water for water banking is not going to help the basin as a whole achieve a sustainable yield.	See response to comment #7. Without the planned aquifer recharge projects, including the sale of water to generate revenue to bring water into the Basin, the GSP will have to rely on other projects like expanded land fallowing and allocation of groundwater use as described in Section 18.2.*4 Other PMAs*.	No change to the GSP.

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90	10/20/21	Tish Espinosa	Implementation 19.2	With nothing to implement what are we paying for? Seems like there are lots of admin costs that keep going up every year with no projects to implement. We cannot apply for grant money with no projects. Why has all the efforts and feasibility studies been conducted in the South American Basin Nothing to implement except land fallowing. For an irrigator (Beneficial user) that is an undesirable result.	The initial year funding program developed by the Cosumnes Subbasin GSAs is primarily dedicated to operational costs to meet regulatory requirements (ex: reporting, monitoring, etc.) from SGMA. Our operational costs have an annual escalator to cover inflation but are otherwise anticipated to remain the same. Test projects to determine the practicality of our PMAs is included in our projected operational costs. See also response to comment #86.	See planned GSP modifications described for comment #2.
91	10/20/21	Tish Espinosa	PMA/ Implementation 18 & 19.2	I would like to see a breakdown by grants & projects of what time and projects have been brought forth and discussed in the basin. Claim a lot of coordination efforts for a plan with no substance!.	PMAs are discussed in Section 18 of the GSP, including the goals and objectives of the PMAs, including the guiding principles used to prioritize the PMAs, the relevant Sustainability Indicators they address, and the expected benefits from their implementation. A list of specific PMAs is presented and summarized in Table PMA-1 (PMA Information Forms are included in Appendix O) and groups the PMAs by benefit category and type. A PMA subgroup was formed in February 2021 by the Working Group to discuss and explore the development of PMAs for subsequent consideration by the Working Group. Past meeting materials are available on the project webpage here: https://cosumnes.waterforum.org/meetings Materials discussing the Fee Program and Funding for GSP implementation can be found on the project webpage here: https://cosumnes.waterforum.org/funding Additionally, a final report on the Proposition 1 and Proposition 68 that the Subbasin was awarded to develop the Cosumnes GSP will be available in 2022.	Updates to Table PI-1
92	10/20/21	Tish Espinosa	Plan Area 5.1.3	I do not believe we have native lands in this area anymore The dry-land cattle ground is non-native annual rangeland with associated seasonal wetland habitats. what are you trying to say here? "Approximately two-thirds of the Basin is covered by native or riparian vegetation and one-quarter by irrigated agriculture. Is it non-native annual range land and riparian habitats?? They are two different types of habitats. The most abundant agricultural land uses are vineyards, orchards, irrigated pasture / hay, and dry-land hay or small grains. Are the Native American tribal communities included in this plan or are their lands Sovereign nations and exempt from the GSP? Do they have irrigated lands? Are they an Ag-Res community or a Rancheria? What are the other interests the other tribes have in this basin??	DWR's land use categories emphasize agricultural land, and the "Native Vegetation" category refers to undeveloped lands. Land use in the Basin is based on 2015 DWR land use survey within Sacramento County, 2014 LandIQ for land within Amador County and modifications made based on stakeholder input and aerial imagery. Based on these data, 132,400 acres are native vegetation (undeveloped) and 3,440 acres are mapped as Riparian Vegetation. Land use for each GSA area is shown in Figure PA-2 through Figure PA-8. California Native American Tribal lands, as shown on Figure PA-9, cover approximately 135 acres of land within the Basin. Tribes within the Basin include the Wilton Rancheria, Buena Vista Rancheria, and Ione Band of Miwoks. Though the Ione Band of Miwoks have no tract of land considered a rancheria, they are a federally recognized tribe with tribal trust lands (see County of Amador, California v Ione band of Miwok Indians). Under SGMA these tribes are considered a beneficial user of groundwater. Tribal lands are non-irrigated and include a mix of urban residential, native vegetation, and idle land. Interests of the tribes within the Basin are further described in Section 5.1.3.	Add clarifying text as needed to GSP sections and tables.

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93	10/20/21	Tish Espinosa	Plan Area/ Implementation 5.5 & 19.1.4	I believe most stakeholders / well users have had a disservice here and have not been properly notified about development of the GSP. The State Mandate requires stakeholders of the GSP be notified. It appears the current mailing list used by the Consumes Sub-basin and/or their consultants is antiquated and outdated, It was brought to their attention and they continue to use the same address set. Who was responsible for the communications & engagement plan that did not adequately reach-out to all stakeholders in the basin. The mail list appears to have been developed or purchased prior to 2018 and is not effective at reaching out to all stakeholders of the basin. I know this for a fact because I have 2 parcels in the basin. Both in GID but one has a Galt address & 1 a Herald address. In 2018 the name on my my trust changed, therefore my tax bills were issued in the name of the new trust however the limited post cards I have received are in the name of the old trust that was changed by March of 2018 (Old outdated data set of addresses). Since I have 2 parcels I should also be getting 2 post cards but I only received the post card for the parcel that was assumed to be irrigated and not my non-irrigated parcel, (not a complete data set of all parcels in the basin). My tax bills since 2018 have been in the name of my new trust but this 1 post card I received was addressed wrong & I should be receiving 2 postcards, one for each parcel. Bad outreach! Meetings held only during the day do prevent working peoples or public involvement. There was no engagement of the stakeholders in the basin to actively participate in the decision making process of the GSP is far from sufficient. No input was sought from the beneficial groundwater users, weather agricultural or Ag-Res any time during the GSP development It was always just a core group of hand picked people who believe they represent all stakeholders in the basin. The public or stakeholders in the basin need to know about this 20 year Plan. Only irrigators were notified not all parcel owners on a well!! Management companies who have a 30 year lease on properties with absentee land owners have no clue what is in the plan. Outreach was sub par.	The GSAs and consultants strive to maintain the most accurate lists of contact information for interested parties, landowners, well users and other beneficial users in the subbasin. More current information or any change to contact information is gratefully accepted at any time, and can be shared with Public Information Officer, Austin Miller at Austin@SloughhouseRCD.org. Interested parties can sign up at any time receive notifications via the project website here: https://cosumnes.waterforum.org/contact While Working Group meetings were typically held during working hours as these representatives are employees of public agencies, Public Workshops were held at a variety of times over the course of GSP development to encourage maximum participation by the public, including evening and lunch-hour virtual and in-person meetings. Many GSA representatives attended each Public Workshop to engage with and hear directly from public stakeholders. Interested parties unable to attend Working Group, Advisory Group, Technical and/or Public Meetings can access archived meeting materials at any point on the project webpage here: https://cosumnes.waterforum.org/meetings Additionally, the formation of a Citizens' Advisory Committee to guide GSP implementation is anticipated. This will be a forum to get direct feedback from constituents on how we can effectively engage with other stakeholders. Please see section 5.5 Notice and Communication in the GSP, and review the Cosumnes C&E Plan (contained in Appendix D of the GSP) for additional detail.	No change to the GSP.
94	10/20/21	Tish Espinosa	Water Budget 10. 2	In your model are you double dipping with leakage from surface water & peculation of surface water, question on how you get evapotransportation from a ground water basin? evapotransporation is from plants & for the plants to transpire the water was already been extracted from the ground	The model accounts for seepage from streamflow and percolation from precipitation and applied water as separate water budget components. A breakdown of surface water inflows and outflows are shown on Figure WB-4 and Table WB-3 while a breakdown of total groundwater inflows and outflows are reported in Figure WB-7 and Table WB-5. ET is a component of the surface water system and is thus incorporated into the groundwater model through surface water processes. When groundwater is extracted for use as irrigation water, the ET represents the amount of groundwater that is consumed (lost from the basin) while the remaining water percolates through the soil and returns to the groundwater system.	No change to the GSP.

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95	10/20/21	Tish Espinosa	GWC 9.1.2	There is a claim that observed declines are reported in the western portion of the Basin (Basin Plain) This is where the majority of the irrigated acres are & where there is a higher concentration of Ag-Res parcels are located. In the Basin Foothills subarea, trend directions are both upward and downward suggesting that overall groundwater levels in that subarea have remained stable. Really!! Are there proper groundwater monitoring wells in the foothill areas or is this trend what the model said? In the basin Plain there is a measurable decline in the aquifer based on well data but in the Basin Foothills, the average annual storage decrease is assumed (assumed means there is not real data to go off of?) to be small because water levels have been relatively stable. According to what data? In the Basin Plain it appears that you use real numbers in the models but in the Basin foothills it is assumed the levels are the same, Why? Appears that there should also be not as much water seeping into the aquifer from the foothills due to the rocky restrictive layers.	The trends discussed in Section 9.1.2. and shown on Figure GWC-5 and Figure GWC-6 are based on historical groundwater levels measured in wells (not modeled data).	No change to the GSP.
96	10/20/21	Tish Espinosa	Water Budget 10.1.1	Arcohe school here in herald has detectable arsenic in their wells. They dump hundreds to thousands of gallons of well water monthly. There has been no outreach to utilize or monitor or measure the ground waster as it peculates back into the aquifer. well water is being being dumped in the septic system or the surround fields. This wasted water can be utilized and developed into a ground water recharge project.	The 2 Archoe wells are included in the DMS (East Campus and Main wells). The most recent results (12/13/2018) for arsenic in samples from these wells were both 2 ug/L (i.e., below the MCL). There are 2 Arcohe wells in the model (Main campus and East Campus). The pumping rates are 43 AFY (Main Campus) and 37 AFY (East Campus). In the model that rate is split into constant monthly values (3.58 AF and 3.08 AF). The annual rates represent indoor and outdoor use, but no information exists on “dumping”. Pumped groundwater that percolates back into the aquifer is not recharge from new water but represents a return of the extracted water back to the Basin.	No change to the GSP.
97	10/20/21	Tish Espinosa	GWC 9.1.1	Since Ione is up gradient from Galt/Herald, the cone of depression is pulling water towards the west. Any projects in Amador County should be studied as to where the Plume or water flows.	Groundwater flow has been, and will continue to be, studied in the Basin Foothills as described in Section 9.1.1. and shown on Figure GWC-3. In the Basin Foothills, most of the vertical gradients are negative indicating an upward gradient. Based on the best available data, there is not evidence that the cone of depression is causing significant lowering of groundwater in the Basin Foothills. As stated in Section 9.1.1., “most of the vertical gradients are upward in the eastern portion of the Basin corresponding to the Basin Foothills subarea (4 of 5 pairs), where extractions from the shallower wells may induce upward flow from deeper portions of the formations that comprise the Principal Aquifer (for example, the Valley Springs and Ione Formations). Alternatively, groundwater in the Valley Springs and Ione Formations originates from higher elevations, and combined with confined or semi-confined aquifer conditions, may create the higher groundwater heads at depths in the Basin Foothills subarea.” Monitoring as required under SGMA in the Basin Foothills RMW-WLs will indicate whether groundwater conditions are changing.	No change to the GSP.
98	10/20/21	Tish Espinosa	GWC 9.4.4	Do we not have any planned projects in the basin due to the LUST sites.	At this time there are no planned projects in the Basin for the Leaking Underground Storage Tank (LUST) sites, and these sites are under regulatory oversight by the Central Valley Regional Water Quality Control Board.	No change to the GSP.

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99	10/20/21	Tish Espinosa	GWC 9.3	With all the talk about twin tunnels or one big tunnel seawater intrusion should be mentioned. It will happen & be an issue with what ever tunnel they keep pushing to send more of our water down south. Seawater Intrusion should be at least mentioned since this is a 5 year plan and the twin tunnels or a single tunnel could potentially happen in the delta to suck water down south. this would cause seawater intrusion if we did not have enough surface water to push it out.	Section 9.3 "Seawater Intrusion" explains the Delta is influenced by the Pacific Ocean, and present-day management methods prevent seawater from reaching far into the Delta minimizing the risk of seawater intrusion in the Subbasin. DWR is preparing the Draft EIR on the proposed Delta Tunnels project scheduled for completion in 2022. The EIR will evaluate the risk of seawater intrusion if tunnels were constructed and operated. Based on the findings of the EIR, and a decision in the future to construct the project, the need for monitoring and SMCs for seawater intrusion can be considered as part of the 5-year Assessments.	No change to the GSP.
100	10/20/21	Tish Espinosa	GWC/ SMC/ Monitoring Network/ Implementation /Appendix I 9.1.1, 9.6, 9.7, 14.6, 17 & 19.1.1	Who is verifying the Groundwater Dependent Ecosystems? Perennial wetlands dependent on perched groundwater. Basin foothills have more seasonal wetlands & vernal pools.	See responses to comments #21, #50 and #56.	No change to the GSP.
101	10/20/21	Tish Espinosa	Water Budget/ PMA 10.2.3 & 18	How is it determined we get 3% inflow into the basin but yet you are claiming we will be benefiting a lot more than the 3% with the projects that are planned in the South American Basin?	See response to comment #73.	No change to the GSP.
102	10/20/21	Tish Espinosa	PMA/ Implementation 18.2.3 & 19.2	Are the small Ag-Res irrigated parcels who paid an irrigator fee lumped in with the real Irrigated agricultural lands of 75% of the outflows to make the number look larger & then are they double counted in the only 10% use for domestic, Ag-Res, etc	See response to comment #65.	No change to the GSP.
103	10/20/21	Tish Espinosa	Agency Information/ Water Budget 3.2.1 & 10.2.3	Aquaculture is agriculture also. It does help with ground water recharge due to all the ponds but they also utilize a lot of water refilling the ponds with losses due to seepage & evaporation.	Aquaculture is considered an industrial water use in the model, not agricultural. As stated in Section 3.2.1, "Aquaculture practices require pumping groundwater year-round; the water is recycled through multiple ponds and tanks before being discharged into a recharge pond or used by nearby farmers to irrigate their crops during irrigation season". Current and projected pumpage, and subsequently recharge and irrigation associated with, for aquaculture is considered a data gap. Future field verification of these operations would improve the reliability of the model-calculated water budget.	No change to the GSP.
104	10/20/21	Tish Espinosa	PMA/ Implementation 18.2.3 & 19.1.4	There has been limited to no active engagement of affected stakeholders by this 20 year plan We need to Achieve and maintain sustainability of our aquifer for our own use before there is any talk of selling water. Beneficial users of the aquifer below the Cosumnes subbasin are dependent on this plan increasing ground water storage for our sustainable future. Outreach to the local landowners is sub-par and the information being presented is far from transparent.	Please see response to comment #4.	No change to the GSP.
105	10/20/21	Tish Espinosa	PMA/ Implementation 18.2.3, 19.1.4 & 19.2	Fees collected this year are still not going to help with projects and with out any identified projects in our basin will never reach a sustainable groundwater balance. Fee or tax collected from the irrigators is not for projects but for more admin. With no funding oppertunities available since there are no projects listed our medium priority basin will be high priority if you are allowed to sell the water we need to sustain our rural lifestyles.	Section 18.2 "*List of Projects and Management Actions*." The fees collected from irrigators will be used to help cover administrative costs as well as pay farmers to voluntarily fallow land as PMA #5 "Volunteer Land Fallowing."	No change to the GSP.
106	10/20/21	Tish Espinosa	Plan Area 5.5.1	Landowners and irrigators in the basin are the beneficial users!	The Sustainability Goal is described in Section 2 and identifies the beneficial users and uses of groundwater as "*urban, domestic, agricultural, industrial, environmental and others.*"	No change to the GSP.

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107	10/20/21	Tish Espinosa	Monitoring Network 17.1.1 & 17.1.6	In the GSP there appears to be a lack of monitoring wells throughout the center of the basin, from Amador County Line through Herald & Galt. This is a large dry area of no monitoring. Majority of the current monitoring activities are along the Cosumnes River. the newest monitoring site just added is at the far west end of our Subbasin, within close distance to the Cosumnes River and identified "wetlands". Without true,and fair, montoring throughout the Entire Subbasin, it is easy to show an "excess of water" from test results in "normal" rainfall years when the natural waterways and "wetlands" flow, or hold water year round. Having the majority of the monitoring sites near a year-round waterway may not Adequately reflect the true conditions throughtout the entire Subbasin, especially in the Cone of Depression is in the Herald and Galt areas. Flawed monitoring data could then be used as the basis for a decision to "sell excess water", that in fact, may not actually exist throughout the entire Subbasin. Time spent investigating the addition of active, and operational, monitoring sites dispersed fairly throughout the Subbasin should be a first priority in the current Plan so All Stakeholder water rights are acknowledged	See response to comment #66.	No change to the GSP.
108	10/20/21	Tish Espinosa	PMA 10.2	It is very concerning that there is a lack of Projects identified in our basin. Water banking & sale of water and land fallowing are the only Management Action you could think of. after 5 years of planning. Implementation of PMA's are required to achieve sustainability within the basin. 6 PMA's identified in the GSP. 3 of them are not within our basin but we are depending on them to recharge our aquifer. How when it is stated we only get 3 % seepage from other basins. Item 4 Galt Wastewater Recycle project is a must for the City of Galt to keep growing. Options 1-3 are not within the Cosumnes Subbasins boundaries, and it is extremely concerning that these projects are being represented to balance our basin. Stakeholders will be asked to fund these projects and any future projects with taxes/bonds. Stakeholder investments should be used for projects within benefits in the Cosumnes Subbasin. This Basin needs to work towards being self-sustainable and not dependent on what the other basins are doing. Harvest Water Project does nothing for us in Herald and in the east part of the county. This project is on the north side of the Cosumnes River way outside of our cone of depression. Fallowing of Land is not a project, with any identifiable benefits. This is not a beneficial project for the beneficial user an irrigator. The cropped land value in the area will not be taken out of production for your fallow program. Piss poor example of a project. The idea of Fallowing as a project targets only small flood irrigated fields and will do nothing on the large scale with any measurable benefits to the aquifer. Developing projects will take years & we are now 5 years behind since we have no projects identified in the plan to allow us to seek grant funding opportunities.	The City of Galt Recycled Water project (PMA #4) is not required for future development. The project applies secondary treated wastewater (recycled water) to adjacent farmlands for summer irrigation and winter percolation. The project is an expansion of their existing project, and therefore relatively straightforward to implement. Other projects, such as the Sacrament Area Flood Control Agency (SAFCA) Flood-MAR project (PMA #2) are more involving negotiations with local, regional, state, and federal agencies in addition to local farmers and ranchers. These projects will take considerably more time to implement than the Galt project. Funds have been allocated to develop these projects and explore the other projects described in Section 18.2.4 *Other PMAs*, such as conservation efforts. All of these projects will be located in the Basin. To have an accurate accounting of groundwater movement across Basin boundaries, our water budget, the effects of other project outside the Basin must be considered. Ignoring these interactions will results in an erroneous water budget for the Basin. The GSAs plan to apply for grant funding to support project feasibility studies, which must be conducted before scaling them up for full implementation. See also responses to comments #3 and #7.	See planned GSP modifications described for comment #2.

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109	10/20/21	Tish Espinosa	PMA/ Implementation 18.2.3	Nobody wants to pay more in taxes/fees/bonds, but to put in our own projects & not be dependent on others who fund the projects & then we are obligated to sell the water. realistic and reasonable projects with an immediate benefit to the basin should be considered before we ever consider selling water to pay for our projects Water banking is not a guarantee but a gamble with our money & water. Makes no sense?? Spending money to fallow irrigated land. Groundwater Banking is not a sure guarantee. Spending money to buy water bank it in a basin which flows into other basins. Then sell 90% of what stored & we get 10% but we lose 4% plus to other basins. We are close to break even & really don't accurately know the water is still banked in the basin. During dry years we will have had several consecutive dry years in a row. That is when we need our ground water & not export it. Our wells will be dropping for the benefit of someone else. Makes no sense.	See Section 10.4 "*Projected Water Budget,*" Table WB-10 "*Summary of Projected Groundwater Budget Estimates,*" and Table WB-11 "*Summary of Projected Groundwater Budget Estimates with Variable Projects and Management Actions (PMAs)*" that report the model-calculated Basin water balance conditions with and without the proposed PMAs. Results indicate that without the PMAs the Basin loses on average 1,700 AFY of groundwater storage, whereas with the PMAs the Basin storage increases on average by 7,100 AFY (a net increase of almost 9,000 AFY (Table WB-10)). Most of this storage benefit is from the SAFCA Flood MAR project (PMA 2; Table WB-11).	No change to the GSP.
110	10/20/21	Tish Espinosa	PMA/ Implementation 18.2 & 19.1.4	Has anyone reached to the fire chief in Herald? They are already having problems with the sprinkler systems in houses not having enough water to put the fire out. If you sell our water & our wells drop can you guarantee there will be water available to put out a fire. Would be nice to have the fire chiefs perspective. They have already caught people steeling water from the fire house & Herald park Small but good projects on agricultural lands are needed but no outreach to them has been done to this point.	Fire Chief James Hendricks at the Herald Fire Station has been engaged throughout the development of the Cosumnes Subbasin GSP. Chief Hendricks has attended several public meetings of the Working Group and GSAs. Our PMA #6 Groundwater Baking and Sale will not negatively impact our groundwater levels and will not impede emergency services using groundwater. Only water that was added to our Subbasin (through fallowing or recharge/banking) would be removed. Furthermore, a leave behind policy will be established to ensure we won't see a negative impact on our groundwater conditions. See response to comment #4 regarding outreach efforts.	No change to the GSP.
111	10/20/21	Tish Espinosa	Water Budget/ PMA 10.2.3 & 18	Please explain How projects in other basins can generate this amount of water for our basin when it is stated earlier we only get 3% inflow from other basins	See response to comments #3 and #73.	No change to the GSP.
112	10/20/21	Jay Schneider	Topic not a component of GSP	Hello My conscious would not allow me to fail to comment, here are my unfiltered comments on the Draft GSP. Very quickly drafted. It's absolutely accurate, abet not stylish or sophisticated. These comments are my personal opinion, ….. [through page 3] .... and County bureaucracy.	Comment noted.	No change to the GSP.
113	10/20/21	Jay Schneider	Various	Comment Summary: Best Available Science: The document states the "regulations emphasize the use of best available science" /1 and the document discusses that issue during the discussions of Basin Setting (p.78) and Hydrogeologic conceptual model (p 82) current groundwater conditions (p 104) and several other instances. Yet, instead of using best available science, it was ignored and throughout the process EKI has said they only put information approved by political GSA's, as such the model is completely incorrect and analysis of PMA's (projects) will be be very inaccurate and unreliable even for estimates, and dangerous. The biggest failures that make the Draft GSP completely unworthy are:	Comment noted.	No change to the GSP.

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114	10/20/21	Jay Schneider	HCM 8.1	The extensive Clay Layer under the cone of depression was dispositively identified in Geoconsultants Dec. 2020 “Hydrogeologic Study Using Electrotelluric Transects, Cosumnes Groundwater Subbasin, Sacramento, San Joaquin, and Amador Counties, California”. This best available science documenting by far the largest and most important geological feature in the Cosumnes Basin, directly over the cone of depression, was a tragic and fatal (to any planning) mistake.	The clay deposits inferred from electrotelluric soundings is discussed in Section 8.1.4. The GSP concluded that "The inferred clay bed therefore is likely not continuous, but where present can impede percolating recharge, support a relatively shallow water table, and result in greater drawdowns as a result of groundwater extractions." The inferred clay is absent in transect CR3, and therefore not continuous across the Basin.	Include map showing ETS results and note in the GSP that the extent and hydrologic effects of the inferred clay bed is a data gap to consider in PMA design and implementation.
115	10/20/21	Jay Schneider	PMA 18.2	Only including PMA’s that were supported by SAFCA and through tiny (mostly) secret supposedly ad-hoc committee’s vetoed every proposed project that was actually viable, commonly used throughout the California, and the world, such as this brief list: a. Metering ... Vetoed by tiny committee. b. Banking water in injection wells.... c. No effort at all to reduce waste and use readily available surface water ...	The outcomes from all Ad-Hoc discussions were brought to the Working Group meetings which are open to the public. The Working Group installed meters on volunteer wells and plans to explore their increased implementation as part of water budget tracking and PMA performance assessments. Banking water with injection wells (dry wells) is included as part of PMA #2. PMA #1 utilizes readily available surface water.	No change to the GSP.
116	10/20/21	Jay Schneider	HCM 8.1.4	The massive Paleo River west of the Cosumnes, is not included in the model. SRCD several years ago commissioned Geoconsultants to conduct a study of groundwater from the Cosumnes River generally westerly to Grant Line Road (essentially the edge of Cosumnes Watershed) They documented a ancient riverbed that is @ one mile wide and forty feet deep of saturated cobbles. Recent articles have suggested these Paleo rivers may be very significant both in bringing water in, and out of an area they run through. Testimonial evidence (and surely well monitoring will affirm) shows wells located in the Paleo River perform better than those nearer the Cosumnes on same property owners. A consequence, for instance: Pumps west of the Cosumnes will draw water toward the Paleo river and most likely into the mile wide/40 feet deep riverbed. Some “reports” of benefits of winter irrigation along/near the west bank of the Cosumnes will assert “leakage” allows water to flow easterly, under the Cosumnes and miles out to Cone of Depression in Galt/Herald area. Yet, as discussed above, the landowner who winter irrigates dormmate vineyard, then turns the pumps on that are westerly of the application area. Darcy’s law kick’s in and the supposed recharge goes west in the direction of the Paleo River. Since that best available science was not placed into the model. The incorrect model assumes the vertical and horizontal conductivity is the same, and water can simply avoid the most prominent geological feature, the massive Paleo River and simply go over it (both directions. Depends on what ideological goal is desired. Any reviewer must ask for essentially a contour map of the underground based on conductivity so one can see where water can easily pass (Paleo river bed) or may not (massive clay layer)	Section 8.1.4 discusses channel deposits inferred from electrotelluric soundings and notes their relatively good agreement with maps constructed independently by DWR showing many inferred channel deposits in the area based on boring logs (Figure HCM-18 and Figure HCM-19). The spatial distribution of clay, silt, sand and gravels is represented in the model by sediment texture (the fraction of coarse-grained sand and gravels) based on boring logs (see Figure HCM-9). These texture distributions are utilized to calculate vertical and horizontal conductivity. The modeled vertical conductivity is typically over 100 times lower than the horizontal conductivity.	No change to the GSP.
117	10/20/21	Jay Schneider	GWC/ Water Budget 9.6.1 & 10.1.1	Refuse to put 1920 engineered data in model. Only want data that supports political views. The 1920 data shows many wells with water levels 13 feet or more below bed of the Cosumnes. The “rate” of well level drop on an average annual calculation will be vastly different if it is assumed the level was higher. If it went from 13 feet to 63 feet from 1920 to 2020 that is 1/50th foot per year; it’s completely understood that the calculation should be weighted to more recent uses, however not including at least the engineered proven base, and ignoring the “recent” change by growers from surface water to groundwater, and ongoing expansion of irrigated acreage, and other groundwater uses, leaves one wondering why one indicator and not another.	The report “*Answers to Protest, Application #2296 before the Division of Water Rights*,” submitted to the Department of Public Works, State of California, July 3, 1922, by Joseph W Gross was considered during GSP development and discussed in Section 9.6.1. The numerical groundwater surface water model, CoSANA, was calibrated to the 1999-2018 time period. It is inappropriate to utilize temporally variable data, like well water levels, outside of this period for calibration.	No change to the GSP.

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118	10/20/21	Jay Schneider	Water Budget 10.1.1	Refusal to put real normal Cosumnes River flows into the model. SRCD commissioned a study which was condeucted by Henry Matasanag to normalize the flows at Michigan Bar to account for releases from Sly Park from about 1956-1977. That report was provided long ago and constitutes best available science on normal flows of the Cosumnes. Looking at the report, generally releases were made when river dropped to about 40 cfs, (which was done by visual calculations but came close to the later calculated amount) This is dramatic, becsuse UC Davis professors have written reports that hypothetize that the "reason" the Cosumnes has lower flows during the summer irrigation season is because of Grounwater Pumping. They even assert groundwater pumping miles and miles west impact the surface flows (Court case re Rancho Cordova EIR on Vinyard area wells) ALL BASED ON incorrect data, as the professor(s) and those quoting the flawed work, constantly assume incorrectly that groundwater pumping was the reason the flows were reduced after the late 1970's relative to the 1950's decades. They didn't know, (didn't research) the records at Michigan Bar included the augmented flows, the reason the flows were lower, is because releases were no longer made from Sly Park to keep it flowing… so damm simple. Hay Davis, and any legitimiate researcher.. Why haven't you amended your "studies" and notified any folks who may rely on them, of your mistake.. It probably was an "honest" mistake bccause of incomplete research, but a mistake and a damm important one at that.	Groundwater levels respond to actual flows in the river irrespective of different water sources. The model therefore relies on actual, measured conditions. For example, actual measured water levels in wells, and actual, measured Cosumnes River flows.	No change to the GSP.
119	10/20/21	Jay Schneider	SMC 15.1.1 & 16.1.1	Ignored EKI's recommendations. For instance, EKI provided a technical update, clearly delinating a potential management area within the Cone of Depression. That area is so vastly different than anything northerly or easterly, or along the floodplain of the Cosumnes (extends across Dillard Road in many areas) It's nonsensical to have "thresholds" the same there as in other vastly different areas of the Basin. Along the Cosumnes, (several landowners recently checked elevations in their wells) and they are not far below 1950's levels (Note, a very very wet last year,the Cosumnes ran all summer a relative rare occasion) This years lack of snowmelt (which charges the Cosumnes and area ABOVE THE CLAY will show up in the next few years. There is essentially no problem along the Cosumnes that isn't easily (use the free, historically used, fully entitled available surface water and quit waste) Efficiencies in irrigation are also easy as it' is mostly prime farmland with great soil characteristic which lend themselves to efficient irrigation. In other words, having the same thresholds in a basin is absurd and should not be tolerated. There is approximately 40,000 acres south of Jackson Highway, East of Dillard Road north of Apple Road, and east of the old ag res units from Dillard Road to east of Voula and north of Twin Cities Road with about 12 homes. Because there is no groundwater. I personally knolw many many wells have been attempted, and the water is not there. (tiny domestic use can be found but never for irrigation) Yet those folks do a fabulous job mostly all surface water (stockwater ponds) and minimal impacts on rainfall ability to perculate … not paved over, not compacted, its fabulous, but in no way will "thresholds" be the same there as in the Cone of Depression, or along the floodplain of the Cosumnes. Or, in Amador County where they extract near zero groundwater, but use surface water. I suspect Amador is a net recharger. Our family rented land over there, irrigated corn with surface water in-lieu of groudwater and as such, were net recharger. Anyhow, like the 40,000 rangeland, Amador is a very net recharger..	As described in Sections 15.1.1. and 16.1.1., the MTs and MOs were determined from historical water level data. While the approach employed to calculate the SMCs was the same across the Basin, the resultant values are not. The values calculated at each RMS include the effects of variable hydrogeologic and water use conditions represented by the well water levels and their trends over time.	No change to the GSP.

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120	10/20/21	Jay Schneider	PMA 18.2.4	Zero back up plan. Unbelievable, again EKI suggested there should be back up (conservation or reduction of use) plans if the hypothetical "plans" lobbied for by SAFCA and their allies, does not come to fruition. It's been all over the water news that San Joaquin has a 20 year (TWENTY YEAR APPLICATION) for water from the American River to be delivered down Folsom South Canal, they have jumped thru every hoop. Who on earth believes the Cosumnes Basin would leap in front of them to acquire rights to American River water (San Joaquin seeks water for recharge, and are an impacted basin, and their growners use surface water when available (persona conservation with grower in OHWD indicated they must use surface water before they use groundwater on their vineyards in San Joaquin) Why would SWRCB grant water to water wasters (let the legal water they already have rights go unused and drain/overdraft the groudwater basin instead, and thru excess pumpig change direction of exisging grondwater westerly from Cosuimnes…	The GSP does not describe a formal back up plan but does identify additional PMAs to provide additional flexibility and adaptively address unforeseen conditions projects (see Section 18.2.4 "*Other PMAs*." The GSP also indicates that demand reduction is the only alternative if aquifer recharge is not feasible. For example, if during the first few years of implementation the negotiations for American River water are unsuccessful plans will be developed to implement demand reduction.	No change to the GSP.
121	10/20/21	Jay Schneider	Water Budget 10.2	(note pumps run continuously near our Basin in the Cosumnes Watershed at the landfill just north of Jackson Road, on Keifer, so the water goes towared the pumps and not southerly to the wells of homeowners along Jackson Road; Aerojet purportedly pumps 27,000 gpm/ 24/7/365 (their must be a Paleo river supplying that quantity, but the pumps draw water towaerd them….all to contain pollution)	The landfill is located north of the Cosumnes Subbasin in the South American Subbasin. It is therefore not within the area managed by the GSP. However, the landfill is represented in the numerical groundwater-flow model utilized to develop the GSP (CoSANA), and therefore its influence on the Cosumnes Subbasin water budget and groundwater levels are included in the GSP. The model represents groundwater extractions at the landfill with 15 extraction wells located on the southwest side of the landfill. Pumping from these wells starts in July 1995 and average 985 AFY. The pumping rate of 27,000 gpm (43,550 AFY) is questionable and likely reports the wrong units. As a comparison, the cited pumping rate is a third of the estimated historical pumping rate (1999-2018) for the entire Cosumnes Subbasin (131,200 AFY) as reported in Table WB-10.	No change to the GSP.
122	10/20/21	Jay Schneider	Water Budget 10	Point:1 pumping the 10,000 ac feet from groundwater west of the Cosumnes instead of using Surface water, will dramatically change the direction of groundwater flows during the irrigation season, with lasting determential impacts on the rest of us.	There are no PMAs planned by the Cosumnes Subbasin to extract groundwater west of the Cosumnes (from the South American Subbasin).	No change to the GSP.
123	10/20/21	Jay Schneider	PMA 18.2.3	Even asking for voluntary reduction was vetoed. The figures seem to show that a 10% conservation of irrigation water over 3-5 years would achieve sustainability (other factors equal) yet, as EVERY other organization, Water Districts, Cities, Counties, bergs, every entity I read about followed the advice of Governor Newsom and countless other leaders to call on their constituents to voluntary reduce 10% , 20%, etc. While many in the state had to cut 100%, 80%...etc.	Conservation as a potential PMA for the GSP is scheduled for evaluation in years 2 and 3 of plan implementation. See also response to comment #138.	See planned GSP modifications described for comment #138.

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124	10/20/21	Jay Schneider	Topic not a component of the GSP	The grounwater users in the Cosumnes were fed a bunch of bull in fancy power points (all 30 or so who attended recent "outreach" meetings) and essentially encouraged to continue existing practices and therefore existing overdraft.	The efforts to prioritize he Basin by DWR and to assess groundwater conditions in the Basin as part of our GSP planning process clearly demonstrate the Basin is currently pumping more groundwater than it is replenishing. The average rate of decline is approximately 1 foot per year. Existing practices cannot continue if the Basin is to achieve sustainability. This deficit has been shared at every public workshop that the Working Group has held since that data was developed. Attendance at these workshops has ranged from approximately 30 to over 130 individuals. The GSP includes projects that put more winter flood water into the aquifer (recharging) and options that reduce groundwater usage (PMAs #2, #4, #5, and #6). The PMAs are discussed in Section 18 of the GSP, including the goals and objectives of the PMAs, including the guiding principles used to prioritize the PMAs, the relevant Sustainability Indicators they address, and the expected benefits from their implementation. A list of specific PMAs is presented and summarized in Table PMA-1 (PMA Information Forms are included in Appendix O) and groups the PMAs by benefit category and type.	No change to the GSP.
125	10/20/21	Jay Schneider	Topic not a component of the GSP	Really bad pontification led to horrific results. A legal "opinion" that isn't written and reviewable is not an "opinion" that any court would accept and is absolutely not citable. So when I wrote many laymen opinions, case law was profusely cited, including in the submissions to the Board of Supervisor in 2017 where I predicted Cosumnes Basin would become the Poster Boy of civil rights abuses regarding representation… [to bottom of page 8] ... I believe most of the documents I mention herein are in the administrative record. If one is missing, please inquire. Some or most are public record like SWRCB file leading to Order 79-13 regarding operation of Sly Park and other matters on Cosumnes. So please send me a request if there is trouble finding a specific reference..	Comment noted.	No change to the GSP.
126	10/20/21	Jay Schneider	HCM/ Appendix I 8.1.4 & 8.2	Other common pontification… that the clay layer doesn't exist..or is homogenious (?) and asserting "John said it's one aquifer:. Do not say it again until you show a well log(s) in the areas identified with Clay Layer in Geoconsultants report and illustrated in EKI technical report, that doesn't include the clay layer. Or a well that isn't perforated above the clay layer that has standing water above the clay layer (indicating water can travel through clay (in mind only)) Every well log I've looked at had the clay layer.. water doesn't travel through it vertically…	The transects reported in "*Hydrogeologic Study Using Electroteluric Transects, Cosumnes Groundwater Subbasin, Sacramento, San Joaquin, and Amador Counties, California*" by Geoconsultants, Inc. (Appendix I) correlate three categories or "packages" of materials, one of which is identified as "clay." The clay designation may include clay, silty clay, and sandy clay, and may include a small component of coarse-grained materials. Figure 5a and Figure 5b in the report show results for transect CR3. The transect is located south of the Cosumnes River and along Wilton Road (see Figure HCM-18). The inferred clay bed is absent from transect CR3, confirming the clay bed is not continuous across the Basin. Geologic Section D-D' northeast of transect CR3 (Figure HCM-17) and the Middle Reach focused cross-section southwest of transect CR3 (Figure HCM-18) are predominantly fine-grained throughout their depth intervals. Moreover, the lithologic data from boring logs used to construct geologic cross-sections across the Basin indicate almost all the borings are primarily comprised of fine-grained clay and silt.	No change to the GSP.
127	10/20/21	Jay Schneider	HCM/ Monitoring Network 8.1.4, 8.2 & 17.1	Now focus on the Clay Layer, its so simple. This type illustration is available everywhere groundwater is discussed. It illustrates how two aquifers are formed when there is an impermeable layer, such as the clay layer in the Geoconsultants report. [Illustration]	A continuous, low permeability clay bed where present can create two adjacent water bearing zones with low vertical hydraulic connectivity. Where the clay bed is discontinuous or absent, the vertical connectivity between the water bearing zones is much greater, the formations are hydraulically connected, and physical barriers to groundwater flow are not present. Moreover, the ionic composition of groundwater is generally similar between formations with depth and across the Basin, and wells have been constructed at variable depth intervals throughout the entire Basin. These observations support a single principal aquifer, but the depth distribution of water-bearing and non-water bearing zones can vary across the basin.	No change to the GSP.

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128	10/20/21	Jay Schneider	HCM/ Appendix I 8.1.4 & 8.2	Geoconsultants soundings (logs) are unbelievably consistent. They did several "transects" where they created the logs an intervals along a straight line. Here is one transect. Note the aquifer above the clay layer, the clay layer, then the aquifer below. [Illustrations - 2] This is another… note the absolute consistency. The top of the clay slopes slightly southwesterly if you look at the elevations. [Illustrations - 8]	See response to comment #126.	No change to the GSP.
129	10/20/21	Jay Schneider	Purpose of the Groundwater Sustainability Plan 1	The cone of depression is the "reason" the Cosumnes Basin was impacted and required a SGMA compliant GSP. The massive clay layer and the two distinct aquifers are by far the most significant known geological formation in the Cosumnes Basin that impacts groundwater.	DWR inventoried and ranked California's basins into high, medium, low, and very low priority based on population, projected growth, public supply wells, total supply wells, irrigated acreage, groundwater reliance, groundwater impacts, and habitats. A detailed look at why the Cosumnes Subbasin was ranked as a medium priority basin can be found here: https://data.cnra.ca.gov/dataset/sgma-basin-prioritization/resource/6347629e-340d-4faf-ae7f-159efbfbcdc9. The Basin ranking was influenced primarily by the number of wells, reliance on groundwater, and projected future growth in the basin. The ranking criteria did not consider "the cone of depression."	No change to the GSP.
130	10/20/21	Jay Schneider	HCM/ Appendix I 8.1.4 & 8.2	This illustrates where the clay layer surfaces, there are very old and extensiver clay mines easily seen in the aeraial photos available in google earth, apple etc.	The clay mines shown are in areas of exposed Ione Formation. The Ione Formation includes a distinct member that is described as a thick bed of white clay of ceramic quality. The clay is also red and yellow in areas. The Ione Formation dips downward and underlies the valley. However, the Ione is found at depths of more than 1,000 feet beneath the valley and is much deeper than the ETS surveys conducted by Geoconsultants, Inc. (Appendix I) which extend to depths of only 250 ft bgs. The clay utilized by mines and clay layer inferred from ETS survey results are not the same. Moreover, the shallower clay layer was not inferred in all of the ETS survey transects, and therefore is unlikely to be continuous to the foothills.	No change to the GSP.
131	10/20/21	Jay Schneider	HCM/ Appendix I 8.1.4 & 8.2	Some deniers, assert EKI, generally naming John says the clay layer isn't there or is permable etc. Nothing could be further from true. EKI acknowledged the clay layer in one of their technical bulletins and described the impacted area, which included all the cone of depression. I sent some information to John including the photo above. Our neighbor has a clay mine (just north and South of Jackson Highway, immediately east of Rancho Murieta,where the clay hits the surface to the north) I was aware for all my adult life of these clay mines as we drive by them, drove cattle across them (on the Howard estate years ago) etc. John not only affirmed the clay layer but how important it will be to affirm it. I have personally reviewed many of Geoconsultants reports. Long before SGMA they did work in our neighborhood (Sloughhouse to Rancho Murieta, north/south of Hwy 16) including a study commissioned by Rancho Murieta that included some of our ranch. The test well dug comported exactly with the sounding log, on the well on our ranch and every neighbor who used their services to locate groundwater. There should be no doubt that the report is dispositive and illustrates two very distinct and consistent aquifers and a constant 30- 40 foot layer of impermeable clay (as identified in report and everyone who ever lined a pond with the clay, or drilled a hole thru it knows)	See responses to comments #126 and #130. The inferred clay layer is not continuous across the Basin, and where present may create two adjacent water bearing zones with depth in a portion of the Basin. There is no evidence that these two zones are separate aquifers supplied by different sources of recharge, rather the Hydrogeological Conceptual Model indicates that they represent a portion of the Principal Aquifer where vertical movement of groundwater between depth intervals can be limited by the clay layer. Additional data is needed to characterize the extent and physical properties of the clay layer.	See planned GSP modifications described for comment #113.

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132	10/20/21	Jay Schneider	Topic not a component of the GSP	So to sum up. I've presented the legal information, case law etc. regarding our civil rights of representation; the information on the Paleo River; the information on the incorrect flow records and assumptions of why flows were lower after augmentation stopped; of the 1920 information on surface water use and groundater depth; the history of surface water use along the Cosimnes; the documentation of the Mexican Land Grant the further assures by Treaty with Mexico the rights to use the surrfac water without jumping through artificial hoops (the theaty also referenced treaty's with Indians who slso hae protected rights (protected by treaty) ; all the time locally within the GSA's believing that the issues are so important that the elites and non resident deciders would come to their senses. Nope, the SAFCA lobby and others simply had too much political power to let a few constitutional provisions, civil rights, legal taxes, massive geological underground rivers and extensive clay layers, etc etc. disrupt their plans to control the projects and create a rule-by-unconstitutional-undemocratic-unrepresentative artificially created governmental entity with fiefdom powers to govern by fiat.	See responses to comments #114 through #131.	No change to the GSP.
133	10/20/21	Jay Schneider	Topic not a component of the GSP	Had to write this, this afternoon, after the last ditch effort at the Working Group today fell on deaf ears. It must have been a nightmare for those years ago seeking equal representation, suffrage, civil rights of common folks let alone distinguishable minorties. The great thing about civil rights when properly adhered to, is everyone has them equally, not only their sex, gender, color, religious beliefs that get the press, but common rights to equal representation for schools, planning, and for damm sure governance and regulation of water and the human right to such water. Even lowly groundwater users in the 94,000 acre Sloughhouse RCD or OHWD where our ranch is located. But those of us in SRCD are not 1/7th a constituent as OHWD. The folks in GID are not 1/7 of their neighbors in CWD. It's beyond supifying how this horric attribute of human nature that even thinks about treating others as a fraction of a person.. how does that happen.	Comment noted.	No change to the GSP.
134	10/20/21	Jay Schneider	Topic not a component of the GSP	End: The GSA is fatally flawed and should never be approved until the fatal flaws identified herein are corrected.	Comment noted.	No change to the GSP.
135	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA/ Implementation 18.2.3 & 19.1	The biggest concern is the "sale of water" identified as revenue stream intended to pay or subsidize plan implementation, and/or any ground water recharge projects necessary to bring the basin into balance. The CA State Mandate requires correction of the overdraft of our water resources, and until that is achieved, the stakeholders of this basin do not want language allowing the sale of water included in the Final GSP to be submitted to the State because: We need to focus on bringing the Cosumnes Subbasin into balance BEFORE including any language in the GSP referring to the selling of excess water! That cannot be done unless we have projects directly in the basin to benefit us all. Unless all areas of the subbasin are actively monitored, there is no reliable way to determine if the entire subbasin is coming into balance with water reserves, and our water resources are protected from depletion.	See response to comment #7 and #62.	See planned GSP modifications described for comment #2.

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136	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA 18.2	The Cosumnes Subbasin Draft Groundwater Sustainability Plan (GSP) has 6 identified "projects". Three (3) are "projects" located within the Cosumnes Subbasin and three (3) "projects" are located in a neighboring basin. The only water recharge "project" shown within the Cosumnes Subbasin is the City of Galt's Wastewater Recycling Project. The other two are "Voluntary Land Fallowing", and "Groundwater Banking and Sale".	As shown on Figure PMA-1, one project is located adjacent to, but outside of, the Basin (OHWD Agricultural Flood-MAR), one project is located on the Basin boundary (OHWD Cosumnes River Flow Augmentation), and the remaining four are located in the Basin. Two of the projects in the Basin are recharge projects (Sacramento Area Flood Control Agency (SAFCA) Flood-MAR project (PMA #2) and the City of Galt Recycled Water project (PMA #4).	No change to the GSP.
137	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA 18	“Voluntary Land Fallowing”, and “Groundwater Banking and Sale" are Not “Projects”, nor "Management Actions” to help bring our aquafer into sustainability because only after having implemented water recharge projects could there be any possibility of excess groundwater based on the data provided by EKI projecting a deficit of -10,000 acre feet of water every year for the next 5 years. How can you sell water before you know you have enough to supply your current users? And how can you as a small group who do not all reside in the basin or depend on our aquafer make a decision to sell water that belongs to all the stakeholders without stakeholder approval.	See response to comments #3, #7, #40 and #70.	No change to the GSP.

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138	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA/ Implementation 18.2.4 & 19.2	There is an abundance of agricultural areas where smaller recharge projects can be developed. These agricultural entities are along creeks and tributary drainages where beneficial projects can be implemented that will be of great value to ALL stakeholders in the basin. Every project in our basin helps no matter the size, but yet there are none identified to benefit the users of the groundwater.	Smaller distributed projects will be identified and considered in Years 2 and 3 of GSP implementation. See response to comment #123.	Update Table PI-1 and expand text in Section 19 to include additional projects for consideration
139	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA 18.2.3	The ripped and planted ground in the basin does provide better water penetration and infiltration during the winter months back into the aquafer.	Comment noted.	No change to the GSP.

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140	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA/ Implementation 18.2 & 19.1	There are three projects in our neighboring basin, the South American Basin in which we are relying on to help rebalance our groundwater numbers. The act of relying on a neighboring basin's projects is considered “piggy backing”. The Draft GSP states we expect a 3% seepage from other basins. All projects are helpful but “piggy backing” onto neighboring basins projects and utilizing that as a primary rebalancing source seems imprudent on our part. With no NEW PROJECTS planned in the Cosumnes Subbasin to bring the aquafer into balance and expecting projects in other Subbasins not under our control to help replenish our aquafer, we are at Extreme Risk of not having enough water to sustain our own uses.	During the first 5 years of GSP implementation, the following PMAs will begin operation: • PMA #1 OHWD Flood-MAR • PMA #4 City of Galt Recycled Water Project • PMA #5 Voluntary Land Fallowing - Developing the fallowing program and begin fallowing up to 700 acres. • Various feasibility studies that are required before their full implementation (for example, PMA #2 SAFCA Flood-MAR). Projects planned for implementation beyond Year 5 include: • PMA #2 SAFCA Flood-MAR • PMA #3 OHWD Cosumnes River Flow Augmentation • PMA #6 Groundwater Banking and Sale • Other projects described in Section 18.2.4 “Other PMAs”. All of these later projects require either preliminary studies or complex negotiations with local, regional, state, and federal agencies in addition to local landowners. These projects will come online as assumed by the GSP glide path described in Section 15 “Minimum Thresholds” and Section 18 “Projects and Management Actions.”	No change to the GSP.
141	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA 18	Dependence on Water Banking: Although a potential interim tool, purchasing water and selling water are not sustainable practices to ensure the stabilization of our groundwater. In the case of Water Banking, it requires the purchase of water. Where will those funds come from? The reply is “fallowing of land”. A board of seven consultants have decided to sell the water that would have been used by a farm operator/owner to a Water Purveyor and use those funds to pay the grower who fallowed his land and potentially purchase more water when it is at a lower cost and bank it. This way of thinking is a “band-aid” mentality and is not going to fix the issue at hand. Once the ground is fallowed multiple years' owners will find higher productive uses for the ground such as housing. Future generations are relying on us as growers, to ensure domestic production of our food supply, “water banking” may be an interim tool but not a permanent solution.	See response to comments #3, #7, #40 and #70.	No change to the GSP.

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142	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	PMA 18.2.3	Land Fallowing: Land fallowing should not be considered a “Project” nor a “Management Action” to solving the ground water problem because: Once land is fallowed, or taken out of production, these same acres will no longer be classified as "irrigated" and the actual fees collected will be less than the projections shown in the Draft Plan. Land fallowing is going to result in water moving to the high value crops. Row crops like alfalfa will go unplanted which may be detrimental to groundwater recharge and our sensitive environmental habitat which does utilize the irrigated lands.	The GSP anticipates fewer than 2,000 acres will need to be fallowed to generate sufficient savings to cover the costs of participating in the SAFCA program that will bring American River basin water into the Cosumnes Subbasin. Revenue from these lands will be lost in the process, which is one reason why the GSAs will be compensating the landowners that fallow. It is estimated that the sale of this water saved by fallowing will generate more than 5 times the revenue over the GSA’s cost to fallow the land. Further, row crops like alfalfa do indeed provide beneficial habitat, but the GSP intends to fallow less than 4% of the total irrigated lands and less than 1% of total farmed acreage in the Basin.	No change to the GSP.
143	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	Implementation 19.2	Annual Fee Assessment Via Assessor's Tax Roll: All parcels with wells within the Cosumnes Subbasin will be assessed a fee in the 2022/2023 tax year, even though not all of these parcels were notified in 2021 that this plan will be affecting them. Irrigators are the 1st group being charged a fee on their November (2021/2022) Tax Bill to start implementing a plan that has nothing in it for them. They are paying for a significant portion of the plan implementation, but yet these are the same people you are asking to “fallow land”, and “take land out of production.” The Agricultural communities' input in the GSP has not been effectively sought out, but yet irrigated agriculture is contributing an estimated $448,299.00 towards the planning and implementation of the GSP starting with 2021 tax bill via a $10 per acre initial assessment. The exorbitant amount of money spent to develop a plan with no projects could be streamlined by partnering with agencies such as the Farm Service Agency (FSA) / Natural Resources Conservation Service (NRCS) who have annual aerial photographs of irrigated cropland; a grower data base; and already implements a multitude of “water saving" cost share projects that could be identified and incorporated in our subbasin plan with minimal additional cost burdens. Why are we not using efficiencies of scale and partnering with established agencies to reduce costs which are being passed on to growers? I realize that the FSA/NRCS is a Federal Office however it has a history of partnering with the Cooperative Extension Service, (a county funded office), Agricultural Commissioner, and others when needed to achieve a common goal. In this case "water sustainability” could be addressed through and in conjunction with current federal programs.	See responses to comments #1 and #4.	No change to the GSP.

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144	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	Implementation 19.2	As noted above, the data used by the Consultants to produce the Draft GSP projects a deficit of -10,000 acre feet of water each year for the next 5 years. It has been stated there will be a continuation of administrative plan development and implementation over these same 5 years, which is projected to consume most of the estimated fees collected from the irrigated ag parcels, and all other parcels with a well. If plan administration and implementation uses up all estimated funds, what funds will be available for creation and implementation of projects? Will continuously increasing fees/taxes be the only alternative?	GSAs are actively pursuing a variety of grants and funding opportunities and are dedicated to keeping local costs at a minimum while still complying with state regulations. By partnering with other agencies, like SAFCA, we have been able to channel funding to a variety of projects and efforts. Once a long-term funding mechanism is implemented it will be reevaluated in line with 5-year Assessments of the GSP to ensure funds generated reflects the actual needs of the program. Section 19.2 of the GSP shows our anticipated implementation costs.	No change to the GSP.
145	10/20/21	Villa Craig; Deanna Delu; Kevin Delu; Dennis R. Johnson; Teresa Flewellyn; Gary McEnemey; William McEnemey; Nelson Haires; James Hendricks; Jason Mahon; Betty & Jack Nunes; Brady R. Otto; Tish Espinosa	Monitoring Network 17.1.1 & 17.1.6	Lack of Monitoring Wells: An effective GSP, requires correctly ascertaining our water supply by adequately, actively, and fairly dispersing monitoring wells throughout our Subbasin. Even though the well locations meet SGMA's requirements, we are relying on the majority of the monitoring wells along the north border of the Subbasin/Cosumnes River. These do not appear to adequately represent the aquifer levels throughout the entire Subbasin especially the middle area from Galt to Herald to Clay east and south. Currently, there is a marked lack of active monitoring wells throughout the middle of the subbasin where the cone of depression exists. Stakeholders in the cone of depression (Galt/Herald) are at risk of their water levels continuing to drop as there is a noticeable gap in data collection in all parts of the subbasin. Although new monitoring wells are planned, no start date has been released as to when they will be brought on line. It is my contention, that All monitoring wells and stream gauges should be in working order to give an accurate picture of current conditions within ALL areas of the subbasin.	See response to comment #66.	No changes to the GSP.

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146	10/20/21	Sacramento County Farm Bureau	PMA/ Implementation 18.2 & 19.1.2	Our primary concerns center around the Project and Management Actions discussed within the GSP. We are supportive of various groundwater recharge efforts including the Omochumne-Hartnell Agricultural Flood Managed Aquifer Recharge project, proposed SAFCA Flood-MAR project, and the Omochumne-Hartnell Cosumnes River Flow Augmentation project. These recharge projects are vital to the preservation of our basin, provide substantial conservation efforts to meet sustainability goals and are a natural way to preserve our limited water resources. We encourage each GSA to look at additional groundwater recharge efforts both on large and small scales to enhance the conservation practices throughout the basin where they are appropriate. However, we have concerns with PMA #5 Voluntary Land Fallowing and PMA #6 Groundwater Banking and Sale in the GSP that we encourage each GSA to explore and provide clearer details regarding their implementation.	See response to comment #3, #123 and #138.	See revision to the GSP in response to comment #138.
147	10/20/21	Sacramento County Farm Bureau	PMA 18.2.3	First, members are deeply concerned with the lack of information centered around the proposed voluntary land fallowing program. It is our goal to keep vital farmland in production, not to remove that farmland, as that will have a negative impact on our overall agricultural economy in Sacramento County. Our organization is concerned that this will lead to a permanent fallowing of prime farmland and thus increasing the propensity for land to be converted to non-agricultural uses. If this program is pursued, concerns have been raised regarding appropriate payment amounts for different types of crop land, where that compensation will come from, and how to ensure that the viability of our agricultural economy remains sustainable. Farm Bureau encourages other conservation efforts to be pursued that doesn't take farmland out of production, yet still conserves vital water resources in our basin.	See response to comment #7, #93, and #146	No changes to the GSP.
148	10/20/21	Sacramento County Farm Bureau	PMA 18.2.3	Second, we have had numerous member questions, concerns, complaints regarding PMA #6 which focuses on groundwater banking and sale. First and foremost, water conserved in this basin should go to the replenishment of our aquifer and not be used simply for monetary gain, as that defeats the numerous conservation efforts put forth in this plan. We ask that significant review of this PMA be done and in a public forum, as members have many questions regarding the technical science and intent behind selling water for a profit, when others are asked to conserve. While this practice may make sense via groundwater modeling, technical analyses and the like, the simple concept of charging a fee for groundwater resources, implementing conservation efforts, just to sell that outside the basin seems counterintuitive and seems that financial gain is more important that using that resource within the basin. We ask that much more extensive research, dialogue and presentations be done to further explore this concept, how it relates to the overall picture of groundwater sustainability to have more public participation and interaction regarding this concept before moving further. We understand that these requests are outside of the initial scope of the Groundwater Sustainability Plan and will be addressed during the implementation phase, however, we wanted these concerns noted as this plan moves forward. We support the collaborative efforts of the GSA's and are committed to staying engaged in this process through its implementation and encourage the public's participation through that phase as well.	See responses to comments #7 and #62.	See revision to the GSP in response to comment #62.