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Environmental Council of Sacramento
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October 15, 2021

Cosumnes Subbasin Groundwater Sustainability Plan
c/o Sloughhouse Resource Conservation District GSA
Attn. Mr. Austin Miller/Interim Plan Manager
8698 Elk Grove Boulevard, Suite 1-207
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Subject: Comments on the Cosumnes Subbasin Groundwater Sustainability Plan Public Draft (GSPPD) dated 8/20/2021

ECOS is providing comments on each draft GSP in the Sacramento region, therefore you may find that some comments are relevant to the other sub-basins in the region, also.

ECOS would like to commend the effort of the of the Cosumnes Subbasin Groundwater Sustainability Agencies (GSAs), the GSP Working Group, and their Consultant Team, EKI, in the preparation of the GSPPD. The document goes a long way to provide both a technical and layperson understanding of the Cosumnes Subbasin (CS) and how groundwater moves within it. With the additional information we call for below, the final GSP will present a clear direction for the subbasin's sustainable groundwater management. We also want to acknowledge the GSP Working Group and the individual Groundwater Sustainability Agencies for their efforts to involve the public in the development of the GSPPD. The following paragraphs address our suggestions for improvement to the GSPPD.

ECOS is seeing the ongoing, complex effects of climate change on the environment and people in the Cosumnes and Greater Sacramento regions, throughout California as a whole, and globally. Extreme heat waves are now more common in coastal areas, and torrential rains and flooding are becoming far more frequent in the eastern United States and in parts of Europe. While climate change is mentioned in a number of sections in the GSPPD, we are looking for much more robust, comprehensive discussion as it affects each topic.

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



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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".

We acknowledge the difficulty of dealing with uncertainty regarding future precipitation levels and evapotranspiration patterns. However, climate change needs to be explicitly presented as a key policy concern in every section of the GSP, including the Executive Summary. As is often the case, many readers will stop after reading the Executive Summary. Therefore, the key issues such as climate change, and related priorities for action need to be prominent in the first section of the document.

Our specific comments on the GSPPD's technical work, conclusions, and findings are discussed below.

<p>Page 118, last bullet, Water Quality</p>	<p>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.</p> <p>Per Title 22, the California Secondary Drinking Water Standard for manganese is 0.05 mg/L (see https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/ddw_secondary_standards.pdf, accessed 9/24/2021).</p> <p>See also SWRCQ requirements for regulation of manganese as a neurotoxin – Drinking Water Notification Level for Manganese (see https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Manganese.html, accessed 9/27/2021)</p> <p>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.</p> <p>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 (see for example Hull, 1984, Geochemistry of ground water in the Sacramento Valley, California, https://doi.org/10.3133/pp1401B).</p>
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	<p>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.</p> <p>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 (https://ca.water.usgs.gov/projects/gama/water-quality-results/), 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”).</p>
<p>Page 125 – GDEs</p>	<p>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.</p> <p>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.</p> <p>Please note comprehensive Cosumnes Chinook Salmon escapement metrics are available in CDFW’s GrandTab report, found on the following webpage: https://wildlife.ca.gov/Conservation/Fishes/Chinook-Salmon/Anadromous-Assessment</p>
<p>Page 138, bullet #2 - Surface Water Imports and Diversions</p>	<p>This bullet item refers to SMUD's decommissioned Rancho Seco nuclear facility and its use of imported surface water.</p> <ul style="list-style-type: none"> ○ Please explain why the decommissioned facility still requires a regular water supply.



	<ul style="list-style-type: none"> ○ 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).
<p>Page 161 - Water Budget</p>	<p>The section states: "As future climatic conditions are difficult to project, and could result in greater reliance on groundwater storage to balance the water budget (see Table WB-10), actions that reduce groundwater consumption (demand reduction) and increase recharge will support long-term groundwater sustainability."</p> <p>The CS GSPPD addresses one major option for demand reduction, through Project/Management Action #5 which involves creation of a Voluntary Land Fallowing program.</p> <ul style="list-style-type: none"> ○ Please discuss contingency options and timeframes for demand reduction measures if the Voluntary Land Fallowing program does not result in the anticipated groundwater savings. ○ 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. ○ 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.
<p>Page 162 - Water Budget</p>	<p>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.</p> <ul style="list-style-type: none"> ○ Please provide more detail on how the six scenarios were used in the Water Budget future projection and prediction process. ○ 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. ○ Please discuss the strengths and weaknesses, and credibility of each scenario for the Cosumnes GSP region.



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	<ul style="list-style-type: none"> ○ Please discuss how each scenario, if applicable, addressed land use conditions. ○ Please summarize any relevant research studies (e.g., American River Basin Study).
<p>P.164 - Water Budget -- Project Conditions Baseline Scenario</p>	<p>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.”</p> <ul style="list-style-type: none"> ○ Please summarize the anticipated population growth in the Cosumnes Subbasin region for the GSP interval, and where the new growth will likely occur. ○ Given the expectation of new population growth, discuss the implications for increased groundwater use. ○ Given the possibility of expanded agricultural activity, discuss the implications for increased groundwater use.
<p>Page 196 – Sustainability Management Criteria</p>	<p>We have a conceptual concern regarding interconnected surface water criteria and other undesirable results: <i>“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...”</i></p> <p>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.</p>
<p>Page 200 – Domestic Well Analysis</p>	<p>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.</p>



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<p>Page 252 - Project/ Management Actions (P/MA)</p>	<p>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.</p> <ul style="list-style-type: none"> ○ Please explain how the Cosumnes River diversion would work, and when. ○ Discuss how the excess status for each "Wet Year" water source is determined, and by whom. ○ Explain where excess water, if any, currently goes. ○ Discuss contingency plans if the anticipated wet years do not occur. ○ Summarize the legal/water rights status of the water considered excess. ○ 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.
<p>Page 260 - Table P/MA</p>	<ul style="list-style-type: none"> ○ 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. ○ 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.
<p>Other Management Actions</p>	<p>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.</p> <p>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.</p>



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	<p>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.</p> <p>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.</p> <p>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.</p>
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Finally, we note the important insights made possible by research and monitoring that guides Project development so that both recharge and ecological value are increased. An example is the investment made by OHWD and SAFCA to work with research teams to fully understand the site characteristics and to identify all the opportunities for principal aquifer recharge, flood protection, and ecological uplift. This information will enhance multi-benefit funding opportunities and support effective and responsible groundwater banking.

CONCLUSION: The GSPPD has a lot of very useful information and will provide an excellent start to regional subbasin management of groundwater with the suggestions provided above. As one of the few community groups that participated in the development of all three subbasin GSPDs, however, we feel improvements not only need to be made in the individual plans, but that consistency is also needed between the plans. There does not appear to be a reason for differences in key overarching management approaches, and analytical tools. This subbasin variability will not only hinder economies of scale for analysis, but efficient and effective management of the larger basin.



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ECOS strongly supported the use of common analytical tools to develop a basinwide understanding of the surface and groundwater flow elements. ECOS also strongly supported joint evaluation of GDEs and felt this was important to the regional outcome. Collaboration and consistency are also needed, however, in the setting of management objectives. We support the approach taken by the North American Subbasin GSPD regarding setting management objectives. Additionally, shallow and disadvantaged well programs, water bank evaluation and potential adjacent subbasin impacts, additional GDE evaluation using new studies, baseline demand reduction measures, water demand data timeframes, public involvement and very importantly, climate change modeling are all best handled through collaboration and consistency between the three subbasins. ECOS requests that all three subbasins consider not just touch points between the subbasins but a commitment to bring consistency in substantive approach to the next round of GSPs.

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The Environmental Council of Sacramento (ECOS) is a 501c3 nonprofit, with the mission to achieve regional and community sustainability and a healthy environment for existing and future residents. Member organizations of ECOS include: 350 Sacramento, Breathe California Sacramento Region, Environmental Democrats of Sacramento, *Friends of Stone Lakes NWR*, *International Dark-Sky Association*, Physicians for Social Responsibility Sacramento Chapter, *Sacramento Audubon Society*, Sacramento Citizens' Climate Lobby, Sacramento Electric Vehicle Association, Sacramento Housing Alliance, Sacramento Natural Foods Coop, *Sacramento Valley Chapter of the California Native Plant Society*, Sacramento Vegetarian Society, *Save Our Sandhill Cranes*, *Save the American River Association* and *Sierra Club Sacramento Group*. Habitat 2020 is a coalition that works to protect the lands, waters, wildlife and native plants in the Sacramento region.

Member organizations of Habitat 2020 include: the ECOS member groups italicized above, as well as the Friends of Swainson's Hawk, Sacramento Area Creeks Council and Sacramento Heron and Egret Rescue. Habitat 2020 also serves as ECOS' Habitat and Conservation committee.

We thank you for the opportunity to provide comments. If you have any questions regarding this letter, please feel free to contact me.

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