APPENDIX C-2. RESPONSE TO COMMENTS ON THE PIRU BASIN DRAFT GSP

The Fillmore and Piru Basin Groundwater Sustainability Agency (FPBGSA) received the following comment letters and comments via its website. Each of the comments is included in and responded to on the following Response to Comments table. The full comment letters are available at the FPBGSA website at https://www.fpbgsa.org/comments-received-for-fillmore-basin/.

Letters:

1. Bondy Groundwater Consulting, Inc., September 29, 2021 (Same comment letter as for Fillmore)
2. California Department of Fish and Wildlife, October 20, 2021
3. Los Angeles County Sanitation Districts, October 22, 2021
4. State University of New York College of Environmental Science and Forestry, University of California Santa Barbara, and Cardiff University, October 22, 2021
5. The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund, October 20, 2021
6. United Water Conservation District, October 22, 2021
7. Ventura County Public Works Agency, Watershed Protection, October 21, 2021

Comments Submitted Via Website:

A. California Department of Fish and Wildlife, October 21, 2021 (Same as letter)
B. State University of New York College of Environmental Science and Forestry, October 22, 2021 (same as letter)

RESPONSE TO PUBLIC COMMENTS - PIRU GSP

GSP	Letter No.	Comment No.	Commenter(s)	Date	Section	Page No.	Line No.	Topic	Comment	Response
Piru	1	1-1	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Principal aquifers	Two principal aquifers are proposed in the GSPs. The proposed "Main Aquifer" consists of "Aquifer Systems" A & B. The proposed "Deep Aquifer" consists of "Aquifer System" C. The terminology used in the GSP may not be appropriate and may create confusion for some readers. Specifically, how can an "aquifer" consist of one or more "aquifer systems"? It is recommended that the A, B, and C "Aquifer Systems" be referred to as zones or horizons instead to avoid confusion.	We concur that the usage of Aquifer, Aquifer System, and Aquifer Zone was potentially confusing. Upon consultation with the commenter, UWCD, and DWR, we have adjusted the language in the GSP to a single Principal Aquifer composed of Aquifer Zones A and B. Zone C is designated as a non-Principal Aquifer. References to Aquifer System(s) have been removed.
Piru	1	1-2	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Principal aquifers	The identification of multiple principal aquifers appears to be based exclusively on technical criteria without consideration of the management and cost implication. The technical reasons provided include: (1) "the distribution and extent of hydraulic properties (i.e., hydraulic conductivity) in the United (2021a) VRGWFM", (2) unconfined vs. semi-confined conditions, and (3) an aquitard between the B and C "Aquifer Systems". Given that there is only one "Aquifer System" C groundwater elevation monitoring well in each basin, it does not appear that sufficient data are available to evaluate the degree of confinement of "Aquifer System" C. Similarly, there are insufficient borehole data to conclude that the aquitard between "Aquifer Systems" B and C is continuous across the Basins. This is indicated by the GSP cross-sections, which do not depict geologic strata beneath "Aquifer System" B over large portions of the Basins due to a lack of data at depth.	"See previous comment" We concur that the usage of Aquifer, Aquifer System, and Aquifer Zone was potentially confusing. Upon consultation with the commenter, UWCD, and DWR, we have adjusted the language in the GSP to a single Principal Aquifer composed of Aquifer Zones A and B. Zone C is designated as a non-Principal Aquifer. References to Aquifer System(s) have been removed.
Piru	1	1-3	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Principal aquifers	It is unclear whether identification of the "Deep Aquifer" is consistent with the definition of the term "principal aquifer". (GSP Emergency Regulations § 351 (aa) defines "Principal aquifers" as aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems.) Specifically, it is unclear whether the "Deep Aquifer" transmits significant or economic quantities of groundwater to wells. The GSPs indicate that only 1 to 4% of verifiable pumping in the basins occurs from this zone. Furthermore, the GSPs refer to "Deep Aquifer" pumping as "minor" when discounting "Deep Aquifer" data gaps. At a minimum, the designation of the "Deep Aquifer" as a Principal Aquifer contradicts the statements about the "minor" pumping from the "Deep Aquifer".	Aquifer Zone C is no longer referred to as a Principal Aquifer. Although there are a few wells extracting from this zone, the quantity of water being pumped is not a predominant source in the basin.
Piru	1	1-4	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Principal aquifers	The most significant concern is the apparent lack of consideration of the management and cost implications of the decision to identify the "Deep Aquifer" as a separate principal aquifer. The GSP does not communicate what management objective(s) would be met by identifying the "Deep Aquifer" as a principal aquifer. Rather, the GSP argues the opposite - that there is little concern about the "Deep Aquifer" because there is only a minor amount of pumping sourced from it. It is unclear why this small amount of pumping requires special consideration in the GSPs and how identifying separate principal aquifers furthers management of the basins. Moreover, the GSP does not consider the costs for complying with the additional self-imposed requirements that come with this decision. Specifically, the GSP Emergency Regulations require the following for each Principal Aquifer: 1. Hydrogeologic Conceptual Model GSP Section: a. General water quality b. Vertical and lateral extent 2. Groundwater Conditions GSP Section: a. Groundwater elevation contour maps b. Groundwater elevation hydrographs c. Hydraulic gradients between the Principal Aquifers 3. Monitoring Network: a. Sufficient density of monitoring wells to collect representative measurements in each Principal Aquifer to: i. Demonstrate groundwater flow directions ii. Demonstrate water quality iii. Calculate hydraulic gradients between Principal Aquifers 4. Annual Reports: a. Change in storage for each Principal Aquifer	See responses to comments 1-1, 1-2, and 1-3.
Piru	1	1-5	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Sustainable yield	The sustainable yields presented in the GSPs are based on the "pumping minus change in storage" approach applied to the water budget data. This approach underestimates the sustainable yield because it ignores the fact that the basins refill completely periodically and reject potential recharge during such periods. Simply stated, the basins could recover with higher pumping rates than used in the water budgets. Modeling results presented during various meetings have demonstrated this fact very clearly. Moreover, the basins experienced deeper groundwater levels prior to the historical water budget period without reported undesirable results, further suggesting that the sustainable yield is greater than that which results from a strict application of the "pumping minus change in storage" mathematics. Ideally, the sustainable yield would be estimated using numerical model simulations designed to estimate the true potential and resiliency of the basins. If this is not feasible in the time remaining for GSP completion, then it is recommended that the GSPs be updated to caveat the sustainable yield values as noted above.	- The "pumping minus change in storage" calculation is considered a minimum sustainable yield estimate (based on 50 year historical record adjusted for 2070CT climate change and associated increased pumping demand. The change in storage SMC will be updated to reflect using GW levels as a proxy.
Piru	1	1-6	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Data gaps	GSP Emergency Regulations § 351(l) defines "data gaps" as a "lack of information that significantly affects the understanding of the basin setting or evaluation of the efficacy of Plan implementation and could limit the ability to assess whether a basin is being sustainably managed." A potential interpretation of this definition is that anything identified as a "data gap" would need to be addressed during GSP implementation. The GSP Emergency Regulations make this clear for the monitoring network - "data gaps" must be addressed within five years following GSP adoption (GSP Emergency Regulations § 354.38(d)). A concern is that the term "data gap" is used in the GSP to describe data limitations that are not necessary to address to sustainably manage the Basins and for which the GSA has no plan to address. It is recommended that each use of the term "data gap" be carefully reconsidered to determine if the item in question is really a data gap as defined by the GSP Emergency Regulations. It is recommended that any items that are not truly data gaps (as defined by the GSP Emergency Regulations) and/or that the GSA is not committed to addressing be characterized using a different term, such as "data limitation" or "potential data gap."	"Data gaps" usage will be revised to only reflect HCM and SMC items that limit implementation of the GSP and assessment of sustainability. References to "data gaps" altered to "potential data gaps", where appropriate.

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Piru	1	1-7	Bondy Groundwater Consulting, Inc.	9/29/2021	2.2.2.7, 3.2.5	NS	NS	Depletions of interconnected surface water - calculations	Calculations of interconnected surface water depletion are presented in Section 2.2.2.7 and referred to in Section 3.2.5. These calculations were developed by running the VRGWFM with historical pumping rates and comparing to a second simulation which employed a hypothetical 50% reduction in basin wide pumping. Appendix J discussed changes in streamflow using a similar analysis that eliminated pumping within 1 mile of the Santa Clara River. Both approaches do not calculate the full amount of depletion, as seems to be required by the GSP Emergency Regulations. In particular, indirect depletion2 is being underestimated. It is recommended that the analysis be revised to include removal of all pumping to fully estimate depletions. Doing so will ensure compliance with the GSP Emergency Regulations and provide a more robust technical basis and transparency for the decision to screen out the depletions of interconnected surface water sustainability indicator.	Our interpretation of the Emergency Regulations are a bit more pragmatic. The goal is to quantify the amount of surface water depletion due to groundwater extractions, which for this basin is possible at the East Grove and Fish Hatchery areas. The relationship between surface water flow (i.e., rising groundwater) is approximated by the empirical relationships between water levels in key wells and manual surface water flow measurements. The manual measurements are constrained to some upper limit that incorporates consideration of personnel safety while gathering the flow data. Hence the data in Figures 2-4 and 3-16 in Appendix J have upper flow rates at or near 50 cfs. The empirical relationship does not extend beyond this value, so if the water levels in the key wells rise to an elevation that falls outside the range of the field measurement (due to the hypothetical elimination of all groundwater extractions in the groundwater flow model), we do not currently have a mechanism to quantify that flow rate. The best available information for this topic is the empirical relationship.
Piru	1	1-8	Bondy Groundwater Consulting, Inc.	9/29/2021	3.2.5	NS	NS	Depletions of interconnected surface water - SMC	The justification for not developing SMC for the depletions of interconnected surface water sustainability indicator can be better described. Only a few sentences are devoted to this critical decision. The concern is that the basis for not developing SMC will be unclear to those who did not directly participate in the planning process, including certain stakeholders and DWR reviewers. It is suggested that Section 3.2.5 be expanded to more fully present the rationale for not developing depletions of interconnected surface water SMC. For example, Point No. 2 in Section 3.2.5 should be supported with appropriate references. Pertinent information from the Stillwater memo appendix could be summarized here together with a more detailed description of why the decision to not develop depletions of interconnected surface water SMC is not inconsistent with designation of the Santa Clara River as critical habitat for steelhead. Lastly, consider more fully describing the process for reaching the decision. More description of the number of meetings this matter was discussed, outreach, feedback received, etc. could be included to support the decision.	See the updated language in Appendix J, Section 3.6.5 and GSP Section 3.2.1.
Piru	1	1-9	Bondy Groundwater Consulting, Inc.	9/29/2021	Appendix J, Section 3.6.5	NS	NS	Depletions of interconnected surface water - SMC	Appendix J, Section 3.6.5 makes the argument no significant and unreasonable effects will occur because estimated past and future depletion rates are similar. This logic is questionable. For example, could GSAs in the Central Valley continue with subsidence so long as the subsidence rates are less than or equal to historical rates? Probably not. A potentially stronger argument may be that there have not been reported undesirable results historically and depletion rates are not projected to increase; therefore, undesirable results are not expected in the future. The lack of reported undesirable results should be emphasized and supported in the GSP and appendix to provide a more solid basis for not developing depletions of interconnected surface water SMC.	The rate of subsidence is not similar to rate of ISW depletions (the rate of ISW depletion at East Grove and Fish Hatchery areas fluctuates within a range of values through time), while a constant rate of subsidence will result in cumulatively worse conditions over time. Section 3.6.5 in Appendix J has been revised to expand on the rationale for not developing a MT.
Piru	1	1-10	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Degraded water quality - SMC	The GSP establishes minimum thresholds and measurable objectives for degraded water quality but then says the GSA is not responsible for meeting them. This approach does not appear to be consistent with the GSP Emergency Regulations because it does not address any degradation that could be caused by pumping or plan implementation. DWR has been very clear that GSPs must address any potential degradation that may be caused by pumping or plan implementation. The GSPs do not provide information concerning whether pumping or plan implementation can potentially cause water quality degradation. If there is no nexus between water quality degradation and groundwater pumping or plan implementation, then the GSPs should present the technical evidence, clearly state there is no nexus, and use this information to further justify the approach for this sustainability indicator. If there is potential for groundwater pumping or plan implementation to degrade water quality, then the GSPs should describe that potential and caveat the SMC by saying the criteria only apply if GSA determines that the degradation in question is being caused by pumping or plan implementation. This is the approach taken by several other GSAs.	Section 3.3.4 of the GSP states that the GSA will continue the water quality monitoring program during GSP implementation to assess if any observed material water quality changes are caused by the implementation actions. Neither historical or current extraction rates or water levels have resulted in undesirable GW quality results. The GSP does not propose any projects or management actions that would change the groundwater extraction regime in the basin.
Piru	1	1-11	Bondy Groundwater Consulting, Inc.	9/29/2021	3.2.3.1, 3.3.1	NS	NS	Chronic lowering of groundwater levels	Section 3.2.3.1 of the GSPs states that an undesirable result for chronic lowering of groundwater levels occurs when groundwater elevations drop below the bottom of well perforations (i.e., screen) in 25% of the representative monitoring sites. Section 3.3.1 goes on to say that "the Agency acknowledges wells going dry is an undesirable result, yet, a certain number of shallow water wells (i.e., less than 100 ft deep) going dry is acceptable (see DBS&A, 2021c [Appendix J]). A concern is that justification for the 25% criterion and "a certain number of shallow water wells going dry" is not supported by an analysis of impacts on beneficial uses. There is a concern that the DWR reviewers may conclude that there is insufficient justification for this criterion. It is suggested that the GSP be expanded to include a description of the effects on beneficial uses that would be expected if groundwater levels reached the minimum threshold levels and to provide justification for why those effects are not considered to be significant and unreasonable.	See updated language in Section 3.2.3.1 of the GSP
Piru	1	1-12	Bondy Groundwater Consulting, Inc.	9/29/2021	3.3.2, 3.4 Appendix J	NS	NS	Reduction of groundwater storage	The GSP text and SMC Appendix (Appendix J) are in conflict. The GSP text (Section 3.3.2) uses the sustainable yield for the minimum threshold. In contrast, Appendix J uses groundwater levels as a proxy and adopts the minimum thresholds for the chronic lowering of groundwater levels sustainability indicator. The GSP text (Section 3.4) does not establish a measurable objective. In contrast, Appendix J uses groundwater levels as a proxy and adopts the measurable objective for the chronic lowering of groundwater levels sustainability indicator. The approach proposed in Appendix J is preferred because of the sustainable yield values presented in the GSPs understate the true pumping potential of the basins, as discussed in an earlier comment.	We have adjusted the text to remove the conflict.
Piru	1	1-13	Bondy Groundwater Consulting, Inc.	9/29/2021	NS	NS	NS	Implementation costs	Implementation costs were not included in the draft GSP. These should be made available as soon as possible for stakeholder review.	Full implementation costs can be developed once the Mitigation Plan for supplying supplemental groundwater supplies to the Cienega Springs Restoration project has been prepared and the Board of Directors has the opportunity to consider the other projects identified in Section 4 of the GSP.

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Piru	1	1-14	Bondy Groundwater Consulting, Inc.	9/29/2021	3.2.2, 3.2.3	NS	NS	Groundwater levels and quality	GSP Sections 3.2.2 state that "water quality degradation beyond historical conditions" is an undesirable result. GSP Sections 3.2.3 state that "groundwater levels changes (i.e., declines) can extend to any of the applicable undesirable results. When considering these statements together, there is an implication that a causal relationship between groundwater levels and groundwater quality exists. The GSPs do not provide technical information to justify or refute a causal relationship between groundwater levels and groundwater quality. More information should be provided in the GSPs to clarify whether declining groundwater levels cause groundwater quality degradation. The statement in Section 3.2.3 should be revised if it is concluded that declining groundwater levels do not cause groundwater quality degradation.	Pumping does not have an evident impact on GW quality, based on analysis of GW level and quality trends (Appendix K, Section 2.2.2.5.2). The documented historical fluctuations in water levels have not resulted in undesirable results.
Piru	2, A	2,A-1	California Department of Fish and Wildlife (CDFW)	10/20/2021	2.2.1.6, Appendix K	2-35; Appendix K page 132	15-19	Hydrologic Conceptual Model (HCM) data gaps	There is insufficient information in the Draft GSP about the hydrologic interconnection between the shallow aquifer and the Main aquifer. Page 2-35 of the Draft GSP states, "Data gaps (Figure 2.2-14) in the HCM comprise a lack of groundwater level data in the shallow groundwater of the Main Aquifer along the streams (e.g., Santa Clara River and Piru Creek), and a lack of groundwater level data in the Deep Aquifer. The shallow groundwater data gaps in the stream areas will be addressed with the installation of monitoring wells by the Agency (per DWR Grant Funding) and installation of shallow monitoring wells by UCSB (Stillwater, 2021b)". CDFW appreciates the efforts the GSA undertook to analyze the Basin in terms of geologic and hydrogeologic characterization. CDFW also appreciates PBGA's proposed plans to utilize the updated HCM to fill in the data gaps and deficiencies identified in the Draft GSP. However, there is a need for a better understanding of the interactions between interconnected surface water and groundwater particularly in the GDE areas mentioned below in Comment 2,A-2. Additional clarification is needed in the final GSP along with a description of future assessments on how this data gap will be addressed. Recommendation #1(a): Accurate hydrogeologic modeling requires an accurate and complete data set. CDFW recommends the installation of shallow groundwater monitoring wells near potential GDEs and interconnected surface waters. Recommendation #1(b): CDFW also recommends pairing multiple-completion wells with additional streamflow gages to facilitate an improved understanding of surface water- groundwater interconnectivity and subsurface recharge channels. CDFW agrees with the PBGA proposal to install more multiple-well monitoring facilities across the basin. The Draft GSP states that "Construction of twenty of these facilities equally spaced across the Basins would greatly decrease GSP analysis uncertainty and would be consistent with the DWR's data quality recommendations but would likely be cost prohibitive for FPBGSA rate payers in the Fillmore and Piru Basins." (Page 3-33, Lines 20-23, Draft Text). CDFW recommends the PBGA commit to a more modest number of strategically placed well monitoring facilities in the Project and Management Actions.	- Surface water occurs at limited areas during various time periods. The only perennial surface water areas are the East Grove, followed by Cienega Riparian Complex (which goes dry during drought periods). The other GDE areas depend on groundwater and occasionally have surface water present nearby. - RE: Recommendation #1(a) - the GSA plans to install shallow GW monitoring wells near the GDEs - RE: Recommendation #1(b) - streamflow gages have been considered infeasible in the SCR and lower Sespe Creek channels by USGS, Ventura County and United. Multi-completion wells are not necessary (only clustered, single-completion wells are necessary) for understanding shallow GW levels near/beneath GDEs. The difficulty of maintaining streamflow gages within the basin prevents characterization of potential interconnected SW, with the limited exception of identifying surface water with aerial imagery and/or field mapping.
Piru	2, A	2,A-2	California Department of Fish and Wildlife (CDFW)	10/20/2021	Appendix D, Section 6.4.1	Appendix D page 98	NS	Groundwater Dependent Ecosystems	The Draft GSP presents a thorough analysis of ecosystems potentially reliant on groundwater known as "indicators of groundwater dependent ecosystems" (ridges), however, of the five areas within the Basin that were mapped as containing iGDEs, only one area was considered as certain to be groundwater dependent. (Appendix D, Section 6.4.1, Piru Groundwater Basin, starting on Page 98). They are as follows: • Area 1 – Cienega Riparian Complex Area: 154 acres with mulefat and giant reed (Arundo donax); • Area 2 – Del Valle: 433 acres with riparian forest and widespread willows and cottonwoods; • Area 3 – Piru Basin Santa Clara River Riparian Shrubland: 317 acres; giant reed (Arundo donax), patches of sandbar willows and large mulefat thickets; • Area 4 – Piru Creek Riparian: 246 acres; and, • Area 5 – Piru Basin Tributary Riparian: 5.6 acres. The PBGA utilized three categories when evaluating groundwater dependence of iGDEs: unlikely, possible, and certain. The Cienega Riparian Complex Area was the only GDE to be categorized as certain to be dependent on groundwater. The Del Valle GDE was categorized as likely to be groundwater dependent. The Piru Basin Santa Clara River Riparian GDE was categorized as possible to be groundwater dependent. The Piru Basin Tributary Riparian GDE Unit and Piru Creek Riparian GDE were categorized as unlikely to be groundwater dependent. The PBGA indicated that the Del Valle GDE was located where "Perennial surface water flows are likely connected with groundwater" (Appendix D, Page 98). The PBGA indicated that the Piru Basin Santa Clara River Riparian GDE was located where "Intermittent surface flows are not connected with groundwater" (Appendix D, Page 100). The PBGA indicated that the Piru Basin Tributary Riparian GDE was located where "Intermittent and ephemeral surface water flows are not connected with groundwater. Hopper Canyon Creek within the Piru Basin may be a passage corridor for O. mykiss, but is likely dependent on surface water flows rather than groundwater for passage" (Appendix D, Page 104). The PBGA indicated that the Piru Creek Riparian GDE was located where "Groundwater wells in the rooting zone of plants (<30 ft) are rare in this unit and Releases from Santa Felicia Dam sustain surface flows" (Appendix D, Page 103).	No comment needed
Piru		2,A-2 (cont'd)							The Draft GSP uses words such as "likely not connected" and "unknown but unlikely" to rule out GDEs from further monitoring because there are data gaps in the monitoring system. The elevation and movement of subsurface flow is uncertain as is the interconnectivity of surface water relative to shallow aquifers and the main aquifers. CDFW believes the shallow perched groundwater, shallow alluvium, and surface water can still be connected to groundwater and hydrologic connectivity cannot be ruled out. These sources of water could be impacted in the future by new production wells that would adversely affect these GDEs. Water Code § 10721 (x)(6) requires GSPs avoid significant and unreasonable adverse impacts to beneficial uses of surface water including aquatic ecosystems reliant on interconnected surface water. If hydrologic-connectivity exists between a terrestrial or aquatic ecosystem and groundwater, then that ecosystem is a potential GDE and must be identified in a GSP. [23 CCR§354.16 (g).] Hydrologic-connectivity between surface water and groundwater, as well as groundwater-accessibility to terrestrial vegetation, must, therefore, be evaluated carefully, and conclusions should be well-supported. Hydrologic-connectivity considerations include connected surface waters, disconnected surface waters and transition surface waters. According to The Nature Conservancy (TNC), "if pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs (Figure 2). This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water" (TNC 2019). CDFW believes shallow perched aquifers, intermittent surface flows and shallow alluvial aquifers, although rarely used for a water supply, are extremely important to the ecological communities or species that depend on groundwater emerging from all aquifers or from groundwater occurring near the surface within the Basin.	The presence of extensive shallow perched aquifers in the Piru Basin has not been shown, although the area of rising groundwater near the Fillmore/Piru basin boundary is a possible area. The FPBGSA has an ongoing project to install three shallow monitoring wells in this area to investigate those waters and provide properly constructed monitoring locations. The TNC (2019) reference is a general comment and the inference that there are significant vertical gradients across the hydrostratigraphic units in the Piru basin is not supported by the data. Intermittent surface water flow (detached from the underlying aquifers) is not, by definition, groundwater. If vegetation, for example, is supported by the intermittent surface water flows, it does not meet the definition of a Groundwater Dependent Ecosystem. It is well documented that much of the Santa Clara River in the Piru Basin is disconnected from the underlying aquifers with the exception being the area of rising groundwater near the Fillmore/Piru basin boundary.

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Piru		2,A-2 (cont'd)							Recommendation #2(a): CDFW recommends the five areas within the Basin that were mapped as containing potential GDEs be included in the Final GSP as GDEs because these areas rely on the shallow perched groundwater, bedrock groundwater and/or surface water within the Basin. The PBGA has not provided enough data to make the assertion that the groundwater interaction with these GDEs should remain omitted. Water in the shallow alluvial aquifer can also percolate to the main aquifer below. As groundwater pumping occurs from the principal aquifer, water from the shallow alluvial aquifer can become depleted as it recharges the principal aquifer. These are important contributions to sustaining these habitats and Areas 3, 4, and 5 should be reinstated in the Final GSP as GDEs. This shallow alluvial "aquifer" needs to be protected under SGMA. If these GDEs are adversely impacted, groundwater plans should be in place to facilitate appropriate and timely monitoring and management response actions. Recommendation #2(b): CDFW recommends that the best scientific data on depth to groundwater be included in the analysis of interconnected surface waters before any data is excluded. USGS mapped springs/seeps and comparisons of recent groundwater level contours to vegetation root zones should also be included in the analysis. Mapping GDEs and other beneficial uses is an essential component in the consideration, development, and implementation of GSPs (Water Code §10723.2) and in assessing the potential effects on groundwater beneficial uses. GSAs must also include sustainable management criteria and monitoring to detect adverse impacts on all groundwater beneficial users. Recommendation #2(c): CDFW recommends using Normalized Difference Vegetation Index (NDVI) and Normalized Difference Moisture Index (NDMI) to assess habitat health for all five areas on an annual basis and should inform the revision of both the planning and minimum thresholds for the representative wells to within or near the historic baseline. CDFW does not recommend relying solely on soils information. For example, the presence of sandy, dry, and friable soils, does not mean that existing plant species do not rely on groundwater for some portion of their life cycle. Capillary fringe associated with root networks from native plants could be accessing groundwater from deeper depths.	A) There isn't any evidence that potential GDEs rely on perched groundwater or groundwater from the bedrock. The Riparian Shrubland GDEs are mostly comprised of mulefat and other plants that combine shallow roots (< 2 ft) with low water requirements. These plants are generally located where groundwater is 5-10 ft at its shallowest, and generally deeper , based on the new depth to water map in Fall 2011 (ie., the roots are located above the groundwater elevation and the capillary fringe). They are outside the area of mapped rising groundwater and typically do not support surface flow. The plants that make up this GDE may use groundwater during wet years given some uncertainty in the elevation of groundwater, but if groundwater were typically within the rooting zone, the dominant vegetation likely be cottonwoods and willows. B) The depth to groundwater map has been updated using Fall 2011 groundwater contours provided by United Water, based on the assumption that this wet year represents the highest summer groundwater levels in the basin. A discussion of the depth relative to rooting zones has been added to the GSP. C) NDVI and NDMI monitoring of the potential GDE sites has been included in the monitoring program.
Piru	2, A	2,A-3	California Department of Fish and Wildlife (CDFW)	10/20/2021	Appendix K, Section 6.2.1	Appendix K page 136	NS	Fish Hatchery pumping	CDFW is concerned that the Fillmore Fish Hatchery pumping is overquantified. The PBGA states on page 136 that "…there is potential that Fish Hatchery groundwater pumping which constitutes the largest pumping by a single entity in the basins for some years may complicate interpretation of water level data gathered from a new monitor well facility (i.e., measured water levels may not be representative static water levels if they are significantly influenced by the nearby pumping)." Although the Draft GSP identifies the Fish Hatchery as the largest pumping entity (pg. 136), impacts to groundwater levels are substantially minimized by returning pumped water to the main aquifer for recharge. Most of the water pumped from CDFW groundwater wells enter the fish hatchery raceway to sustain young fish. Although some water is lost from evaporation after entering the raceway, the majority of pumped well water is returned to the groundwater system via soil saturation and percolation. CDFW agrees with the PBGA's concern (pg. 136) that the Fish Hatchery production well has the potential to interfere with the accuracy of data collected from the shallow monitoring wells. The Fish Hatchery well is screened at the 300-foot-level whereas the shallow monitoring wells have been proposed at the 100-foot-level. The cone of depression from the Fish Hatchery production well has the potential to skew data as the surrounding areas of the production well in aquifer are slowly replenished. Recommendation #3(a): CDFW recommends the final GSP accurately quantify pumping activities at the Fillmore Fish Hatchery using both pumping and return flow quantities that recharge the aquifer when evaluating impacts to the groundwater. The rising groundwater area around the Fish Hatchery should retain sufficient water levels to protect both the pumping of water and key GDEs as suggested on page ES-1 of the Draft GSP. Recommendation #3(b): CDFW recommends the PBGA investigate adding additional shallow aquifer monitoring wells away from the vicinity of the Fish Hatchery production well to generate additional monitoring data that will accurately identify groundwater pumping trends, interactions, or interferences.	- Depletion of ISW is considered not unreasonable per SWRCB designations of beneficial uses/users (which are specifically referred to in SGMA) and the lack of evidence of spawning/rearing of Steelhead to support the significance of NMFS defined critical habitat. Beneficial use related to fish is limited to migration activities, which are conceptualized to occur when large surface water flows occur along the SCR and tributaries during storm events and wet periods, rather than during dry periods when surface water flow is limited to areas of rising groundwater (i.e., the basin boundaries). The GSA hosted multiple discussions with stakeholders on the merit of including surface water temperature monitoring in the ISW MT. It is not evident how the GSA would alter the GSP if the temperature data were available. Groundwater extraction reductions during prolonged droughts have been shown to not mitigate groundwater declines and shift undesirable impacts to other beneficial uses/users (e.g., DACs, agricultural operations, municipal water supplies).
Piru	2, A	2,A-4	California Department of Fish and Wildlife (CDFW)	10/20/2021	4.1	4-2	23-27	Mitigation	CDFW has not engaged in meaningful discussions of Basin overdraft mitigation with PBGA regarding SGMA project and management actions at the Cienega Springs Ecological Reserve. Page 4-2 of the Draft GSP states, "The FPBGSA desires to dampen the impacts of groundwater extraction by supporting the restoration efforts at the Cienega Restoration Project. The primary action being considered by the FPBGSA is to provide supplemental groundwater to the restoration program during multiyear droughts when the shallow groundwater levels decline to below the Critical Water Level" (Draft Text, Page 4-2, Lines 1-4). Page 4-2 of the Draft GSP also states, "FPBGSA staff have engaged with CDFW representatives about this project and the conversations are continuing. A detailed Mitigation Plan will be developed after the GSP has been adopted by the FPBGSA and the GSP submitted to DWR for their review (Jan 2022)" (Draft Text, Page 4-2, Lines 23-26). CDFW had a meeting on July 12, 2021 to talk about the Cienega Riparian Complex Area with members of TNC and PBGA. Beyond any initial discussions, CDFW has not received detailed information on PBGA's mitigation proposal. CDFW is open to discussing PBGA's potential mitigation projects or management actions that may include the construction of a production well on CDFW property. CDFW believes the Cienega Riparian Complex is situated in an area of rising groundwater. This Cienega Riparian Complex should retain sufficient water levels to protect key GDEs as suggested on page ES-1 of the Draft GSP except during "below normal years of precipitation". During instances of "below normal years of precipitation," the Cienega Riparian Complex has the potential to remain resilient through project and adaptive management actions. Recommendation #4(a): CDFW recommends the installation of additional shallow monitoring wells to inform specific trigger levels and thresholds requiring adaptive management actions. Recommendation #4(b): CDFW recommends the PBGA consider alternate project and management actions as opposed to a production well on CDFW property such as: i) reduced groundwater pumping; ii) implement groundwater pumping allocations; iii) implement Arundo donax removal; and iv) increase the quantity of imported water. CDFW looks forward to discussing these project and management actions to achieve groundwater sustainability within the Basin. Recommendation #4(c): CDFW proposes the final GSP incorporate Recommendation #3(b).	The Basin is not in overdraft. CDFW representative(s) are aware of and have attended FPBGSA Board meetings, where discussion among Board members and stakeholders has occurred regarding potential mitigative actions at the Cienega Springs Restoration Project area. The Board, in consultation with stakeholders, determined that a mitigation project of supplemental water for GDE support during droughts is the best solution for all beneficial users and uses of groundwater. GSA staff have met with CDFW representatives on at least two occassions to outline the proposed mitigative program. The current high-level mitigation plan is to provide supplemental water (from an existing deep well) to restoration experts (i.e., CDFW, TNC) who already have invested time and money in formal plans to make GDEs more resiliant and have jurisdiction over and expert knowledge regarding the best use of water for GDEs. - Recommendation #4(a) - shallow MWs are proposed and planned to be installed at the CSRP area. - Recommendation #4(b) - (i) pumping reductions have been shown to be ineffective at providing total mitigation of declining water levels in prolonged droughts and functionally shift the total impact of drought-induced water level declines to groundwater pumper (including the Fish Hatchery operations). Pumpers have no control over drought-induced groundwater declines, (ii) pumping allocations are not considered reasonable by the Board and merely shift the undesirable impacts from one beneficial user group to others. An allocation program could mean that the Fish Hatchery operations would be subject to a reduction in its groundwater extractions, also. Allocations would also impact the DACs in the basin. Allocations are not favored given the ability to use supplementabl water to mitigate GDE dieoff and reduce undesirable results on GW pumpers (i.e., the economy); (iii) and (iv) are being considered by the Board following GSP adoption. - Recommendation #4(c) - see response to comment 3,A-4

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GSP	Letter No.	Comment No.	Commenter(s)	Date	Section	Page No.	Line No.	Topic	Comment	Response
Piru	2, A	2,A-5	California Department of Fish and Wildlife (CDFW)	10/20/2021	3.2.5	3-7	3-13	SMC - southern California steelhead	CDFW is concerned the depletion of interconnected surface waters will have undesirable impacts on the Federal Endangered Species Act (ESA)-listed southern California steelhead (Oncorhynchus mykiss or steelhead). The PBGA states on page 3-7, lines 3-13 "The Agency deliberated extensively to determine if undesirable results related to the depletion of interconnected surface water, namely loss of Steelhead rearing and spawning habitat along the Santa Clara River as a sustainability indicator, is a significant and unreasonable effect of groundwater conditions. Ultimately, the Agency does not consider this a significant and unreasonable effect related to depletions of interconnected surface water because: (1) there is no designated existing or potential beneficial use for spawning and rearing along the Santa Clara River in the Basin per the LARWQCB Basin Plan (LARWQCB, 1994); (2) there is no evidence of these fish using the surface water (except during major flood events when the Santa Clara River is fully connected with runoff); and (3) even severe (i.e., 50%) pumping reductions would not prevent the surface water at Cienega Riparian Complex from going dry during severe droughts". The Santa Clara River is designated as critical habitat for the survival of steelhead and contains important steelhead spawning and rearing habitat in Southern California (NMFS 2021). The Southern California Steelhead Recovery Plan published in January 2012 by the National Marine Fisheries Service (NMFS) identified the Santa Clara River as one of the highest priority sites for recovery actions, as one of the most likely to sustain independently viable populations, and as critical for ensuring viability of the species as a whole (NMFS, 2012). Threats to steelhead, such as excessively high-water temperatures in the spring, summer, and early fall, reduce available juvenile rearing habitat. Low flows in the fall and winter can delay adult passage to critical spawning areas. CDFW is concerned that groundwater overdraft will lead to losing streams, temperature increases, diminishing refugia pools, and a lack of connectivity flows needed for steelhead migration. Recommendation #5: CDFW believes the Sustainable Management Criteria (SMC) needs to be revised to implement measures that will protect against significant and unreasonable effects related to depletions of interconnected surface water that have been identified in the Basin. Minimum thresholds and measurable objectives for the SCR are important tools that SGMA has provided to quantify groundwater conditions and ensure groundwater sustainability. Monitoring the temperature of the Santa Clara River, which is critical to steelhead survival, is a much- needed component in the Final GSP.	- Depletion of ISW is considered not unreasonable per SWRCB designations of beneficial uses/users (which are specifically referred to in SGMA) and the lack of evidence of spawning/rearing of Steelhead to support the significance of NMFS defined critical habitat. Beneficial use related to fish is limited to migration activities, which are conceptualized to occur when large surface water flows occur along the SCR and tributaries during storm events and wet periods, rather than during dry periods when surface water flow is limited to areas of rising groundwater (i.e., the basin boundaries). The GSA hosted multiple discussions with stakeholders on the merit of including surface water temperature monitoring in the ISW MT. It is not evident how the GSA would alter the GSP if the temperature data were available. Groundwater extraction reductions during prolonged droughts have been shown to not mitigate groundwater declines and shift undesirable impacts to other beneficial uses/users (e.g., DACs, agricultural operations, municipal water supplies).
Piru	2, A	2,A-6	California Department of Fish and Wildlife (CDFW)	10/20/2021	NS	NS	NS	Editorial	The GSA may need to revise the GSP before it is finalized and adopted by the GSA. Recommendation #6: CDFW recommends the GSA provide a red-lined version of the final GSP to understand the changes made between the daft GSP and final GSP. Alternatively, CDFW recommends the GSA provide a summary of changes made and comments addressed by the GSA in preparation of a final GSP.	A red-lined draft Final GSP was posted on the FPBGSA wesbite and available for public review prior to adoption of the Final GSP by the FPBGSA.
Piru	2, A	2,A-7	California Department of Fish and Wildlife (CDFW)	10/20/2021	NS	NS	NS	Sensitive species and habitats	Three of the five GDEs identified in the draft GSP as wetland, and riverine features, excluded by the PBGA are utilized by ESA-listed Steelhead; the FESA-and California Endangered Species Act (CESA)-listed least Bell's vireo (Vireo bellii pusillus), and the FESA-CESA-listed southwestern willow flycatcher (Empidonax traillii extimus). Southwestern pond turtle (Actinemys pallida) was designated as a California Species of Special Concern (SSC) in 1994 and is known to occur throughout the Santa Clara River watershed in four of the five GDEs specified in the Draft GSP. Southwestern pond turtle preferred habitat is permanent ponds, lakes, streams, or permanent pools along intermittent streams associated with standing and slow-moving water. A potentially important limiting factor for the southwestern pond turtle is the relationship between water level and flow in off-channel water bodies (groundwater dependent), which can both be affected by groundwater pumping. Other wildlife resources that could be substantially adversely affected based on declining water levels designated as SSC include coast horned lizard (Phrynosoma blainvillii); coast patch- nosed snake (Salvadora hexalepis virgultea); California legless lizard (Anniella spp.); two-striped garter snake (Thamnophis hammondii); and burrowing owl (Athene cunicularia). If groundwater depletion results in reduced streamflow due to interconnected surface waters, the nesting and foraging success of the SSC yellow warbler (Dendroica petechia), the SSC yellow breasted chat (Icteria virens), least Bell's vireo, southwestern willow flycatcher and other bird species may be diminished due to the reduced nesting habitat and food availability. Proper management of both shallow and deep groundwater pumping combined with reduced surface water pumping and diverting such as that from the would ensure that the Basin is not negatively impacted. Unsustainable use of groundwater can impact the shallow aquifers and interconnected surface waters on which these species and GDEs reply on for survival. This may lead to adverse impacts on fish and wildlife and the habitat they need to survive. Determining the effects groundwater levels have on surface water flows in the Basin will inform how the groundwater levels may be associated with the health and abundance of riparian vegetation. Poorly managed groundwater pumping, and surface water flows have the potential to reduce the abundance and quality of riparian vegetation, reducing the amount of shade provided by the vegetation, and ultimately leading to increased water temperatures in the Basin. Additionally, shallow groundwater levels near ISWs should be monitored to ensure that groundwater use is not depleting surface water and adversely affecting fish and wildlife resources in the Basin.	There is no recorded surface water pumping in this basin. The surface water diversions in this basin average less than 100 AF/year. The GSP provides a rationale for managing groundwater extractions in the basin within sustainable parameters. The GSP increases groundwater monitoring in the areas of rising groundwater in the Fillmore Basin, particularly near the Cienega and East Grove, where rising groundwater connects to interconnected surface water (discharges to the surface, generating surface water).
Piru	2, A	2,A-8	California Department of Fish and Wildlife (CDFW)	10/20/2021	NS	NS	NS	CDFW - environmental conclusions	CDFW has significant concerns about data gaps in the Hydrologic Conceptual Model (HCM), Riparian Groundwater Dependent Ecosystems being eliminated, the description of the CDFW Fillmore Fish Hatchery and listing the proposed Mitigation Plan Project as a SGMA project. CDFW urges the GSA to plan for and engage in responsible groundwater management that minimizes or avoids these impacts to the maximum extent feasible as required under applicable provisions of SGMA and the Public Trust Doctrine. In conclusion, the Draft GSP does not comply with all aspects of SGMA statute and regulations, and CDFW deems the Draft GSP inadequate to protect fish and wildlife beneficial users of groundwater for the following reasons: 1.The assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are not reasonable and/or not supported by the best available information and best available science. [CCR § 355.4(b)(1)] (See Comments 2,A-1, 2, and 5); 2.The Draft GSP does not identify reasonable measures and schedules to eliminate data gaps. [CCR § 355.4(b)(2)] (See Comments 2,A-1, 2, 3, 4 and 5); 3.The sustainable management criteria and projects and management actions are not commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the Draft GSP. [CCR § 355.4(b)(3)] (See Comments 2,A-2, 3, 4 and 5); and, 4.The interests of the beneficial uses that are potentially affected by the use of groundwater in the basin, have not been considered. [CCR § 355.4(b)(4)] (See Comments 2,A-1, 2, 3, 4, 5 and see General Comments).	See responses to comments 3, A-1, -2, -3, -4, and -5.

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GSP	Letter No.	Comment No.	Commenter(s)	Date	Section	Page No.	Line No.	Topic	Comment	Response
329:3329	3	3-1	Los Angeles County Sanitation Districts	10/22/2021	NS	NS	NS	Water quality	The Santa Clarita Valley Sanitation Districts are concerned that the chloride, sulfate, and total dissolved solids (TDS) results from wells in the Lower Area East of Piru Creek were compared to incorrect water quality objectives. Per Table 3-13 in Chapter 3 of the Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), the water quality objectives for the Lower Area East of Piru Creek are 200 mg/L for chloride, 1,200 mg/L for sulfate, and 2,500 for TDS, which are not reflected in the draft GSP. We recommend that the water quality objectives used in the GSP match those in the Basin Plan. The Sanitation Districts would like to suggest several changes that reflect progress that has been made to comply with the Upper Santa Clara River (USCR) Chloride Total Maximum Daily Load (TMDL), which is designed in part to protect groundwater in the east Piru Basin. (See comments 3-2 through 3-5.)	See adjusted text in Section 2.2.2.5.2 of the GSP.
Piru	3	3-2	Los Angeles County Sanitation Districts	10/22/2021	2.2.2.5.2	2-44	13 and 19-20	Water quality	Suggested deletions indicated with double underline, and additions in **bold text**: Section 2.2.2.5.2, TDS, page 2-44, lines 13 and 19-20: Recommend correcting the TDS water quality Objective (WQO) and stating that the TDS result was below the WQO (if the result was below 2,500 mg/L). We also recommend including the TDS result when it's compared to the WQO. Line 13: "• Lower area east of Piru Creek (WQO = 1,200 mg/L **2,500 mg/L**)" Lines 19-20: "One well **[Enter result]** shows TDS by TFR above **below** the WQO in Lower area East of Piru Creek."	See adjusted text in Section 2.2.2.5.2 of the GSP.
Piru	3	3-3	Los Angeles County Sanitation Districts	10/22/2021	2.2.2.5.2	2-45	19 and 24-25	Water quality	Suggested deletions indicated with double underline, and additions in **bold text**: Section 2.2.2.5.2, Sulfate, page 2-45, lines 19 and 24-25: Recommend correcting the sulfate water quality Objective (WQO) and stating that the sulfate result was below the WQO." Line 19: "• Lower area east of Piru Creek (WQO = 600 mg/L **1,200 mg/L**)" Lines 24-25: "One well (646 mg/L) shows sulfate above **below** the WQO in Lower area East of Piru Creek."	See adjusted text in Section 2.2.2.5.2 of the GSP.
Piru	3	3-4	Los Angeles County Sanitation Districts	10/22/2021	2.2.2.5.2	2-46	19 and 24-25	Water quality	Suggested deletions indicated with double underline, and additions in **bold text**: Section 2.2.2.5.2, Chloride, page 2-46, lines 19 and 24-25: Recommend correcting the chloride water quality Objective (WQO) and stating that the chloride results were below the WQO." Line 19: "• Lower area east of Piru Creek (WQO = 100 mg/L **200 mg/L**)" Lines 24-25: "All three wells (117 - 158 mg/L) sampled in 2015 show **chloride below** sulfate above the WQO limit and **but** at or above the toxicity threshold for avocados in Lower area East of Piru Creek."	See adjusted text in Section 2.2.2.5.2 of the GSP.
Piru	3	3-5	Los Angeles County Sanitation Districts	10/22/2021	2.2.2.5.2	2-47	22-24	Water quality	Suggested deletions indicated with double underline, and additions in **bold text**: Section 2.2.2.5.2, Chloride, page 2-47, lines 22-24: Recommend correcting the year the USCR Chloride TMDL was adopted. The USCR Chloride TMDL was fully adopted in 2004. In addition, the Sanitation District has made progress on implementing TMDL actions to mitigate chloride impacts and we recommend that this progress be noted. Lines 22-24: "A chloride total maximum daily load (TMDL) for the Upper Santa Clara River was adopted in 2008 **2004**, but the proposed TMDL actions to reduce and mitigate chloride impacts in the Piru Basin have not yet been fully implemented, **and actions to comply with the TMDL implementation plan to reduce and mitigate chloride impacts in the Upper Santa Clara River and east Piru Basin are underway. The Sanitation District has begun operating the UV disinfection facilities at the Saugus and Valencia WRPs and anticipates that the Advanced Water Treatment Facility will be operational by December 2022, which will bring the Valencia and Saugus WRPs into full compliance with the requirements of the Upper Santa Clara River Chloride TMDL.** "	See adjusted text in Section 2.2.2.5.2 of the GSP.
Piru	4,B	4,B-1	State University of New York College of Environmental Science, University of California Santa Barbara, and Cardiff University	10/9/2021	NS	NS	NS	Groundwater Dependent Ecosystems	Commentors shared research findings to help improve the identification and consideration of GDEs in the Fillmore Basin. These include: 1. Riparian vegetation die-off during the 2012-2016 drought is linked to groundwater decline. 2. The groundwater decline causes more water stress to riparian vegetation than climatic variables. 3. Native cottonwood and willow trees are groundwater-dependent species that rely on constant root access to groundwater for survival and growth, especially during dry summer months and in drought years. 4. The rate of groundwater level decline is as important to riparian vegetation as the absolute depth below which their roots completely lose access to the water table ("critical water depth"). 5. The installation of more shallow monitoring wells is needed to support ongoing efforts to understand the ecohydrological links between groundwater and riparian forests along the SCR. See comment letter for further discussion of these findings.	Additional monitoring wells are planned following the adoption of the GSP in the Cienega area (near the boundary with the Fillmore Basin), along Piru Creek, and between the Del Valle GDE Unit and the confluence with Piru Creek. We have added text about the importance of the rate of groundwater decline to the text of the GDE memo and added a reference to Kibler 2021.

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GSP	Letter No.	Comment No.	Commenter(s)	Date	Section	Page No.	Line No.	Topic	Comment	Response
Piru	5	5-1	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Disadvantaged Communities and Drinking Water Users	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 2.1-4). However, the GSP fails to clearly state the population of each DAC or include the population dependent on groundwater as their source of drinking water in the basin. The GSP provides a density map of domestic wells in the basin. However, the plan fails to provide depth of these wells (such as minimum well depth, average well depth, or depth range) within the basin. 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: 1. Provide the population of each identified DAC. 2. 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). 3. Include a map showing domestic well locations and average well depth across the basin.	Figure 2.1.4 provides information on the domestic well locations (with the bottom of the well screen depths) and DAC population. In addition, all of the existing well information is publically available at www.https://fillmore-piru.gladata.com/. Groundwater is the source of drinking water for the entire basin.
Piru	5	5-2	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Interconnected Surface Waters	The identification of Interconnected Surface Waters (ISW) is insufficient, due to lack of supporting information provided for the ISW analysis. To assess ISWs, the plan refers to a previous report by United Water Conservation District, included in the GSP as Appendix E. This Appendix describes a numerical model developed for a regional area that includes the Piru Basin. The main text of the GSP presents a summary of annual depletions of ISW in the Piru Basin at one location of the Santa Clara River. The ISW section of the GSP concludes with the statement (p. 2-56): "Data gaps remain regarding identifying the extent and timing of interconnectedness of other stream channel areas (e.g., Piru Creek and central and eastern portions of the Santa Clara River), due to a lack of paired groundwater level and surface water level monitoring sites. Stream conditions are considered to vary between all three stream conditions depicted on Figure 2.2-28, except at the Dell Valle potential GDE unit (Figure 2.2-30), where stream flows are sustained perennially by wastewater effluent from the Santa Clara River Valley East. The significance of interconnected surface water and groundwater conditions at these areas is less than that of the area of rising groundwater, because surface water exists less often in the Piru Creek and central Santa Clara River reaches (Figure 2.2-11) and surface water flows are sustained in Piru Creek by United releases from Lake Piru." However, no map is provided to show the stream reaches to which this statement refers. Without a map of labeled stream reaches in the basin, it is difficult to understand the location of these reaches, and whether the GSP has included them as potential ISWs in the GSP. In addition, it is unclear whether the GSP is only considering ISWs in areas with "rising groundwater" (gaining conditions). Under SGMA's ISW definition, they must also include losing reaches that maintain a connection with the saturated zone at any point in time and space.	No comment needed
Piru		5-2 (cont'd)		10/20/2021					Recommendations: 1. Provide a map showing all the stream reaches in the basin, with reaches clearly labeled with stream name and interconnected (gaining, losing) or disconnected status. 2. Provide more discussion in the GSP about the groundwater elevation data and streambed elevation data that could be used to verify the modeling analysis for interconnected reaches. Include a map of the interpolated groundwater elevations and spatial extent of groundwater monitoring wells used to produce the map. Discuss screening depth of monitoring wells and ensure they are monitoring the shallow principal aquifer. 3. To confirm the results of the groundwater modeling, overlay the stream reaches shown with depth-to-groundwater contour maps to illustrate groundwater depths and the groundwater gradient near the stream reaches. 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. 4. On the ISW map, clearly label the areas with data gaps. While the GSP clearly identifies data gaps and their locations in the text, we recommend that the GSP considers any segments with data gaps as potential ISWs and clearly marks them as such on maps provided in the GSP.	1. A map of the interconnected reaches (Figure 4-6) has been added to the GDE memo 2. The data resolution for shallow groundwater and land surface elevations are not sufficent to accurately generate interconnected reaches by the method suggested in Attachment D of the reviewers comment. Additional shallow monitoring wells are planned to augment the current water level information for the shallow aquifer. 3. Depth to groundwater maps were generated using methods outlined in the recomendations and have been clarified in the text. 4. Reaches with uncertain connection to groundwater were highlighted.
Piru	5	5-3	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Groundwater Dependent Ecosystems	The identification of Groundwater Dependent Ecosystems (GDEs) is incomplete. We commend the GSA for their efforts to evaluate GDEs in the basin, as presented in the GDE Technical Memorandum (Appendix D). The GSP mapped GDEs and potential GDEs using multiple sources, including the NC Dataset (also referred to in the GSP as the iGDE database), California Department of Fish and Wildlife (CDFW) VegCAMP, US Department of Agriculture (USDA) CalVeg, and National Wetlands Inventory data. However, we would also like to see aquatic GDEs (e.g., steelhead critical habitat) mapped. Table 2.2-5 describes the type of GDEs in the basin with dominant flora species and acreage within the basin. Table 2.2-7 presents the critical habitat and special status species in the basin. The Appendix states (p. 21): "In light of the limitations of the monitoring well data, the groundwater elevation data presented in this section are intended to illustrate general trends within GDE units. The spring 2019 depth to water surface (Section 2.1.2), as opposed to monitoring well data, is used to establish GDE connectivity with shallow groundwater." The Appendix describes the challenges with using groundwater monitoring well data for some of the GDE units and explains that 2019 groundwater levels are conservative for GDE mapping. However, we would like to see additional discussion and use of groundwater data from the pre-SGMA benchmark date of 2015 where available (e.g., pre-drought 2011 water levels) to determine which GDE units are connected to groundwater. Furthermore, we found that some mapped features in the NC dataset were improperly disregarded (i.e., coastal live oak (Quercus agrifolia) on slopes). NC dataset polygons were incorrectly excluded for mapped vegetation growing on a clear slope, based on landscape position and improbable connection to groundwater. However, without groundwater data, there is no way to confirm that these NC dataset polygons are not GDEs. If no data are available, then these polygons should be retained as potential GDEs. Recommendations: 1. For GDE units where groundwater elevation data are available, we recommend the pre-SGMA period of 2005-2015 be used to verify a connection to groundwater. If complete data from this period are not available, consider the use of data from 2011 (a wet year) since it is before the SGMA benchmark date of 2015. 2. Identify aquatic GDE habitats (e.g., steelhead critical habitat) in the GSP, and specify which reaches support migration, spawning, and rearing. 3. Re-evaluate the NC dataset polygons that were removed based on their location on a slope. If groundwater elevation data are not available to verify connection to groundwater, retain these polygons as potential GDEs in the GSP.	The 30 ft depth to water was altered based on Fall 2011 water surface data. This increased the extent of GDEs in the Piru Basin, but had little influence on GDEs in the Fillmore Basin. Aquatic GDE units (represented by connected reaches are shown in the new figure 4-6 in the GDE appendix. The justification of removal of coast live oak was expanded in the text of the Section 2.1.3 GDE Appendix "These stands typically occur on the fringes of the basin, where the non-water bearing Pico Formation bedrock outcrops (Figure 2.2-3) and average slopes exceed 20%. It is therefore extremely unlikely that oaks in these areas are connected to groundwater-bearing alluvial or fluvial sedimentary formations."

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Piru	5	5-4	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Native vegetation and managed wetlands	Native vegetation and managed wetlands are water use sectors that are required to be included in the water budget. The integration of native vegetation into the water budget is sufficient. We commend the GSA for including the groundwater demands of this ecosystem in the historical, current and projected water budgets. Managed wetlands are not mentioned in the GSP, so it is not known whether or not they are present in the basin. Recommendation: 1. State whether or not there are managed wetlands in the basin. If there are, ensure that their groundwater demands are included as separate line items in the historical, current, and projected water budgets.	1. There are no managed wetlands in the Basin (based on ...). Evapotranspiration (ET) in the water budget represents all vegetation water use.
Piru	5	5-5	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Stakeholder engagement	Stakeholder engagement during GSP development is insufficient. SGMA's requirement for public notice and engagement of stakeholders is not fully met by the description in the Communication and Engagement Plan (Appendix B). We note the following deficiencies with the overall stakeholder engagement process: 1. The opportunities for public involvement and engagement are described in very general terms. They include attendance at public meetings, a stakeholder email list, updates to the GSP website and social media, and information shared at meetings held by other local agencies and organizations. There is no specific outreach during the GSP development process described for environmental stakeholders and domestic well owners. 2. The Communication and Engagement Plan does not include a detailed plan for continual opportunities for engagement through the implementation phase of the GSP that is specifically directed to environmental stakeholders. Recommendations: 1. Include a more detailed and robust Communication and Engagement Plan that describes active and targeted outreach to engage DAC members, domestic well owners, and environmental stakeholders during the remainder of the GSP development process and throughout the GSP implementation phase. Refer to Attachment B for specific recommendations on how to actively engage stakeholders during all phases of the GSP process.	The FPBGSA conducts extensive outreach to actively engage all stakeholder interests within the basin. Additional text has been added to GSP Section 2.1.5 Notice and Communication that further describes stakeholder outreach and engagement that occured during GSP preparation, including targeted outreach to domestic well owners, including those within DACs. DACs and well owners within those communities are representated on the Board by the Ventura County, City of Fillmore, and Pumpers Association Directors. In addition, among the organizations represented by the Environmental Stakeholder Director is Central Coast Alliance United for a Sustainable Economy (CAUSE), which protects environmental and DAC interest. Outreach to DACs includes numerous mailings and communications to well owners by the Pumpers Associations and FPBGSA participation at targeted stakeholder outreach and education meetings ("WaterTalks") sponsored by the Watersheds Coalition of Ventura County Integrated Regional Water Management (IRWM). Environmental interests are represented on the FPBGSA Board by the Environmental Stakeholder Director. A number of local environmental organizations nominate the Environmental Director and she regularly reaches out and coordinates with numerous local environmental organizations as described in Section 2.1.5. The Ventura County Director provides information and updates to IRWM and Santa Clara River Watershed Committee. The FPBGSA will use the Communications and Engagement Plan and continue GSP development outreach methods to engage a diversity of stakeholders through GSPimplementation."
Piru	5	5-6	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	SMCS/Disadvantaged Communities and drinking water users - groundwater levels	For chronic lowering of groundwater levels, the GSP mentions impacts to DACs and domestic drinking water wells when defining undesirable results. The GSP states (p. 3-3): "Groundwater levels below the base of well perforations (or screen intervals) prevents beneficial uses (i.e., domestic) and users (i.e., DACs) from benefiting from the California Human Right to Water due to dry well conditions." However, the GSP does not sufficiently describe how the existing minimum threshold groundwater levels are consistent with avoiding undesirable results in the basin. The measurable objectives set for groundwater elevations do not consider DACs and drinking water users. The GSP states (2-41): "Historically water quality chemicals (analytes or constituents) of concern (COCs) in the Fillmore and Piru basins have generally included, but are not necessarily limited to, the following analytes: Total Dissolved Solids (TDS), Sulfate, Chloride, Nitrate, and Boron." The GSP further states (2-50): "Additional potential COCs in the Piru Basin were identified [as] Radiochemistry (gross alpha and uranium), Selenium, Lead, Iron, and Manganese." The GSP states that the minimum thresholds for degraded water quality correspond with water quality objectives (WQOs) and maximum contaminant levels (MCLs) established by the Los Angeles Regional Water Quality Control Board (LARWQCB) Basin Plan and California Division of Drinking Water (DDW), respectively. However, they are not specifically provided in Section 3 (Sustainable Management Criteria) of the GSP. For degraded water quality, the GSP does not discuss direct and indirect impacts on DACs or drinking water users when defining undesirable results for degraded water quality, nor does it evaluate the cumulative or indirect impacts of proposed minimum thresholds on these stakeholders. The GSP does not set any measurable objectives for the degraded water quality sustainability indicator.	No cooment needed

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Piru	5	5-6 (cont'd)	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund						Recommendations re: Chronic Lowering of Groundwater Levels: 1. Describe further the direct and indirect impacts on DACs and drinking water users when defining undesirable results for chronic lowering of groundwater levels. 2. Consider and evaluate the impacts of selected minimum thresholds and measurable objectives on DACs and drinking water users within the basin. Further describe the impact of passing the minimum threshold for drinking water users. For example, provide the number of domestic wells that would be de-watered at the minimum threshold. Recommendations re: Degraded Water Quality: 1. Describe direct and indirect impacts on DACs and drinking water users 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." 2. Evaluate the cumulative or indirect impacts of proposed minimum thresholds for degraded water quality on DACs and drinking water users. 3. Include the minimum thresholds established for the identified COCs in Section 3 (Sustainable Management Criteria) of the GSP, instead of just stating that they align with drinking water standards. 4. Set measurable objectives for the degraded water quality sustainability indicator.	The reviewers comments suggest that DACs in the Piru basin are a separate group of stakeholders that are not included within other stakeholder categories. The DACs in the basin are served by a combination of the Town of Piru's water system, various mutual water companies, or by their own domestic wells. The GSP addresses impacts to DACs when discussing how projected future groundwater conditions will effect municipal and industrial, domestic well owners, and agricultural users. It is not correct in this basin to equate all DACs to domestic well users nor are all domestic well operators DACs. The MT for the Declining Water Level sustainability indicator was set by the FPBGSA Board of Directors at when the water levels in 25% of the representative wells (there are several in the basin) decline to depths below the bottom of the well perforations (functionally a dry well). The representative wells are spatially distributed throughout the basin and complete at a variety of depths. So, the number of domestic wells that would be impacted by a MT violation would depend on which suite of the representative wells had water levels fall below the bottom of the well screen. There are several possible permutations. Qualitatively, if the deepest 25% of the representative wells exceed the MT, then several shallow domestic wells would be impacted, however if the shallowest 25% of the representative wells exceeded the MT, the number of shallow domestic wells that would be impacted will be less. Table 2.2-3 provides a summary table of the regulatory water quality thresholds for several analytes, however, it is acceptable to incorporate references to water quality standards rather than providing a detailed list in the GSP. MOs were not set for the degraded water quality sustainability indicator as the GSA is not responsible for regulating water quality in this basin. The inclusion of MOs sets objectives that the GSA is expected to strive for, however, they lack the regulatory authority over water quality.
Piru	5	5-7	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	SMCs/ Groundwater Dependent Ecosystems and Interconnected Surface Waters	We commend the GSA for their comprehensive analysis of undesirable results for GDEs and ISWs. The GSP analyzes the impacts on GDEs when defining undesirable results for three sustainability indicators (i.e., chronic lowering of groundwater levels, degraded water quality, and depletions of interconnected surface waters). For minimum thresholds, the GSP states (p. 3-9): "The MT for groundwater levels in the Cienega Restoration / Fish Hatchery area is set at the critical water level (Kibler, 2021 and Kibler et al., 2021), 10 ft below 2011 low groundwater levels (i.e., the MO). If/when this MT is exceeded, mitigation (Section 4) will be implemented to offset the undesirable result that would occur without adequate soil moisture." The GSP does not, however, assess the impacts of minimum thresholds on the other GDEs in the basin. The GSP notes that the Cienega Riparian Complex has historically shown the greatest degradation due to groundwater levels (p. 2-78). It also describes this impact as an undesirable result due to groundwater levels declining, resulting in (p. 3-4) "die off of riparian vegetation (e.g., cottonwood or willow species in the Cienega Riparian Complex GDE unit), due to groundwater level declines below the critical water level, that are attributable to groundwater pumping." If the minimum threshold is exceeded, the referenced mitigation action will require months or years to implement. However, there is no discussion of interim pumping reductions or other actions that could have an immediate positive impact on the undesirable result. Recommendations: 1. Provide explicit discussion of how the minimum threshold (10 feet below 2011 groundwater levels) will prevent undesirable results specifically for all GDEs in the basin, not just those in the Cienega Restoration / Fish Hatchery area. 2. State directly what the depth to groundwater corresponds to under the GDEs for the proposed minimum threshold (10 feet below 2011 groundwater levels), and how it compares to plant rooting depth information. 3. Consider GDEs when establishing measurable objectives and evaluate the measurable objectives based on GDE water needs.	We used Kibler 2021 as the source for definig a critical water level. Kibler's analyses indicated that a 10 ft decline in the water level was an important threshold below which vegetation can die off. This relationship was presumed to be applicable to other the other GDEs. Based on Stillwater 2021a, the only GDE area to experience material die off was the Cienega/Fish Hatchery area. The explicit MT is shown at Figure 3.5-4. The MO for GDEs is the 2011 low water level which functionally represents "a full basin condition".
Piru	5	5-8	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Climate change	The SGMA statute identifies climate change as a significant threat to groundwater resources and one that must be examined and incorporated in the GSPs. The GSP Regulations8 require integration of climate change into the projected water budget to ensure that projects and management actions sufficiently account for the range of potential climate futures. The effects of climate change can intensify the impacts of water stress on GDEs, making available shallow groundwater resources more critical for their survival. Research shows that GDEs are more likely to succumb to water stress and rely more on groundwater during times of drought9. When shallow groundwater is unavailable, riparian forests can die off and key life processes (e.g., migration and spawning) for aquatic organisms, such as steelhead, can be impeded. The integration of climate change into the projected water budget is insufficient. The GSP does incorporate climate change into the projected water budget using DWR change factors for 2070. However, the GSP does not consider multiple climate scenarios (e.g., the 2070 extremely wet and extremely dry climate scenarios) in the projected water budget. The GSP should clearly and transparently incorporate the extremely wet and dry scenarios provided by DWR into projected water budgets or select more appropriate extreme scenarios for their basins. While these extreme scenarios may have a lower likelihood of occurring, their consequences could be significant, therefore they should be included in groundwater planning. The GSP includes climate change into key inputs (e.g., precipitation, evapotranspiration, surface water flow, and sea level) of the projected water budget. However, imported water is not included in the projected water budget or stated to be adjusted for climate change. The GSP calculates a sustainable yield based on the projected water budget with climate change incorporated. However, if the water budgets are incomplete, including the omission of extremely wet and dry scenarios and projected climate change effects on imported water volumes, 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: 1. Integrate climate change, including extreme wet and dry scenarios, into all elements of the projected water budget to form the basis for development of sustainable management criteria and projects and management actions. 2. Incorporate imported water inputs that are adjusted for climate change to the projected water budget. 3. Incorporate climate change scenarios into projects and management actions.	Use of the 2070CT climate change factors in the forward groundwater modeling effort indicated that the basin was in a functionally sustainable condition. Analysis of the extreme wet future climate scenario, would have resulted in the basin being "more sustainable." The 2070CT extremely dry scenario was not considered likely based on independent analyses provided by Oakley et al 2019. The 2070CT climate change factors are considered sufficient in other approved GSPs. Climate change factors were incorporated into the projected water budgets. When the GSA is prepared to consider their projects and management actions, they will likely conduct further analyses on the cost-benefit relationship under future climate scenarios. It is important to recognize that the future climate conditions for this inland portion of Ventura County are not dramatically different from current conditions and certainly those differences are not of the magnitude forecast for other regions.

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Piru	5	5-9	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Data gaps	The consideration of beneficial users when establishing monitoring networks is insufficient, due to lack of specific plans to increase the Representative Monitoring Points (RMPs) in the monitoring network that represent water quality conditions and shallow groundwater elevations around DACs and domestic wells in the basin. Figure 2.1-8 (Existing Groundwater Elevation Monitoring Programs Map) and Figure 2.1-9 (Existing Groundwater Quality Monitoring Programs Map) show that no monitoring wells are located across portions of the basin near DACs and domestic wells (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. The GSP provides comprehensive discussion of data gaps for GDEs and ISWs. Section 3.5.4.4.2 (Potential New Monitor Wells) discusses plans to include installation of new shallow monitoring wells to provide water level data around GDEs and ISWs, which is further described in Appendix D (Assessment of Groundwater Dependent Ecosystems for the Fillmore and Piru Basins Groundwater Sustainability Agency) and Appendix K (Monitoring Network and Data Gaps). However, this information is scattered across several locations in the GSP without a comprehensive set of maps provided. Recommendations: 1. Provide maps that overlay monitoring well locations with the locations of DACs and domestic wells to clearly identify potentially impacted areas. Increase the number of representative monitoring points (RMPs) in the shallow aquifer across the basin for the groundwater elevation and water quality groundwater condition indicators. Prioritize proximity to DACs and drinking water users when identifying new RMPs. 2. Provide maps that overlay existing and proposed monitoring well locations with the locations of GDEs and ISWs to clearly identify potentially impacted areas. 3. Describe further 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 basin. Appendix D discusses remote sensing of GDEs using NDVI or other data to monitor the health of GDEs through time, but few details are provided. 4. Provide discussion that adaptive changes in SMC for GDEs will be made, if GDE groundwater or biological monitoring reveals that existing SMC are not protective of these ecosystems.	1. Additional monitoring wells are being installed with DWR Grant Funding; Figure 3.5-1 shows the locations of the proposed new wells to be added to the monitoring network. The GSA can consider adding some of the new monitoring wells to the RMP list if is assists with water resource management strategies. the data gap figure can be updated with domestic wells to demonstrate sufficient data coverage 2. Section 3 contains a figure (3.5-1) showing GDEs, ISW and proposed monitoring points. 3. The biological monitoring will be focused on the use of NDVI analyses from the Fall of each year and will be evaluated and summarized in each 5-year GSP update.
Piru	5	5-10	The Nature Conservancy, Audubon California, Local Government Commission, Union of Concerned Scientists, Clean Water Action/Clean Water Fund	10/20/2021	NS	NS	NS	Projects and Management Actions	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 beneficial users of groundwater such as DACs and drinking water users. We commend the GSA for including several projects and management actions with explicit benefits to the environment. However, the GSP does not discuss the manner in which DACs and drinking water users may be benefitted or impacted by projects and management actions identified in the GSP. 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 plan's commitment to mitigate the undesirable result on the Cienega Riparian Complex GDE is insufficient. The plan is confusing in that the mitigation refers only to the Cienega Springs Restoration project and does not seem to propose any mitigation for the Cienega Riparian Complex GDE. Furthermore, it is not clear how the proposed Projects 1 & 2 would mitigate impacts to the Cienega Riparian Complex GDE even if it is part of the Cienega Springs Restoration project area. Recommendations: 1. 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. 2. 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. 3. For GDEs, include the following: 1) Add a map showing the locations of the Cienega Riparian Complex GDE and the Cienega Springs Restoration project, 2) Explain how the proposed management actions will mitigate the undesirable result occurring at the Cienega Riparian Complex GDE, 3) Develop immediate and longer term management actions to address the undesirable result occurring at the Cienega Riparian Complex (e.g., immediate pumping reductions when the minimum threshold is reached, non-native vegetation removal should die-off occur). 4. If the data gathered from additional monitoring in the basin reveals that other GDEs are present, develop mitigation actions for undesirable impacts on those GDEs.	1. We refer to the Statewide Dry Well Reporting system for collecting information on dry well conditions (known have been reported in this system, nor at Board meetings by representatives). Domestic well users frequently fall into the de minimus category and the GSA cannot mandate that de minimus users report their groundwater extractions or water levels. The GSA can, with the approval of the de minimus user, record water levels. The GSP does not explicitedly follow the system offered in the Drinking Water Well Impact Mitigation Framework, however, many of its element have been incorporated into the GSP. For example, no "Yellow Light" or "Red Light" triggers (as presented in the DWWIMF) exist for the Piru basin. 2. The Mitigation Plan for the Cienega Springs Restoration Project has yet to be developed. The details of that plan will include a consideration of how the mitigative actions will effect both the CSRP and CRC GDEs. (3) Pumping reductions near the Santa Clara River have been shown to be ineffective at totally mitigating declining water levels during a drought. Pumping reductions likely create undesirable impacts to groundwater users such as DACs, municipalities, and agriculture. The GSP includes a potential Project and Management Action regardin non-native vegetation removal that will be considered by the GSA in the future.
Piru		5-10 (cont'd)							5. Recharge ponds, reservoirs, and facilities for managed stormwater 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." 6. Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.	5) No response required 6) When the GSA is prepared to consider their projects and management actions, they will likely conduct further analyses on the cost-benefit relationship under future climate conditions.
Piru	6	6-1	United Water Conservation District	10/22/2021	1.0	NS	NS	Introduction	The Piru Basin GSP is well organized and well written. The purpose and sustainability goals of the Piru Basin GSP are clearly defined, and the background agency information presented is consistent with United's understanding.	Comment noted
Piru	6	6-2	United Water Conservation District	10/22/2021	2.0	NS	NS	Plan Area and Basin Setting	United appreciated the opportunity to contribute to the Piru basin GSP through the development of the recent updates for the hydrogeologic conceptual model and the numerical surface water and groundwater flow modeling that were referenced and used throughout much of Section 2. The GSP hydrogeologic conceptual model identifies and describes aquifer zones A, B, and C within the basins that are based on varying aquifer properties and depths of occurrence following United's presentation of a similar convention within the referenced modeling reports. We believe that the GSP adequately describes the variability within the aquifer zones with the data currently available. For management purposes, we believe that identifying a single Principal Aquifer within both the Piru and Fillmore basins is appropriate given the limited number of wells screened only in zone C, as well as the number of wells that are screened across zones B and C in both basins. As new data become available in the future, we look forward to collaborating with the FPBGSA to continually improving our understanding of surface water and groundwater conditions, refine the hydrogeologic conceptual model for the basins if necessary, and periodically refine and update the numerical surface water and groundwater flow models, as needed.	Comment noted

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Piru	6	6-3	United Water Conservation District	10/22/2021	3.0	NS	NS	Sustainable Management Criteria	United believes the sustainable management criteria described in the GSP and supporting documents, including measurable objectives and minimum thresholds, are defined appropriately and are reasonable. However, we suggest that more content from Appendix J (Technical Memorandum relating to the Sustainable Management Criteria) be included within the relevant portions of the GSP document and be referenced more clearly, especially in Section 3.4 where measurable objectives are addressed. United agrees that the current understanding of present-day and future groundwater uses in Piru Basin does not suggest that significant and unreasonable impacts should be expected for the six SGMA sustainability indicators. United agrees that undesirable results related to seawater intrusion are not applicable sustainable management criteria in Piru Basin as described in Section 2.2.2.4 of the draft GSP. Additionally, United agrees that the potential future depletion of interconnected surface water as presented in the Piru Basin GSP in the context of temporary habitat loss is reasonable and should not be considered a significant and unreasonable effect, as supported by the explanations mentioned in Section 3.2.5 of the draft GSP. Related to the monitoring network background, analysis, and proposed expansion, United agrees with the information provided in Section 3 of Piru Basin's Draft GSP and looks forward to supporting efforts to collect additional data related to the current and proposed expansion of the monitoring network for the sustainable management criteria for which sustainable management criteria have been developed.	See updated Section 3.4
Piru	6	6-4	United Water Conservation District	10/22/2021	4.0	NS	NS	Projects and Management Actions	United agrees with the proposed projects and management actions that support the five sustainable management criteria for which sustainable management criteria have been developed. We agree that these projects and management actions have the potential to enhance the water resources of the Piru Basin and aid in keeping the basin closer to the desired future conditions. United looks forward to supporting efforts related to ongoing project planning and implementation in the near future.	Comment noted
Piru	6	8-5	United Water Conservation District	10/22/2021	5.0	NS	NS	Implementation	United is committed to supporting efforts related to ongoing project planning and implementation in the future.	Comment noted
Piru	7	7-1	Ventura County Public Works Agency	10/21/2021	Executive Summary	ES-1	NS	Editorial - SMC terminology	On page ES-1, it is recommended that the sustainability criteria be renamed to match the terminology used in the regulations: 1. Chronic Lowering of Groundwater Levels 2. Reduction of Groundwater Storage 3. Seawater Intrusion 4. Degraded Water Quality 5. Land Subsidence 6. Depletions of Interconnected Surface Water	See updated ES-1
Piru	7	7-2	Ventura County Public Works Agency	10/21/2021	Executive Summary	ES-1	NS	SMCs, Groundwater Dependent Ecosystems and Interconnected Surface Waters	On page ES-1, the rationale for exclusion of the sustainable management criteria (SMC) for Interconnected Surface Water because it is "not applicable due to significant effect of droughts that deplete rising groundwater areas" should be explained in more detail. There is interconnected surface water as well as GDEs supported by rising groundwater, all of which are influenced by the hydrology, including groundwater pumping. This comment applies to all portions of the Draft where interconnected surface water and GDEs are discussed and the SMC is excluded, particularly in Section 3 (SMC).	See Sections 2.2.1.5.6, 2.2.2.7 and 3.2.1 inthe GSP, as well as additional technical details in Appendix J.
Piru	7	7-3	Ventura County Public Works Agency	10/21/2021	NS	NS	NS	Editorial, groundwater model	There are references to the groundwater model in Appendix E throughout the text body. It would be helpful to include a summary discussion on the model in the GSP text rather than requiring the reader to review the detailed modeling appendix.	Comment noted
Piru	7	7-4	Ventura County Public Works Agency	10/21/2021	Executive Summary	ES-2	57	Water quality	On page ES-2, line 57 states "Water quality changes in the basin are not expected due to the implementation of the GSP." It should be noted if there are water quality impacts from upstream wastewater effluent disposal.	See updated language in the Executive Summary
Piru	7	7-5	Ventura County Public Works Agency	10/21/2021	2.1.2.2	NS	NS	Conjunctive use programs	In Section 2.1.2.2, recommend listing the conjunctive use programs between the Upper Santa Clarita Water District and United Water Conservation District that would provide greater operational flexibility of groundwater resources within the Basin.	See updated language in Section 2.1.2.2
Piru	7	7-6	Ventura County Public Works Agency	10/21/2021	2.2.1.3	NS	NS	Sustainable yield, basin storage	In Section 2.2.1.3, the description of the interface of the water-bearing alluvium and underlying consolidated material of the San Pedro Formation implies that the basin bottom is not clearly defined. There is no discussion of how this could affect the estimated sustainable yield or basin storage.	- This does not significantly affect the ability to evaluate changes in storage because the significant changes in storage occur in the shallower portions of the aquifer by virtue of changes in the water table associated with the predominant unconfined conditions of the Principal Aquifer.
Piru	7	7-7	Ventura County Public Works Agency	10/21/2021	2.2.1.4	NS	NS	Aquifer zones	Section 2.2.1.4 lists the two principal aquifers in the Subbasin (unconfined Main Aquifer and the semi-confined Deep Aquifer). There are subsequent references to Aquifer Zones A, B and C per United (2021a). Discussion of the relationship between the principal aquifers and the Aquifer Zones is not introduced until Section 3.5.1.2.2. It would be helpful to the reader to introduce this relationship in Section 2.2.1.4 and when discussing Aquifer Zones in other parts of the text. Further, it would be helpful to include the relative depths (and thickness) of these aquifers and the aquitard separating them found in Section 2.2.1.4.2 to better support Section 2.2.1.3.	See responses to comments 1-1, 1-2, and 1-3. See updated Section 2.2.1.4.
Piru	7	7-8	Ventura County Public Works Agency	10/21/2021	2.2.1.4.4	NS	NA	Well status	Section 2.2.1.4.4 states that 316 wells have at least one historical water quality sample. Are these wells still active and can they be sampled?	There are many active wells in the basin (147), however, it is unknown how many could be sampled for water quality. The ability to sample the wells depends on the access to the property, wellhead configuration (i.e., is the well equipped with a sampling port or similar method to collect a water sample), presence/absence of pumping equipment in the well, and availability of power to operate the pump.
Piru	7	7-9	Ventura County Public Works Agency	10/21/2021	2.2.1.4.4, 2.2.2.5.1	NS	NS	Groundwater quality	In Sections 2.2.1.4.4 and 2.2.2.5.1, elevated chloride and sodium levels in groundwater east of Piru Creek could be attributed to wastewater effluent discharged to the Santa Clara River from upstream Santa Clarita wastewater treatment plants (WWTPs). Have there been any actions or orders from the Los Angeles Regional Water Quality Control Board (LARWQCB) to reduce chloride and sodium in these effluents?	See updated language in Section 2.2.2.5.1 in the GSP

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Piru	7	7-10	Ventura County Public Works Agency	10/21/2021	2.2.1.5.6	NS	NS	Surface water diversions	In Section 2.2.1.5.6, it would be informational to include an estimate of the quantities of water diverted by each listed entity.	See updated information is this section of the GSP
Piru	7	7-11	Ventura County Public Works Agency	10/21/2021	2.2.2.5.2	NS	NS	Groundwater quality	In Section 2.2.2.5.2, elevated nitrate levels could be attributed to upstream discharges from septic systems and agricultural fertilizers and chemicals.	Comment noted
Piru	7	7-12	Ventura County Public Works Agency	10/21/2021	2.2.2.5.3	NS	NS	Groundwater quality	Section 2.2.2.5.3 states that the water percolated by the Piru WWTP percolation ponds likely does not have sufficient volume to impact the groundwater quality in the basin. Has a comparison been made between COC concentrations of the effluent discharged by the Piru WWTP to other WWTPs in Santa Clarita? Additional monitoring wells located on the eastern boundary of the basin might provide further data pertaining to the influx of chloride and other COCs from upstream sources.	A comparison of the upstream WWTPs effluent water quality and that of the Piru WWTP has not been performed.
Piru	7	7-13	Ventura County Public Works Agency	10/21/2021	NS	2-6	9,18	Surface water budget	On page 2-62, lines 9 and 18, recommend explaining how the surface water diversions are accounted for in the groundwater model.	Surface water diversions are discussed in Appendix E
Piru	7	7-14	Ventura County Public Works Agency	10/21/2021	NS	2-63	7	Surface water budget	On page 2-63, line 7 states "The Basin water budget is estimated based on flows calculated from the calibrated VRGWFM (United, 2021a)." It would be beneficial to elaborate on the main components of the groundwater and surface water budgets.	Subsequent sections in the GSP contain more information on the details of the water budgets.
Piru	7	7-15	Ventura County Public Works Agency	10/21/2021	NS	2-63	26-28	Surface water budget	On page 2-63, lines 26–28 state "underflow from the East Santa Clara River Valley basin is modelled as essentially zero in the groundwater model because the outside hydrogeology is significantly less permeable and the aquifer material…is thin." Has the underflow been quantified or estimated?	- The groundwater model budget has been updated to include underflow (compare ranges to historical studies).
Piru	7	7-16	Ventura County Public Works Agency	10/21/2021	NS	2-64	28	Surface water budget	On page 2-64, line 28 states "the maximum ET flux was increased to 0.014 feet per day (5.2 feet per year) in order to account for…" This reference is from the groundwater model. Are other groundwater model assumptions used as components of the water budget?	- Yes they are described in greater detail in each corresponding water budget component in the United GW model documentation.
Piru	7	7-17	Ventura County Public Works Agency	10/21/2021	NS	2-67	Table 2.2-8, 5-7	Groundwater budget	In Table 2.2-8 and lines 5–7, "United's allocation of imported SWP water deliveries varies from between zero and 60% (of the 3,150 AFY allocation for Santa Clara River Valley basins) during dry years, to more than 60% and even more than 100% during above average and wet years." There may be more recent estimates of average deliveries. The 2019 SWP Delivery Capability Report has reported Table A deliveries at 52-58%.	- Incorporated.
Piru	7	7-18	Ventura County Public Works Agency	10/21/2021	NS	NS	Table 2.3-9	Historical water budget	In Table 2.2-9, a note should be added for the years that are represented as "historical." The text later indicates 1988-2015 for groundwater budget on Table 2.2-10. Is this the same period for surface water? What is the relationship between the values from the surface water budget and the groundwater budget?	- Table updated with historical years noted. (1988-2015) - Same period for surface water. (1988-2015) - The surface water budget and groundwater budget are related primarily by the SW-GW exchange component.
Piru	7	7-19	Ventura County Public Works Agency	10/21/2021	NS	2-70	11-13	Historical water budget	On page 2-70, lines 11-13 state "Higher average pumping rates during dry periods (Figure 2.2-34) is biased largely due to wells that pumped during the early 1990s drought but have since become inactive or destroyed." How does this affect pumping in future scenarios?	- Future pumping relates to analogous years from the historic pumping records. Analogous years were selected based on the years in the historic record that are similar to the precipitation and temperature of each year in the future climate dataset (created based on adjusting historic time period 1943 through 2019 with climate change factors provided by DWR). Therefore, the future pumping samples historic pumping from a mixture of years, including the higher pumping rates from the early 1990s and lower pumping rates from recent years (i.e., 2017-2019).
Piru	7	7-20	Ventura County Public Works Agency	10/21/2021	NS	NS	Tables 2.2-10, 2.2-12, 2.2-14	Groundwater budget	An explanation should be provided regarding how the annual flow for Mountain Front Recharge is calculated/estimated in Tables 2.2-10, 2.2-12 and 2.2-14. Is this based on stream exchange data?	Please refer to Section 3.5.2.4 in Appendix E.
Piru	7	7-21	Ventura County Public Works Agency	10/21/2021	3.2.3.1	3-5	NS	Undesirable results criteria	On page 3-5, Section 3.2.3.1, more rationale should be provided on the criteria to define undesirable results (i.e., drop below well screen in 25% of the representative monitoring sites or groundwater elevations drop below the minimum threshold (MT) [not yet discussed] equivalent to the critical water level of 10 feet below fall of 2011 conditions.	- See updated Section 3.2.3.1.
Piru	7	7-22	Ventura County Public Works Agency	10/21/2021	3.3.1	NS	NS	Groundwater levels	Section 3.3.1 indicates that no dry wells have occurred in Ventura County, according to the DWR Household Water Supply Shortage Reporting System. Does FPBGSA plan to survey wells to assess if any have become dry?	The Pumpers Association can initiate outreach to pumpers, but there is no significant threat identified based on historical groundwater elevation contours and similarities simulated in the future GW model with climate change. Domestic wells are likely de minimus extractors and are not required to report their pumping to the GSA, but can certainly share water level data from their wells with the GSA at their discretion. The GSA does not cuttently have plans to survey the domestic wells.
Piru	7	7-23	Ventura County Public Works Agency	10/21/2021	3.3.5	NS	NS	Subsidence minimun threshold	In Section 3.3.5, the rationale for the establishment of the subsidence MT should be explained.	The subsidence MT is established based on tech memo from Pumper's Association / Bryan Bondy, as well as extensie stakeholder discussions at multiple board meetings and workshops.

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Piru	7	7-24	Ventura County Public Works Agency	10/21/2021	NS	NS	NS	Evapotransporation	Is there an available and up-to-date evapotranspiration map available for the Basin and/or the adjacent Fillmore Basin? Figure 2.1-3 is a Land Use Map listing various crops in the Basin, but it would be helpful to develop an evapotranspiration figure based on the various crops.	Basin-scale evapotranspiration maps are not included in the UWCD groundwater model documentation or the GSP. An evapotranspiration map can be developed for the 5 year GSP update, if deemed appropriate.
Piru	7	7-25	Ventura County Public Works Agency	10/21/2021	3.5.4.1.1, 3.5.4.4.2	NS	NS	Data gaps - monitoring points	Sections 3.5.4.1.1 and 3.5.4.4.2 state that there is a potential monitoring point data gap in the eastern portion of the Basin and there are a limited number of wells that access deep groundwater from the Deep Principal Aquifer. Does FPBGSA plan to install additional monitoring points to address these gaps?	See adjusted text in these sections.
Piru	7	7-26	Ventura County Public Works Agency	10/21/2021	4.5	NS	NS	Water quality monitoring	In Section 4.5, water quality monitoring wells should be installed to monitor shallow groundwater quality, especially entering the eastern boundary of the Basin.	The alluvium thickness in the extreme eastern portion of the Piru basin is thin (a few 10s of feet) and this area was not prioritized for new monitoring wells at this time. If grant or other funds become available in the future, the GSA can consider additional monitoring wells in the extreme eastern portion of the basin.