Public Review Draft GSP—
Comment and Response Matrix

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San Pasqual Valley Groundwater Sustainability Plan
Public Comment and Response Matrix

#	Commenter Name	Commenter Organization	Comment	Response
1	Matt Witman	N/A	Page ES-5-It seems to me that the well inventory is misplaced, it should be in Tier 0, and in fact is mostly done. The well inventory in necessary to study and make the decisions on the other Tier 1 actions. To not have this in Tier 0 will cause delays in carrying out Tier 1 actions. This will then cause delays in Tier 2 actions. It is imperative in the case of an undesirable result that management actions that can affect change happen in a timely manner. The well inventory in itself will not affect change in water use, only an understanding of what should be the next step in the process, hence Tier 0.	Comment noted. Tier assignments for projects and management actions were chosen by the GSA Core Team, after significant discussion and deliberation. Due in part of current conditions in the Basin, and the strategies used to set the measurable objectives, planning thresholds, and minimum thresholds, the Core Team believes that a thorough and comprehensive well inventory (*Management Action 9 – Well Inventory*) will establish the list of wells addressed in other Tier 1 and 2 management actions.
2	Matt Witman	N/A	Page ES-6-Add the word plan in the Tier 2 box-"implement pumping restriction and enforcement plan"	*Management Action 11 – Pumping Reduction Plan* is a Tier 1 management action. Figure ES-3 reflects this.
3	Matt Witman	N/A	Page 2-15 paragraph 2.1.3-What is the relevance of the "historical San Ysabel creek riparian rights". Does there need to any study to see if the court decision is still relevant to the SGMA plan? Just the statement and figure 2-2 are meaningless without some additional study or explanation why it does not affect SGMA. Some of the area is in the county and some is in the city, does this make a difference.	There is an existing court order (Trussell v. City of San Diego (1959)) that pre-dates the state legislature's enactment of SGMA. As a GSA participant, the City takes into account the interests of all stakeholders in the Basin when complying with SGMA. As a Tier 0 management action, the City will evaluate the feasibility of surface water recharge as a potential management action (*Management Action 7 – Initial Surface Water Recharge Evaluation*).
4	Matt Witman	N/A	Paragraph 3.6.3. The interaction between the bedrock and Quaternary deposits and residuum. If we don't know about this interaction then it needs to be studied. There are monitoring wells that were installed specifically to study this interaction. This needs to be done. This is another recommendation for Tier 0 actions. The city has installed the wells, the study of the interaction should begin.	Noted. These wells have been installed, and future data interpretation and analysis is the responsibility of the City. As a Tier 1 management action, the GSA may also include studies to help determine which wells may be subject to pumping restrictions (*Management Action 9 – Well Inventory*). In addition to the City monitoring wells, DWR has announced medium and high priority basins will be aerial electromagnetic (AEM) surveys conducted. Results from this survey will provide additional information about the geological structure of the Basin.
5	Matt Witman	N/A	Paragraph 3.8 –same as above . Groundwater Interaction between the crystalline rock and the alluvium needs to be studied as part of Tier 0 actions.	See Response #4.
6	Matt Witman	N/A	Paragraph 7.6.8-Replacement of the existing City monitoring wells should be a priority. Many of these wells are old and the casings compromised and do not reach the bottom of the alluvium. The data that is currently being used is suspect. New monitoring wells need to be found or drilled. This should be a Tier 0 action as well.	Noted. As part of GSP implementation (see Section 10.2), the Core Team may pursue grant funding for replacement of damaged monitoring wells.
7	Matt Witman	N/A	Section 9 projects and management actions.-As I stated many times during the AC meetings, I believe that the groundwater users will have to be enacting their own water reductions prior to Tier 2 actions. Somehow when examining how to reduce pumping in Tier 2, management actions by the water users prior to the mandatory pumping restrictions need to be considered. These type of short or long term water reductions that could be done would be fallowing ground, orchard or vineyard removal to change varieties, or a change in crops. If a water user takes these actions preemptively, the reduced water use should not be used as their baseline when calculating the restrictions planned for Tier 2 actions.	Noted. Future potential pumping restrictions will include outreach and communication with stakeholders, and specific methodologies for determining potential future restrictions has not yet been discussed or determined at this time.
8	Matt Witman	N/A	Section 9 planning projects should also include as mentioned above, finishing the well inventory as part of Tier 0. Also under Tier 0 should be beginning the study of the alluvium, residuum, and crystalline deposits using the city installed monitoring wells that are already present in the valley.	See Responses #1 and #4.
9	N/A	TNC, Audubon, LGC, UCS, CWF	Disadvantaged Communities and Drinking Water Users The identification of Disadvantaged Communities (DACs) and drinking water users is insufficient. The DWR DAC mapping tool indicates that there are no DACs in the basin, however this is not stated in the GSP. We commend the GSA for including a map of the density of domestic wells in the basin (Figure 2-8). The GSP should be further improved by including a map of individual domestic well locations and by indicating the population dependent on groundwater for their source of drinking water. Recommendations • State definitively that there are no DACs in the basin, instead of being silent on the subject. Indicate what source was used to make the determination (e.g., the DWR DAC mapping tool). • Include a map of individual domestic well locations and a table of well data showing screen depths. Indicate the population dependent on	New Section 2.1.2 will be added to summarize Basin demographics and indicate that there are No DACs or tribal reservation lands in the Basin. Specific well locations will be identified as part of *Management Action 9 – Well Inventory*. New Table 8.2 will be added to Section 8.2 comparing domestic well depths to minimum thresholds, to document that thresholds are protective of domestic wells. Refer to Figure 3-26 of Attachment J (which shows the locations of households). The SPV GSP Model estimates Basin population at less than 70 residents.

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			groundwater for their source of drinking water. • Describe the occurrence of tribal lands in the basin. The GSP states that there are no tribal lands in the basin, but includes a tribe member from the San Pasqual Tribe on the Advisory Committee. If the San Pasqual Tribe has interests in the basin, describe them in detail.	
10	N/A	TNC, Audubon, LGC, UCS, CWF	Interconnected Surface Waters The identification of Interconnected Surface Waters (ISWs) is insufficient. The GSP uses a numerical model to analyze surface water and groundwater interactions. A short description of the ISW analysis is provided in the GSP, but very little detail or background on the approach is given. For example, the location and spatial resolution of groundwater elevation data (e.g., how close the wells are to the streams) behind the numerical model is not provided. Additionally, the temporal resolution of groundwater elevation data (e.g., number of years and seasonality) that parameterizes the numerical model is also unclear. The GSP states that reaches identified as disconnected are in portions of the basin where depth to groundwater has been greater than 30 feet since 2015. The GSP does not, however, provide justification for the 30 feet criteria provided in the text. Recommendations • Overlay the figure of stream surface water depletion (Figure 4-33) with depth-to-groundwater contour maps to illustrate the groundwater depths and groundwater gradient near the stream reaches. Show the location of groundwater wells used in the analysis. Use depth to groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) to determine the range of depth and capture the variability in environmental conditions inherent in California's climate. • 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 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. • Describe data gaps for the ISW analysis. Discuss and reconcile these data gaps with specific measures (shallow monitoring wells, stream gauges, and nested/clustered wells) along surface water features in the Monitoring Network section of the GSP.	While the GSP was developed with the best available science, the GSA recognizes the limitations of any model given the various input parameters that could be used. As such, thresholds and sustainability are based on actual water levels rather than modeled values and the model will be updated with new data over time. Section 4.7 in the GSP summarizes the approach for addressing GDEs and refers to Appendix J, which describes in detail the desktop analysis and follow-up field assessment of GDEs. The SPV GSP Model was also used to intersect the modeled stream bottoms with the average monthly, modeled water table from Water Years 2005 through 2019. This modeling exercise was done to assess the general pattern of where the depth to groundwater along modeled streams was within 30 feet of land surface during any average month of the historical period. The 30-foot rule was used based on The Nature Conservancy's Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act (TNC, 2018). Areas with potential GDEs in Figure 4-35 are reasonably consistent with interconnected streams depicted in Figure 4-33 and the areas where the water table were generally within 30 feet of modeled land surface and stream bottoms. The modeled land surface is based on 10-meter DEM data. New Planning Thresholds will be added (Section 8.7) to initiate *Management Action 8 – Study GDEs* to evaluate GDEs in more detail. The GSAs may implement this study prior to the 5-Year Update even if the Planning Thresholds aren't reached.
11	N/A	TNC, Audubon, LGC, UCS, CWF	Groundwater Dependent Ecosystems The identification of Groundwater Dependent Ecosystems (GDEs) is incomplete. The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset). We commend the GSA for including a comprehensive list of the state and federally threatened and endangered species in the basin (Table 1 of Appendix J). However, we found that some mapped features in the NC dataset were improperly disregarded, as described below. • GDEs were incorrectly removed based on groundwater levels that were greater than 30-ft in 2015, a single point in time. This is a technically incorrect approach since groundwater levels fluctuate over seasonal and interannual time scales due to California's Mediterranean climate and intensifying flood and drought events due to climate change. Justifying the removal of NC dataset polygons solely based on this criterion does not acknowledge that groundwater levels temporally vary and the fact that many plant species within GDEs can access groundwater depths beyond 30-feet or have adapted water stress strategies to deal with intermittent periods of deep groundwater levels. Using this methodology disregards groundwater fluctuations and may result in the omission of ecosystems that are groundwater dependent. • GDEs were disregarded based on the presence or proximity of surface water. However, partial reliance on surface water does not necessarily prove that the plants and animals do not access groundwater. Many GDEs often simultaneously rely on multiple sources of water (i.e., both groundwater and surface water), or shift their reliance on different sources on an interannual or inter-seasonal basis. Additionally, adverse impacts can occur to GDEs due to pumping that further separates groundwater from surface water. • The GDE identification process utilized aerial imagery in an incorrect manner. The GSP relied on aerial imagery to detect surface water, and then made the assumption that only GDEs present in inundated or saturated areas were connected to groundwater. This approach is incorrect for two reasons: 1) not all surface water is connected to groundwater, and 2) visually inspecting aerial imagery cannot detect groundwater occurring near the ground surface. GDEs can rely on groundwater for some or all its water requirements, whether or not surface water is present. In California, GDE reliance on groundwater often vary by season, and depend on the availability of alternative water sources (e.g., precipitation, river water, reservoir water, soil moisture in the vadose zone, groundwater, applied water, treated wastewater effluent, urban stormwater, irrigated return flow).	See Response #10. The GDE assessment recognizes that there are seasonal fluctuations in groundwater and that GDEs can be affected by those changes. Aerial imagery (current and historic), in combination with other geospatial datasets, was the best available way to review surficial ecological communities, land use modifications, and disturbances. New Planning Thresholds will be added (Section 8.7) to initiate *Management Action 8 – Study GDEs* to evaluate GDEs in more detail. The GSAs may implement this study prior to the 5-Year Update even if the Planning Thresholds aren't reached.

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12	N/A	TNC, Audubon, LGC, UCS, CWF	(continued from row above) Recommendations • Provide depth-to-groundwater contour maps, noting 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 DEM to estimate depth-to-groundwater contours across the landscape. • Use depth to groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) to determine the range of depth to groundwater around NC dataset polygons. We recommend that a baseline period (10 years from 2005 to 2015) be established to characterize groundwater conditions over multiple water year types. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer. • If insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons as "Potential GDEs" in the GSP until data gaps are reconciled in the monitoring network. While the GSP acknowledges that some locations that may be GDEs are not confirmed as GDEs (and their status is uncertain), they are mapped as non-GDEs. These should be mapped as potential GDEs.	See Response #10. Depth-to-water data was a primary tool used for assessment of potential GDEs in SPV Basin.
13	N/A	TNC, Audubon, LGC, UCS, CWF	Native Vegetation and Managed Wetlands Native vegetation and managed wetlands are water use sectors that are required to be included into the water budget. The integration of these ecosystems into the water budget is insufficient. The water budget did not include the current, historical, and projected demands of native vegetation and managed wetlands. The omission of explicit water demands for native vegetation and managed wetlands is problematic because key environmental uses of groundwater are not being accounted for as water supply decisions are made using this budget, nor will they likely be considered in project and management actions. Recommendations • Quantify and present all water use sector demands in the historical, current, and projected water budgets with individual line items for each water use sector, including native vegetation and managed wetlands.	Native vegetation (that is, native shrubs plus riparian vegetation) water demand is met through precipitation and shallow groundwater uptake. The ET of native vegetation is a portion of the sum of the ET of precipitation and the ET of shallow groundwater in Table 5-3 of the GSP. The ET of native vegetation alone within the Basin averages 2,328 to 2,556 AFY during the averaging periods indicated. This information will be incorporated into Table 5-3 in the GSP and in the associated subsections of Appendix I.
14	N/A	TNC, Audubon, LGC, UCS, CWF	Stakeholder Engagement during GSP development Stakeholder engagement during GSP development is incomplete. SGMA's requirement for public notice and engagement of stakeholders is not fully met by the description in the Notice and Communication section of the GSP (Section 1.4). We note the following deficiencies with the overall stakeholder engagement process. • The opportunities for public involvement and engagement are described in very general terms. They include attendance at public meetings, stakeholder email list, and updates to the San Pasqual Valley GSP website. • Very little information was provided on the level of engagement of the Advisory Committee and the Technical Peer Review Group. While the members of the Advisory Committee are provided in Table 1-2, the members of the Technical Peer Review Group are not listed. Recommendations • Include a robust Stakeholder Communication and Engagement Plan. • Conduct active and targeted outreach to engage domestic well owners, environmental stakeholders, and tribal 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. • Describe the occurrence of tribal lands in the basin. Explain the inclusion of a tribe member from the San Pasqual Tribe on the Advisory Committee. The GSP states that there are no tribal lands in the basin, but includes a tribe member from the San Pasqual Tribe on the Advisory Committee. If the San Pasqual Tribe has interests in the basin, describe them in detail.	Section 1.5 will be expanded with more detail about the SPV Advisory Committee. Additional details regarding stakeholder involvement are included in Appendix E of the GSP.

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15	N/A	TNC, Audubon, LGC, UCS, CWF	Considering Beneficial Uses and Users When Establishing Sustainable Management Criteria and Analyzing Impacts on Beneficial Uses and Users The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is insufficient. The consideration of potential impacts on all beneficial users of groundwater in the basin are required when defining undesirable results 4 and establishing minimum thresholds Disadvantaged Communities and Drinking Water Users There are no DACs in the basin, according to the DWR DAC mapping tool. The GSP has taken initial steps to define SMC for domestic wells owners. The GSP analyzes direct or indirect impacts on domestic wells when defining undesirable results for chronic lowering of groundwater levels and degraded water quality by describing impacts to potable supply of drinking water for domestic well users. However, the SMC developed for domestic well owners can be improved with the following recommendations. Recommendations • Chronic Lowering of Groudnwater Levels o Further describe the impact of passing the minimum threshold for domestic well owners. For example, provide the number of domestic wells that would be de-watered at the minimum threshold. • Degraded Water Quality o Evaluate the cumulative or indirect impacts of proposed minimum thresholds for TDS and nitrate on domestic water users.	Section 8.2 will be revised to better explain how the minimum thresholds are protective of known domestic wells. New Table 8.2 will be added to demonstrate that the proposed minimum thresholds are protective of known domestic wells.
16	N/A	TNC, Audubon, LGC, UCS, CWF	Groundwater Dependent Ecosystems and Interconnected Surface Waters Minimum thresholds for chronic lowering of groundwater levels are set to historical low groundwater elevations in proximity to potential GDEs, and are allowed to fall to 50% of the historical range below historical minimums where potential GDEs are not present. Based on the GSP's assessment that historic levels have been sustainable, the GSP states that using these levels as a minimum threshold should not pose a harmful impact to GDEs. However, the true impacts to ecosystems under this scenario are not discussed. If minimum thresholds are set to historic low groundwater levels and the basin is allowed to operate just above or close to those levels over many years, there is a risk of causing catastrophic damage to ecosystems that are more adverse than what was occurring in 2015, at the height of the 2012-2016 drought. This is because California ecosystems, which are adapted to our Mediterranean climate, have some drought strategies that they can utilize to deal with short-term water stress. However, if the drought conditions are prolonged, the ecosystem can collapse. While ecosystems may have been only water stressed in 2015, they can be inadvertently destroyed if groundwater conditions are maintained just above those 2015 levels in the long-term, since the basin would be permitted to sustain extreme dry conditions over multiple seasons and years. Recommendations • When defining undesirable results for chronic lowering of groundwater levels, water quality, and depletions of interconnected surface waters, provide specifics on what biological responses (e.g., extent of habitat, growth, recruitment rates) would best characterize a significant and unreasonable impact to GDEs. Undesirable results to environmental users occur when 'significant and unreasonable' effects on beneficial users are caused by one of the sustainability indicators (i.e., chronic lowering of groundwater levels, degraded water quality, or depletion of interconnected surface water). Thus, potential impacts on environmental beneficial uses and users need to be considered when defining undesirable results in the basin. Defining undesirable results is the crucial first step before the minimum thresholds can be determined. • For the interconnected surface water SMC, the undesirable results should include a description of potential impacts on instream habitats within ISWs when defining minimum thresholds in the basin 9. The GSP should confirm that minimum thresholds for ISWs avoid adverse impacts to environmental beneficial users of interconnected surface waters as these environmental users could be left unprotected by the GSP. These recommendations apply especially to environmental beneficial users that are already protected under pre-existing state or federal law.	Undesirable results for GDEs will be clarified in Section 6.3.6. New Planning Thresholds will be added (Section 8.7) to initiate *Management Action 8 – Study GDEs* to evaluate GDEs in more detail. The GSAs may implement this study prior to the 5-Year Update even if the Planning Thresholds aren't reached. The GDEs Study will include a phased approach to investigation, starting with a desktop study.

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17	N/A	TNC, Audubon, LGC, UCS, CWF	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 Regulations 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 integration of climate change into the projected water budget is insufficient. The GSP does incorporate climate change into the projected water budget using a climate transient analysis. However, the GSP did not consider multiple climate scenarios (e.g., the 2070 wet and 2070 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 included climate change into key inputs (precipitation, evapotranspiration, and surface water flow) of the projected water budget. However, the GSP does not calculate a sustainable yield based on the projected water budget with climate change incorporated, and in fact does not present a sustainable yield for any time period. If the water budgets are incomplete, including the omission of extremely wet and dry scenarios, and sustainable yield is not calculated, 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 and domestic well owners. Recommendations • 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. • Calculate sustainable yield based on the projected water budget with climate change incorporated. • Incorporate climate change scenarios into projects and management actions.	Noted. Climate change was considered in the groundwater modeling. The GSP presents a range of SY estimates based on current and historical water budgets. Appendix I explains the rationale for selecting the climate change scenarios analyzed and presents the sensitivity to the water budget terms and safe yield associated with these scenarios. Sections 3.5.1 (see the "Future Period" subsection) and 5.1.1 of Appendix I describe how climate change has been incorporated into the projection simulations. The HadGEM2-ES RCP8.5 climate scenario was incorporated into the future baseline projection simulation and used to develop the projected water budgets. DWR's 2070 Drier/Extreme-Warming (DEW) scenario is based on the HadGEM2-ES RCP8.5 climate scenario that was analyzed as part of the SPV GSP. The GSP did consider the 2070 extremely dry climate scenario. Because the GSP is a planning document focused on projects and management actions that could potentially be needed during times of water scarcity, it was deemed unnecessary to include projection simulations under extreme wet conditions. A second climate scenario was also simulated based on the CanESM2 RCP 8.5 climate scenario as a sensitivity analysis to support GSP development. This particular GCM was selected because it is generally in the mid-range of the four GCMs evaluated (Figure 3-14 of Appendix I), but exhibits a more favorable sequence of future hydrology than the HadGEM2-ES GCM. Water budgets associated with this second climate change scenario are provided in Section 5.5 of Appendix I. The GSP did consider multiple climate scenarios. Because sustainable yield is highly dependent on the sequence of hydrologic/climate conditions and because future climate conditions are uncertain, the GSP based the initial estimate of the sustainable yield range on groundwater pumping rates estimated for the historical period including WYs 2005 through 2019. This historical range of groundwater pumping of 4,740 to 6,741 AFY serves as an initial estimate of the sustainable yield, as described in Section 4.4.5.
18	N/A	TNC, Audubon, LGC, UCS, CWF	Data Gaps The consideration of beneficial users when establishing monitoring networks is insufficient. Our comments above note data gaps in the monitoring networks for GDEs and ISWs. The lack of monitoring wells and/or the lack of plans for future monitoring threatens GDEs, aquatic habitats, and surface water users. Appropriate monitoring is necessary so that groundwater conditions within GDEs and ISWs are characterized and surface-shallow groundwater interactions are fully integrated into the GSP. GDEs and ISWs will remain unprotected by the GSP without adequate monitoring and identification of data gaps. The Plan therefore fails to meet SGMA's requirements for the monitoring network. Recommendations • Provide maps that overlay monitoring well locations with the locations of domestic wells to clearly identify potentially impacted areas. • Include plans to reconcile data gaps for GDEs and ISWs in the GSP now, instead of leaving this for a future project to be implemented when a groundwater level trigger is reached. Evaluate how the gathered data will be used to identify and map GDEs and ISWs. • Determine what ecological monitoring can be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the subbasin.	According to 23 CCR 351, '"Data gap" refers to 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.' New Planning Thresholds will be added (Section 8.7) to initiate *Management Action 8 – Study GDEs* to evaluate GDEs in more detail. The GSA does not believe that establishing this as a Tier 1 PMA will significantly affect the GSAs ability to sustainably manage the Basin.

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19	N/A	TNC, Audubon, LGC, UCS, CWF	Addressing Beneficial Users and Projects and Management Actions The consideration of beneficial users when developing projects and management actions is insufficient. The GSP states that because the basin is sustainable, project and management actions will only be implemented as necessary in the future. However, groundwater sustainability under SGMA is defined not just by sustainable yield, but by the avoidance of undesirable results for all beneficial users. Environmental beneficial users such as GDEs, aquatic habitats, and surface water users were not sufficiently identified in the GSP. Therefore, potential project and management actions to be implemented sometime in the future may not protect these beneficial users. The GSP presents tiers for the projects and management actions in Figure 9-2. Tier 0 projects and management actions are to be implemented by the GSA during GSP implementation. Future tiers are triggered by increasingly severe minimum threshold exceedances. The GDE study is proposed as a Tier 1 Project and Management Action. Because of the data gaps noted for GDEs above, this study should be included in the GSP now, not set aside for future implementation. Recommendations • For GDEs and ISWs, 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". • For domestic well owners, include discussion of a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Refer to Attachment B for specific recommendations on how to implement a drinking water well mitigation program. • For 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. • Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.	See Response #18. *Management Action 5 – Education and Outreach for TDS and Nitrate* will be expanded to better articulate that it incudes conducting education/outreach to domestic well users on water quality testing. Thank you for sending Attachment B - we have used this information to improve *Management Action 5*. Also, new *Management Action 6 – Coordinate with City on Hodges Watershed Improvement Project* will be added to the Plan (see Section 9.8.6).
20	Frank Konyn	Konyn Dairy	"Where is the definition of the bottom of the basin in Section 2.1?"	The bottom of the basin statement in Section 3.6.3 will be included in Section 2.1 .
21	Frank Konyn	Konyn Dairy	3rd paragraph typ. "a will" a "a well"	Edit will be incorporated.
22	Frank Konyn	Konyn Dairy	Section 5.1 typo "approach" is correct spelling	Edit will be incorporated.
23	Frank Konyn	Konyn Dairy	Add abbreviation for TAF to abbreviation list in the introduction	Edit will be incorporated.
24	Frank Konyn	Konyn Dairy	Two new nested wells need be discussed as well as investigating the relationship between the residuum and the bedrock.	The 2 new nested wells will be added to the GSP (Table 7-2 and new Table 7-3). DWR's Bulletin 118 definition is included in Section 2.1. The GSAs are managing to the SPV basin as defined in Bulletin 118.
25	Frank Konyn	Konyn Dairy	All County land needs to be shown in the figure. It appears that not all County land is shown in the figure, mainly near Santa	Figure will be revised.
26	Lisa Peterson	San Diego Zoo Wildlife Alliance	a. "The single largest contributing source of nitrogen is commercial crop fertilizer use, at 56 percent of the Basin total, followed by landscape fertilizer use at 14 percent. Nitrogen, managed through in-Basin manure applications at Frank Konyn Dairy Inc. and the San Diego Zoo Safari Park, represents a combined 21 percent of the Basin total, with other nonregulated small animal facilities comprising 2 percent of the Basin total." (p. 4-16.) b. What is the source of this information? We use minimal amounts of fertilizer and it is contained in our greenhouses and not in any of our habitats.	Section 4.1.6 summarizes the findings of the San Pasqual Valley Groundwater Basin SNMP about nitrate loading.
27	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 1 1. CITY'S SELF-DEALING IN DEVELOPMENT OF THE GSP VIOLATES SGMA AND DUE PROCESS OF LAW The GSP fails as a management plan for the Basin because it is so blatantly biased in favor of the City's interests that adoption would violate not only SGMA, but the basic Constitutional requirements of Due Process of Law. This bias was built into the plan by the City to promote the City's water rights over those of other land owners in the Basin, and to protect the City's unlawful diversion of 50% of the natural recharge to the Basin. The City cannot move forward with adoption of the GSP without major revisions to the plan that address these issues in a fair and equitable manner.	This comment consists entirely of legal argument and does not address specific elements of the draft GSP to which the GSA can meaningfully respond.

#	Commenter Name	Commenter Organization	Comment	Response
28	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 1A A. The City's activities in the Basin create an unmitigable conflict of interest The City's interests in this Basin are readily apparent. The City owns more than 90% of the land in the Basin. The City leases its property in the Basin to sod farmers, citrus farmers, and dairy operators, and takes a percentage of the profit of each operation. The City's self interest in the Basin is therefore tied directly to the viability of the agricultural operations on its lands. By virtue of these contracts, the City is operating farms in the Basin. Notably, the City's agricultural operations in the Basin are extremely water intensive. Most recently, the City has been investing in sod farms that use significant volumes of water and essentially export it out of the Basin. The City's other operations are likewise detrimental to the health of the Basin. Specifically, the City leases land to dairy farms and manure sales operations that have caused major damage to water quality in the Basin over the past 50 years. The City has made no effort to clean up the damage caused by these operations. As described more fully below, the GSP utterly fails to manage this issue. More importantly, the City owns and operates the Sutherland Reservoir 8 miles upstream of the Basin and the Hodges Reservoir directly downstream of the Basin. These reservoirs are of far greater value to the City than the agricultural operations in the Basin. They are, in fact, the only reason the City owns property in the Basin. The City constructed Sutherland in the 1950s. The reservoir captures surface water upstream of the Basin for use elsewhere in the City of San Diego. By blocking surface flows downstream, the reservoir diverts 50% of the natural recharge to the Basin. Pursuant to court order, the City is prohibited from storing water in Sutherland Reservoir if water levels on certain properties in the Basin are lower than 20 feet below the ground surface. As of the date of this letter, water levels are much lower than this threshold throughout the Basin. The City appears to be operating Sutherland Reservoir is violation of a lawful court order. To avoid complying with this requirement, the City began acquiring properties in the Basin. The City was successful in acquiring most of the real estate in the San Pasqual Valley, but did not acquire properties now owned by the County, Rancho Guejito and several other small land owners. The City has tried to use its position as a GSA to protect its interests in the Basin and elevate its appropriative water rights over the overlying and riparian rights of the remaining landowners.	There is an existing court order (Trussell v. City of San Diego (1959)) that pre-dates the state legislature's enactment of SGMA. As a GSA participant, the City takes into account the interests of all stakeholders in the Basin when complying with SGMA. As a Tier 0 management action, the City will evaluate the feasibility of surface water recharge (*Management Action 7 – Initial Surface Water Recharge Evaluation*). The Court case and adjudicated area are disclosed in Section 2.1 of the GSP.
29	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 1B B. City control over the GSP contract allowed it to hijack the process for its own benefit The City used its position as the GSA for the majority of the Basin to take on the role of primary author of the GSP. The City hired and directed the consultants that drafted the Plan. The City ran the technical and public advisory group meetings that provided input on the plan and acted as gatekeeper for all aspects of the plan. The City refused to allow those not directly affiliated with the City (including Rancho Guejito) to have direct contact with the City's consultants. At the same time, the City gave open access to its tenants, going as far as to direct the consultants to contact to the City's tenants to receive input and answer questions regarding the GSP. These same tenants engaged in gift-giving with City staff to ensure continued access. So not only did the City ensure that its interests would dominate the development of the GSP, but individual staff members with authority over the consultants accepted gifts from interested parties and in turn provided those parties with preferred access to the consultants who were developing the plan. The City's self-dealing resulted in actual harm to other landowners in the Basin. Specifically, the City refused to provide equal access to the consultants, and ensured that the consultants drafted the plan in a manner that benefits the City's interests in the Basin.	Stakeholders had access to consulting team during Advisory Committee (AC) and Technical Peer Review (TPR) meetings. Consultant staff followed up as needed after AC and/or TPR meetings, as documented in meeting minutes. Stakeholder outreach effort, including the AC and TPR meetings, is described in Section 1.5 of the GSP. The AC Charter and meeting summaries are in Appendix E and available on the project website: https://www.sandiegocounty.gov/content/sdc/pds/SGMA/san-pasqual-valley.html.
30	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 1Ci C. The City developed a plan that elevates its interests over the rights of other land owners in the Basin The City has drafted a plan that would require landowners such as Rancho Guejito to cease pumping and face economic hardship so that the City can continue to deprive the Basin of 50% of the natural recharge, and mismanage the remaining groundwater assets. This is an untenable proposition. Pursuant to the Court of Appeals decision in Trussell v. City of San Diego, the City is prohibited from impounding water in Sutherland Reservoir if groundwater levels fall lower than 20 feet below the ground surface on key parcels in the eastern portion of the Basin. The case defined the Basin for purposes of future regulation and in a manner that is consistent with the definition provided by DWR in Bulletin 118. The case, in conjunction with DWR's definition of the Basin, defines the City's obligations in the Basin and the limits of the City's authority. At every opportunity, the City sought to undermine these parameters. Such behavior would be expected in an adversarial setting, but not when the City has taken on the role of regulator.	See Response #28. The draft GSP concludes that the Basin is sustainable and will be managed with no restrictions on wells at this time. If established Planning Thresholds within the GSP are ever exceeded, Tier 1 *Management Action 9 – Well Inventory* would be completed and then if needed, Tier 1 *Management Action 11 – Pumping Reduction Plan* could be developed. The Pumping Reduction Plan could be considered an amendment to the GSP and may require Board and City Council approval. The process would be public and the appropriate time to dialogue regarding which wells would be subject to management in accordance with SGMA. The TPR Group was intentionally collaborative, so that stakeholders could participate in development of model inputs and assumptions. In the SPV

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				GSP model, the adjustments to hydraulic conductivity values in Rockwood Canyon were made in an attempt to better match measured groundwater levels at the four calibration target wells located therein. It is acknowledged that alternate conceptual models are also possible. Additional aquifer testing in Rockwood Canyon would provide the opportunity to refine the conceptual model and reduce uncertainty.
31	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 1Cii - Figure for comment text above The City used its position managing the consultants to corrupt the groundwater model produced for the GSP. The City is now using that model to both justify future expansion of the Basin boundaries and deny its obligation to release water from Sutherland Reservoir ifgroundwater levels in the Basin decline. The City's consultants bent over backwards to accommodate this false reality. Rancho Guejito's specific concerns about the GSP are detailed below and in the attachments to this letter. However, one example that is particularly egregious and demonstrates the unlawful bias the City has incorporated into the GSP is shown on page 684 of the appendix to the GSP. In order to obtain the desired outcome for model simulations, the City's consultants found it necessary to imagine a new kind of geology for Rancho Guejito only: The illustration assumes that only one small portion of the Basin – the section owned by Rancho Guejito Corporation – would have connectivity with the underlying bedrock at levels that are 50 to 100 times higher than the rest of the Basin. There is no rational basis for treating this portion of the Basin differently. The City engaged in an outcome oriented analysis that it hoped would justify its efforts to expand regulatory control over neighboring lands and continue to avoid releasing water from Sutherland Reservoir.	See Response #30. The SPV Model is the best available tool and represents the best available science for modeling the SPV Basin. The model was used in the 2007 *San Pasqual Groundwater Management Plan* and the 2015 *San Pasqual Valley Groundwater Basin Salt and Nutrient Management Plan* (SNMP), and updated and calibrated for the GSP. The U.S. Geological Survey (USGS), who has an internationally recognized reputation for model development, developed the modeling code for the two models that were used - MODFLOW and BCM. Refer to Section 5 and Appendix I. Additionally, a robust peer review process was undertaken with the TPR reviewing the model over the course of seven meetings and included a Rancho Guejito representative.
32	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 1D D. Adopting the GSP in its current form would Violate SGMA and the Due Process requirements of the California and United States Constitutions As described in greater detail below, the bias and other flaws that have been built into the GSP violate SGMA and the DWR regulations developed to implement the Act. Because of the City's conflict of interest, adoption would also violate Due Process requirements in the California Constitutions. When, an administrative agency such as a GSA conducts adjudicative proceedings, the constitutional guarantee of due process of law requires a fair tribunal. A fair tribunal is one in which the judge or other decision maker is free of bias for or against a party." "Of all the types of bias that can affect adjudication, pecuniary interest has long received the most unequivocal condemnation and the least forgiving scrutiny." The state and federal Constitutions forbid the deprivation of property by a judge with a " 'direct, personal, substantial, pecuniary interest in reaching a conclusion against' " a party. Here the City's interest is pecuniary and then some. The value of water in the arid west cannot be understated. An acre-foot of water is currently valued in the range of $1,000 dollars, That value extends into perpetuity for the renewable, local resource with the value increasing over time. The City has impounded tens of thousands of acre feet of water in Sutherland Reservoir and its tenants pump vast amounts from the Basin every year. The value of the water in the Basin is in the millions of dollars on an annual basis. The City has been unable to avoid imposing its bias into the GSP. As the GSA adopting the GSP, the City is subject to Constitutional requirements of due process of law. Landowners in the Basin such as Rancho Guejito are entitled to an unbiased plan and an unbiased tribunal. The City cannot move forward with the GSP in its current form without violating these principles.	Water Code §10723(a) provides that any local agency overlying a groundwater basin may decide to become a GSA for that basin. In 2017, the City and County applied for status as GSAs and received approval by DWR. SGMA provides that "[n]othing in this part, or in any groundwater management plan adopted pursuant to this part, determines or alters surface water rights or groundwater rights under common law…." (Water Code §10720.5(b).) Thus, a GSA has no authority to act in an adjudicative capacity, and adoption and implementation of a GSP cannot constitute adjudicative proceedings."

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33	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 2 - part 1 2. THE CITY HAS ATTEMPTED TO SIDESTEP THE BASIN BOUNDARIES SET BY THE CALIFORNIA COURT OF APPEALS AND DWR The City has sought for decades to control water resources in the Basin and its tributary watersheds, and has made no secret about its willingness to use any legal means necessary to assert control over the water and land use on private property adjacent to the Basin. Rancho Guejito has been on the receiving end of these efforts on multiple occasions. The City has made it clear that it intends to use the GSP process to take expand its jurisdictional reach via SGMA. This is despite the fact that the Basin has been defined by DWR and court order affirmed by the California Court of Appeals. DWR, the trial court in the Trussell case, and the Court of Appeals in the Trussell case all found that the Basin is the water bearing gravel and alluvium underlying the San Pasqual Valley; and that it is bounded on the sides and below by the granitic rocks that make up the hills and mountains surrounding the Basin. The City has sought to undermine that definition by including multiple statements in the GSP about the potential hydrologic connection between the Basin and the underlying granitic rocks and/or outright ignoring the Basin boundary and by incorporating imagined flow between the granite and the Basin into the hydrologic conceptual model and numerical groundwater model used in the GSP.	The Basin is defined in Bulletin 118 and includes Quaternary alluvium and residuum. Implementation of the GSP and management for SGMA will be in accordance with Bulletin 118. Stating that there is a potential hydrologic connection between the Basin and granitic rock is not ignoring the Basin boundary, it is simply recognizing an inflow to the Basin. Also, a GSA may conduct investigations for the purposes of determining the need for groundwater management. (Water Code §10725.4(a)(1).) So, the GSA has the authority to evaluate the connection between the alluvium and granitic rock. These types of investigations may also be appropriate for supporting a basin boundary modification, which SGMA authorizes a GSA to pursue. (Water Code §10722.2(a).) Such studies may be conducted as part of Tier 1 *Management Action 9 – Well Inventory* when planning thresholds for water levels are exceeded. The nature and locations of hydraulic interactions between the Basin and adjacent bedrock are not well understood with the available data. Implementing a modeling approach that ignores the bedrock would be too rigid and inappropriate because such a model configuration would not allow an objective assessment of the potential exchange of groundwater between the Basin and adjacent rock. The GSP modeling team acknowledged the uncertainty of this exchange term by including model layers representing the bedrock and assigning low hydraulic conductivity values therein. In doing so, the model can provide insights and starting estimates for the potential exchange of groundwater between the Basin and adjacent rock. In other words, incorporating low-permeability bedrock layers in the model allows it to simulate the physics of groundwater flow between zones with different resistances to flow based on the input parameter values. This approach is more objective and scientific, as compared with forcing a conceptual model in which it is not even possible for the model to simulate any exchange of groundwater between the Basin and adjacent rock. Additionally, as a result of input from TPR members during the development of the SPV GSP Model, the modeling team changed no-flow boundary conditions that had been assigned around the perimeter of the model domain to allow for some bedrock groundwater flow into the model domain. It would be inconsistent to insist on some groundwater flow in bedrock across catchment divides at the model perimeter, while at the same time insisting on no-flow conditions between the Basin and underlying bedrock. The water budgets presented in the GSP provide estimates for various water-budget components, including the potential exchange of groundwater between the Basin and adjacent bedrock. These values should not be viewed as hard conclusions or proof; just estimates using the best available tool. If stakeholders and the GSA wish to reduce uncertainty in these estimates during GSP implementation, then investigations that seek to reduce the uncertainty could be considered in the future.

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			Comment 2 - part 2 For example, Figures 2-8 through 2-10 in the GSP purport to show the location of all wells in the Basin. However, the figures include wells that are screened only in fractured bedrock underlying the Basin. Similarly, the GSP relies on data from a series of wells drilled by the United States Geologic Survey to claim that there is significant flow between the Basin and the underlying granite but without hard evidence to support the conclusion. There is no flow observed between the alluvium and the bedrock at other wells in the Basin, suggesting that if there were a connection between the bedrock and the alluvium at the USGS well location, little to no vertical flow is actually occurring. Moreover, the granite immediately underlying the Basin has consistently acted as an aquitard not yielded economic quantities of groundwater. Past studies document the way in which the bedrock acts as a barrier to flow between the Basin and anything beneath it. The GSP is rife with similar efforts to misconstrue the Basin boundaries. More than that, in an effort to prove a strong connection, the City has incorporated imaginary characteristics into the numerical groundwater model that would demonstrate large volumes of recharge from the granite underlying the Basin. As noted above, the model assumes that in the small portion of the Basin owned by Rancho Guejito, the volume of water flow between the underlying granite and the Basin is 50 to 100 times greater than elsewhere in the Basin., even though the observed rocks in the area are virtually identical. This kind of assumption is absurd and exposes the outcome oriented approach taken by the City.	Figures 2-8 through 2-10 will be updated to acknowledge that all wells within and adjacent to the San Pasqual Valley are included, some of which may be outside of the Bulletin 118 defined Basin. Refer to Response #33. Tier 1 *Management Action 9 – Well Inventory* will identify wells located in/out of the Basin.
34	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 3 3. THE NUMERICAL GROUNDWATER MODEL IS FUNDAMENTALLY FLAWED. IT CANNOT BE USED TO SUPPORT THE GSP, OR ANY OF THE MANAGEMENT MEASURES IN THE GSP, OR ANY FUTURE ITERATION OF THE GSP DWR Regulations at Title 23 California Code of Regulations section 354.14(a) requires every GSP to "include a descriptive hydrogeologic conceptual model of the basin based on technical studies and qualified maps that characterizes the physical components and interaction of the surface water and groundwater systems in the basin." There are two fundamental flaws in the numerical groundwater model constructed to represent the hydrogeologic conceptual model in the GSP that appear to have been introduced to protect the City's interests in the Basin – the model assumes an absurdly high level of connectivity between the Basin and the underlying and adjacent granitic rock; and it assumes that most of the recharge to the Basin does not come from surface flows. These assumptions represent the core of the model and have no basis in reality. In fact, they run counter to the known characteristics of the Basin and the rocks surrounding it. The deviation from known hydrologic conditions documented in technical studies and qualified maps is so great that it represents a violation of Section 354.14. There is a reason why the City would choose to manipulate the model in this fashion. The outcome of the modeling allows the City to downplay the impact that Sutherland Reservoir has on recharge to the Basin, while at the same time making an argument for regulating groundwater extractions outside the Basin. It is biased and unfit for use as a regulatory tool.	Refer to Response #31. Model layer construction and connectivity was discussed with the TPR Group on December 10, 2020 (see Appendix E). While the GSP was developed with the best available science, the GSA recognizes the limitations of any model given the various input parameters that could be used. As such, thresholds and sustainability are based on actual water levels rather than modeled values and the model will be updated and refined with new data over time.
35	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 3A A. The Model's Assumption that recharge does not come from surface flows is counter to known conditions in the Basin and creates a fundamental flaw in the Model Even a lay person would know that the primary source of recharge is from stream flow and precipitation. What is easily observable to the average person has been confirmed routinely in scientific papers – "[a] large fraction of ground water stored in the alluvial aquifers in the Southwest is recharged by water that percolates through ephemeral stream-channel deposits."USGS' 1983 Report by on the Basin (conducted in conjunction with the County and DWR) confirmed that this is the case on the local level, finding "[r]echarge to the alluvial aquifer originates primarily outside the hydrologic subarea as flow in Santa Ysabel, Guejito, and Santa Maria Creeks." Nonetheless, the GSP uses estimates of hydrologic conductivity for stream beds that grossly constrained the ability of the aquifer to obtain recharge from surface flow. The difference was in orders of magnitude from what would be expected based on past reports on the Basin and the easily observed conditions in the creek beds in the Basin. Treating the streambeds as having low conductivity (and the resulting limited infiltration) ripples through the model and impacts estimated horizontal and vertical conductivity in all 4 layers of the model.	There is no available data to support that modeled streambed hydraulic conductivity values are 100 times too low. As streamflow recession occurs between periodic rainfall events, the energy decreases and finer sediments are the last to be deposited. So although much of the valley fill is made up of coarser sediments, that does not necessarily mean that the streambed permeability will be as permeable as the underlying subsurface sediments. The streambed hydraulic conductivity values used in the SPV GSP Model can neither be confirmed nor refuted based on the available data.

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36	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 3B B. Limited Recharge from Surface Flow Biased the Model in favor of the City's Interests In order to match observed conditions in the Basin, and keep the assumption that surface water recharge was minimal, the model needed to assume that hydraulic conductivity was 100 times higher than what is generally accepted for the rocks in the Basin, and the assumptions were made in specific locations to create the desired result. Thus, the figure shown above, which alleged that the vertical hydraulic conductivity was 100 times higher than what would be expected based on the rocks present in the aquifer, and only in the portions of the Basin owned by Rancho Guejito. The assumptions are absurd the resulting simulation is all too convenient an outcome for the City. The model is fundamentally flawed and cannot be used as a management tool in the GSP or for any other purpose unless and until these assumptions are revised.	See Response #35.
37	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 4 4. THE GSP'S WATER QUALITY MANAGEMENT MEASURES ARE DEFICIENT Degraded water quality is a major limitation on full use of the Basin. The GSP does almost nothing to address the high TDS and Nitrogen levels that have been present in the Basin for decades. This is a violation of SGMA, which requires the GSP to monitor and manage groundwater quality in the Basin. DWR Regulations expressly require the GSP to include minimum thresholds to manage for water quality: The minimum threshold for degraded water quality shall be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality as determined by the Agency that may lead to undesirable results. The minimum threshold shall be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the basin. In setting minimum thresholds for degraded water quality, the Agency shall consider local, state, and federal water quality standards applicable to the basin. The levels of total dissolved solids ("TDS") and nitrogen in the western portions of the Basin exceed applicable Basin Plan standards promulgated by the San Diego Regional Water Quality Control Board. The levels are high enough to impair the use of groundwater in large portions of the Basin. In these areas, the water is unfit for human consumption. The GSP makes no effort to correct this condition. This is not consistent with the requirements of SGMA or the DWR regulations. The primary source of nitrogen and TDS in the Basin is unclear, but prior investigations determined that dairy operations, nitrogen fertilizer and soil storage are all major contributors.	A GSP may, but is not required to, address undesirable results that occurred before and have not been corrected by January 1, 2015. (Wat. Code 10727.2(b)(4.) Because TDS and nitrate issues have been present for decades, SGMA does not require the GSA to address these issues. The GSA is conducting the following activities: (1) Tier 0 *Management Action 5 – Education and Outreach for TDS and Nitrate* which addresses education/outreach for water quality and a new Tier 0 *Management Action 6 – Coordinate with City on Hodges Watershed Improvement Project* has been added and is being implemented by City.
38	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 4 continued The GSP attemPlanning Thresholds to blame surface flow contributions for the presence of high TDS and Nitrogen. But that does not explain the high levels in portions of the Basin that are not near surface streams such as at well SP043. The GSP nonetheless states that Undesirable Results for water quality are not occurring in the Basin currently (even though TDS and Nitrogen exceed Basin Plan standards) because: For degraded water quality to be characterized as an undesirable result, it must be associated with groundwater-management activities and the impacts those activities have on water quality. If those activities cause a significant and unreasonable reduction in the long-term viability of domestic, agricultural, municipal, or environmental uses over the planning and implementation horizon of this GSP; that would be considered an undesirable result for degraded water quality. This direct relationship underscores that undesirable results for water quality must be associated with groundwater pumping and other groundwater-related activities. Water quality impacts caused by land use practices, naturally occurring water quality issues, or other issues not associated with groundwater pumping would not be considered an undesirable result for degraded water quality since those would be outside of GSA authorities. This statement totally ignores the fact that the City has full control over the land use activities of its tenants, and could very easily impose water quality based restrictions on their operations. More importantly, there is reduced recharge and flow through the Basin caused by the construction of the Sutherland Reservoir. One of the best ways to improve water quality and reduce the TDS and Nitrogen levels in the Basin would be to increase the flow into the Basin of water with low levels of both constituents – e.g. to release water from Sutherland Reservoir and allow it to recharge the Basin. The GSP does not consider this option to correct water quality conditions and it is a fatal flaw in the plan. Undesirable Results are occurring now, and the City has full authority to alleviate the condition. The City has created all of the negative conditions in the Basin through operation of Sutherland Reservoir and mismanagement of its agricultural leases. The City is trying to use the GSP to force the remaining land owners in the Basin to live with the ramifications. That is not fair or equitable and in the case of water quality it is a violation of SGMA. The GSP needs to be revised.	Noted. Revisions will be incorporated into Section 6 and 8 to better define undesirable results and thresholds for water quality.

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39	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 5 5. MANAGEMENT MEASURES ARE INADEQUATE IN LIGHT OF COURT ORDER DIRECTING CITY TO RELEASE WATER FROM SUTHERLAND RESERVOIR The primary management measure proposed in the GSP is the reduction of groundwater extractions by users in the Basin. The City of San Diego is under a court order that prohibits it from impounding water in Sutherland Reservoir if water levels in the Basin fall lower than 20 feet below the ground surface elevation in the eastern portion of the Basin. There is no reason why the remaining land owners in the Basin should be asked to subsidize the City's water use by cutting back on their own groundwater use. The City is required to ensure the ongoing health of the Basin and this should be reflected in the GSP. The GSP needs to be revised to remove pumping reductions as the primary management measure. No property owner in the Basin should be asked to reduce their groundwater use until the City has replenished the Basin as required by the court's decision in Trussell v. City of San Diego.	See Response #28. There is an existing court order (Trussell v. City of San Diego (1959)) that pre-dates the state legislature's enactment of SGMA. As a GSA participant, the City takes into account the interests of all stakeholders in the Basin when complying with SGMA. As a Tier 0 management action, the City will evaluate the feasibility of surface water recharge (*Management Action 7 – Initial Surface Water Recharge Evaluation*).
40	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 6 6. FAULTY ANALYSIS OF REPLENISHMENT OPPORTUNITIES The GSP includes an appendix that purports to analyze the feasibility of recharging the Basin with surface water from Sutherland Reservoir. Unsurprisingly, the analysis is incomplete and biased in favor of the City's interests. And equally unsurprisingly, it showed the releases from Sutherland would not improve groundwater conditions in the Basin. The feasibility analysis is yet another example of the City attempting to use the GSP to avoid its obligation in the Basin. The following aspects of the analysis demonstrate this bias: • Additional water releases from Sutherland Dam of 300 AFY were "simulated" for the March to September timeframe. This timeframe includes the warmest months of the year and will simulate conditions under the highest Evapotransportation rates. There is no need to assume that surface water releases would have to occur during this timeframe because this management action would be undertaken during times that the Basin water levels are low, and could use recharge even during the winter months. "Simulating" releases during the winter months would reduce [Evapotransportation] losses, and would also reduce stream losses that would occur between Sutherland and the Basin. • Exactly what model was used to "simulate" releases is not clear, and the details of the simulations are not provided in the memo. • Of the 2,100 AFY that reached the Basin, only 187 AFY infiltrated through the alluvial sediments of Santa Ysabel Creek, while the remainder continued flowing in the creek to Lake Hodges, even though historical groundwater levels in the Basin respond rapidly to wet winter conditions. This suggests a fundamental disconnect between the model response and the observed hydrogeologic response in the Basin, which in turn suggests that the model does not accurately represent the Basin and needs substantial revision before it can be used to assess the efficacy of projects and management actions.	There seems to be confusion related to the preliminary water budget values presented in Appendix N, Screening Analysis Results. Appendix N will be revised to better explain that the simulation assumed Sutherland Dam releases in summer months to avoid a majority of surface discharge to Hodges Reservoir. The information included in Appendix N was a preliminary/high level analysis. More detailed analysis to be completed in *Management Action 7 – Initial Surface Water Recharge Evaluation*.
41	Andre Monette	Best Best & Krieger LLP on behalf of Rancho Guejito Corporation	Comment 6 continued • The memo states that only 7% of the "simulated" releases from Sutherland Dam would contribute to groundwater storage while the remainder would "be lost to ET or outflow." This number is misleading as it could equally be much higher if the model simulated higher stream bed infiltration rates or higher if releases weresimulated during the winter months, and the water that flows through the model to Lake Hodges was not included as being "lost." Use of a meaningless low percentage of water retained in the Basin is there to bias the reader into assuming that the releases of water are not helpful. This has not been demonstrated by the memo. • A review of surface water releases from Sutherland Dam that includes reasonable release parameters, a revised numerical model that reflects observed groundwater responses in the Basin, and a detailed explanation of the work conducted is needed. It is anticipated that such a study would indicate the efficacy of surface water releases from Sutherland Dam at providing recharge to the Basin and that this management action should have a higher priority in the GSP. • On multiple occasions, the City stated that the hydrologic conceptual model would not be used for developing management measures for the Basin. The feasibility analysis states that flows from Sutherland were modeled, presumably using the conceptual model developed for the GSP. The same bias that is built into that model infected the Sutherland analysis and renders it inadequate and incomplete.	See Response #40.
42	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Cloverdale Creek is not included in the list of creeks that drain the Basin.	Edit will be incorporated.

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43	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Is the last sentence a statement confirming the DWR Basin boundary and a separation of the Basin from the bedrock below	Noted. DWR Bulletin 118 basin description does not include bedrock.
44	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Figure 2-1 description is strange without an inset map to show relative location to downtown San Diego. Figure also doesn't show relative portions of City jurisdiction vs County jurisdiction. Suggest deleting first 2 sentences of description or modify figure to show the features described in the 1st 2 sentences.	Edit will be incorporated.
45	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Figure 2-3 description includes "South Coast Hydrologic Region" and "San Dieguito Drainage Basin" neither of which are shown on Figure 2-3.	Figure will be revised.
46	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Figure 2-4 does not show City boundary, so description: "Much of the Basin is in the northern portion of the City" is unclear.	Figure will be revised.
47	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Figures 2-6 and 2-7 text states "primary land uses in the Basin are native vegetation and agriculture." This should be clarified to "riparian vegetation" as the figures show the broader watershed and include large portions of "native shrub" which is limited within the Basin.	Edit will be incorporated.
48	Jill Weinberger, Kayvan Ilkhanipour	Dudek	The text explaining Figures 2-8 through 2-10 is insufficient and the figures themselves are misleading. Ideally the well maps should only show wells screened within the alluvium and residuum, as these are the only wells located in the Basin. In the absence of that, however, the text should explain explicitly that the well density maps include wells screened solely in the bedrock underlying the Basin, and therefore well densities shown on the maps are higher than the actual well densities in the Basin. The text for Figure 2-8 hints at this discrepancy but does not make a clear distinction for the average reader to understand. The text for Figures 2-9 and 2-10 is incorrect. The maps do not show wells "in the Basin" but include all wells in the DWR database. The text should be corrected. Additionally, a note should be added to the figures themselves to clarify that the well densities displayed include wells screened solely in the bedrock underlying the basin and the densities shown are higher than the actual well densities in the Basin. These figures and the associated text are misleading and require correction.	Noted. Text will be revised to explain that the density of wells include wells screened in the alluvium and bedrock
49	Jill Weinberger, Kayvan Ilkhanipour	Dudek	States replenishment of groundwater extractions is not included. Reasoning is that economically viable replenishment has not been "discovered." Need to relate to releases from Sutherland Dam and provide basis for Basin replenishment via releases.	The SPV GSP modeling did not include replenishment via dam releases. See Response #41.
50	Jill Weinberger, Kayvan Ilkhanipour	Dudek	States impacts to groundwater dependent ecosystems are discussed in Section 2. There is no reference to GDEs in Section 2.	Cross-reference will be corrected.
51	Jill Weinberger, Kayvan Ilkhanipour	Dudek	1st paragraph - Discussion of imported water doesn't belong in the introduction to the topography, surface water bodies, and recharge section. This discussion, which seems focused on areas outside of the Basin, should focus on recharge to the Basin from imported water, should be to be moved to relevant section of the GSP, and needs proofreading.	Noted. Text will be reviewed.
52	Jill Weinberger, Kayvan Ilkhanipour	Dudek	First paragraph states groundwater flow from bedrock contributes unknown amount of recharge into Basin. What is the basis for the underlying assumption that there is groundwater flow into the basin from the bedrock, as opposed to groundwater flow out of the basin, or a distinct separation between the bedrock and the residuum? The statement in the first paragraph should be removed or revised to say, "the nature of the interaction between the underlying bedrock and the base of the residuum is not currently understood."	Noted. Subsequent chapters on groundwater model explain why GSA believes there is recharge from bedrock.
53	Jill Weinberger, Kayvan Ilkhanipour	Dudek	These figures only show data through 2016. Data is available for 2017 through 2020 for Guejito Creek and Santa Maria Creek. These data would show the creek flows during above average water years in 2017 and 2019.	Data were not provided during GSP development. Please send to the GSA and it will be incorporated into the first Annual Report.

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54	Jill Weinberger, Kayvan Ilkhanipour	Dudek	These sections should be reviewed by a geologist for accuracy. 1st sentence paragraph 1 should read "The crystalline rocks that surround and underlie the Basin were formed during the Cretaceous Period …" the current wording is inaccurate and misleading. There are multiple additional inaccuracies in the discussion of the geologic formations and use of "stratigraphy" in the context of the San Pasqual Valley Basin.	Noted. Text will be reviewed.
55	Jill Weinberger, Kayvan Ilkhanipour	Dudek	This figure appears to disagree with figure 3-11, which is illegible in the document, but available online. Figure 3-10 and Table 3-1 identify older alluvial river deposits and colluvial deposits as being the same as residuum. Residuum is weathered in place, while alluvium and colluvium are deposits that have been transported away from their source material. These – by definition – cannot also be residuum. This is an important distinction because the hydrologic properties of the residuum and older alluvium are very different, with residuum typically being far less transmissive than alluvium. This conflation of older alluvium with residuum shows a fundamental misunderstanding of the hydrogeologic conceptual model for this basin and needs to be corrected.	Noted. Text will be reviewed.
56	Jill Weinberger, Kayvan Ilkhanipour	Dudek	The figures are illegible, rendering the keys provided in figures 3-12 through 3-15 useless. The geologic unit abbreviations should be clearly legible on the map.	Noted. This was our best attempt to provide USGS geology maps for readers.
57	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Some of well locations appear to be misrepresented in the plan view and cross section D-D'. Location of LWELL5915 (prev. Well 5) needs to be shifted ~900 feet to the NNW. Location of Rockwood Well 6 needs to be shifted ~650 feet to the NW. Also, LWELL5915 (Well 5) has been destroyed as of Fall 2020. Unsure what well is represented by LWELL5246 in figures.	Noted. Figure will be reviewed.
58	Jill Weinberger, Kayvan Ilkhanipour	Dudek	The Basin boundary is clearly defined in the first sentence. However, three sentences later there is an ambiguous statement regarding the interaction of groundwater in fractured bedrock with the overlying residuum and alluvium. This statement indicates a bias that was brought into the hydrogeologic conceptual model and carried through the numerical groundwater model, but is not supported by the water level discussion in section 4 and does not belong in the discussion of the basin boundary. It should be deleted.	Noted. See Response #33.
59	Jill Weinberger, Kayvan Ilkhanipour	Dudek	As above comment: "The amount of water contributed to the Quaternary Deposits and Residuum from Crystalline Rock near the Basin is not known and may be investigated further by the GSA." This statement is not supported by the water level discussion in Section 4 and does not belong in the discussion of the principal aquifers. A statement regarding the interaction between the bedrock and the alluvial aquifers could be added to a discussion of the data gaps.	Noted. See Response #33.
60	Jill Weinberger, Kayvan Ilkhanipour	Dudek	States that the depth to crystalline rock is unknown, however, the cross sections in Figures 3-18 and 3-19 suggest otherwise, and there are a number of wells that have been drilled into bedrock, by both private landowners and the USGS. This should be clarified in the discussion and specific areas should be named where additional data could improve the hydrogeologic understanding of the basin.	Noted. Text will be reviewed.
61	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Last bullet in this section needs proofreading.	Edit will be incorporated.
62	Jill Weinberger, Kayvan Ilkhanipour	Dudek	1st sentence is missing a word: "groundwater _____?_____ and groundwater quality in the Basin."	Edit will be incorporated.
63	Jill Weinberger, Kayvan Ilkhanipour	Dudek	The lowermost intervals for the USGS nested wells: SDSY (screened from 280 ft to 340 ft below land surface) and SDLH (170 to 270 ft bgs) are within the bedrock at their respective locations. There is no vertical gradient observed between the alluvium and the bedrock at well SDSY, close to the mouth of Rockwood Canyon, suggesting that if there were a connection between the bedrock and the alluvium at this location, little to no vertical flow would occur. However, it should be emphasized that the granite immediately underlying the Basin has consistently not yielded economic quantities of groundwater and acts as a barrier to flow between the Basin and anything beneath it. At well SDLH, in the western part of the Basin the observed vertical gradient is directed downward suggesting that if there were a connection between the bedrock and the alluvium in that location, the alluvium would recharge the bedrock. As above, the presence of a vertical gradient does not mean that there is flow between the alluvium and the bedrock, but suggests that the statements in section 3 regarding contribution from the granite to the alluvium are not based on the data that should have been used to develop the hydrogeologic conceptual model of the Basin.	DWR's Bulletin 118 definition is included in Section 2.1. The GSAs are managing to the SPV basin as defined in Bulletin 118. Figure 4-6 in Appendix I shows the vertical head difference hydrographs at the three USGS well clusters. These figures show that most of the time between 2011 and 2020, there are vertical head differences that mostly indicate downward vertical hydraulic gradients at these particular locations. Vertical hydraulic gradients alone do not directly indicate the amount of vertical groundwater flow that might be occurring. This is because vertical groundwater flow would also be affected by the vertical resistance to groundwater flow. The nature of the vertical flow patterns between the Basin

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				and underlying bedrock is not well understood due to the limited available data on the vertical hydraulic conductivity of the lower alluvium, residuum, and upper bedrock. Thus, the degree to which the residuum and upper bedrock acts as a barrier to groundwater flow is not known with certainty. However, because groundwater-level fluctuations through time in the different depth intervals at some of the USGS cluster mimic each other (see Figure 4-4 in Appendix I), this would suggest there is some degree of hydraulic connection between the alluvium, residuum, and bedrock at some locations in the Basin.
64	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Typo in heading	Edit will be incorporated.
65	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Figure 4-22 is missing a legend explaining the colors of each bar.	Figure will be revised.
66	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Table 4-1 shows the average annual depletions due to groundwater pumping over the 2005–2019 period. How do they determine the AF depletions listed in the Table? Particularly from creeks listed as disconnected from the regional aquifer, like Guejito Creek. The work done to create this table is not well enough explained.	Noted. Clarification will be added.
67	Jill Weinberger, Kayvan Ilkhanipour	Dudek	The statement that the interaction between DWR defined Basin and bedrock may need improvement because it's not well understood, along with the discussion of aquifer testing should be removed. This statement isn't justified by the data and does not belong in a discussion of the historical groundwater conditions. At the same time there is no discussion of data gaps regarding GDE monitoring sites, or groundwater quality data. This should be added to the areas of potential improvement, based on the data discussed.	See Response #33. The GSA will implement Tier 1 *Management Action 8 – Study GDEs*. Groundwater quality monitoring is proposed in Section 7.9.
68	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Under the heading "Identification of Undesirable Results", the GSP defines the undesirable result for chronic lowering of groundwater levels: "The undesirable result for the chronic lowering of groundwater levels is considered to occur during GSP implementation when 30% of representative monitoring wells (i.e., 5 of 15 wells) fall below their minimum groundwater elevation thresholds for two consecutive years." This undesirable result language doesn't take into account geographic variation in water levels in this Basin, and appears to be tied to the undesirable results established for the Cuyama Basin which states "This result is considered to occur during GSP implementation when 30% of representative monitoring wells (i.e., 18 of 60 wells) fall below their minimum groundwater elevation thresholds for two consecutive years." (Cuyama GSP, Section 3.2.1 Chronic Lowering of Groundwater Levels - Identification of Undesirable Results). The Cuyama Basin and the San Pasqual Valley Basin are very different basins and undesirable results need to be defined locally, based on the historical data and modeling conducted for the San Pasqual Valley Basin, and taking into account significant and unreasonable impacts to beneficial users and uses of groundwater. In the San Pasqual Valley Basin, 5 representative monitoring wells in the western part of the Basin could be below the minimum threshold, while water levels in the eastern part of the Basin are above the minimum thresholds, yet everyone in the Basin would be subject to implementation of projects and management actions. Local hydrogeology and local understanding of the beneficial uses and users of groundwater in the San Pasqual Valley Basin should be used to develop Basin specific undesirable results. This is a fundamental tenant of SGMA and has not been followed in the development of this GSP.	Noted. The GSP will be revised to include further description of and rationale for undesirable results (see Section 6.3.1).
69	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Rate of land subsidence referenced here (0.028 inches per year) disagrees with rate of land subsidence referenced in section 4 (0.05 feet per year). These should be reconciled.	Edit will be incorporated.

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70	Jill Weinberger, Kayvan Ilkhanipour	Dudek	Management Actions 2, 10, and 11 state that "Reducing groundwater pumping will help alleviate groundwater degradation associated with lowering of groundwater levels." The GSP has not established an association between groundwater levels and groundwater quality. This statement appears to have been copied from Table 7-2 in the Cuyama GSP, where groundwater elevations may be linked to lower quality groundwater. Unless a similar link is established locally for the San Pasqual Valley Basin, these statements need to be removed from Table 9-3. Groundwater producers in the San Pasqual Valley Basin should not be subject to management actions that have not been demonstrated to produce the desired impact described in the table.	Noted. The GSP will be revised to include further description of and rationale for undesirable results (see Section 6.3.4).
71	Jill Weinberger, Kayvan Ilkhanipour	Dudek	The assessment of the viability of additional surface water recharge via releases of water from Sutherland Dam is unclear, and appears biased in several ways: (1) Additional water releases from Sutherland Dam of 300 AFY were "simulated" for the March to September timeframe. This timeframe includes the warmest months of the year and will simulate conditions under the highest ET rates. There is no need to assume that surface water releases would have to occur during this timeframe because this management action would be undertaken during times that the Basin water levels are low, and could use recharge even during the winter months. "Simulating" releases during the winter months would reduce ET losses, and would also reduce stream losses that would occur between Sutherland and the Basin. (2) Exactly what model was used to "simulate" releases is not clear, and the details of the simulations are not provided in the memo. (3) Of the 2,100 AFY that reached the Basin, only 187 AFY infiltrated through the alluvial sediments of Santa Ysabel Creek, while the remainder continued flowing in the creek to Lake Hodges, even though historical groundwater levels in the Basin respond rapidly to wet winter conditions. This suggests a fundamental disconnect between the model response and the observed hydrogeologic response in the Basin, which in turn suggests that the model does not accurately represent the Basin and needs substantial revision before it can be used to assess the efficacy of projects and management actions. (4) The memo states that only 7% of the "simulated" releases from Sutherland Dam would contribute to groundwater storage while the remainder would "be lost to ET or outflow." This number is misleading as it could equally be much smaller if the model simulated higher releases or much higher if releases were simulated during the winter months, and the water that flows through the model to Lake Hodges was not included as being "lost." Use of a meaningless low percentage of water retained in the Basin is there to bias the reader into assuming that the releases of water are not helpful. This has not been demonstrated by the memo. A review of surface water releases from Sutherland Dam that includes reasonable release parameters, a revised numerical model that reflects observed groundwater responses in the Basin, and a detailed explanation of the work conducted is needed. It is anticipated that such a study would indicate the efficacy of surface water releases from Sutherland Dam at providing recharge to the Basin and that this management action should have a higher priority in the GSP.	See Response #40.

#	Commenter Name	Commenter Organization	Comment	Response
72	Peter Quinlan	Peter Quinlan LLC	The low Kz assigned to the stream bed is a function of the model computational constraints, not the observed conditions. A result of this modeling compromise, a small fraction of the average surface water inflow (13,907 AFY per Table 4-7) recharges groundwater. The simulated average groundwater recharge from streams is that only 2276 AFY (16%) of model estimated surface water inflow during the historical period. In contrast, the model simulates that 36% of the total of: 1) precipitation falling within the model, 2) the water applied for irrigation, and 3) septic discharges end up recharging the groundwater. The total annual average precipitation and applied irrigation water amount to 8543 AFY which is much less than the stream inflow at 13,907 AFY, yet in the model it provides more groundwater recharge (3052 AFY versus 2276 AFY). The surface sediments outside of the stream beds are finer-grained and should have a lower Kz than the stream beds, but in this model these finer-grained sediments have assigned Kz values roughly 100 times greater than the stream beds. If the model code could computationally handle values of Kz for the stream beds more in keeping with the observed sediments, groundwater recharge in the model from stream beds would increase. Other aspects of the model would change as a result. The assignment of the low Kz to the stream beds and the resulting limited infiltration ripples through the model affecting calibration modifications to Kh and Kz in all 4 layers of the model and the estimated subsurface inflows. The model also underestimates cumulative surface water inflow from Guejito Creek during the 15-year historical period by 10,000 AF (Figure 3-20) which is half of the observed discharge. This also serves to underestimate potential recharge from surface water flows. As with most models, this one is under-determined; that is, there are insufficient data to constrain assumptions about model parameters, inflows, and outflows. To better understand the water balance of the SPV Basin, it is critical that two new stream gauges be installed along Santa Ysabel Creek, one just upstream of the confluence with Santa Maria Creek and another at the downstream end of the basin. These gauges would improve the understanding of the contributions of the stream flow to groundwater recharge. Additional stream flow monitoring gauges were not identified as a data gap in the draft GSP.	Alternative conceptual models that provide adequate fits to calibration targets are certainly possible. The conceptual model inherent in the SPV GS Model is one of several plausible models. The modeling team is not aware of such hydraulic conductivity data for the streambeds. As streamflow recession occurs between periodic rainfall events, the energy decreases and finer sediments are the last to be deposited. So although much of the valley fill is made up of coarser sediments, that does not necessarily mean that the streambed permeability will be as permeable as the underlying subsurface sediments. The streambed hydraulic conductivity values used in the SPV GSP Model can neither be confirmed nor refuted based on the available data. If stakeholders and the GSA wish to reduce uncertainty in the estimates of streambed hydraulic conductivity, then investigations that seek to reduce that uncertainty could be considered in the future. Additionally, the footprints of stream channels relative to the much larger footprint outside of stream channels is a consideration when reviewing the contributions from different water sources. The larger area outside of stream channels provides more opportunity for areal groundwater recharge to occur, whereas a creek channel is limited to its wetted perimeter, which is a much smaller area for recharge to occur when ephemeral flows occur. Although Figure 3-20 indicates that the streamflow bias-correction process under-estimates stream projected inflows from Guejito Creek to the SPV GSP Model domain, actual measured streamflow values are simulated for the historical simulation period. The intent of the bias-correction process is to remove potential biases in the Basin Characterization Model (BCM) for ungaged watersheds and for development of projected hydrologic stream inflows. So, the historical model does not underestimate Guejito Creek inflows, because they are based on actual streamflow data at the Guejito Creek stream gage.

#	Commenter Name	Commenter Organization	Comment	Response
73	Peter Quinlan	Peter Quinlan LLC	As discussed in sections 4.3.2 and 4.3.6, in order to reproduce the vertical head differences in the east and simulated pumping from the granitic rock, the vertical hydraulic conductivity (Kz) had to be increased in the granitic rock. Indeed, it was increased to be 100 times greater than horizontal conductivity (Kh). Typically the ratio of Kh:Kz is expected to be on the order of 10:1 in alluvium (or 1:1 in lower permeability formations like clay and crystalline rock like granite). While the GSP states that this highly unusual ratio is possible in fractured rock, that implies vertical fracturing and no evidence is cited to justify this unusually high Kz. It is also odd that Kz in the granitic rock was selectively increased on only a few isolated areas surrounding the USGS monitor wells where there were historical water levels used in calibration. This appears to be an arbitrary localized tweak to match historical water levels. In Rockwood Canyon this highly unusual Kh:Kz ratio of 1:100 was applied to the residuum which is weathered granite having a granular texture and abundant fines in the silt to clay range and unlikely to fracture. The application of this highly unusual Kh:Kz ratio to the residuum is inappropriate. Furthermore, this highly unusual ratio of 1:100 for Kh:Kz was not assigned to the granitic rock in the layers beneath the residuum. The granitic rock is precisely where fracturing could be expected to occur. This clearly looks to be an artifact of calibration rather than the reflection of a well-conceived conceptual model of the basin and surrounding granitic rock. It also makes drawing conclusions about the hydrologic interaction of the alluvial sediments and residuum based on model results highly dubious	The SPV GSP Model utilized calculated vertical head difference values at the three USGS monitoring wells to constrain hydraulic parameters in the vicinity of these wells. Vertical head differences at the USGS wells indicate the potential for downward groundwater flow from the Basin into the underlying bedrock. Groundwater-level fluctuations through time observed at the SDSY and SDCD wells in each zone (alluvium, residuum, and bedrock) mimic each other across all three zones, suggesting direct hydraulic connection between the alluvium, residuum, and bedrock. The modeling team aimed to honor the measured water level trends observed at the USGS wells during model calibration, and in order to do so, the conceptual model of hydraulic connection between the Basin and the underlying bedrock was incorporated. However, it is acknowledged that the nature, extent, and characterization of hydraulic connection between the Basin and the underlying bedrock is not well understood and could be further investigated during GSP implementation in an attempt to reduce uncertainty. We disagree with the assertion that the Kh:Kv ratio should be limited to the range of 1:1 to 100:1. In addition to fracturing, which can cause Kh:Kv ratios to be less than one, differential weathering could result in areas with Kv values that are higher than Kh values. As stated in the comment, residuum is weathered rock with a granular texture and abundant fines in the silt to clay range. It is possible to have complex arrangements of weathering and grain sizes within the residuum to result in less resistance to vertical flow, as compared with horizontal flow. The mismatch between modeled and target heads in some areas was reduced by having Kh:Kv ratios less than one. If the stakeholders and GSA wish to reduce uncertainty on this topic, targeted aquifer testing could be explored in an attempt to reduce the associated uncertainty.
74	Peter Quinlan	Peter Quinlan LLC	It is not clear, but it appears that the model was used to evaluate the feasibility of releasing water from Sutherland Reservoir to provide recharge to the basin. Predictably the model as constructed with the unrealistically low Kz assigned to the stream beds predicted that only a small percentage of the released water would recharge the basin. If the model more accurately reflected the sandy sediments in the stream beds, more water would have infiltrated. This analysis also estimated that 772 AFY would be lost to evapotranspiration during releases from May to September. However, the draft GSP fails to mention that there would be losses to evaporation from the reservoir even if no water were released to recharge the San Pasqual Valley Basin. The average annual evaporation from Sutherland Reservoir is 52.77 inches /year (4.4 ft/yr). Most of that occurs between May and October, when the analysis indicated that the releases would occur. Sutherland Reservoir has an area of 557 acres when full. If full the annual loss to evaporation would be 2449 AF.	See Response #73.

#	Commenter Name	Commenter Organization	Comment	Response
75	David Mayer	CDFW	Comment 1 Assessment of Interconnected Streams and Groundwater Dependent Ecosystems (GDEs). (SPV-GSP Volume 1 Section 4.6, SPV-GSP Volume 2 Appendices J and L, page 4-42) Issue: The SPV-GSP conclusion that streams and wetlands in the eastern portion of the Basin (eastern Basin) are disconnected from the Basin's aquifer (i.e., not GDEs) is not fully supported by the data provided in the SPV-GSP or in Appendices J and L. Readily available scientific data indicates that the riparian and wetland vegetation in the eastern Basin likely maintain some connectivity to groundwater and should still be considered GDEs. Under SGMA, a GSP is required to avoid unreasonable adverse impacts on the beneficial uses of interconnected surface waters, defined as, "surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer, and the overlying surface water is not completely depleted" (Water Code §§ 10721(x)(6) and 10727.2(b); 23 CCR § 351(o).). Concern: The SPV-GSP's reliance on the 2015 to 2019 baseline analysis to identify disconnected portions of the Basin and eliminate potential GDEs with a depth to groundwater greater than 30 feet is not representative of current climate conditions. The 2015 to 2019 baseline analysis begins several years into a historic drought when groundwater levels throughout the Basin were trending lower than usual due to reduced surface water availability. As such, this period of groundwater elevations does not account for GDEs that can survive a finite period without groundwater access (Naumburg et al. 2005). The following are additional factors which support the need to further analyze GDEs and groundwater levels: a. The distance to groundwater within the riparian/wetland habitat may be less than the distance to groundwater at the well location, given that riparian and wetlands are located intopographical depressions compared to adjacent well locations; therefore, calculations for GDE's should be corrected for actual ground surface elevation (The Nature Conservancy 2019). The corrected distance to groundwater elevation should be used in the GDE analysis. b. As shown in Appendix L, some hydrographs in the eastern Basin show measurement at or around 30 feet in 2019, yet the SPV-GSP categorized streams in the eastern Basin as disconnected due to depth to groundwater being greater than 30 feet since 2015. Wells in the eastern reaches show recent connection to groundwater and should be considered GDEs. c. Appendix J notes that, "[t]he major drainages in the San Pasqual Valley have significant riparian or wetland vegetative communities with an abundance of woody phreatophytes such as willows (Salix spp.), salt cedar (Tamarisk ramosissima), Fremont cottonwood (Populus fremontii), California sycamore (Platanus racemosa), and California fan palm (Washingtonia filifera)" (pg. 14). Some of these trees, such salt cedar, can have a rooting depth up to 70 feet (Gries et al. 2003). These species, while not native to southern California, provide habitat for the California Endangered Species Act (CESA)-listed least Bell's vireo (Vireo bellii pusillus).	New Planning Thresholds will be added (Section 8.7) to initiate Tier 1 *Management Action 8 – Study GDEs* to evaluate GDEs in more detail. The GSAs may implement this study prior to the 5-Year Update even if the Planning Thresholds aren't reached.
76	David Mayer	CDFW	Comment 1 - Continued from previous Comment d. Riparian areas in the eastern Basin remain functional without perennial surface flow and were able to persist through drought conditions; for these reasons, they are likely connected to groundwater. The GDE Pulse tool by The Nature Conservancy (TNC) also identifies the eastern Basin's riparian and wetland habitats as GDEs (Klausmeyer et al. 2019). Naumburg et al. (2005) presents several models that evaluate how GDEs rely on fluctuating groundwater elevations for long-term survival. GDEs have been sustained by groundwater, despite the depth of the groundwater table being greater than 30 feet below ground surface (bgs), due to these fluctuating groundwater elevations. Figure 3-25 shows that the Santa Ysabel catchment, which is in the watershed furthest east, provided more than 20 acre-feet of groundwater recharge even at the height of the drought in 2014. This surface to groundwater connection sustains the riparian vegetation that is habitat for various endangered species, such as the CESA-listed least Bell's vireo and CESA-listed tricolored blackbird (Agelaius tricolor). This should be identified as a beneficial use. e. Riparian areas that are considered gaining reaches may be considered GDEs even if groundwater levels are greater than 30 feet bgs. Further guidance on riparian vegetation as GDEs can be found in Groundwater Dependent Ecosystems Under the Sustainable Groundwater Management Act Guidance for Preparing Groundwater Sustainability Plans and Identifying GDEs Under SGMA Best Practices for Using the NC Dataset. (The Nature Conservancy 2018 and 2019 respectively). Recommendation: The SPV GSA should clarify depth to groundwater for GDEs in the eastern Basin and conduct additional studies as recommended in Appendix J. CDFW also recommends including areas classified as wetland and riparian habitats as GDEs. This includes areas	See Response #75. The GSP includes a Tier 1 *Management Action 8 – Study GDEs* to better understand how GDEs access water supply.

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			where groundwater depth is greater than 30 feet bgs but habitat is still sustained by groundwater. CDFW suggests these habitat areas be identified as GDEs in the final GDE map in the SPV-GSP.	
77	David Mayer	CDFW	Comment 2 Water Budgets and Projected Deficits and Sustainability Goals (SPV-GSP Section 5.5.3, page 5-15) Issue: Figure 5-5 of Appendix H shows that project groundwater surface levels at the representative wells in the eastern Basin will hit their planning or minimum threshold by 2035, which is prior to the sustainable planning horizon of 2040 required under SGMA. Additionally, the SPV-GSP already has identified a small deficit in groundwater storage. The model seems to indicate that diminishing groundwater storages may be a long-term trend based on projected data. Concern: The SPV-GSP fails to identify specific actions which will determine if the deficit is a trend, and potential management actions which will be implemented if the deficit is determined to be a trend. Recommendation: Thresholds should be revised to provide an earlier indicator of undesirable reductions in groundwater storage. Management actions may need to be implemented to prevent undesirable results both for chronic lowering of groundwater storage and potential impacts to interconnected surface waters and GDEs.	The GSP includes a Tier 2 *Management Action 12 – Pumping Restrictions and Enforcement* to address any long-term trend in declining storage/groundwater levels, if observed through monitoring. The 5-Year Update will also reevaluate the thresholds established for the Basin.
78	David Mayer	CDFW	Comment 3 Water Budgets and Impacts to GDEs (GSP Section 5.5.3, page 5-15) Issue: The Average Annual Surface Water System Water Budget (Table 5-4) shows that during SPV-GSP implementation, groundwater discharge to streams will decrease significantly, while stream inflow from adjacent areas will double due to a few large storms. Fay et al. (2000) found that, "[a]boveground net primary productivity, soil carbon dioxide flux, and flowering duration were reduced by the increased inter rainfall intervals and were mostly unaffected by reduced rainfall quantity" (pg. 308). It is unclear in the SPV-GSP how the change in water timing and type will affect beneficial uses in the stream, such as vegetative growth and blooming periods, especially during drought conditions. Concern: Changes in water inputs that may impact GDE health should be monitored as part of the SPV-GSP. This monitoring data will help to inform future water budgets. Recommendation: Annual monitoring of GDE health, the use of Normalized Derived Vegetation Index (NDVI) which estimates greenness, and Normalized Derived Moisture Index (NDMI) which estimates vegetation moisture, should be used as metrics for interconnected surface water and GDE impacts.	The GSA has no control over changes in rainfall patterns. The groundwater modeling simulated future precipitation under climate change conditions. The GSA will consider the recommended tools in completion of the Tier 1 *Management Action 8 – Study GDEs* - see revisions to Section 9.8.8.

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79	David Mayer	CDFW	Comment 4 Groundwater Level as a Proxy for Interconnected Surface Waters and GDE's. (SPV-GSP Section 6.3.6, page 6-7) Issue: Although groundwater levels are a simple proxy for many sustainability indicators, it is not sensitive to changes in ecosystem health and noticeable changes to groundwater levels as representative wells may lag real time impacts to GDEs due to relative location to the groundwater surface. Concern: Current sustainability indicators will not detect changes, which will affect other beneficial uses and GDEs. Recommendation: NDVI and NDMI should be used as early indicators of water stress on GDEs. NDVI and NDMI are remotely sensed color data that can be used as a refined proxy for vegetation health in the Basin. The TNC GDE Pulse tool provides both a web viewer and access to the raw data to analyze these metrics over different periods of time (Klausmeyer et al. 2019)	See Response #78.
80	David Mayer	CDFW	Comment 5 Degraded Water Quality (SPV-GSP Section ES, 4.1.6, 6.3.4, pages ES-4, 4-16,6-5) Issue: Water quality within the Basin is being impacted by land use practices adjacent to the Basin. Concern: The SPV-GSP notes that the SPV GSA only has authority over issues related to groundwater pumping in the Basin. Although nitrogen and Total Dissolved Solids sources are outside of the Basin, CDFW is concerned that there are downstream impacts to water quality in the Basin that could be addressed by managing entities outside of the MOU for the SPV GSA. Recommendation: Although the SPV GSA only has authority over issues pertaining to groundwater pumping, both the City and the County have planery authority and can address water quality issues within their management areas, including upstream watersheds. CDFW recommends that the SPV GSA coordinate with relevant municipal jurisdictions and landowners on potential water quality projects to ameliorate the water quality issues upstream of the Basin.	Noted. The GSP includes multiple projects and management actions directing the GSA to coordinate with the City, County, and MS4 Copermittees on implementation of water quality projects.
81	David Mayer	CDFW	Comment 6: Minimum Thresholds Are Set Lower Than Historic Baseline (SPV-GSP Section 8.2.1, page 8-2) Issue: Minimum thresholds are set well below historic minimums and are not protective of beneficial uses. Setting minimum and planning thresholds at 50 to 100 percent lower than historic minimums does not account for how current conditions may already be trending towards a groundwater storage deficit (Comment #3). Additionally, the future range of groundwater levels may fall within or near the historic range, which also included severe drought conditions. Concern: Setting the minimum and planning thresholds below the historic range may not be enough to allow for protection against undesirable results. Furthermore, as presented in the SPV-GSP, the planning threshold for wells adjacent to GDEs is less protective than the threshold set for wells that are further from GDEs. Given CDFW's concern that riparian and wetland vegetation in the eastern Basin may also be GDEs, the absence of established protective thresholds is of particular concern. Although the SPV GSA is not currently experiencing an overdraft, trends of overdraft conditions, if they persist, may cause undesirable results prior to reaching either the proposed planning or minimum threshold. Recommendation: CDFW recommends following TNC's guidance by setting minimum thresholds at levels that prevent adverse impacts to GDEs (TNC 2018). The planning and minimum thresholds for wells closer to GDEs should also be more protective of the GDEs thanwells that are further, and the planning threshold should be closer to the measurable objective rather than the minimum threshold in areas adjacent to GDEs.	Noted. Sections 6 and 8 will be revised to better articulate rationale for undesirable results and minimum thresholds for GDEs and interconnected surface waters.

#	Commenter Name	Commenter Organization	Comment	Response
82	David Mayer	CDFW	Comment 7: Monitor GDEs Should Be A Tier 0 Project (SPV-GSP Figure 9-2, page 9-3) Issue: Section 9 of the SPV-GSP includes monitoring of GDEs as a Tier 1 project that would be implemented once the planning threshold is reached. Concern: Given CDFW's many concerns pertaining to interconnected surface waters and GDEs for the Basin, we are concerned that undesirable results may occur well before Tier 1 projects are implemented, particularly given that planning and minimum thresholds set for the representative wells is not protective of GDEs and beneficial uses. Recommendation: Additional studies and monitoring pertaining to GDE's should be implemented, as identified in Appendix J, as a Tier 0 project that can be implemented at any time after plan adoption. Again, NDVI and NDMI should be used to assess habitat health 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.	New Planning Thresholds will be added (Section 8.7) to initiate Tier 1 *Management Action 8 – Study GDEs* to evaluate GDEs in more detail. The GSAs may implement this study prior to the 5-Year Update even if the Planning Thresholds aren't reached.
83	David Mayer	CDFW	Comment 8: Use of CNDDB Data to Presume Absence (SPV-GSP Volume 2 Appendix J Groundwater Dependent Ecosystems Technical Memo Table 1, page 6) Issue: Appendix J notes that presence and/or absence of sensitive species is based on California Natural Diversity Database (CNDDB) occurrence data. CNDDB only provides positive occurrence data where studies have been conducted and cannot be relied upon to presume absence due to lack of data in a specific location. Concern: Species-specific studies conducted in suitable habitat according to species-specific protocols are required to determine species absence from a particular area. Only presence can be assumed and should be assumed in suitable habitat where species-specific surveys have not been conducted. Recommendation: In the absence of species-specific protocol surveys, the GSP should assume presence for sensitive species in areas where suitable habitat exists.	Noted. CNDDB was best available data for species presence.
84	David Mayer	CDFW	Comment 9: Species Dependence on Groundwater and Mischaracterization as Not Applicable (SPV-GSP Volume 2 Appendix J Groundwater Dependent Ecosystems Technical Memo Table 1, page 6) Issue: Table 1 of Appendix J states that the reliance of many of the sensitive plants and invertebrates on groundwater is Not Applicable (NA) based on omission from the Critical Species LookBook (Rohde et al. 2019). The Critical Species LookBook Appendix I Other Threatened or Endangered Species Relevant to SGMA includes many of the species noted as NA. Although groundwater relationships may be less apparent and not fully discussed in the LookBook, groundwater relationships between plants and vernal pool habitats do exist and have been described in the scientific literature. In one study in the Central Valley, "[p]erched groundwater discharge accounted for 30–60% of the inflow to the vernal pools during and immediately following storm events. (Rains et al. 2006, pg. 1157). Endangered plants such as the threadleaf brodiaea (Brodiaea filifolia) which CNDDB notes as potentially present in the eastern Basin may also be impacted by changes to groundwater. Concern: Although these groundwater relationships are not well understood for the Basin, CDFW is concerned that additional monitoring of known sensitive populations have not been included in the SPV-GSP. Recommendation: Sensitive plants and invertebrates should be included in Appendix I of the Critical Species LookBook as having a potential reliance on groundwater rather than 'NA.' The SPV GSA should also coordinate with the City and County to include periodic monitoring of sensitive species populations within the Basin, beginning with baseline studies where suitable habitat exists.	Noted. LookBook was best available data for species groundwater dependance.

#	Commenter Name	Commenter Organization	Comment	Response
85	David Mayer	CDFW	Comment 10: Pictures Were Not Provided for Eastern Field Data Points That Were Determined to Not Be GDEs (GSP Volume 2 Appendix J Groundwater Dependent Ecosystems Technical Memo Attachment 1) Issue: Appendix J does not include representative photos of field surveys in the eastern Basin. The SPV-GSP makes the conclusion that the riparian and wetland habitat in the eastern portion are not GDEs due to the depth of groundwater being greater than 30 feet. Concern: Pictographic evidence regarding GDEs was not included to support the GDE analysis provided. Recommendation: Representative photographs of the field surveys conducted in the eastern Basin should be included in Appendix J. The Final SPV-GSP should contain updated analysis in Appendix J to addressed issues discussed in this letter.	The photo log in Appendix J included photographs of locations from the eastern part of the basin (sites 11, 12, 13, and 16) and will be revised to clarify that these locations were classified as wetland and riparian vegetation areas.
86	Alicia Appel	City of Escondido	Update map or add footnote to denote errors on this map. Santa Ysabel should be named San Dieguito and San Dieguito River should read Cloverdale Creek. The map on the next page is correct.	Figure will be revised.
87	Alicia Appel	City of Escondido	Approach (sp)	Edit will be incorporated.
88	Alicia Appel	City of Escondido	Is there a different term that can be used rather than “exceedance”? Exceedance is going "over" a limit but in the case of groundwater levels it would be falling below a threshold. This term is often used in stormwater compliance. It would make sense for the water quality metrics (e.g. nitrate and TDS)	Noted. Text will be reviewed.
89	Alicia Appel	City of Escondido	Delete repeated table reference (9-2)	Edit will be incorporated.
90	Alicia Appel	City of Escondido	Water District Source map does not match the Escondido Water boundaries. See attached map and contact me if you want the GIS layer.	Figure will be revised.

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