Comment #	Commenter Name	Commenter Organization	Comment Received	Subject	Location in Document	Comment	Response
1	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		Based on our review of Technical Memoranda 5 and 6, it appears that the City's modeling is designed to avoid any outcome that would show that releasing water from Sutherland Reservoir has benefits for the Basin or the environment. Worse, the City has "cherry picked" modeling scenarios to show that surface water recharge would be ineffective. Even going so far as to use inconsistent modeling criteria for each scenario to benefit the other methods of recharge. This is outrageous and demonstrates the flawed approach the City has taken with this model. The City needs to redo the modeling with appropriate input criteria if it intends to use the modeling for any decision on groundwater management.	The operational constraints used in the modeling analysis considered the physical processes of streamflow, infiltration, and groundwater flow. Because the individual recharge strategies are influenced differently by these physical processes, it was appropriate to implement different operational criteria. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.
2	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		All of the City's scenarios assumed that water would only be released during extreme drought, after the Basin had been significantly drawn down. This tilted the scale in favor of showing that releasing water from Sutherland would not benefit the Basin.	The modeled strategies first consider whether groundwater levels are below the planning threshold at well SPV GSP-43 (SP086). Planning thresholds were established for the wells during development of the GSP. So no action is taken until planning thresholds are triggered, consistent with the GSP. The TM5 simulations then incorporate a forecast-informed operational constraint, by "looking ahead" and noting whether the next two years would be dry or critically dry. The forecast-informed approach to reservoir operations is a strategy intended to better inform decisions to detain or release water. This approach strives to provide reservoir operators flexibility in operational policies and rules with enhanced monitoring and improved weather and water forecasts (https://cw3e.ucsd.edu/firo/). The simulations presented in TM5 show the potential outcomes from the operational constraints imposed in the analysis and provide important information to consider when developing operational rules, including whether the modeled constraints are too restrictive.
3	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		The City's scenarios only made water available for release from Sutherland after water was sent to other users. As a result, outflows to the City's municipal ratepayers were given priority over native users and the environment in the San Pasqual Basin. The "left overs" were made available for the Basin.	Giving priority to recharge activities over other existing commitments for Sutherland water could negatively impact other water users supplied by the City. It was deemed appropriate for the recharge strategy involving Sutherland Reservoir (Strategy 2A) to incorporate current operations, which includes managed releases to San Vicente Reservoir.
4	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		The City did not consider any scenario that involved ongoing managed releases of water from Sutherland. This kind of management approach would to keep the Basin at levels that would remain healthy throughout any drought period.	As stated in Section 3 of TM5, "For this evaluation, it was assumed that the intent of implementing a recharge strategy would be to enhance resilience against undesirable results, as defined in the GSP (City and County, 2021), rather than to keep the Basin full of groundwater year after year".
5	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		The City used different base criteria for the surface water recharge projects than it used for the direct injection project. This meant that favorable conditions were presented for direct injection, while limited, unfavorable conditions and scenarios were modeled for the surface water recharge projects.	The operational constraints used in the modeling analysis considered the physical processes of streamflow, infiltration, and groundwater flow. Because the individual recharge strategies are influenced differently by these physical processes, it was appropriate to implement different operational criteria. For example, the performance of an injection well at the modeled locations would not depend on streamflow conditions in the creek. Therefore, it would not have been realistic to incorporate that constraint for Strategy 3D. However, streamflow conditions in the creek would affect the efficiency of the other strategies that rely on streambed infiltration. Thus, the physical processes played a role in how recharge strategies were simulated because they would be also be a consideration for how the strategies would likely be managed.
6	Andre Monette	BBK	10/1/2023	TM6: Lack of Benefit to GDEs		The City carried forward the results of its flawed modeling into Technical Memorandum 6 and concluded that releasing water from Sutherland would not benefit groundwater dependent ecosystems in the San Pasqual Valley.	TM6 evaluated the potential for recharge to benefit groundwater dependent ecosystems (GDEs), based on the average maximum rooting depth for potential GDE vegetation communities. The results, which were based on the modeled results for TM5, showed negligible benefits to GDEs for each of the four recharge strategies, even for Strategy 3D which provided the largest volume of water to the Basin.
7	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		The modeling results presented in Technical Memoranda 5 and 6 are fundamentally flawed and need to be redone. Common sense dictates that releasing water from Sutherland in a controlled manner, that takes advantage of the natural conditions in the Basin would be the most effective method of recharge. In fact Technical Memorandum 4 expressly found that this was the case. Rancho Guejito's comments on Technical Memorandum 4 acknowledged and lauded that analysis, and I am reiterating those comments here.	Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.

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8	Andre Monette	BBK	10/1/2023	Trussell v. City of San Diego		The City's analysis in Technical Memorandum 4 demonstrated that the most cost effective, and physically effective method of providing groundwater recharge for the San Pasqual Valley Groundwater Basin is to release water from Sutherland Reservoir. That is good news, because the City has an obligation to do that under the San Diego Superior Court's order in Trussell v. City of San Diego. The case is valid law and at this point, both the facts and the law dictate that the City can and should be releasing water from Sutherland Reservoir to provide recharge to the Basin, when water levels fall below the thresholds identified in the Trussell case.	Comment noted.
9	Andre Monette	BBK	10/1/2023	TM5: Modeled Operations		The City has now presented modeling results that appear designed to contradict the findings of Technical Memorandum 4. The fact that the City has tried to carry forward that analysis into Technical Memorandum 6 is extremely concerning because it shows a willingness to rely on fundamentally flawed data to make management decisions that affect water availability and the environment. Further, it implies a concerted effort to avoid responsibility for the damage that the City's management of its lands in the San Pasqual Valley, and the watershed upstream, have caused to the environment.	TM5 presents results that build upon information presented in the associated technical memoranda leading up to TM5. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.
10	Andre Monette	BBK	10/1/2023	Trussell v. City of San Diego		As the primary landowner in the Basin, the City has an obligation to manage its resources and to comply with the law. The City cannot avoid responsibility for the damage it has caused in the Basin, and must comply with its obligations under the Trussell case.	The City as a GSA member for San Pasqual Valley groundwater basin is committed to maintaining the sustainability of the basin by implementing the State approved SPV Groundwater Sustainability Plan. The initial Surface Water Recharge Evaluation as a tier 0 PMA was initiated to determine the benefits and feasibility of implementing potential recharge strategies that will maintain sustainability into the future. Potential strategies having the effect of maintaining groundwater levels to a specific elevation are not being evaluated as part of this study.
11	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Modeled Operations		In Tech Memo 5, the City of San Diego / San Pasqual Valley Basin GSA consultant team continued the evaluation of the 4 recharge alternatives carried forward from Tech Memo 4. The memo described the revisions and recalibration of the numerical model of groundwater in the San Pasqual Valley Basin (SPVB). The groundwater model was then used to simulate recharge using the 4 alternatives over a 67-year period representing a warmer, drier future in order to quantitatively evaluate the effectiveness of the recharge alternatives using 6 criteria. Unfortunately, simulations included very restrictive conditions under which the recharge alternatives would be implemented. The result was that that recharge was simulated very few times and the conditions under which it did occur biased the results in favor of the most complicated and expensive alternative. The evaluation can only be said to characterize the performance of the alternatives under these specific conditions simulated, not generally. Implementing recharge using different conditions to trigger implementation of recharge might well yield different results.	Comment noted.
12	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Approach to Simulating Recharge under the Four Alternatives		Only allowing recharge under specific conditions greatly reduced the amount of water that could potentially have been recharged. As a result, none of the recharge alternatives was effective in maintaining water levels above minimum thresholds (MTs) during the severe drought at end of the simulation.	The simulations presented in TM5 are intended to provide a starting point to help understand the potential benefits, consequences, and limitations associated with how each recharge strategy could be implemented. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.
13	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Approach to Simulating Recharge under the Four Alternatives		Tech Memo 4 indicated that on average 3350 AF per year were available from Ramona Municipal Water District (RMWD). But under alternative 3A only 9063 acre-feet (AF) were recharged and only 23,264 AF were recharged under alternative 3D over the entire 67 years. That is only 4% and 10% respectively of the water that was potentially available through RMWD.	Comment noted. TM4 was based on a preliminary understanding of the hypothetical maximum volume of water available from each of the water sources, and the recharge capabilities of the stream channel. Modeling completed in TM 5 demonstrated potential recharge outcomes under the specific modeled scenarios.
14	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Approach to Simulating Recharge under the Four Alternatives		Tech Memo 4 indicated that 1200 acre-feet per year (AFY) (960 AFY net after losses between Sutherland and SPVB) were available on average from Sutherland Reservoir. But only 2363 AF were recharged under alternative 2A over 67 years. That is only 4% of the water that was potentially available from Sutherland Reservoir.	Comment noted. TM4 was based on a preliminary understanding of the hypothetical maximum volume of water available from each of the water sources, and the recharge capabilities of the stream channel. Modeling completed in TM 5 demonstrated potential recharge outcomes under the specific modeled scenarios.

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15	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Approach to Simulating Recharge under the Four Alternatives		A large part of the reason that alternatives 2A, 3A, and 3D were ineffective at reducing the modeled groundwater deficit and minimizing the number of exceedances of MTs was the constrains put on applying the recharge alternatives in Tech Memo 5. Recharge alternative 3D was only implemented in the simulations of the future when water levels were below planning thresholds and looking into the future it could be seen that 2 consecutive years were either dry of critically dry. Setting aside that it will not be possible to see into the future to operate this way in reality, this approach greatly limited the amount of water that was recharged. More typically, resource managers would seek to recharge during normal to wet years to bank the surplus for droughts. A consequence of conditioning implementation of recharge this way was that the only years that the modeling sought to release water from Sutherland Reservoir were in drought years when little or no water was available. As a result, although alternatives 2A and 3A had to meet the same conditions for implementation, almost 4 times as much water was recharged under	The simulations presented in TM5 are intended to provide a starting point to help understand the potential benefits, consequences, and limitations associated with how each recharge strategy could be implemented. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.
16	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Approach to Simulating Recharge under the Four Alternatives		The conditions for implementing recharge under alternatives 2A and 3A were even more restrictive than under alternative 3D. In addition to the 2 conditions applied to 3D, the third condition specified that there had to be no modeled flow in Santa Ysabel Creek at Santa Ysabel Road. As was detailed in Tech Memo 5 earlier the creek bed is quite wide in places. Spreading water in the creek even when there is already flow at Santa Ysabel Road could cause water to spread and infiltrate outside the lowest channel in the creek. Indeed, alternative 1B sought to back stream flow up to encourage infiltration in lateral areas that were outside the lowest channel of the creek. As a result, no recharge using the creek bed was simulated at many of the times when recharge via injection wells under alternative 3D was simulated.	As described in Section 2.1.1 of TM5, the SPV GSP Model v2.0 is capable of simulating streamflow conditions more dynamically than SPV GSP Model v1.0. The updated model already accounts for the greater streamflow widths and additional streamflow infiltration during larger streamflow events. The performance of an injection well at the modeled locations would not depend on streamflow conditions in the creek. Therefore, it would not have been realistic to incorporate that constraint for Strategy 3D. The conditions under which recharge to the creek bed was simulated was established to minimize excess water flowing downstream of Ysabel Creek Road, where it would not benefit the eastern portion of the Basin.
17	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Approach to Simulating Recharge under the Four Alternatives		The premise of the simulations was that recharge alternatives were not intended to keep the basin full, but be a response to drought periods. Establishing strict conditions for implementing recharge were intended to model this response to drought approach. But the simulations demonstrated that recharging based on the 3 conditions is ineffective in preventing groundwater deficits and avoiding undesirable results. It remains to be determined whether a different recharge strategy implemented more routinely during normal and above normal years would be effective.	Correct, as stated in Section 3 of TM5, "For this evaluation, it was assumed that the intent of implementing a recharge strategy would be to enhance resilience against undesirable results, as defined in the GSP (City and County, 2021), rather than to keep the Basin full of groundwater year after year". The simulations presented in TM5 are intended to provide a starting point to help understand the potential benefits, consequences, and limitations associated with how each recharge strategy could be implemented. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.
18	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Evaluation Criteria 1, 2, 3, 4, and 6		The effect of the restrictive conditions that had to be met before recharge was simulated to bias the evaluation in favor of the alternative with injection wells. Alternative 3D was ranked highest in evaluation Criteria 1 (reduction in modeled groundwater deficit), 2 (reduction in average depth to water), 3 (fewer exceedances of minimum thresholds), 4 (efficiency of recharge strategy), and 6 (fewer consecutive days below 30 feet to support GDEs). However, alternative 3D only reduced the modeled groundwater deficit by 80 AF in a basin with annual pumping extraction around 6,000 AF. Alternative 3D as simulated had one tenth the exceedances of minimum thresholds that alternative 2A had while recharging 10 times as much water. Even so, alternative 3D was inadequate as simulated at preventing water levels from falling below minimum thresholds, especially during the prolonged drought at the end of the 67-year simulation.	The simulations presented in TM5 are intended to provide a starting point to help understand the potential benefits, consequences, and limitations associated with how each recharge strategy could be implemented. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.
19	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Evaluation Criterion 4 - Water Quality Improvement	Figure 3-17	Figure 3-17 indicates that imported RMWD water has higher TDS (typically around 1000 milligrams per liter (mg/L)) than 2 of 3 SPBV wells shown, so it can't improve water quality in the eastern portion of the SPVB where the recharge operations are envisioned to occur. Figure 3-17 indicates that the TDS concentration of well SPV GSP-40 (SP089) in the eastern portion of the basin where recharge through Santa Ysabel Creek would occur has been less than 800 mg/L historically and the majority of the time has been less than 600 mg/L. Figure 3-17 also shows that the TDS of water in Sutherland Reservoir is substantially better (less than 400 mg/L) than the groundwater in the eastern portion of the SPVB so it could potentially improve water quality in the basin.	Figure 3-17 indicates the TDS in the RMWD untreated water system has ranged from ~550 mg/L to ~1,000 mg/L with more recent TDS concentrations being ~550 mg/L. As stated in the *San Pasqual Valley Groundwater Basin Salt and Nutrient Management Plan* (City, 2014), "Site-specific flow dynamics in the Basin cause some subareas to pump and transmit groundwater and constituents more readily than in other subareas. Substantially improving overall groundwater quality in the Basin will require implementing not only an improved monitoring program but also a combination of strategies for land management and conjunctive use." In other words, to get a better sense of how recharge strategies might influence groundwater quality, one must consider not only TDS concentrations in source water and groundwater, but also the flows associated with the source water and groundwater, which is also affected by groundwater pumping. We acknowledge that the TDS concentrations in Sutherland Reservoir are lower than TDS concentrations in the untreated water system of RMWD. Geochemical interactions would be further evaluated for any of the recharge strategies as they are considered in the future in more detail, along with coordination and compliance with applicable regulations.

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20	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Evaluation Criterion 4 - Water Quality Improvement	Figure 3-17	The feasibility of recharging water from RMWD under alternatives 3A and 3D is questionable without a basin plan amendment from the California Regional Water Quality Control Board for the San Diego region (RWQCB). The RWQCB has established a water quality objective (WQO) for the San Pasqual Hydrologic Area for TDS of 1,000 mg/l (Table 3-10 of the Basin Plan). Figure 3-17 in Tech Memo 5 indicates that the RMWD water exceeded the WQO consistently during 2014-2016. Regarding this WQO for TDS, the RWQCB states in footnote "b" to Table 3-10, "In the interim period of time, projects of ground water recharge with water quality inferior to the tabulated numerical values may be permitted following individual review and approval by the Regional Board **if such projects do not degrade existing ground water quality to the aquifers affected by the recharge**" (emphasis added). Figure 3-17 indicates that the TDS concentration of well SPV GSP-40 (SP089) in the eastern portion of the basin where recharge through Santa Ysabel Creek would occur has been less than 800 mg/L historically and the majority of the time has been less than 600 mg/L.	The ability of the aquifer to assimilate TDS and other groundwater constituents of concern is difficult to forecast with certainty. Comparisons of source water and groundwater concentrations alone without consideration of the timing, location, and nature of how source waters would enter the aquifer as part of a recharge strategy is not appropriate for this level of planning analysis. Results presented in TM5, which attempt to also consider flows in addition to TDS concentrations, indicate that implementation of the four recharge strategies would not substantially change TDS concentrations in the aquifer. Geochemical interactions would be further evaluated for any of the recharge strategies as they are considered in the future in more detail, along with coordination and compliance with applicable regulations.
21	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Cost		The consultant team solicited evaluation criteria in a workshop. Cost was one of the criteria selected. But importantly the question of who would pay the costs was not specified and left to be determined later by the GSA. In most basins, recharge water is paid for by a fee levied on every acre-foot of water pumped by the groundwater users. The response to the importance of the cost criterion would undoubtedly have been different if it had been indicated that the farmers pumping groundwater would pay the costs. Tech Memo 5 evaluates alternative 3D which was carried forward from Tech Memo 4 despite costing one to two orders of magnitude more than the other alternatives.	As stated in TM4, "Strategy 3D, injection wells using Ramona MWD water, is carried forward to provide diversity in the strategies warranting further evaluation. By utilizing direct injection, it provides an excellent comparison against the three other selected alternatives that would rely on infiltration methods". Additionally, the Preliminary Feasibility Study includes consideration of cost under Evaluation Criterion 7. Evaluation Criterion 7 was not included in TM5, but will be shown as cost per acre-foot to allow for comparison between strategies, though total cost will also be provided. At this planning level, cost allocation is not defined, but would be addressed closer towards project definition and implementation. The GSA continually pursues funding mechanisms / grant opportunities for GSP implementation activities.
22	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Cost		Another effect of the restrictive conditions that had to be met before recharge was simulated was to bias the evaluation in favor of the alternative with the highest costs by one to two orders of magnitude over the other alternatives. The cost of the recharged water, infrastructure, and agreements for 3D is the highest at $190 million (using estimated costs from the previous tech memo) or $8171/AF recharged during the 67-year simulation. Alternative 3A is second highest at $35.5 million ($3927/AF recharged). Alternative 2B has a cost of $5.3 ($2234/AF recharged). At 36 times the cost of alternative 2A, alternative 3D severely underperformed.	Updated costs will be presented in the Preliminary Feasibility Study that align with the strategies as modeled, and are considered under Evaluation Criterion 7.
23	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Cost		It doesn't make sense to build costly infrastructure to convey and recharge water and then only use it rarely. If recharge is to be implemented only intermittently, the alternative with the lowest capital cost is preferrable.	Comment noted.
24	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Cost		In the final feasibility, cost will only be one factor and weighted by only 7%. Cost should be more heavily weighted.	The Preliminary Feasibility Study strives to consider the strategies within the spirit of the Evaluation Criteria as established in TM1, though some adjustments have been made to address unforeseen issues with the structure of the evaluation process outlined in TM1, including how costs are considered when evaluating strategies. The Preliminary Feasibility Study has divided the evaluation process into a two-step process that separates benefits to the Basin from costs and implementation considerations to allow the GSA to better consider how to balance what it would take to implement a strategy compared with the projected benefits from doing so.
25	Peter Quinlan	Peter T. Quinlan LLC	9/28/2023	TM5: Proposed Additional Alternative for Final FS		It is possible that the City of San Diego is reluctant to release water from its municipal water supply system at Sutherland Reservoir to recharge the basin for agricultural use. Perhaps another alternative should be evaluated in which the City purchases potential surplus RMWD water and receives it through its existing connections to the San Diego County Water Authority pipelines to offset releases from Sutherland Reservoir. No new infrastructure would likely be necessary.	The simulations presented in TM5 are intended to provide a starting point to help understand the potential benefits, consequences, and limitations associated with how each recharge strategy could be implemented. Important information about how the Basin responds to the addition of more water was learned from these initial sets of simulations, which are appropriate at the Preliminary Feasibility Study level of analysis.