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Andre Monette
(202) 370-5303
andre.monette@bbklaw.com

November 19, 2021

VIA E-MAIL

Karina Danek
Project Officer II
Public Utilities Department
City of San Diego
525 B Street
San Diego, CA 92101
kdanek@sandiego.gov

Re: Comments on Proposed Scope of Work for San Pasqual Valley Surface Water Recharge Evaluation

Dear Ms. Danek:

I represent the Rancho Guejito Corporation in matters relating to water rights in the San Pasqual Valley Groundwater Basin. I am submitting this letter to convey comments on the City's proposed Scope of Work for San Pasqual Valley Surface Water Recharge Evaluation on behalf of Rancho Guejito.

We appreciate the City of San Diego's efforts to more thoroughly investigate the potential for using surface water from the Sutherland Reservoir to recharge groundwater in the San Pasqual Valley. Using water from the reservoir to maintain groundwater levels in the Valley will help ensure that the City's tenants have sufficient supplies to support their operations. It also gives the City the opportunity to restore wetlands and riverine habitat in the Valley that has been destroyed by creation of the Sutherland Reservoir and through years of mismanagement of the river channel. Habitat restoration in the Valley would provide crucial support to endangered birds, toads and other wildlife.

We are, however, very concerned that the City's efforts will be hamstrung by reliance on the groundwater model that the City created to support the Groundwater Sustainability Plan ("GSP") for the San Pasqual Valley Groundwater Basin.

Rancho Guejito and its experts submitted extensive comments on the GSP pointing out the deficiencies in the model. As noted in those comments, flaws in the model make it pre-disposed

to showing that surface water recharge projects will not work. We believe the City must address these flaws before using the model to support the proposed Surface Water Recharge Evaluation.

Attached please find additional, technical comments from Rancho Guejito's expert, Peter Quinlan. Thank you for your attention to this matter, we appreciate the opportunity to provide comment on the proposed study.

Sincerely,

Andre Monette
of BEST BEST & KRIEGER LLP

AM:DG

Attachment

Peter T Quinlan
Peter T Quinlan LLC
652 rancho Santa Fe Road
Encinitas, CA 92024
760.415.9057

Memo
To: Karina Danek, City of San Diego, Andre Monette, Esq., Best, Best and Krieger
From: Peter Quinlan
November 18, 2021

Comments on the Proposed Feasibility Evaluation of Surface Water Recharge and the Numerical Groundwater Presented in the Final Groundwater Sustainability Plan for the San Pasqual Valley Basin

In the presentation to the San Pasqual Valley Groundwater Sustainability Plan (GSP) Stakeholders Workshop on November 9, 2021, the City of San Diego's team and consultants, Woodard Curran and Jacobs Engineering, presented an overview of revisions made to the GSP and an outline of the Initial Surface Water Recharge Evaluation Scope proposed for the next two years. Of particular concern is the intent to use the existing numerical groundwater model in that evaluation. I previously submitted comments about the questionable representation of the hydraulic properties of the stream bed of Santa Ysabel Creek that make the current model unsuitable for evaluating recharge of surface water through the creek bed (see below). Figure 3-15 of the GSP shows that the soil type assigned to the creek bed is sand while the overbank deposits are shown as silty clay. Yet the numerical model assigns vertical conductivity values characteristic of silt (3.5 X 10e-5 cm/sec) to the creek bed sand while assigning vertical hydraulic conductivity values characteristic of sand, (1.76E-03 to 3.53E-03 cm/sec (100 times higher)), to the silty clay sediments of the valley floor outside the creek. This is the opposite of what the expected values would be for those sediment types.

The response to my comments merely said that the modeling team was unaware of hydraulic data for the creek:

"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 the GSP team is developing a scope of work for the next two years to complete its Evaluation of Surface Water Recharge, now it the time to include field work in the scope to generate estimates of the hydraulic conductivity of the stream bed sand. The scope should also include re-calibration of the model incorporating the new estimates of the hydraulic conductivity of the stream bed sand.

The proposed scope of work should be increased to include field work to provide site specific estimates of creek bed hydraulic conductivity by means of laboratory testing of soil samples, double ring infiltrometer tests, controlled and quantified discharges to streams from wells, or other means to provide site specific hydraulic properties for the sand of the creek bed. I am happy forward jars of sand from the creek bottom to confirm that it is indeed composed of sand if necessary.

The presentation indicated that some of the modeling would be on a daily rather than monthly basis. This may help with the numerical mass balance errors in the model encountered previously that necessitated the revision of the initial estimates of hydraulic conductivity for creek bed sands from reasonable values to unrealistic ones.

Once the model is revised to incorporate realistic hydraulic properties for the creek bed and recalibrated, it may be a useful tool for the Initial Surface Water Recharge Evaluation. Unrevised, this flawed model will provide flawed results evaluating surface water recharge.

Comments previously submitted on the GSP provide more detail:

<u>Recharge from Surface Water</u>

The initial estimate of vertical hydraulic conductivity (Kz) for the creek beds was to have been 8.8 X 10e-3 cm/sec (Section 3.4.1, page 3-10), but numerical mass balance errors in the model necessitated reducing the Kz of the stream beds. This reflects a computational limitation of the code in the model rather than a limitation of the infiltration capacity of the stream beds at least in Santa Ysabel and Guejito Creeks. The final Kz of the stream beds was 3.5 X 10e-5 cm/sec which is characteristic of silt (Freeze and Cherry, *Groundwater*, 1979) and is at odds with the fine to coarse sand and gravel observed in the stream beds of Santa Ysabel Creek in the eastern portion of the basin and Guejito Creek. By comparison the Kz assigned to Layer 1 in much of the basin in the calibrated model ranged from 1.76E-03 to 3.53E-03 cm/sec (Figure 4-10), two orders of magnitude greater. The original value of 8.8 X 10e-3 cm/sec would be more appropriate as the Kz for these sediments.

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.

Carlson, Sandra

From: Peter Quinlan <petertquinlanllc@gmail.com>
Sent: Thursday, November 18, 2021 10:05 AM
To: Danek, Karina
Cc: jim.bennett@sdcounty.gov; Andre Monette; Carlson, Sandra; Balo, Keli
Subject: Re: [EXTERNAL] Clarification of Slide 10 MA-7 Initial Surface Water Recharge Evaluation

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Karina,
Thank you for this clarification. Given that we only got it today, could we please have until close of business on Monday to submit our comments?
Thanks,

PQ

> On Nov 18, 2021, at 7:34 AM, Danek, Karina <KDanek@sandiego.gov> wrote:
>
> Good morning Peter,
> See the response below:
>
> We are not aware of new hydraulic conductivity data for the streambeds, although some additional stream gage data may be available. We do not plan to recalibrate the steamed conductance. The stream-related boundary conditions will only be updated to adequately simulate the intended recharge scenarios. Hydraulic conductivity may be re-evaluated in the 5-Year Update.
>
> Please provide your comments by tomorrow. Have a great rest of the week!
>
> Karina Danek
> Project Officer II
> Public Utilities Department
> T: 619-533-7402
> kdanek@sandiego.gov

From: Peter Quinlan <petertquinlanllc@gmail.com>
Sent: Friday, November 12, 2021 6:23 PM
To: Danek, Karina <KDanek@sandiego.gov>
Cc: jim.bennett@sdcounty.gov; Andre Monette <Andre.Monette@bbklaw.com>
Subject: Re: [EXTERNAL] Clarification of Slide 10 MA-7 Initial Surface Water Recharge Evaluation

---

Thanks, Karina.

PQ

> On Nov 12, 2021, at 2:36 PM, Danek, Karina <KDanek@sandiego.gov> wrote:
>
> Hi Peter, I've forwarded your question and will get back to you.
>
> Karina Danek
> Project Officer II
> Public Utilities Department
>
> T: 619-533-7402
> kdanek@sandiego.gov
>
> ---
>
> **From:** Peter Quinlan <petertquinlanllc@gmail.com>
> **Sent:** Wednesday, November 10, 2021 2:37 PM
> **To:** Danek, Karina <KDanek@sandiego.gov>; jim.bennett@sdcounty.gov; Andre Monette <andre.monette@bbklaw.com>
> **Subject:** [EXTERNAL] Clarification of Slide 10 MA-7 Initial Surface Water Recharge Evaluation
>
>
>
> ---
>
> Karina,

Does the third bullet "Revise Input Assumptions and Boundary Conditions to Simulate Each Recharge Strategy" mean that numerical model parameterization will be revised and updated with new hydraulic conductivity data for the streambeds, or that the model will not be updated and revised, but merely changed to reflect the recharge approach being simulated?
Please respond before the 19th, so that I can provide a written comment if it is the latter rather than the former.
Thank you,
Peter

Carlson, Sandra

From: Dan Silver <dsilverla@me.com>
Sent: Tuesday, November 9, 2021 4:59 PM
To: Danek, Karina
Cc: Balo, Keli; rprickett@woodardcurran.com; Carlson, Sandra
Subject: [EXTERNAL] Re: Discussion w/Danek Silver: RE San Pasqual GSP

Dear Karina and Others

One question now that I reflect on the presentation. The GSP says:

> *To the extent that the GSA identifies a recharge project that relies on a surface water supply controlled by a third-party (including the City or neighboring jurisdictions), the third-party must agree that the project is feasible and consent to implementation of the project.*

Does this give the City or other third party “veto power” based on its own subjective determination of what is “feasible" means? Or will the surface recharge study determine in advance what is feasible for the purposes of that statement?

Thanks for a clarification
Dan

On Nov 8, 2021, at 9:38 AM, Danek, Karina <KDanek@sandiego.gov> wrote:

Microsoft Teams meeting

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Learn More | Meeting options

<Mail Attachment.ics>

Dan Silver, Executive Director
Endangered Habitats League
8424 Santa Monica Blvd., Suite A 592
Los Angeles, CA 90069-4267

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dsilverla@me.com
https://ehleague.org

San Pasqual Valley Groundwater Sustainability Plan
Stakeholder Workshop – November 9, 2021
Comment Tracking Table

Commenter Name	Commenter Organization	Comment Received	Subject	Comment	Response
Rikki Schroeder	Ranch Guejito	11/9/2021 During stakeholder meeting	Initial Surface Water (SW) Recharge Study	Any future studies need to respect the needs for transparency, including respecting the environment and respecting the law, including the Trussell Case. Is there a Request for Proposal (RFP) that will be put out for this Study?	No, there will be no RFP because Woodard & Curran (W&C) was selected as the SGMA consultant through an RFP process previously, and the City is amending the current contract to include both this Initial SW Recharge Study and the GSP's Annual Report due next March.
Cara Lacy	The Nature Conservancy	11/9/2021 During stakeholder meeting	Initial SW Recharge Study	How will this Study align with the other studies that are needed?	This is a high priority management action, and something the City wants to do first at the same general time as the Annual Report. Based on comments received, this was identified as an important study by stakeholders. Also, Task 5 Groundwater Dependent Ecosystems (GDEs) portion of this study can help inform the other studies, including a Tier 1 Study which is the GDE Study. So, this evaluation will help provide information for future studies.
Lani Lutar	Responsible Solutions, on behalf of Ranch Guejito	11/9/2021 During stakeholder meeting	GSP Public Draft Comments	Wished to acknowledge staff for having this workshop opportunity, because this is exactly what we were looking for. We still have concerns, but this is tremendous progress. Our concerns will be shared moving forward. Thanks to all for helping and contributing to the GSP development process, including public representatives and environmental groups. This is the kind of transparency we have been wanting and we look forward to in the future.	Thank you.
Frank Konyn	Konyn Dairy	11/9/2021 During stakeholder meeting	GSP Public Draft Comments	Are you accepting comments after this meeting today?	Yes, please send all comments to Karina Danek. The deadline on receiving comments is the end of next week (Friday, November 19, 2021).

Commenter Name	Commenter Organization	Comment Received	Subject	Comment	Response
Dan Silver	Endangered Habitats League	11/9/2021	Initial SW Recharge Study Scope	A brief note to say that the scope of work for the surface water recharge study as presented at today's workshop looks very thorough. Thank you for initiating it. EHL looks forward to continued participation where we will focus on the GDEs. I also much appreciate the special time you made for me yesterday. Do you have a date for when the study returns to the City Council? I would support the study at that time.	Thank you. The City Council and County Board of Supervisor dates for considering adoption of the San Pasqual Valley GSP have not been finalized. Once they are confirmed, an email with the dates will be sent to the stakeholder email list.
Dan Silver	Endangered Habitats League	11/9/2021	Initial SW Recharge Study Scope	One question now that I reflect on the presentation. The GSP says: To the extent that the GSA identifies a recharge project that relies on a surface water supply controlled by a third-party (including the City or neighboring jurisdictions), the third-party must agree that the project is feasible and consent to implementation of the project. Does this give the City or other third party "veto power" based on its own subjective determination of what is "feasible" means? Or will the surface recharge study determine in advance what is feasible for the purposes of that statement? Thanks for a clarification.	The Initial SW Recharge Study will identify evaluation criteria by which to consider the alternative recharge scenarios, including feasibility. Performance metrics will be determined at that time, in collaboration with stakeholders.
Peter Quinlan	Dudek, Rancho Guejito	11/10/2021	Initial SW Recharge Study Scope	Does the third bullet "Revise Input Assumptions and Boundary Conditions to Simulate Each Recharge Strategy" mean that numerical model parameterization will be revised and updated with new hydraulic conductivity data for the streambeds, or that the model will not be updated and revised, but merely changed to reflect the recharge approach being simulated? Please respond before the 19th, so that I can provide a written comment if it is the latter rather than the former.	The GSA has always made it a point to provide a technically sound GSP including this Initial SW Recharge Study. Hydraulic conductivity will be re-evaluated for this Study and updated in the San Pasqual Valley (SPV) GSP Model, as appropriate. In addition, we plan to recalibrate the streambed conductance. The stream-related boundary conditions will be updated to adequately simulate the intended recharge scenarios.

Commenter Name	Commenter Organization	Comment Received	Subject	Comment	Response
Andre Monette	BBK, Rancho Guejito	11/19/2021	General Scope comments	We appreciate the City of San Diego's efforts to more thoroughly investigate the potential for using surface water from the Sutherland Reservoir to recharge groundwater in the San Pasqual Valley. Using water from the reservoir to maintain groundwater levels in the Valley will help ensure that the City's tenants have sufficient supplies to support their operations. It also gives the City the opportunity to restore wetlands and riverine habitat in the Valley that has been destroyed by creation of the Sutherland Reservoir and through years of mismanagement of the river channel. Habitat restoration in the Valley would provide crucial support to endangered birds, toads and other wildlife. We are, however, very concerned that the City's efforts will be hamstrung by reliance on the groundwater model that the City created to support the Groundwater Sustainability Plan ("GSP") for the San Pasqual Valley Groundwater Basin. Rancho Guejito and its experts submitted extensive comments on the GSP pointing out the deficiencies in the model. As noted in those comments, flaws in the model make it pre-disposed to showing that surface water recharge projects will not work. We believe the City must address these flaws before using the model to support the proposed Surface Water Recharge Evaluation.	The SPV GSP Model was developed to estimate the water balance within the San Pasqual Valley Basin, including surface and subsurface inflows and outflows. The Model was built using scientifically sound modeling practices and assumptions, including available data provided by the GSA and stakeholders.
Peter Quinlan	Peter T Quinlan LLC, Rancho Guejito	11/19/2021	Initial SW Recharge Study Scope	In the presentation to the San Pasqual Valley Groundwater Sustainability Plan (GSP) Stakeholders Workshop on November 9, 2021, the City of San Diego's team and consultants, Woodard Curran and Jacobs Engineering, presented an overview of revisions made to the GSP and an outline of the Initial Surface Water Recharge Evaluation Scope proposed for the next two years. Of particular concern is the intent to use the existing numerical groundwater model in that evaluation. I previously submitted comments about the questionable representation of the hydraulic properties of the stream bed of Santa Ysabel Creek that make the current model unsuitable for evaluating recharge of surface water through the creek bed (see below). Figure 3-15 of the GSP shows that the soil type assigned to the creek bed is sand while the overbank deposits are shown as silty clay. Yet the numerical model assigns vertical conductivity values characteristic of silt (3.5 X 10e-5 cm/sec) to the creek bed sand while assigning vertical hydraulic conductivity values characteristic of sand, (1.76E-03 to 3.53E-03 cm/sec (100 times	The GSA priority is that the SPV GSP Model be built using scientifically sound modeling practices and assumptions. Hydraulic conductivity will be re-evaluated for this Study and updated in the Model as appropriate. In addition, the stream-related boundary conditions will be updated to adequately simulate the intended recharge scenarios. Figure 3-15 is a regional surficial geology map and does not provide estimates of hydraulic conductivity. According to Freeze and Cherry

Commenter Name	Commenter Organization	Comment Received	Subject	Comment	Response
				higher)), to the silty clay sediments of the valley floor outside the creek. This is the opposite of what the expected values would be for those sediment types. The response to my comments merely said that the modeling team was unaware of hydraulic data for the creek: "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 the GSP team is developing a scope of work for the next two years to complete its Evaluation of Surface Water Recharge, now it the time to include field work in the scope to generate estimates of the hydraulic conductivity of the stream bed sand. The scope should also include re-calibration of the model incorporating the new estimates of the hydraulic conductivity of the stream bed sand. The proposed scope of work should be increased to include field work to provide site specific estimates of creek bed hydraulic conductivity by means of laboratory testing of soil samples, double ring infiltrometer tests, controlled and quantified discharges to streams from wells, or other means to provide site specific hydraulic properties for the sand of the creek bed. I am happy forward jars of sand from the creek bottom to confirm that it is indeed composed of sand if necessary.	(1979), the hydraulic conductivity of silty sand spans four orders of magnitude (1E-5 to 1E-1 cm/s) and the modeled values are within that range.
Peter Quinlan	Peter T Quinlan LLC, Rancho Guejito	11/19/2021	Initial SW Recharge Study Scope	The presentation indicated that some of the modeling would be on a daily rather than monthly basis. This may help with the numerical mass balance errors in the model encountered previously that necessitated the revision of the initial estimates of hydraulic conductivity for creek bed sands from reasonable values to unrealistic ones. Once the model is revised to incorporate realistic hydraulic properties for the creek bed and recalibrated, it may be a useful tool for the Initial Surface Water Recharge Evaluation. Unrevised, this flawed model will provide flawed results evaluating surface water recharge.	The SPV GSP Model will be updated with daily timesteps for selected portions of the simulation period to better estimate the variability of surface flows, which will affect stream channel infiltration and conveyance.

Commenter Name	Commenter Organization	Comment Received	Subject	Comment	Response
Peter Quinlan	Peter T Quinlan LLC, Rancho Guejito	11/19/2021	Initial SW Recharge Study Scope	Comments previously submitted on the GSP provide more detail: <u>Recharge from Surface Water</u> The initial estimate of vertical hydraulic conductivity (Kz) for the creek beds was to have been 8.8 X 10e-3 cm/sec (Section 3.4.1, page 3-10), but numerical mass balance errors in the model necessitated reducing the Kz of the stream beds. This reflects a computational limitation of the code in the model rather than a limitation of the infiltration capacity of the stream beds at least in Santa Ysabel and Guejito Creeks. The final Kz of the stream beds was 3.5 X 10e-5 cm/sec which is characteristic of silt (Freeze and Cherry, Groundwater, 1979) and is at odds with the fine to coarse sand and gravel observed in the stream beds of Santa Ysabel Creek in the eastern portion of the basin and Guejito Creek. By comparison the Kz assigned to Layer 1 in much of the basin in the calibrated model ranged from 1.76E-03 to 3.53E-03 cm/sec (Figure 4-10), two orders of magnitude greater. The original value of 8.8 X 10e-3 cm/sec would be more appropriate as the Kz for these sediments. 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.	Alternative conceptual models that provide adequate fits to calibration targets are certainly possible. The conceptual model inherent in the SPV GSP Model is one of several plausible models. 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. The GSA has always made it a point to provide a technically sound GSP, including this Initial SW Recharge Study. Hydraulic conductivity will be re-evaluated for this Study and updated in the Model, as appropriate.

Commenter Name	Commenter Organization	Comment Received	Subject	Comment	Response
				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.	