

Wyandotte Creek GSA Advisory Committee Meeting

Access meeting materials at: <https://www.wyandottecreekgsa.com/>

Meeting Brief

- **Overview:** This was the second meeting of the Wyandotte Creek Groundwater Sustainability Agency (GSA) Advisory Committee (WAC).
- **Wyandotte Creek GSA Management Committee Reports:** The WAC received verbal updates from the Management Committee and an overview presentation of inter-basin coordination efforts in the Northern Sacramento Valley [[Access Inter-basin Coordination Slides](#) | [Access Flyer](#)].
- **Sustainable Management Criteria (SMC) Discussion:** The WAC received a presentation and provided input on draft SMC from the Geosyntec consulting team. The objectives of the discussion were to discuss (1) wording and quantitative measures to include in the SMC, (2) technical background or monitoring implications related to each SMC definition, (3) potential differences between areas, and (4) specific analysis or further refinement needed to prepare a draft SMC section for approval and incorporation into the Draft Groundwater Sustainability Plan (GSP) [[Access Slides](#)].
- **Next Steps:** The WAC will meet again via video conference on February 4, 2021 from 9:00-12:00.

Action Items

Item	Lead Person(s)	Completion
Consider including a placeholder for the option to offer Brown Act trainings to WAC members.	CBI & Management Committee	Upon completion
Contact Tatiana Garcia (Rural Community Associates Corporation) to discuss opportunities for partnership related to stakeholder outreach and engagement.	CBI	Upon completion
Upload meeting recording to the website.	Chris Heindell	Complete Access Here
Share with Geosyntec available data about shallow monitoring wells near creeks and information related to the Feather River management that could help inform the SMC analysis.	WAC Members	Upon completion

Summary

Introductions & Agenda Review

The facilitator, T. Carlone (Consensus Building Institute, CBI) welcomed participants and reviewed the meeting agenda. WAC members and Wyandotte Creek GSA Management Committee representatives introduced themselves.

Public Comment for Items Not on the Agenda

Rural Community Associates Corporation (RCAC) representative, Tatiana Garcia, introduced herself and her organization’s mission. RCAC provides training, technical and financial resources and advocacy to

rural and disadvantaged communities, such as well assessments. The facilitation team will follow up with RCAC to discuss opportunities for partnership related to stakeholder outreach and engagement.

Meeting Notes Review & Consideration

WAC members reviewed and approved the meeting summary (12/16/20). D. Kehn (Cal Water) would like to follow up with Butte County and SFWP related to the leakage from the South Feather Canal, and K. Peterson (Butte County) suggested considering including a placeholder in the charter to offer Brown Act trainings to future WAC members, who may not represent existing water agencies.

Wyandotte Creek GSA Management Committee Reports

Wyandotte Creek GSA Board Update

The Wyandotte Creek GSA Board met on December 17, 2020. The board approved its 2021 calendar for meetings to be held on the fourth Thursday of each month [[Access Calendar](#)]. GSA board meetings are open to the public and will be streamed via YouTube. In addition, the board received an update on the multi-completion well planned to be drilled, which is funded through the Department of Water Resources' (DWR) Technical Support Services (TSS) program. Once all land-use agreements are executed, the well permitting will move forward.

Inter-basin Coordination Update

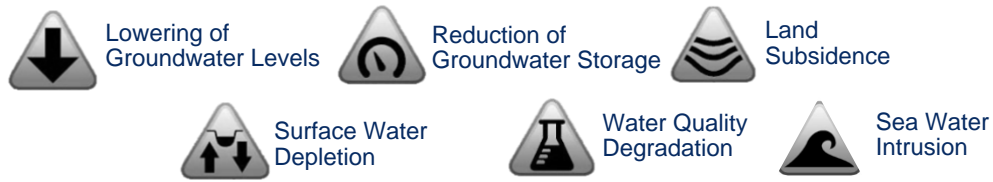
CBI provided a brief update on inter-basin coordination efforts in the Northern Sacramento Valley (NSV), including staff and consulting teams from 11 subbasins (Antelope, Bowman, Butte, Colusa, Corning, Los Molinos, Red Bluff, Sutter, Vina, Wyandotte Creek, and Yolo). Efforts have focused on creating tools to foster general and technical information exchange. CBI presented a series of documents developed through inter-basin coordination efforts, including a document describing modeling tools used for Sustainable Groundwater Management Act (SGMA) implementation in the NSV and a flyer describing inter-basin coordination efforts [[Access Inter-basin Coordination Slides](#) | [Access Flyer](#)]. Staff and consultants plan to reconvene in Spring 2021 to discuss appropriate ways to compare and communicate information on model assumptions, cross-boundary flows, and stream-aquifer interactions at boundaries. Key findings will be presented when available for public input. More information can be found at <https://www.buttecounty.net/waterresourceconservation/Sustainable-Groundwater-Management-Act/Inter-basin-Coordination>.

Sustainable Management Criteria (SMC) Strawman Discussion

The WAC received a presentation and provided input on draft SMC from the Geosyntec consulting team. The objectives of the discussion were to discuss (1) wording and quantitative measures to include in the SMC, (2) technical background or monitoring implications related to each SMC definition, (3) potential differences between areas, and (4) specific analysis or further refinement needed to prepare a draft SMC section for approval and incorporation into the Draft GSP [[Access Slides](#) | [Access SMC Best Management Practices Report](#)].

The SMC is the umbrella that includes: Sustainability Goal (qualitative), Undesirable Results (quantitative), Minimum Thresholds (quantitative), and Measurable Objectives (quantitative). Overall,

sustainability is demonstrated by the avoidance of Undesirable Results for the six sustainability indicators below. What is considered “significant and unreasonable” is determined by local GSAs and stakeholders.



Each undesirable result must include three elements:

- a) **Description of Undesirable Results:** what constitutes a “significant and unreasonable” condition
- b) **Minimum Threshold:** quantitative definition of groundwater conditions at a representative monitoring site at which undesirable results may begin to occur
- c) **Measurable Objective:** quantitative definition that reflects the basin’s desired groundwater condition and allows the GSA to achieve sustainability goals within 20 years

Chronic Lowering of Groundwater Levels

Approach: Geosyntec, the consulting team, proposed setting the Minimum Threshold (MT) based on domestic well depths, with the intent to establish some level of protection for domestic wells. Geosyntec suggested establishing Measurable Objective (MO), or desired state for water levels, based on current and projected water level trends, using existing monitoring data and modeling results. The area between the MT and MO indicates the level of operational flexibility. This SMC process would apply to each Representative Monitoring Site (RMS). In sum, the proposed approach takes into account local hydrogeological conditions, is protective of domestic wells, and uses modeled water level trends.

Draft Undesirable Results and Sustainability Criteria

Undesirable Result Statement	<ul style="list-style-type: none"> • GW Levels are unable to satisfy beneficial uses over a sustained period. Specific examples of undesirable results include domestic wells going dry, reduction in pumping capacity, increase in pumping costs, potential impacts to GDEs.
Minimum Threshold (onset of undesirable result) & Measurable Objective (desired condition)	<ul style="list-style-type: none"> • Minimum Threshold – Fall (Sept/Oct) GW level is above the 15th Percentile of all domestic well depths in a given area or sub-area. This means 85% of all domestic wells are completed below the minimum threshold and will be “protected.” • Measurable Objective – Fall 2015 groundwater level (or modeled 2015 groundwater level if no data are available). This means dry cycle minimums are no worse than 1993-2015 minimums.
Quantitative definition of significant and unreasonable impact	<ul style="list-style-type: none"> • 25 % of representative monitoring wells fall below minimum threshold for 2 consecutive years.

Discussion | SMC

- Will the 15th percentile be adjusted over time? Geosyntec explained that the DWR data they are using lists all the domestic wells that have been installed. They do not know if all wells considered are active. The process will be adaptive and can be modified in every GSP 5-year update. Further, a Project and Management Action (PMA) could be deepening wells.
- WAC members felt there was a pretty good coverage of monitoring wells across the subbasin, with the four-mile radius around each well illustrated.
- A WAC member requested a graphic representation for each proposed monitoring location. In total, 13 wells were recommended by Woodard & Curran, but the Geosyntec team may recommend additional locations to address data gaps. The consulting team shared there will be an MO and MT for each well, included in future materials.
- The choice for which trend to use to establish the MO will depend on the WAC’s expectation of future conditions (do we expect future droughts worse than 2015 levels) and on what the subbasin can reasonably achieve through the PMAs. Higher numbers will require more ambitious PMAs.
- A member of the public asked how the consulting team determined the 15th percentile as the MT and expressed concern with a lack of accurate information which may result in an underestimate or overestimate of the number of wells affected. J. Turner (Geosyntec) explained that the percentile is a purely mathematical calculation (common statistical number as one standard deviation away from the mean), which would help filter out wells that are old and may already be dry or not in use. The GSA can adapt and reevaluate the number during the 5-year update. Further, the MT does not reflect an intention to let those wells go dry, but rather establishes a benchmark for what is truly undesirable.

Reduction in Aquifer Storage:

The consulting team proposed using groundwater levels as a proxy for aquifer storage. Therefore, the proposed approach mimics the Chronic Lowering of Groundwater Levels process described above. Aquifer conditions in the subbasin are different than in other areas of the state, as there are episodic aquifer storage recoveries during wet cycles. While some GSPs describe this SMC as the amount of water in storage, the technical team suggests describing aquifer storage based on steady groundwater level trends. Levels can go up and down based on hydrological cycles, but overall the trend should stay flat.

Draft Undesirable Results and Sustainability Criteria

Undesirable Result Statement	<ul style="list-style-type: none"> • Total groundwater storage volume is insufficient to satisfy beneficial uses. • Groundwater level will be used as a proxy for aquifer storage (i.e. groundwater storage will not be calculated explicitly).
Minimum Threshold (onset of undesirable result) & Measurable Objective (desired condition)	<ul style="list-style-type: none"> • Minimum Threshold – Fall (Sept/Oct) GW level is above the 15th Percentile of all domestic well depths in a given area or sub-area. This means 85% of all domestic wells are completed below the minimum threshold and will be “protected.” • Measurable Objective – Fall 2015 groundwater level (or modeled 2015 groundwater level if no data are available). This means dry cycle minimums are no worse than 1993-2015 minimums.
Quantitative definition of	<ul style="list-style-type: none"> • 25 % of representative monitoring wells fall below minimum threshold for 2 consecutive years.

significant and unreasonable impact	<ul style="list-style-type: none"> • 25% = 3 wells assuming current 13 well monitoring network.
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Discussion

- A WAC member asked whether PMAs could be categorized to be triggered at specific targets (e.g., drought conditions). The consulting team explained PMAs should be aligned to the MO. The GSA can also establish interim targets. At every 5-year update, the GSA could specify that certain PMAs would activate if conditions are not reaching interim targets. Another consideration is that the GSA can identify data gaps to be revisited in 5-year updates to include new information.
- In other words, PMAs should be developed around the MO (what you hope to achieve) and MT (what you wish to avoid), and the space in between represents the level of operation flexibility.

Land Subsidence:

Once again, the consulting team proposed using groundwater levels as a proxy for subsidence. Therefore, the proposed approach mimics the process described above.

Minimum Threshold (onset of undesirable result) & Measurable Objective (desired condition)	<ul style="list-style-type: none"> • Minimum Threshold – Fall (Sept/Oct) GW level is above the 15th Percentile of all domestic well depths in a given area or sub-area. This means 85% of all domestic wells are completed below the minimum threshold and will be “protected.” • Measurable Objective – Fall 2015 groundwater level (or modeled 2015 groundwater level if no data are available). Dry cycle minimums are no worse than 1993-2015 minimums.
Quantitative definition of significant and unreasonable impact	<ul style="list-style-type: none"> • A subsidence rate of more than 0.2 feet per year for a 10-year period that is directly related to groundwater pumping and within 2,000 feet of critical infrastructure, including roads, railways, pipelines, water conveyance systems, hospitals or other critical facilities.

Discussion

- The WAC overall thought the approach (15%) seems reasonable. The only concern related to lack of action above MOs, and the possible intent of letting things get worse than the 2015 drought.
- A WAC member asked if the consulting team is not considering actual subsidence levels as the metric because of data gaps, as groundwater levels alone may miss subsidence. The consulting team shared that the GSA would have to establish a relationship between pumping and subsidence. No significant subsidence now may not mean that conditions will not worsen in the future.
- Regarding the transition from the SMC to PMAs, the technical consultants highlighted the iterative nature of the process. The conversation now is to establish SMCs, or what the subbasin is solving for. The PMA discussion will happen during the next meeting and will determine how this is done.

Depletion of Interconnected Surface Water – Data Gap

Geosyntec explained that the process to determine the MT and MO for depletion of interconnected surface water will be challenging due to existing data gaps. They suggest using groundwater levels in

shallow wells adjacent to natural stream channels as a proxy for depletion. However, there are monitoring data gaps and model limitations (lack of information of shallow aquifer) to define measurable objectives. The subbasin may need to rely more on words than numbers initially.

Suggested approach: Geosyntec suggests focusing on shallow aquifer conditions but recognizing significant data gaps exist. There is little to no data to analyze (1) how the shallowest aquifer zones interact with streams, and (2) how deeper pumping affects water levels in shallowest aquifer zone. The subbasin will need to define in the implementation chapter when and how data gaps will be filled. The technical team can use model outputs to create a profile that shows water levels in the stream, in the first layer, and in the level underneath to show the gradient. They will run the model again to extract model output at each location under each of the streams, coordinating with the Vina Subbasin to get a comprehensive model data set. P. Gosselin (Butte County) shared that the state acknowledges that this is one of the most difficult indicators to measure due to the lack of data and methodology. Thus, the State Board indicated that there would be no potential intervention on this sustainability indicator until 2025.

Draft Undesirable Results and Sustainability Criteria

<p>Undesirable Result Statement</p>	<ul style="list-style-type: none"> • Surface water depletion caused by groundwater pumping prevents beneficial uses over a sustained period. This includes environmental beneficial uses in natural stream channels that support a viable ecosystem, particularly ecosystems containing endangered species. • Groundwater levels in shallow wells adjacent to natural stream channels will be used as proxy for depletion. • Representative monitoring locations must be within a shallow aquifer that is known to be hydraulically connected to a natural stream channel.
<p>Minimum Threshold (onset of undesirable result) & Measurable Objective (desired condition)</p>	<ul style="list-style-type: none"> • Minimum Threshold – Groundwater levels lower than 5 feet below the base of the stream channel during September for two consecutive years. • Fall 2015 groundwater level in shallow aquifer (or modeled 2015 groundwater level if no data are available). Dry cycle minimums are no worse than 1993-2015 minimums.
<p>Quantitative definition of significant and unreasonable impact</p>	<ul style="list-style-type: none"> • 25 % of representative monitoring locations fall below minimum threshold for 2 consecutive years.

Groundwater Dependent Ecosystems (GDEs): GDEs are a very important consideration in this sustainability indicator. Geosyntec presented GDEs and modeled stream/aquifer interactions in Feather River and Honcut Creek. The model is uncalibrated at this point due to the absence of shallow groundwater monitoring sites by the streams. the approach would be specifying areas where the team suggests monitoring to address data gaps and then quantifying MO and MT.

Discussion:

- WAC members were overall supportive of the approach, as it seemed like the most viable option without the monitoring wells.
- A WAC member asked whether the implementation schedule to fill gaps in the monitoring network would be aggressive or minimal. The technical team said that in an ideal world, the subbasin could determine between 6-10 locations for shallow wells, but the model results overlaid with the GDE maps will determine the priority locations.
- Geosyntec asked WAC members to share any shallow monitoring sites from nearby mine sites or other sources which could help inform the analysis. In addition, the technical team asked WAC members to share any information about the Feather River management that they would like to see included in the plan that could affect GDEs.

Degraded Groundwater Quality:

Suggested approach: Geosyntec shared this is a straightforward approach, as GSAs are only responsible for addressing water quality problems clearly related to pumping. Thus, the MT and MOs can be tied to the same criteria, based on salinity as the indicator. Currently, the team has data on two wells in the subbasin that show good water quality, but the team will propose others. Using the State Water Resources Control Board’s GAMA Program ([Access Here](#)), the technical team will identify more wells and add to the map to ensure adequate coverage across the subbasin. The WAC will receive an update with additional well information.

Draft Undesirable Results and Sustainability Criteria

Undesirable Result Statement	<ul style="list-style-type: none"> • Water quality is below State Maximum Contaminant Levels (MCLs) or thresholds for agricultural productivity as a result of groundwater pumping. • Salinity will be used as a proxy for overall water quality. • Other programs and agencies are responsible for enforcing groundwater quality violations. GSA will coordinate with other agencies if water quality degradation is associated with groundwater pumping.
Minimum Threshold (onset of undesirable result) & Measurable Objective (desired condition)	<ul style="list-style-type: none"> • Minimum Threshold – 1,600 µS/cm–Upper SMCL • Measurable Objective–900 µS/cm–Secondary MCL (SMCL)
Quantitative definition of significant and unreasonable impact	<ul style="list-style-type: none"> • 25 % of representative monitoring locations fall below minimum threshold for 2 consecutive years.

Discussion

- WAC members expressed support for the current approach.

WAC Feedback on overall approach to SMC:

- Overall, the WAC expressed high level support on the approach.
- D. Kehn would like to have more information to assess the 15% MT for groundwater levels, including number of wells, year drilled, etc. He does feel comfortable with the proposed MOs

given the cost implications of PMAs. It would be beneficial to plot the different trend lines in the same graph as the MT to better illustrate the tradeoffs. Further, the GSA can always set more ambitious goals during dry years.

- K. McKillop appreciated the consultants work and the ability to look at the data. She will feel more comfortable after a comprehensive review of the hydrographs and other information provided. Further, it will be key to find ways to communicate the implications and rationale for the decisions to the broader public.

Public Comment

- A member of the public had some suggestions on how to make the information more palatable to a broader audience. One idea is to keep terminology consistent across all materials referenced and using terms that are familiar to the constituents; for example, the consultants could consider using well depths instead of mean sea level to communicate water levels.

Outcomes & Next Steps | SMC

- The technical consultant team will provide another presentation on the SMC during the next WAC meeting and asked WAC members for any useful information and data available that could help inform their analysis.

Next Steps

- The WAC will meet again via video conference on February 4, 2021 from 9:00-12:00.
- The GSA will host a GSA Board Workshop focused on SMC on February 25th.

Meeting Participants

Participant	Representation/Affiliation	Present
Wyandotte Creek GSA Advisory Committee (WAC) Members		
David Kehn	California Water Service	Y
Kristin McKillop	South Feather Water and Power	Y
Groundwater Sustainability Agency (GSA) Member Agency Staff		
Paul Gosselin	Butte County	Y
Chris Heindell	Thermalito Water and Sewer	Y
Matt Thompson	City of Chico	Y
Kelly Peterson	Butte County	Y
State Agencies		
Pat Vellines	Department of Water Resources (DWR)	
Facilitator		
Tania Carlone	Consensus Building Institute	Y
Mariana Rivera-Torres	Consensus Building Institute	Y

In addition, 3 members of the public attended the meeting.