# SANTA CLARITA VALLEY WATER
# GROUNDWATER SUSTAINABILITY AGENCY
# MEMORANDUM

**DATE:** April 8, 2021

**TO:** President Gina Natoli

**FROM:** GSA Staff

**SUBJECT:** SCV-GSA Special Board Meeting on March 25, 2021 - Response to Questions on Item 3.2 – Status Update on the Development of the Sustainable Management Criteria

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QUESTIONS FROM PRESIDENT NATOLI

1. The Status Update provided in the packet for our 25 March Special Board meeting included several terms for when action would be taken to alleviate a potential undesirable result: guideposts, minimum thresholds, and trigger levels. Are these the same thing? How does a guidepost differ from a trigger level differ from a minimum threshold?

   Answer:
   The term guideposts was used only as a descriptive term to reflect that minimum thresholds and trigger levels are guideposts that inform sustainability.

   Trigger levels pertain to avoiding impacts to GDEs in the GDE area. They are based at or slightly higher than historic groundwater elevation lows in the basin that occurred during a recent drought (2015/2016). When trigger levels are reached, an evaluation program for Groundwater Dependent Ecosystems (GDEs) will commence to help ensure GDEs do not incur significant and unreasonable effects caused by groundwater extraction. Use of trigger levels is not specifically required by GSP regulations, but they and the evaluation program are recommended to demonstrate to DWR that a process to consider GDEs per the regulations is in place.

   Minimum Thresholds are required by GSP regulations and reflect, for example, the minimum (lowest) water levels for selected wells allowed over a given period. Per the regulations, if water levels threaten to go below the minimum thresholds in selected wells, this would suggest an undesirable result might occur and appropriate projects and or management actions would be undertaken to avoid undesirable results.

   It is important to point out that for the SCV-GSA, we are proposing Minimum Thresholds at the lowest predicted future water level by 2042. We took this approach locally because it reflects the best available water resources planning for build out of the valley, corresponding increased groundwater extraction, and climate change effects. The groundwater model indicates that water levels will recover and that pumping in accordance with the operating plan can be sustained without chronic water level decline. Importantly, we don't have a clear indication that exceeding the proposed MTs will cause an undesirable result; however, the

GSP monitoring program is designed to fill data gaps and allow for revision of Minimum Thresholds (upward or downward) in the future.

2. The Status Update provided in the packet for our 25 March Special Board meeting states the Expert Peer Review panel **"[g]generally**…finds the groundwater flowmodel-supported [sustainable management criteria] reasonable…**generally** finds the approach used for addressing potential impacts to groundwater dependent ecosystems reasonable and **in the spirit of GSP preparation**…" (emphasis added). This appears to indicate less than a full endorsement of the sustainable management criteria and approach to protecting groundwater dependent ecosystems. Please identify the areas of concern expressed by the panel and in what ways they found the approach lacking.

   Answer:
   The Expert Review Panel's draft input provided recommendations to improve the groundwater model and documentation but also found that the groundwater model is appropriate and defensible for making decisions regarding how to set sustainable management criteria and assess management actions.

   Key recommendations are that the Sustainable Management Criteria for "Depletion of Interconnected Surface Water" doesn't fully "check the box" for GSP regulations and the GSP should include an approach to address future river conditions for dry-weather flow periods by setting minimum thresholds based on groundwater elevations. We agree with this approach, and the revised SMC for surface water depletion will describe an approach to use groundwater elevations and other monitoring data.

   The Expert Review Panel also recommends:
   - Making small technical adjustments to the calculations of certain SMCs.
   - Providing more detail regarding how often and how long a water level would need to be below the minimum threshold before it is deemed a potential undesirable result.
   - Making certain language revisions to be consistent with terminology in the SGMA rules and to thereby facilitate DWR review and acceptance.

3. How will we know if a drop in groundwater level is caused by pumping?

   Answer:
   In addition to groundwater levels, we will also be monitoring precipitation trends, which wells are being pumped in a given area, how much groundwater is being pumped to meet demand, surface water flow, WRP discharges, and water level responses that seem to reflect climate (e.g., drought) more than pumping in any given year. The monitoring data will inform how the basin is responding from year to year. If we find the monitoring data and the above information is inconclusive, we will likely use the groundwater model to help answer the question by varying pumping or testing how a decrease in precipitation affects water levels. We may also conduct field testing to see whether the decline is caused by pumping by reducing pumping at the location to see if that stops the decline. It will be a matter of converging lines of evidence, rather than a single approach.

4. If a groundwater level drops below a minimum threshold due to natural conditions, would pumping be allowed in that area?

   Answer:
   The proposed minimum thresholds are based on the lowest future (2042) groundwater levels evaluated with the groundwater flow model and include the *combined* effect of

groundwater pumping, drought, and climate change. These values are conservative. If it appears that groundwater levels will drop below minimum thresholds at the requisite number of monitoring sites, and the cause only included natural conditions, then this issue would be unusual and evaluated further. Pumping may be allowed providing it did not create undesirable results.

5. How long will it take to identify that the basin, or a portion of the basin, has met an indicator for an undesirable result in groundwater level?

   Answer:
   A groundwater elevation monitoring program coupled with computer analysis of groundwater elevation trends will be used to track meeting or not meeting thresholds at least twice a year, in spring and fall, but may be done more frequently. The monitoring results would be analyzed following each monitoring event and reported to the GSA. More frequent analysis is expected if it appears groundwater elevations are trending to a level where undesirable results may take place. Within the GDE area, monitoring will be conducted more frequently during drought so that potential impacts to GDEs can be addressed in a timely manner.

6. How long will it take to select a specific course of action to halt or improve an undesirable result in groundwater level? Who would make that selection?

   Answer:
   The exact length of time, and parties involved, is under evaluation as part of developing the "Projects and Management Actions" section of the GSP. We will further consider this question with the SAC and Board.

7. How long will it take to implement a course of action to halt or improve an undesirable result in groundwater level?

   Answer:
   The exact length of time is under evaluation as part of developing the "Projects and Management Actions" section of the GSP. We will further consider this question with the SAC and Board.

8. How long will it take to alleviate an undesirable result in groundwater level once it has been identified?

   Answer:
   The exact length of time is under evaluation as part of developing the "Projects and Management Actions" section of the GSP. We will further consider this question with the SAC and Board.

9. Staff stated during the presentation on 25 March that groundwater levels in the basin have been stable over the long-term, and that the groundwater model shows this would continue under a climate change scenario. Please explain the assumptions about future rainfall and recharge programmed into the model that resulted in this prediction.

   Answer:
   We used a set of climate change factors developed by DWR that describe future changes in the years 2030 and 2070 for rainfall and evaporation/ evapotranspiration. DWR provides these factors as multipliers that are applied to the historical climate data sets, which extend from as far back as the early 1900s to the past decade. We applied these factors in the local

basin groundwater flow model to change two of the key model inputs: (1) the demand for water by the plant communities in the riparian corridor which take up groundwater (a demand that increases by about 4% to 5%), and (2) the amount of infiltration occurring from storm flow in streams and from rainfall infiltration outside of streams (which decreases by about 5% under 2030 climate change and by about 11% under 2070 climate change). Details about the climate-change factors, their use in the model, and their influence on the aquifer system are provided in the draft water budget report from October 2020, which is being updated at this time to reflect input from the SAC and the Expert Review Panel.

10. Why is the figure 25% of representative wells proposed as the threshold for groundwater elevation levels, when 20% is proposed for salts and nutrients, and 10% is proposed for land subsidence?

    Answer:
    The proposed percentages are a reasonable first step, but may still change some. The percentage depends somewhat on how many wells/locations are being monitored. The idea is to have a sufficient percentage of wells/locations needed to identify a potential problem that might be considered significant and unreasonable. We will consider if it would be best to use the same percentage for all the indicators.

11. Staff stated during the presentation on 25 March that the groundwater sustainability plan ("GSP") may propose going to a three-year period of exceeding minimum thresholds before declaring an undesirable result has been reached, rather than using a two-year period. Under what circumstances would it make more sense to choose a three-year period?

    Answer:
    We are considering the three-year period to provide flexibility and to avoid triggering actions based on an observation that may be short-lived. Three years of trend provides more confidence that there is a trend, rather than just two years.

12. Staff stated during the presentation on 25 March that one objective of the GSP is to identify actions to prevent groundwater pumping from resulting in significant degradation of existing native riparian or aquatic habitat. What is the definition of "significant degradation of existing native riparian or aquatic habitat?"

    Answer:
    Significant and unreasonable effects to GDEs* includes the following:

    - Permanent loss or significant degradation of existing native riparian or aquatic habitat due to lowered groundwater levels caused by pumping
    - Temporary acute loss of aquatic habitat in specific locations critical to sensitive aquatic species due to lowered groundwater levels caused by pumping

    * February 10, 2021 Draft Technical Memorandum on Sustainable Management Criteria

    Without conducting frequent detailed studies, it may be difficult to observe significant loss of habitat over such a large area. We believe that alternative methods including use of periodic satellite imagery that can differentiate "greenness" or changes in evapotranspiration resulting from stress should be considered.

13. Staff stated during the presentation on 25 March that it is normal to have loss of native vegetation during drought, but that native vegetation usually recovers with the returning rains, and that the basin would be able to maintain "[a]verage future groundwater levels that

do not result in permanent loss of habitat." Does this mean the model predicts no net loss of native vegetation over time with climate change? How and when would we know if the loss is permanent? If native vegetation usually recovers with the returning rains, but the rains do not return as in the past, would that inform pumping levels? How and when?

Answer:
The GDEs have adapted to a range in river flows and groundwater levels within wet, normal, dry, and very dry climate regimes as have occurred historically in this area. We have chosen to utilize historical groundwater levels as trigger levels, rather than future groundwater levels with climate change, because the historic level is a reasonable starting trigger level since that elevation did not result in permanent or significant degradation of habitat, including sensitive aquatic species. With additional information from the monitoring plan, the trigger level may be revised upward or downward.

Groundwater modeling anticipates future groundwater level lows will be lower than historical lows when considering increased pumping as the valley builds out, and climate change. There are many variables included in groundwater model simulations of future conditions. Simulated future conditions suggest lower future water levels will occur during drought and may cause increased stress on GDEs, however like in the past, future droughts will end with recovery during a wetter period. If we find that the thresholds that have been chosen are not sufficiently protective, the GSA may change those thresholds in the future. The projects and management actions section of the GSP will discuss what the responses will be if a threshold is reached.

14. Director Gutzeit asked during the presentation on 25 March a question I had, which is why there are no groundwater dependent ecosystem ("GDE") monitoring locations in the Coast Live Oak areas to the west. While the answer provided was that staff is not sure whether to include these as GDEs, I suggest the conservative approach would be to include them in the GSP as special areas of concern.

    Answer:
    The coast live oak areas were shown in the Eastern part of the basin and are considered GDEs at this stage, but due to their upland location and natural hydrologic processes nearby, are not considered likely to be affected by groundwater pumping in the basin, but are likely to be affected by natural hydrologic processes, including drought. As a result, they are not made part of the GDE monitoring program. We could clarify these areas as "upland GDEs with very low potential to be affected by pumping".