



MEMORANDUM

DATE: September 9, 2020

TO: Vina Stakeholder Advisory Committee

FROM: Christina Buck, Assistant Director

RE: Public Comments on Basin Setting Drafts and Possible SHAC Recommendations

Public Comment Overview

Drafts of the Basin Setting and Monitoring Network Chapters have been available since August 10, 2020 for a public comment period. The comment period ended on Tuesday September 8, 2020.

The documents are available online at VinaGSA.org:

<https://www.vinagsa.org/groundwater-sustainability-plan-gsp-basin-setting-chapters-public-comment-open>

In addition, a presentation was given as a technical webinar in two parts providing an overview of the Basin Setting content. These presentations are also available online for reference:

<https://www.vinagsa.org/2020-06-16-stakeholder-advisory-committee-meeting>

Comments were received from three individuals and are attached to this report. Several themes emerged which are summarized in the bullets below:

- Commenters highlight the importance of the multiple aquifer zones that are present in the subbasin and the pressurized nature of the deeper zones. This has implications for understanding flow paths, vertical gradients, groundwater conditions and connectivity between zones, interbasin flow in the pressurized deep aquifer zone, connection of shallow groundwater to deeper zones and vulnerability of groundwater dependent ecosystems (GDEs), efficacy of recharge projects to provide benefits to shallow vs. deep zones, delayed and long lasting potential effects of deep pumping on stream-groundwater interactions.
- Commenters point out that monitoring the four defined aquifer zones is a data gap that should be filled with monitoring groundwater levels in each zone. The aquifer zones should also be better defined using well logs, cross sections to understand connectivity between zones, groundwater flow paths, and changes in vertical gradients over time.
- Monitoring of the shallowest portion of the groundwater system was identified as a need to identify baseline and dynamic water levels that support groundwater dependent ecosystems. A

shallow monitoring network needs to be developed and implemented to understand conditions in the shallowest portions of the aquifer system.

- A comment suggested that the rooting depth of the Valley Oak is incorrectly limited by The Nature Conservancy documentation on GDEs to 30 feet. Sources listed by the US Forest Service identify a rooting depth of 80 feet. The urban forest in Chico should also be identified and considered as a GDE and habitat monitoring should survey and monitor impacts on wetlands and other GDE areas.
- A number of clarification questions and comments were submitted
- Comments largely relate to the Hydrogeologic Conceptual Model and have implications for expansion of monitoring to address identified data gaps.

Other significant issues that have been raised include:

- Importance of understanding and characterizing interbasin flows
- Climate change impact assessment- concern has been raised that the 2030/2070 climate change scenarios utilized by the water budget analysis in the Basin Setting Chapter do not include the potential for multi-decade drought (i.e. megadrought).

All received comments have been compiled and attached with this memo. In the near future staff will address or respond to each comment. This information is provided to the SHAC for discussion and possible direction to staff and/or recommendation to the Vina GSA Board.

These Groundwater Sustainability Plan (GSP) chapters remain in draft form and will not be considered final until they are combined with the rest of the GSP for review and public comment in mid-2021. Public review and comment now provides a foundation for moving into development of Sustainable Management Criteria (SMC) and other portions of the GSP this fall. Comments received also help inform the SHAC and GSA Boards of significant issues that may need to be considered during development of SMCs and Projects and Management Actions.

Topics for potential recommendation

The SHAC can consider making specific recommendations to the Vina GSA Board on contents of the draft GSP chapters (i.e. Basin Setting and Monitoring network). The following topics are presented for discussion and consideration by the SHAC. The SHAC may choose to provide other recommendations not included here as well.

1. Shallow Monitoring Network

The document and public comment identify a lack of existing monitoring in the shallowest portions of the aquifer system as an important data gap. Funding will be available after submission of the GSP in 2022 to support implementation of the Plan. Alternatively, the Vina GSA could pursue Technical Support Services from DWR for shallow monitoring wells. Either implementation option will require design and development of a shallow monitoring network. The development of the design for a shallow monitoring network and securing the resources for implementation will occur after GSP submission. The SHAC could recommend that development of a shallow monitoring network be prioritized as a data gap.

2. Evaluating Climate Change

The value of modeling tools and scenario development is the ability to explore the sensitivity of the groundwater system and water budget to different changed conditions (whether driven by growth, climate change, etc.). Results of such analysis does not provide answers on what to do or not do, but rather contributes additional information to the decision-making process and can support risk assessment. Decision makers and the community decide how to use the information and what to plan for. Scenario development is most valuable when driven by specific questions that will help better inform the process and policy.

Scenarios using the Butte Basin Groundwater Model (BBGM) developed to support the water budgets included in the Basin Setting documentation utilized the 2030 and 2070 Central Tendency climate change datasets provided by DWR. This is an approach utilized by GSPs throughout the Central Valley. Public comment has questioned the sufficiency of this approach in evaluating the range of potential changes to hydrology that the subbasin may experience under future climate change or extended drought (i.e. megadroughts). The water budget results point out the large variation in groundwater storage that occurs driven by wet and dry cycles in California's highly variable hydrology. Climate change and changes in demand exacerbate these swings (Figure 1-36). Sustainably managing the Vina subbasin largely hinges on drought resiliency planning to somewhat smooth out the extremes. Fundamentally, this is done either by reducing outflows (i.e. reduced pumping) or increasing inflows (i.e. managed recharge) to/from the aquifer system. Several approaches regarding evaluating climate change impacts could be considered:

- The historical time period (2000-2018) described in the Basin Setting chapter has been discussed by the Public Policy Institute of California as having climate signals of a megadrought- unusually dry conditions and warm temperatures (<https://www.ppic.org/blog/californias-21st-century-megadrought/>). The SHAC could recommend that existing BBGM results be explored further to understand the impacts of this dry period on different components of the water budget and thereby inform development of Sustainable Management Criteria in this next phase of GSP development.
- A megadrought or other more extreme dry scenario (ex. 2070 Drier with Extreme Warming scenario DWR dataset) could be developed for the BBGM and/or used when considering and evaluating specific projects or policies. Assumptions about how streamflows and surface water supplies will change in the future as a result of climate change will affect projected benefits or impacts of any particular management policy or project. The SHAC could more clearly define what such a scenario could include.
- Additional model runs for the BBGM could be developed to evaluate effects on groundwater storage, streamflows, interbasin flows, available supplies and pumping demands. The SHAC could recommend that additional climate change model runs be prioritized to address the data gap through subsequent analysis after GSP submission.