

November 21, 2019

Brian McMinn
City of Marina
Directory of Public Works
211 Hillcrest Avenue.
Marina CA 93933

Subject: Comments on the Marina Groundwater Sustainability Plan

Mr. McMinn

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) staff and consultants have reviewed the Marina Groundwater Sustainability Agency (MGSA) Draft Groundwater Sustainability Plan (GSP), dated October 2019. While the MGSA has made a significant attempt to quickly develop a passable GSP, SVBGSA finds the draft GSP incomplete, inaccurate, and incompatible with SVBGSA's GSP for the 180/400-Foot Aquifer Subbasin.

SVBGSA
Letter 1

SVBGSA is concerned that the large number of errors and omissions in the MGSA GSP will result in the GSP being rejected by the California Department of Water Resources (DWR). An inadequate GSP by MGSA could potentially result in the entire 180/400-Foot Aquifer Subbasin being declared out of compliance with the Sustainable Groundwater Management Act (SGMA). Submitting this GSP therefore puts the SVBGSA at risk of being part of a subbasin that is declared probationary by the State of California.

SVBGSA
Letter 2

A coordination agreement between SVBGSA and MGSA is required if both GSPs are submitted to DWR. DWR will declare both SVBGSA and MGSA's GSPs incomplete if a coordination agreement is not included. Unfortunately, SVBGSA has identified a number of technical areas where it will be very difficult to reach the settlements needed for a coordination agreement.

SVBGSA
Letter 3

Significant points of required coordination that will be difficult to achieve include:

- The MGSA attempts to set thresholds for future groundwater levels and other criteria in wells managed by SVBGSA. SVBGSA is the only GSA with authority to set management criteria within the SVBGSA area. MGSA can only set management criteria for wells within its boundaries.

SVBGSA
Letter 4

- The MGSA attempts to set criteria for Groundwater Dependent Ecosystems (GDEs) that are in the SVBGSA GSP area. SVBGSA is the only GSA with authority to set management criteria within the SVBGSA area. MGSA can only set management criteria for wells within its boundaries.

SVBGSA
Letter 5

SVBGSA
Letter 6

- Coordination between the two GSPs requires a consistent description of the principal aquifers and hydrogeology. Coordination between the two GSPs will not be possible until there is agreement on whether or not the Dune Sand Aquifer constitutes a principal aquifer.

SVBGSA
Letter 7

- SGMA requires that a single undesirable result for each sustainability indicator be applied to the entire Subbasin. The SVBGSA GSP and the MGSA GSP state significantly different undesirable results. As explained in more detail in the attached document, it is unlikely that a single undesirable result can be reconciled between the two plans for indicators such as seawater intrusion and surface water depletion.

The sections in the attached comment document expand on the concerns listed above, and detail additional concerns with the MGSA GSP.

Should you have question or comments please contact me by telephone at 831-682-2592, or email at peterseng@svbgsa.org.

Sincerely,



Gary Petersen

General Manager, Salinas Valley Basin Groundwater Sustainability Agency

CC: Board of Directors SVBGSA
Dustin Cooper, Minasian, Meith, Soares, Serton & Cooper

Comments on Marina Groundwater Sustainability Plan

Executive Summary

The Executive Summary states that the SVBGSA used a pre-publication version of the USGS SVIHM to evaluate and develop regional water budgets for the Subbasin; however, the SVIHM was only used for the future projected water budget, as stated in the SVBGSA 180/400-Foot Aquifer Groundwater Sustainability Plan.

SVBGSA 1

This GSP relies on the water budget and other information from the SVBGSA 180/400-Foot Aquifer Subbasin GSP, which does not include the Dune Sand Aquifer as a principal aquifer. This GSP also includes GDEs dependent on the vernal ponds; however, the GDEs appear to be entirely or mostly outside the MGSA area.

Chapter 1: Introduction

Several maps of GSA Jurisdictions in the Subbasin are incorrect because they use GIS layers that have since been updated. The MCWD GSA area does not include the Marina Airport, so the Ord Service Area triangle extending into the 180/400-Foot Aquifer Subbasin should be smaller (Figures ES-1, 1-2, 1-3, 2-2).

SVBGSA 2

In Chapter 1, page 1-2, it states that the remaining subbasins in the Salinas Valley Basin are designated as high priority by DWR, but not critically overdrafted. This should be corrected to be "medium- and high-priority."

SVBGSA 3

Section 1.3 incorrectly states that the MCWD GSA has retained its jurisdictional authority to approve the SVBGSA GSP. This may have been copied from an earlier draft of the SVBGSA GSP, but it should be deleted from the MGSA GSP.

SVBGSA 4

Section 1.5 incorrectly states that "...DWR considers none of these three GSAs to be exclusive GSAs for the entire Subbasin; however, each GSA is exclusive for that portion of the Subbasin within its jurisdictional boundaries." Currently, DWR considers neither the SVBGSA nor the MGSA exclusive in any part of the Subbasin.

SVBGSA 5

Chapter 2: Plan Area

This chapter states that there are 8 subbasins in the Salinas Valley Groundwater Basin. This should be corrected to be 9, based on the addition of the Atascadero Subbasin (page 2-1).

SVBGSA 6

In Section 2.2.10.4 MCWD Recycled Water Project, it is misleading to state the 19,500 AFY of recycled water for Castroville area. Locating that statement in this section makes it seem that this amount is in addition to CSIP and M1W that have already been discussed. Up to 19,500 AFY capacity of M1W should be shifted to section 2.2.10.1 and clarify the amount of recycled water for landscaping in Marina in 2.2.10.4.

SVBGSA 7

Chapter 3: Basin Setting

Much of Chapter 3 provides description of the entire Salinas Valley Groundwater Basin or the 180/400-Foot Aquifer Subbasin, not just the area under the jurisdiction of the MGSA. The Plan should more clearly separate when it is not discussing the area under the jurisdiction of the MGSA.

SVBGSA 8

Chapter 3 states that the MGSA area is 398 acres; however, if the MGSA area is trimmed to the Subbasin outline used by DWR it is closer to 372-acres (pg. 3-1).

SVBGSA 9

SVBGSA
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Section 3.1.6 identifies the Dune Sand Aquifer as a principal aquifer in the Subbasin. The SVBGSA GSP does not identify the Dune Sand Aquifer as a principal aquifer, and therefore the SVBGSA does not propose to manage this sand veneer. Coordination between the two GSPs requires a consistent description of the principal aquifers and hydrogeology. Coordination between the two GSPs will not be possible until there is agreement on whether or not the Dune Sand Aquifer constitutes a principal aquifer.

SVBGSA
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It would help to have more sources cited, such as in the first paragraph of 3.1.6.1.

Chapter 4: Sustainable Management Criteria

SVBGSA
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This chapter fails to establish a single adequate sustainable management criterion for the MGSA area. The minimum thresholds, measurable objectives, and undesirable results established in this chapter do not meet the requirements of the SGMA regulations. Because the sustainable management criteria do not meet the requirements of the SGMA regulations, the MGSA and SVBGSA GSPs cannot be coordinated. This is because:

1. Coordination requires a single undesirable result be stated for each sustainability indicator in the Subbasin.
2. Undesirable results are a combination of minimum thresholds.
3. Therefore, the minimum thresholds in each GSP must be defined using comparable criteria.
4. Currently, the minimum thresholds are not defined comparably in the two GSPs.

One example of the problem outlined above are the sustainable management criteria for seawater intrusion. The SVBGSA GSP sets minimum thresholds based on the location of an isocontour. The MGSA sets minimum thresholds based on either a thickening of the existing seawater intrusion wedge, or a spatial distribution of groundwater level decline. It is impossible to develop a meaningful numerical combination of these various minimum thresholds. Therefore, it is impossible to develop an undesirable result for the Subbasin.

Additionally, the GSP fails to set any sustainable management criteria for the Deep Aquifers. Regulations require that sustainable management criteria be set for each principal aquifer in the GSP area. Specific comments on the sustainable management criteria for each sustainability indicator, and an explanation of why the sustainable management criteria are inadequate, are listed in the following subsections.

Section 4.4 Chronic Lowering of Groundwater Levels

SVBGSA
13

Section 4.4.1 is inadequate because it does not establish undesirable results for the chronic decline of groundwater levels. Undesirable results are defined as a combination of minimum thresholds. No combination of minimum thresholds is established, and therefore fails to establish undesirable results as required by regulation.

SVBGSA
14

Section 4.4.2.1 sets groundwater elevation minimum thresholds for the Dune Sand Aquifer. The Dune Sand Aquifer is not considered a principal aquifer by the SVBGSA, and therefore no sustainable management criteria for the Dune Sand Aquifer are required or enforceable.

SVBGSA
15

Section 4.4.2.1 erroneously sets the groundwater elevation minimum thresholds in the Dune Sand Aquifer as a drawdown due to pumping rather than a groundwater elevation as required by regulation (§354.28 (c)(1)). Furthermore, the minimum thresholds in the Dune Sand Aquifer are erroneously based on conditions and measurements in areas covered by the SVBGSA GSP. The MGSA GSP has no authority to set sustainable management criteria in the SVBGSA GSP area. Therefore, the groundwater elevation minimum thresholds in the Dune Sand Aquifer are invalid.

SVBGSA
16

The GSP fails to establish any groundwater elevation minimum thresholds in Section 4.4.2 as required by regulation. Groundwater elevation minimum thresholds must be a quantitative value established at each representative monitoring site. The GSP includes no quantitative groundwater elevation criteria at any representative monitoring site in the MGSA GSP area.

SVBGSA
17

The groundwater elevation minimum threshold definitions for the 180-Foot and 400-Foot aquifers are incorrectly established as a percentage of monitoring wells with groundwater elevations above a certain criterion. Minimum thresholds must be set in each representative monitoring site, not as a percentage of monitoring wells. This GSP erroneously confuses the concepts of minimum thresholds and undesirable results.

SVBGSA
18

Section 4.4.3 defines measurable objectives based on a drawdown due to pumping rather than a groundwater elevation as required by regulation. Groundwater elevation measurable objectives must be a quantitative groundwater elevation established at each representative monitoring site. The GSP includes no quantitative groundwater elevation criteria at any representative monitoring site in the MGSA GSP area, and therefore fails to establish any groundwater elevation measurable objectives.

SVBGSA
19

This GSP fails to establish any interim milestones for the chronic lowering of groundwater levels.

Section 4.5 Reduction in Groundwater Storage

SVBGSA
20

Section 4.5.1 is inadequate because it does not establish undesirable results for the reduction in groundwater storage. Undesirable results are defined as a combination of minimum thresholds. No combination of minimum thresholds is stated, and therefore this GSP fails to establish undesirable results as required by regulation.

SVBGSA
21

Section 4.5.2 erroneously attempts to establish the minimum thresholds for reduction in groundwater storage as either a decrease in thickness of low-TDS zone, or a spatial distribution of groundwater level decline. By regulation, the minimum threshold for the reduction in groundwater storage is a total volume of groundwater that can be withdrawn. Therefore, this section fails to adequately establish a minimum threshold for the reduction in groundwater storage.

SVBGSA
22

Section 4.5.3 erroneously attempt to establish the measurable objectives for reduction in groundwater storage as either a decrease in thickness of low-TDS zone, or a spatial distribution of groundwater level decline. By regulation, measurable objectives for the reduction in groundwater storage are established as a total volume of groundwater that can be withdrawn. Therefore, this section fails to adequately establish a measurable objective for the reduction in groundwater storage.

SVBGSA
23

The GSP fails to establish any reduction in groundwater storage interim milestones.

Section 4.6 Seawater Intrusion

SVBGSA
24

This section incorrectly states that the 180-Foot and 400-Foot Aquifers are, “experiencing undesirable results based on the regional definition”. The SVBGSA defines an undesirable result as seawater intrusion past the mapped 2017 500 mg/L chloride isocontour. There are no published data showing that this undesirable result has occurred.

SVBGSA
25

Section 4.6.1 is inadequate because it does not establish undesirable results for seawater intrusion. Undesirable results are defined as a combination of minimum thresholds. No combination of minimum thresholds is stated, and therefore this GSP fails to establish undesirable results as required by regulation.

SVBGSA
26

Section 4.6.2 erroneously attempt to establish the minimum thresholds for seawater intrusion as either a thickening of the existing seawater intrusion wedge, or a spatial distribution of groundwater level decline. By regulation, the minimum thresholds for seawater intrusion is the location of an isocontour. Therefore, this section fails to adequately establish a minimum threshold for the reduction in groundwater storage.

SVBGSA
27

Section 4.6.3 erroneously attempts to establish the measurable objectives for seawater intrusion as either a statistically significant increasing trend in chlorides in three or more wells, or an increase in the thickness of the sailing groundwater wedge. By regulation, the measurable objective for seawater intrusion is an isocontour. Therefore, this section fails to adequately establish a measurable objective for seawater intrusion.

SVBGSA
28

The GSP fails to establish any seawater intrusion interim milestones.

Section 4.7 Degraded Groundwater Quality

SVBGSA
29

Section 4.7.1 is inadequate because it does not establish undesirable results for degraded groundwater quality. Undesirable results are defined as a combination of minimum thresholds. No combination of minimum thresholds is stated, and therefore this GSP fails to establish undesirable results as required by regulation.

SVBGSA
30

Section 4.6.2 erroneously attempt to establish the minimum thresholds for degraded groundwater quality as either a violation of groundwater quality objectives for the low-TDS groundwater zone, or interference with ongoing cleanups of contaminant plumes. By regulation, the minimum thresholds for degraded groundwater quality is either:

1. A number of supply wells that exceeds concentrations of constituents of concern
2. A volume of water that exceeds concentrations of constituents of concern, or
3. A location of an isocontour

The proposed minimum thresholds do not meet any of these criteria, and therefore, this section fails to adequately establish a minimum threshold for the reduction in groundwater storage.

SVBGSA
31

Section 4.6.3 erroneously attempt to establish the measurable objectives for degraded groundwater quality as either a statistically significant increasing trend in chloride or TDS in three or more wells, a statistically significant increase above baseline chloride or TDS concentrations at the 90% confidence level, or a spatial pattern of groundwater level declines that indicate water quality changes. By regulation, the measurable objective for degraded groundwater quality is either:

1. A number of supply wells that exceeds concentrations of constituents of concern
2. A volume of water that exceeds concentrations of constituents of concern, or
3. A location of an isocontour

The proposed measurable objectives do not meet any of these criteria, and therefore this section fails to adequately establish a measurable objective for seawater degraded groundwater quality.

SVBGSA
32

The GSP fails to establish any degraded groundwater quality interim milestones.

Section 4.8 Land Subsidence

Section 4.8.1 is inadequate because it does not establish undesirable results for land

SVBGSA 33 | subsidence. Undesirable results are defined as a combination of minimum thresholds. No combination of minimum thresholds is stated, and therefore this GSP fails to establish undesirable results as required by regulation.

SVBGSA 34 | Section 4.8.2 states that this GSP uses groundwater elevation data as a proxy for land subsidence because no land subsidence is currently measured in the basin and no evidence of land subsidence has been observed. While it is incorrect that no land subsidence is currently measured in the basin, it is acceptable to use groundwater elevation data as a proxy for land subsidence. However, in order to use groundwater elevation as a proxy, the GSP must establish that significant correlation exists between groundwater elevations and land subsidence. The GSP fails to establish this correlation.

SVBGSA 35 | Minimum thresholds for land subsidence in the 180-Foot and 400-Foot Aquifers are based on a percentage of groundwater elevations that are above a certain standard. This erroneously confuses the concepts of minimum thresholds and undesirable results. Minimum thresholds must be set at every representative monitoring site. Therefore, this section fails to adequately establish minimum thresholds for land subsidence.

SVBGSA 36 | Section 4.6.3 erroneously sets measurable objectives for land subsidence in the 180-Foot and 400-Foot Aquifers as a percentage of groundwater elevations that are above a certain standard. This erroneously confuses the concepts of measurable objectives and undesirable results. Measurable objectives must be set at every representative monitoring site. Therefore, this section fails to adequately establish measurable objectives for land subsidence.

SVBGSA 37 | The GSP fails to establish any land subsidence interim milestones.

Section 4.9 Depletion of Interconnected Surface Water

SVBGSA 38 | Section 4.9.1 is inadequate because it does not establish undesirable results for depletion of interconnected surface waters. Undesirable results are defined as a combination of minimum thresholds. No combination of minimum thresholds is stated, and therefore this GSP fails to establish undesirable results as required by regulation. Furthermore, the depletion of interconnected surface water concerns listed in section 4.9.1 include areas in the SVBGSA GSP area.

SVBGSA 39 | The assessment of undesirable results includes discussions of the Salinas River, which is not in the MGSA GSP area, and GDEs that are outside the MGSA GSP area. The GSP can only define sustainable management criteria within the plan area. The plan cannot define criteria for the SVBGSA GSP area.

SVBGSA 40 | Section 4.9.2 appears to use groundwater elevation data as a proxy for depletion of interconnected surface waters. It is acceptable to use groundwater elevation data as a proxy, however the GSP must establish that significant correlation exists between groundwater elevations and the rate or volume of surface water depletions. The GSP fails to establish this correlation, and therefore fails to adequately establish minimum thresholds for depletion of interconnected surface water.

SVBGSA 41 | Section 4.9.3 appears to use drawdown attributable to groundwater extraction in the MGSA area as a proxy for depletion of interconnected surface waters measurable objectives. It is not acceptable to use drawdown as a proxy; it is only acceptable to use

groundwater elevation as a proxy for depletion of interconnected surface water measurable objectives. Therefore, this GSP fails to adequately establish measurable objectives for depletion of interconnected surface water.

Chapter 5: Monitoring Network

SVBGSA
42

This chapter largely relies on groundwater monitoring sites within the SVBGSA GSP area. This GSP cannot set sustainable management criteria for representative monitoring sites in the SVBGSA GSP area. Only three well clusters identified in this chapter: MW-1, MW-3, and MW-4 appear to lie within the boundaries of the MGSA GSP. These are the only three well clusters that can be included in the MGSA GSP. The groundwater monitoring network for any of the sustainable management criteria therefore comprises only seven wells: MW-1S, MW-1M, MW-1D, MW-3S, MW-3M, MW-3D, MW-4S, MW-4M, MW-4D, and 1032. All other representative monitoring wells identified in the Chapter 5 are apparently in the SVBGSA GSP. Although the MGSA can collect data from these wells, the MGSA cannot set sustainable management criteria at these wells.

SVBGSA
43

No groundwater monitoring wells exist or are planned, to monitor the Deep Aquifers within the MGSA GSP area. By regulation, the GSP must include groundwater elevation monitoring in each principal aquifer.

Chapter 6: Projects and Actions

SVBGSA
44

Projects and actions in SGMA are designed to avoid undesirable results. As stated in our review of Chapter 4, there are currently no correctly established undesirable results in the GSP. Therefore, no actions need to be implemented immediately. The actions are therefore potential actions to avoid future undesirable results. However, with no clearly stated undesirable results, it is impossible to assess how any projects or actions will achieve sustainability.

SVBGSA
45

Management action 6.1 contains no definitive actions to address seawater intrusion. While SVBGSA appreciates the measured and thoughtful response approach, the management action is not developed to a point where it will have any impact on seawater intrusion.

SVBGSA
46

Management action 6.2 contains no definitive actions to address impacts to GDEs. While SVBGSA appreciates the measured and thoughtful response approach, the management action is not developed to a point where it will have any impact on GDE health.

SVBGSA
47

Management action 6.3 is more accurately a plan to fill a data gap, not a management action that leads to sustainability. This is explicitly stated in Section 6.2.3.3. The SVBGSA agrees that this is a data gap that could be filled, but it more accurately fits in Chapter 7.

SVBGSA appreciates MGSA's support of the projects and management actions included in SVBGSA's GSP.

Chapter 7: Implementation Plan

SVBGSA
48

The GSP states that the MGSA plans to construct a locally refined groundwater flow, solute transport and density driven flow model. As required by SGMA, all GSPs in the Subbasin must use consistent data and tools. Therefore, any model developed by the MGSA will need to be approved and adopted by SVBGSA. This is a future coordination issue that is currently unresolved.

SVBGSA
49

The implementation plan discusses monitoring representative monitoring sites outside of the MGSA boundary. While MGSA can collect data from these sites, it has not authority to set sustainable management criteria at these sites including minimum thresholds and measurable objectives.

SVBGSA
50

The GSP lists the interconnection between groundwater and the Salinas River as a data gap. The Salinas River does not pass through the MGSA GSP area, and the MGSA GSP has no location where groundwater is interconnected with the Salinas River. Therefore, this is not a data gap the MGSA must fill.

SVBGSA
51

SVBGSA disagrees with the statement that there is insufficient data to assess subsidence. The subsidence data provided by DWR shows no recent subsidence in the MGSA GSP area.