

October 14, 2021

Colby Pereira, Chairperson  
Members of the Board of Directors  
Salinas Valley Basin Groundwater Sustainability Agency  
P.O. Box 1350  
Carmel Valley, CA 93924  
Via email board@svbgsa.org

Subject: Draft Groundwater Sustainability Plans for the Upper Valley Aquifer Subbasin, Forebay Aquifer Subbasin, Eastside Aquifer Subbasin, Langley Aquifer Subbasin, and Monterey Subbasin

Dear Chair Pereira and Members of the Board of Directors:

LandWatch Monterey County offers the following comments on the draft Groundwater Sustainability Plans (GSPs) for the above referenced subbasins.

- A. Selection and funding of proposed projects are not coordinated among subbasins, which is contrary to the 180/400 GSP and DWR's findings approving it. And the five new GSP's fail to provide the evidence SGMA requires that their proposed projects are financially feasible.**
- 1. The GSA represented to DWR in the 180/400 GSP that it will identify a suite of Basin-wide projects needed to attain sustainability, which will be funded through the Basin-wide water charges framework based on pumping allowances, and that this system will be set up by June 30, 2023.**

The 180/400-Foot Aquifer Subbasin GSP (180/400 GSP) that was approved by DWR identifies 13 projects that purport to “constitute an integrated management program for the entire Valley,” 9 of which are identified as “priority projects.” (180/400 GSP, p. 9-25.) The 180/400 GSP states that “[s]ome subset of these priority projects will be implemented as part of the six Salinas Valley Groundwater Subbasin GSPs,” although some additional projects may be needed in some basins. (*Id.*) The 180/400 GSP found that the “projects and management actions identified in Chapter 9 are sufficient for attaining sustainability in the 180/400-Foot Aquifer Subbasin as well as the other five subbasins in the Salinas Valley Groundwater Basin.” (*Id.* at 10-9.)

The 180/400-Foot Aquifer Subbasin GSP (180/400 GSP) provides that a “water charges framework” (WCF) will be implemented basin-wide in order to fund these projects and to deter pumping in excess of groundwater allowances. (180/400 GSP pp. 9-2 to 9-4.) The WCF is to be based on tiered charges for different levels of groundwater pumping. Tier one charges would be based on a “Sustainable Pumping Allowance,” and its revenues

would cover just the GSA administration. Tier 2 and 3 charges would be assessed for amounts in excess of a “Transitional Pumping Allowance” and, after the Transitional Pumping Allowances are phased out, for amounts in excess of the Sustainable Pumping Allowance. Tier two and three revenues would be used to fund the new water supply projects. The pumping allowances and fee structures were to be separately determined for each subbasin, so they would not be uniform for each subbasin; but each subbasins tiered charges would be included “in the final water charges framework agreement.” (*Id.* at 9-4.)

In approving the 180/400 GSP, DWR relied on the feasibility and likelihood of the integrated set of Basin-wide projects funded by a Basin-wide WCF:

The projects and management actions designed to eliminate overdraft and prevent seawater intrusion are reasonable and commensurate with the level of understanding of the basin setting, as described in the Plan. The water charges framework, at this time, appears feasible and reasonably likely to mitigate overdraft, which is an important management action to help prevent undesirable results and ensure that the 180/400 Foot Aquifer Subbasin is operated within its sustainable yield.

(DWR, Statement of Findings Regarding The Approval Of The 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan, June 3, 2021, p. 2.) DWR found:

To achieve sustainability, the Plan proposes to assess fees for groundwater extraction and use these funds to implement other projects or management actions, as needed. The proposal to charge fees for extraction is called the water charges framework and involves a three-tiered system where groundwater users will be charged a series of fees based on the volume of annual groundwater extraction. The proposal includes exemptions for some groundwater pumpers, including de minimis users that will not be included in the fee program. The foundation of the water charges framework is a sustainable pumping allowance that each parcel will be allocated based on the calculated sustainable yield. Groundwater users will be allowed to pump more than their sustainable allocation; however, this additional pumping (supplemental pumping) will be subject to higher extraction fees. The proposed water charges framework is also proposed to be instituted in the other five groundwater subbasins overseen by the SVBGSA, representing a Salinas Valley Basin-wide management action.

(*Id.*, p. 5.) DWR concluded that the “fundamental structure of groundwater management in the Subbasin is a management action called the water charges framework.” (*Id.* at 31, emphasis added; see also *id.* at 33.) DWR found that “implementation of projects will depend, fully or partially, on revenue generated by the proposed water charges framework.” (*Id.* at 13; see also *id.* at 33, 6.)

The 180/400 GSP requires development of the WCF by January 31, 2023 for all six subbasins:

Details of the water charges framework for all six subbasins will be developed during the first three years of this GSP's implementation through a facilitated, Valley-wide process. This process will be similar to the successful facilitated process that resulted in the SVBGSA serving as the GSA for some or all parts of all six subbasins. The result of this facilitated process will be an agreement on the financing method approved by the SVBGSA. The facilitation will be complete by January 31, 2023, and the financing method will be implemented in all six subbasins immediately following.

(180/400 GSP at 10-4.) The 180/400 GSP also requires refining the list of projects intended to support the integrated management of the entire Basin on the same schedule:

An additional benefit of refining the projects during the first three years of implementation is that this approach complements the approach for refining the water charges framework, as outlined in Section 10.2. Refinement of the projects and actions will occur simultaneously with refinement of the funding mechanism that supports the projects and actions. By refining all of these plans simultaneously, the funding mechanism and the projects will all be in place by June 30, 2023. Projects and management actions will then be immediately implemented in a coordinated fashion across the entire Salinas Valley Groundwater Basin.

(*Id.* at 10-10.)

Since the WCF is based on pumping allowances, these allowances must be determined on the same schedule:

This GSP proposes a water charges framework that provides incentives to constrain groundwater pumping to the sustainable yield while generating funds for project implementation. The framework creates sustainable pumping allowances, charging a Tier 1 Sustainable Pumping Charge for pro-rata shares of sustainable yield, Tier 2 Transitional Pumping Charge to help users transition to pumping allowances, and higher Tier 3 Supplementary Pumping Charge for using more water. Pumping allowances are not water rights, but would be established to incentivize pumping reductions.

(*Id.* at ES-14.) The Sustainable Pumping Allowance is the “base amount of groundwater pumping assigned to each non-exempt groundwater pumper. The sum of all sustainable pumping allowances and exempt groundwater pumping is the sustainable yield of the Subbasin.” (*Id.* at 9-3.) Pumping allowances “are not water rights. Instead, they are pumping amounts that form the basis of a financial fee structure to both implement the regulatory functions of the SVBGSA and fund new water supply projects.” (*Id.*)

In short, determining pumping allowances, setting the tiered rates for the WCF, and selecting the basin-wide projects to be financed is supposed to be accomplished simultaneously by January 2023 for all six subbasins.

**2. The five draft GSPs are inconsistent with the 180/400 GSP because they do not rely on, assume, or identify a common set of Basin-wide projects and do not include participation in a Basin-wide Water Charges Framework.**

Each of the five GSPs identifies a different set of projects than each other and different than the projects identified in the 180/400 GSP. (See Tables 9-1 in each GSP.) There is little overlap among the projects, and there are no projects that are common to all of the GSPs.

Furthermore, both the UVA and Forebay GSPs expressly reject the Water Charges Framework. (Forebay GSP at 10-15 to 10-16; UVA GSP at 10-15 to 10-16.) The Eastside, Monterey, and Langley GSPs do not mention the water charges framework in their discussions of funding options. (Eastside GSP at 10-15; Monterey GSP at 10-23; Langley GSP at 10-15.)

At this point, the “fundamental structure” on which DWR relied to approve the 180/400 GSP has been set aside because the five new draft GSPs no longer propose a Basin-wide Water Charges Framework or a common set of Basin-wide projects to attain sustainability.

If the GSA approves the five new GSPs as written, it must fundamentally revise the 180/400 GSP, which no longer appears viable if other subbasins will not fund a common set of projects. The problem that the GSA must address squarely is that pumping reductions, not just capital projects, are needed to attain sustainability in the 180/400-Foot Aquifer Subbasin. For example, instead of investing in a permanent \$100 million+ pumping barrier to hold back seawater intrusion, the GSA should consider investing in a finite period of pumping reductions that would be sufficient to restore groundwater levels to protective elevations. A finite period of pumping reductions that restores protective elevations would obviate and may be less expensive than financing and operating a permanent pumping barrier. Once the protective elevations are restored, the 180/400 could resume pumping the full sustainable yield of the subbasin, which is all that SGMA allows. (The pumping barrier would not allow any more pumping than the sustainable yield.) In any event, pumping reductions are at least feasible, and as discussed below, there is no evidence that a pumping barrier is financially feasible.

**3. The UVA and Forebay GSPs do not require, and presumably will not fund, common Basin-wide projects.**

The only project listed by the UVA GSP and Forebay GSP that is common to some of the other GSPs is the Multi-benefit Stream Channel Improvements, which is included in the

Eastside and Monterey GSPs and which contains as one component the Invasive Species Eradication project described by the 180/400 GSP. But the Multi-benefit Stream Channel Improvements projects are expected to benefit primarily the GSP's along the Salinas River, rather than the Langley or Eastside subbasins, and it is not even included in the Langley GSP. Indeed, the GSPs do not estimate any benefits to the Monterey, Eastside, and Langley Subbasins from this project.

Furthermore, neither the UVA GSP nor the Forebay GSP actually purport to require any projects to attain sustainability. (UVA GSP at 9-1 [projects not necessary to maintain sustainability]; Forebay GSP at 9-1 to 9-2 [subbasin sustainable; only management actions to be pursued].) Both GSPs anticipate ongoing maintenance of sustainability through management actions, not projects. They list projects only in case they might be needed in the future.

At this point, no GSP should assume that the Forebay and UVA water users would agree to provide funding for any large Basin-wide capital projects, either through a water charges framework or a Proposition 218 vote. To the extent that the Eastside, Langley, and Monterey GSPs assume funding contributions or project-participation from the Forebay and UVA subbasins, the five draft GSPs are inconsistent on their faces and cannot be approved. The project discussions in the Eastside, Langley, and Monterey GSPs should be revised to make clear that the proposed projects do not rely on funding contributions or project-participation from the Forebay and UVA subbasins.

**4. The Eastside, Langley, and Monterey GSPs do not propose a commons set of Basin-wide projects and do not provide the evidence required by SGMA that any large capital projects that benefit multiple subbasins are financially feasible.**

Contrary to the expectation set up by the 180/400 GSP, there is no common set of Basin-wide projects proposed by the GSPs. Although there are several large capital projects that are listed by more than one of the GSPs, the GSPs fail to provide evidence that these projects are financially feasible. This failure is because the GSPs do not address the critical question of the willingness to pay for the water these projects might deliver.

For agricultural uses, irrigation water is an input to production, so the maximum value of water is constrained by expected returns. There must be some price beyond which agricultural users will not pay for water projects. Is it \$500 AF? \$750 AF? \$1,000 AF? \$1,500 AF? And how much water would be demanded at each of these prices? What does the demand curve for agricultural water supply look like in the Valley? The GSP's simply fail to address these critical questions.

Water markets provide some evidence of willingness to pay. Although some farmers have reportedly paid as much as \$2,200 per AF for some amounts of water for high value crops (e.g., on a short term basis to protect investments in permanent crops), the average NASDAQ Veles California Water Index water futures price is now only \$686 AF, an

extraordinarily high price attained only as a result of a long drought period<sup>1</sup> Agricultural water has reached market prices in the \$500 to \$1000 range only in times of water stress.<sup>2</sup> Salinas Valley farmers may be willing to pay more for water due to their higher productivity than the average California farmer, but obviously there is a limit.

The analysis of fallowing options in the Eastside GSP provides some indirect evidence of willingness to pay; and since it is based on local land prices, it should reflect the range of agricultural productivities in the Salinas Valley. The Eastside GSP concludes that land could be fallowed to make its water available to other users by paying farmers rent and cover crop expenses. (Eastside GSP, p. 9-67.) Based on these land rents and cover crop expenses, farmers would be willing to forego farming for payments that represent water values of from \$590 to \$1,730 per AF. If agricultural users would find it more profitable not to use water at all when it is worth more than these values to others, it is not reasonable to suppose that they would vote to assess themselves for a capital project that produces water at higher costs per acre foot.

Despite this, the GSPs propose large capital water projects with unit costs well in excess of \$1,000 per AF.<sup>3</sup> For example, the Eastside GSP identifies the Chualar and Soledad diversion projects using the 11043 water rights as costing \$55 million and \$104 million respectively. The 6,000 AFY provided by these diversion projects would cost \$1,280 and \$2,110 per AF respectively. The projects would benefit Eastside and 180/400 water users, but there is no analysis in either the Eastside GSP or the 180/400 GSP that would support the assumption that agricultural users would be willing to pay that much for water.

Similarly, both the Monterey and Eastside GSP's identify winter reservoir releases with ASR as a potential project, costing \$172 million to provide 12,900 AFY at a unit cost of \$1,450 per AF. Both the Monterey and Eastside GSPs say that the distribution of benefits would be determined through a benefits assessment. But there is simply no analysis that supports the assumption that there is a willingness to pay \$1,450 per AF for agricultural water, much less to do so through a long term commitment in a Proposition 218 vote or through adoption of a Water Charges Framework.

The Eastside and Monterey GSPs both identify a Regional Municipal Supply project that is based on desalinating brackish water pumped from a seawater intrusion barrier. The unit cost for desalinating this water would come to \$2,900 per AF, to which must be

---

<sup>1</sup> Aquaoso, California Agricultural Water Prices by Water District, June 17, 2021, available at <https://aquaoso.com/blog/california-agricultural-water-prices/>.

<sup>2</sup> *Id.*

<sup>3</sup> By contrast, many of the projects that are proposed to benefit only one subbasin are more modest in scale and in price per AF.

added the \$1,200 per AF to pump the source water from the seawater intrusion barrier. While municipal users are willing to pay more than agricultural users for water, there is no analysis in the Eastside and Monterey GSPs of how the costs would be allocated between agricultural and urban beneficiaries or whether either group would be willing to pay as much as \$4,100 per AF for this water, which they now enjoy for the cost to pump it..

Some proposed large capital projects may make sense financially. The 3,500 acre CSIP expansion, identified in the Langley and Eastside GSPs, and already proposed in the 180/400 GSP, could proceed based on the existing CSIP model if the expanded benefit assessment district is willing to assess itself \$630 per AF for this water. Similarly, the direct delivery (as opposed to the aquifer storage and recovery or ASR) of winter release water for MCWD's winter urban demand at \$1,100 per AF may make sense given the likely willingness of new urban customers to pay higher rates.

Each of the GSPs should be revised to include a discussion of likely willingness to pay for the proposed capital projects and the likely financial feasibility of proposed projects. The discussion should reflect whether the large capital projects are scalable and whether sufficient numbers of water users would be willing to pay the average cost per AF to actually cover the minimum scale project's entire cost. The willingness of one water user to pay the average cost per AF is not evidence that the entire project can be funded.

Without an analysis of the willingness to pay for large capital projects, especially those projects for which the cost per AF is in excess of \$500, the GSP's cannot be approved by DWR. SGMA requires that a GSP include both the estimated cost for each project and "a description of how the Agency plans to meet those costs." (23 CCR § 354.44(b)(8).) DWR must have substantial evidence to support a finding that the projects are "feasible" and that the GSA "has the financial resources necessary to implement the Plan." (23 CCR § 355.4(b)(5),(9).) The GSP's do not provide evidence that funding is actually feasible. Their discussions of project funding merely list the kinds of funding arrangements that are commonly used for large capital projects. (Eastside GSP at 10-15; Monterey GSP at 10-23; Langley GSP at 10-15; UVA GSP at 10-15; Forebay GSP at 10-15.) As noted, the UVA and Forebay GSPs do not propose to provide any project funding because they determine that no projects are actually needed, and they specifically reject participation in the Water Charges Framework. (Forebay GSP at 10-15 to 10-16; UVA GSP at 10-15 to 10-16.) Merely listing the kinds of arrangements that can conceptually be used to fund projects does not explain how the GSA could actually meet their costs, especially where there is substantial uncertainty about willingness to participate in these funding arrangements.

The findings that projects are financially feasible are particularly critical for the Eastside and Monterey Subbasins because they depend on the success of high capital, multi-subbasin projects to address overdraft conditions. (Eastside GSP at 9-103 to 9-104; Monterey GSP at 9-105.)

**B. For the Monterey Subbasin GSP, the groundwater level sustainable management criteria and interim milestones fail to support the seawater intrusion criteria.**

**1. SGMA requires coordination of sustainable management criteria: groundwater level minimum thresholds must support the seawater intrusion minimum threshold.**

SGMA requires that each minimum threshold must avoid *each* undesirable result because SGMA requires that “basin conditions at each minimum threshold will avoid undesirable results for *each of* the sustainability indicators.” (23 CCR § 354.28(b)(2), emphasis added.) For example, the groundwater level minimum threshold must be “supported by” the “[p]otential effects on *other* sustainability indicators.” (23 CCR 354.28(c)(1)(B), emphasis added.) This means that each minimum threshold, especially the groundwater level minimum threshold, must be coordinated to ensure that *all* undesirable results are avoided. Furthermore, a GSP must not “adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal.” (23 CCR § 355.4(b)(7).)

**2. The Monterey Subbasin GSP’s proposed seawater intrusion SMCs do not permit any additional intrusion.**

The Monterey Subbasin GSP sets the MT and MO for seawater intrusion for the lower 180-Foot Aquifer and the 400-Foot Aquifer at the line of advancement as of 2015. (Monterey GSP, p. 8-51.) The Monterey GSP sets the MT and MO for seawater intrusion to the Deep Aquifers at Highway 1, based on the observation that there is limited intrusion in these aquifers. (*Id.*, pp. 8-51 to 8-52.) In effect, the Monterey GSP commits the GSA not to permit any additional seawater intrusion in these aquifers. This is a proper goal in light of the clear impacts to beneficial users.

**3. The Monterey Subbasin GSP’s groundwater level SMCs and groundwater level interim milestones are set based on their effects on seawater intrusion.**

The Monterey GSP acknowledges that the MT and MO for groundwater levels must support attainment of the seawater intrusion MT and MO because it identifies the primary consideration in setting the groundwater level MT and MO as the effect on seawater intrusion:

As discussed in Section 3.1.6, groundwater use within the Marina-Ord Area is almost exclusively limited to generation of municipal supplies by MCWD. Groundwater elevations are significantly higher than municipal production well screen elevations in all aquifers in the Marina-Ord Area, and there is limited concern regarding the potential dewatering of groundwater production wells. Therefore, *groundwater levels that could cause undesirable results associated with other locally relevant sustainability indicators, such as the lateral or vertical*



*expansion of the existing seawater intrusion extent and/or eventual migration of saline water into Deep Aquifer wells, have been used to define groundwater level minimum thresholds in the Marina-Ord Area.*

(Monterey GSP, p. 8-16, emphasis added.) The Monterey GSP also provides that

*. . . undesirable results caused by chronic lowering of groundwater levels in the Marina-Ord Area are primarily associated with the expansion of seawater intrusion and other locally relevant sustainability indicators. These sustainability indicators have been considered when defining groundwater level minimum thresholds in the Marina-Ord Area.*

(Monterey GSP, p. 8-19, emphasis added.)

**4. Setting the Monterey Subbasin GSP's groundwater level SMCs at historic 1995-2015 conditions is purportedly justified by the stability of the lateral extent of seawater intrusion in the Monterey Subbasin during that historic period.**

The Monterey GSP contends that setting the groundwater level MT and MO for the 180- and 400-Foot Aquifers on the basis of the 1995 to 2015 groundwater levels is justified because the lateral extent of seawater intrusion in the Monterey Subbasin has been “generally stable” in that period:

*As discussed in the preceding sections, the potential effects of undesirable results caused by chronic lowering of groundwater levels in the Marina-Ord Area are primarily associated with the expansion of seawater intrusion. The observed lateral extent of seawater intrusion within the Subbasin appears to have been generally stable within the 180- and 400-Foot Aquifers between 1995 and 2015. As such, minimum thresholds have been set based upon minimum groundwater elevations observed between 1995 and 2015 in the 180- and 400 Foot aquifers. Seawater intrusion is additionally monitored and managed pursuant to seawater intrusion SMCs (Section 8.9 below) to verify seawater intrusion does expand within the Subbasin due to sea-level rise and/or changes in the groundwater gradient.*

(Monterey GSP, p. 8-30.) There are several problems with this contention, discussed below.

**5. The “stability” rationale for setting the Monterey Subbasin GSP’s groundwater level SMC’s based on historic conditions is undercut by the Monterey GSP’s projections that historic conditions will not continue: groundwater levels will actually continue to decline and remain below historic conditions and the interim milestones permit such declines.**

First, the contention that groundwater level SMCs are justified by historic conditions ignores the GSP’s own projection that groundwater levels will continue to decline until at least 2033 and will not attain the MO until 2042. The Monterey GSP documents and projects in its “Example Trajectory for Groundwater Elevation Interim Milestones” that groundwater levels for a Marina-Ord well fell below the MT in 2019, will continue to fall until 2033, will not rise above the MT until 2039, and will not attain the MO until 2042. (Monterey GSP, pp. 8-42, Figure 8-12.) The interim milestones for wells in the 400-Foot Aquifer and the Deep Aquifers assume and permit that groundwater levels will remain below historic levels and the MT for most of the next 20 years:

Within the Monterey Subbasin, for wells in the 400-Foot Aquifer, Deep, and El Toro Primary Aquifer System Aquifers where groundwater levels have been declining, groundwater elevation interim milestones are defined based on a trajectory informed by current (fourth quarter of 2020) groundwater levels, historical groundwater elevation trends [footnote], and measurable objectives. This trajectory allows for and assumes a continuation of historical groundwater elevation trends during the first 5-year period of GSP implementation, a deviation from that trend over the second 5-year period, and a recovery towards the measurable objectives in the third and fourth (last) 5- year period.

(Monterey GSP, p. 8-41.) The proposed interim milestones for wells in the 180-Foot and Deep Aquifers permit substantial declines in groundwater levels from 2020 conditions in the years 2027 and 2032. (*Id.*, p. 8-43 to 8-44, Table 8-3.) For some wells, the interim milestones would not require that the minimum threshold be met until 2037 or later. In short, the Monterey GSP does not expect that groundwater levels will actually remain within historic levels.

Allowing groundwater levels to fall below historic levels is purportedly justified because “there are large volumes of freshwater in the Subbasin that provide additional time and flexibility to reach identified SMCs while projects and management actions are implemented.” (*Id.*, p. 8-41.) However, the draft GSP provides no evidence to suggest that groundwater levels that fall and remain below the historic conditions for at least the next ten years in the Marina-Ord area will not induce further seawater intrusion, resulting in a failure to meet the seawater intrusion SMCs. The evidence is to the contrary: lower groundwater levels increase seawater intrusion.<sup>4</sup> Thus, declining groundwater levels

---

<sup>4</sup> Geoscience, Protective Elevations to Control Seawater Intrusion in the Salinas Valley, 2013, available at <https://www.co.monterey.ca.us/home/showdocument?id=19642>.

will make it impossible to meet the seawater intrusion minimum threshold and measurable objective, which require a halt to the advancement of seawater intrusion.

In summary, the historic “stability” rationale cannot be extrapolated to claim that groundwater levels well below the historic record will continue to result in a stable areal extent of seawater intrusion. It makes no sense to contend that setting the MT and MO on the basis of historic conditions will halt seawater intrusion when the GSP would effectively fail to maintain those historic conditions.

The historic stability rationale also ignores the fact that Deep Aquifer groundwater levels began dropping in 2014, have continued to drop, and are projected to continue to drop due to increased levels of extractions. MCWRA reported in 2020 that Deep Aquifer groundwater levels have been falling since 2014, are well below sea-level, and that induced vertical migration of contaminated water to the Deep Aquifers themselves is in fact occurring:

As is the case with the 180-Foot and 400-Foot Aquifers, groundwater levels in the Deep Aquifers are predominantly below sea level. Beginning around 2014, groundwater levels in the Deep Aquifers began declining and are presently at a deeper elevation than groundwater levels in the overlying 400-Foot Aquifer based on comparisons of multiple well sets at selected locations, meaning that there is a downward hydraulic gradient between the impaired 400-Foot Aquifer and the Deep Aquifers (Figure 16 and Figure 17). This decrease in groundwater levels coincides with a noticeable increase in groundwater extractions from the Deep Aquifers (Figure 16 and Figure 17). The potential for inducing additional leakage from overlying impaired aquifers is a legitimate concern documented by previous studies and is something that would be facilitated by the downward hydraulic gradient that has been observed between the 400-Foot Aquifer and Deep Aquifers.

Seawater intrusion has not been observed in the Deep Aquifers. However, the Agency has documented the case of one well, screened in the Deep Aquifers, that is enabling vertical migration of impaired groundwater into the Deep Aquifers. The Agency is working with the well owner on destruction of this well.<sup>5</sup>

In addition to the threat to contaminate the Deep Aquifers, the induced vertical migration of upper aquifer groundwater to the Deep Aquifers aggravates seawater intrusion in those upper aquifers. A 2003 study for MCWD concluded that increasing pumping of the Deep Aquifers from the 2002 baseline level of 2,400 AFY to just 4,000 AFY would (1) induce

---

<sup>5</sup> Monterey County Water Resources Agency (MCWRA), Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update, May 2020, p. 31,

<https://www.co.monterey.ca.us/home/showdocument?id=90578>

further seawater intrusion into the upper aquifers (the 180-Foot and 400-Foot Aquifers), which were vertically connected, and (2) risk contamination of the Deep Aquifers themselves.<sup>6</sup> Deep Aquifer pumping is now in excess of 10,000 AFY.<sup>7</sup>

And, in fact, the Monterey GSP admits that falling groundwater levels in the Deep Aquifer threatens to contaminate the Deep Aquifers and to induce seawater intrusion in the upper aquifers:

Seawater intrusion has not been observed in the Deep Aquifer to date. However, groundwater elevations have been declining and are significantly below sea level. The declining groundwater elevations in the Deep Aquifer may be causing groundwater elevations to fall within the 400-Foot Aquifer in the southwestern portion of the Marina-Ord Area (i.e., near wells MPMWD#FO-10S and MPMWD#FO-11S). Although there is some uncertainty whether the Deep Aquifer is subject to seawater intrusion from the ocean, continued decline of groundwater elevations in the Deep Aquifers could increase the risk of seawater intrusion and may eventually cause vertical migration of saline water from overlying aquifers into the Deep Aquifers. As such, minimum thresholds for the Deep Aquifers are set to historically observed minimum groundwater elevations between 1995 and 2015, which is equivalent to the groundwater elevations observed in 2015 for most Deep Aquifer wells.

(Monterey GSP, p. 8-30.) Again, setting the groundwater level MT and MO to historic levels but then allowing another ten to twenty years to pass before the interim milestones actually require attainment of these historic levels cannot demonstrably ensure that there is no further advancement of seawater intrusion. However, no further advancement is precisely what is required by the seawater intrusion MT and MO.

In sum, interim milestones cannot be set at a level that permits continued declines in groundwater levels if the Monterey GSP is to find that the groundwater levels are consistent with the seawater intrusion SMCs.

---

<sup>6</sup> WRIME, Deep Aquifer Investigative Study, May 2003, pp. 4-7, 4-11 to 4-12, pdf available upon request.

<sup>7</sup> Monterey County Water Resources Agency (MCWRA), Well Permit Application Activities Update, prepared for May 17, 2021 MCWRA Board of Directors meeting, <https://monterey.legistar.com/View.ashx?M=F&ID=9381226&GUID=34ED34CD-3A39-4851-87A3-298BE70D383C>

**6. The Monterey Subbasin GSP fails to assess the effects on other subbasins of setting groundwater level SMCs based on historic conditions or allowing groundwater levels to decline further through relaxed interim milestones.**

As the Monterey GSP acknowledges, the interconnectivity between the 180/400-Foot Aquifer Subbasin and the Monterey Subbasin requires coordination of the sustainable management criteria for both subbasins. (Monterey GSP, p. 8-35.) Coordination is required in order to meet SGMA's requirement that the SMC's for one subbasin do not prevent another subbasin from meeting its sustainability goal. (23 CCR § 355.4(b)(7).)

Setting the groundwater level MT and MO at historic levels and then effectively ignoring these criteria through use of relaxed interim guidelines for ten to twenty years may very well impair attainment of the seawater intrusion criteria for the 180/400-Foot Aquifer GSP, which are also set at a level that permits no further advancement of the seawater intrusion front.

However the Monterey GSP provides no analysis of that possibility. Instead, the Monterey GSP proposes to defer the assessment of the impact of the Monterey Subbasin's groundwater level MTs on the Deep Aquifers in the neighboring 180/400-foot Aquifer Subbasin until after completion of the long-delayed Deep Aquifers Study and the eventual establishment of Deep Aquifer SMCs for the 180/400-foot Aquifer Subbasin.

The Deep Aquifer Study, recommended four years ago, has not commenced.

Furthermore, there is no reason that an assessment of the effects of the Monterey Subbasin's groundwater level MTs should be limited to its effects on the Deep Aquifers in the 180/400-Foot Subbasin. The assessment should also include an assessment of the effects of the Monterey Subbasin's groundwater level MTs on seawater intrusion of each of the principal aquifers in that neighboring subbasin. The Monterey Subbasin GSP argues that pumping in the 180/400-Foot Aquifer Subbasin has caused seawater intrusion in the Monterey Subbasin. In turn, the Monterey Subbasin GSP must assess the reciprocal effects of its own pumping, SMCs, and interim milestones on the 180/400-Foot Aquifer Subbasin.

SGMA's mandate to use the best available science is not an invitation to let the perfect be an enemy of the good pending completion of the Deep Aquifer study. The Monterey GSP must use the whatever science is now available to provide some discussion and assessment of the effect on the neighboring subbasins of allowing continued reductions in Monterey Subbasin groundwater levels below historic conditions through relaxed interim thresholds.

Again, it is not reasonable to extrapolate beyond the historic data to assume that lower-than-historic groundwater levels in the Monterey Subbasin will not impair adjacent basins. The purported stability of the lateral extent of seawater intrusion in the Monterey Subbasin from 1995 to 2015 was certainly not matched in the 180/400-Foot Aquifer

Subbasin, where seawater intrusion rapidly advanced during that period. The Monterey GSP provides no evidence to justify the assumption that allowing lower-than-historic groundwater levels in the Monterey Subbasin will not contribute to the continuing seawater intrusion in the neighboring subbasin.

Finally, the Monterey Subbasin GSP must also evaluate and address the effects of reduced groundwater levels in the Corral de Tierra Subarea on the Seaside Subbasin. Again, there is no evidence in the record that merely maintaining historic groundwater levels is sufficient to support groundwater levels in the Seaside Subbasin. To the contrary, comments by the Seaside Basin Watermaster indicate that chronic lowering of groundwater levels in the Laguna Seca Subarea of the Seaside Subbasin can only be corrected by reducing existing pumping in the Corral de Tierra, i.e., increasing groundwater levels above historic levels. (Robert Jacques, PE, email to Sarah Hardgrave, et al., March 22, 2021.) Setting Monterey Subbasin groundwater level SMC's at historic levels violates SGMA because it will prevent attainment of groundwater level objectives in the adjacent Seaside Subbasin.

**C. For the Eastside Subbasin GSP, the groundwater level sustainable management criteria and interim milestones also fail to support the seawater intrusion criteria.**

As discussed above, SGMA requires that each minimum threshold must avoid *each* undesirable result because SGMA requires that “basin conditions at each minimum threshold will avoid undesirable results for *each of* the sustainability indicators.” (23 CCR § 354.28(b)(2), emphasis added.) For example, the groundwater level minimum threshold must be “supported by” the “[p]otential effects on *other* sustainability indicators.” (23 CCR 354.28(c)(1)(B), emphasis added.) This means that each minimum threshold, especially the groundwater level minimum threshold, must be coordinated to ensure that *all* undesirable results are avoided.

However, the groundwater level SMCs for the Eastside Subbasin fail to support the seawater intrusion SMC. Although the Eastside Subbasins is not seawater intruded itself, its GSP sets its seawater intrusion minimum threshold to prevent any seawater intrusion over the 500 mg/l threshold in any subbasin, in effect acknowledging that conditions in the Eastside Subbasin can cause seawater intrusion in adjacent subbasins. (Eastside GSP, p. 8-29.) In its discussion of its sustainability indicators for groundwater levels, the Eastside GSP acknowledges that “interference with other sustainability indicators,” e.g., the sustainability indicators for seawater intrusion, would be a significant an unreasonable condition. (*Id.*, p. 8-7.) The Eastside GSP states that that the groundwater level minimum threshold is “intended not to exacerbate the rate of seawater intrusion.” (*Id.*, p. 8-15.)

Overdraft conditions in the Eastside Subbasin that lower groundwater levels create a gradient causing subsurface flows from the 180/400 Subbasin to the Eastside Subbasin. These subsurface outflows from the 180/400 Subbasin contribute to seawater intrusion by

negatively affecting the water budget in the 180/400 Subbbasin. The Eastside GSP acknowledges that the historic groundwater levels in the Eastside Subbasin, including the pumping trough around Salinas, have resulted in net subsurface outflows from the 180/400 Subbasin to the Eastside Subbasin. (*Id.*, p. 6-19.) Figure 6-9 demonstrates that there have been increasing net subsurface outflows from the 180/400 Subbasin to the Eastside Subbain since 1980. (*Id.*) For example, there are substantial net subsurface outflows from the 180/400 Subbasin to the Eastside Subbasin in both 2011 and 2015, and all of the other years after 1980. (*Id.*) Despite this, the Eastside GSP sets the minimum threshold for groundwater levels at the historic 2015 levels and sets the measurable objective at the 2011 level.<sup>8</sup> (*Id.*, pp. 8-7, 8-18.) In short, the Eastside SMC's are set at levels that will continue to induce subsurface outflows from the seawater intruded 180/400 Subbasin.

The Eastside Subbasin GSP fails to analyze the possibility that its minimum thresholds for groundwater levels and storage depletion will contribute to seawater intrusion in the 180/400 Subbasin. Instead, the Eastside GSP simply punts this issue to the future:

Minimum thresholds for the Eastside Subbasin will be reviewed relative to information developed for the neighboring subbasins' GSPs to ensure that these minimum thresholds will not prevent the neighboring subbasins from achieving sustainability.

(Eastside GSP, p. 8-16.) It is unclear when this review will occur, especially for the 180/400 Subbasin, for which a GSP has already been adopted. Regardless, deferral of the analysis is not sufficient. SGMA requires that the Eastside GSP squarely address whether it “will adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal.” (23 CCR § 355.4(b)(7).) The GSP must support its conclusions with substantial evidence after applying the best science that is available now. (23 CCR § 354.44(c).) It is clear that the groundwater level and storage depletion sustainability indicators for the Eastside Subbasin will continue to contribute to seawater intrusion in the 180/400 GSP by inducing subsurface flows out of the 180/400 Subbasin. Since the 180/400 Subbasin minimum threshold for seawater intrusion requires halting any further seawater intrusion, any further inducement of seawater intrusion will prevent the attainment of sustainability by the 180/400 Subbasin.

The Eastside GSP must be revised to provide minimum thresholds and measureable objectives for groundwater levels that will not prevent attainment of sustainability by the 180/400 Subbasin, and it must provide an analysis based on the best available science to explain why.

---

<sup>8</sup> The Eastside GSP also sets the minimum threshold for storage reduction using the groundwater level minimum threshold as a proxy indicator. (Eastside GSP, p. 8-23.)

**D. Water quality sustainable management criteria should not be limited to effects caused by “direct GSA action.” The GSPs must also regulate extractions that cause undesirable results, and do so through a specific and enforceable management action.**

The five new GSPs purport to limit significant and unreasonable conditions related to groundwater quality degradation to just those “[l]ocally defined significant and unreasonable changes in groundwater quality resulting from *direct GSA action*.” (Monterey GSP, p. 8-56, italics added; see also, e.g., Eastside GSP, p. 8-34.) Thus, the GSPs claim that the GSA need only address water quality degradation that is a “direct result of projects or management actions conducted pursuant to GSP implementation:”

For the Subbasin, any groundwater quality degradation that leads to an exceedance of MCLs or SMCLs in potable water supply wells or a reduction in crop production in agricultural wells that is a direct result of GSP implementation is unacceptable. Some groundwater quality changes are expected to occur independent of SGMA activities; because these changes are not related to SGMA activities they do not constitute an undesirable result. Therefore, the degradation of groundwater quality undesirable result is:

*Any exceedances of minimum thresholds during any one year as a direct result of projects or management actions conducted pursuant to GSP implementation is considered as an undesirable result.*

(Monterey GSP, p. 8-56, underlining added.)

This language does not define what constitutes a “direct result” of GSP implementation or “direct GSA action.” However, elsewhere, the GSP’s give three examples of conditions that may lead to an undesirable result and that the GSA is presumably prepared to address:

- Required Changes to Subbasin Pumping. If the location and rates of groundwater pumping change *as a result of projects implemented under the GSP*, these changes could alter hydraulic gradients and associated flow directions, and cause movement of constituents of concern towards a supply well at concentrations that exceed relevant standards.
- Groundwater Recharge. *Active recharge of imported water or captured runoff* could modify groundwater gradients and move constituents of concern towards a supply well in concentrations that exceed relevant limits.
- Recharge of Poor-Quality Water. *Recharging the Subbasin* with water that exceeds an MCL, SMCL, or level that reduces crop production could lead to an undesirable result.



(Monterey GSP, p. 8-58; see also Eastside GSP, p. 8-42 [same].) Significantly, none of these three conditions that might trigger GSA action include excessive pumping or changes in pumping by other parties that may cause water quality degradation; each condition includes only the secondary effects of the GSA's own projects. But the GSA's failure to take management action to regulate other parties, e.g., its failure to restrict excessive extractions or changes in pumping by other parties, may also cause water quality degradation. For example, the Community Water Center (CWC) has documented that for the San Jerardo Cooperative, Inc., increasing levels of nitrate and arsenic correspond to lower groundwater levels.<sup>9</sup> CWC has documented that "contaminants like arsenic, uranium, and chromium (including hexavalent chromium) are more likely to be released under certain geochemical conditions influenced by pumping rates, geological materials, and water level fluctuations."<sup>10</sup> It is clear that pumping levels and pumping changes can mobilize, concentrate, or move existing contaminants so as to cause water quality degradation. The GSA has a duty under SGMA to prevent this.

The Monterey GSP contends that because other agencies have authority over groundwater quality, the GSA's role is somehow limited:

The powers granted to GSAs to effect sustainable groundwater management under SGMA generally revolve around managing the quantity, location, and timing of groundwater pumping. SGMA does not empower GSAs to develop or enforce water quality standards; that authority rests with the SWRCB Division of Drinking Water and Monterey County. Because of the limited purview of GSAs with respect to water quality, and the rightful emphasis on those constituents that may be related to groundwater quantity management activities.

Therefore, this GSP is designed to avoid taking any action that may inadvertently move groundwater constituents already in the Subbasin in such a way that the constituents have a significant and unreasonable impact that would not otherwise occur.

(Monterey GSP, pp. 8-60 to 8-61; see also Eastside GSP, p. 8-35.) The fact that the County *and* the RWQCB also have authority and responsibility to address water quality degradation demonstrates that the statutory scheme does not rely on the regulatory

---

<sup>9</sup> Community Water Center, letter to SVGBGSA, April 23, 2021, re Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins, p. 1.

<sup>10</sup> *Id.*, pp. 1-2, citing Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information. [https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC\\_FS\\_GrndwtrQual\\_06.03.19a.pdf?1560371896](https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896).

actions of any single agency. Nothing in SGMA’s mandate that the GSP address water quality degradation permits the GSA to ignore water quality degradation that results from third party pumping or to ignore such third party degradation unless the GSA has affirmatively regulated pumping. The GSP must address the effects of its regulatory acts or omissions, including omissions that move, mobilize, or concentrate pollutants by permitting excessive extractions or changes in extractions by groundwater pumpers.

Indeed, DWR has made it clear in its imposition of corrective actions on the 180/400-Foot Aquifer Subbasin GSP that “groundwater management *and extraction*” must be addressed because it may result in degraded water quality:

RECOMMENDED CORRECTIVE ACTION 5 Coordinate with the appropriate groundwater users, including drinking water, environmental, and irrigation users as identified in the Plan, and water quality regulatory agencies and programs in the Subbasin to understand and develop a process for determining if groundwater management *and extraction* is resulting in degraded water quality in the Subbasin.<sup>11</sup>

Accordingly, the GSP cannot limit its concern to the effects of its own projects without taking responsibility for the effects of unregulated, excessive, or changed extractions on water quality degradation.

For example, if there is evidence that arsenic contaminations are mobilized or concentrations increased by new or excessive extractions, then the GSP must manage extractions to avoid undesirable results from mobilized, moved, or concentrated arsenic. The GSP cannot simply state that there “is no clear correlation that can be established between groundwater levels and groundwater quality at this time” as if that disposes of the matter for the GSP planning horizon. (Monterey GSP, p. 8-58.) The GSA must adopt an effective program to investigate, apply the best available science, and manage the resource to prevent undesirable contaminant concentrations caused by excessive or changed extractions, whether those are due to changes the GSA requires in subbasin pumping or due to the failure of the GSA to regulate existing pumping in the first instance.

In sum, the GSPs fail to propose a coordinated system of meaningful sustainable management criteria and a management action to address water quality degradation. The minimum threshold and measureable objectives should be based on zero exceedances of water quality standards, as in the Eastside GSP so that each and every instance of water quality degradation can be determined and action can be prompted. (Eastside GSP, pp. 8-34, 8-41.) The GSP’s should provide for a more robust monitoring program and a self-reporting program so that any exceedance will actually be determined. It is not sufficient to monitor only a small sampling of domestic wells.

---

<sup>11</sup> Department of Water Resources, GSP Assessment Staff Report Salinas Valley – 180/400 Foot Aquifer (Basin No. 3-004.01), June 3, 2021, p. 37, emphasis added available at <https://sgma.water.ca.gov/portal/gsp/assessments/29>.

Most importantly, the proposed “Water Quality Partnership” implementation action needs to be revised so that it is an effective, enforceable commitment to action by the agency with the most direct oversight of the cause of any exceedance. (See, e.g., Eastside GSP, pp. 9-100 to 9-101.) The proposed Water Quality Partnership contains only the flowing proposals for action:

SVBGSA will coordinate with the appropriate water quality regulatory programs and agencies in the Subbasin to understand and develop a process for determining when groundwater management and extraction are resulting in degraded water quality in the Subbasin. . . . Under this implementation action, SVBGSA will play a convening role by developing and coordinating a water quality partnership (Partnership). . . . The Partnership will review water quality data, identify data gaps, and coordinate agency communication. The Partnership will include the Regional Water Quality Control Board, local agencies and organizations, water providers, domestic well owners, technical experts, and other stakeholders. The Partnership will convene at least annually. The goal of the Partnership will include documenting agency actions to address water quality concerns. An annual update to the SVBGSA Board of Directors will be provided regarding Partnership efforts and convenings.

(Eastside GSP, p. 9-101.) In effect, the Water Quality Partnership calls for holding an annual meeting and writing a report. This is not a sufficient basis to find that the GSA has met its statutory obligation to adopt a plan that will actually address water quality degradation.

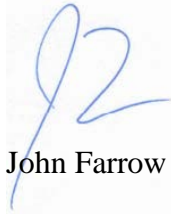
At minimum, a management action that addresses water quality degradation should include the following specific steps, which should be negotiated and memorialized in an MOU with the CCRWQCB and the Monterey County Department of Environmental Health:

- The agencies should arrange to monitor a sufficiently representative sampling of domestic wells to reliably determine any instance of a domestic well’s failure to meet water quality standards.
- The agencies should accept and verify self-reporting of instances of failures to meet water quality standards.
- For each instance of failure to meet water quality standards, the agencies should ascertain whether the cause includes (1) discharge of pollutants, as determined by the CCRWQCB or the County DEH, and/or (2) pumping activity that has concentrated, mobilized, or moved pollutants, as determined by SVBGSA or the County DEH.
- Where the cause includes pumping activity, the SVBGSA should take action to abate the pumping that is causing the failure to meet water quality standards.

Absent such a program, the GSPs do not meet the statutory obligation to adopt a plan that will actually address water quality degradation.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.

A handwritten signature in blue ink, appearing to be 'JF' or 'John Farrow', is written over a light blue rectangular background.

John Farrow

JHF:hs

Cc: Donna Meyers, [meyersd@svbgsa.org](mailto:meyersd@svbgsa.org)  
Emily Gardner, [gardnere@svbgsa.org](mailto:gardnere@svbgsa.org)  
Gary Petersen, [peterseng@svbgsa.org](mailto:peterseng@svbgsa.org)  
Les Girard, [GirardLJ@co.monterey.ca.us](mailto:GirardLJ@co.monterey.ca.us)