

# AQUALLIANCE

DEFENDING NORTHERN CALIFORNIA WATERS

April 10, 2024

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Re: Revised Corning Subbasin Groundwater Sustainability Plan

Dear Ms. Hunter and the Corning Subbasin GSAs:

AquAlliance submits additional comments and questions on the revised Corning Subbasin Groundwater Sustainability Plan (“revised GSP” or “revised Plan”) that was made available on April 9, 2024. The 2022 GSP was deemed “Incomplete” by DWR. Serious flaws remain in the revised Plan.

## **A. Public Process**

As we previously explained in our April 7, 2024 comment letter, the process used to revise the 2022 GSP is a maze of challenges for the public. First we didn’t see the revised GSP until April 9<sup>th</sup>,<sup>1</sup> yet presentations at past meetings stated that written comments were due *Sunday*, April 7<sup>th</sup>. However, the Legal Notice in the Sacramento Valley Mirror indicated “Comments received prior to and during the public hearing [April 11, 2024] will be considered by the Corning Sub-basin Groundwater Sustainability Agency Committee prior to the adoption of the proposed Amended GSP.” The Legal Notice then mentions the “Final Amended GSP will be located online by April 8, 2024...” The Legal Notice says nothing about comments due on April 7 or if there are any constraints on the type of comments accepted.

Second, the Corning GSA and the Tehama County Flood Control and Conservation District (“TCFCCD”) (collectively the “GSAs”) failed to reach a decision about a potential new well moratorium in certain areas of the Corning Subbasin at the April 4, 2024 meeting. Third, when AquAlliance sent e-mails asking Lisa Hunter, the Plan Manager, when the revised GSP would be

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<sup>1</sup> Replies by Lisa Hunter to AquAlliance’s e-mails regarding release of the revised GSP:

- a) April 4, 2024. “The draft Corning GSP will be available by April 8 at: <https://www.countyofglenn.net/government/departments/planning-community-development-services/water-resources/corning-sub-basin-gsa>” one day after the purported written comment deadline. On April 8<sup>th</sup> the revised Corning GSP wasn’t found at that url. See screenshot exhibit.
- b) April 9, 2024. “Here’s the direct link Barbara. It’s also included in the April 11 meeting packet. [https://www.countyofglenn.net/CorningSub-basinGSA/RevisedCorningGSP.](https://www.countyofglenn.net/CorningSub-basinGSA/RevisedCorningGSP)”

available and what the comment period was, we were provided with the url and informed that the revised GSP would be released April 8th, the day after one of the comment deadlines disclosed at public meetings.<sup>2</sup> No date for comment submission was provided and the revised GSP wasn't obtainable until April 9<sup>th</sup>.

In light of the egregiously short time frame for comments (whether the 7<sup>th</sup> or the 11<sup>th</sup>), a GSP made available on April 9<sup>th</sup>, major decisions by the GSAs still in flux over Minimum Thresholds and a moratorium on new wells, and the mixed messages about timing, AquAlliance will submit these additional written comments by April 11, 2024 to add to what we submitted on April 7<sup>th</sup>. Anything in our comments that seems confusing is due to the fact we are trying review a 1,400 page document that was released two days ago and, as stated above, major decisions are still pending and there is completely inadequate time allowed for public comments.

## **B. Subsidence**

It appears the revised GSP didn't change anything regarding subsidence. While the issue wasn't raised in DWR's determination letter, unfortunately, the GSA had an opportunity to look at a growing body of evidence that could have better advised the GSA, residents, and farmers regarding the seriousness of subsidence in the Corning Subbasin. The revised GSP contains a conclusion that we strongly disagree with: "There are no data gaps identified for the land subsidence sustainability indicator at this time, since existing data sources provide sufficient information at a scale that is appropriate for the GSP implementation."<sup>3</sup> Figure 1 indicates that **there is widespread inelastic subsidence occurring in the Corning Subbasin.**<sup>4</sup> There is a significant area with subsidence taking place greater than 0.5 inch per year. Based on the InSAR data from 2015-2023, there are scattered areas with subsidence greater than 1-2 inches per year that likely exceed the current MT of half a foot per year over five years. These data are not disclosed in the Corning Subbasin GSPs released to date or the Annual Report for 2023 that was just submitted to DWR in April 2024.

The revised GSP goes on to assert that "Available data indicate that little to no inelastic subsidence has occurred in the Subbasin during the past 2 decades."<sup>5</sup> Really? The publicly available data used in Figure 1 demonstrate otherwise.

An additional point in the revised GSP illustrates the inadequacy of the current subsidence monitoring and tracking: "For recent subsidence monument surveys, local agencies supplied staff to conduct the monitoring and DWR provided supplies and lead the project. DWR has been responsible for monitoring the extensometer in the Subbasin and making the data available."<sup>6</sup> It is this inadequate level of monitoring and/or disclosure that is a disservice to the GSP, the public, and the environment.

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

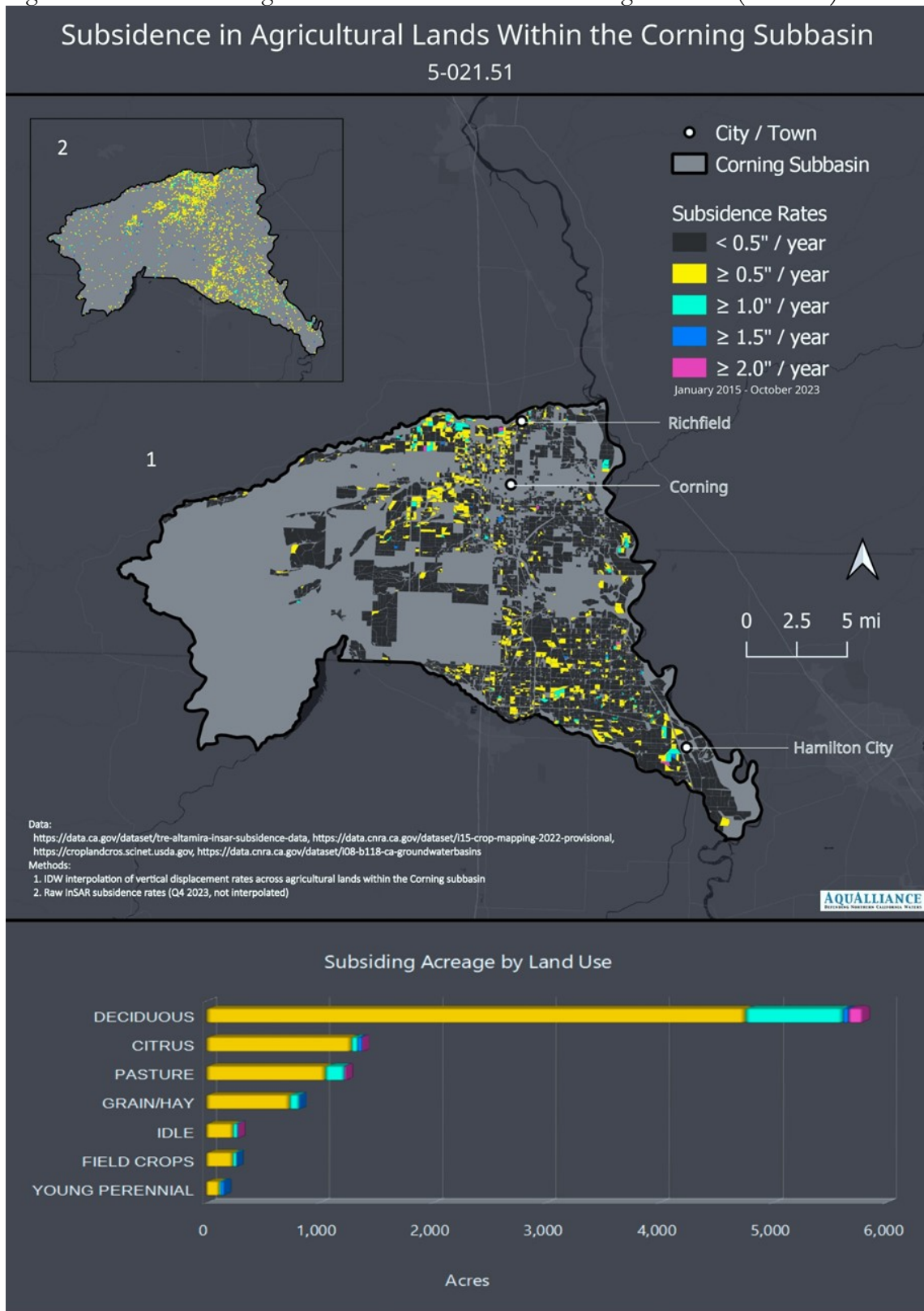
<sup>3</sup> *Id.* p. 5-35.

<sup>4</sup> AquAlliance 2024. *Subsidence in Agricultural Lands Within the Corning Subbasin.*

<sup>5</sup> Corning GSAs, 2024. Revised Corning GSP. p. 5-31.

<sup>6</sup> *Id.* p. 5-32.

Figure 1. Subsidence in Agricultural Lands Within the Corning Subbasin (5-021.51)



### **C. Revised Corning GSP Additional Areas of Concern**

1. Red ovals were added around wells near Stony Creek that are not in the Focus Areas or Zone of Special Concern (pdf p. 424 – Map of Focus Areas, Figure 6-1a).. The reason that these wells are not in a Focus Area or Zone of Special Concern is apparently because the annual average decline in groundwater levels is not faster than 1.5 feet per year (ft/yr), which is the revised threshold of significance for declining groundwater levels. The justification for this revised threshold is stated as:

*Declining water levels indicate declining groundwater storage. When we look at RMP that have a period of record with 1.5 feet decline per year in Figure 6-1b we see substantial portions of the subbasin appear to have an unsustainable water supply [sic]. The average rates are posted on the figure however short term averages are often steeper, as evidenced in the hydrographs. These polygons are “zones of concern.”*

*The Focus Areas experienced undesirable results and as such we can use that information to define the MTs. MTs for chronic lowering of groundwater levels are the groundwater elevation indicating a depletion of supply at a given location that may lead to undesirable results. (p. 6-12, pdf p. 426)*

This setting of the threshold of significance at -1.5 ft/yr seems to contradict the groundwater level trends shown in Figure 6-3 (pdf p. 432). When the attached Figure 6-3 (pdf p. 432) is overlain onto Figure 6-1a ( pdf p. 424), which shows the Focus Areas (Zones of Special Concern), most of the dry wells and the areas of the Focus Areas are overlain by the Slight Decline trend area, not by the Declining trend area. The Focus Area in the southeastern portion of the Corning GSP extends into the Stable towards the Sacramento River. The Focus Area in the northwest has only a small portion of its area within the Declining trend area with the majority not included in any groundwater trend area.

A second attached composite figure shows Figure 6-3 overlain onto the Representative Monitoring Point (RMP) Theissen polygons of Figure 6-1b (pdf p. 425), which gives the value of the average annual decline groundwater levels at the Corning Subbasin RMP wells that are equal to or greater than -1.5 ft/yr. This overlay figure shows that the polygons with declining groundwater levels equal to or greater than -1.5 ft/yr mostly lie within the Slight Decline trend area, not the Declining trend area, even though the greatest annual declining values are within the Declining trend area. Like the Figure 6-3 with the Focus Areas overlay discussed above, there appears to be a disconnect between the areas with the greatest rate of groundwater level decline and the Focus Areas or Zone of Special Concern proposed in the revised GSP. The reasoning for the revised GSP excluding the areas of the polygons with the highest rate of groundwater decline from the Focus Area or Zone of Special Concern isn't clearly explained in the revised GSP.

2. Figure 6-9 shows the *Predicted Impacted Wells at Minimum Thresholds* as those domestic wells with red dots (pdf p. 443). At the top of the figure is a table that lists the total number of wells by type, the number of wells in each type that will be impacted by the proposed revised Minimum Thresholds (MTs) and the percentage of impacted wells. A red oval has been overlain

on Figure 6-9 above the Thiessen polygon around RMP well 22N03W05F002M. Attached pdf pages 909 and 973 are the hydrographs from the revised GSP for this RMP well. This RMP well is outside of the Focus Areas or Zone of Special Concern. The MT elevation listed on the hydrographs is unchanged from the original GSP MT elevation of 177.9 feet, presumably because the average annual rate of groundwater decline is only -1.42 ft/yr. The pdf page 973 hydrograph shows the dry well percentile elevations and the number of wells that will be impacted when the groundwater level declines below the percentile elevation. The legend of the hydrograph indicates that if the groundwater level drops below the 20th percentile depth, 30 wells will go dry. The table at the bottom of pdf page 973 indicates that there are 101 domestic wells in the polygon around RMP well 22N03W05F002M and that 43 wells, or 31%, will be impacted by the proposed MT. It is unclear from this table whether the 41 wells have already been impacted, given the recent groundwater levels have declined below the 20th percentile elevation, or whether a total of 41 wells will be impacted whenever the groundwater level declines below the MT elevation. Regardless, the fact that this RMP well and the associated polygon are not included in the Focus Area or Zone of Special Concern apparently because the rate of groundwater decline hasn't yet reached -1.5 ft/yr even though there is a potential that 31% or 43 out of 101 wells will be impacted by the MT, seems to suggest that the -1.5 ft/yr threshold for defining the Focus Areas or Zone of Special Concern is arbitrary and lacking in a clear justification.

3. The revised GSP indicates that:

*[t]he GSAs recognize that undesirable results have occurred in the Corning Subbasin. These undesirable results coincided with the 2020 to 2022 lows when dry conditions persisted in the region. Consequently groundwater extraction increased and water levels correspondingly decreased. The areas that roughly defines [sic] the experienced undesirable results are called Focus Areas. The boundary of the Focus Areas was made in consideration of dry wells reported (since 2015) on the state Dry Well Reporting Platform and the hydrographs at RMP, especially their rate of decline. A map of the Focus Areas is presented in Chapter 6. (p. ES-23, pdf p. 42)*

The revised GSP apparently proposes in the future two alternatives for determining the threshold for significant and unreasonable effects from the chronic lowering of groundwater levels (p. 6-9, pdf p. 423) to any of the six sustainability indicators defined by SGMA that are caused by groundwater conditions occurring in the Subbasin when:

- 1) 10 supply wells becoming dry (after the GSP revision) within each Thiessen polygon (Figure 6-2) established in the revised GSP (2024), or*
- 2) when water levels at any RMP in the future decline 7.5 ft or more within a per year [sic] over five (5) year period [sic] at any RMP. (p. 6-12, pdf p. 426)*

These two alternatives for determining when an unreasonable result has occurred are apparently the GRA's response to DWR's determination letter comment that the GRA needs to "Refine the

description of undesirable results to clearly describe the significant and unreasonable conditions the GSAs are managing the Subbasin to avoid. This must include a quantitative description of the negative effects to beneficial uses and users that would be experienced at undesirable result conditions.” (p. 6-12, pdf p. 426)

As discussed above, the reasoning for selecting the -1.5 ft/yr threshold, which sums to the proposed -7.5 ft or more decline in 5 years alternative, isn't clearly linked to the potential for impacts, such as the number of dry wells. An example was given above for RMP well 22N03W05F002M where a significant number of dry wells will occur even though the groundwater level is declining at a rate slower than -1.5 ft/yr. In addition, the linkage isn't clear between these two alternative triggers for undesirable results from the chronic lowering of groundwater and the undesirable results that occur whenever the proposed MT groundwater elevations are exceeded. The lack of clarity on why these alternatives or the MT elevations are determined to be an undesirable result seems to contradict DWR's requirement to "...clearly describe the significant and unreasonable conditions the GSAs are managing the Subbasin to avoid" and lacks the "...quantitative description of the negative effects to beneficial uses and users that would be experienced at undesirable result conditions.”

4. The revised GSP proposes a Well Mitigation Program as a remedy for the undesirable results that occur when groundwater levels decline below one of the two alternatives listed above, and possibly below the MT elevations. The Well Monitoring Program is described in concept in Appendix 7H (pdf p. 1370). The description of the Well Mitigation Program given on p. 7-13 (pdf p. 513) states that:

*As currently envisioned, well owners seeking mitigation would submit a dry well or well incident report. From there, temporary measures to provide water would be initiated in coordination with the appropriate county. An application for well mitigation would then be submitted. Staff will then review the application and determine eligibility, evaluate long term solutions if applicable, and implement solutions as appropriate. Permanent remediation strategies may include setting the well pump to a lower depth, connection to a small water system or municipal water system, installation of residential water treatment equipment, or well replacement. However, the exact details of the Program will be determined during the development of the Program as described in the resolutions (Appendix 7G). (pdf p. 1364; note that Appendix 7G is titled Demand Management Resolution)*

The revised GSP also states that:

*GSAs will address any adverse impacts through projects to supplement supplies of water and through a well mitigation program. The impacts to groundwater dependent ecosystems that may occur without rising to significant and unreasonable levels constituting undesirable results will be evaluated within the next three years of GSP implementation (by January 2027). The GSAs are actively addressing data gaps and conducting monitoring to establish the*

*relationship between interconnected surface water and groundwater and evaluating the potential adverse effects of depletion of groundwater on interconnected surface water and related beneficial users. The GSAs will update the Undesirable Results definition to include depletion of interconnected surface water in the 5-year GSP Periodic Evaluation due in January 2027, and following the release of DWR's guidance on interconnected surface water analysis and SMC setting. (p. ES-24, pdf p. 42; pdf p. 426, pdf p. 467)*

*The GSAs are aware of the hardship to well owners if their wells no longer provide water due to management of the subbasin and the related decline in water levels. Currently in Tehama County residents whose household wells or springs have gone dry can apply for free water deliveries through North Valley Community Foundation (NVCF). Glenn County has a dry well incident reporting program. Water delivery is a temporary solution, and the GSAs will implement a well mitigation program to provide a long term solution. The GSAs have adopted a resolution (Appendix 4C) to commit to this program. The well mitigation program is a response to DWR's determination letter stating "Lastly, the GSA should explain how potential alternate supplies of water or well mitigation will be considered by the GSA during its management of the Subbasin in a project or management action as part of the GSP." (p. 6-14, pdf p. 428; note that Appendix 4C is titled, Development of Projected Water Budgets with Climate Change)*

The Well Mitigation Program described in Appendix 7H (pdf pp. 1372 - 1373) provides a list of Program Eligibility criteria that will be finalized at some unstated future date that may potentially include:

- *Property eligibility*
- *Eligible mitigation versus non-eligible mitigation (what will and will not be covered) based on evaluation of whether issues are related to groundwater management, which may include evaluation of:*
  - a. *Groundwater levels*
  - b. *Timing of groundwater decline*
  - c. *Groundwater quality*
  - d. *Well casing*
  - e. *Well depth*
  - f. *Minimum threshold exceedances*
  - g. *Historical overdraft*
  - h. *Recent hydrology*
  - i. *Recharge programs*
  - j. *Age and condition of well*
- *Acute, short-term mitigation*
- *Chronic, long-term mitigation*
- *Identified areas of concern where minimum threshold exceedances and/or undesirable results have been documented.*

The revised also GSP states that:

*All reported dry wells will be investigated by the GSAs. Reports will be considered factual until investigated and proven otherwise. The GSAs will the [sic] determine why each reported dry well no longer produces water. Reported dry wells will be confirmed to be dry wells if the cause is due to the GSA's management of the subbasin and declining water levels, instead of mechanical, electrical, or structural problems with the well and pump unrelated to declining water levels. The confirmation of dry wells and the subsequent solutions will be included in the Well Mitigation Program. (p. 6-12, pdf p. 426)*

The description of the Well Mitigation Program in Appendix 7H states that the District (Water Conservation District):

*....will fund the Program through long term GSA funding mechanisms as determined by the District Board. The estimated expenses for the Program are anticipated to range between:*

- \$300,000 for Program startup (years 1-2), and \$75,000 for Program administration thereafter (years 3+)*
- \$3,000,000 for Program mitigation measures, assuming (for planning purposes), that approximately 150 wells may require mitigation and that the cost of mitigation per well is approximately \$20,000, on average, although the precise number and costs of mitigation are subject to refinement during Program development. (pdf p. 1374)*

The GRAs “...anticipated that the Program funding will come from one, or a combination, of the following sources established by the Parties:”

- GSA fees and assessment*
- Funds generated through implementation of other projects and management actions (e.g., fines and/or penalties)*
- County/state/federal funding, as available*
- Other sources, as identified (pdf p. 1375)*

In summary, the revised GSP proposes a Well Mitigation Program that will provide resources to mitigate approximately 150 out of the 621 domestic wells the GSP will impact, 22% of a total of 2,822 wells (Figure 6-9, p. 6-29, pdf p. 443) Wells that are determined by the GRAs to be eligible for the program must match specific criteria that are yet to be determined and will be paid for by funding sources that are yet to be located. The GSAs adopted a resolution to commit to develop this Well Mitigation Program by January 1, 2026. “The Program shall cover eligible mitigation as of the Program start date and shall continue thereafter until groundwater sustainability is achieved during the GSP Implementation Period, or as otherwise directed by the District” (Appendix 7H, pdf p. 1375).



Apparently, the Corning Subbasin Well Mitigation Program won't address impacts to those wells that have gone or will go dry before the start date of the program, presumably January 1, 2026. Given that the Subbasin has had undesirable results from the GRAs' current management actions, and that those actions have resulted in undesirable results such as groundwater storage overdraft and dry wells, it appears that implementation of a meaningful Well Mitigation Program is at best uncertain given the somewhat arbitrary standards for program eligibility and the lack of known sources of funding.

5. The revised GSP was not updated with the benefit of using a revised Subbasin numerical model (p. ES-18, pdf p. 36). The Corning Subbasin numerical model won't be revised until 2027. The revised GSP acknowledges that the estimated annual change in groundwater storage in the November 2021 GSP was inaccurate when it estimated a positive 6,900 acre-feet per year (afy) average (ES-19, pdf p. 37). The estimated change in groundwater storage from 2019 through 2023 is actually an annual average of -31,200 afy, which means the Subbasin is in overdraft. The revised GSP notes that the "...empirical method used in annual reports likely has less certainty than the numerical model. Regardless of the methodology, numerical modeling or empirical method, there is significant uncertainty in the overdraft value" (p. ES-19, pdf p. 37).

The inference from the revised GSP's statement about uncertainty in overdraft volume suggests that the estimate of the Subbasin's sustainable yield may also be significantly uncertain. It is assumed that the positive 6,900 afy estimated change in annual groundwater storage was developed, at least in part, with the use of the Subbasin's numerical model. **The fact that the actual annual change in storage is -31,200 afy, or 38,100 afy less than what was estimated, suggests that the numerical model results for other sustainable parameters may also be in error, such as the volume of stream loss or gain, the groundwater levels beneath groundwater-dependent ecosystems, and the rate of subsidence**

The revised GSP re-calculates the sustainable yield by subtracting the uncertain 2019-2023 -31,200 afy average annual change in storage volume from the average annual pumping volume of 172,200 afy to arrive at a new sustainable yield of 141,000 afy (p. ES-19, pdf p. 37). The revised GSP proposes to wait until the 5-Year Period Evaluation in 2027 to determine a better estimate of sustainable yield with the aid of an updated numerical model (p. ES-20, pdf p. 38; p. 4-90, pdf p. 367). Until the 2027 5-Year Period Evaluation is completed, the GRAs will assume that the 2070 simulated sustainable yield is 141,000 AF (p. 4-90, pdf p. 367). This apparently means that the GRAs are intent on continuing to manage the Subbasin in a manner that today has achieved a condition of overdraft, which will perpetuate the existing undesirable results from the decline in groundwater levels. The revised GSP, with a management plan that is intent on continuing the overdraft of the Corning Subbasin for 3.5 more years, appears to conflict with the principles of sustainability required by SGMA.

#### **D. Conclusion**

Article X, Section 2 of the California Constitution requires that "the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation

of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.” For all the above reason, the Plan fails to meet SGMA’s goal of water resource sustainability and protection of the water rights of all beneficial users and uses and fails to prevent waste and unreasonable use of water. In accordance with legal requirements to protect the Public Trust, the Plan also fails. It appears that the GSP will foist the responsibility to demonstrate damage from undesirable results onto the unsuspecting public, creating an impossible burden for all but the large water districts with deep pockets. The Plan must be rejected by DWR and the SWRCB.

Respectfully submitted,



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