Len F comments on draft GSP for CMA
Rev. 10-8-21

Main comments/concerns:

1. When referring to "data gaps" for monitoring the Buellton Aquifer, the Plan needs to say those gaps are so spatially large that the groundwater level monitoring network is *inadequate and insufficient*. This statement is not only true, but also it will bolster the justification for the Plan's action items related to adding monitoring wells.
   Here are some specific suggested edits:
   - Page ES-9; top paragraph; change "could" to "should" in "….where the network could be improved".
   - P. ES-15: Implementation Group 2: Should emphasize the *necessity* of adding a monitoring well in the Upland.
   - Per page 2a-16 says there is a need to "develop a more extensive groundwater level database for the Buellton Upland". This database improvement should be identified as a necessity in order to have a "more extensive database".
   - Page 2a-42: Yes! This paragraph does a good job of clearly identifying the data gap and what needs to be done.
   - If Figure 3a.3-1 is compared with the text below Table 3a.3-2 on page 3a-19, the text is misleading. With only 4 wells to monitor the Aquifer, and with 2 of those wells on the extreme western end of the CMA, and the other 2 wells located rather far in the eastern portion of the CMA, there is a clear lack of sufficient monitoring wells for covering the vast majority of the Aquifer's area. This insufficiency is striking when the map of GW level wells is compared with the map of water quality wells. As noted on page 3a-20, the water quality monitoring wells do indeed "provide adequate spatial distribution". The text on page 3a-19 should be revised to say there is ***not*** sufficient spatial distribution of the wells to be used for GW level monitoring.
   - Page 3b-32: Given the lack of monitoring wells within the Buellton Aquifer, I question the accuracy of the statement that "the groundwater monitoring program for the Buellton Aquifer will provide adequate data to assess the measurable objective for chronic lowering of groundwater levels." Because "existing monitoring wells will be used…..until additional wells are added", the existing wells are too few in number and too spatially separated to provide adequate data.

2. **The Plan should more clearly call out the need to assess not only the location but also the interconnectivity, if any, between the Buellton Aquifer and the Alluvial subflow east of the Buellton Bend**.
   - Page ES-5, final paragraph: What is the actual "data gap" that is mentioned? Is it only "the extent that the Buellton Aquifer underlies the SY River and alluvial subflow" as is stated? I believe it also should include the extent to which there is inter-connectivity between the Aquifer and the subflow.

- Page ES-15: Implementation Group 2: The Plan should include a proposed action to better determine interconnectivity of aquifer and river subflow.
- Page 2a-15 states that "a precise understanding of the Buellton aquifer underneath the SYR is undetermined." And also says "Additional geophysical AEM data collected within the CMA will be able to fill in more details and validate the geologic structure of the Buellton Aquifer in the SYRA subarea". Thus, the GSP should have an action item to obtain the needed data and conduct an analysis.
- Page 2a-37: Paragraph 2 says "…the streamflow loses water to the ground water aquifers of the Santa Ynez River alluvium subarea". This statement is confusing because it refers to "*groundwater aquifers* of the alluvium" (my empahais added). Please clarify!
- If the paragraph 2 above is actually some surface/alluvial flows can help recharge the Buellton Aquifer, then that point needs to be made in several other places in this Plan.
- Page 2b-7 final sentence and page 2b-8 top sentence: Does the downward gradient (from the alluvium to the underlying aquifer) mean that subflow water in the alluvium can (and does) enter the Buellton Aquifer?
- Page 2b-35: Section 2b.6-2 says "there is no interconnected surface water in the CMA". However, the previous sentence seems to say there is a "data gap" regarding the extent of connectivity of the Buellton Aquifer and the river's alluvial subflows. Given this data gap, **the text shouldn't say there is no connectivity, but should say the connectivity east of the Buellton Bend is uncertain at this time due to lack of data**.
- Page 3a-21 at the bottom says "Surface Water Depletion monitoring network will include"…. "use of groundwater level monitoring as presented in Figure 3a.3-3 as a proxy to evaluate potential Surface Water Depletions". However, those existing monitoring wells (several of which are *west* of the Buellton Bend where there is no underlying Aquifer) must be drawing from the alluvial subflow and not from the groundwater aquifer. So, **the proposed network won't be using "groundwater level monitoring … as a proxy", it will be using subflow level monitoring as a proxy**. The text should be revised to be clear on this point.

3. **Having to wait for 2 consecutive non-drought years in order to trigger any action could be waiting too long, especially if the rainfall pattern of the past decade continues through the next decade. Another triggering level should be established if groundwater levels fall to a certain depth for a certain length of time under drought conditions**.
   - Page ES-11: The need to rely on data from 2 consecutive non-drought years is shown in small print in the table on page ES-11, but it also should be clearly stated in the text.
   - if we experience *only* drought years in the next decade (or alternating drought and normal/wet years), then minimum threshold levels won't be triggered. Thus, groundwater levels could plummet, and yet no mitigating actions will be taken. These facts should be clearly stated in the Exec Summary and elsewhere.
   - Pages ES-13 and ES-14: These pages should clearly state that the undesirable results thresholds will only be triggered based on monitoring data from 2 consecutive non-drought years.

4. **The Plan should call for a stream gage on the SY River <u>within the CMA</u>, preferably east of the Buellton Bend**.
   - Page ES-8: The final paragraph should specifically say there are <u>no</u> stream gages within the CMA on any streams nor on the river.
   - Page ES-15: Implementation Group 2: Add an action to install stream gages on at least the river and perhaps also on a stream in the CMA.
   - Page 1d-18: The section on streamflow monitoring should state that there is <u>no</u> streamflow monitoring currently taking place in the CMA.
   - Figure 2b.6-1: It's extremely difficult to distinguish the active gage symbol from inactive gage symbols. A reader could easily, but mistakenly, assume there are active gages within the CMA. A different symbol or color should be used for either the active or inactive gages.
   - Page 2b-33: The text should state that ***<u>all</u>*** gages within the CMA boundaries are inactive, including 3 on the river, 1 on Zaca creek and 1 on Nojoqui Creek.
   - Page 3a-22 ***<u>incorrectly states</u>*** that the surface water depletion monitoring network will include: "continued use of stream gage data from within the CMA….". However, there is ***<u>no</u>*** stream gage within the CMA (per Fig 2b.6-1). The text is incorrect and needs to be revised. Also, the Plan should recommend installing at least one or more gages within the CMA, at least on the SY River.
   - Page 3b-6, As noted in my comments above, in addition to the data gaps identified in this section, there is also a data gap for stream flows because of the lack of any stream gage within the CMA's boundaries. A program should be initiated to install stream gages and to monitor them.
   - Page 5a-4: Per my previous comments, a surface water gage should be proposed for installation on the SYR within the CMA.

5. **The Plan should commit to more and better public outreach for implementing "Management Actions" and for future plans and related studies or findings (such as AEM results)**.

<u>Additional specific comments:</u>

<u>Executive Summary:</u>

Page ES-1: Paragraph 1 says "Basin" means the entire S- Y- R- V- G- Basin, and then says "….current Basin conditions are sustainable…..". How is it sustainable if in the CMA we need to avoid continual loss of 200 AF (or more) per year?

Page ES-1: Perhaps change "Physical and political complexities…." to "Physical, political, and water management complexities….".

Page ES-2, bottom paragraph, line 4: Change "Upland which are" to Upland which is"

Page ES-3, paragraph 2, line 4: After "imported water" delete the word "primarily"; after Project, insert the word "only".

Page ES-7, paragraph 2 says surface water inflows were 32,040 AF/year; and the outflows were also 32,040. Is that correct?

Page ES-8, paragraph 2; should indicate the number of wells being monitored in the CMA by USGS, SBCWA, and the City, i.e., 3 separate numbers.

Chapter 1: Intro and Plan area

Page 1c-5: The heading is incorrectly numbered. Should be a "c" not a "d" in 1d.1-5 Public comments.

Page 1d-7. A new paragraph should be added at the end of this section to say that *although the Buellton Upland and the Alluvium are distinct subareas of the CMA, the Buellton aquifer underlies the Buellton Upland and underlies part of the Alluvium subarea east of the Buellton Bend.*

Section 1d.4-2: This section on "Management Plans" should be put into the Appendices.

...1d.5.: ……"Regulatory Programs"……. should be in the Appendices

… 1d.6……..."Land Use Considerations"……in the Appendices.

Chapter 2.

Page 2a-15 and the 3 cross section figures: Figure A-A' shows the alluvium (Qal) being on top of the Aquifer (Paso QTp and Careaga Tca), but the text says the Aquifer is separated from the SYR and subterranean alluvial deposits except west of the Buellton Bend.

- In contrast, page 2a-41 seems to say the opposite; it has a good description basically saying that the entire River upstream of the Lompoc Narrows is underlain by bedrock except for section from the EMA/CMA boundary to the Buellton Bend. This section includes "Paso Robles and Careaga Sand" …. "beneath the Santa Ynez River alluvial deposits."

Page 2a-19 , top paragraph. Typo with freestanding "i".

P. 2a-25; SY River and Tributaries: 1st, paragraph, Final sentence should be edited because the tunnels take water not only to *cities* (SB and Goleta) but also to Montecito, which is not a city. Jameson Reservoir and Doulton tunnel are owned and operated by the Montecito Water District.

P. 2a-26; paragraph 2; Wouldn't the tributary that has the eastern most confluence with the SY River be Nojoqui Creek rather than Zaca Creek? I think of Nojoqui Creek as being east of Hwy101 and Zaca Creek as being west of Hwy 101.

P. 2a-34: para 1; final sentence; change "with no permit issued for 13 parcels" to with no permits **yet** issued **as of August 2021** for 13 parcels.

P. 2a-41 mentions “additional geophysical AEM data” (in paragraph 2) and “The AEM geophysics study” (in paragraph 3) but the text should be clear on the status of the data and the study, or say that the study is a recommended action (if that is the case).

Groundwater Conditions

Page 2b-7: Seasonal High text: What are the units of measure for the hydrographs, e.g., # of feet to reach groundwater level? Or the elevation level above sea level? The units should be indicated in the text and on the maps (Figures 2b.1-1 and 1-2).

Page 2b-8 re Evaluation of Seasonal High and Low: When the text says “groundwater elevations measured in Fall 2019 are lower than those measured in Spring 2020”, I believe that means the recorded number is *higher*, i.e., the depth to groundwater is a larger number in the fall than in the spring. Perhaps this point should be made clear, because it can be confusing for a general public reader who may be thinking of depth to water rather than elevation - - or vice versa.

Figure 2b.6-3: The drawn line boundary of the Buellton Aquifer (near Buellton Bend) is very helpful in this Figure. It should be similarly shown on some other maps, especially Figures 2a.2-1, and/or -2, -3, and -4.

Water Budget

Fig 2c.1-1 shows (and is titled as) the HCM for the *Western* MA, not the CMA; and it even includes the *Lompoc* Reclamation Plant. This graphic should be replaced by the HCM graphic in the PowerPoint slides which shows a wastewater plant but doesn’t label it as the Lompoc Plant. Alternatively, since one HCM is being used for both the WMA and the CMA, this Figure could be re-titled and the drawing re-labeled so the Lompoc RWRP becomes simply “Wastewater Recharge” since wastewater recharge happens in Buellton too.

Page 2c-21. Says “Santa Rita Upland (CMA) and Buellton Upland (WMA)…”. Shouldn’t those CMA & WMA designations be switched?

Figure 2c.2-1: For inflows, are any “river alluvium inflows” actually visible on this chart? I can’t see any.

- Isn’t this chart incorrectly showing Imported SWP water prior to 1997?
- why is the Imported SWP shown as a consistent dark line? Shouldn’t there be great variability over time?
- is the Net Percolation color actually visible on the chart? I see only SY River and alluvium colors.

Page 2c-42: While Figures 2c.3-1A&B are excellent in giving annual averages, there should be another figure to show the data from page 2c-42, i.e., the net decline of 10,880 AF over the total years of the current water budget period of 2011-2018.

Monitoring Networks

Page 3a-14: The 2nd bullet point regarding CCWA deliveries is irrelevant to this issue. Although the SWP data is appropriately part of the water budget, the amount of SWP water delivered in the CMA (i.e., to the City of Buellton) doesn't help to "estimate current surface water conditions within the CMA". If you have data to show a relationship between SWP deliveries and surface water conditions, then please present it here. However, I doubt that any such relationship exists, partly because poor surface water conditions due to drought often mean low SWP deliveries due to drought in Northern CA.

Page 3b-3; final paragraph says: "Water levels and GW in storage in the SYR Alluvium fluctuate in response to water rights and environmental regulations." No! Better to say: *Alluvium storage fluctuates in response to: precipitation, river flow (including releases from Cachuma), water diversions from the river, pumping from the alluvium, surface evaporation, and phreatophyte ET.* Then you could add that water rights and environmental regulations influence water releases, diversions, and pumping.

- *Also, the sentence is using the term "groundwater in storage" for the alluvium! !*

Page 3b-3, final paragraph: Insert *data* between "groundwater elevation" and "is needed".

Projects and Actions

Table 4a.1-2: For "Supplemental Imported Water", I contend that the "estimated benefit" would be Low, not *Low to Medium*. The text later in the chapter actually identifies why, i.e.: cost of SWP water would be very high; SWP water is often unavailable when it is most needed during drought years; banking the water somewhere else would add to the cost; etc. Also, I believe Buellton residents won't want to substitute aquifer water with more expensive SWP water. Retaining this action item in the Plan is fine, but the "benefit/cost" would be low.

Table 4a.2-1: Change spelling of "Tired" to Tiered.

Page 4a.-35: Since "Group 4" actions seem to be out-of-the-box thinking, how about adding a regional seawater desalination plant to the list? A desal plant on Vandenberg SFB could pump water in a new pipeline along CCWA's pipeline route.

Page 5a-1, table: The Group 1 PMAs should be included in this table, either individually or as a line item, e.g., "Group 1 PMAs", with a "Task" to start implementing them in WY2023.

Page 5a-3: Final paragraph quotes a cost for 2 new monitoring wells. Why not quote a cost for only 1 well, which at least would be more affordable? - - even if 2 wells are sought. Also, this kind of project might be ideal for a future grant from the State or the Feds. This project should be included in the County's IRWM Plan.

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