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Delta-Sierra Group
Mother Lode Chapter
P.O. Box 9258, Stockton CA 95208

Eastern San Joaquin Groundwater Authority
P. O. Box 1810
Stockton, CA 95201

11 June 2018

Re: Model and Water Budget

The Sierra Club Water has adopted a water policy to promote proper management for a healthful and aesthetically pleasing natural environment. The policy calls for thorough water inventories including historic water yields and uses, with priority where substantial demands are anticipated. The Eastern San Joaquin Subbasin is a high priority basin which is critically overdrafted requiring that managers of the resource, the Eastern San Joaquin Groundwater Authority, develop a groundwater sustainability plan by January 2020 that must contain four main components:

1. A description of the plan area and groundwater basin setting (including an assessment of current and future groundwater conditions) and a **water budget**.
2. Sustainability goal which must avoid all six undesirable results
3. Projects and management actions that will achieve the community's sustainability goal, and
4. A monitoring plan that will measure progress over time.

I began asking for model and water budget information in 2017, continuing by email in February and April 2018 and was told that water budget information was not available for public review. On May 8, 2018 at 10:47 AM a pdf of the presentation of the model and water budget was sent out to interested parties on the ESJGA email list. On May 9, 2018 the Eastern San Joaquin Groundwater Authority unanimously approved the motion: approve of the use of the groundwater model in support of the development of the GSP, which include efforts to verify calibration with specific water agencies that have been identified. The model and water budget which was approved did not include references and descriptions of the source of information used.

May 9, 2018 Presentation Water Budget Summary
We were informed that the Model Development was open and transparent with the following Stakeholder Participation:

- California Water Services
- Calaveras County Water District
- Central Delta
- DWR North Central District
- Escalon, City of
- Lathrop, City of
- Linden County Water District
- Lockeford Comm. Services District
- Lodi, City of
- Manteca, City of
- North San Joaquin Water Conservation District
- Oakdale Irrigation District
- Ripon, City of
- San Joaquin County
- South San Joaquin Irrigation District
- Stanislaus County
- Stockton, City of
- Stockton East Water District
- Woodbridge Irrigation District

This list does not include many of the SGMA identified stakeholders, general public, domestic well owners, public water systems, environmental interests, the federal government, California Native American tribes and disadvantaged communities.

We were informed that the Integrated Water Flow Model (IWFM) used is a public domain model developed and maintained by the California Department of Water Resources and has the same model platform as C2VSim. The model includes land-surface processes, groundwater flow, streamflow, physical systems integration and water budgets. Of concern is that details were missing about how the summary values were derived and the sources of data. Also, cropping patterns have changed considerably since 2015 as reflected in the recent increased numbers of permanent crops seen within the basin. The model's ability to capture this crop distribution change was not mentioned nor were acreages by crop type presented. We were informed that 63 wells were selected from 160 calibration wells and that 20 wells were used for statistical analysis. Descriptions of these wells or locations were not specified.

Questions and Request for Information

1. What is the actual water demand and source for each GSA area?
2. What are the boundary conditions for the 20 subregions or 17 GSA areas?
3. Why were SOI boundaries used as reference for cities?
4. What are the biggest groundwater gains and losses in our basin (top and bottom 20%)
5. What proportion of the groundwater wells are deeper than 500 feet and what fraction of the total pumping do these wells represent?
6. What portion is provided by individual domestic wells and/or irrigation wells (not associated with GSA entity)?
7. What are the data sources for water budget and model?
8. Provide summary well information and GSA location for the 160 calibrations wells 1995-2015, 63 selected and 20 used for statistical analysis.
9. Where in the Subbasin are the wells located that are most aligned with the model and where are the wells that deviate significantly from the model projections? What are some possible reasons if a pattern observed.
10. What are the land use assumptions for each GSA area?
11. What are the cropping patterns for each GSA area?
12. What were the categories used to get the estimated average annual groundwater budget?
13. How did the model perform when projecting conditions observed in 2016 and 2017?
14. How does the model include projected effects of climate change?
15. Can the model be used to perform a vulnerability analysis specifically relating to human and ecological communities that may be affected by management decisions, such as domestic well depths and species habitat, and groundwater-dependent ecosystem locations.

Thank you for your assistance and we are looking forward to reviewing the information requested.

Sincerely,

Mary Elizabeth M.S., R.E.H.S.
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Sierra Club
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