

To: Committee Members, Paso Robles Groundwater Sustainability Plan
From: Dennis R Loucks, Fred Hoey and Greg Grewal
Date: October 17,2018

Re: Groundwater Sustainability Plan, Chapter 5, Subsidence.

Dear Committee Members,

Our group is concerned that the consultant, Montgomery & Associates, is not adequately addressing the subsidence that has occurred in the Paso Robles Groundwater Basin.

We have reviewed the dismissive statements in the PowerPoint presentation and the incomplete statements made in Chapter 5.4 Subsidence. As you know, Subsidence is a key requirement in the Sustainability Plan and it cannot be cavalierly dismissed, as it has been to date.

Please take the time to review our research and reasons why this key SGMA requirement must be considered carefully.

Background:

Several weeks ago, we discovered a USGS report (open file report 00-447), Titled: **Use of InSAR to Identify Land-Surface Displacements Caused by Aquifer-System Compaction in the Paso Robles Area, San Luis Obispo County, California, March to August 1997**

The report authored by D.W. Valentine, Densmore, Galloway and Amelung was completed in 2001 and can be found on the USGS web site. The report, nine pages in length, discusses the methodology, results, areas of study, and provides a summary and conclusion. There are also four maps/images. We encourage the Committee Members to review this report and to compare with the findings of the Consultant.

Our summary of USGS report:

The report stated that in the Paso Robles area, about 3 miles northeast of Paso Robles there was downward land-surface displacement of .06 inches, northwest of Paso Robles, .08 inches downward displacement, and 2.1 inches in the southern signature area encompassing approx..75-square-miles (Figure 4, USGS)

Subsidence was also located in other areas of the County:

Atascadero Area:

“The phase signature shows about 1 to 2 inches of downward ground displacement, which coincides with the seasonal water-level declines between spring and fall 1997 of about 54 feet (figure 4)”

Paso Robles Groundwater Basin:

“In the Shandon and Red Hills areas, as much as 2 inches of displacement was identified, which is apparently related to pumping for agricultural use.” Other areas outside of our basin were also identified, Morro Bay, Arroyo Grande/Pismo Beach/Nipomo, Santa Maria Valley area, and Point Sal areas.

After reading the USGS report, we were astonished that this had not been, to our knowledge, ever discussed in the numerous engineering studies completed in the past twenty years. We felt it was a vital element that required further investigation. Considering the report is 21 years old, and subsidence of 2 inches was documented in a sixth month period, what is the current condition of the basin 21 years later? Has it stabilized? or has it continued to subside? Our fear is that with the growth of agriculture and rural development it may be unwelcome information. Be it as it may, it is necessary, in fact a requirement, of SGMA that subsidence be addressed.

Therefore it was our recommendation that the USGS study be updated and that monitoring stations be established with regard to subsidence. In fact, we forwarded a letter to California Department of Water Resources requesting that subsidence monitors be required in Groundwater Sustainability Plans. A copy was forwarded to the Consultant, Montgomery & Assoc.

Please compare our brief summary of the USGS report to that of Montgomery & Assoc.:

5.4 Subsidence

Land subsidence is the lowering of the land surface. While several human-induced and natural causes of subsidence exist, the only process applicable to the GSP is subsidence due to lowered groundwater elevations caused by groundwater pumping.

Direct measurements of subsidence have not been made in the Subbasin using extensometers or repeat benchmark calibration; however, interferometric synthetic aperture radar (InSAR) has been used in the area to remotely map subsidence. This technology uses radar images taken from satellites that are used to create maps of changes in land surface elevation. The studies done in the area show that a localized area three miles northeast of the City of Paso Robles had a downward displacement of .06 to 2.1 inches between Spring 1997 and Fall 1997 (Valentine, D.W. et al., 2001)

5.4 Subsidence, The Consultant's summary doesn't mention other relevant areas in the referenced USGS report, such as 2.1 inches in an approx. 75 square mile area, and about 2 inches of displacement in the Shandon and Red Hills area, apparently related to pumping for agricultural use.

To further compound this issue, when the Consultant presents a PowerPoint that states in reference to Subsidence:

“No direct measurements”

“Some satellite data suggest small ground surface drops over”

“ Not a significant concern”

“ Subsidence: Not a significant problem”

We find the Consultant's comments dismissive and incomplete.

Conclusions/Recommendations:

Our group of concerned citizen's are not Engineer's or Hydrologists but we, as many other concerned citizens, recognize that the current condition of the basin must be determined in order to effectively manage the basin in the future for the benefit of all residents.

We firmly believe that evidence exists that would lead a reasonable person to conclude that subsidence in the basin has occurred. We feel it is now reasonable to determine if subsidence has stabilized or has continued, please consider updating the InSAR through the USGS and consider installing subsidence monitors.

Enclosures: USGS Open file report 00-447

Cc: Committee Members