

8. Progress Towards Implementing the GSP

8.1 Introduction

The participating agencies of the Basin's GSA agree to work together to protect the groundwater resources of the Basin to meet the current and future beneficial uses in the Basin by developing a GSP that conforms with the requirements of the SGMA.

The hydrologic conditions and hydrogeologic setting of the Basin and ongoing proactive water management have demonstrated the resilient nature of the Basin and avoidance of groundwater overdraft conditions. As a result, the DWR has designated the Basin as very low basin priority that is being sustainably managed.

Because the Basin is currently being managed sustainably, as evidenced by historic groundwater levels in the Basin, there are no projects or management actions that are required to achieve sustainability. Several management actions and conceptual projects were included in the GSP to provide a means to ensure the Basin is operated to maintain its sustainable yield and sustainability.

This section describes the project and management actions that are in progress, recently implemented, or anticipated in the Basin to maintain sustainability and address data gaps.

8.2 Implementation Approach

Because the Basin is currently being managed sustainably, implementation of additional projects and management actions to reach or maintain sustainability are not necessary at this time. However, project and management actions are being taken to address identified data gaps in the GSP and to develop a more complete model of the Basin.

8.3 Basin-Wide Management Actions and Projects

As the Basin is considered very-low priority by DWR and it is currently being operated sustainably, there were no Basin-wide projects implemented during WY 2024.

8.4 Area-Specific Projects

There are no area-specific projects being implemented at this time.

8.5 Summary of Progress toward Maintaining Basin Sustainability

Relative to the Basin conditions at the end of the study period as reported in the GSP, this Fourth Annual Report (WY 2023-2024) indicates the Basin is still being managed in a sustainable fashion. There are fluctuations in groundwater levels, but elevations have been maintained above the MTs at all RMS locations. Continued evaluation of the Basin through Annual Reports, and implementation of projects and management actions, work to ensure the Basin continues to achieve sustainability.

8.5.1 Subsidence

Land subsidence is the lowering of the land surface. As described in the GSP, several human-induced and natural causes of subsidence exist, but the only process applicable to SGMA are those due to permanently lowered ground surface elevations caused by groundwater pumping (GEI 2022). Historical subsidence can be estimated using InSAR data provided by DWR. InSAR measures ground elevation using microwave satellite imagery data. The GSP documents zero historical subsidence in the Subbasin based on data provided by DWR depicting the difference in InSAR measured ground surface elevations between June 2015 and June 2018. The GSP established minimum thresholds for InSAR measured land subsidence as, "...no more than 0.1 foot in any single year and a cumulative 0.5 foot in any 5-year period" as measured using InSAR between June of 1 year and June of the following year (GEI 2022).

Updated InSAR data has been provided by DWR through October 2023. As discussed in the GSP, to minimize the influence of elastic subsidence, changes in ground level should be measured annually from June of one year to June of the following year (GEI 2022). For this WY 2024 Annual Report, the single-year land subsidence was measured using InSAR from June 2023 through June 2024 and the 5-year land subsidence was measured from June 2019 through June 2024. According to Towill, Inc. (2024) there is a potential error of +/- 20 millimeters (or 0.066 feet) associated with the InSAR measurement and reporting methods. Therefore, an InSAR measured land surface change of less than 0.066 foot is within the noise of the data and is equivalent to no evidence of subsidence. Considering this range of potential error, examination of the single-year change InSAR data from June 2023 to June 2024 show that zero land subsidence has occurred (**Figure 16**). Considering the same potential error for the 5-year cumulative change InSAR data from June 2019 to June 2024 it is apparent that as much as 0.09 foot of subsidence has occurred in an isolated area in the northern portion of the Subbasin during this period (**Figure 17**). Although minor land subsidence is documented during the 5-year period of June 2019 to June 2024, neither of these results indicate an undesirable result as specified by the land subsidence minimum thresholds. The GSAs will continue to monitor and report annual subsidence as more data become available.

8.5.2 Interconnected Surface Water

Although the Alluvial Aquifer hydrographs presented in **Attachment G** typically show declining water levels in response to drought periods, they also demonstrate the ability of the Alluvial Aquifer to fully recharge during wet periods. Based on this long-term stability of groundwater elevations exhibited in the Alluvial Aquifer RMS wells it appears that no long-term interconnected surface water depletion is occurring in the Basin.

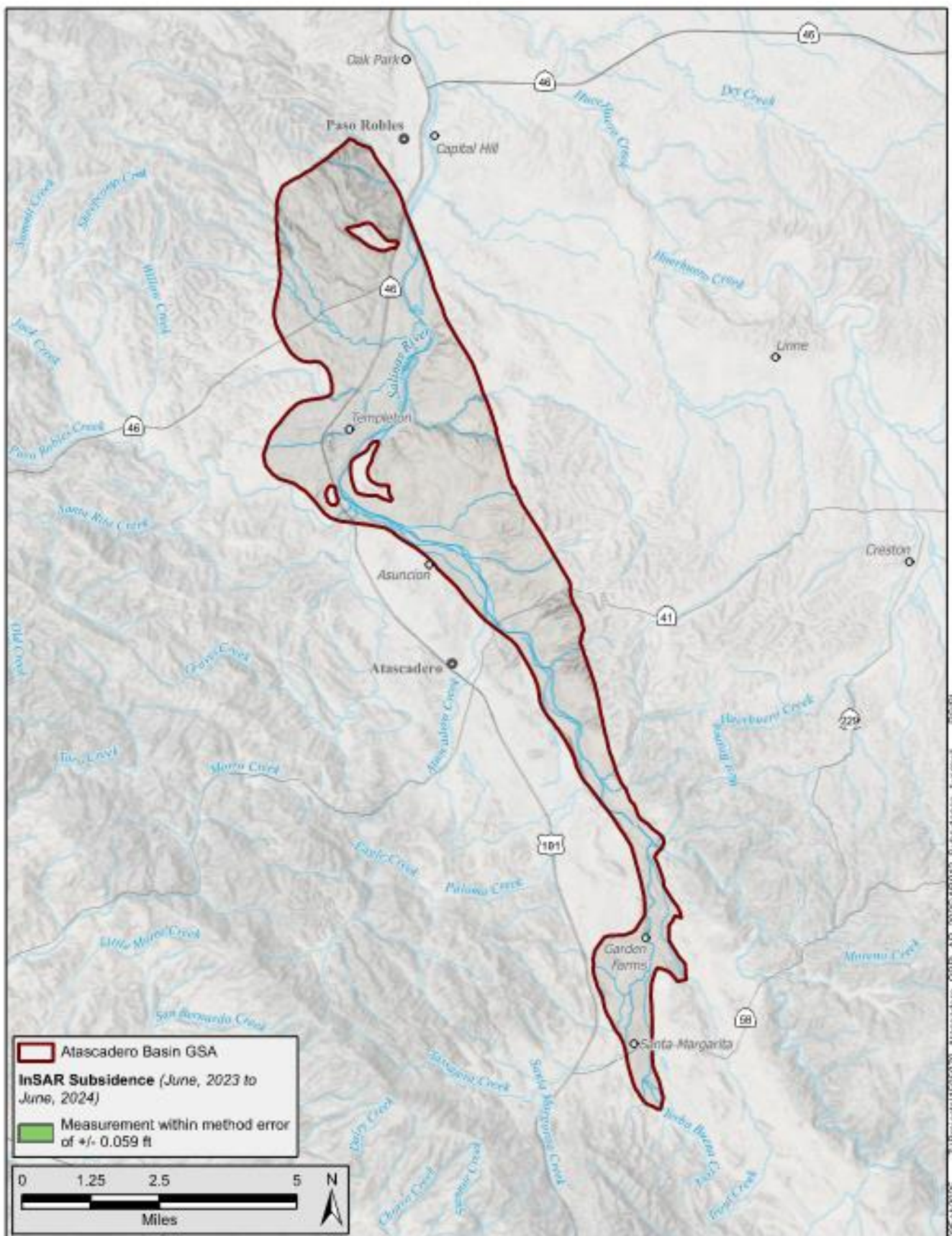
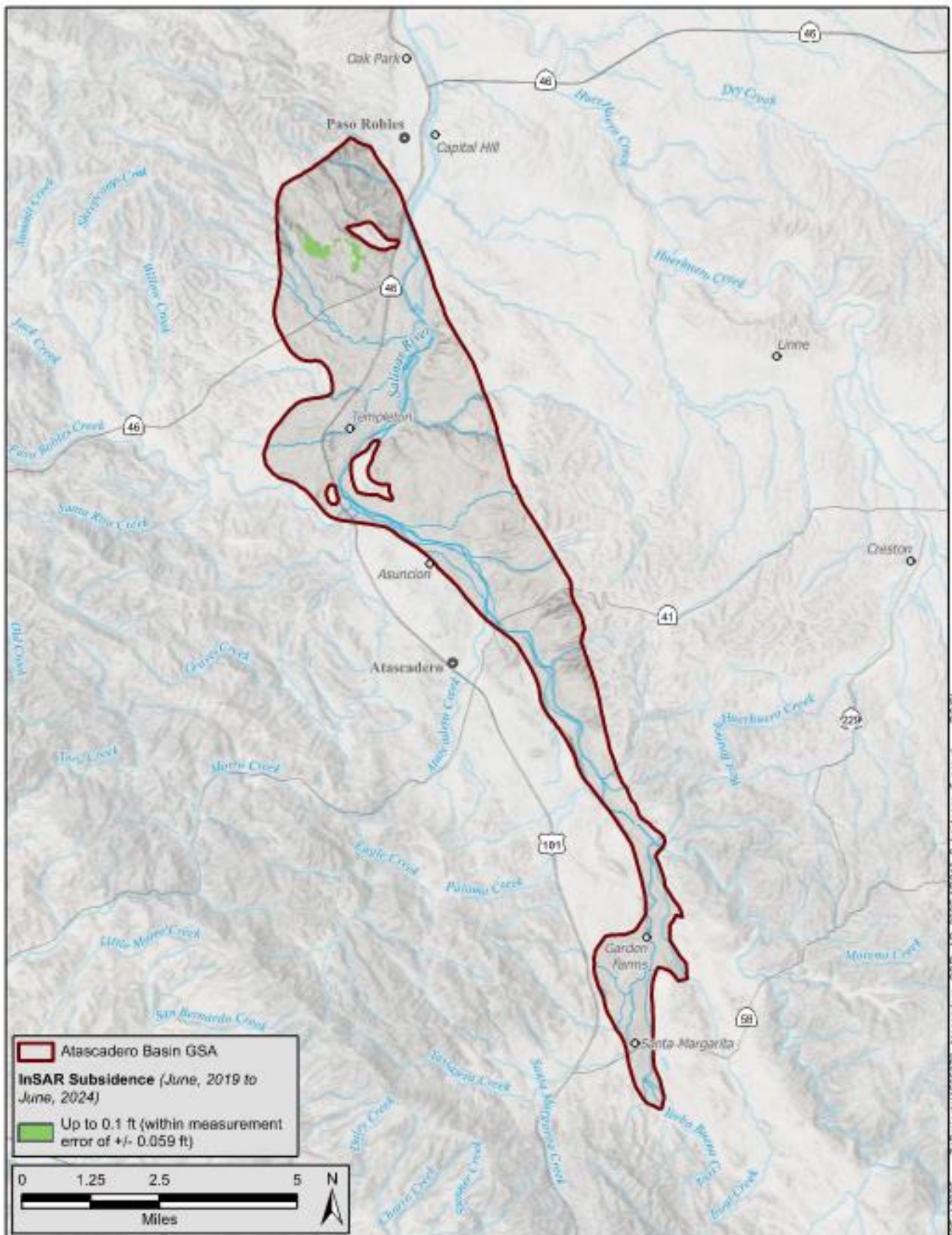


Figure 16: Land Subsidence Measured by InSAR for June 2023 to June 2024



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Figure 17: Land Subsidence Measured by InSAR for June 2019 to June 2024

8.5.3 Groundwater Quality

General Groundwater Quality

Although groundwater quality is not a primary focus of SGMA, actions or projects undertaken to achieve sustainability cannot degrade water quality to the extent that they would cause undesirable results. As stated in the GSP, groundwater quality in the Basin is generally suitable for both drinking water and agricultural purposes (GEI 2022). Five constituents of concern (COC's) were identified and discussed in the GSP. These COC's identified in the GSP are total dissolved solids (TDS), sodium, chloride, nitrate, and boron. For this annual report, concentrations of these five COC's were analyzed for WY 2024 using data from the GeoTracker Groundwater Ambient Monitoring and Assessment (GAMA) Program database (GAMA 2025). All of the COC's reviewed show a steady concentration trend since 2016.

Overall, there are no significant changes to general groundwater quality since 2016, as documented in the GSP. Implementation of sustainability projects and/or management actions, as presented in the GSP, in this annual report, or in future reports or GSP updates, are not anticipated to result in degraded groundwater quality in the Basin. Any potential changes in groundwater quality will be documented in future annual reports and GSP updates.

Perfluoroalkyl Substances in Drinking Water

In April 2024, EPA finalized an MCL of 4 ppt for perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS). There is no agricultural goal for PFOA and PFOS. Both contaminants are part of a group of Per- and Polyfluoroalkyl Substances (PFAS), a category of manufactured chemicals that have been used in industry and consumer products. Commonly, PFOA is used for nonstick cookware, and PFOS is used in stain and water-repellant fabrics and firefighting foam. PFAS typically break down slowly and are highly hydrophobic.

These contaminants have been detected in five wells within the AMWC system. The origin of these contaminants in our water supply is currently unknown. AMWC is currently performing an investigation to determine the source and is continuing to monitor the PFOS, PFOA, and PFHxS levels in its water sources.

AMWC is required to inform its customers that the drinking water it supplies has concentrations of three perfluoroalkyl substances that exceed the notification levels established by the California State Water Resources Control Board (Water Board) pursuant to Health and Safety Code Section 116455. These substances are perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and perfluorohexane sulfonic acid (PFHxS). AMWC is currently designing a treatment facility that will remove PFAS from the water using granulated activated carbon (GAC). A pilot study using different mediums shows that GAC effectively removes PFAS from the water. The facility design is approximately 30% complete.

8.5.4 Summary of Changes in Basin Conditions

Groundwater elevations have remained relatively consistent. While fluctuations are observed between years based on climatic conditions, groundwater elevations remain consistent with the historical record

and no threshold exceedances occurred. Similarly, groundwater in storage in the Basin remained relatively constant, with fluctuations due to climatic conditions observed. Water Year 2024 was an example of this with the wet year resulting in 3,600 acre-foot increase in groundwater storage in the Basin. These fluctuations are within the historical record. The volume of groundwater extractions in the Basin has remained relatively consistent with a slight upward trend (averaging between 14,000 and 16,000 AFY; Section 4.4 – Total Groundwater Extraction Summary).

This slight increase has not manifested as a significant change to groundwater levels or groundwater in storage.

8.5.5 Summary of Impacts of Projects and Management Actions

As of this Annual Report, projects and management actions have yet to be implemented in the Basin at a level impacting the management of the Basin. The Basin is very low priority by DWR and continues to be operated sustainably so no projects or management actions are needed at this time. Additional projects and management actions, as outlined in the GSP, shall be implemented if deemed necessary to maintain groundwater sustainability in the Basin.

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