3. Groundwater Elevations (§ 356.2[b][1])

This section provides a report on GWEs in the Basin measured during spring and fall of 2024. Accompanying maps present the most up-to-date seasonal conditions in the Basin.

Data provided characterizes conditions for the two principal aquifers in the Basin – the Alluvial Aquifer and Paso Robles Formation Aquifer. Monitoring data is reviewed for quality and an appropriate time frame is chosen to provide the highest consistency in the wells used for each reporting period. Data quality is often difficult to ascertain when measurements are taken by other agencies or private well owners, and well construction information may be incomplete or unavailable. This means that a careful review of the data is required prior to uploading to DWR's Monitoring Network Module (replacing the current California State Groundwater Elevation Monitoring Program [commonly knowns as, CASGEM] program) to verify whether measurements are trending consistent with trends of previous years and with the current year's hydrology and level of extractions.

3.1 Principal Aquifers

Water-bearing sand and gravel beds are generally grouped together into zones that are referred to as aquifers. The aquifers can be vertically separated by fine-grained zones that can impede movement of groundwater between aquifers. As discussed in Section 2 – Atascadero Basin Setting and Monitoring Networks, there are two principal aquifers in the Basin:

- **Alluvial Aquifer** – A relatively continuous aquifer comprising alluvial sediments that underlie the Salinas River and tributary streams
- **Paso Robles Formation Aquifer** – An interbedded aquifer comprised of sand and gravel lenses in the Paso Robles Formation

Some of the groundwater level information in this report, such as contour maps, is provided by aquifer.

3.2 Seasonal High and Low Groundwater Elevations (Spring and Fall) (§ 356.2[b][1][A])

The assessment of groundwater elevation conditions in the Basin as described in the GSP is largely based on data from the county of San Luis Obispo Flood Control and Water Conservation District (SLOFCWCD) groundwater monitoring program. Groundwater levels are measured by the SLOFCWCD through a network of public and private wells in the Subbasin. Data from many of the wells in the monitoring program are collected subject to confidentiality agreements between the SLOFCWCD and well owners. Consistent with the terms of such agreements, the well owner information and specific locations for these wells are not published in the GSP and that convention is continued in this Annual Report. To maintain consistency with the GSP and represent conditions that can be easily compared from year to year, this Annual Report used the same set of wells as was used in the GSP. Groundwater level data from 29 to 30 Paso Robles Formation wells and 32 to 33 alluvial wells are used to create the groundwater elevation contour maps. The well locations and data points are not shown on the maps to

preserve confidentiality. Twenty-four wells in the Subbasin are being used as RMS wells for the purpose of monitoring sustainability indicators. Owners of these wells have agreed to allow public use of the well data. As implementation of the GSP progresses, it is anticipated that additional wells will be added to the data set and that some of the wells with current confidentiality agreements will be modified to allow for public use of the data. No wells were added to the monitoring network during the last year.

It was discovered in spring 2023 that the depth to water data reported in the SLOFCWCD database is presented as a calculated depth to water from the ground surface elevation rather than as measured from the reference point elevation of each well, as was previously understood. This misunderstanding has resulted in prior reporting of groundwater elevations (GWEs) that are slightly off from their true value. This same misunderstanding also affected the setting of measurable objectives and minimum thresholds in the GSP. However, all GWEs presented in this Annual Report have been corrected and represent true groundwater elevations, including both current water year (2023) and historical values. The measurable objectives and minimum thresholds for each well have been corrected using the same approach. The resolution of this issue is essentially clerical. Because both the GWEs and the measurable objectives and minimum thresholds have been moved by the same amount in each well there is no change in status, regarding sustainable management criteria for each well. A more detailed explanation is provided in **Attachment F.**

In accordance with the SGMA regulations, the following information is presented based on available data:

- Groundwater elevation contour maps for the seasonal high and seasonal low groundwater conditions in each principal aquifer. Contour maps were prepared for the seasonal high groundwater levels, which typically occur in the spring, and the seasonal low groundwater levels, which typically occur in the fall. In general, the spring groundwater data are for April and the fall groundwater data are for October. For consistency with the GSP, the same well data sets were used for contouring. The most recent presentation of groundwater conditions representing the spring and fall for WY 2024 are shown in this section.
- Change in groundwater in storage maps for each principal aquifer are prepared comparing the groundwater elevations between spring 2023 to spring 2024 and fall 2023 to fall 2024 are also shown in Section 7 – Change in Groundwater Storage.
- Hydrographs for RMS wells (**Attachment G**).

3.2.1 Alluvial Aquifer Groundwater Elevation Contours

Data from public and private Alluvial Aquifer wells were used for contouring groundwater elevation contour maps for spring and fall for WY 2024 (**Figures 4 and 5**). Contour maps were generated using a computer-based contouring program and checked/modified by a qualified hydrogeologist. Groundwater elevation data deemed unrepresentative of static conditions or obviously erroneous were not used for contouring.

In general, alluvial groundwater elevations range from approximately 980 feet above mean sea level (ft msl) in the Santa Margarita area to approximately 660 to 670 ft msl in the north where the Salinas River exits the Basin. Alluvial groundwater elevations are generally slightly higher in the spring than in the fall.

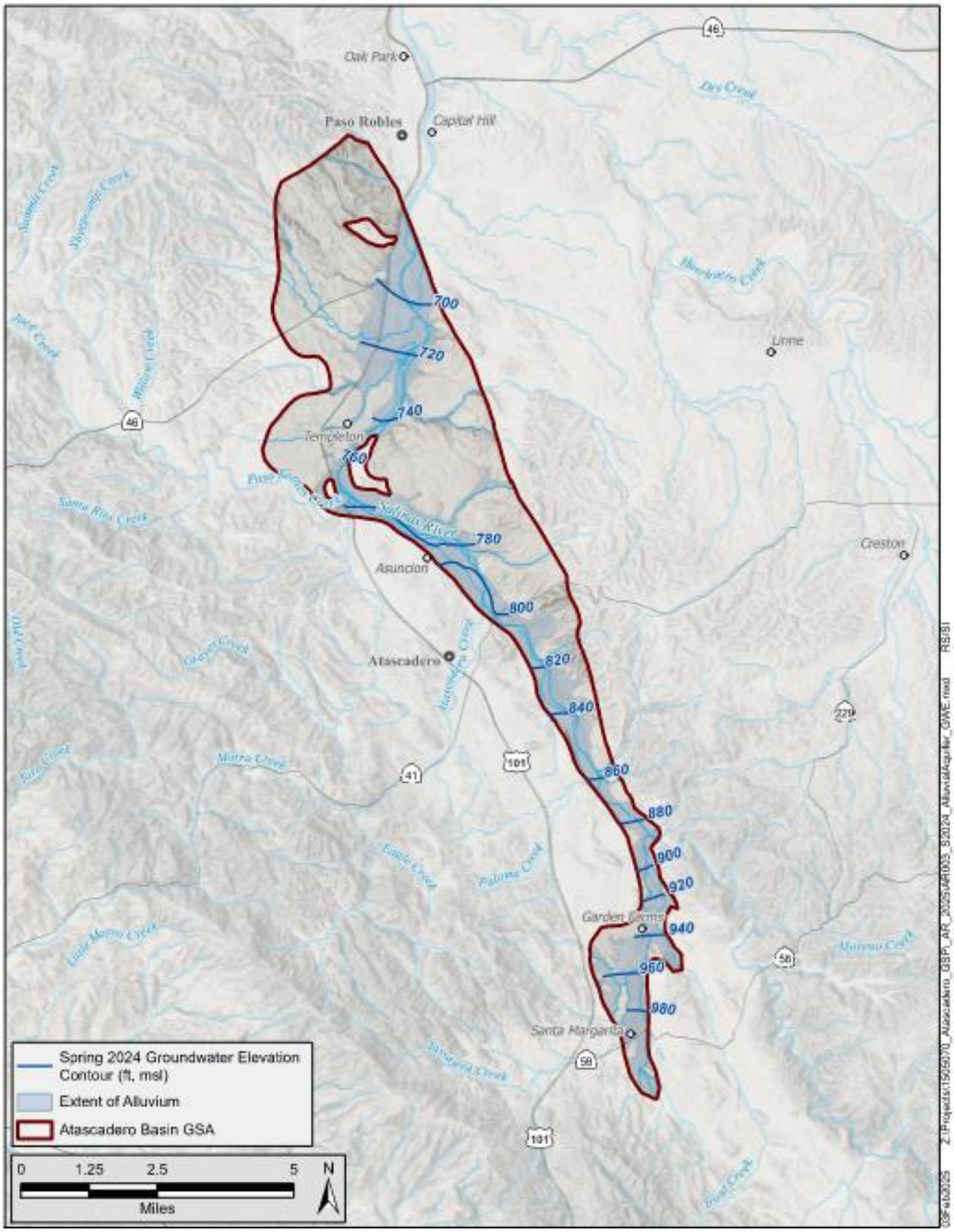

Figure 4: Alluvial Aquifer – Groundwater Elevations Spring 2024

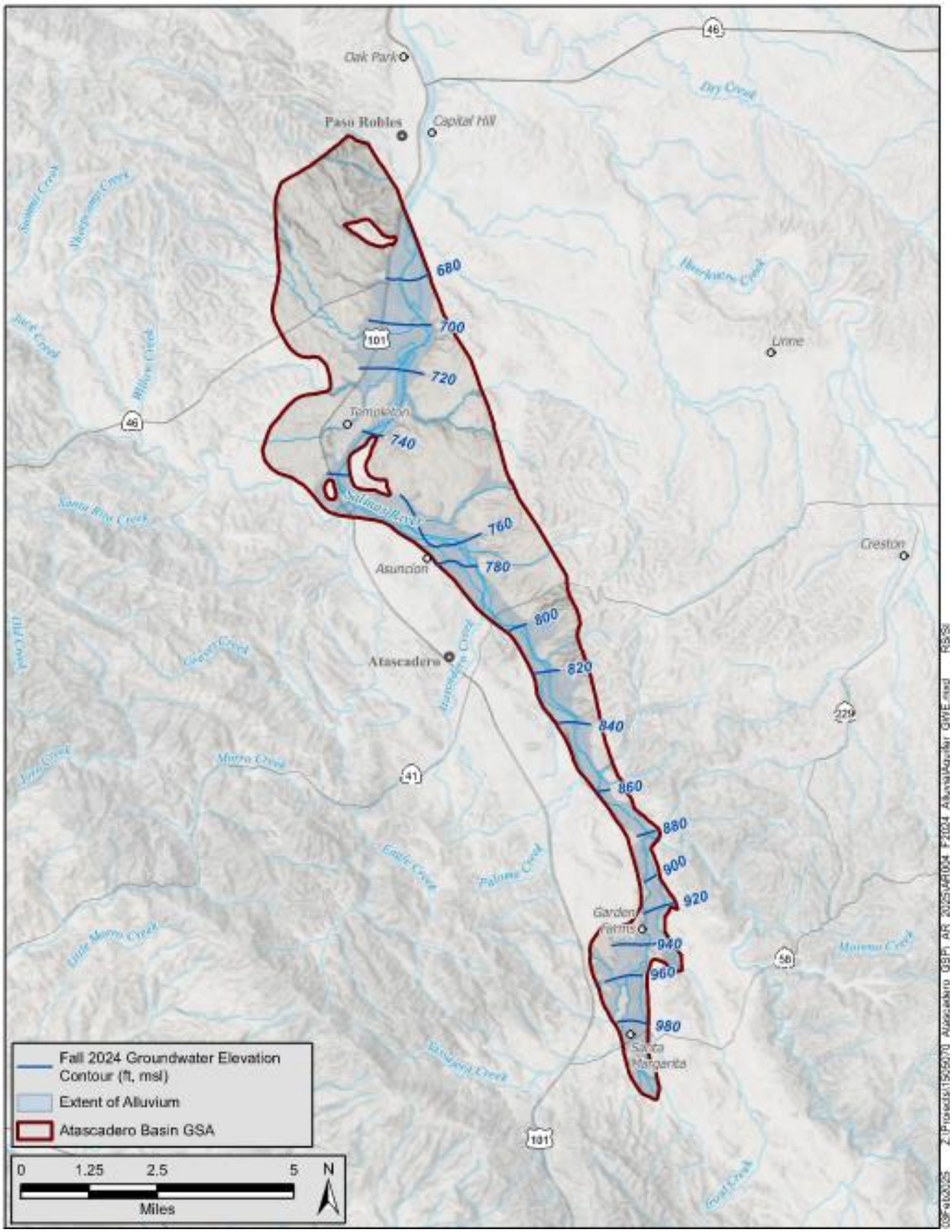

Figure 5: Alluvial Aquifer – Groundwater Elevations Fall 2024

3.2.2 Paso Robles Formation Aquifer Groundwater Elevation Contours

Data from public and private Paso Robles Formation Aquifer wells were used for contouring groundwater elevation contour maps for spring and fall of WY 2024 (**Figures 6 and 7**). Contour maps were generated using a computer-based contouring program and checked/modified by a qualified hydrogeologist. Groundwater elevation data deemed unrepresentative of static conditions or obviously erroneous were not used for contouring.

Groundwater elevations observed in the Paso Robles Formation Aquifer in WY 2024 were generally similar to those observed in WY 2023. Positive and negative changes in GWEs from year to year are observed in different parts of the Basin, as has been observed historically. Seasonal trends of slightly higher spring GWEs compared with fall levels continued in each of the water years.

3.3 Hydrographs (§ 356.2[b][1][B])

Groundwater elevation hydrographs for the 24 RMS wells in the Basin are presented in **Attachment G**. These hydrographs also include information on well screen interval (if available), reference point elevation, as well as the chronic lowering of groundwater levels measurable objectives (MOs) and minimum thresholds (MTs) for each well that were developed during the preparation of the GSP.

As described in the GSP, the average of the spring and fall groundwater elevation measurements in any one water year constitutes the value that shall be measured against MTs and MOs established for each RMS well. If only one measurement was taken for the year, then that value alone is measured against the MT and MO.

The 24 RMS hydrographs presented in **Attachment G** show the measured spring and fall 2024 groundwater elevations. Of the 24 RMS hydrographs presented in Attachment G all the RMS wells exhibit an average of spring and fall 2024 groundwater elevations above the MT.

Hydrographs for the Alluvial Aquifer RMS wells show no discernable long-term trends. Although the Alluvial Aquifer hydrographs 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.

Hydrographs for the Paso Robles Formation RMS wells generally illustrate overall stability of water levels throughout the Basin. Although, hydrographs for Paso Robles Formation Aquifer wells completed in the northern part of the Subbasin exhibit a trend of declining water levels since the 1990's, each of the wells show a notable recovery since the end of the recent drought in 2017. Seventeen of the 24 RMS wells have current groundwater elevations greater than the MO for that RMS well.

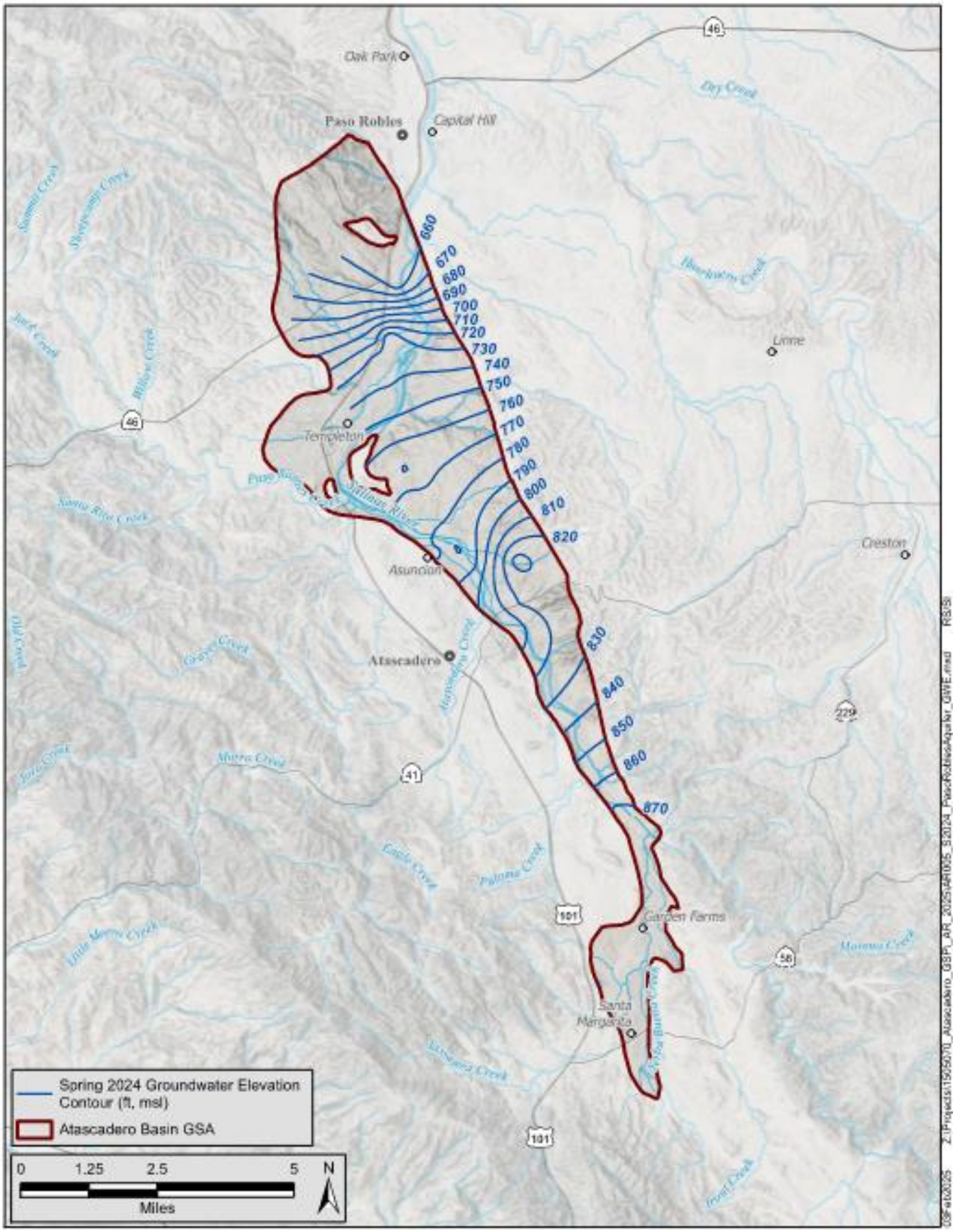

Figure 6: Paso Robles Aquifer – Groundwater Elevations Spring 2024

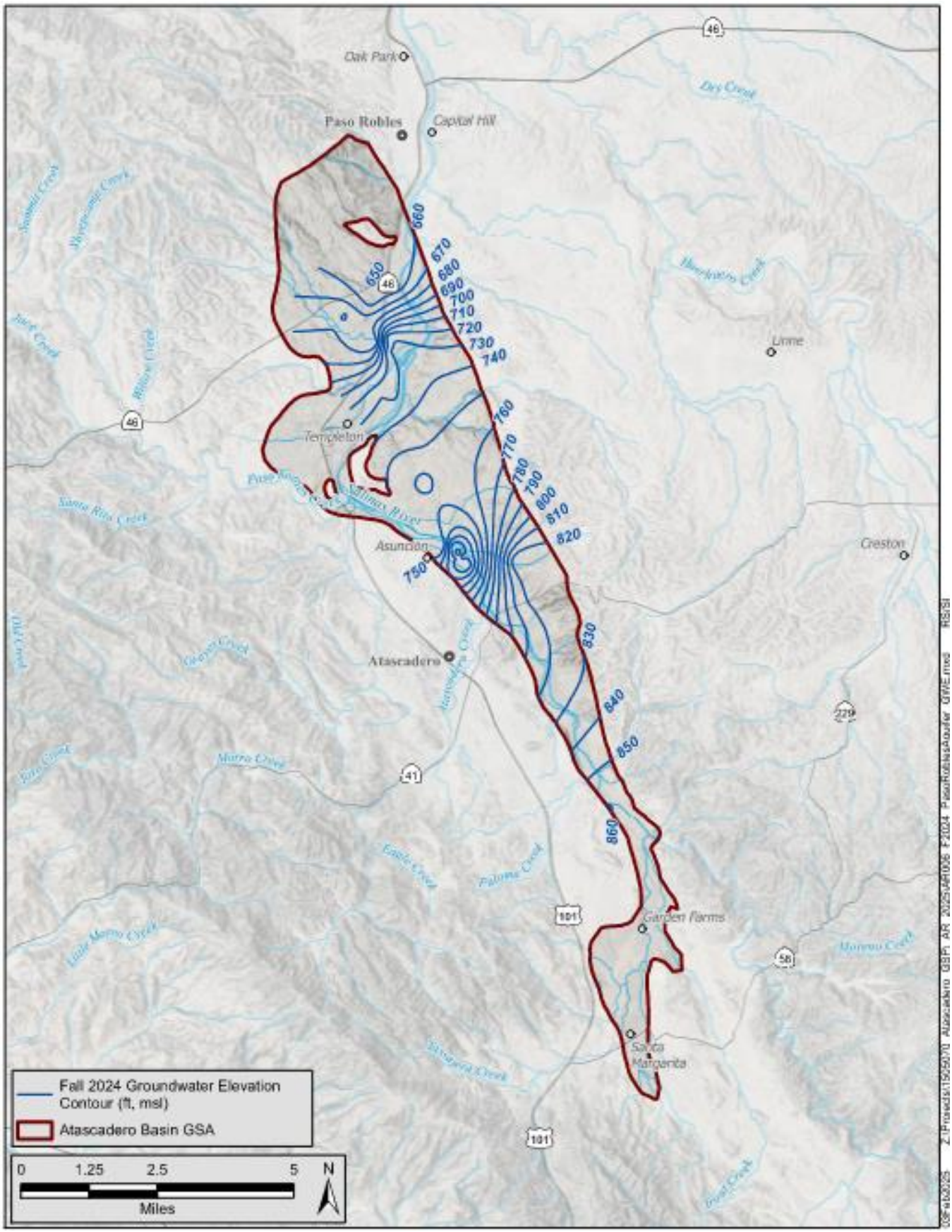

Figure 7: Paso Robles Aquifer – Groundwater Elevations Fall 2024

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