

7. Change in Groundwater Storage

7.1 Annual Changes in Groundwater Elevation (§ 356.2[b][5][A])

Annual changes in groundwater elevation are derived from comparison of fall groundwater elevation contour maps from one year to the next. For WY 2025, the fall 2024 groundwater elevations were subtracted from the fall 2025 groundwater elevations in both principal aquifers, resulting in maps depicting the changes in groundwater elevations that occurred during WY 2025. These groundwater elevation change maps are based on a reasonable and thorough analysis of the currently available data.

A net negative change in groundwater storage was observed in WY 2025 in the northeastern portion of the Subbasin, east of Templeton, based on changes in groundwater elevations measured in wells completed in the Paso Robles Formation Aquifer. This area coincides with recent vineyard development and associated increases in groundwater pumping, which may be contributing to the observed reduction in groundwater storage. These changes appear localized and will continue to be tracked in future annual reports to evaluate persistence and potential long-term implications.

7.1.1 Alluvial Aquifer

Figure 13 shows the change in groundwater elevation for the Alluvial Aquifer from 2024 to 2025. There is a slight decline in groundwater levels in the Alluvial Aquifer. In much of the alluvial Aquifer south of Templeton, groundwater levels declined up to five feet with areas in the southern end of the Basin and in the east of Asuncion by up to 10 feet. In a small area north of Templeton groundwater levels in the alluvial aquifer increased by up to 10 feet.

7.1.2 Paso Robles Formation Aquifer

Figure 14 shows changes in groundwater elevation from 2024 to 2025, the most recent period evaluated. Declines in water levels of up to 40 feet were observed in the area east of Templeton. Groundwater elevations in the areas to the north of Templeton increased by up to 10 feet. Groundwater elevations in the areas southeast of Templeton and near Asuncion increased by up to 10 feet. South of Atascadero groundwater elevations decreased by up to 10 feet.

7.2 Annual and Cumulative Change in Groundwater in Storage Calculation (§ 356.2[b][5][B])

The groundwater elevation change maps presented above represent a volume change within each principal aquifer for each water year. The volume change depicted on each map represents a total volume, including the volume displaced by the aquifer material and the volume of groundwater stored within the void space of the aquifer. The portion of void space in the aquifer that can be utilized for groundwater storage is represented by the aquifer storage coefficient (S), a unitless factor, which is multiplied by the total volume change to derive the change in groundwater in storage. Based on work completed for the Paso Robles

Subbasin GSP (M&A 2020), S is estimated to be 7 percent for the Paso Robles Formation Aquifer.⁷ The aquifer storage coefficient value used for the Alluvial Aquifer is 20 percent.⁸ The annual change of groundwater in storage calculated for WY 2025 is presented in **Table 9** and the annual and cumulative change in groundwater in storage since 1981 are presented on **Figure 15**.

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⁷ Attachment H includes derivation of the storage coefficient from the Paso Robles Subbasin GSP groundwater model files and a sensitivity analysis as documented in the Paso Robles Subbasin First Annual Report (GSI 2020).

⁸ In the case of the alluvial aquifer, the aquifer storage coefficient is equivalent to the specific yield, a unitless factor, which is estimated to be 20%.

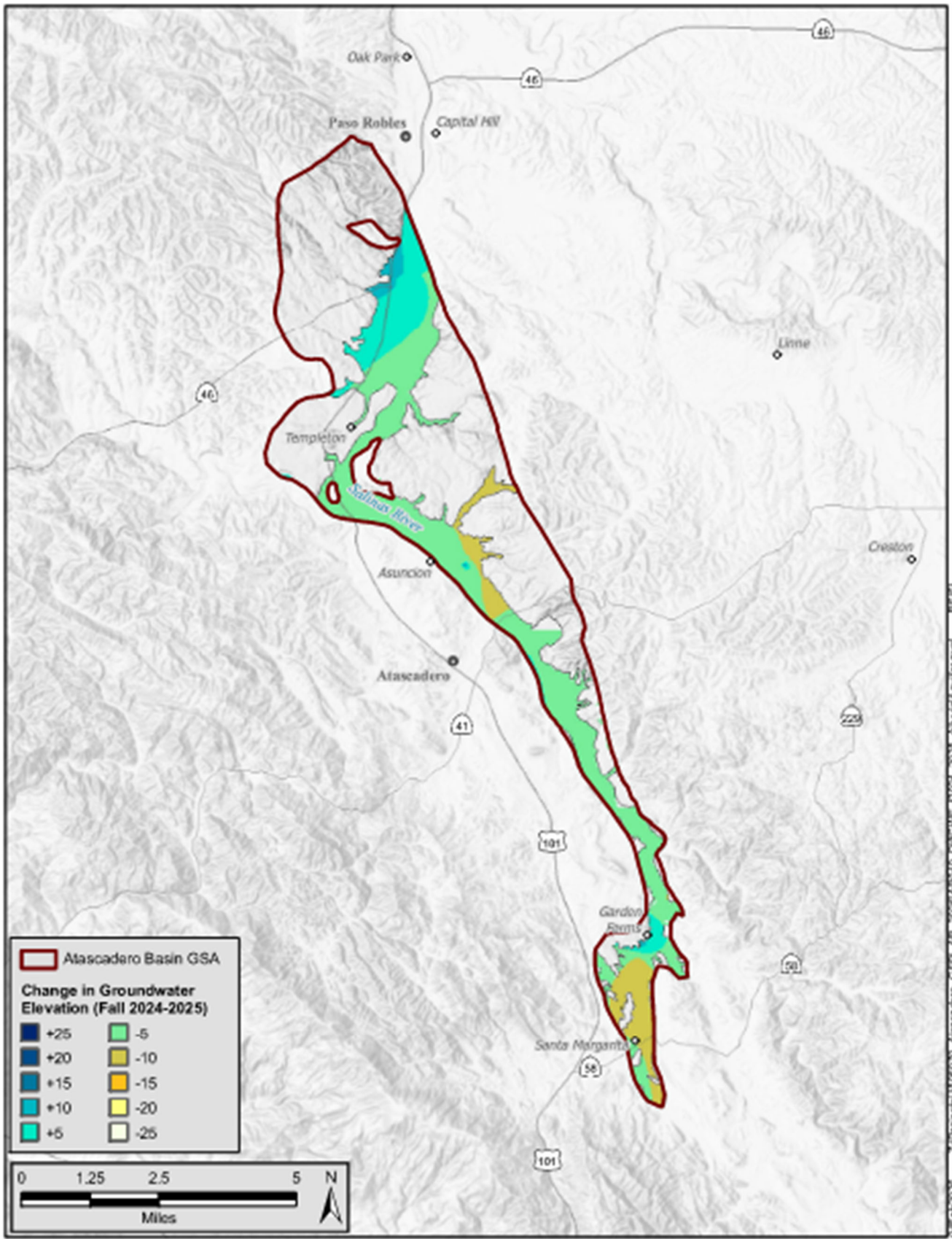


Figure 13: Alluvial Aquifer Change in Groundwater Elevation (Fall 2024 – Fall 2025)

Table 9: Annual Change in Storage

Water Year	Annual Change (AF)
2017	14,600
2018	-5,400
2019	4,300
2020	100
2021	-5,200
2022	-8,000
2023	15,700
2024	3,600
2025	-9,400

Note: AF = acre-feet

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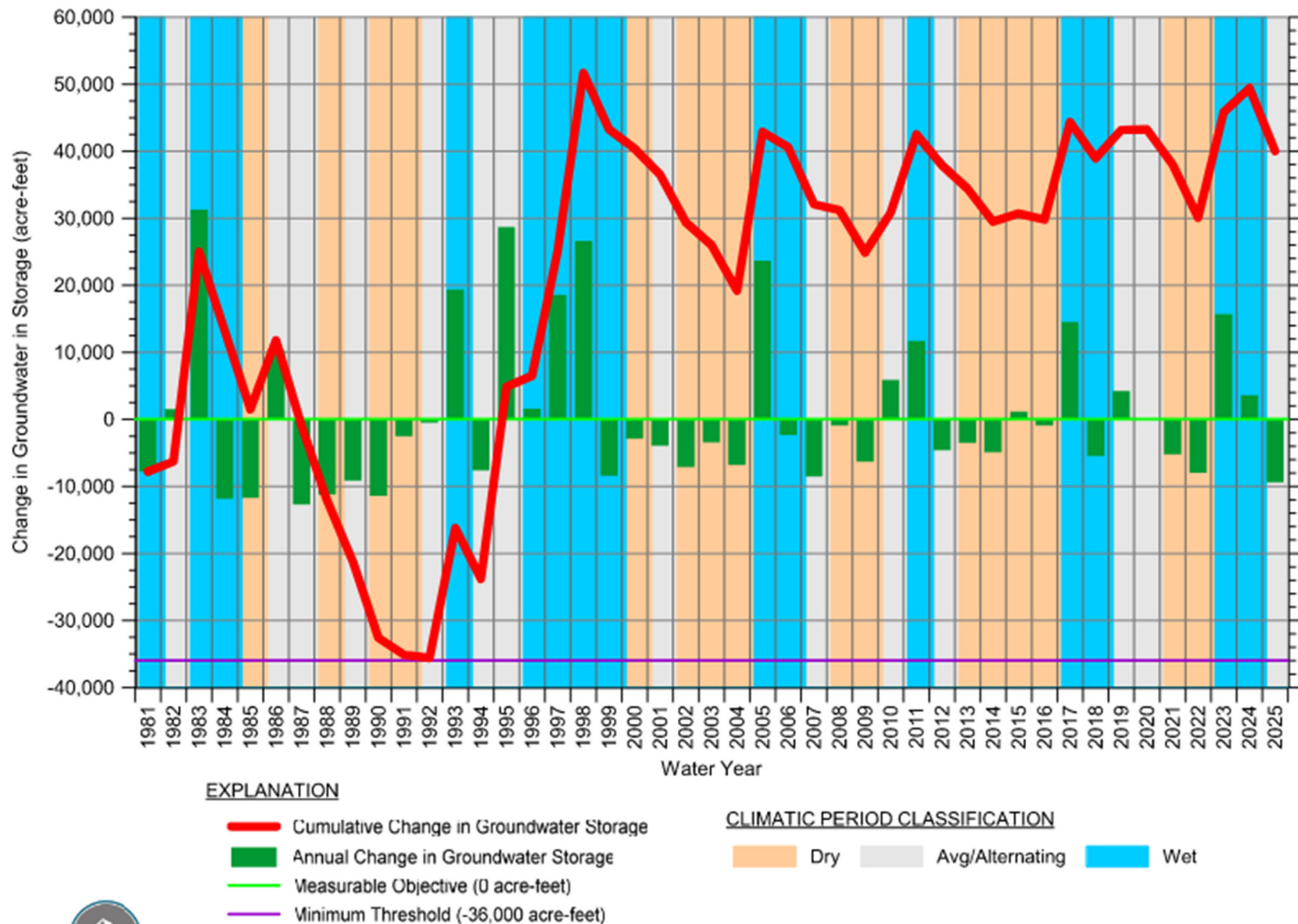


Figure 15: Estimated Annual and Cumulative Change in Storage

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