Salinas Valley Groundwater Basin
Eastside Aquifer Subbasin
Water Year 2021 Annual Report
Submitted in Support of Groundwater Sustainability Plan Implementation

Salinas Valley Basin
Groundwater Sustainability Agency

Prepared by:

MONTGOMERY & ASSOCIATES
Water Resource Consultants

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

AF ....acre-feet
AF/yr. ....acre-feet per year
CBI....................Consensus Building Institute
CCRWQCB.......Central Coast Regional Water Quality Control Board
COC ....Constituent(s) of concern
D-TAC ....Drought Technical Advisory Committee
DAC..................Disadvantaged Communities **
DDW.................Division of Drinking Water
DWR ....California Department of Water Resources
eWRIMS ....Electronic Water Rights Information Management System
GEMS ....Groundwater Extraction Management System
GSA...................Groundwater Sustainability Agency
GSP or Plan.......Groundwater Sustainability Plan
InSAR ....Interferometric Synthetic-Aperture Radar
ILRP..................Irrigated Lands Regulatory Program
ISW ....interconnected surface waters
MCL..................Maximum Contaminant Level
MCWRA...........Monterey County Water Resources Agency
mg/L..................milligram/Liter
MOU ....Memorandum of Understanding
SGMA...............Sustainable Groundwater Management Act
SMC..................Sustainable Management Criteria/Criterion
SMCL................Secondary Maximum Contaminant Level
Subbasin............Eastside Aquifer Subbasin
SVBGSA...........Salinas Valley Basin Groundwater Sustainability Agency
SVIHM.............Salinas Valley Integrated Hydrologic Model
SWIG ....Seawater Intrusion Working Group
SWRCB.............State Water Resources Control Board
WY....................Water Year

EXECUTIVE SUMMARY

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) is required to submit an annual report for the Eastside Aquifer Subbasin (Subbasin) to the California Department of Water Resources (DWR) by April 1 of each year following the SVBGSA's 2022 adoption and submittal of its Groundwater Sustainability Plan (GSP or Plan). This Annual Report covers data collected through Water Year (WY) 2021, from October 1, 2019, to September 30, 2021.

As described in the GSP, DWR lists the Subbasin as a high priority subbasin, which indicates that continuation of present water management practices would probably result in significant adverse impacts. The goal of the Eastside Subbasin GSP is to balance the needs of all water users in the Subbasin while complying with SGMA.

In WY 2021, groundwater conditions remained similar to conditions in recent years, with slight changes in conditions related to specific sustainability indicators. WY 2021 is classified as a dry year.

The groundwater data for WY 2021 are summarized below:

- Groundwater extractions for reporting year 2021 (November 1, 2020, through October 31, 2021) were approximately 82,000 acre-feet (AF).
- Groundwater elevations decreased slightly during this dry water year, with most wells showing elevations above their minimum thresholds but still below their measurable objectives.
- There is still no seawater intrusion in the Subbasin.
- There were 6 groundwater quality constituents of concern (COC) that exceeded their minimum thresholds for the Division of Drinking Water (DDW) municipal wells in WY 2021. One new constituent— methyl-tert-butyl ether—was added to the list of COC for the Subbasin because it had an exceedance of the regulatory drinking water standard in WY 2021. There were no exceedances in the Irrigated Lands Regulatory Program (ILRP) irrigation or on-farm domestic wells.
- No subsidence was detected in the Subbasin.
- There are no locations of interconnected surface water (ISW) in the Subbasin.

The SVBGSA has taken numerous actions to implement the GSP. These include:

- **Coordination and engagement** –SVBGSA worked throughout the year with the Eastside Aquifer Subbasin Planning Committee to develop the Eastside Subbasin GSP, submitted to DWR in January 2022. In addition, SVBGSA strengthened its relationship with Monterey County Water Resources Agency (MCWRA), contracted the Consensus-Building Institute (CBI) to develop a work program for meaningful engagement with underrepresented communities, and continued to regularly engage stakeholders through its Advisory Committee and Board of Directors.

- **Data and monitoring** – selecting 2 data gaps to request a monitoring well through DWR's Technical Support Services and participating in DWR's planning for an airborne electromagnetic (AEM) survey across the Salinas Valley.
- **Planning activities** – during WY 2021, SVBGSA continued to draft the Eastside Aquifer Subbasin GSP through working with the Eastside Aquifer Subbasin Planning Committee. SVBGSA reviewed DWR's recommended corrective action on the water quality undesirable result on the 180/400-Foot Aquifer Subbasin GSP, and addressed it in the Eastside Subbasin GSP.
- **Project implementation activities** – SVBGSA, MCWRA, and Monterey County moved forward with actions to begin implementing the GSP, including:
    - Continuing to convene the Seawater Intrusion Working Group (SWIG).
    - Creating the Deep Aquifer Study Cooperative Funding Partnership and releasing the Request for Qualifications for the Study.
    - Funding expansion of the Seawater Intrusion Model to cover all potentially seawater intruded areas of the Salinas Valley.
    - Continuing to convene MCWRA's Drought Technical Advisory Committee.

1 INTRODUCTION

1.1 Purpose

The 2014 California Sustainable Groundwater Management Act (SGMA) requires that, following adoption of a Groundwater Sustainability Plan (GSP), Groundwater Sustainability Agencies (GSAs) annually report on the condition of the basin and show that the GSP is being implemented in a manner that will likely achieve the sustainability goal for the basin. This report fulfills that requirement for the Salinas Valley – Eastside Aquifer Subbasin (Subbasin).

The sustainability goal of the Eastside Subbasin is to manage groundwater resources for long-term community, financial, and environmental benefits to the Subbasin's residents and businesses. The goal of this GSP is to ensure long-term viable water supplies while maintaining the unique cultural, community, and business aspects of the Subbasin. It is the express goal of this GSP to balance the needs of all water users in the Subbasin.

This is the first annual report and includes monitoring data for Water Years (WY) 2020 and 2021, which is the period from October 1, 2019, to September 30, 2021. This Annual Report includes a description of basin conditions through text, hydrographs, groundwater elevation contour maps, calculated estimates of change in groundwater in storage, and maps of the distribution of groundwater extraction across the Subbasin. It compares WY 2021 data to Sustainability Management Criteria (SMC) as a measure of the Subbasin's groundwater conditions with respect to the sustainability goal that must be reached by the end of 2042.

1.2 Eastside Aquifer Subbasin Groundwater Sustainability Plan

In 2017, local GSA-eligible entities formed the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) to develop and implement the GSPs for the Salinas Valley. The SVBGSA is a Joint Powers Authority with membership comprising the County of Monterey, Monterey County Water Resources Agency (MCWRA), City of Salinas, City of Soledad, City of Gonzales, City of King, Castroville Community Services District, and Monterey One Water.

The SVBGSA developed the GSP for the Eastside Aquifer Subbasin, identified as California Department of Water Resources (DWR) subbasin 3-004.02. SVBGSA has exclusive jurisdiction of the Eastside Subbasin. DWR has designated the Eastside Subbasin as a high priority basin, which indicates that continuation of present water management practices would probably result in significant adverse impacts.

The SVBGSA developed the GSP for the Eastside Aquifer Subbasin in concert with the 5 other Salinas Valley Subbasin GSPs that fall partially or entirely under its jurisdiction: the 180/400-Foot Aquifer Subbasin (DWR subbasin 3-004.01), the Forebay Aquifer Subbasin (DWR subbasin 3-004.04), the Upper Valley Aquifer Subbasin (DWR subbasin 3-004.05), the Langley Area Subbasin (DWR subbasin 3-004.09), and the Monterey Subbasin (DWR subbasin 3-004.10). This Annual Report covers all the 57,500 acres of the Eastside Aquifer Subbasin, as shown on Figure 1.

1.3 Organization of This Report

This Annual Report corresponds to the requirements of GSP Regulations § 356.2. The Report first outlines the subbasin conditions, including several components of the Regulations: groundwater elevations, groundwater extractions, surface water use, total water use, and change in groundwater storage. The Report then addresses GSP implementation by reporting on actions taken to implement the Plan and progress toward interim milestones.

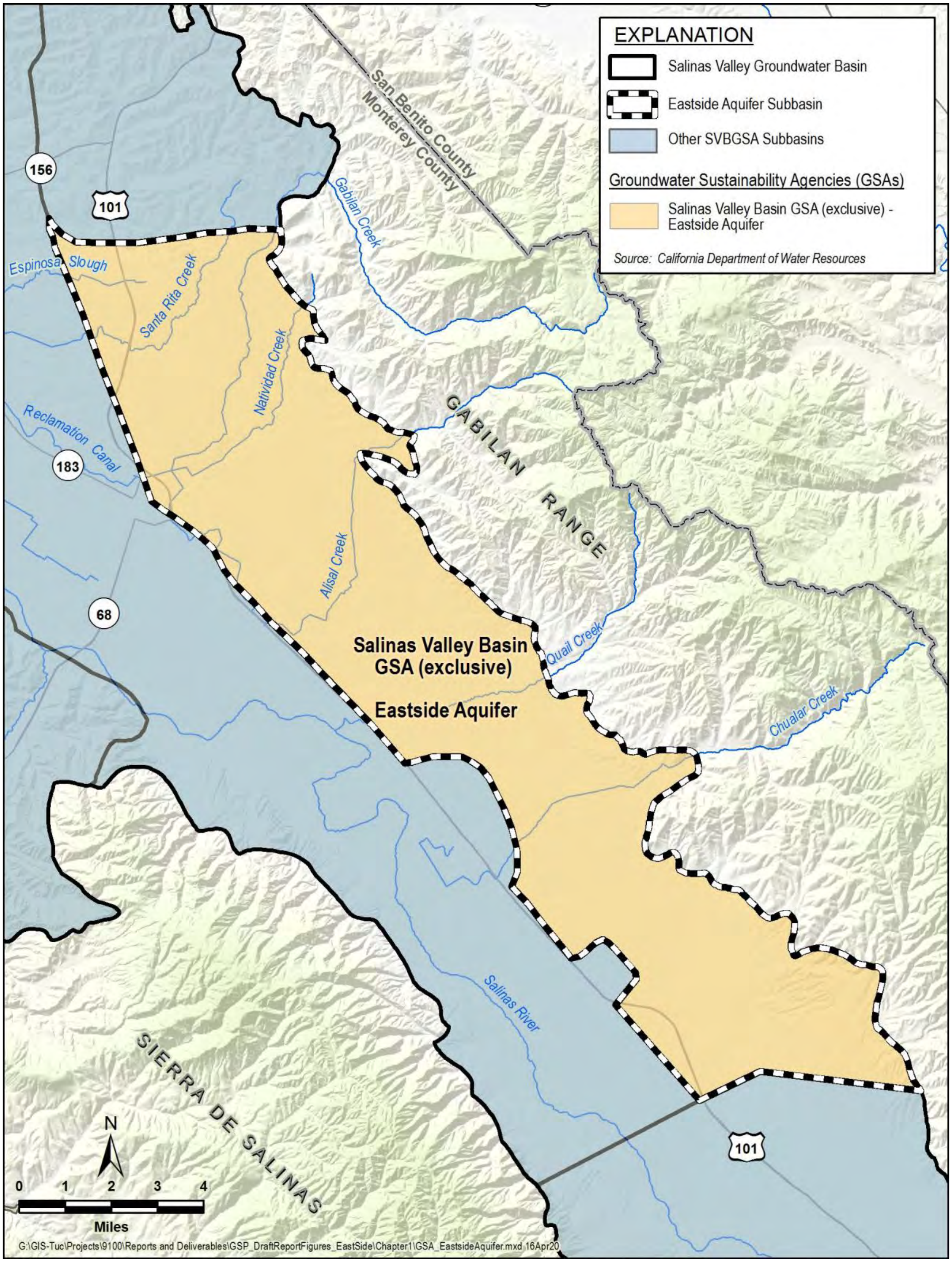


Figure 1. Eastside Aquifer Subbasin

2 SUBBASIN SETTING

The Eastside Aquifer Subbasin is located in northwestern Monterey County that includes the northern end of the Salinas River Valley. The Subbasin contains portions of the City of Salinas, City of Gonzales, and a small portion of the community of Chualar. The geology of the Eastside Subbasin is dominated by alluvial fans deposited by surface-water drainages originating in the Gabilan Range. The eastern boundary of the Subbasin is the contact between the unconsolidated sediments and the Gabilan Range that consists mostly of granitic rocks. The northern boundary with the Langley Subbasin generally coincides with the presence of the Aromas Red Sands (DWR, 2004). There are no reported hydraulic barriers separating these subbasins and therefore there is potential for groundwater flow between them. Similarly, there is likely groundwater flow between the Eastside and 180/400-Foot Aquifer Subbasins, although flow may be restricted due to the change from alluvial fan sediments in the Eastside Subbasin to less permeable marine and riverine sediments in the 180/400-Foot Aquifer Subbasin (Kennedy/Jenks, 2004). The change in sediments generally defines the boundary between these 2 Subbasins. At the Subbasin's southern boundary there may be reasonable hydraulic connectivity with the Forebay Subbasin where water along the border moves both down from the mountains and toward the ocean.

2.1 Principal Aquifers and Aquitards

The Eastside Subbasin's sole principal aquifer is made up of 2 generalized water-bearing zones that have been recognized within the alluvial fan aquifer system: the Eastside Shallow Zone and the Eastside Deep Zone. These designations of shallow and deep have not been identified as distinct aquifers by most investigators. They are only generalized zones of water-bearing sediments with time-correlated depositions and are somewhat hydraulically connected to the 180-Foot and 400-Foot Aquifers in the 180/400-Foot Aquifer Subbasin. The seawater intrusion that is occurring in the 180/400-Foot Aquifer Subbasin has not been observed in the Eastside Subbasin despite the eastward groundwater gradient, suggesting that the hydraulic connection between the subbasins is limited. In the 180/400-Foot Aquifer Subbasin, the 400-Foot Aquifer is separated from the Deep Aquifers by the 400-Foot/Deep Aquitard. The historical extents of the alluvial fans that define the Eastside region near the City of Salinas are contemporaneous with the 400-Foot Aquifer. Thus, by inference, the edge of the Deep Aquifers could also potentially extend into the Eastside Subbasin, but further investigation is required to determine this.

2.2 Natural Groundwater Recharge and Discharge

Groundwater can discharge from the aquifer in locations where surface water and groundwater are interconnected and gaining streamflow conditions occur. There are no known locations of interconnected surface water (ISW) in the Subbasin, but interconnection could occur in the future in response to changing aquifer conditions. In areas of interconnection, groundwater dependent ecosystems may depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface, and may discharge groundwater through evapotranspiration. Natural groundwater recharge occurs through deep percolation of surface water, excess applied irrigation water, and precipitation.

2.3 Precipitation and Water Year Type

Precipitation that falls within the Subbasin contributes to runoff and percolation components of the water budget. The precipitation gage at the Salinas Airport (National Oceanographic and Atmospheric Administration Station USW00023233) recorded 9.18 inches of rainfall in WY 2020 and 5.79 inches in WY 2021. For comparison, the average rainfall from WY 1980 to WY 2021 at this gage is 11.98 inches of precipitation.

The SVBGSA adopted the methodology used by MCWRA for determining the Subbasin's water year type. The MCWRA assigns a water year type of either dry, dry-normal, normal, wet-normal, or wet based on an indexing of annual mean flows at the USGS stream gage on the Arroyo Seco near Soledad (USGS Gage 11152000) (MCWRA, 2005). Using the MCWRA method, WY 2020 was a dry-normal year and WY 2021 was a dry year.

3 2021 DATA AND SUBBASIN CONDITIONS

This section details the Subbasin conditions and WY 2021 data. Where WY 2021 data are not available, it includes the most recent data available. The SVBGSA stores monitoring data in a data management system. Monitoring data are included in this Annual Report and are submitted to DWR.

3.1 Water Supply and Use

Within the Subbasin, water is used for agricultural, urban, industrial use, and wetlands and native vegetation. Most of the water in the Subbasin is used for agriculture. Only a relatively small amount of water is used by wetlands and native vegetation.

The water supply in the Eastside Subbasin predominantly consists of groundwater. A small amount of surface water is diverted from the Salinas River's tributaries. No recycled water is used in the Subbasin.

3.1.1 Groundwater Extraction

Urban and agricultural groundwater extractions are compiled using MCWRA's Groundwater Extraction Management System (GEMS), which collects data from groundwater wells with an internal discharge pipe diameter greater than 3 inches within Zones 2, 2A, and 2B.

Table 1 presents groundwater extractions by water use sector in the Eastside Subbasin, including the method of measurement and accuracy of measurement. Urban use data from MCWRA aggregates municipal wells, small public water systems, and industrial wells. Agricultural use accounted for 84% of groundwater extraction in 2021; urban and industrial use accounted for 16%. It is important to note that the reporting year varies according to user: agricultural pumping is reported to MCWRA for the period November 1 through October 31, whereas urban pumping is reported is reported to MCWRA on a calendar year basis. No groundwater was extracted for managed wetlands or managed recharge. Groundwater use by natural vegetation is assumed to be small and was not estimated for this report. The total reported groundwater extraction in reporting year 2021 was 82,000 acre-feet per year (AF/yr.) in the Subbasin. This total is for the Eastside Aquifer Subbasin not the MCWRA Eastside Subarea; therefore, the pumping total is not identical to what MCWRA publishes in their annual Groundwater Extraction Summary Reports. Figure 2 illustrates the general location and volume of groundwater extractions in the Subbasin.

Table 1. 2021 Groundwater Extraction by Water Use Sector (AF/yr.)

Water Use Sector	Groundwater Extraction	Method of Measurement	Accuracy of Measurement
Urban	13,200	MCWRA's Groundwater Reporting Program allows 3 different reporting methods: water flowmeter, electrical meter, or hour meter. For 2021, 84% of extractions were calculated using a flowmeter, 16% electrical meter and <1%-hour meter.	MCWRA ordinances 3717 and 3718 require annual flowmeter calibration, and that flowmeters be accurate to within +/- 5%. The same ordinance requires annual pump efficiency tests. SVBGSA assumes an electrical meter accuracy of +/- 5%.
Agricultural	68,800		
Managed Wetlands	0	N/A	N/A
Managed Recharge	0	N/A	N/A
Natural Vegetation	0	*De minimis* and not estimated.	Unknown
Total	**82,000**		

Note: Agricultural pumping is reported on a MCWRA reporting year basis whereas urban is reported in calendar-year basis. N/A = Not Applicable.

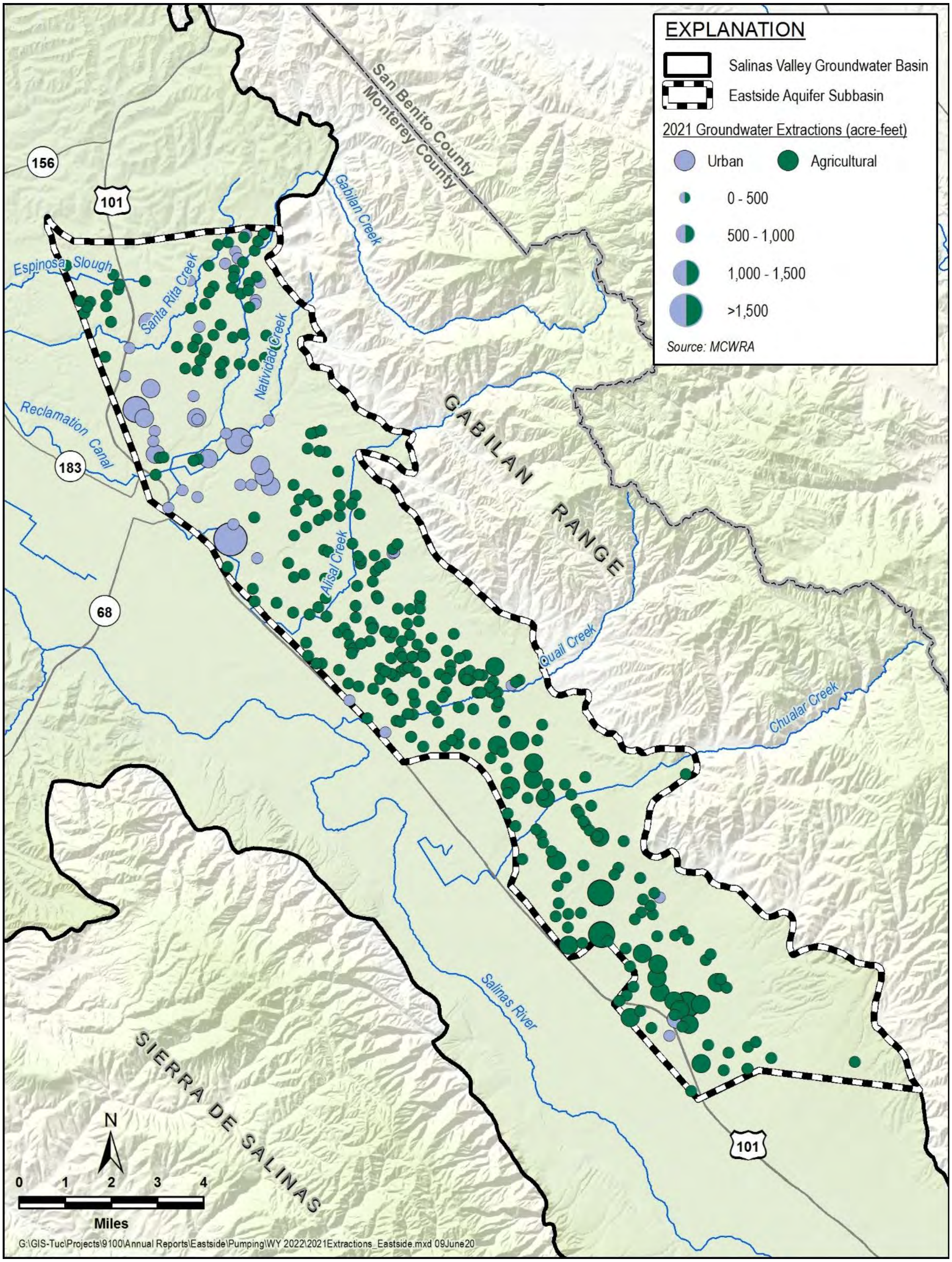


Figure 2. General Location and Volume of Groundwater Extractions

3.1.2 Surface Water Supply

Salinas River diversion data are obtained from the State Water Resources Control Board's (SWRCB) Electronic Water Rights Information Management System (eWRIMS) website. The data are reported annually and include diversions from the Salinas River and its tributaries. Surface water diversions reported to eWRIMS were approximately 400 AF/yr in WY 2021. All diverted surface water is used for irrigation and is reported as a Statement of Diversion and Use.

3.1.3 Total Water Use

Total water use is the sum of groundwater extractions and surface water use and is summarized in Table 2.

Many growers and residents have noted that some irrigation is reported both to SWRCB as Salinas River diversions and to MCWRA as groundwater pumping in other Salinas Valley Groundwater Subbasins. To avoid double counting, all surface water reported as a Statement of Diversion and Use is excluded from the total water use count for the Subbasin. Therefore, in WY 2021, total surface water use for the Subbasin is adjusted from the 400 AF/yr reported in eWRIMS to 0 AF/yr. It is possible that not all of the surface water diversions excluded are being reported to both SWRCB and MCWRA, in which case total water use may be up to 400 AF/yr greater than calculated here. This accounting is done to calculate the total water use and is not meant to imply that SVBGSA classifies any or all the reported diversions as groundwater. SVBGSA will continue to work with stakeholders to refine the method used to resolve double counting.

Total water use was approximately 82,000 AF/yr in WY 2021, as shown in Table 2.

Table 2. Total Water Use by Water Use Sector in WY 2021

Water Use Sector	Groundwater Extraction	Surface Water Use	Recycled Water	Method of Measurement	Accuracy of Measurement
Urban	13,200	0	0	Direct	Estimated to be +/- 5%.
Agricultural	68,800	0		Direct	Estimated to be +/- 5%.
Managed Wetlands	0	0	0	N/A	N/A
Managed Recharge	0	0	0	N/A	N/A
Natural Vegetation	Unknown	Unknown	Unknown	N/A	N/A
SUBTOTALS	82,000	0	0		
TOTAL	**82,000**				

Note: Agricultural pumping is reported on the MCWRA reporting year basis whereas urban is reported in calendar-year basis. To avoid double counting with groundwater pumping reported to MCWRA, Statement of Diversion and Use surface water diversions reported in Section 3.1.2 are subtracted from the total water use. N/A = Not Applicable.

3.2 Groundwater Elevations

The current groundwater elevation monitoring network in the Eastside Subbasin contains 35 wells. All 35 wells are representative monitoring sites and monitored by MCWRA. Locations of groundwater elevation representative monitoring network wells within the Subbasin are shown on Figure 3.

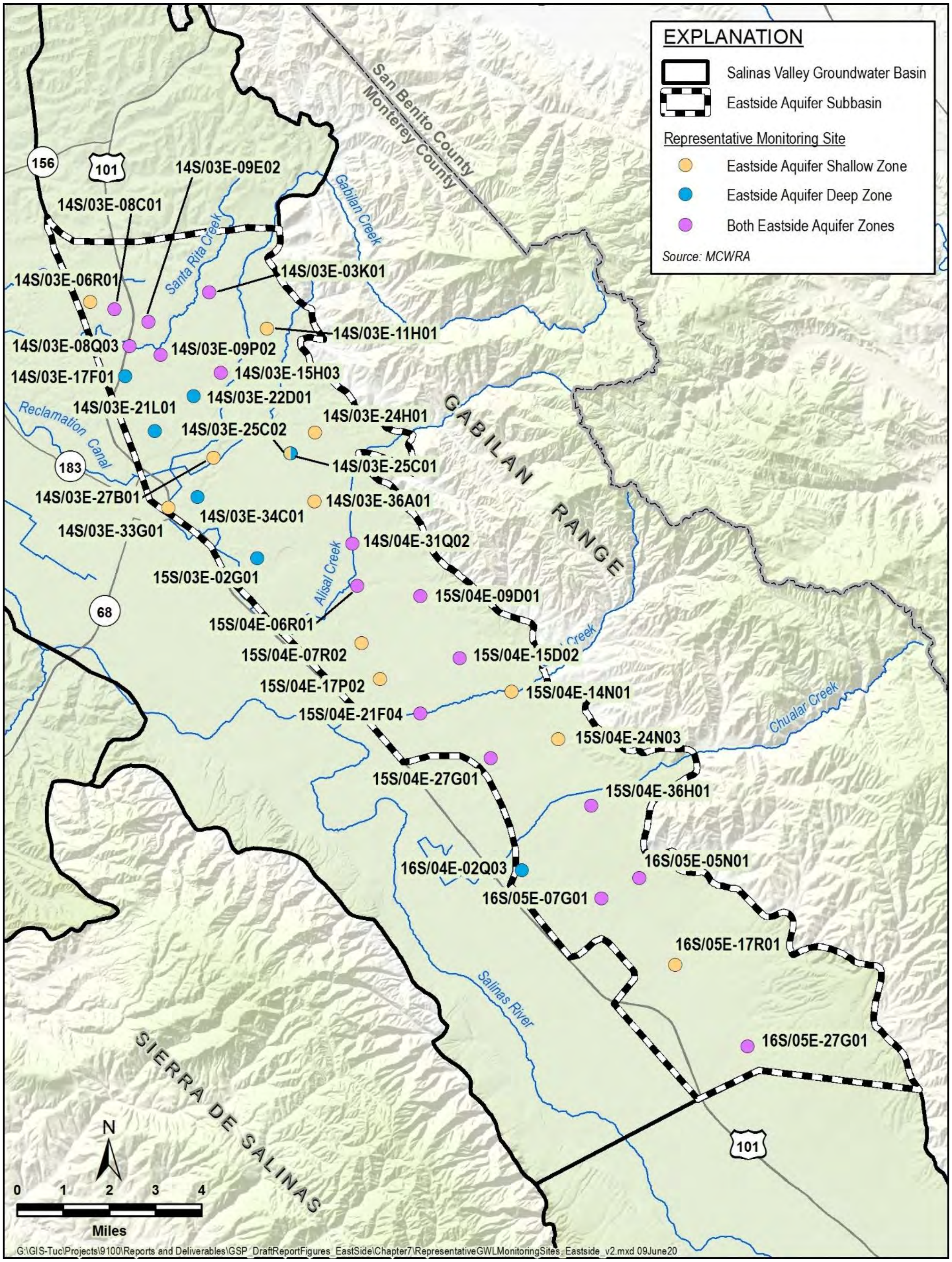


Figure 3. Locations of Representative Groundwater Elevation Monitoring Sites

Fall 2021 groundwater elevation data are presented in Table 3. The fall 2020 groundwater elevations are also included in Table 3 to provide all data since GSP submittal. In accordance with the GSP, this report uses groundwater elevations measured in the fall in order to approximate neutral groundwater conditions that are not heavily influenced by either summer irrigation pumping or winter rainfall recharge. These groundwater elevations are also used to compare to SMC, as described in Section 4.2.1. Fall groundwater elevation measurements are made from November to December and used to produce groundwater elevation contours. These fall contours are further discussed in Section 3.2.1. Sixteen out of 35 RMS are screened in both the Shallow and Deep Zones of the Eastside Aquifer. Depending on the year, these wells could be more representative of either the Shallow or Deep Zone.

Table 3. Groundwater Elevation Data

Monitoring Site	WY 2020 elevation data (ft)	WY 2021 elevation data (ft)
Shallow Zone		
14S/03E-06R01	-30.0	-27.1
14S/03E-11H01	56.1	36.2
14S/03E-24H01	-85.9	-82.2
14S/03E-25C02	-58.2	-58.2*
14S/03E-27B01	-10.9	-8.4
14S/03E-33G01	-15.0	-16.0
14S/03E-36A01	-47.0	-55.7
15S/04E-07R02	4.3	3.3
15S/04E-14N01	-38.4	-37.1
15S/04E-17P02	-3.3	-11.5
15S/04E-24N03	-10.3*	-8.4
16S/05E-17R01	72.1	71.1
Deep Zone		
14S/03E-17F01	-43.0	-43.0*
14S/03E-21L01	-27.0	-27.0*
14S/03E-22D01	-57.0	-57.0*
14S/03E-25C01	-60.9	-60.9*
14S/03E-34C01	-31.0	-33.0
15S/03E-02G01	-22.0	-25.0
16S/04E-02Q03	38.2	33.3
Both Zones		
14S/03E-03K01	-61.2	-65.2
14S/03E-08C01	-37.3	-33.3
14S/03E-08Q03	-83.0	-83.0*
14S/03E-09E02	-59.0	-59.0*
14S/03E-09P02	-27.0	-27.0*
14S/03E-15H03	-48.3	-53.2
14S/04E-31Q02	-58.6	-58.6*

Monitoring Site	WY 2020 elevation data (ft)	WY 2021 elevation data (ft)
15S/04E-06R01	-31.2	-25.1
15S/04E-09D01	-47.1	-55.0
15S/04E-15D02	-24.8	-31.2
15S/04E-21F04	-0.8	-0.8*
15S/04E-27G01	5.8	12.5
15S/04E-36H01	19.8	22.4
16S/05E-05N01	38.8	38.8*
16S/05E-07G01	49.4	48.7
16S/05E-27G01	86.5	86.3

*Groundwater elevation was estimated.

3.2.1 Groundwater Elevation Contours

The SVBGSA received groundwater elevation contour maps from MCWRA for the Eastside Aquifer Subbasin for August and fall 2021. The August contours represent seasonal low conditions, and the fall contours represent seasonal high conditions. The true seasonal high usually occurs between January and March (MCWRA, 2015); however, the GSP adopts fall groundwater elevations as the seasonal high because GSP monitoring is based on MCWRA's existing monitoring networks that annually monitors groundwater elevations in the fall.

Groundwater elevation contours for seasonal high and low groundwater conditions in the Shallow Zone of the Eastside Aquifer are shown on Figure 4 and Figure 5, respectively. Groundwater elevation contours for seasonal high and low groundwater conditions in the Deep Zone of the Eastside Aquifer are shown on Figure 6 and Figure 7, respectively. The contours indicate that groundwater flow directions are similar in the Eastside Subbasin during both seasonal low and seasonal high conditions. Figure 4 through Figure 7 show a groundwater depression trending toward the northeastern boundary of the city of Salinas. In this area, groundwater flow gradients are not parallel to the Valley's long axis, but rather are cross-valley toward the pumping trough. The pumping trough is more pronounced in August than in the fall due to the seasonal groundwater pumping trends in the Basin. The August contours do not extend across all portions of the Subbasin due to data limitations; this is a data gap that will be addressed during GSP implementation.

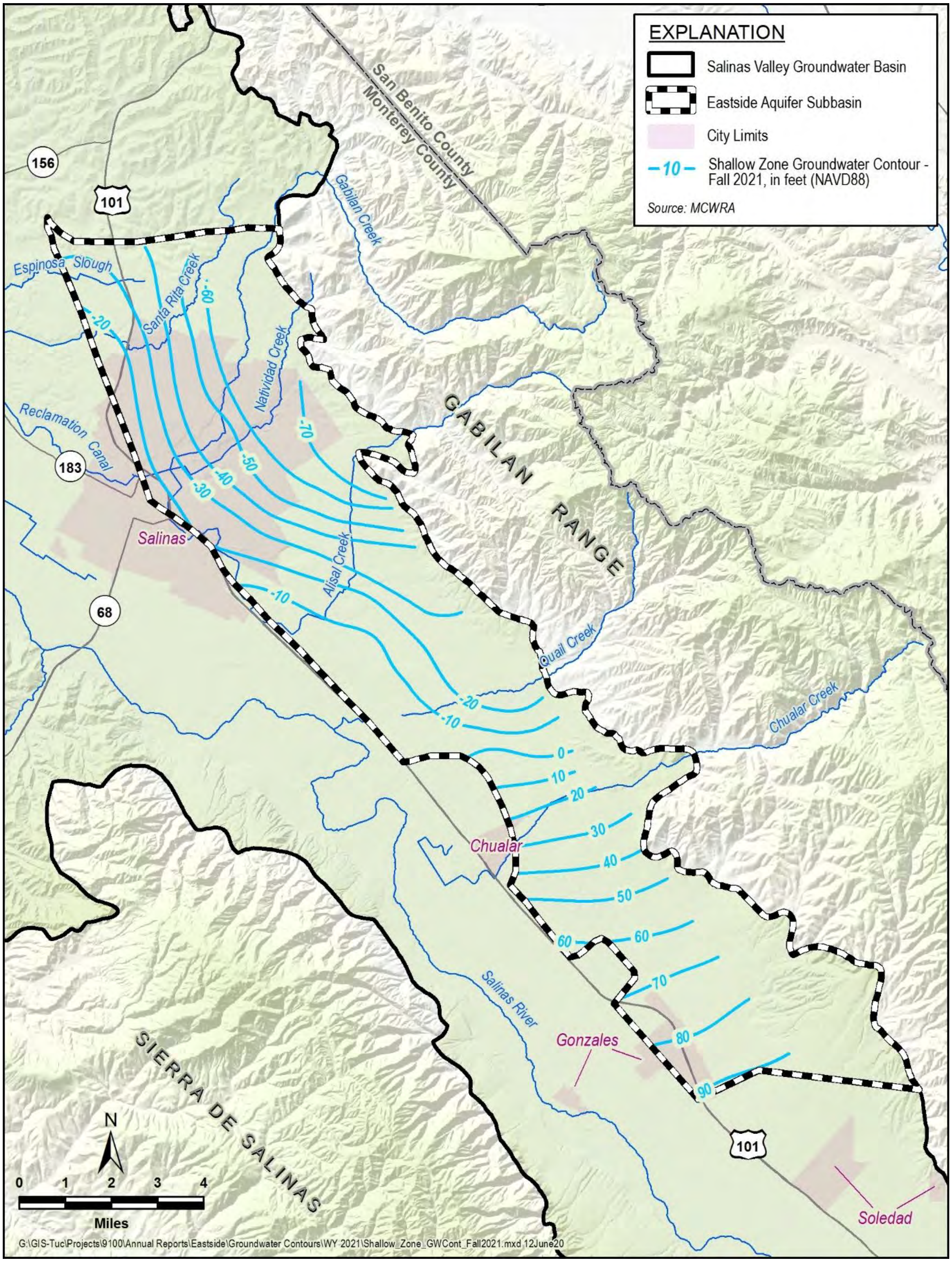


Figure 4. Seasonal High Groundwater Elevation Contour Map for the Shallow Zone of the Eastside Aquifer

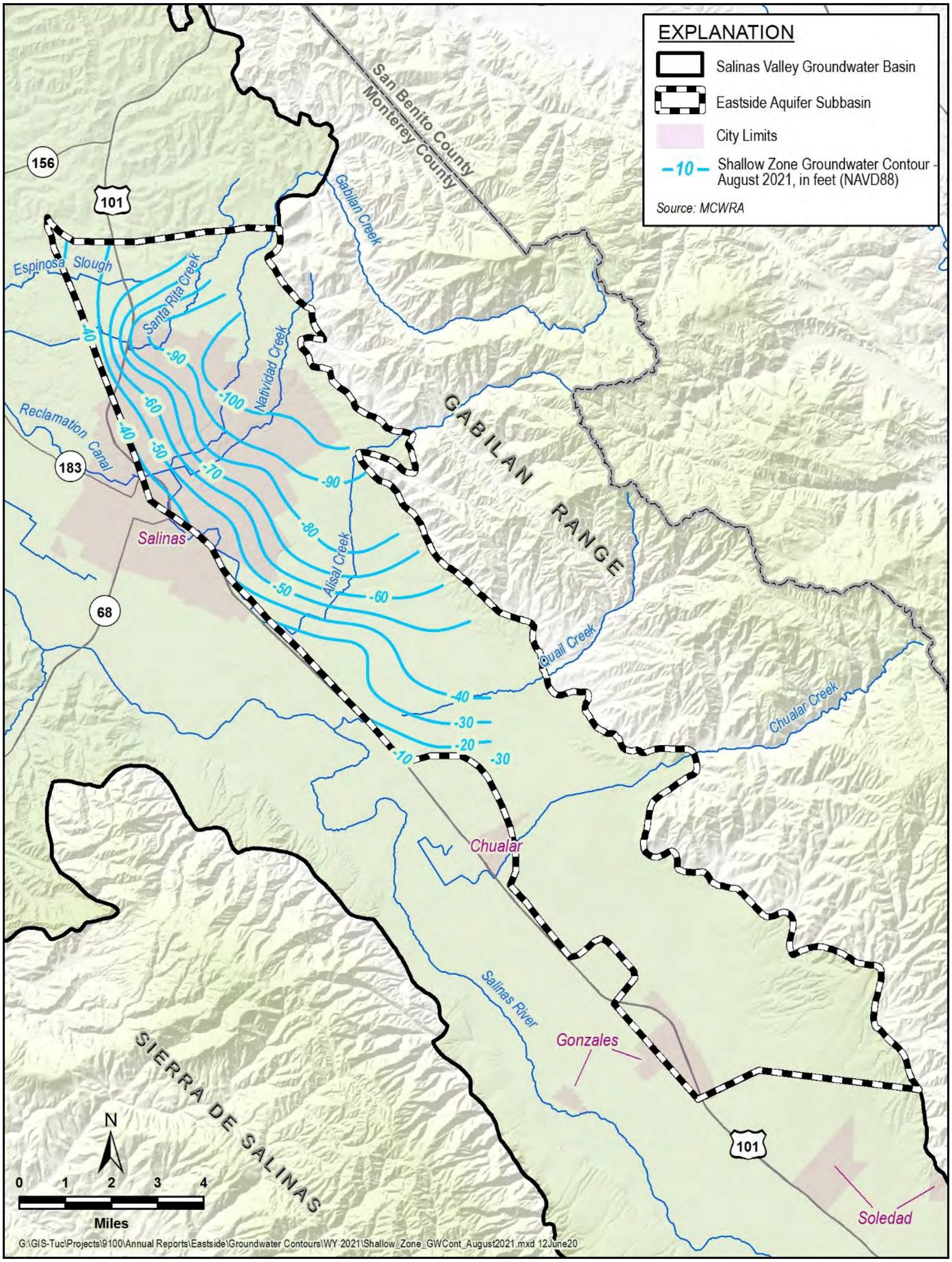


Figure 5. Seasonal Low Groundwater Elevation Contour Map for the Shallow Zone of the Eastside Aquifer

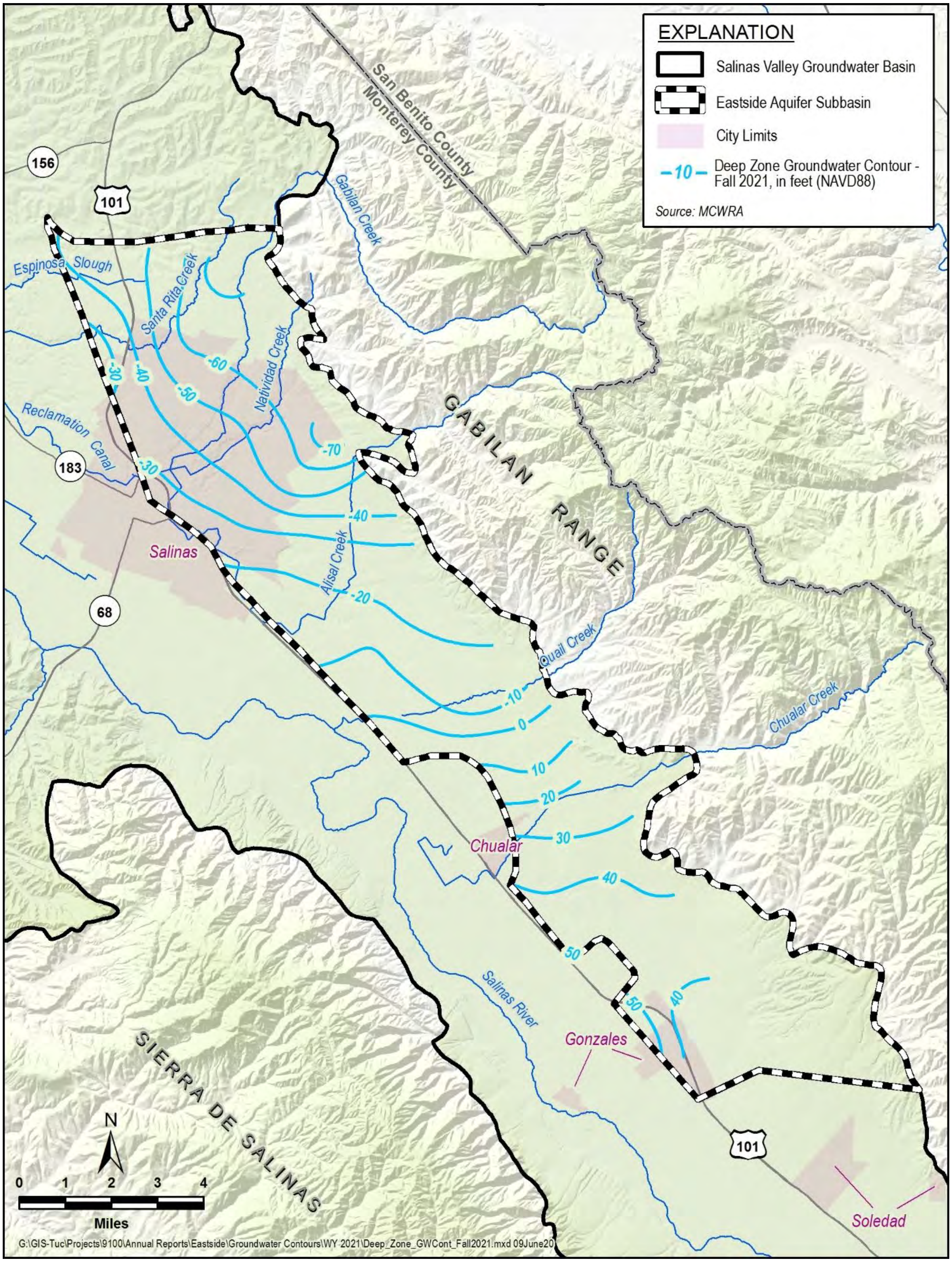


Figure 6. Seasonal High Groundwater Elevation Contour Map for the Deep Zone of the Eastside Aquifer

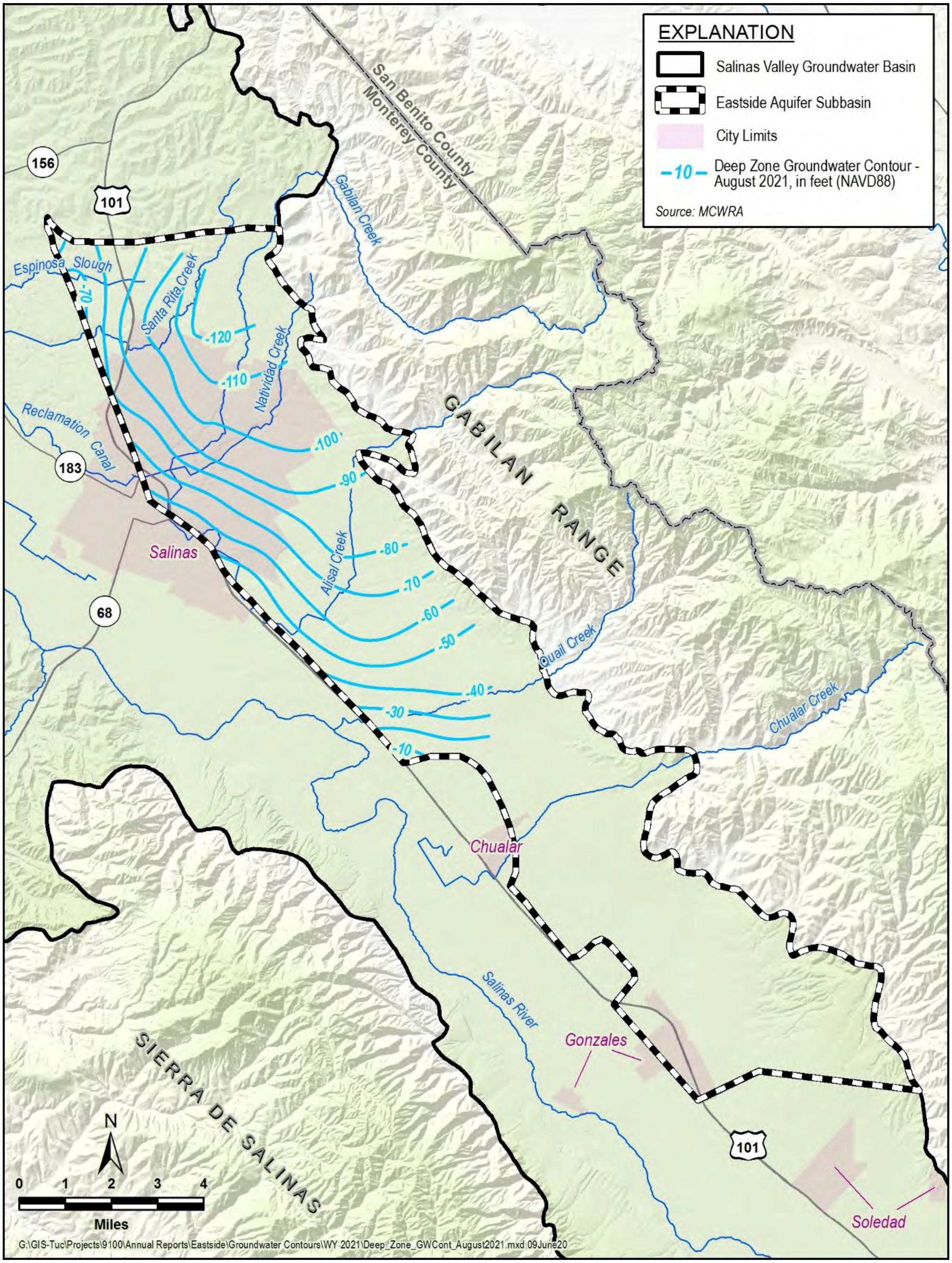


Figure 7. Seasonal Low Groundwater Elevation Contour Map for the Deep Zone of the Eastside Aquifer

3.2.2 Groundwater Elevation Hydrographs

Temporal trends in groundwater elevations can be assessed with hydrographs that plot changes in groundwater elevations over time. Hydrographs for selected monitoring wells within the principal aquifer of the Eastside Subbasin are shown on Figure 8. These hydrographs were selected to show characteristic trends in groundwater elevation in each zone of the aquifer. The hydrographs indicate that groundwater elevations in the Shallow and Deep Zones of the aquifer have generally declined throughout the Subbasin for the last 20 years and have continued to decline since 2019. Hydrographs for all representative monitoring sites are included in Appendix A.

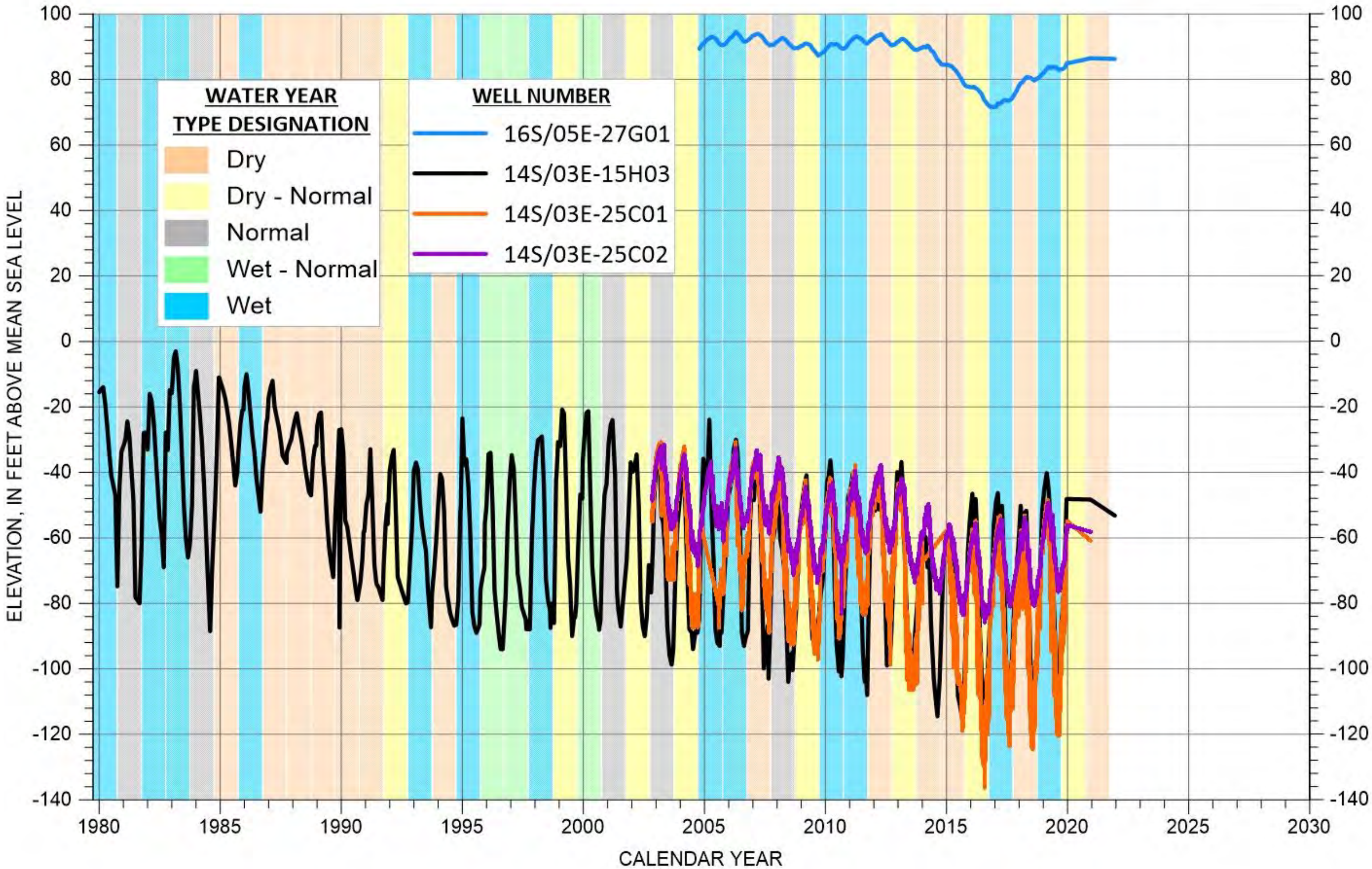


Figure 8. Groundwater Elevation Hydrographs for Selected Monitoring Wells

3.3 Seawater Intrusion

Seawater intrusion does not occur in the Eastside Subbasin; however, seawater intrusion does occur in the 180/400-Foot Aquifer and Monterey Subbasins. Figure 9 and Figure 10 show the seawater intrusion contours for the 180-Foot and 400-Foot Aquifers, respectively, that MCWRA annually prepares for the adjacent 180/400-Foot Aquifer Subbasin. The MCWRA seawater intrusion contours for the Monterey Subbasin are not included in these figures because they are likely less accurate due to lack of monitoring in the Monterey Subbasin. The extent of seawater intrusion is based on the 500 milligram per liter (mg/L) chloride isocontour.

Figure 9 shows that seawater intrusion in the 180-Foot Aquifer did not increase from WY 2020 to WY 2021. The 2021 400-Foot Aquifer contours on Figure 10, however, show that the total seawater intruded acreage approximately doubled from WY 2020 to WY 2021 in the 180/400-Foot Aquifer Subbasin, with a new lobe that extends toward the Eastside Subbasin. This indicates that seawater intrusion is still occurring, with minimal advancement compared with previous years. The 180-Foot and 400-Foot Aquifers are contemporarily correlated to the Shallow and Deep Zones of the Eastside Aquifer, respectively. The boundary between these 2 subbasins generally represents the furthest extents of the alluvial fans that are characterized by clays and other fine sediments. These sediments frequently act as an impediment—if not fully a barrier—to flow in certain locations. The groundwater flow relationship between the Eastside and 180/400-Foot Aquifer Subbasins is largely uncharacterized as a result of a lack of data both about the sediment changes and the groundwater elevations in the area. This is a data gap that will be addressed during implementation.

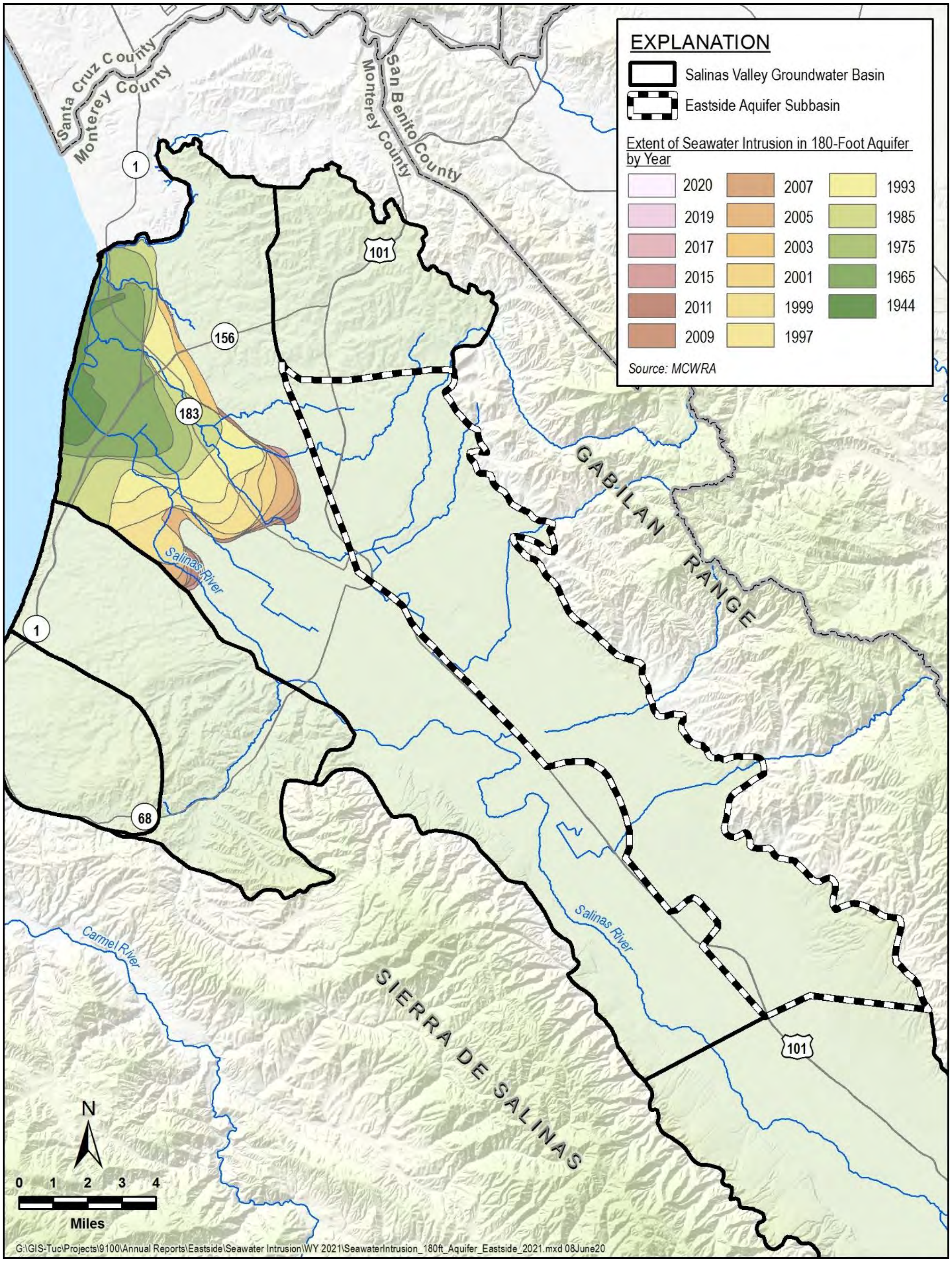


Figure 9. 2021 Seawater Intrusion Contours for the 180-Foot Aquifer

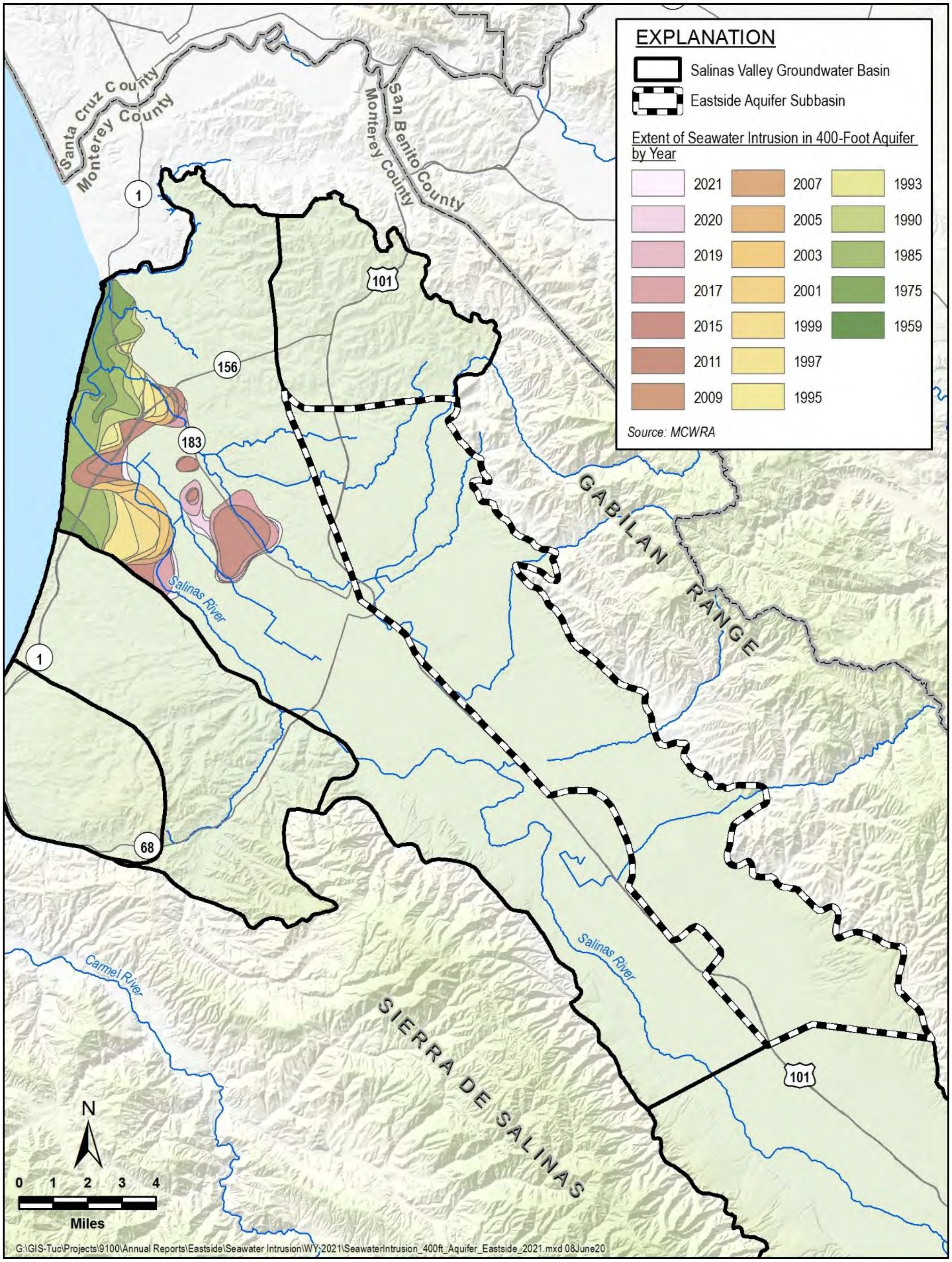


Figure 10. 2021 Seawater Intrusion Contours for the 400-Foot Aquifer

3.4 Change in Groundwater Storage

The Eastside Subbasin GSP adopted the concept of change in usable groundwater storage, defined as the annual average increase or decrease in volume of groundwater that can be safely used for municipal, industrial, or agricultural purposes.

The change in storage calculation for the 2 years since GSP submittal was calculated using groundwater elevation contours produced by MCWRA for fall 2019 and fall 2021. MCWRA uses groundwater elevations from November to December to produce their contours. Fall measurements occur at the end of the irrigation season and before groundwater levels increase due to seasonal recharge by winter rains. These measurements record annual changes in storage reflective of groundwater recharge and withdrawals in the Subbasin.

Average annual change in groundwater elevations in the Eastside Aquifer Subbasin from WY 2019 to WY 2021 was estimated by subtracting the fall 2019 groundwater elevations shown on Figure 11 from the fall 2021 groundwater elevations (Figure 4). The groundwater contours in the Shallow and Deep Zones of the Eastside Aquifer (Figure 4 and Figure 6, respectively) have similar elevations and flow patterns. Therefore, for this change in storage calculation the groundwater elevation contours for the Shallow Zone of the Eastside Aquifer are used because they are generally representative of overall aquifer conditions of the Eastside Aquifer. This change was then multiplied by the storage coefficient for the Eastside Aquifer. MCWRA's *State of the Basin Report* approximates the storage coefficient to 0.08 for the Eastside Subarea, which overlaps most of the Eastside Subbasin (Brown and Caldwell, 2015). The resulting change in storage represents change over the 2-year period; this value is divided by 2 for the average annual change. The estimated change in storage due to groundwater elevation changes, in AF per acre, in the Eastside Aquifer is depicted on Figure 12. Since the groundwater elevation contours do not extend across the entire Subbasin, the storage change was not calculated in the areas that were not contoured, as indicated by the areas without color on Figure 12.

A summary of components used for estimating change in groundwater storage due to groundwater elevation changes is shown in Table 4. Annual groundwater storage change due to changes in groundwater elevation from fall 2019 to fall 2021 decreased at an annual average rate of 3,800 AF/yr. in the Eastside Aquifer. The negative signs in Table 4 indicate decline in groundwater levels or loss in storage.

Table 4. Parameters Used for Estimating Change in Groundwater Storage

Component	Values
Area of contoured portion of Subbasin (acres)	49,700
Storage coefficient	0.08
Average change in groundwater elevation from fall 2019 to fall 2021 (feet)	-1.91
Change in groundwater storage from fall 2019 to fall 2021 (AF)	-7,600
Total annual change in groundwater storage (AF/yr.)	**-3,800**

Note: Negative values indicate loss, positive values indicate gain.

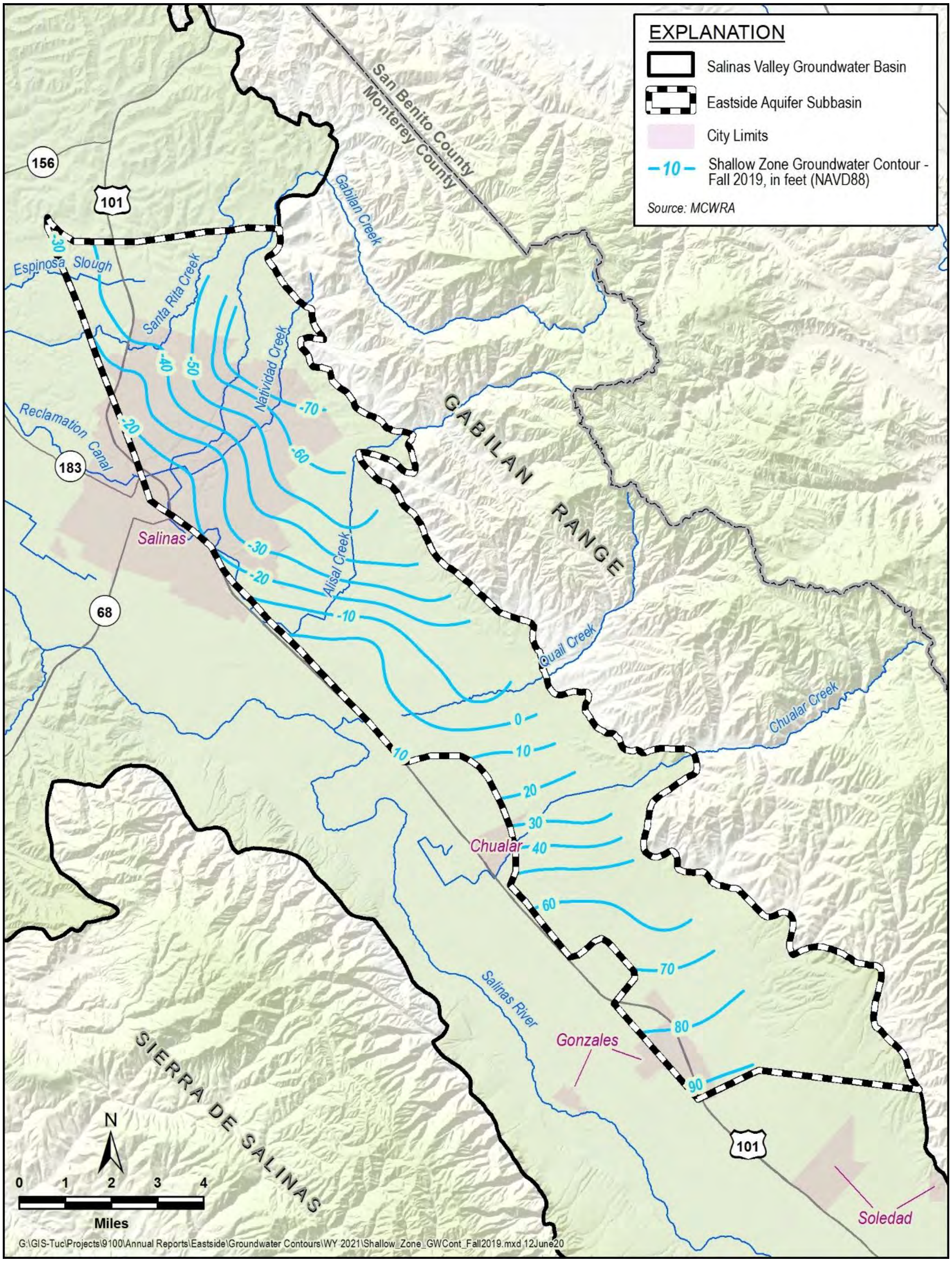


Figure 11. Fall 2019 Groundwater Elevation Contour Map for Shallow Zone of the Eastside Aquifer

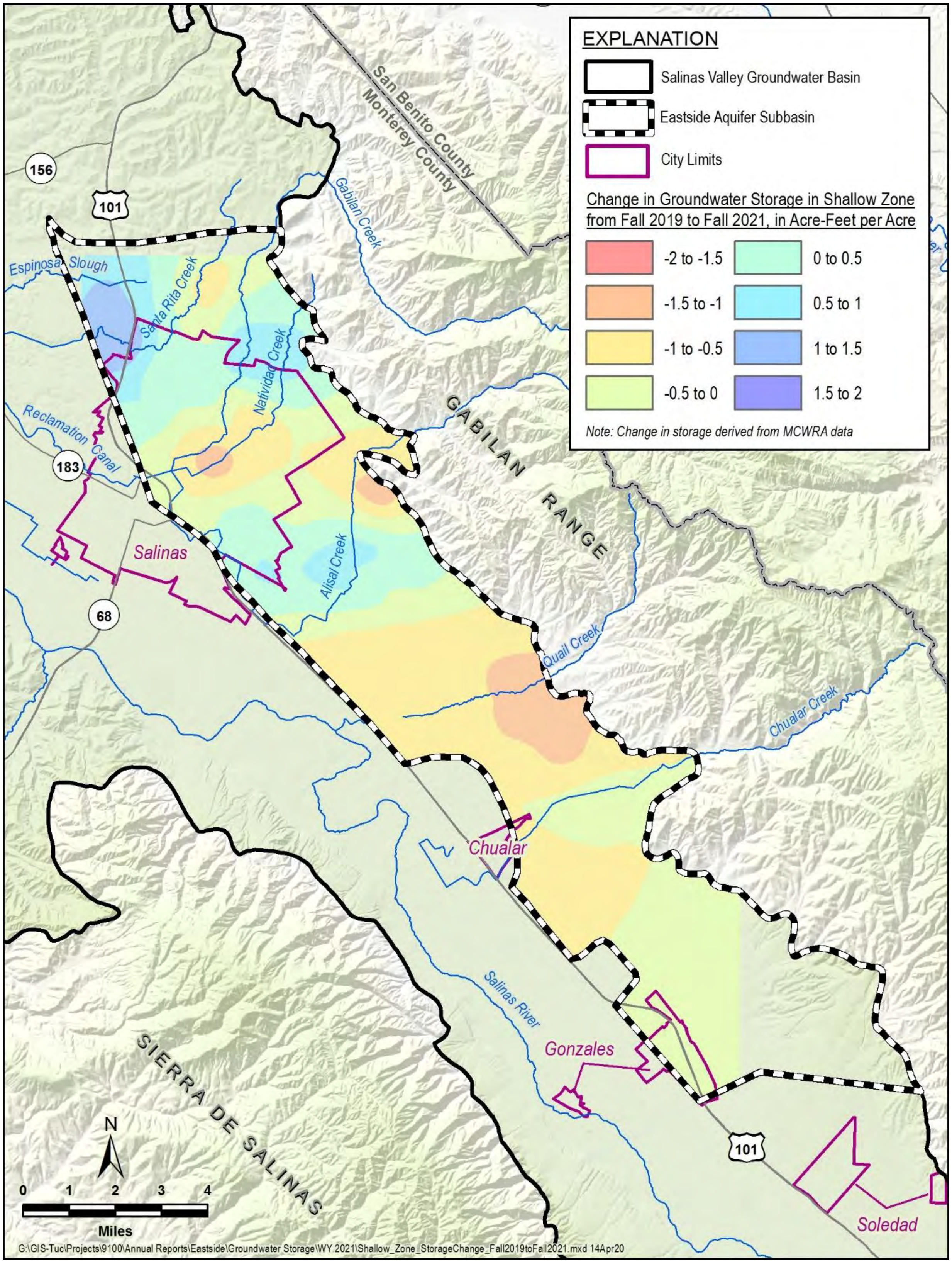


Figure 12. Average Annual Change in Groundwater Storage Between WY 2019 and WY 2021 in the Eastside Aquifer

GSP Regulations also require that annual and cumulative changes in groundwater storage and groundwater use along with water year type data are plotted together as shown on Figure 16. The annual and cumulative groundwater storage changes included on Figure 16 are based on Subbasin-wide average groundwater elevation changes. This figure includes groundwater extraction from 1995 to 2022, 1995 to 2016 average historical extraction, and the 2070 projected extraction from Chapter 6 of the GSP. As the last year in a 3-year drought, 2022 pumping increased slightly since the previous year in reporting year and is lower than the historical average and projected pumping. The orange line represents cumulative storage change since 1944 (e.g., zero is the amount of groundwater in storage in 1944, and each year the annual change in storage is added to produce the cumulative change in storage). The green line represents the annual change in storage from the previous year. The 1995 annual change in storage value is based on change in storage from 1994. From WY 2021 to WY 2022, the annual change groundwater in storage increased slightly, as shown by the green line, but the cumulative change in storage decreased, as shown by the orange line.

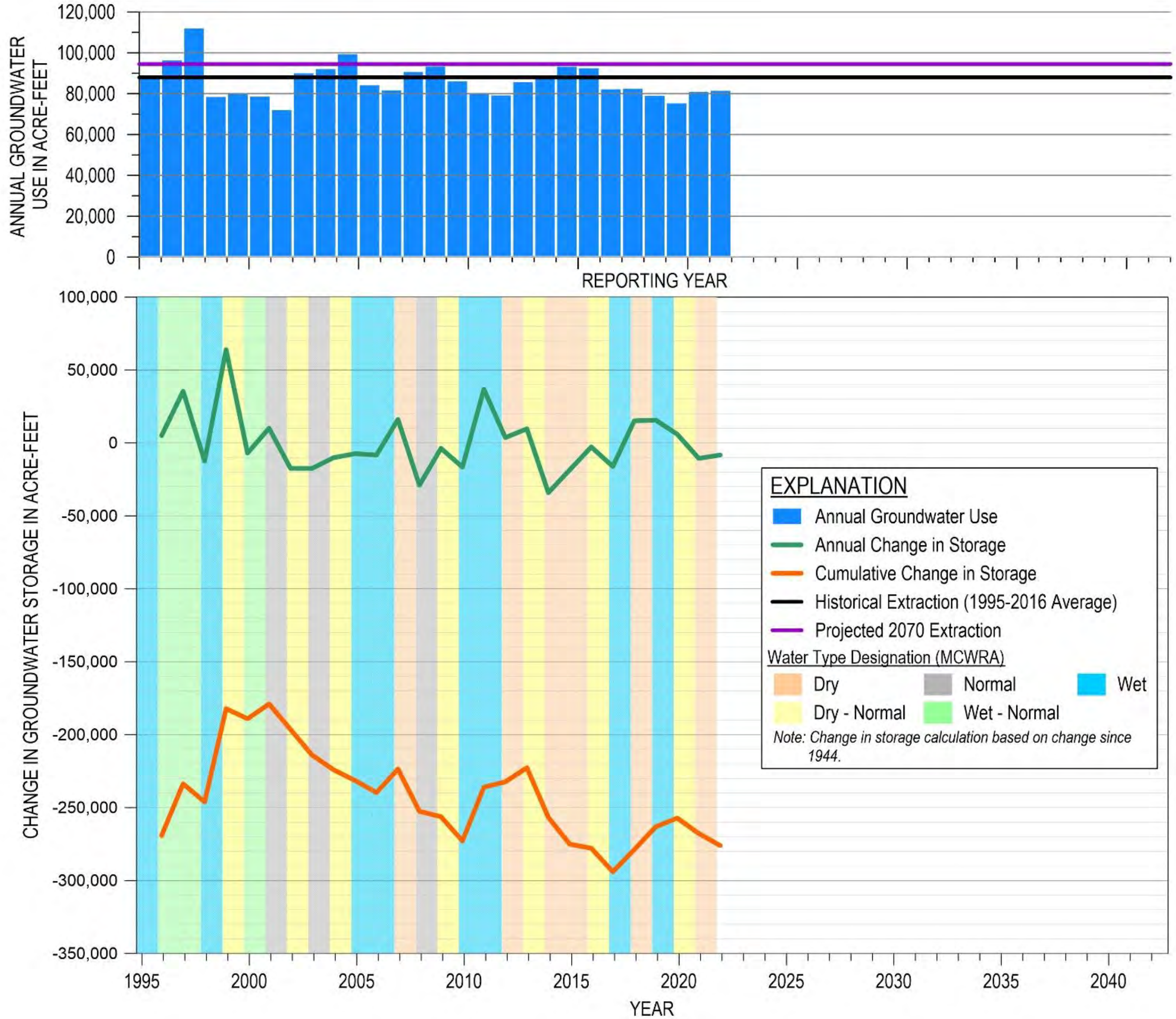


Figure 13. Groundwater Use and Annual and Cumulative Change in Groundwater Storage

3.5 Groundwater Quality

Degradation of groundwater quality is measured in public water system supply wells using data from the SWRCB Division of Drinking Water (DDW). Under the Irrigated Lands Regulatory Program (ILRP), water quality degradation is monitored for on-farm domestic wells and agricultural supply (irrigation) wells. Water quality data for both programs can be found on SWRCB's GAMA groundwater information system. The constituents of concern (COC) for municipal public water system supply wells and domestic wells have a Maximum Contaminant Level (MCL) or Secondary Maximum Contaminant Level (SMCL) established by the State's Title 22 Regulations. The COCs for irrigation supply wells include those that may lead to reduced crop production and are outlined in the Central Coast Regional Water Quality Control Board (CCRWQCB)'s Basin Plan (2019). As discussed in the GSP, each set of wells has its own COCs. Table 5 and Figure 14 show the number of wells that were sampled and that have exceeded the regulatory standard in WY 2021 for the COCs in the Eastside Subbasin listed in the GSP. The COCs that exceeded their regulatory standard include 1,2,3-trichloropropane, arsenic, iron, manganese, nitrate, specific conductivity, and total dissolved solids. One new constituent—methyl-tert-butyl ether—was not included in the GSP because there were no exceedances at that time, but it had an exceedance of the regulatory standard in WY 2021.

Table 5. WY 2021 Groundwater Quality Data

Constituent of Concern (COC)	Regulatory Exceedance Standard	Standard Units	Number of Wells Sampled for COC in WY 2021	Number of Wells Exceeding Regulatory Standard in WY 2021
DDW Wells				
1,2,3-Trichloropropane	0.005	UG/L	13	5
1,2-Dibromo-3-chloropropane	0.2	UG/L	0	0
Arsenic	10	UG/L	17	1
Benzo(a)pyrene	0.2	MG/L	5	0
Di(2-ethylhexyl)phthalate (DEHP)	4	UG/L	5	0
Dinoseb	7	UG/L	5	0
Hexachlorobenzene (HCB)	1	UG/L	4	0
Iron	300	UG/L	16	3
Lindane (Gamma-BHC)	0.2	UG/L	4	0
Manganese	50	UG/L	16	1
MTBE (Methyl-tert-butyl ether)	13	UG/L	11	1
Nitrate as N	10	MG/L	48	12
Specific Conductivity	1600	UMHOS/CM	12	2
Total Dissolved Solids	1000	MG/L	9	2
Vinyl Chloride	0.5	UG/L	11	0
ILRP On-Farm Domestic Wells				
Chloride	500	MG/L	0	0
Iron	300	UG/L	0	0
Manganese	50	UG/L	0	0
Nitrate (as nitrogen)	10	MG/L	3	2
Nitrate + Nitrite (sum as nitrogen)	10	MG/L	0	0
Specific Conductance	1600	UMHOS/CM	0	0
Sulfate	500	MG/L	0	0
Total Dissolved Solids	1000	MG/L	0	0
ILRP Irrigation Supply Wells				
Chloride	350	MG/L	0	0
Iron	5	MG/L	0	0
Manganese	0.2	MG/L	0	0

Note: MG/L= milligram/Liter, UG/L = micrograms/Liter, UMHOS/CM = micromhos/centimeter

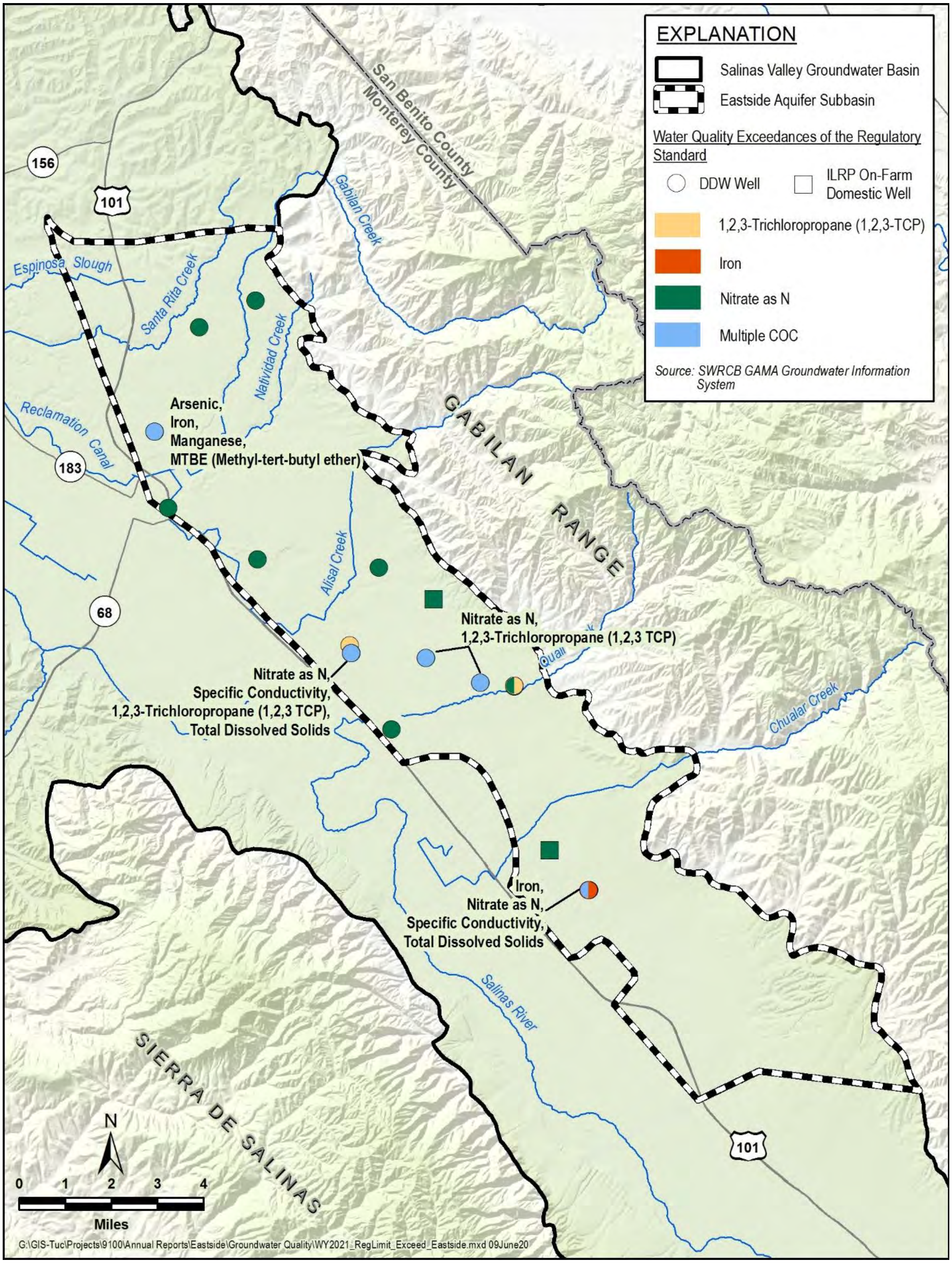


Figure 14. Wells with an Exceedance of the Regulatory Standard in WY 2021

3.6 Subsidence

Subsidence is measured using Interferometric Synthetic-Aperture Radar (InSAR) data. These data are provided by DWR on the SGMA data viewer portal (DWR, 2021). Figure 15 shows the annual subsidence for the Eastside Subbasin from October 2020 to October 2021. Data continue to show negligible subsidence. All land movement was within the estimated error of measurement of +/- 0.1 foot.

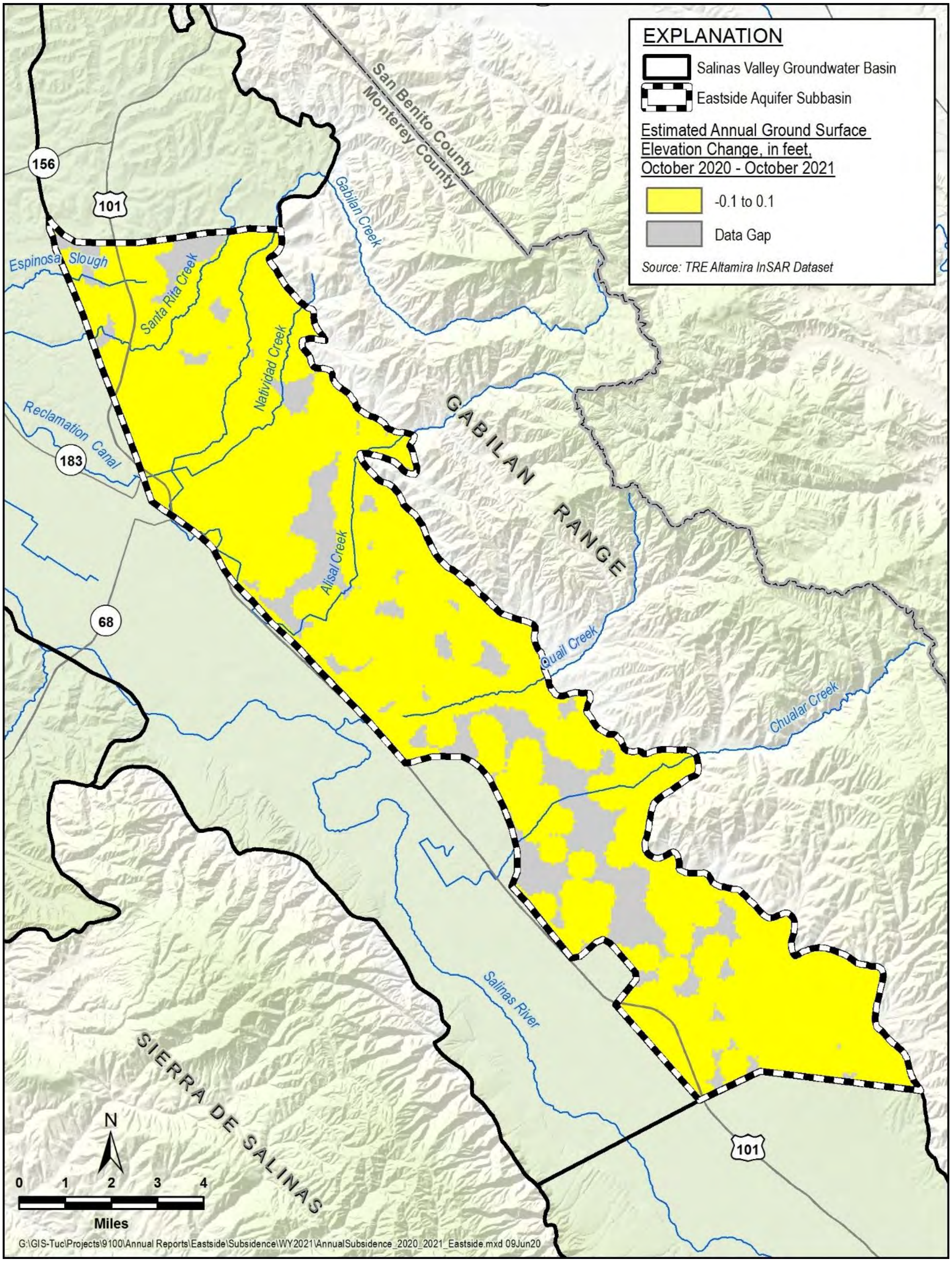


Figure 15. Annual Subsidence

3.7 Depletion of Interconnected Surface Water

As described in Section 4.4.5.1 of the GSP, there are no locations of ISW in the Eastside Subbasin. However, SVBGSA is planning on installing a new shallow well along Gabilan Creek to monitor nearby ISW in the Langley Area Subbasin and to monitor any future interconnection that could occur with the Eastside Subbasin. If there is interconnection inf the future, the rate of depletion of surface water due to groundwater pumping will be estimated as described in Section 5.6.2 of the GSP using the Salinas Valley Integrated Hydrologic Model (SVIHM).

4 ANNUAL PROGRESS TOWARD IMPLEMENTATION OF THE GSP

4.1 WY 2021 Groundwater Management Activities

This section details groundwater management activities that have occurred in WY 2021, independent of GSP implementation. These include activities of SVBGSA and MCWRA that promote groundwater sustainability and are important for reaching the GSP sustainability goal.

In WY 2021, SVBGSA and MCWRA undertook additional activities. Activities are separated into 4 main categories: coordination and engagement, data and monitoring, planning, and project and implementation activities.

4.1.1 Coordination and Engagement

SVBGSA continued robust stakeholder engagement and strengthened collaboration with key agencies and partners. SVBGSA worked throughout the year with the Eastside Aquifer Subbasin Planning Committee to develop the Eastside Subbasin GSP, submitted to DWR in January 2022.

SVBGSA also identified the need for an Integrated Implementation Committee to guide development of an Integrated Implementation Plan for 6 Subbasins within the Salinas Valley. The Integrated Implementation Committee will provide input on basin wide and regional projects and management actions and resolve neighboring basin concerns. The intent of the Committee is to ensure the Salinas Valley Basin is on a cohesive path to sustainability. Over the course of WY 2021, SVBGSA held 12 Valley-wide Board meetings and 11 Valley-wide Advisory Committee Meetings.

SVBGSA and MCWRA also increased coordination and collaboration through weekly meetings between agency leads and consultants. This resulted in increased awareness of each other’s activities, objectives, and challenges. MCWRA and SVBGSA have scoped the roles of the 2 agencies and are developing a Memorandum of Understanding (MOU) to be reviewed by each agency Board. The MOU will further outline how the 2 agencies will coordinate through the implementation of the GSPs.

SVBGSA conducted meetings throughout the year to reach out to additional agencies and stakeholders to coordinate. These included meetings with:

- The National Marine Fisheries Service on the effect of groundwater extraction on surface water depletion and steelhead and its habitat
- Monterey County Health Department on data and the existing well permitting and water quality monitoring programs

- CCRWQCB on data and future coordination with the multiple agencies involved in water quality
- Integrated Regional Water Management Plan, including coordinating with Central Coast Wetlands Group on watershed coordinator grant

SVBGSA contracted with Consensus Building Institute (CBI) to conduct a work program to help SVBGSA better define a meaningful engagement strategy with Disadvantaged Communities (DACs) and to develop a work plan that aligned with GSP development and ultimately with SVBGSA long term goals around groundwater sustainability. CBI conducted interviews to gage primary groundwater issues of concern in DACs, identify possible SVBGSA focus with DACs, confirm barriers to engagement with DACs, and identify outreach and education materials and approaches to achieve success with these communities over the long term. DACs are an important stakeholder for SVBGSA to develop meaningful and long-term relationships with regard to groundwater sustainability.

4.1.2 Data and Monitoring

SVBGSA also undertook several efforts to move data collection and monitoring forward. During WY 2021:

- SVBGSA assessed data gaps and selected 2 to request be filled through DWR's Technical Support Services. SVBGSA evaluated land ownership and access. In doing so, SVBGSA worked with MCWRA to ensure the wells will be strategically located and contribute data that is useful for all agencies.
- SVBGSA and MCWRA began discussions on expanding and enhancing the GEMS program. This effort will primarily take place in 2022 and 2023. These early discussions focused on understanding the challenges to changing the program and steps involved.
- SVBGSA participated in DWR's planning for flying AEM across the Salinas Valley. SVBGSA undertook communication and engagement with stakeholders, and it gave feedback on flight lines.

4.1.3 Planning

Throughout WY 2021, SVBGSA worked with the 10 members of the Eastside Planning Committee to draft the Eastside Subbasin GSP. SVBGSA engaged the Committee in an iterative process of chapter development: first educating the Committee on chapter topics, then facilitating discussions on each topic, and finally reviewing draft chapters. Stakeholders were involved in understanding the Subbasin, setting SMC, and developing a list of potential projects and management actions. It received public comments throughout the process and in September 2021 it initiated a 45-day public comment period for the full GSP. At the conclusion of the planning process in August 2021 for the Eastside GSP the SVBGSA will have held more than 34 planning meetings and technical workshops on each aspect of the Eastside Subbasin GSP.

In addition to regularly scheduled committee meetings, a series of workshops were held for the Eastside Subbasin Planning Committee as detailed in Table 6. These workshops were informational for committee members, stakeholders, and the general public and cover pertinent topics to be included in the GSPs. Workshops were timed to specific chapter development for the GSP. Subject matter experts were brought in as necessary to provide the best available information to Subbasin Planning Committee members.

Table 6. Subject Matter Workshops Held During GSP Preparation

Topic	Date
Brown Act and Conflict of Interest	July 22, 2020
Sustainable Management Criteria	July 28, 2020
Water Law	August 10, 2020
Salinas Valley Watershed Overview	August 26, 2020
Web Map Workshop	September 30, 2020
Town Hall – Domestic Wells & Drinking Water	October 28, 2020
Pumping Allocations	November 18, 2020
Funding Mechanisms	January 27, 2021
Water Budgets	February 24, 2021
Communications and Implementation	March 31, 2021
Technical Modeling Workshop – SVIHM & SVOM	June 30, 2021

As an agency, SVBGSA GSP planning efforts during WY 2021 focused on developing 4 additional groundwater sustainability plans besides the Eastside GSP, as well as the GSP Update for the adjacent 180/400-Foot Aquifer Subbasin that is currently under development. While SVBGSA developed these plans through a bottom-up process working with subbasin planning committees, it ensured that they aligned with the Eastside Subbasin GSP, particularly with regards to selecting SMC that would not prevent the Eastside Subbasin from avoiding undesirable results. For example, all adjacent subbasin GSPs selected groundwater level minimum thresholds that are based on not exceeding recent low levels.

In June 2021, SVBGSA received DWR's review and approval of the 180/400-Foot Aquifer Subbasin GSP. Since the Eastside Subbasin GSP and other Salinas Valley GSPs were under development, SVBGSA took action immediately to address the corrective action on the water quality undesirable result. SVBGSA sought legal advice, revised the undesirable result for the GSPs, and brought the revised language to the partner GSAs, subbasin planning committees, Advisory Committee, and Board of Directors for approval. This language was included in the Eastside Subbasin GSP.

4.1.4 GSP Implementation Activities

The SVBGSA submitted the Eastside Subbasin GSP in January 2022. SVBGSA and MCWRA undertook several activities during WY 2021 that contribute to GSP implementation:

Seawater Intrusion Working Group (SWIG) and SWIG Technical Advisory Committee (SWIG TAC): SVBGSA worked throughout WY 2021 with SWIG and SWIG TAC, thus implementing one of the key management actions within the 180/400-Foot Aquifer Subbasin GSP. SWIG aims to develop consensus on the science of seawater intrusion in the Salinas Valley Groundwater Basin and ultimately develop a comprehensive set of projects and management actions that control seawater intrusion while providing cost effective water supplies for the region. After creating working guidelines for themselves and understanding the landscape of current projects occurring to stop seawater intrusion, SWIG and SWIG TAC meetings in WY 2021 focused on reviewing and better understanding additional projects that could stop seawater intrusion in the 180/400-Foot Aquifer Subbasin. SWIG discussed and provided input on demand management approaches and reviewed the various project types including specific project ideas and examples such as an extraction barrier and aquifer storage and recovery. SWIG completed the development of a Request for Qualifications for the Deep Aquifers Study and recommended tasks for the Deep Aquifers Study.

Deep Aquifers Study: In WY 2021, SVBGSA solicited contributions to fund the Deep Aquifers Study from local agencies and stakeholders. In October 2021, SVBGSA secured the $850,000 needed for the study when the Board approved the Agreement for Contribution to Funding the Deep Aquifer Investigation to be entered into with the following agencies and entities for the Deep Aquifers Study: Monterey County; Monterey County Water Resources Agency; Castroville Community Services District; Marina Coast Water District; City of Salinas; Alco Water; California Water Service; and irrigated agriculture entities including the Salinas Valley Water Coalition. SVBGSA drafted the Request for Qualifications and released it in September 2021.

Seawater Intrusion Model Expansion: SVBGSA began development on a Seawater Intrusion Model in the Monterey Subbasin through a Proposition 68 grant; however, most of the seawater-intruded area of the Valley is within the 180/400-Foot Aquifer Subbasin and if it advances there is risk to the Eastside Subbasin. SVBGSA and Monterey County decided to co-fund the expansion of the model to cover the entire intruded or potentially intruded area within the Salinas Valley Groundwater Basin, including the Eastside Subbasin down to Chualar Creek. The model is a variable density USG-TRANSPORT model. The SVIHM/SVOM developed by USGS does not have the capability of assessing how seawater interacts with groundwater based on their differing densities. This Seawater Intrusion Model will provide a critical tool in assessing which projects and management actions can adequately address seawater intrusion and assist with scoping them.

Drought Technical Advisory Committee: During WY 2021, MCWRA continued to convene the Drought Technical Advisory Committee (D-TAC). D-TAC completed the development of standards and guiding principles for managing the operations of Nacimiento and San Antonio reservoirs during multi-year drought periods. MCWRA Board of Directors adopted the standards and guiding principles on February 16, 2021. Moving forward, D-TAC will meet any time a drought trigger occurs to develop a recommended release schedule for Nacimiento and San Antonio Reservoirs.

4.2 Sustainable Management Criteria

The Eastside Subbasin GSP includes descriptions of significant and unreasonable conditions, minimum thresholds, interim milestones, measurable objectives, and undesirable results for each of DWR's 6 sustainability indicators. SVBGSA determined locally defined significant and unreasonable conditions based on public meetings and staff discussions. SMC are individual criterion that will each be met simultaneously, rather than in an integrated manner. A brief comparison of the data presented in Section 3 and SMC criteria are included for each sustainability indicator in the following sections.

Since the GSP addresses long-term groundwater sustainability, some of the metrics for the sustainability indicators may not be applicable in each individual future year. The GSP is developed to avoid undesirable results—under average hydrogeologic conditions—with long-term, deliberate management of groundwater. Pursuant to SGMA regulations (California Water Code § 10721(w)(1)), "Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods." Therefore, groundwater levels may temporarily exceed minimum thresholds during prolonged droughts, which could be more extreme than those that have been anticipated based on historical data and anticipated climate change conditions. Such temporary exceedances do not constitute an undesirable result.

Average hydrogeologic conditions are the anticipated future groundwater conditions in the Subbasin, averaged over the planning horizon and accounting for anticipated climate change. Future groundwater conditions are based on historical precipitation, evapotranspiration, and streamflow, as well as reasonably anticipated climate change and sea level rise. The average hydrogeologic conditions include reasonably anticipated wet and dry periods.

The 2 solid green lines on Figure 16 show the anticipated average precipitation for 2030 and 2070, accounting for reasonable future climatic change (DWR, 2018). Measured annual precipitation for WY 2020 and 2021 are shown as the 2 blue dots, and the dashed blue line shows the average measured precipitation since GSP implementation. This figure shows that WY

2021 was below the average hydrologic conditions expected for the Subbasin. Furthermore, average rainfall since GSP implementation has not risen to the anticipated future average conditions. As a result, it is not anticipated that all measurable objectives have been achieved this year because these measurable objectives were based on managing to average future climatic conditions. This does not mean that minimum thresholds should be exceeded. However, WY 2021 was dry, and therefore it is more likely that minimum thresholds are exceeded in 2021. Because the Subbasin is not expected to achieve sustainability until 2042, the current minimum threshold exceedances do not imply unsustainable groundwater management. However, areas with current minimum threshold exceedances should be monitored and should demonstrate progress toward measurable objectives as conditions approach expected average conditions.

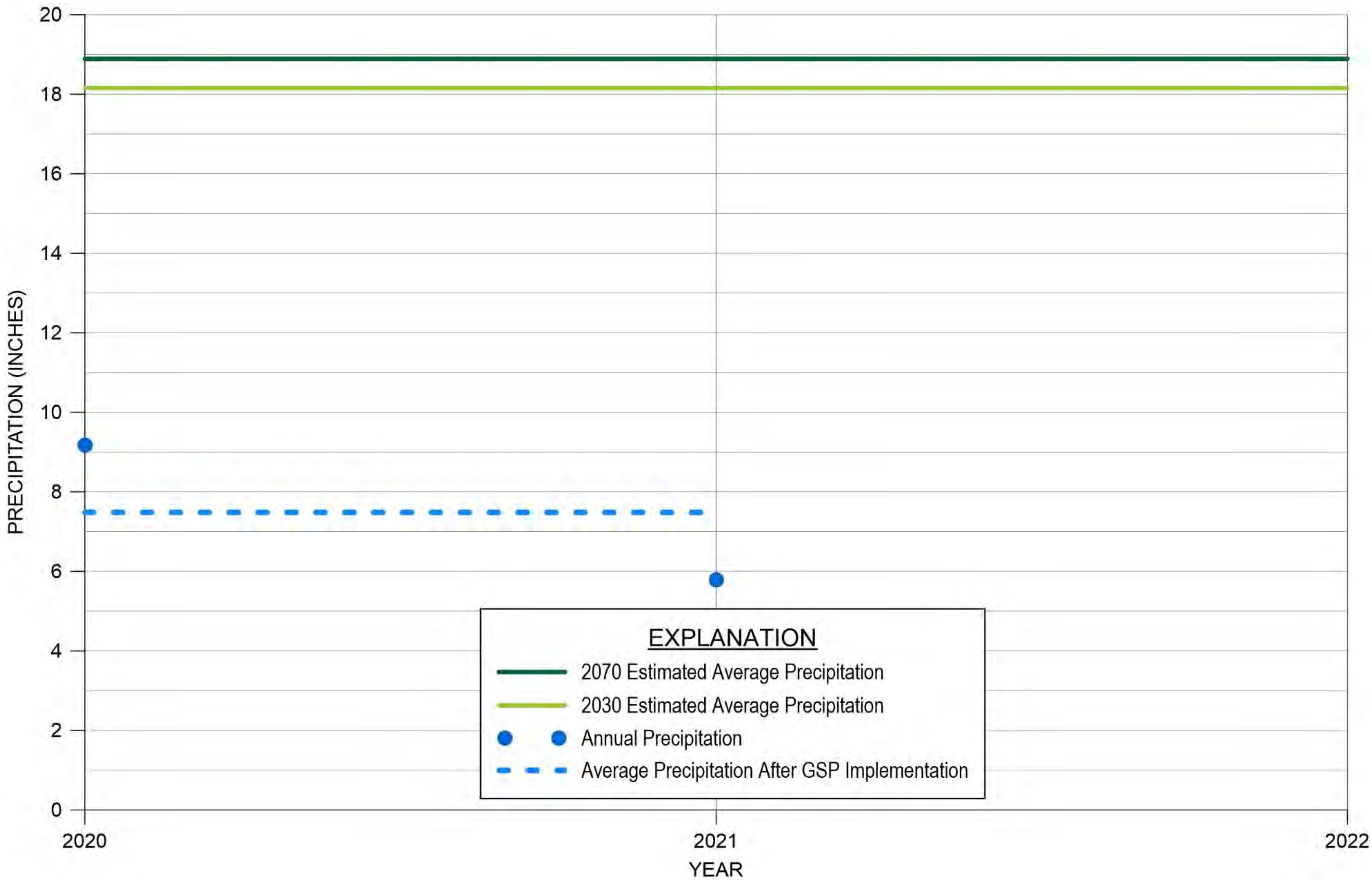


Figure 16. Comparison of Average Precipitation Since GSP Implementation and Estimated Future Average Precipitation

4.2.1 Chronic Lowering of Groundwater Levels SMC

4.2.1.1 Minimum Thresholds

Section 8.6.2.1 of the Eastside Subbasin GSP describes the information and methodology used to establish minimum thresholds for chronic lowering of groundwater levels. In the Eastside Subbasin, the minimum thresholds were set to 2015 groundwater elevations. The minimum threshold values for each well within the groundwater elevation monitoring network are provided in Table 7. Fall groundwater elevation data are color-coded on this table: red cells mean the groundwater elevation is below the minimum threshold, yellow cells mean the groundwater elevation is above the minimum threshold but below the measurable objective, and green cells mean the groundwater elevation is above the measurable objective. In WY 2021, 8 wells in the Subbasin exceeded their minimum threshold as indicated by the red cells below.

Table 7. Groundwater Elevation Data, Minimum Thresholds, and Measurable Objectives (in feet)

Below Minimum Threshold		Above Minimum Threshold		Above Measurable Objective	
Monitoring Site	Minimum Threshold	WY 2020 elevation data	WY 2021 elevation data	Interim Milestone at Year 2027	Measurable Objective (goal to reach at 2042)
Shallow Zone					
14S/03E-06R01	-29.7	-30.0	-27.1	-32.2	-24.9*
14S/03E-11H01	25.2	56.1	36.2	59.0	88.3
14S/03E-24H01	-84.1	-85.9	-82.2	-84.3	-54.5
14S/03E-25C02	-65.4	-58.2	-58.2*	-71.5	-42.2*
14S/03E-27B01	-12.8	-10.9	-8.4	-13.1	-5.0*
14S/03E-33G01	-18.0	-15.0	-16.0	-15.8	-6.9*
14S/03E-36A01	-55.2	-47.0	-55.7	--56.8	-29.7
15S/04E-07R02	-4.6	4.3	3.3	-5.8	17.8
15S/04E-14N01	-34.6	-38.4	-37.1	-42.0	14.0*
15S/04E-17P02	-18.0	-3.3	-11.5	-14.2	17.5
15S/04E-24N03	-15.8	-10.3*	-8.4	-23.5	26.0
16S/05E-17R01	61.9	72.1	71.1	62.1	77.1
Deep Zone					
14S/03E-17F01	-44.0	-43.0	-43.0*	-45.0	-27.5*
14S/03E-21L01	-36.0	-27.0	-27.0*	-42.8	-22.6*
14S/03E-22D01	-62.0	-57.0	-57.0*	-50.0	-50.0
14S/03E-25C01	-64.9	-60.9	-60.9*	-76.3	-41.7*
14S/03E-34C01	-31.0	-31.0	-33.0	-31.5	-13.3*
15S/03E-02G01	-36.0	-22.0	-25.0	-31.4	-8.8*

Below Minimum Threshold		Above Minimum Threshold		Above Measurable Objective	
Monitoring Site	Minimum Threshold	WY 2020 elevation data	WY 2021 elevation data	Interim Milestone at Year 2027	Measurable Objective (goal to reach at 2042)
16S/04E-02Q03	32.5	38.2	33.3	26.0	57.8
Both Zones					
14S/03E-03K01	-63.1	-61.2	-65.2	-67.1	-40.7
14S/03E-08C01	-48.0	-37.3	-33.3	-38.1	-31.5
14S/03E-08Q03	-41.0	-83.0	-83.0*	-48.3	-31.0
14S/03E-09E02	-54.0	-59.0	-59.0*	-65.3	-38.2*
14S/03E-09P02	-33.1	-27.0	-27.0*	-32.3	-19.7
14S/03E-15H03	-55.3	-48.3	-53.2	-59.7	-36.7
14S/04E-31Q02	-61.0	-58.6	-58.6*	-65.3	-25.6*
15S/04E-06R01	-30.5	-31.2	-25.1	-39.1	-4.1
15S/04E-09D01	-52.0	-47.1	-55.0	-55.4	-29.2
15S/04E-15D02	-26.5	-24.8	-31.2	-33.3	-0.2
15S/04E-21F04	-12.2*	-0.8	-0.8*	-12.0	16.5*
15S/04E-27G01	3.8	5.8	12.5	0.7	33.5
15S/04E-36H01	12.9	19.8	22.4	8.6	56.2
16S/05E-05N01	29.1	38.8	38.8*	26.0	62.5
16S/05E-07G01	38.7	49.4	48.7	37.5	69.3
16S/05E-27G01	77.7	86.5	86.3	76.0	88.4*

*Groundwater elevation was estimated.

4.2.1.2 Measurable Objectives and Interim Milestones

The measurable objectives for chronic lowering of groundwater levels represent target groundwater elevations that are higher than the minimum thresholds. These measurable objectives provide operational flexibility to ensure that the Subbasin can be managed sustainably over a reasonable range of hydrologic variability. Measurable objectives for the chronic lowering of groundwater levels are summarized in Table 7. None of the RMS wells had groundwater elevations higher than their measurable objective in WY 2021.

To help reach measurable objectives, SVBGSA set interim milestones at 5-year intervals. The 2027 interim milestones for groundwater elevations are also shown in Table 7. The WY 2021 groundwater elevations in no wells are already higher than the 2027 interim milestones.

4.2.1.3 Undesirable Result

The chronic lowering of groundwater levels undesirable result is a quantitative combination of groundwater elevation minimum threshold exceedances. For the Subbasin, the groundwater elevation undesirable result is:

More than 15% of the groundwater elevation minimum thresholds are exceeded.

Table 7 shows that 23% of wells exceed their minimum threshold and, therefore, the 20-year planning horizon undesirable result. Groundwater elevation minimum threshold exceedances, compared with the 2042 undesirable result, is shown on Figure 17. If a value is in the shaded red area, it would constitute undesirable result in 2042. This graph will be updated annually with new data to demonstrate the sustainability indicator's direction toward sustainability.

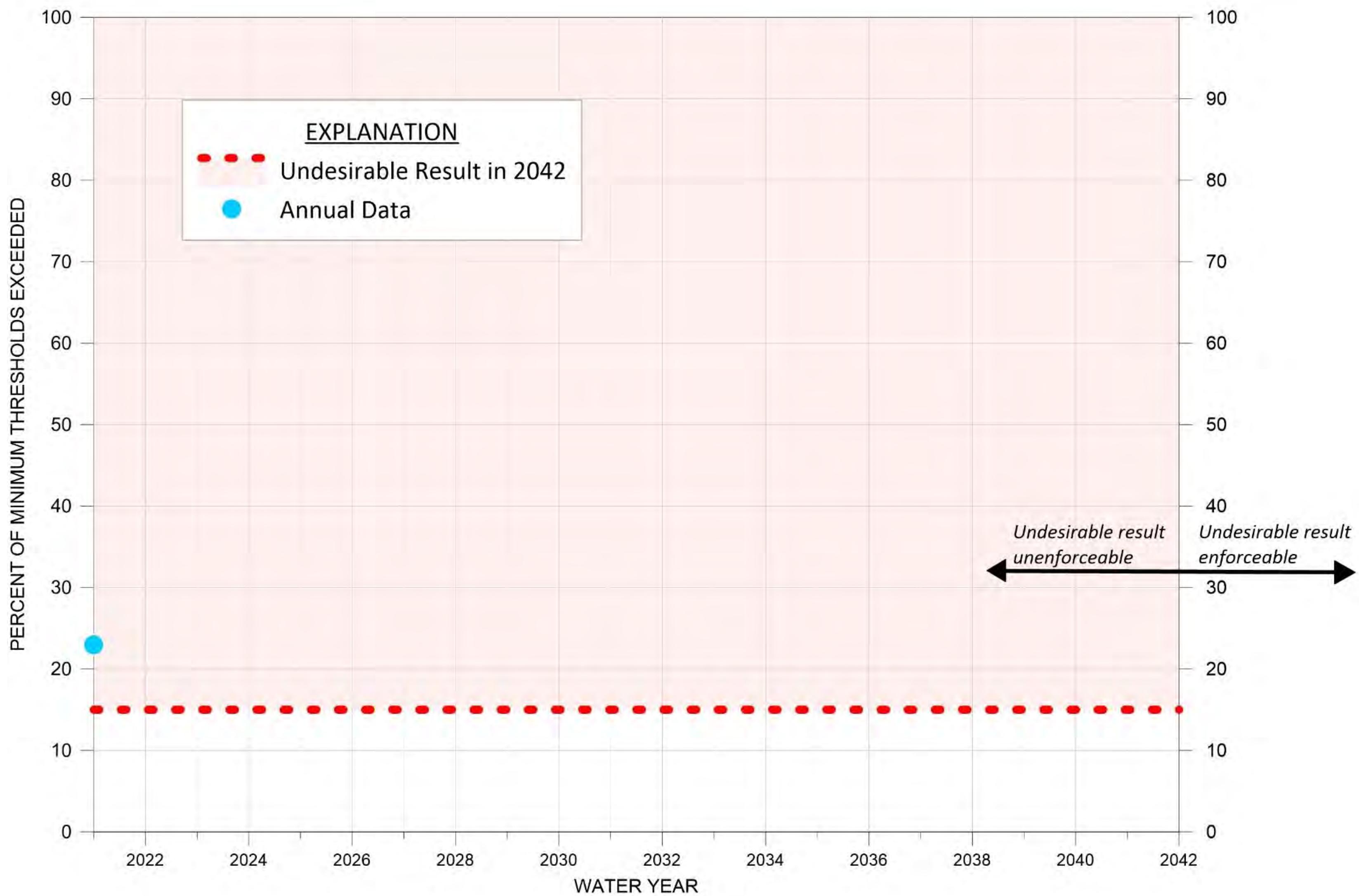


Figure 17. Groundwater Elevation and Storage Exceedances Compared to 2042 Undesirable Result

4.2.2 Reduction in Groundwater Storage SMC

4.2.2.1 Minimum Thresholds

The reduction in groundwater storage SMC is established by proxy using groundwater elevations. The minimum thresholds for reduction in groundwater storage are measured using groundwater elevations as proxies; therefore, the minimum thresholds are identical to the minimum thresholds for groundwater level RMS wells, which are those described in Section 4.2.1.1.

4.2.2.2 Measurable Objective and Interim Milestones

The measurable objectives and interim milestones for reduction in groundwater storage are the same as those for groundwater elevations that are described in Section 4.2.1.2.

4.2.2.3 Undesirable Result

The criteria used to define undesirable results for reduction of groundwater storage are based on minimum thresholds established for chronic lowering of groundwater levels. The reduction of storage undesirable result is:

> *More than 15% of groundwater elevation minimum thresholds are exceeded. The undesirable result for reduction in groundwater storage is established by proxy using groundwater elevations.*

Based on the groundwater elevation data presented in Section 4.2.1, more than 15% of wells exceeded their minimum thresholds. The 2021 groundwater storage as measured by proxy using groundwater elevations exceeded the 20-year planning horizon undesirable result as shown on Figure 17. If a value is in the shaded red area, it would constitute an undesirable result in 2042.

4.2.3 Seawater Intrusion SMC

4.2.3.1 Minimum Thresholds

The minimum threshold for seawater intrusion is defined by a chloride concentration isocontour of 500 mg/L for the principal aquifer where seawater intrusion may lead to undesirable results. Section 8.8.2.1 of the Eastside Aquifer Subbasin GSP describes the information and methodology used to establish minimum thresholds for chronic seawater intrusion. The Subbasin boundary is adopted as the seawater intrusion minimum threshold as depicted by the red line on Figure 18.

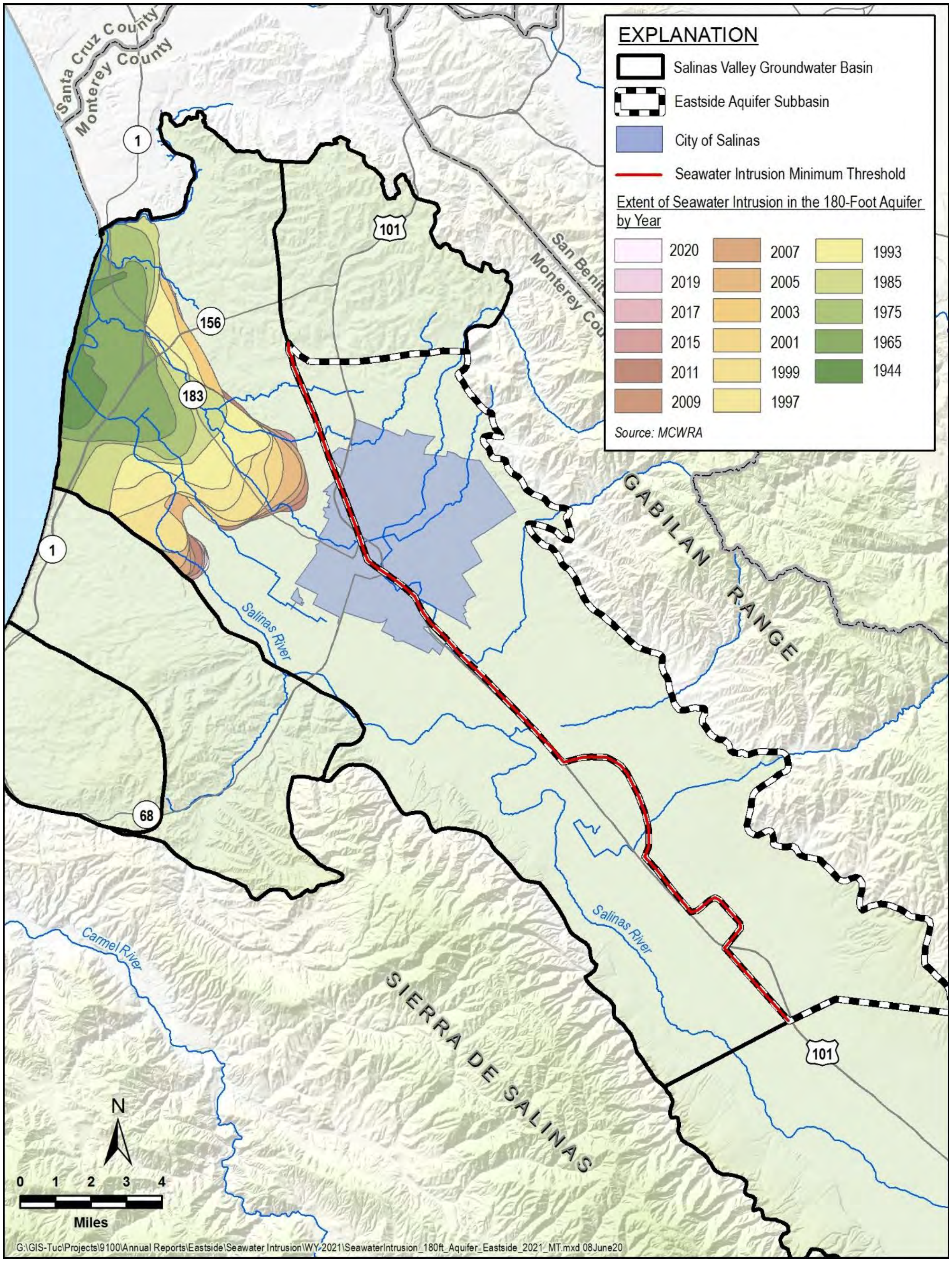


Figure 18. Seawater Intrusion Compared to the Seawater Intrusion Minimum Threshold, 2042 Undesirable Result, and Measurable Objective

4.2.3.2 Measurable Objectives and Interim Milestones

The measurable objective for seawater intrusion is identical to the minimum threshold that is shown on Figure 18.

4.2.3.3 Undesirable Result

The seawater intrusion undesirable result is a quantitative combination of chloride concentrations minimum threshold exceedances. Because even localized seawater intrusion is not acceptable, the subbasin-wide undesirable result is zero exceedances of minimum thresholds. For the Subbasin, the seawater intrusion undesirable result is:

> *Any exceedance of the minimum threshold, resulting in mapped seawater intrusion within the Subbasin boundary.*

There is no seawater intrusion in the Eastside Subbasin thus an undesirable result does not exist.

4.2.4 Degraded Groundwater Quality SMC

4.2.4.1 Minimum Thresholds

The degraded groundwater quality minimum threshold for each COC is based on the number of supply wells monitored that had higher concentrations of constituents than the regulatory standards for drinking water and irrigation water during the last sampling. Section 8.9.2.1 of the Eastside Subbasin GSP describes the information and methodology used to establish minimum thresholds for degraded groundwater quality. The minimum threshold values for each well within the groundwater quality monitoring network are provided in Table 8. Table 8 also shows the WY 2021 exceedances of the regulatory standard discussed in Section 3.5 and the running total of regulatory standard exceedances used to measure against the minimum thresholds. Only the latest sample for each COC at each well is used for the running total. The minimum thresholds are set at zero additional exceedances of each constituent, based on the exceedances in 2019. These conditions were determined to be significant and unreasonable because groundwater quality in exceedance of these will cause a financial burden on groundwater users. Public water systems with COC concentrations above the MCL or SMCL are required to add treatment to the drinking water supplies or drill new wells. Agricultural wells with COCs that significantly reduce crop production will reduce growers’ yields and profits.

In WY 2021, there were 6 exceedances of the minimum thresholds established for DDW public water system supply wells and none for the ILRP on-farm domestic and irrigation wells. The last column in Table 8 includes the number of exceedances above the minimum thresholds and the COCs that exceeded the minimum threshold are highlighted in orange. The negative numbers in the last column indicate wells that once exceeded the regulatory limit are no longer exceeding the limit.

Table 8. Minimum Thresholds and Measureable Objectives for Degradation of Groundwater Quality

Constituent of Concern (COC)	Minimum Threshold/ Measurable Objective (existing exceedances of Regulatory Standard in 2019)	WY 2021 Exceedances of Regulatory Standard (new exceedances based on wells monitored in WY 2021)	Total of Exceedances of Regulatory Standard	Number of Exceedances above Minimum Threshold
DDW Wells				
1,2,3-Trichloropropane	10	5	16	6
1,2-Dibromo-3-chloropropane	3	0	3	0
Arsenic	4	1	5	1
Benzo(a)Pyrene	1	0	1	0
Di(2-ethylhexyl)phthalate	1	0	1	0
Dinoseb	3	0	3	0
Hexachlorobenzene	1	0	1	0
Iron	5	3	8	3
Lindane	1	0	1	0
Manganese	2	1	3	1
MTBE (Methyl-tert-butyl ether)	0	1	1	1
Nitrate (as nitrogen)	8	12	20	12
Specific Conductance	1	2	2	1
Total Dissolved Solids	3	2	3	0
Vinyl Chloride	8	0	8	0
ILRP On-Farm Domestic Wells				
Chloride	3	0	3	0
Iron	4	0	4	0
Manganese	1	0	1	0
Nitrate (as nitrogen)	91	2	69	-22
Nitrate + Nitrite (sum as nitrogen)	17	0	9	-8
Specific Conductance	27	0	19	-8
Sulfate	2	0	2	0
Total Dissolved Solids	22	0	20	-2
ILRP Irrigation Supply Wells				
Chloride	4	0	4	0
Iron	1	0	1	0
Manganese	2	0	2	0

4.2.4.2 Measurable Objectives and Interim Milestones

The measurable objectives for degradation of groundwater quality represent a target number of groundwater quality exceedances in the Subbasin. SGMA does not require the improvement of groundwater quality. Therefore, the Eastside GSP includes measurable objectives identical to the minimum thresholds, as defined in Table 8. Interim milestones are also set at the minimum threshold levels. Although there were 6 groundwater quality minimum threshold exceedances in WY 2021, the groundwater quality data already meet the 2027 interim milestones because these exceedances are not due to GSA actions.

4.2.4.3 Undesirable Result

The degradation of groundwater quality undesirable result is a quantitative combination of groundwater quality minimum threshold exceedances. Any groundwater quality degradation as a direct result of GSP implementation is unacceptable. Some groundwater quality changes are expected to occur independent of SGMA activities; because these changes are not related to SGMA activities they do not constitute an undesirable result. The degradation of groundwater quality undesirable result is:

> *Future or new minimum thresholds exceedances are caused by a direct result of GSA groundwater management action(s), including projects or management actions and regulation of groundwater extraction.*

Table 8 shows that 6 constituents exceeded their minimum thresholds in WY 2021. Since SVBGSA has yet to implement any projects or management actions in the Subbasin, these exceedances are not due to GSA actions. Therefore, the groundwater quality data do not exceed the 20-year planning horizon undesirable result. The groundwater quality minimum threshold exceedances, compared with the 2042 undesirable results, is shown on Figure 19. If a value is in the shaded red area, it would constitute undesirable result in 2042. This graph is updated annually with new data to demonstrate the sustainability indicator’s direction toward sustainability.

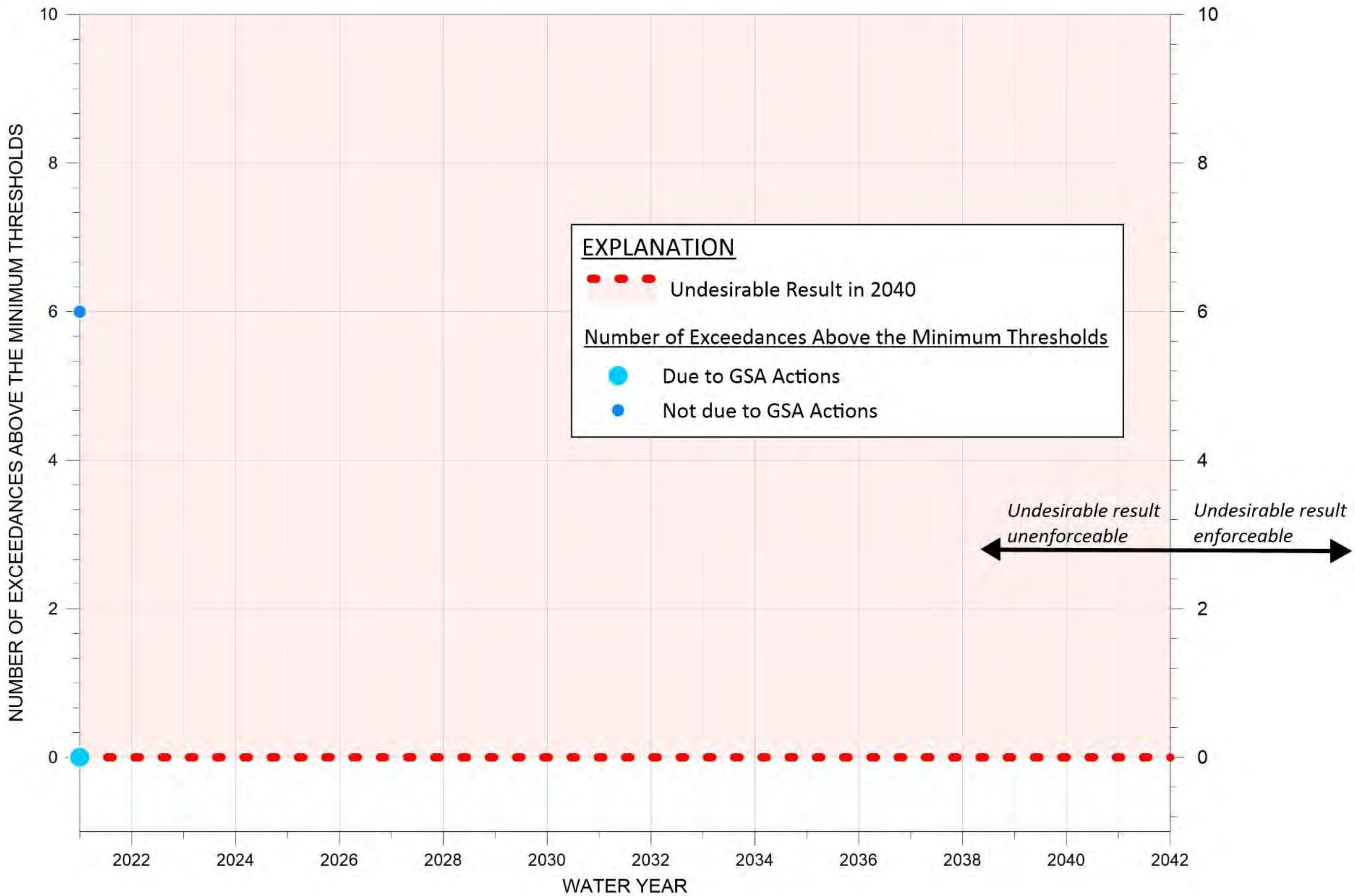


Figure 19. Groundwater Quality Minimum Threshold Exceedances Compared to the 2042 Groundwater Quality Undesirable Result

4.2.5 Land Subsidence SMC

4.2.5.1 Minimum Thresholds

Accounting for measurement errors in the InSAR data, the minimum threshold for land subsidence in the GSP is zero net long-term subsidence, with no more than 0.1 foot per year of estimated land movement to account for InSAR errors. Section 8.10.2.1 of the Eastside Aquifer Subbasin GSP describes the information and methodology used to establish minimum thresholds for subsidence. A single minimum threshold is set for the entire Subbasin. Annual subsidence data from October 2020 to October 2021 demonstrated less than the minimum threshold of 0.1 foot per year, as shown on Figure 15.

4.2.5.2 Measurable Objectives and Interim Milestones

The measurable objectives for ground surface subsidence represent target subsidence rates in the Subbasin. Because the minimum thresholds of zero net long-term subsidence are the best achievable outcome, the measurable objectives are identical to the minimum thresholds: zero net long-term subsidence, with no more than 0.1 foot per year of estimated land movement to account for InSAR errors. Figure 15 demonstrates that data from October 2020 to October 2021 showed less than the measurable objective of no more than 0.1 foot per year of measured subsidence is being met. The interim milestones are identical to minimum threshold of 0.1 foot per year. The latest subsidence data shows that the 2027 subsidence interim milestone is already being met.

4.2.5.3 Undesirable Result

The ground surface subsidence undesirable result is a quantitative combination of subsidence minimum threshold exceedances. For the Eastside Subbasin, no long-term subsidence is acceptable. Therefore, the land subsidence undesirable result is:

> *There is an exceedance of the minimum threshold for land subsidence due to lowered groundwater elevations.*

Data from October 2020 to October 2021 showed subsidence was below the minimum threshold of 0.1 foot per year. The latest land subsidence, therefore, does not exceed the 20-year planning horizon undesirable result. Maximum measured subsidence in the Subbasin, compared with the 2042 change in subsidence undesirable results goal, is shown on Figure 20. If a value is in the shaded red area, it would constitute undesirable result in 2042.

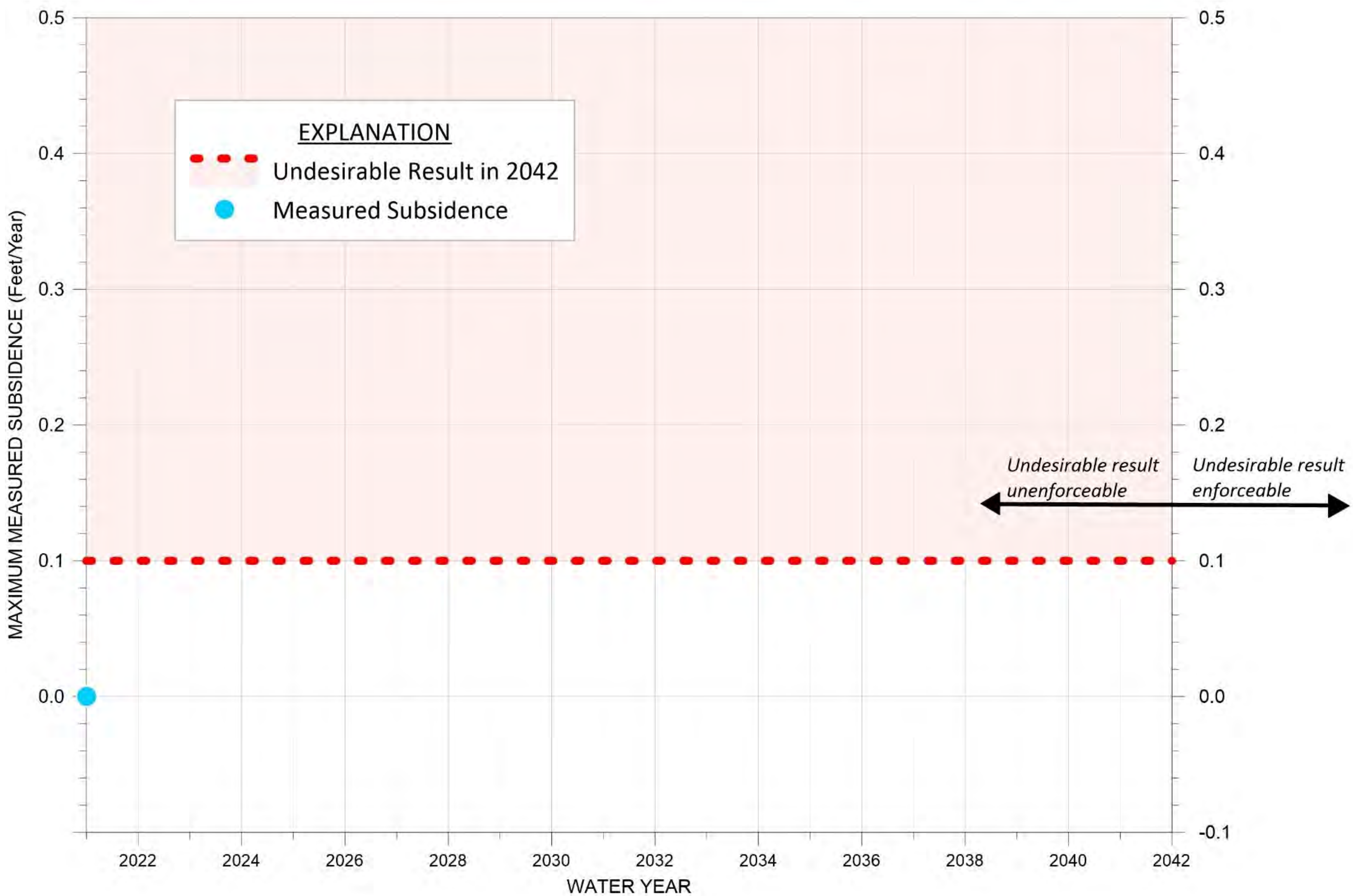


Figure 20. Maximum Measured Subsidence Compared to the 2042 Undesirable Result

4.2.6 Depletion of Interconnected Surface Water SMC

As mentioned in Section 3.7, there are currently no locations of ISW in the Eastside Subbasin. If locations of ISW occur in the future the current conditions will be compared to the SMC presented below.

4.2.6.1 Minimum Thresholds

The minimum thresholds for depletion of ISW are established by proxy using shallow groundwater elevations and are established to maintain consistency with chronic lowering of groundwater elevation and reduction in groundwater storage minimum thresholds. Minimum thresholds at shallow groundwater monitoring wells will be established when the monitoring network is fully developed by interpolating values from the groundwater elevation contour maps.

4.2.6.2 Measurable Objectives and Interim Milestones

The measurable objectives for depletion of ISW target groundwater elevations that are higher than the minimum thresholds. The measurable objectives are established to maintain consistency with the chronic lowering of groundwater elevation and reduction in groundwater storage minimum thresholds, which are also established based on groundwater elevations.

4.2.6.3 Undesirable Result

The depletion of ISW undesirable result is a quantitative combination of minimum threshold exceedances. The undesirable result for depletion of ISW is:

> *There is an exceedance of the minimum threshold in a shallow groundwater monitoring well used to monitor interconnected surface water.*

As stated in Section 3.7, there is no interconnection in the Eastside Subbasin. Therefore, there are no data from WY 2021 to compare to the 2042 planning horizon undesirable result at this point.

5 CONCLUSION

This 2021 Annual Report updates data and information for the Eastside Aquifer Subbasin GSP from WY 2019 to WY 2021 with the best available data. It covers GSP implementation activities up to September 30, 2021. All GSP implementation and annual reporting meets the regulations set forth in the SGMA GSP Regulations.

Results show little change in groundwater sustainability indicators when compared to the current conditions described in the GSP. WY 2021 was classified as dry. Groundwater elevations decreased in WY 2021, with most wells showing elevations above their minimum thresholds but all wells were below their measurable objectives. Change in groundwater storage, as measured by groundwater elevation changes, decreased from WY 2019 and WY 2021. There is still no seawater intrusion in the Subbasin in WY 2021. Groundwater quality data showed 6 exceedances of minimum thresholds in DDW wells only. Negligible subsidence was observed in WY 2021. Finally, there are no locations of depletion of ISW; therefore, there is no ISW data presented in this Annual Report.

Since GSP submittal, the SVBGSA has continued to actively engage stakeholders and has started planning activities to implement the GSP. The SVBGSA continues to engage stakeholders through its participatory subbasin planning committees, Advisory Committee, Board of Directors, and Seawater Intrusion Working Group. It has also begun to fill data gaps to start implementing the Eastside Aquifer Subbasin GSP.

REFERENCES

Brown and Caldwell. 2015. *State of the Salinas River Groundwater Basin - Hydrology Report*. Monterey County Water Resources Agency Water Reports. http://digitalcommons.csumb.edu/hornbeck_cgb_6_a/21.

California Department of Water Resources (DWR). 2004. Salinas Valley Groundwater Basin, Eastside Aquifer Subbasin. Bulletin 118 Interim Update 2004. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/3_004_02_EastsideAquiferSubbasin.pdf

_____. 2017. Sustainable Management Criteria Best Management Practices. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-6-Sustainable-Management-Criteria-DRAFT_ay_19.pdf.

_____. 2018. Guidance for Climate Change Data During Groundwater Sustainability Plan Development. 101 p. https://water.ca.gov/-/media/DWR-Website/WebPages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/BestManagement-Practices-and-Guidance-Documents/Files/Resource-Guide-ClimateChange-Guidance_v8_ay_19.pdf.

_____. 2021. SGMA Data Viewer: Land Subsidence. https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub.

CCRWQCB (Central Coast Regional Water Quality Control Board). 2019. *Water Quality Control Plan for the Central Coast Basin, June 2019 Edition*. California Environmental Protection Agency. https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs/2019_basin_plan_r3_complete_webaccess.pdf

Kennedy-Jenks. 2004. Hydrostratigraphic Analysis of the Northern Salinas Valley. Prepared for Monterey County Water Resources Agency. 14 May, 113p.

MCWRA (Monterey County Water Resources Agency). 2005. *Salinas Valley Water Project Flow Prescription for Steelhead Trout in the Salinas River.*

_____. 2015. CASGEM Monitoring Plan for High and Medium Priority Basins in the Salinas Valley Groundwater Basin.

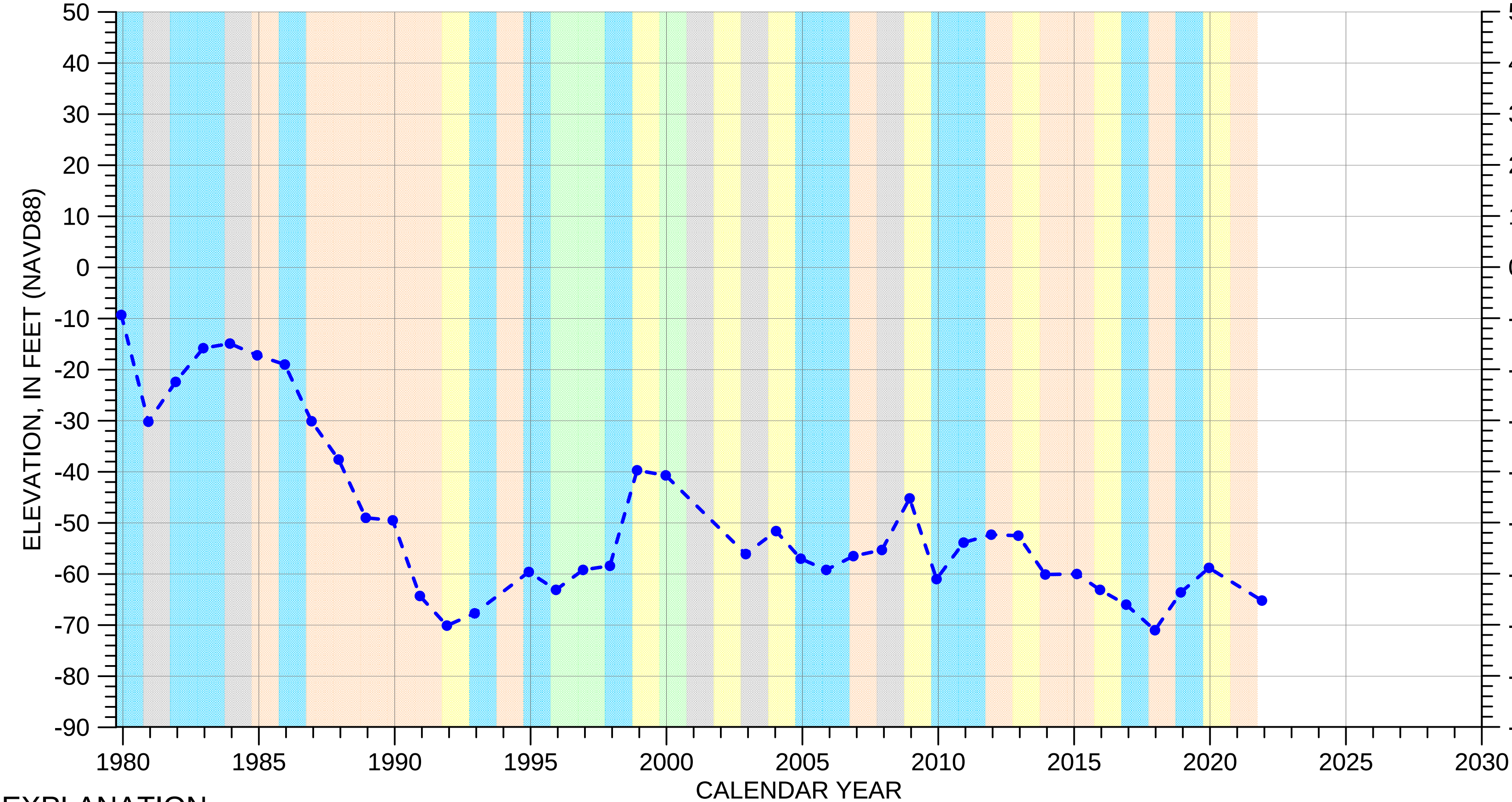
State Water Resources Control Board (SWRCB). 2021. Electronic Water Rights Information Management System (eWRIMS). Accessed December 27, 2021. https://ciwqs.waterboards.ca.gov/ciwqs/ewrims/reportingDiversionDownloadPublicSetup.do.

_____. 2022. Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System Website. Accessed January 17, 2022. https://gamagroundwater.waterboards.ca.gov/gama/datadownload.

APPENDIX A. HYDROGRAPHS OF REPRESENTATIVE MONITORING SITE WELLS

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-03K01

Eastside Aquifer Subbasin



Perforated interval unknown

Well bottom -499 feet msl

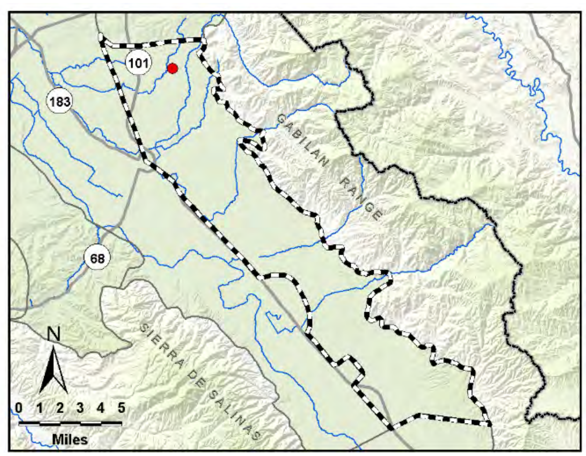
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-03K01.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (169 FT MSL)

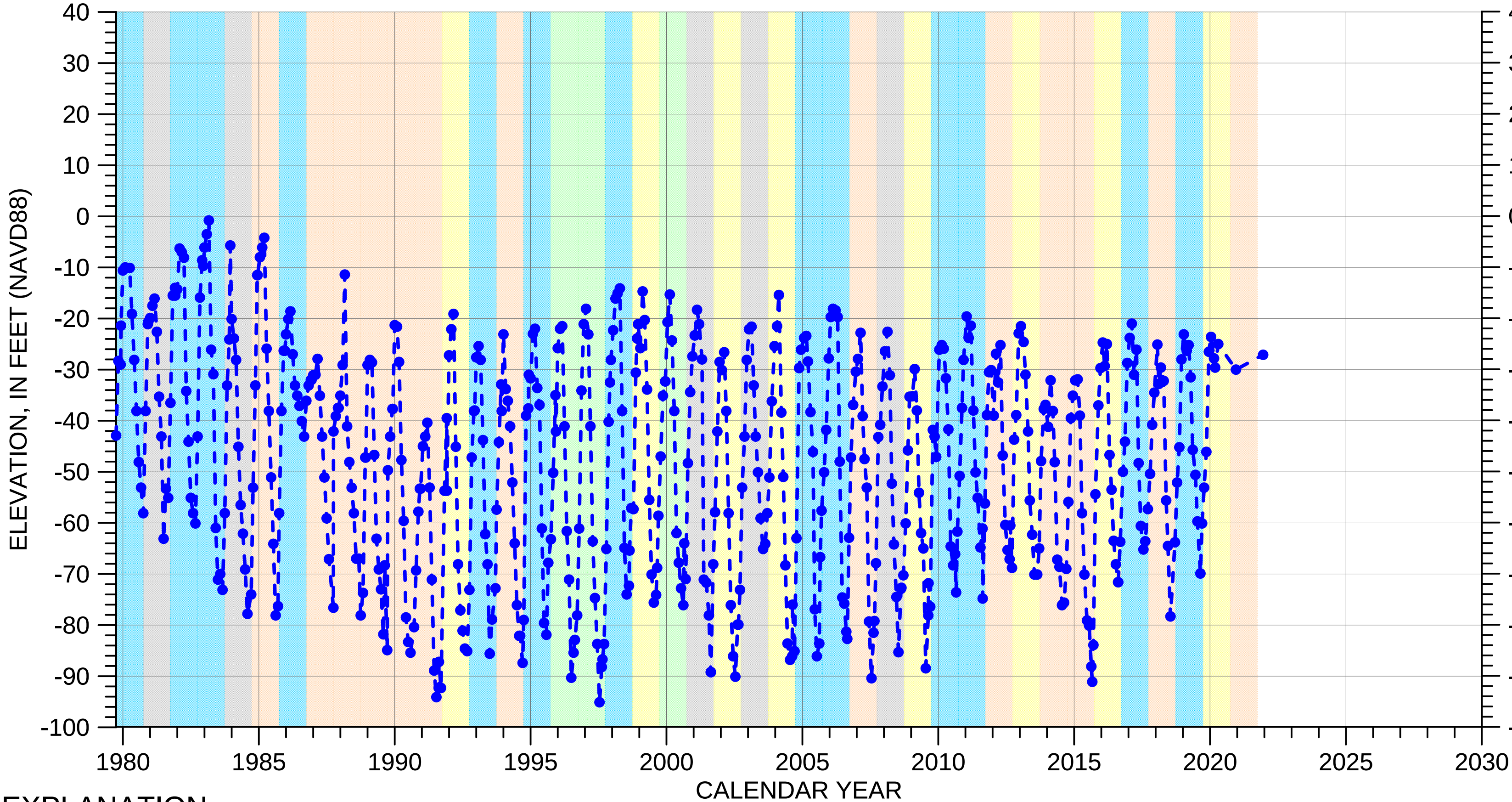
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-06R01

Eastside Aquifer Subbasin

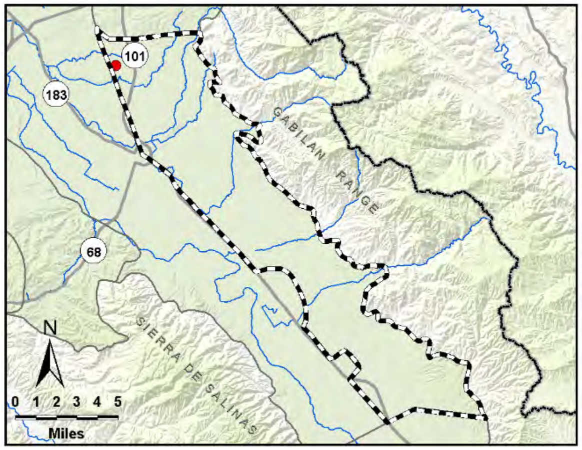


EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (92 FT MSL)



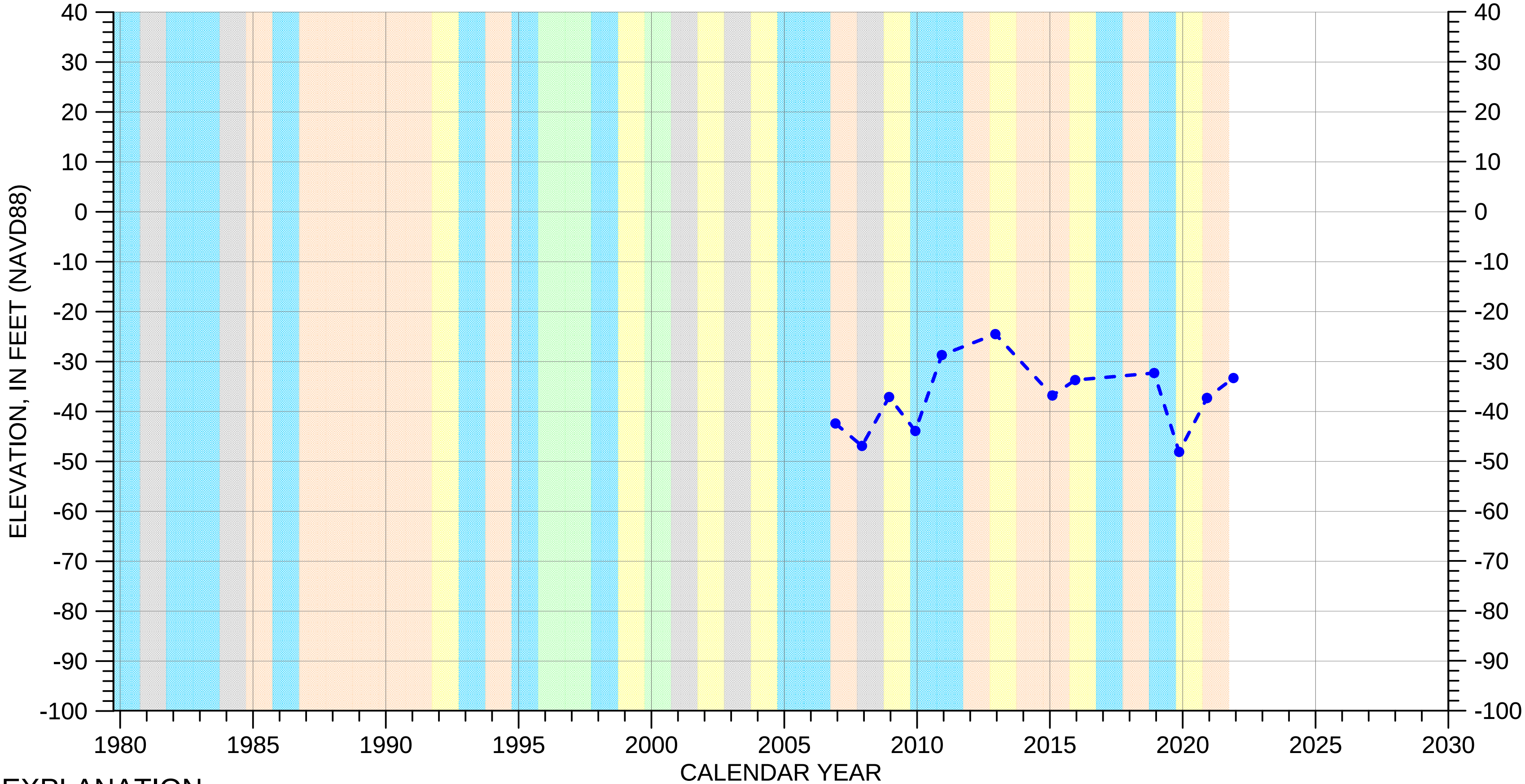
WATER YEAR TYPE DESIGNATION

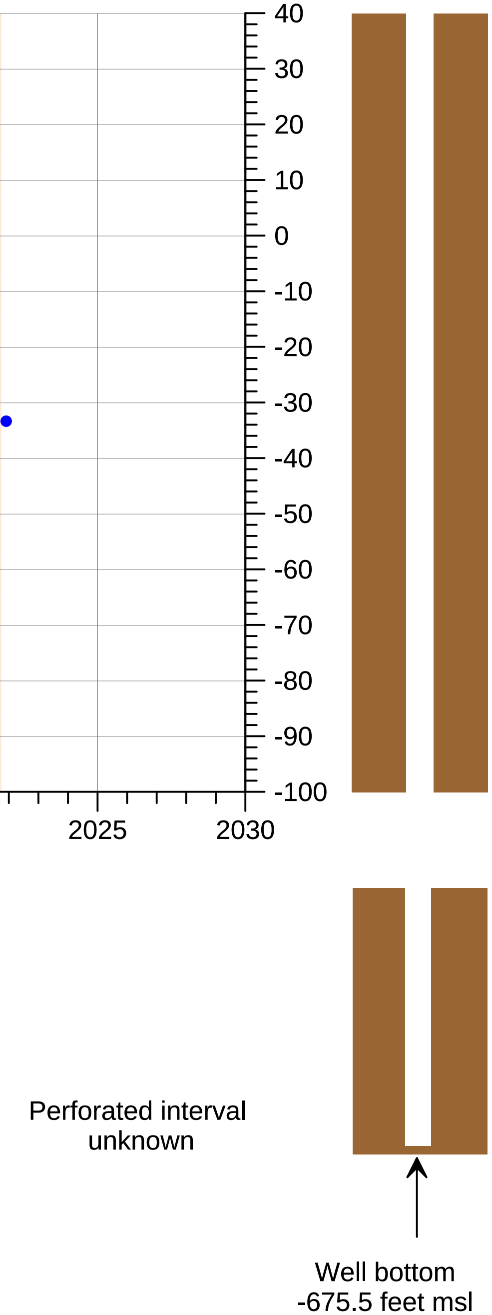
DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-06R01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-08C01

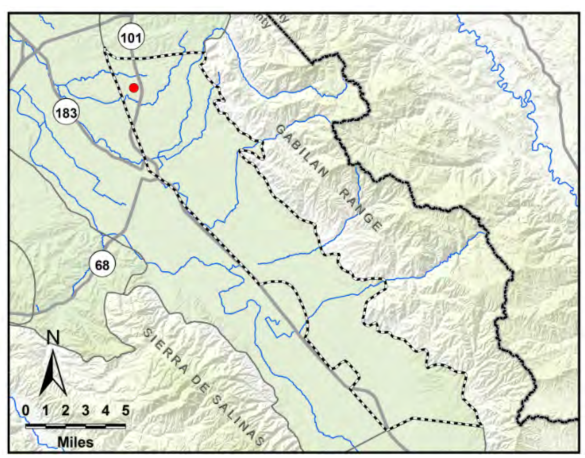
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (110 FT MSL)



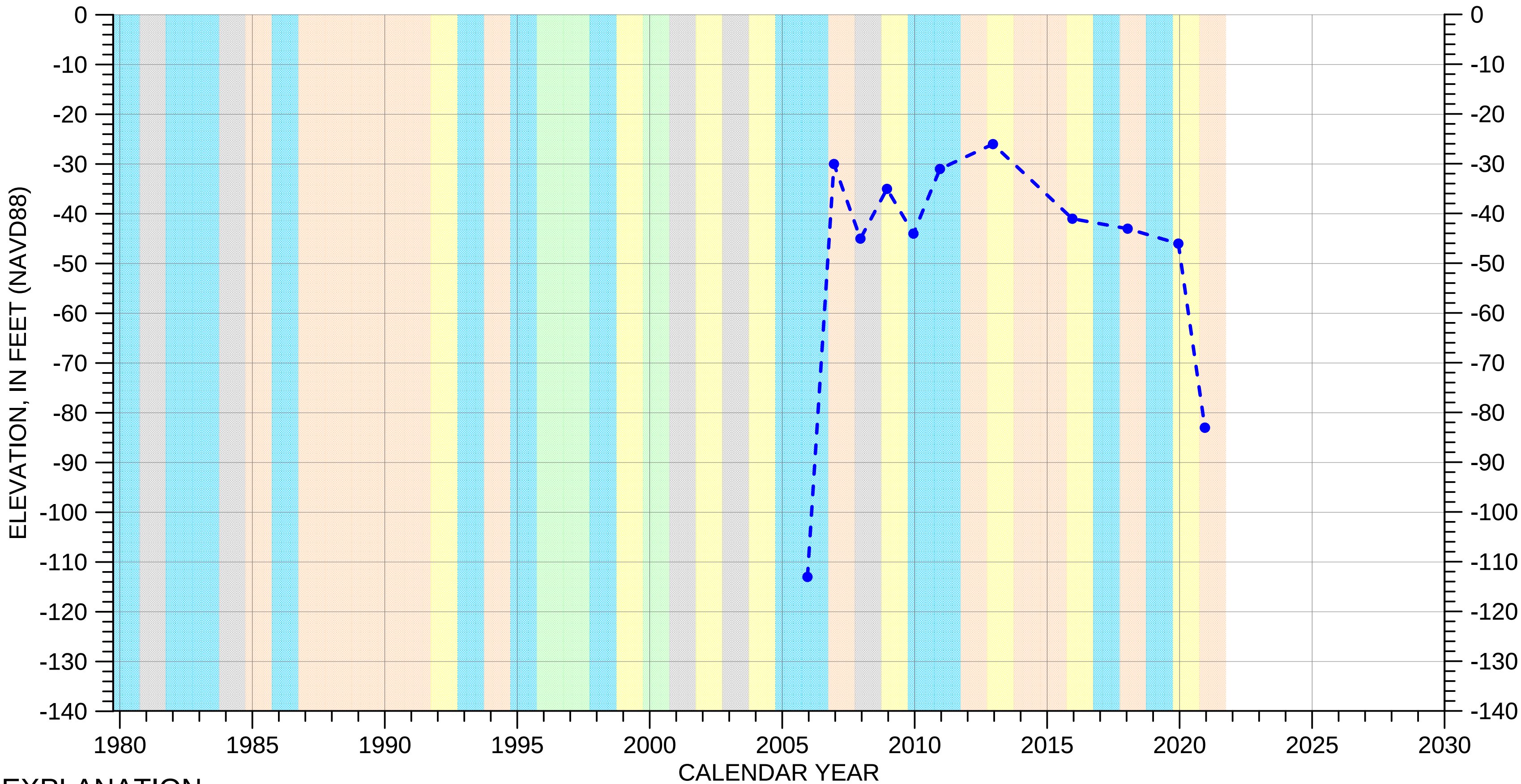
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-08C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-08Q03

Eastside Aquifer Subbasin

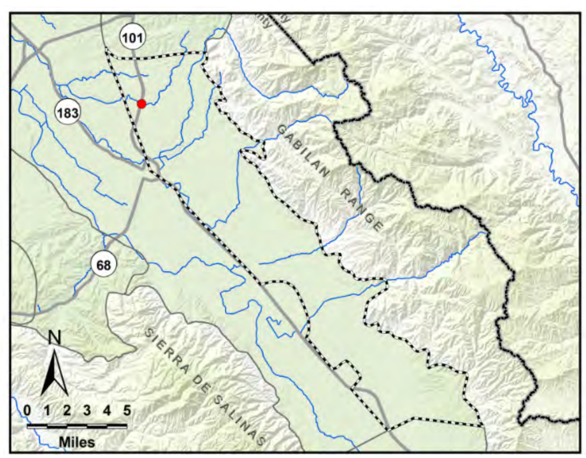


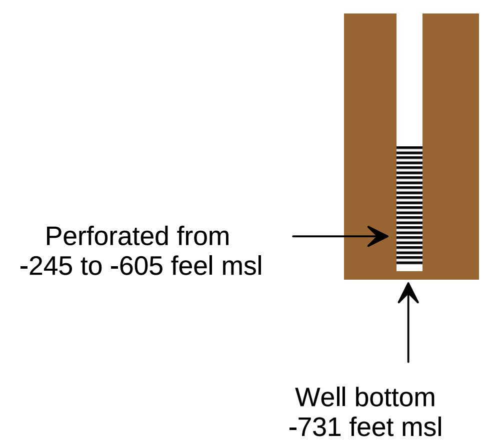
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (75 FT MSL)

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

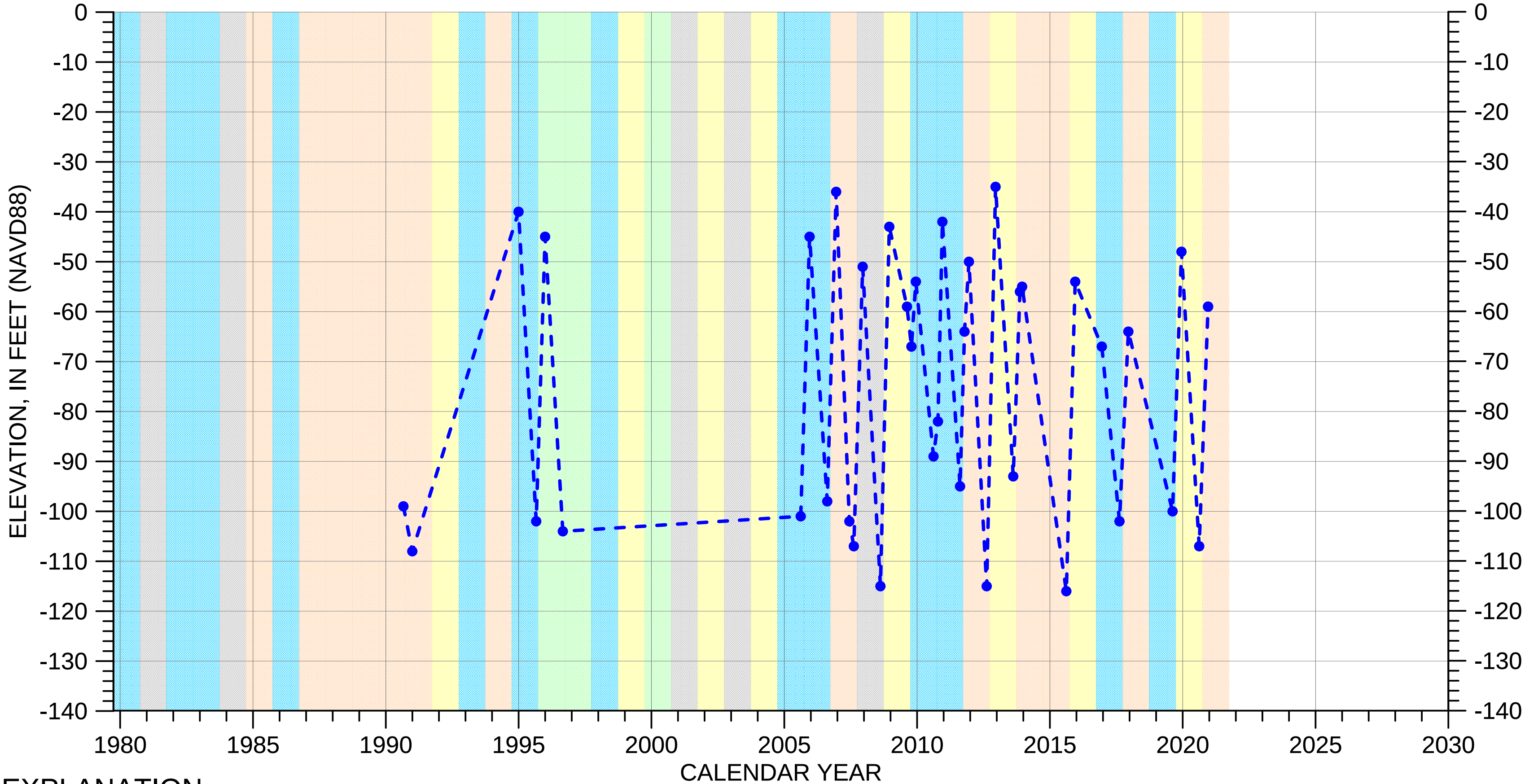




\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-08Q03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-09E02

Eastside Aquifer Subbasin

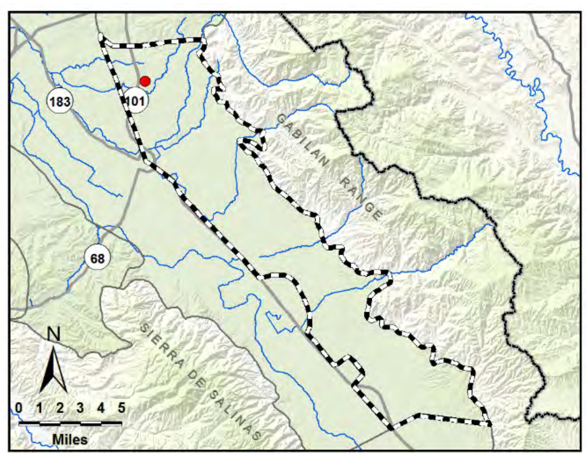


EXPLANATION

- - ● - - Groundwater Elevation

○ Suspect Measurement

—— Land Surface (121 FT MSL)



WATER YEAR TYPE DESIGNATION

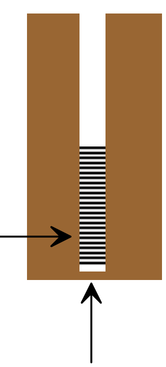
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



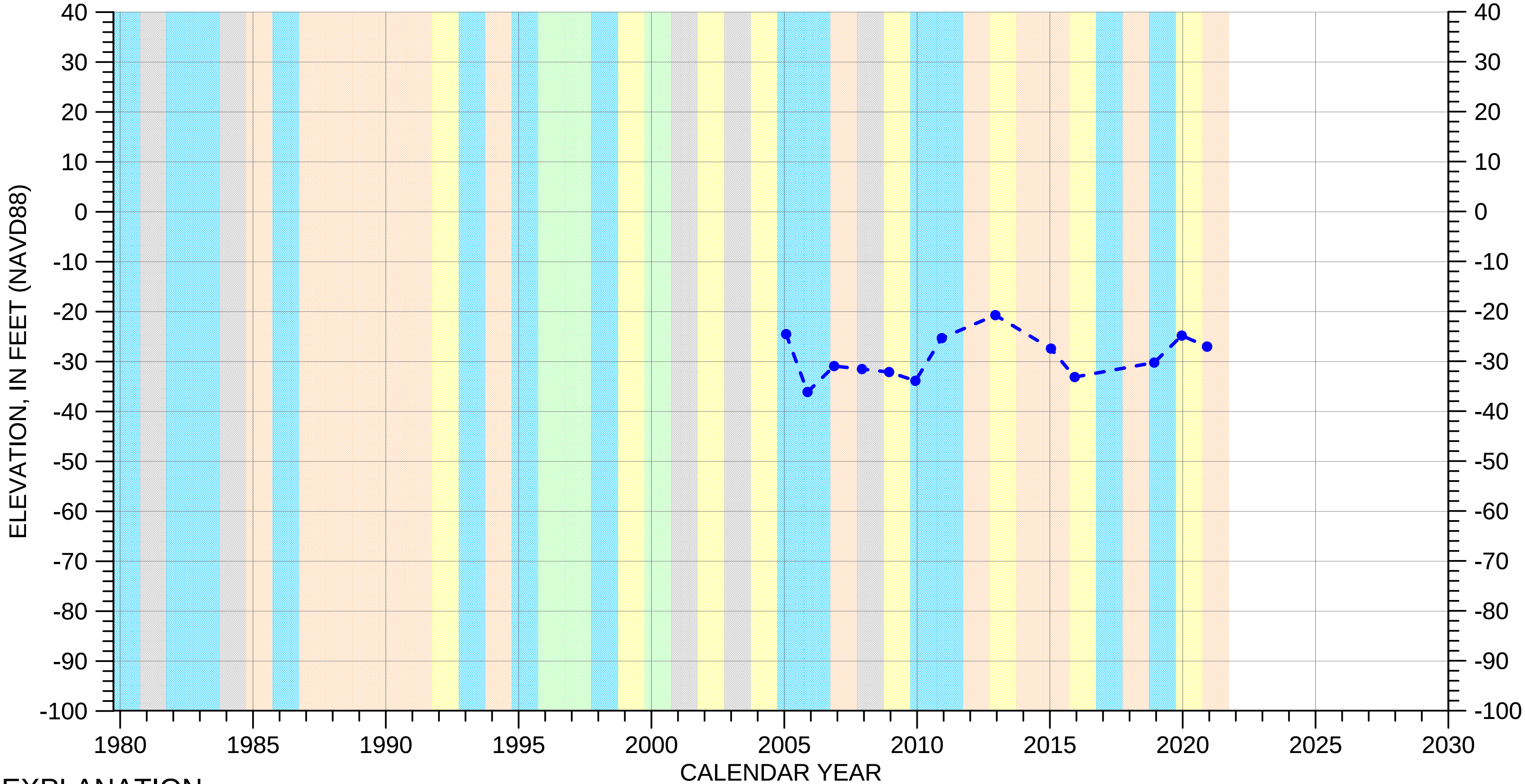
Perforated from
-189 to -509 feet msl

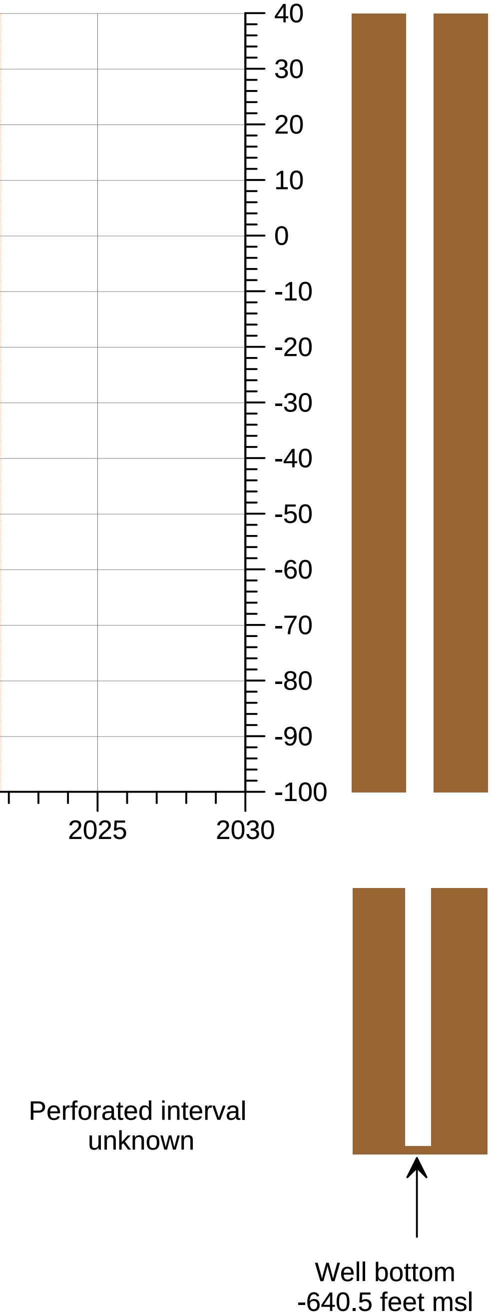
Well bottom
-529 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-09E02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-09P02

Eastside Aquifer Subbasin



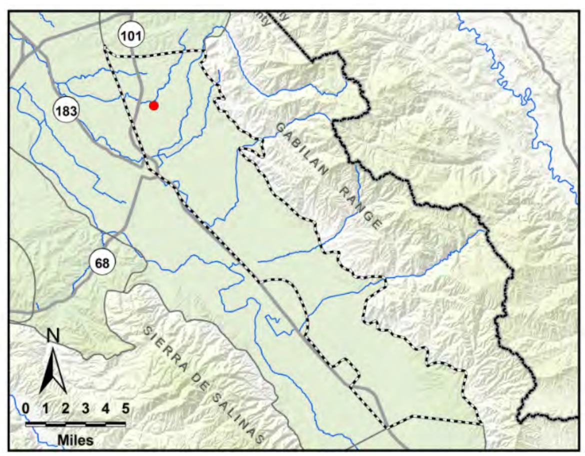


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (115 FT MSL)

WATER YEAR TYPE DESIGNATION

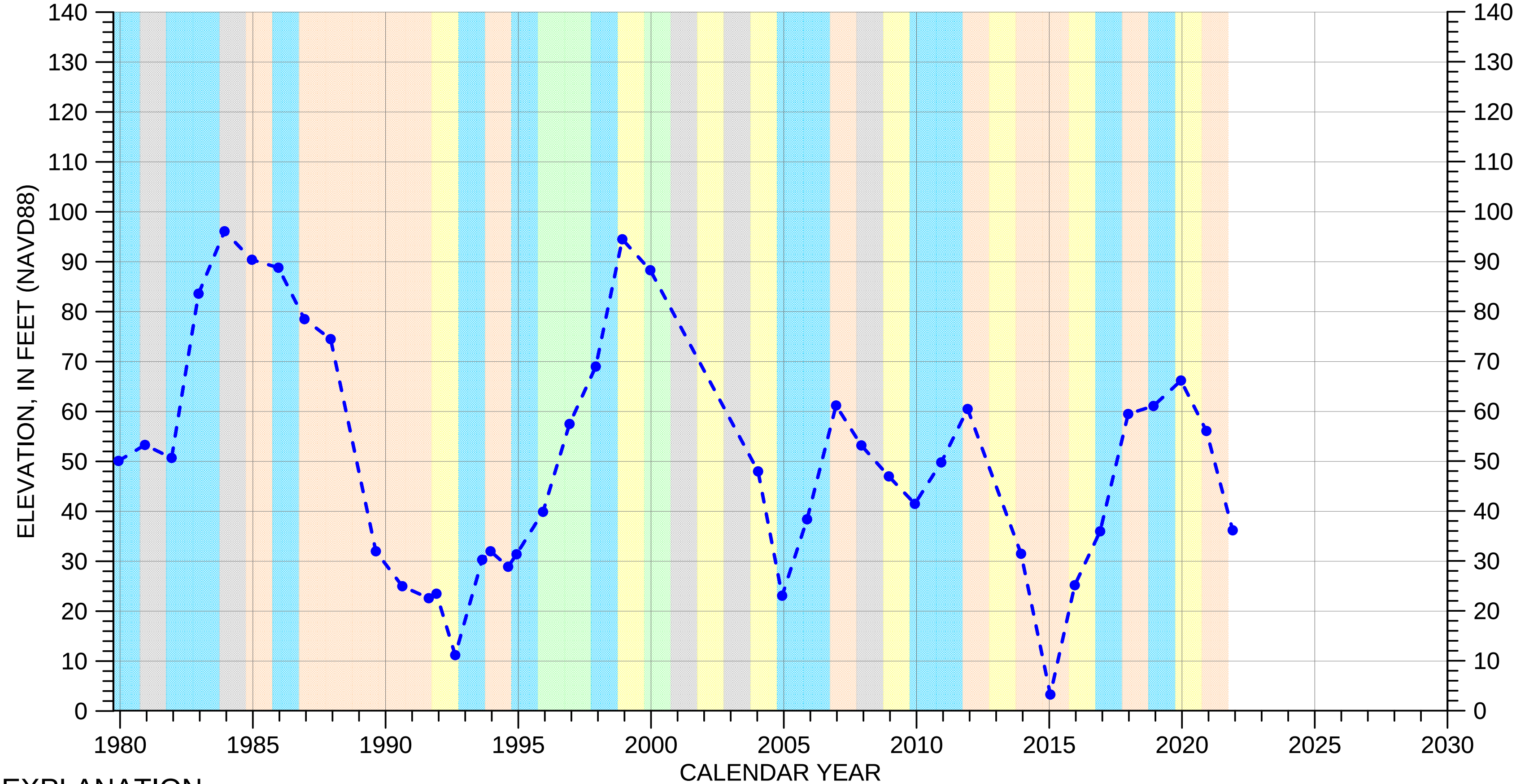
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-09P02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-11H01

Eastside Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (142 FT MSL)

WATER YEAR TYPE DESIGNATION

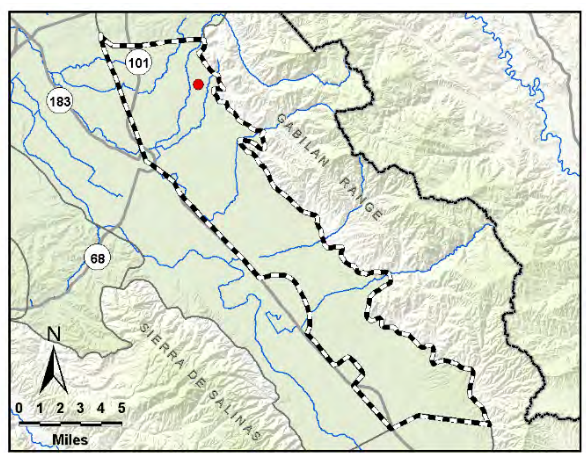
DRY

DRY - NORMAL

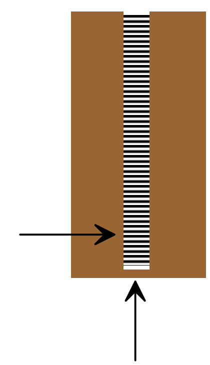
NORMAL

WET - NORMAL

WET



Perforated from
2 to -248 feet msl

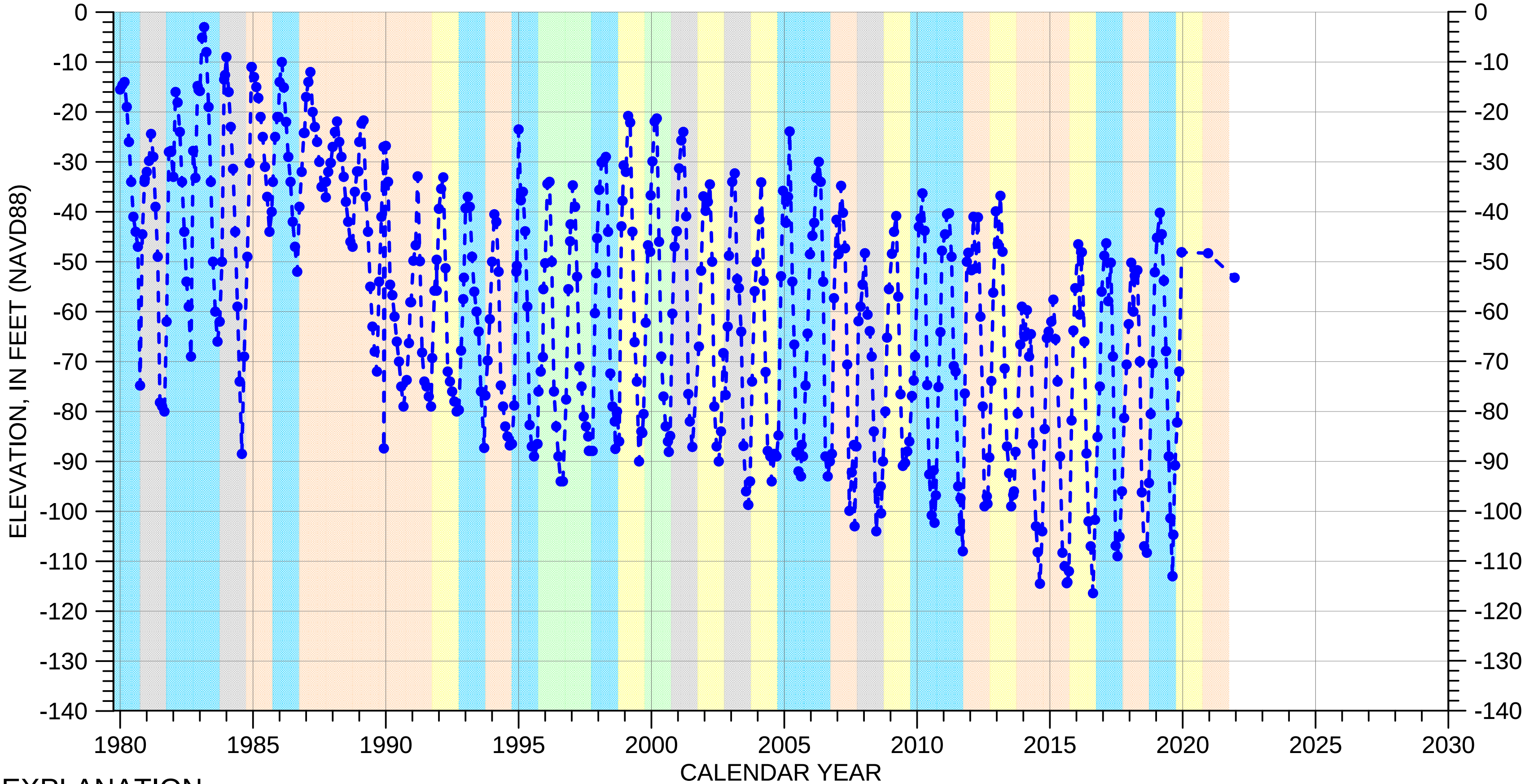


Well bottom
-248 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-11H01.grf

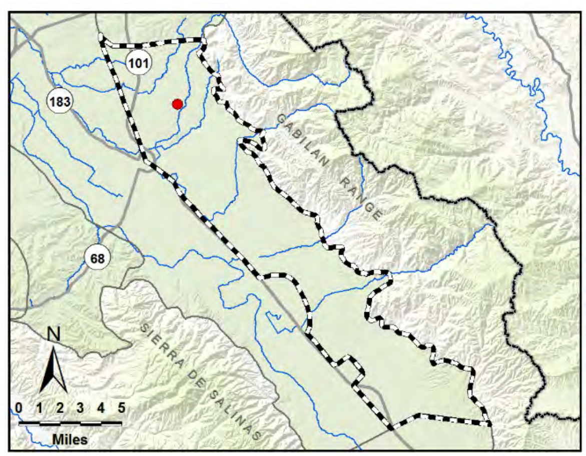
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-15H03

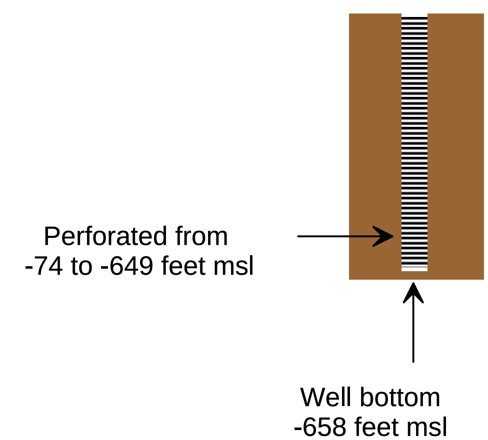
Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (126 FT MSL)





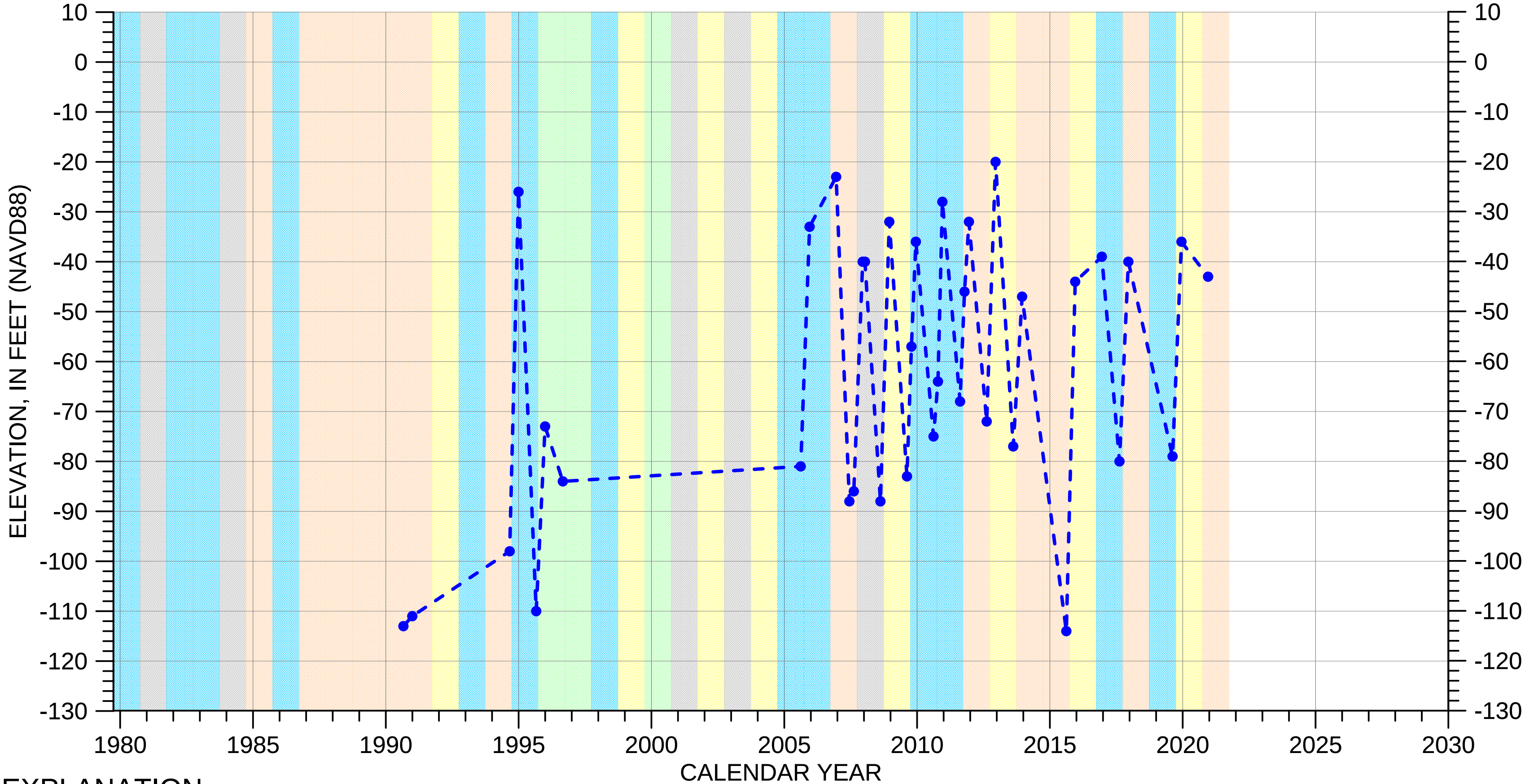
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-15H03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-17F01

Eastside Aquifer Subbasin

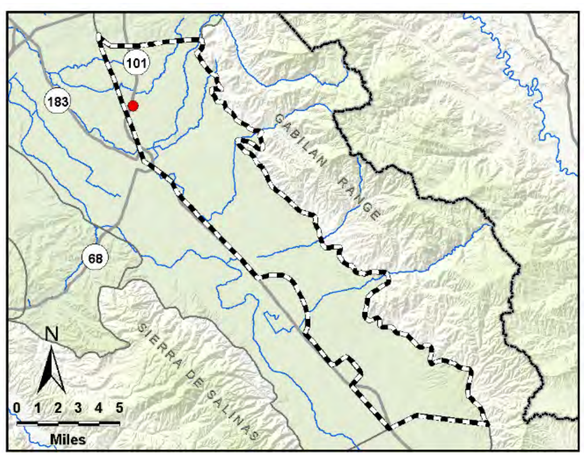


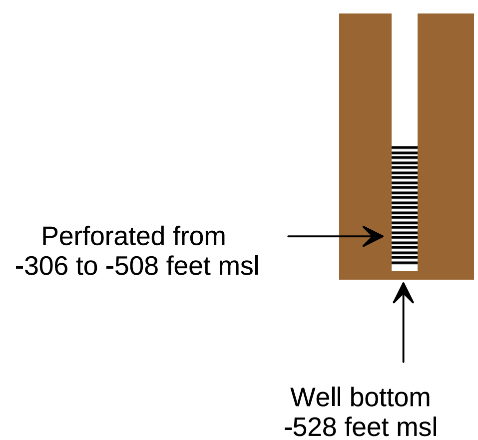
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (92 FT MSL)





WATER YEAR TYPE DESIGNATION

DRY

DRY - NORMAL

NORMAL

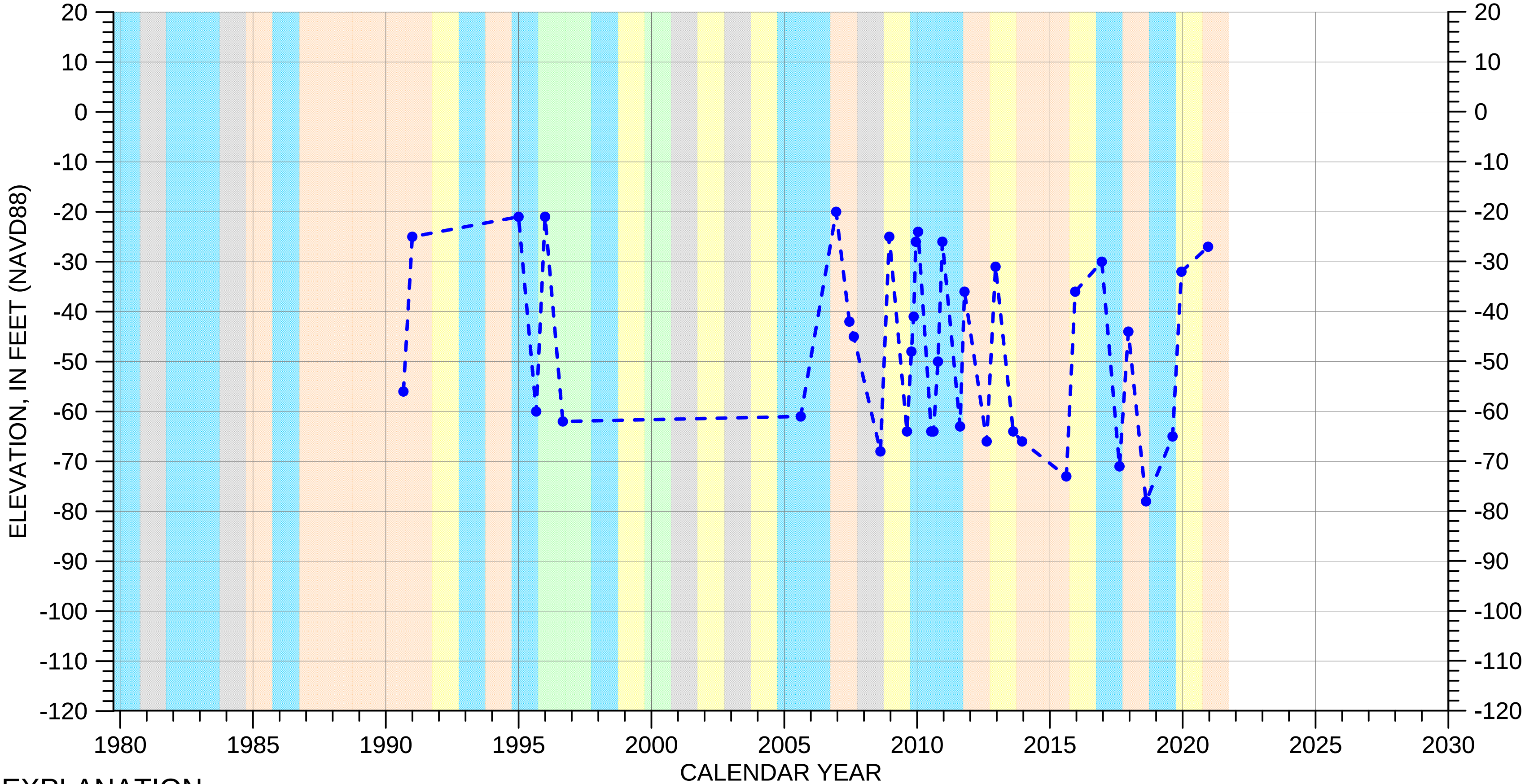
WET - NORMAL

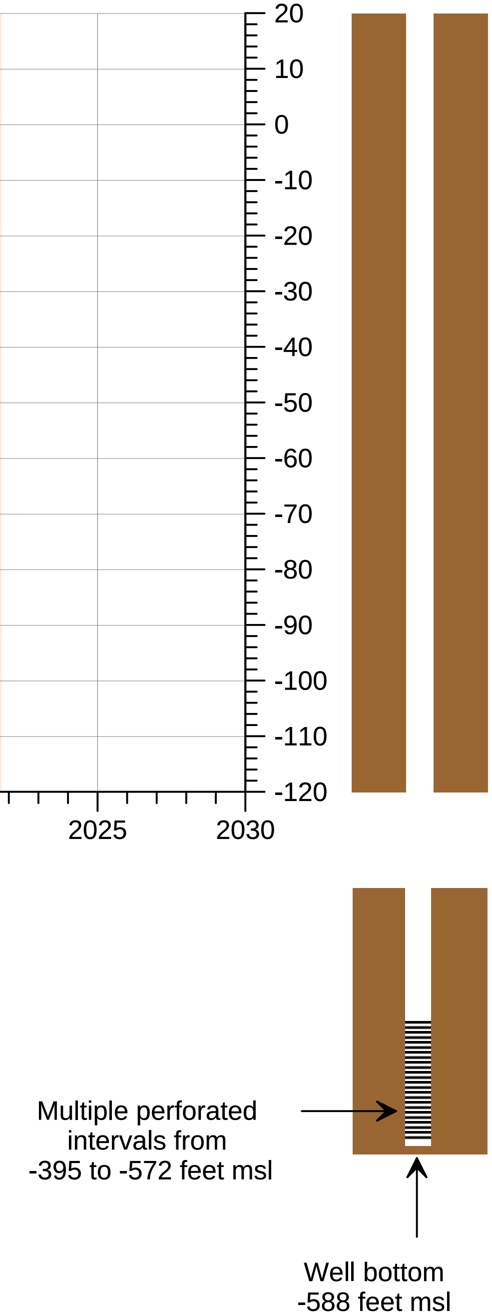
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-17F01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-21L01

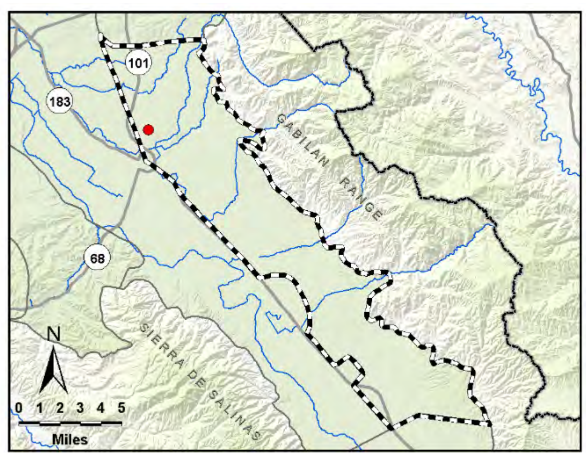
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (80 FT MSL)



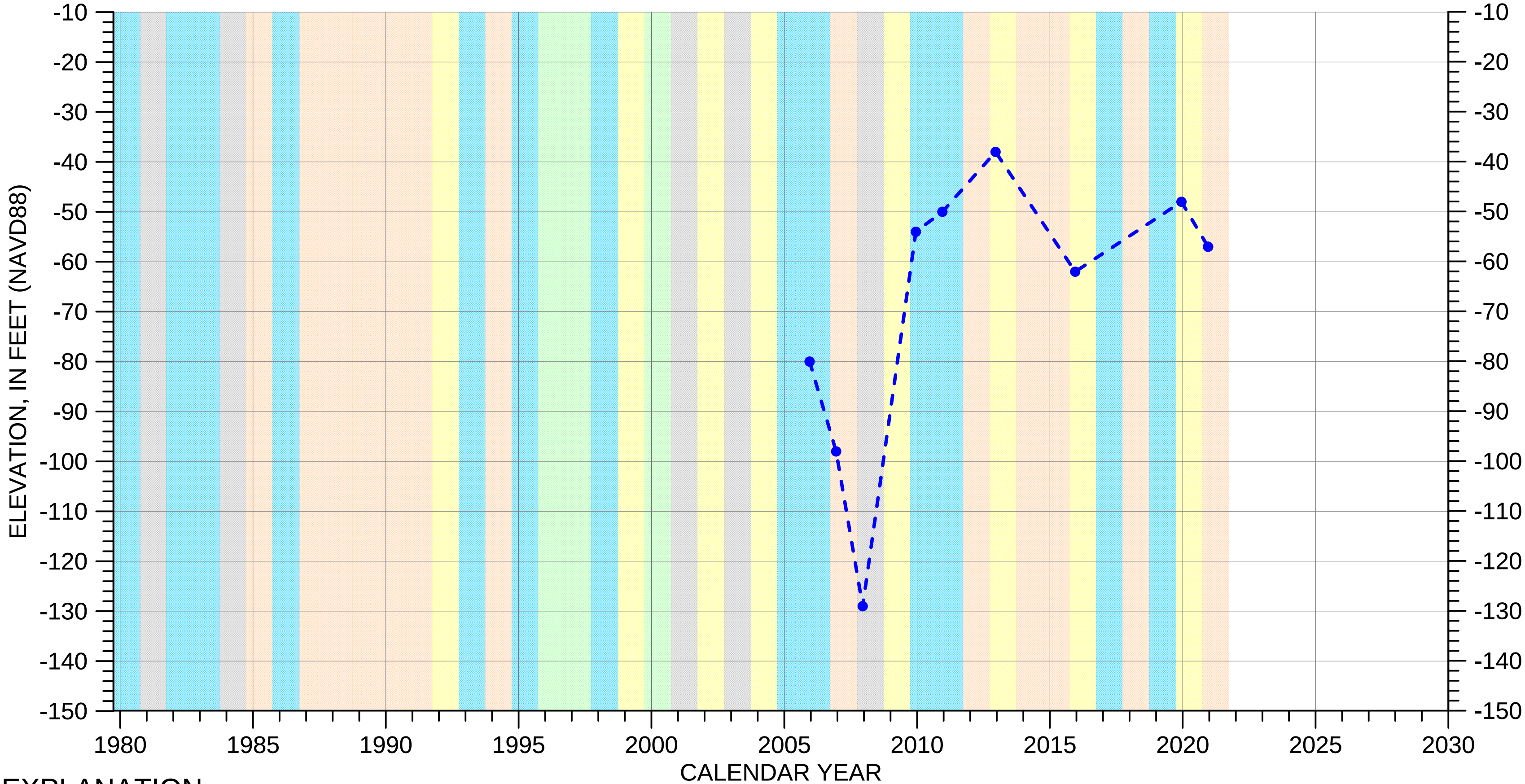
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-21L01.grf

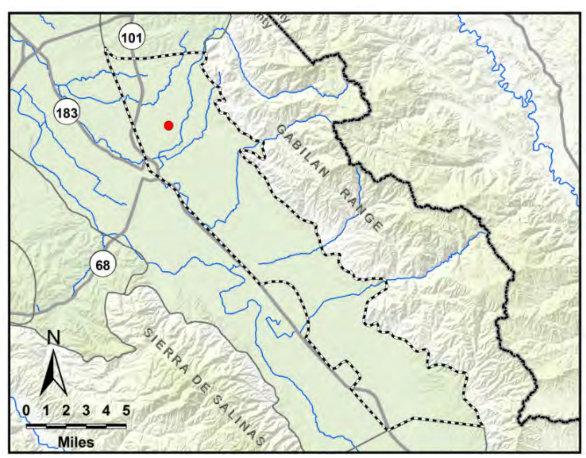
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-22D01

Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (102 FT MSL)



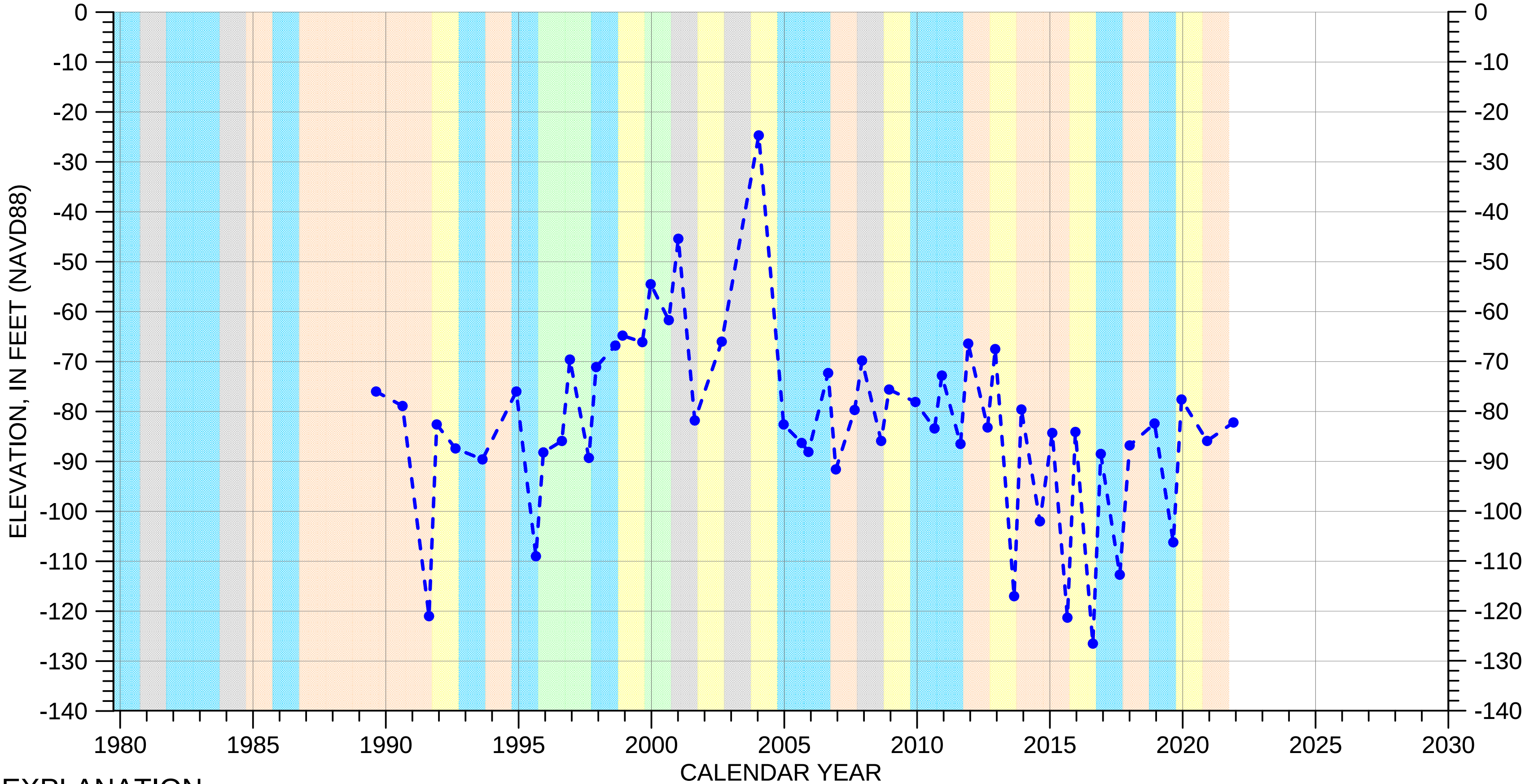
WATER YEAR TYPE DESIGNATION

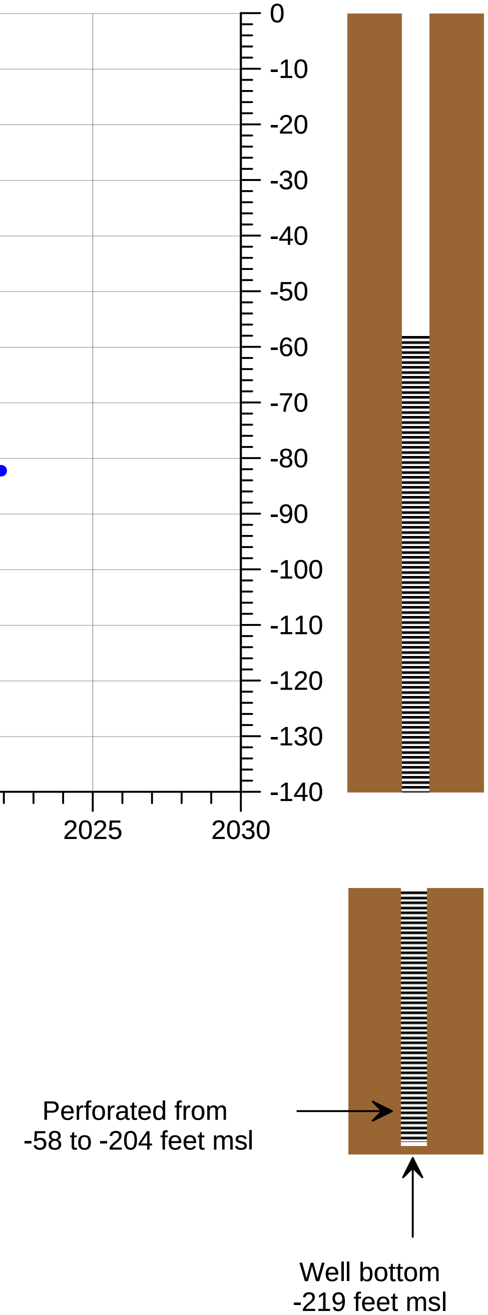
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-22D01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-24H01

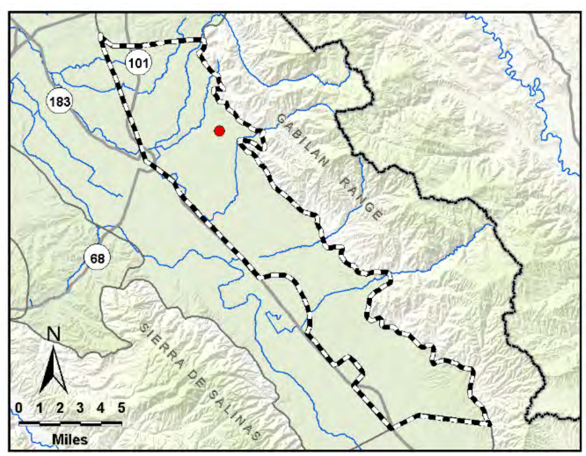
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (156 FT MSL)



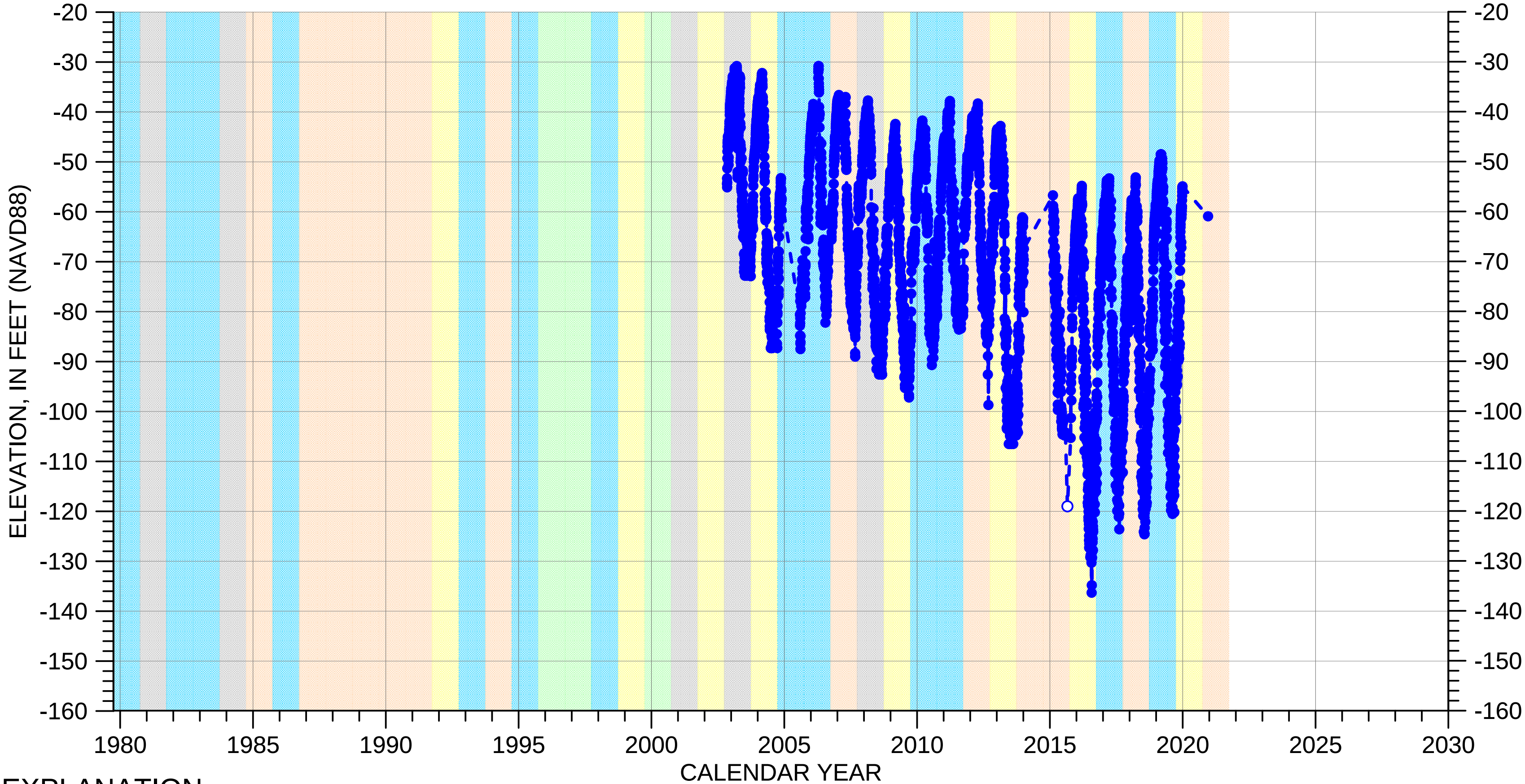
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-24H01.grf

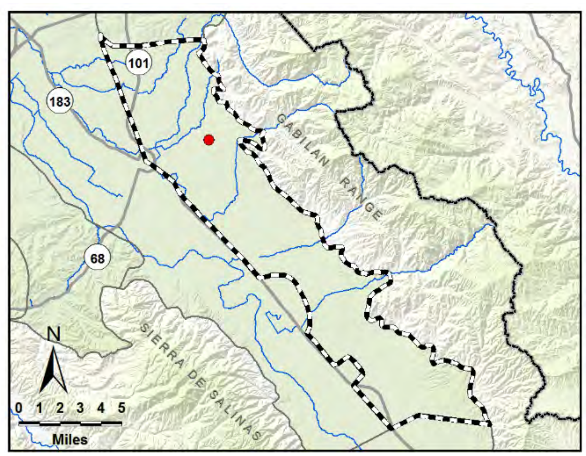
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-25C01

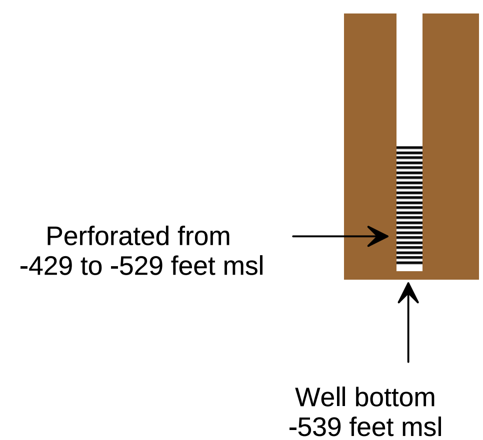
Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (141 FT MSL)





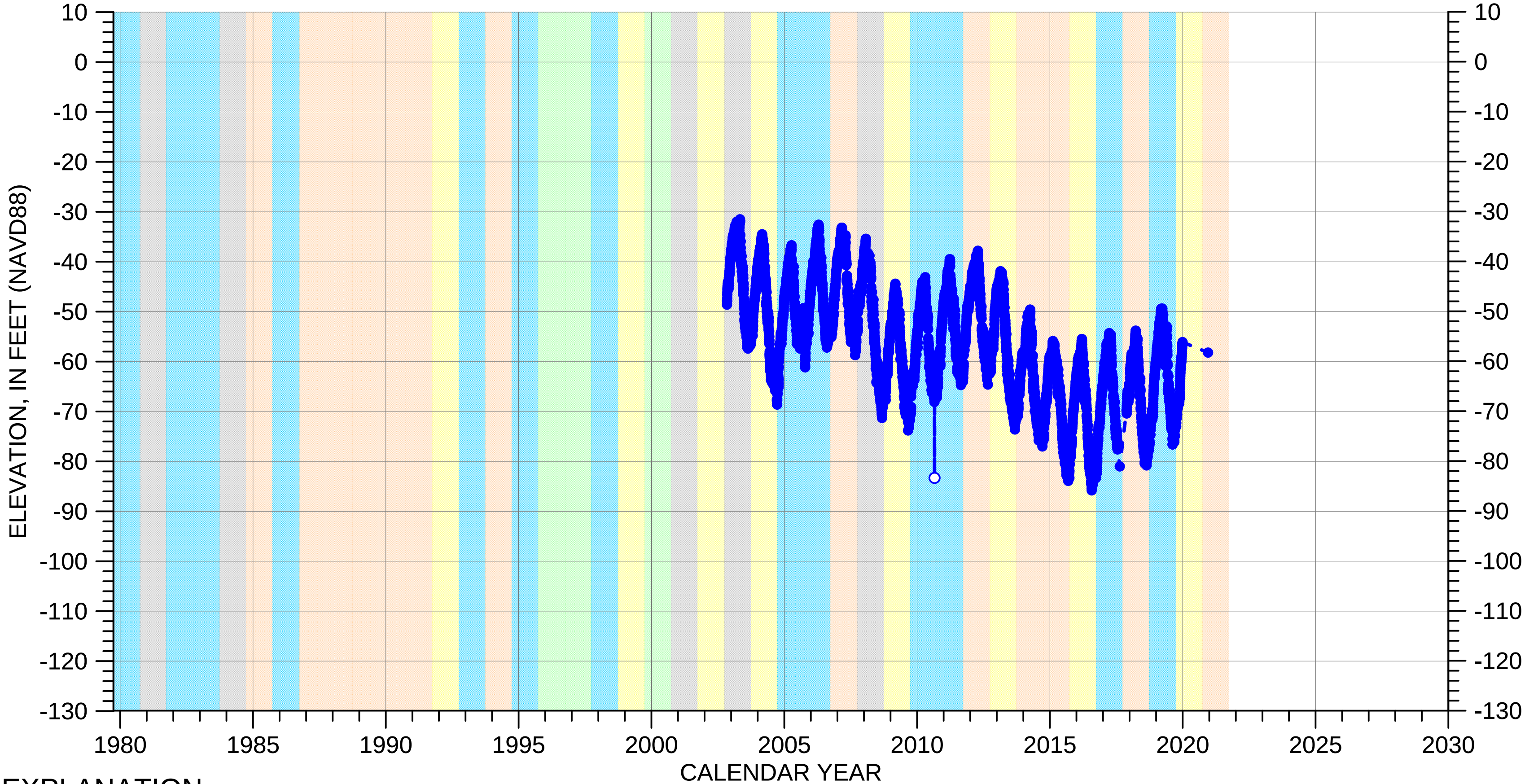
WATER YEAR TYPE DESIGNATION

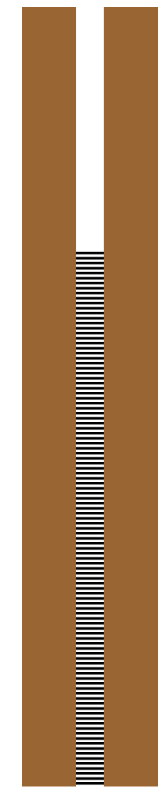
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-25C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-25C02

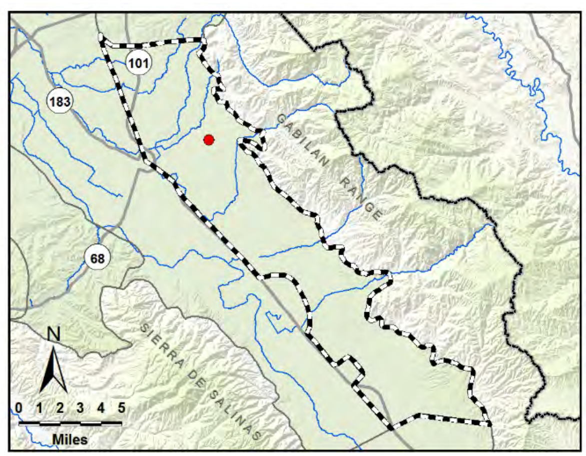
Eastside Aquifer Subbasin

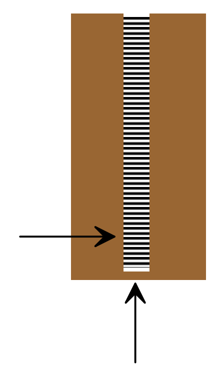




EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (141 FT MSL)





Perforated from
-34 to -219 feet msl

Well bottom
-229 feet msl

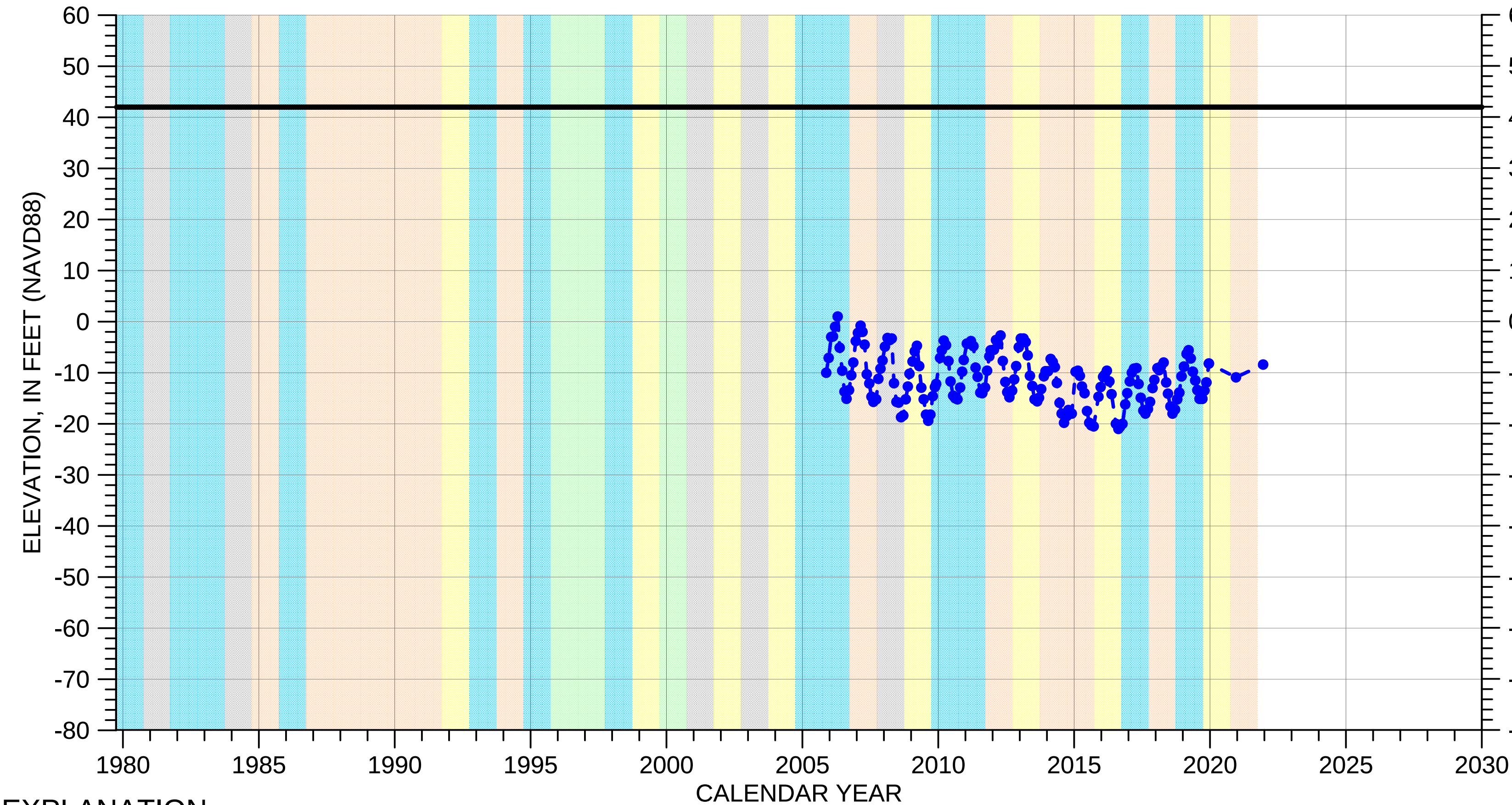
WATER YEAR TYPE DESIGNATION

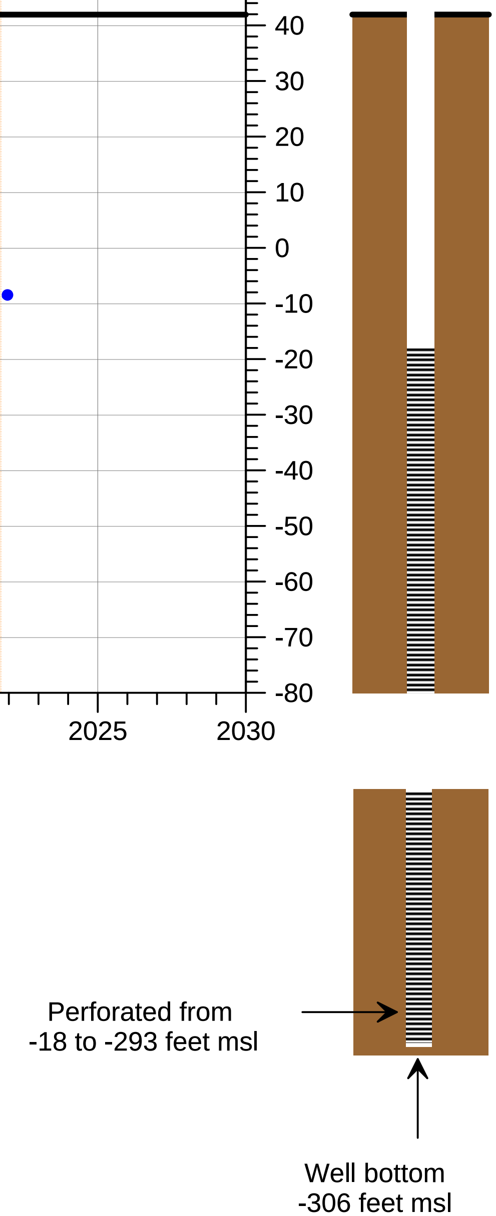
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-25C02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-27B01

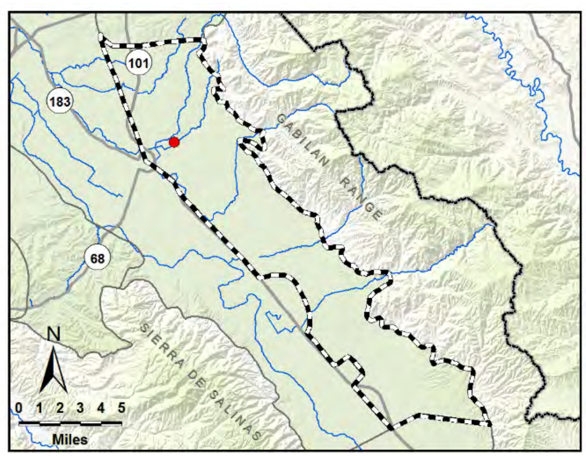
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



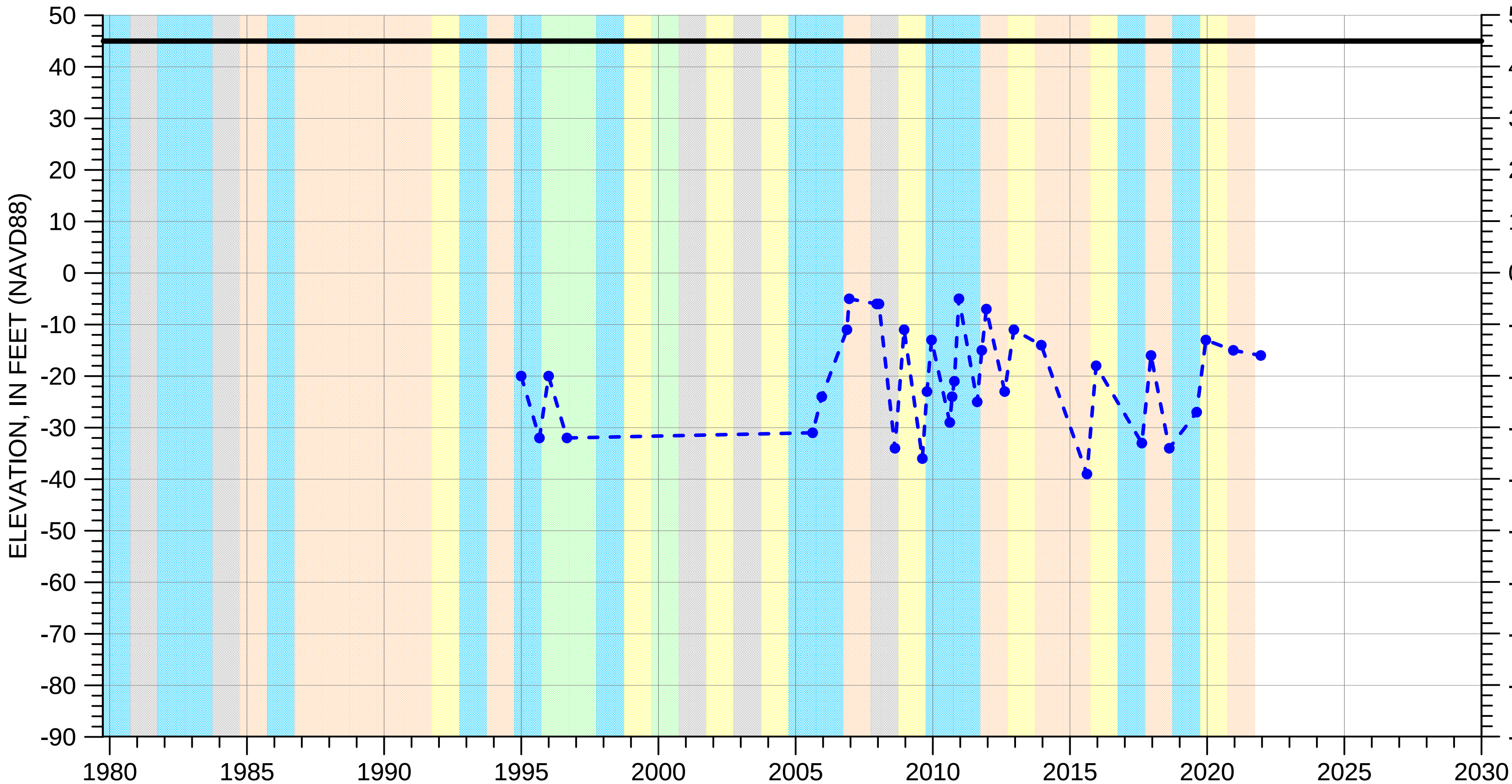
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-27B01.grf

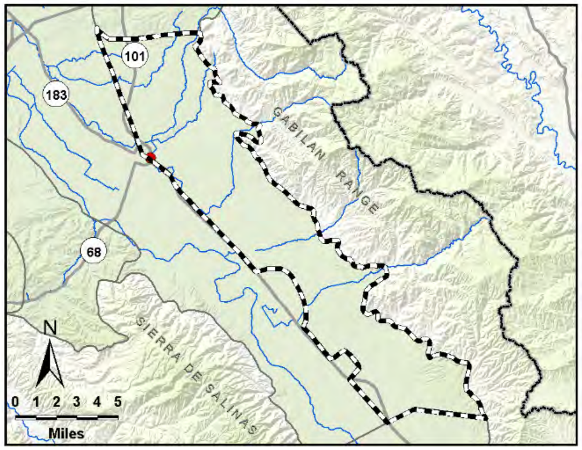
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-33G01

Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



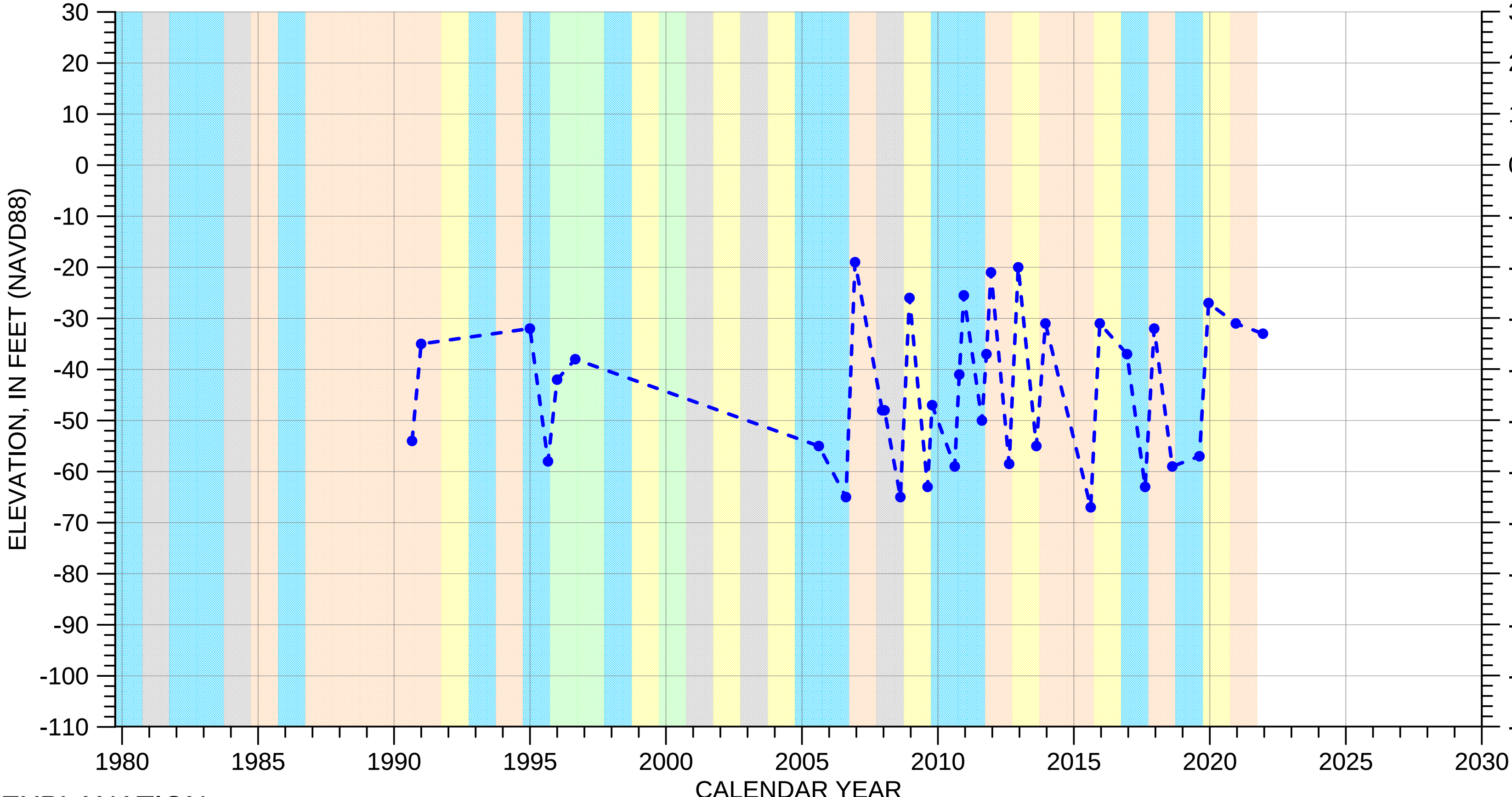
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-33G01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-34C01

Eastside Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (67 FT MSL)

WATER YEAR TYPE DESIGNATION

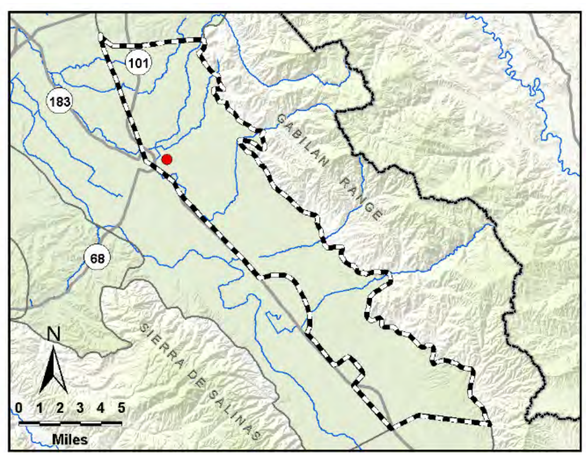
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



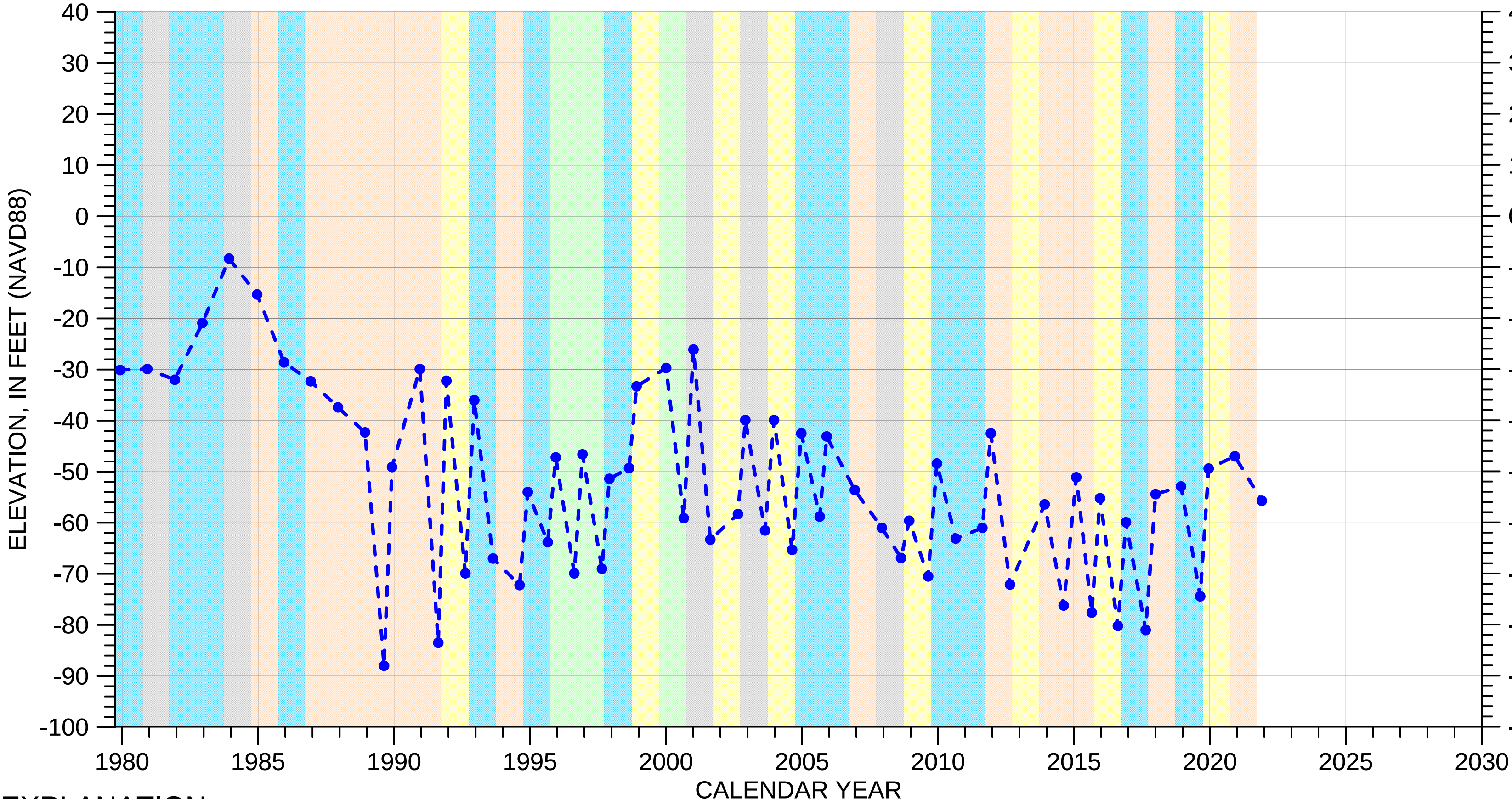
Perforated from
-238 to -493 feet msl

Well bottom
elevation unknown

\\luc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEW\GRFs_Ch5\14S_03E-34C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-36A01

Eastside Aquifer Subbasin



Perforated interval unknown

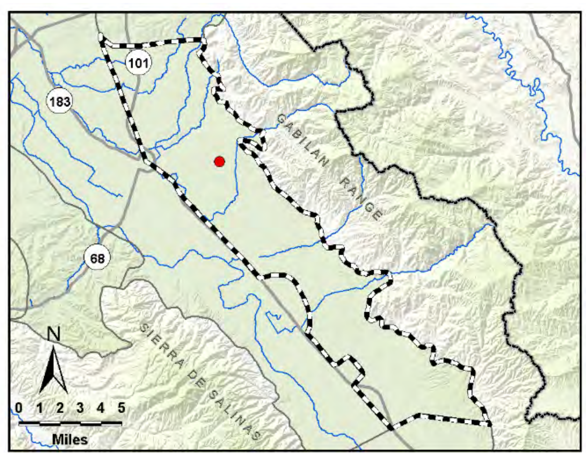
Well bottom -350 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (140 FT MSL)

WATER YEAR TYPE DESIGNATION

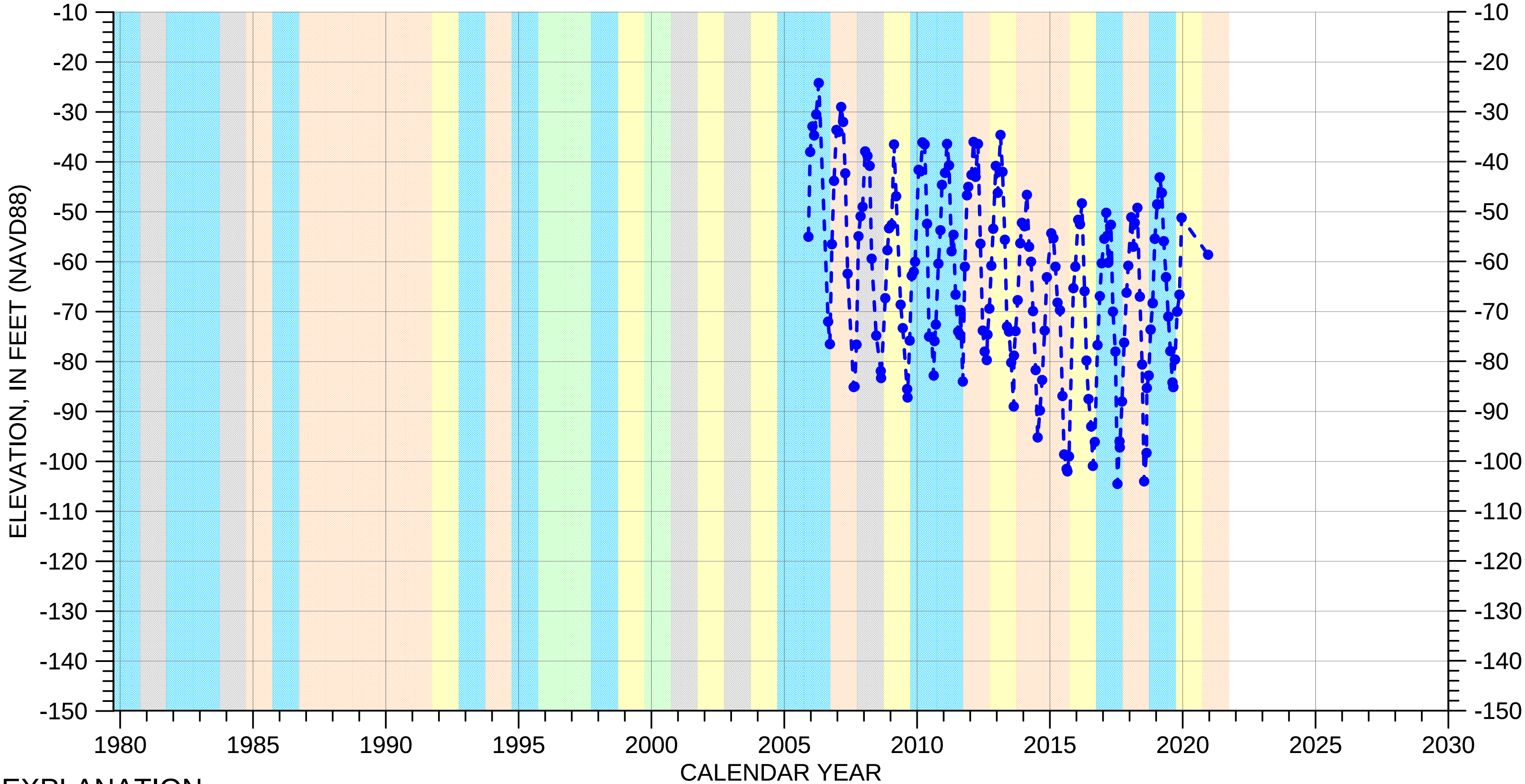
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

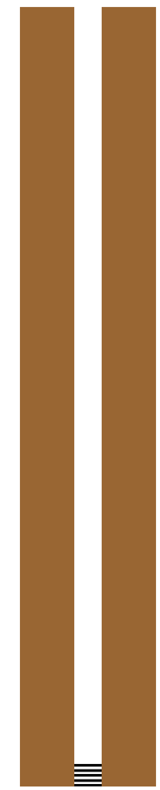


\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-36A01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/04E-31Q02

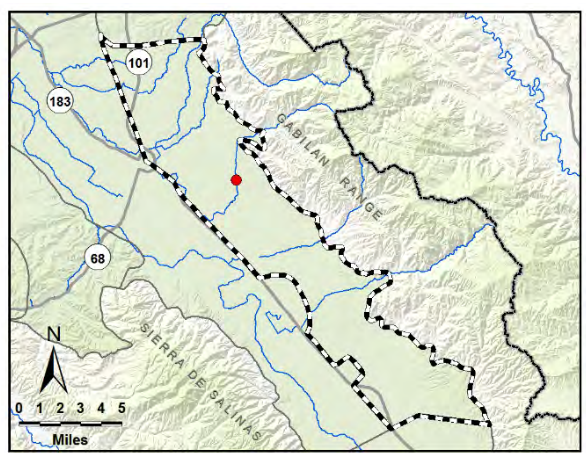
Eastside Aquifer Subbasin

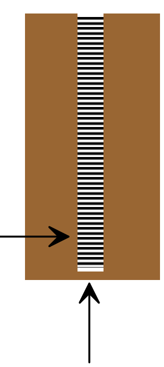




EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (104 FT MSL)





Multiple perforated intervals from -146 to -606 feet msl

Well bottom -606 feet msl

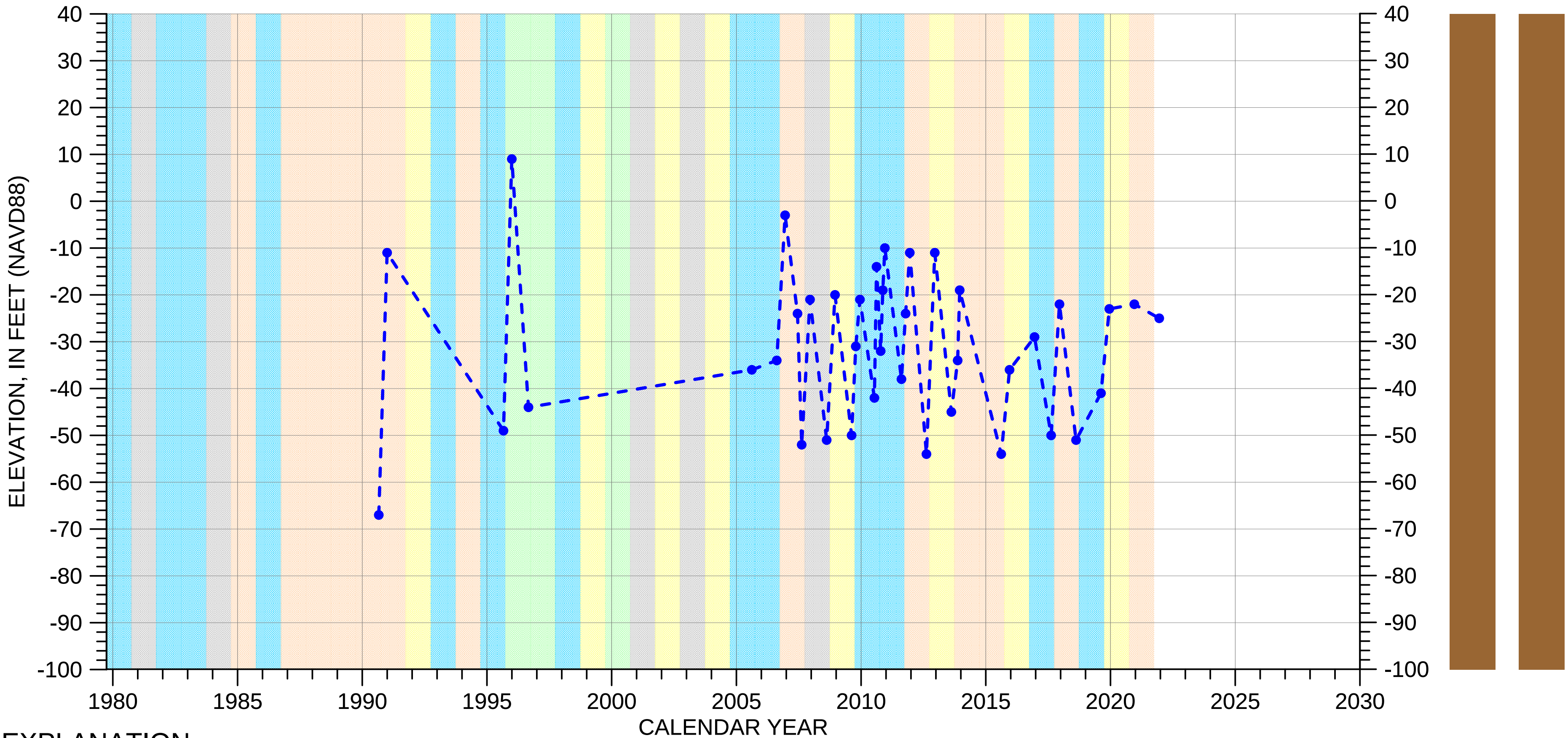
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_04E-31Q02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-02G01

Eastside Aquifer Subbasin

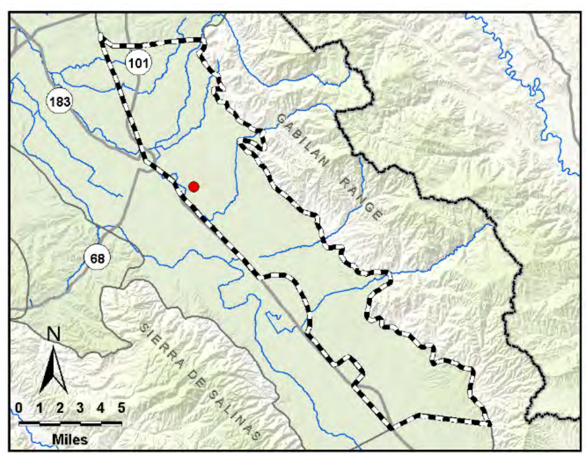


EXPLANATION

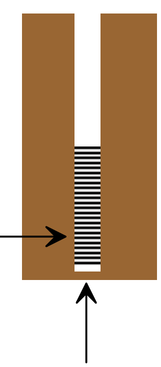
- Groundwater Elevation
- Suspect Measurement
- Land Surface (74 FT MSL)

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Perforated from
-286 to -536 feet msl

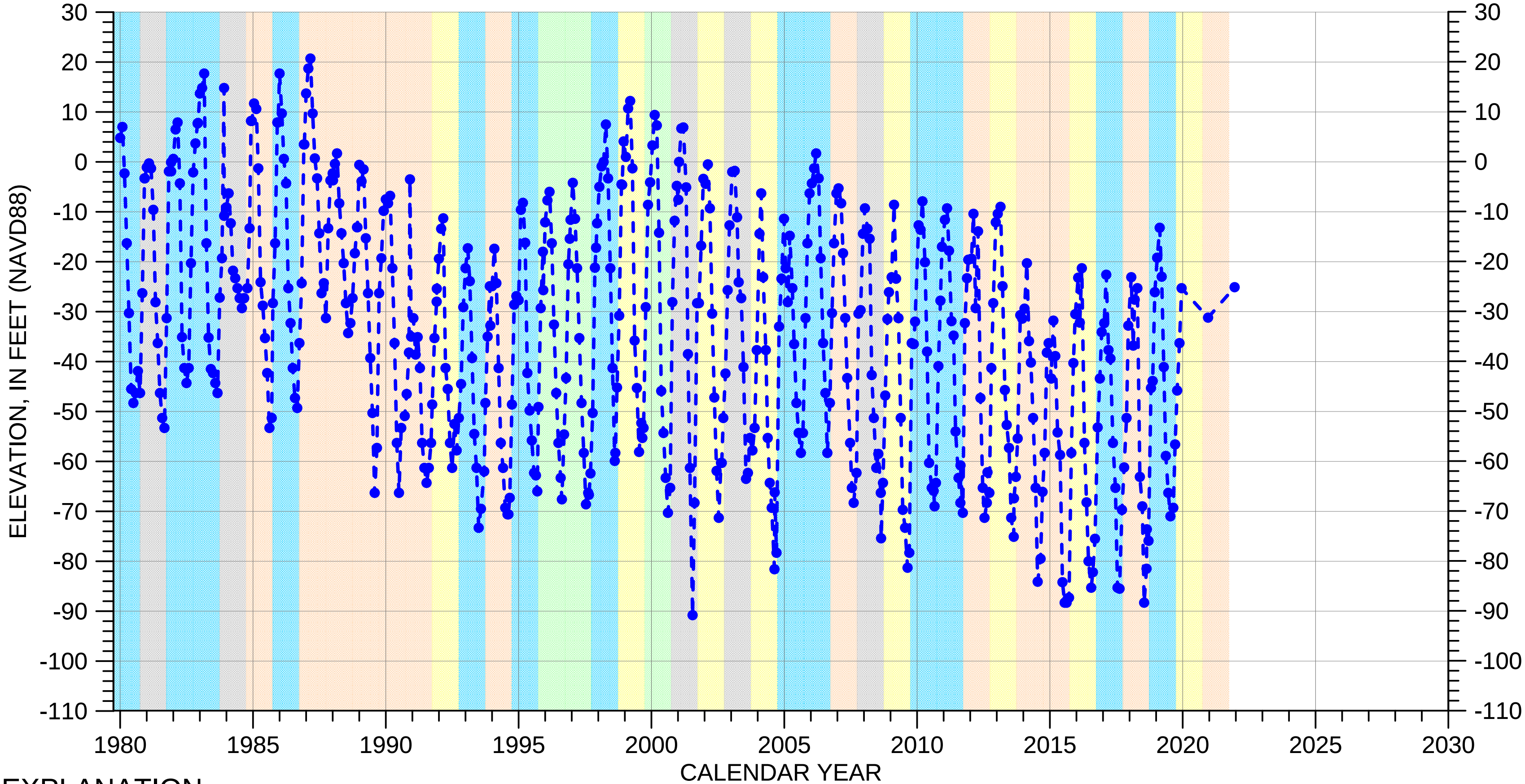


Well bottom
-556 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-02G01.grf

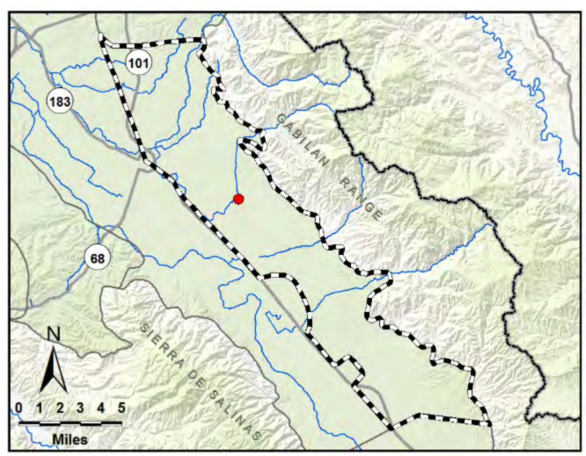
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-06R01

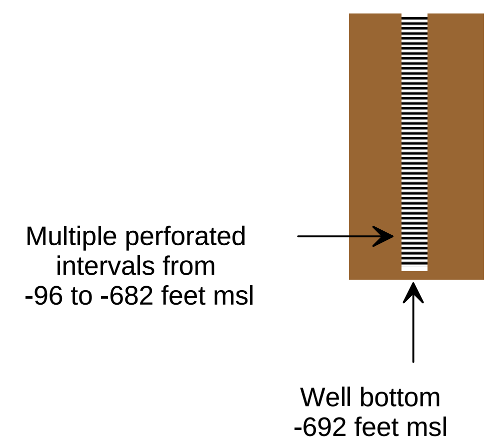
Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (94 FT MSL)





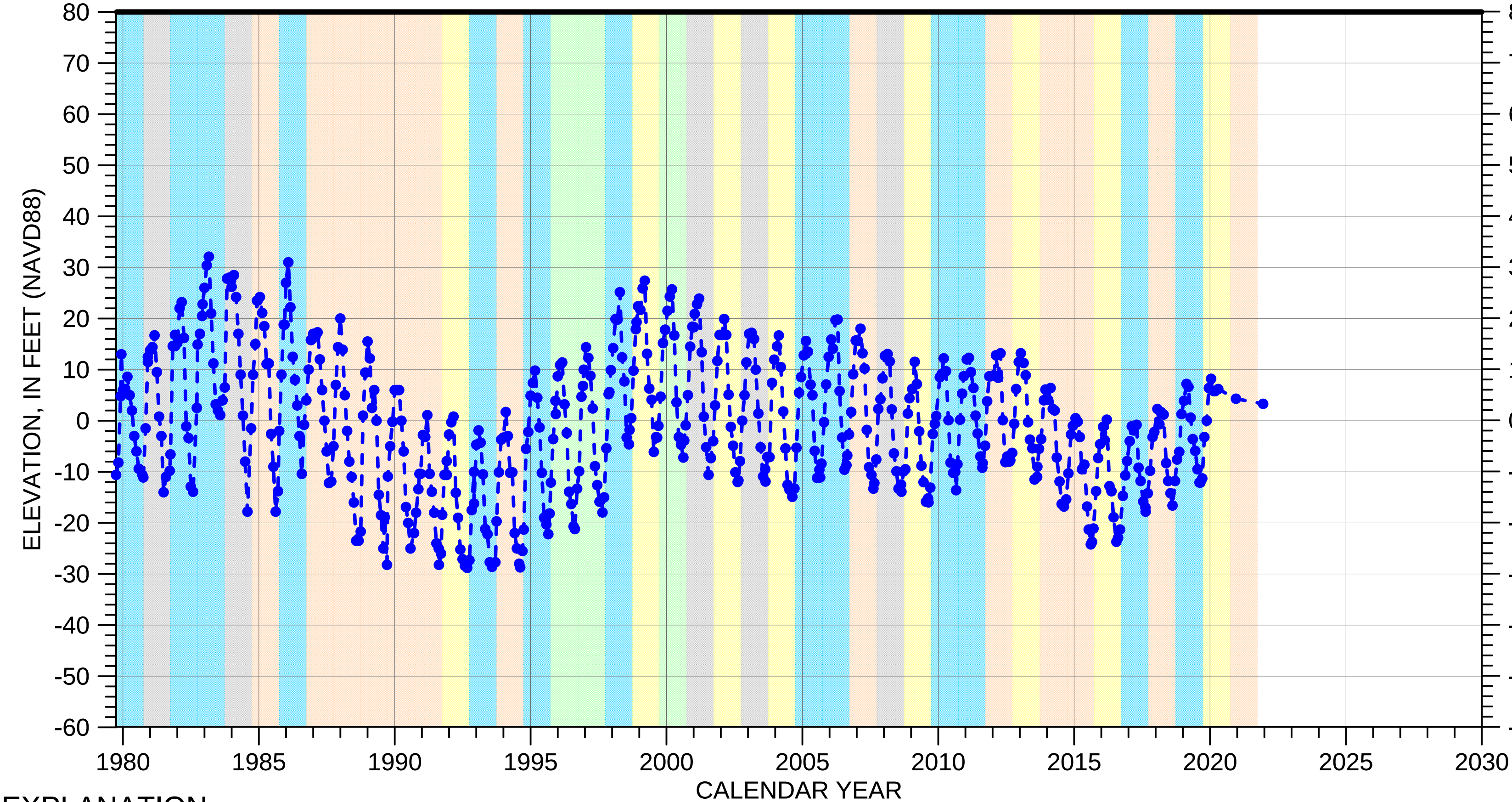
WATER YEAR TYPE DESIGNATION

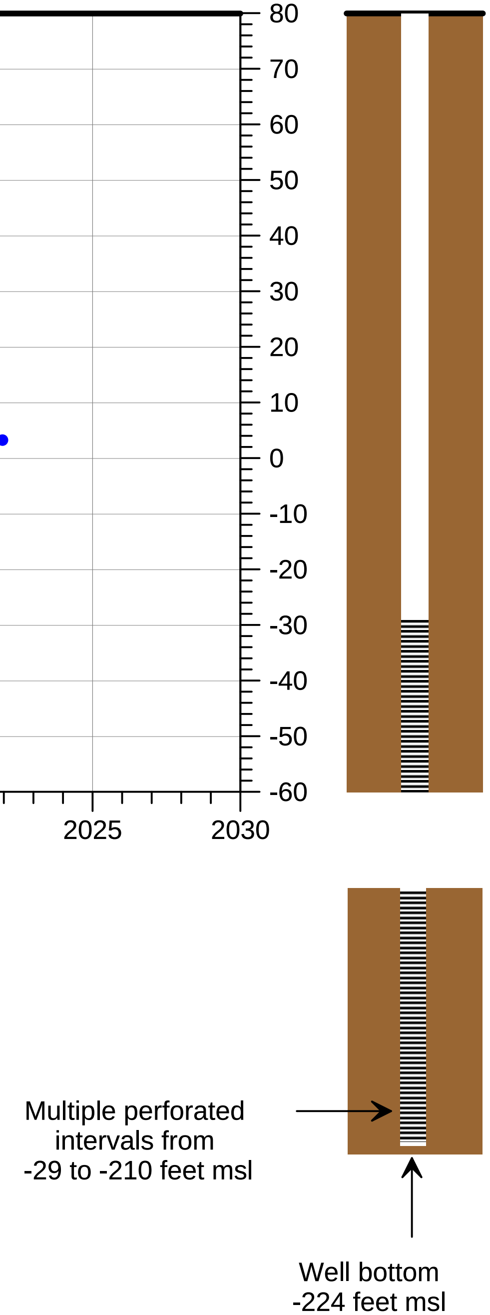
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_04E-06R01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-07R02

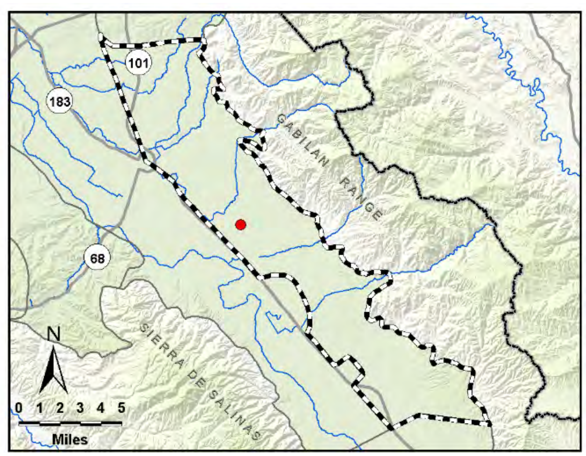
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



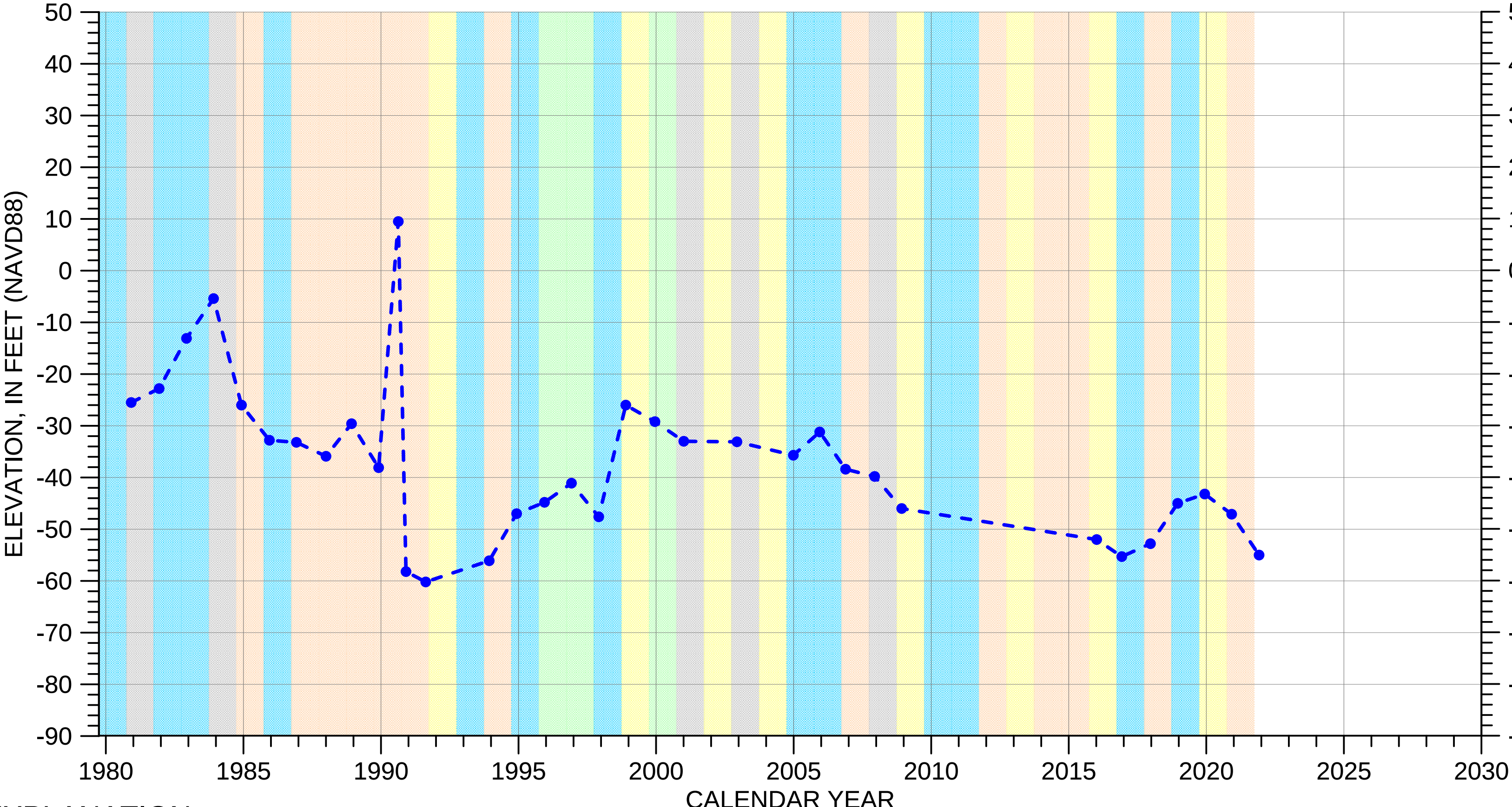
WATER YEAR TYPE DESIGNATION

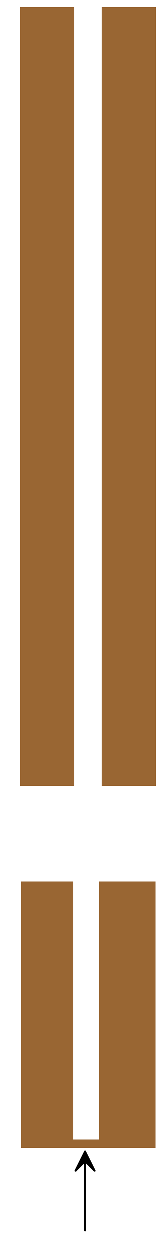
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_04E-07R02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-09D01

Eastside Aquifer Subbasin



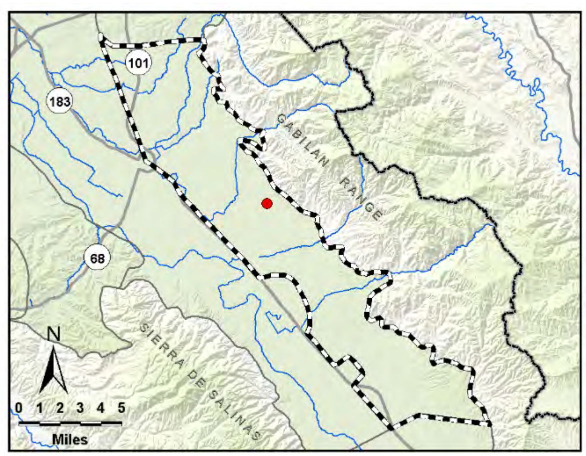


Perforated interval unknown

Well bottom
-334 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (127 FT MSL)



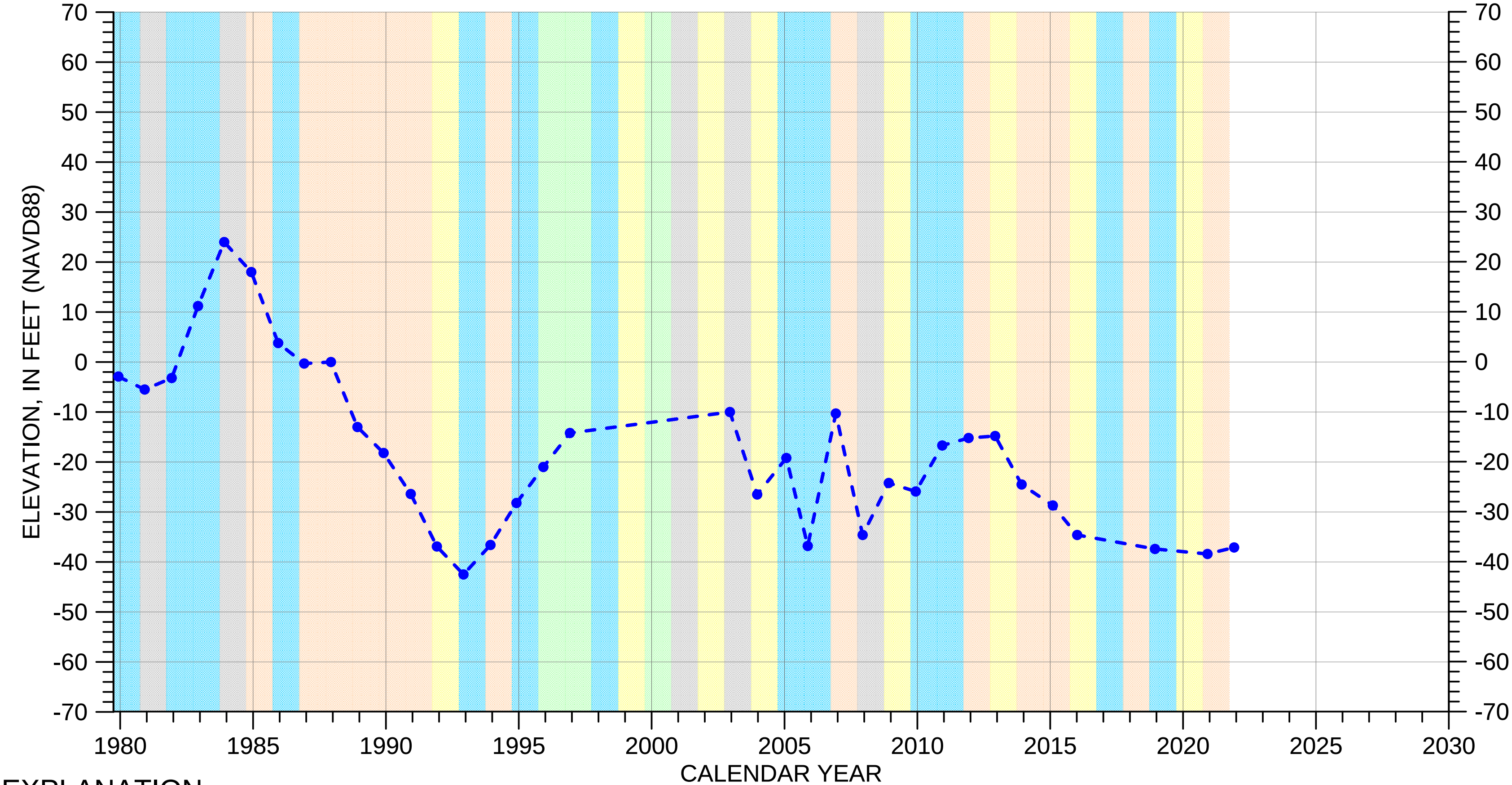
WATER YEAR TYPE DESIGNATION

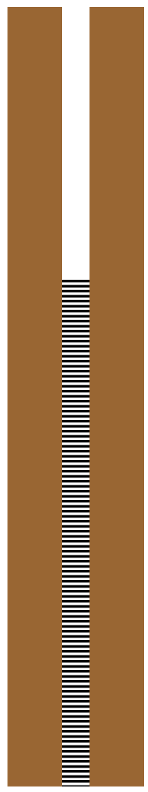
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEW\GRFs_Ch5\15S_04E-09D01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-14N01

Eastside Aquifer Subbasin



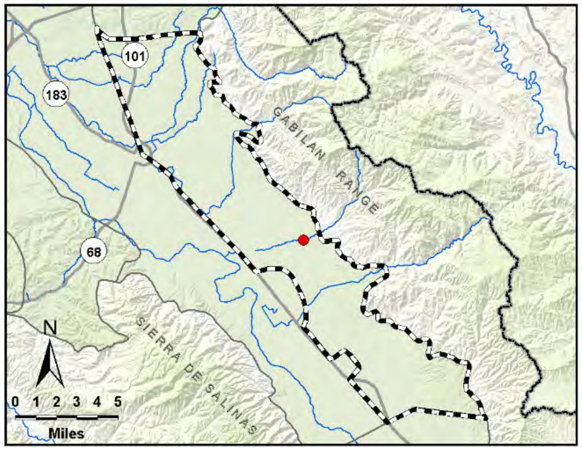


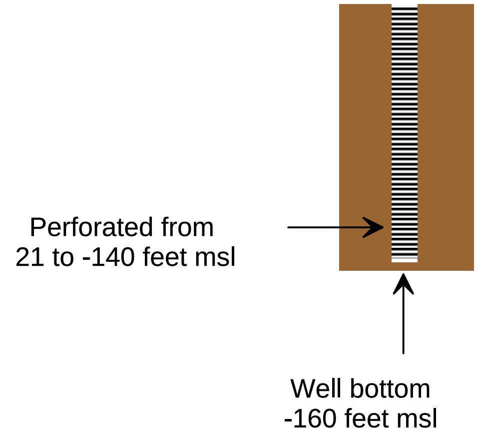
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (240 FT MSL)





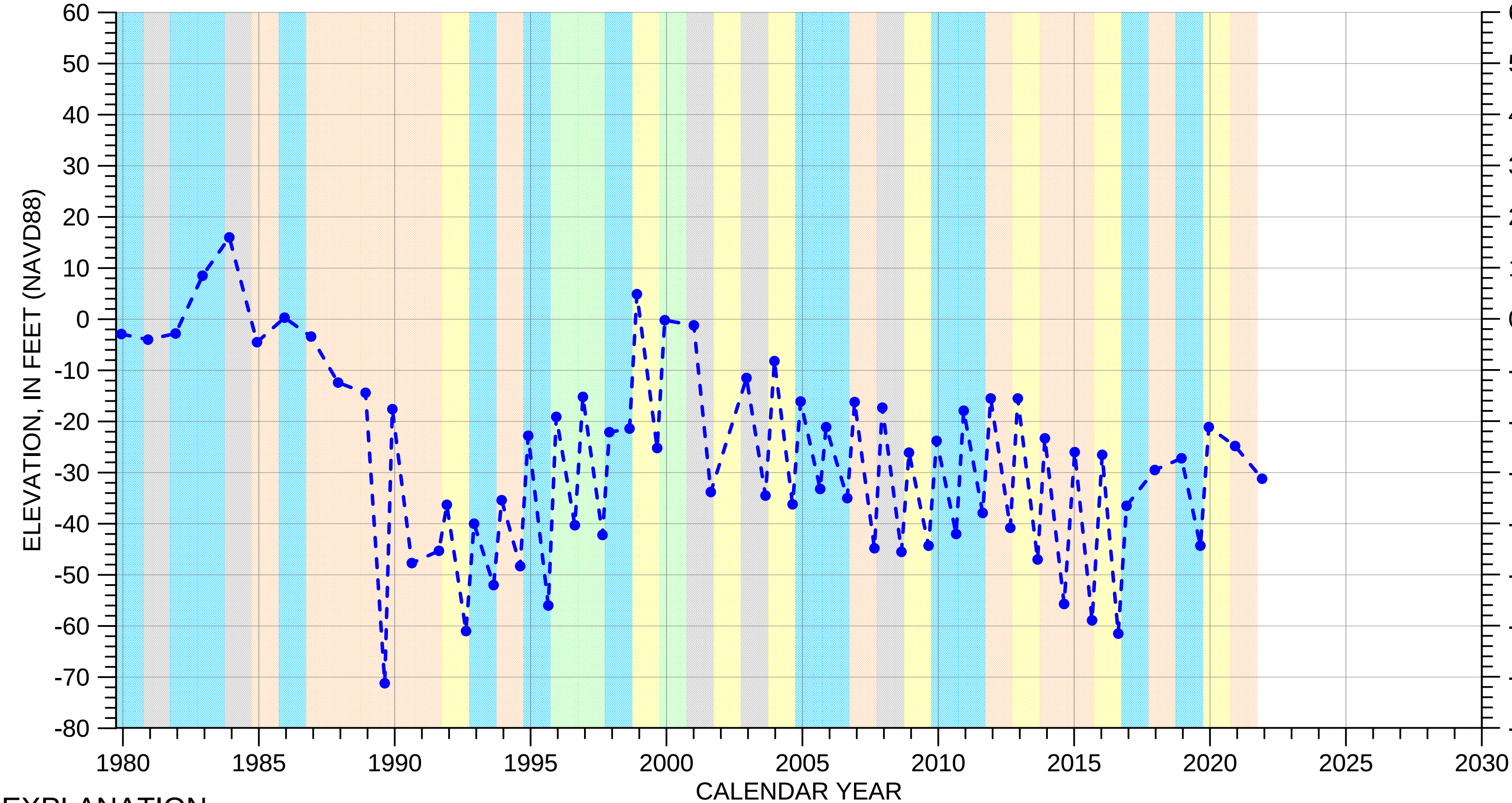
WATER YEAR TYPE DESIGNATION

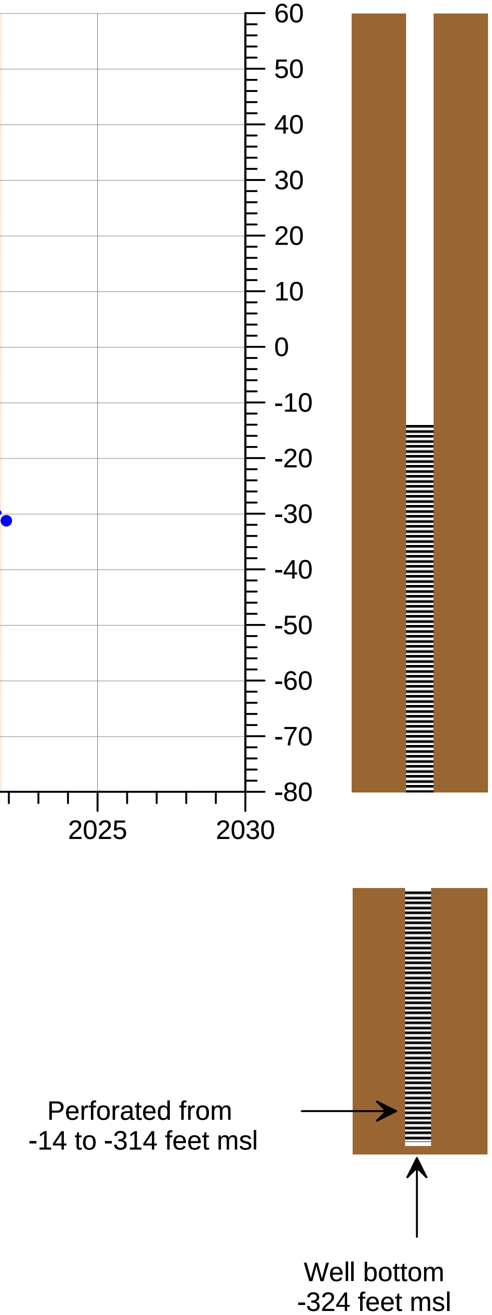
DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_04E-14N01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-15D02

Eastside Aquifer Subbasin



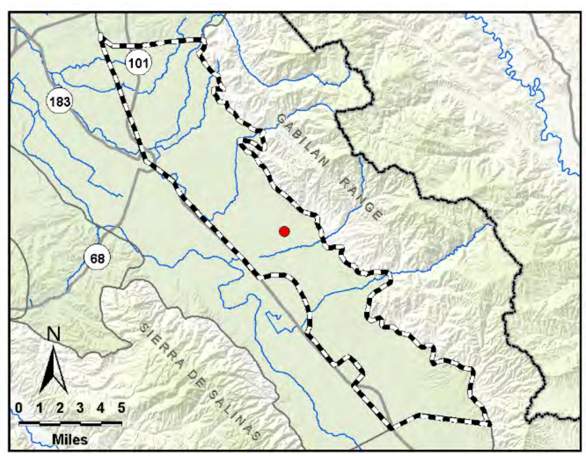


EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (186 FT MSL)



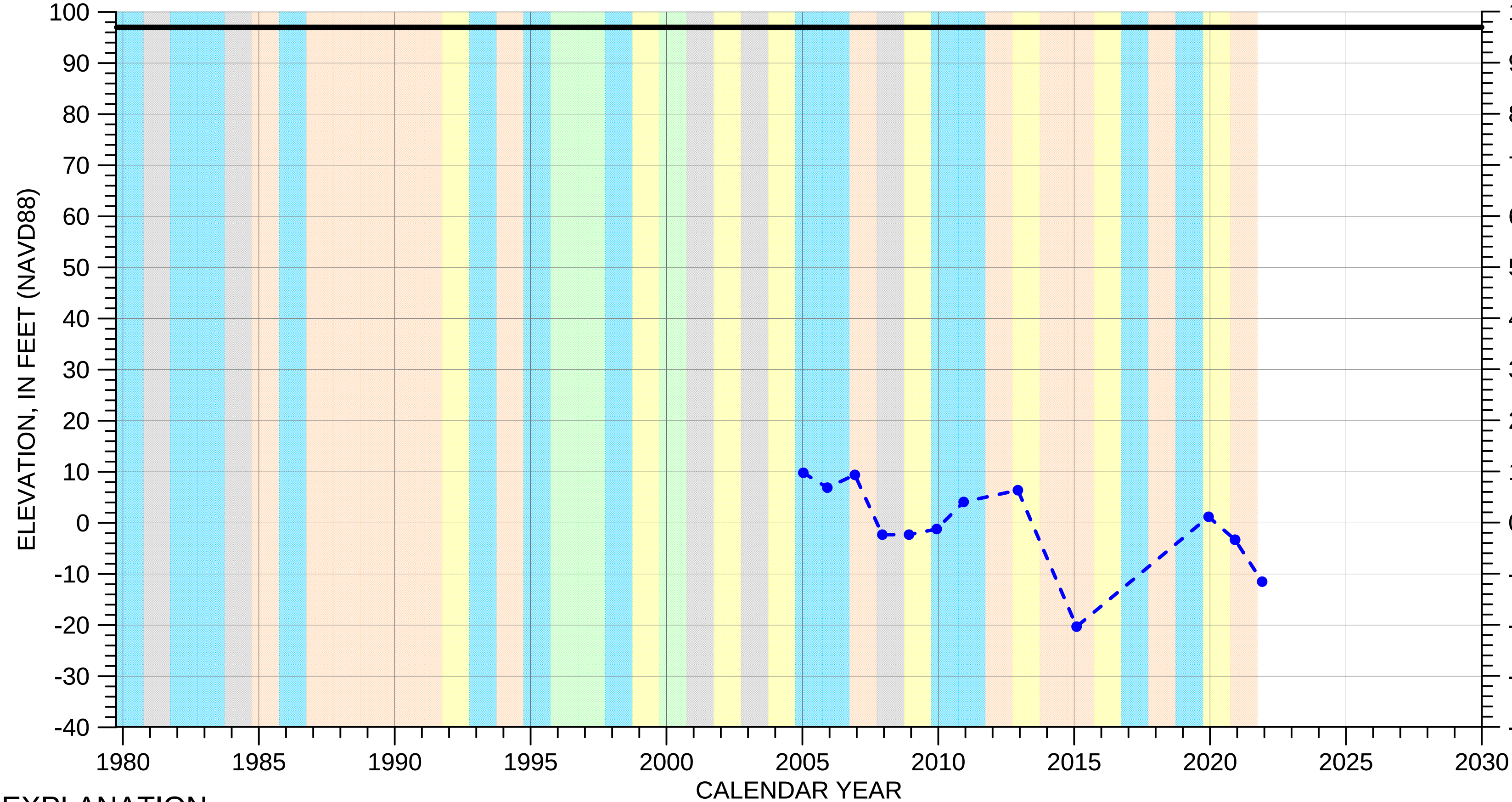
WATER YEAR TYPE DESIGNATION

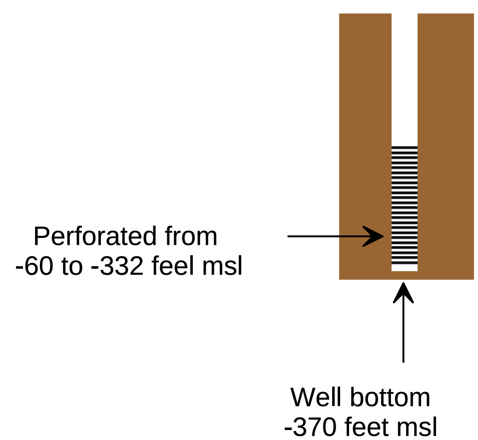
DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_04E-15D02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-17P02

Eastside Aquifer Subbasin





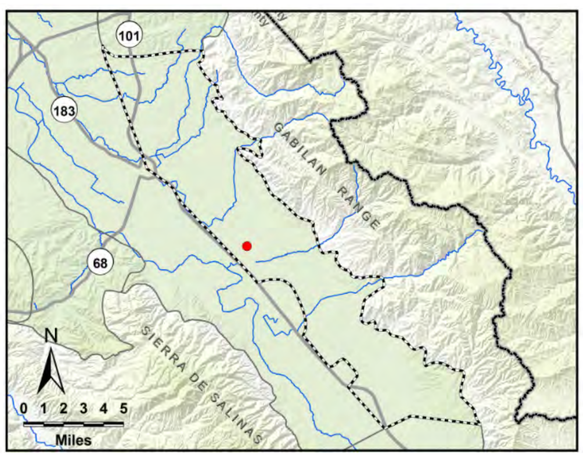
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_04E-17P02.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

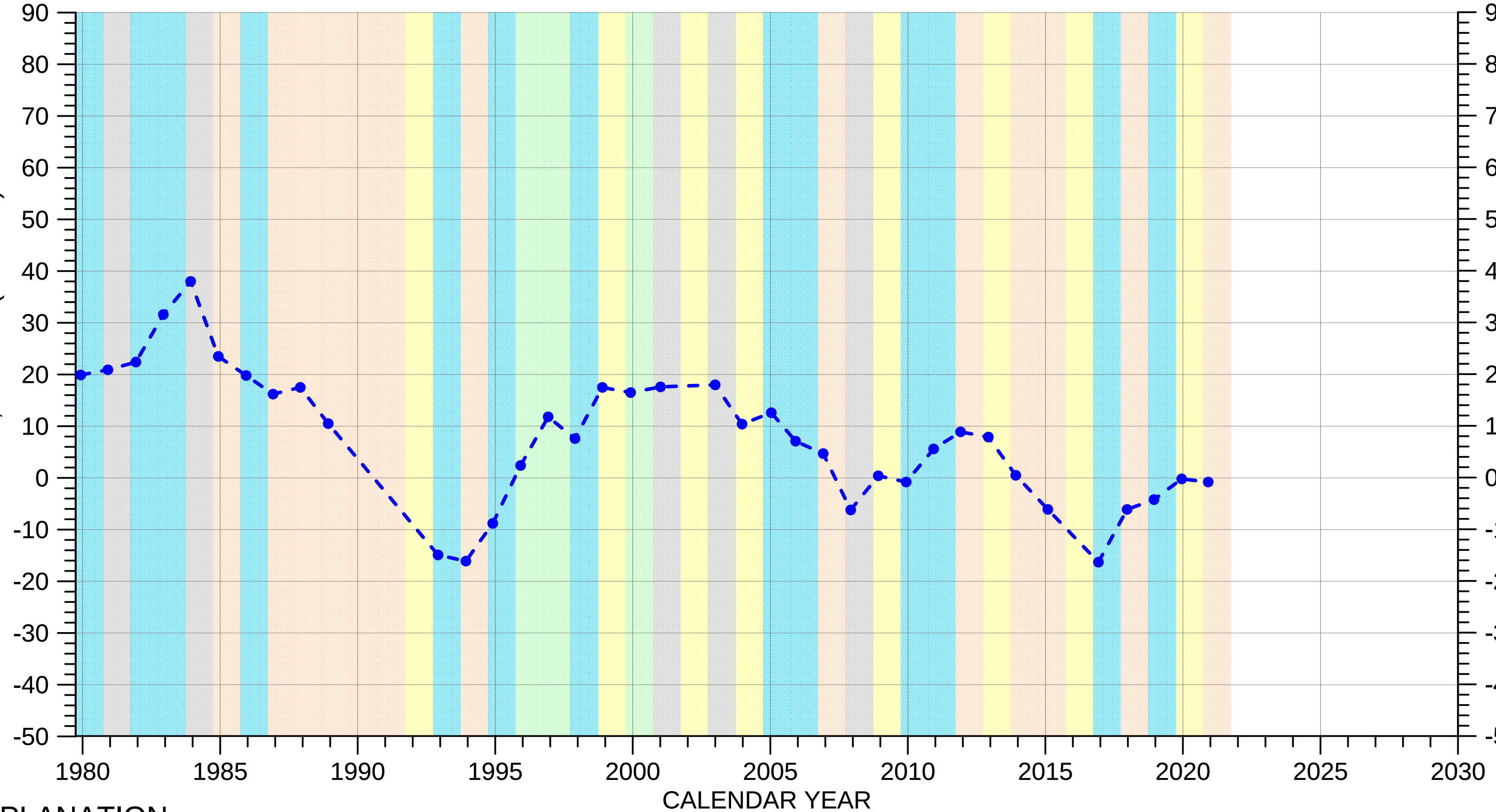
WATER YEAR TYPE DESIGNATION

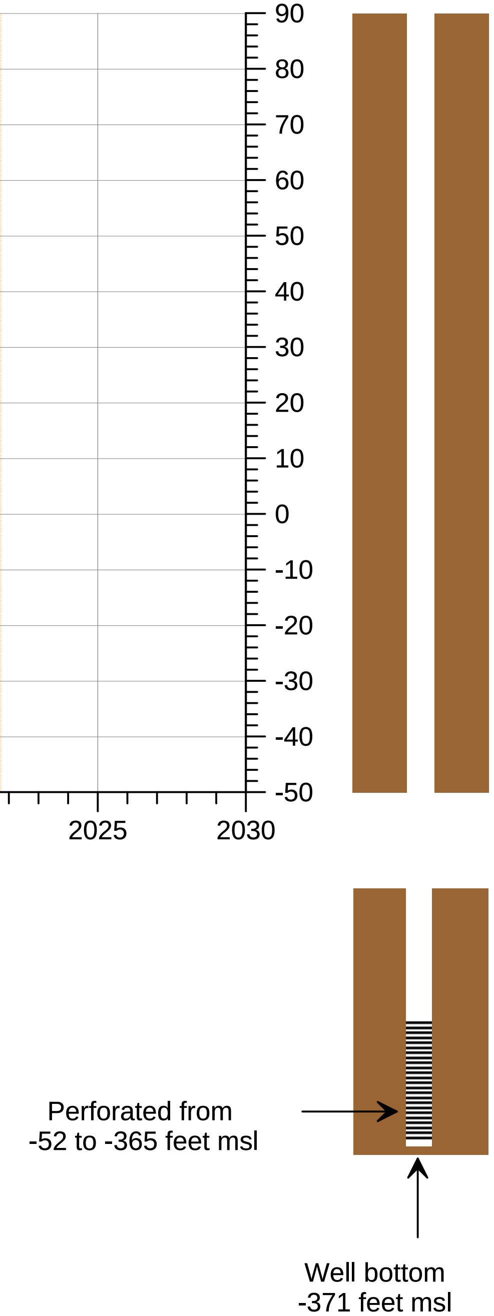
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-21F04

Eastside Aquifer Subbasin

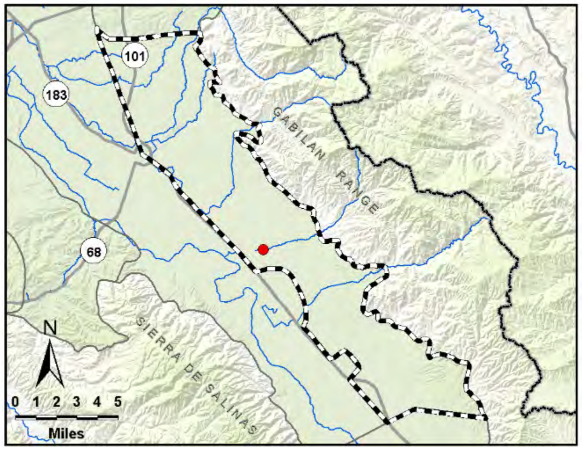




\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_04E-21F04.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (127 FT MSL)

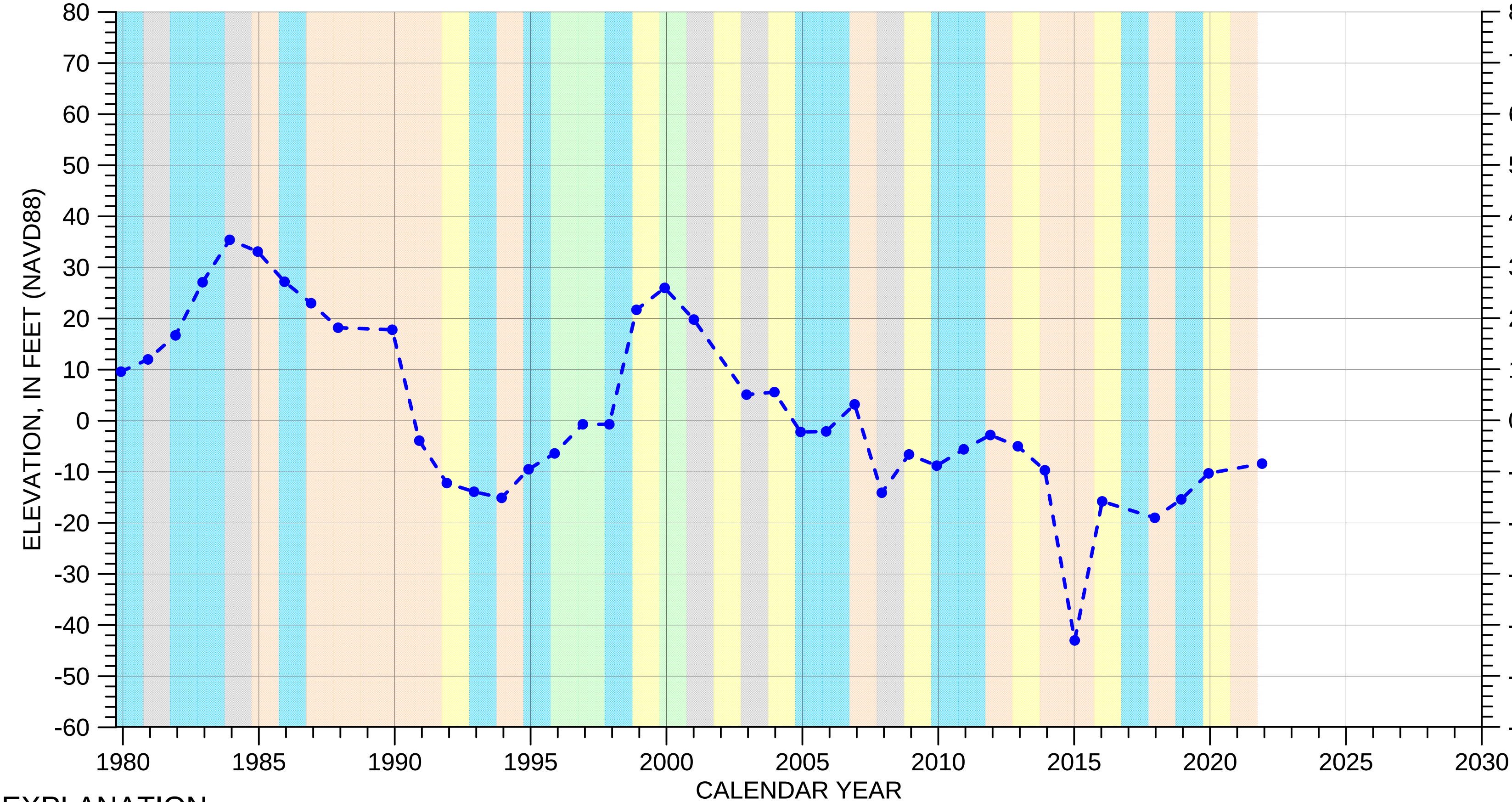


WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-24N03

Eastside Aquifer Subbasin

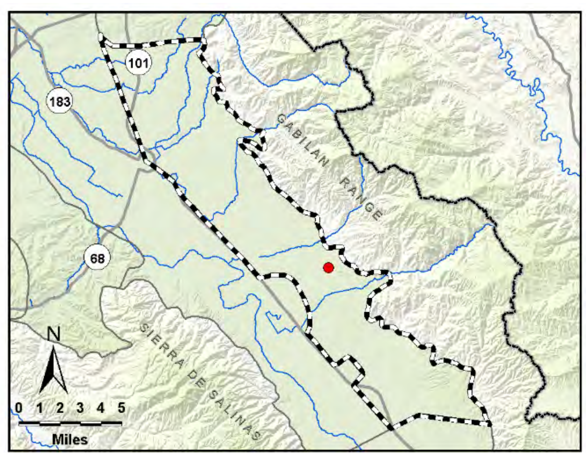


Perforated interval unknown

Well bottom
-98 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (272 FT MSL)



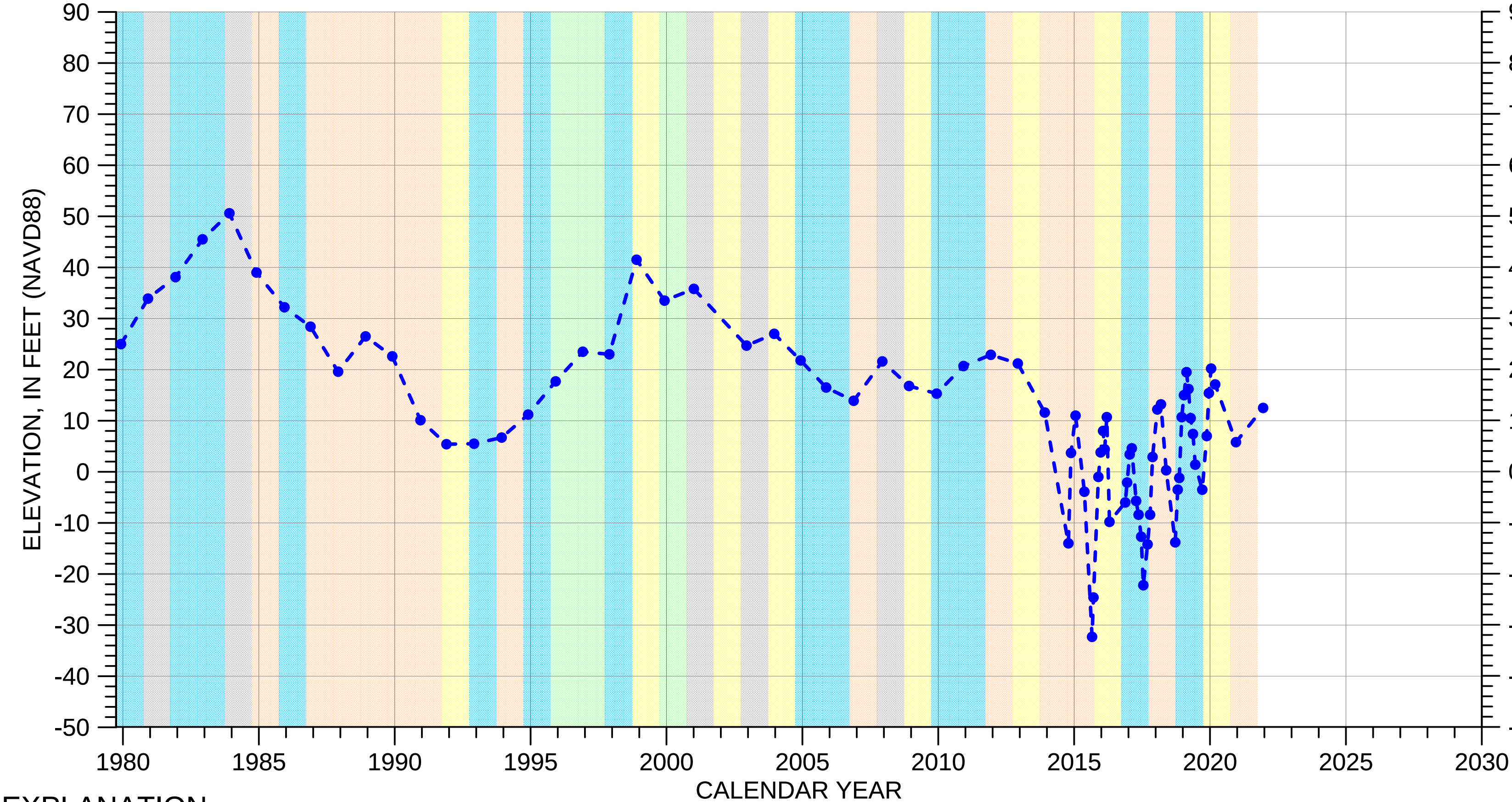
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\15S_04E-24N03.grf

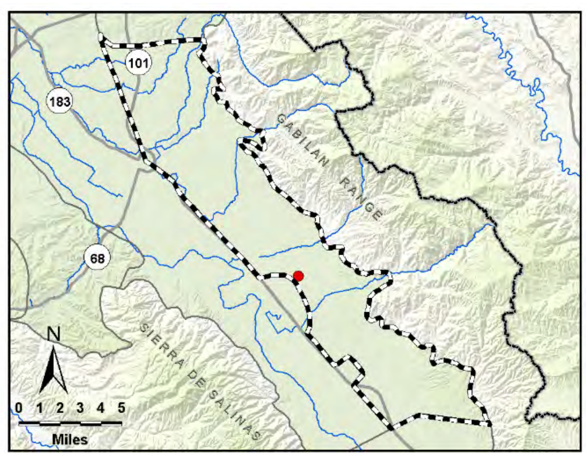
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-27G01

Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (189 FT MSL)



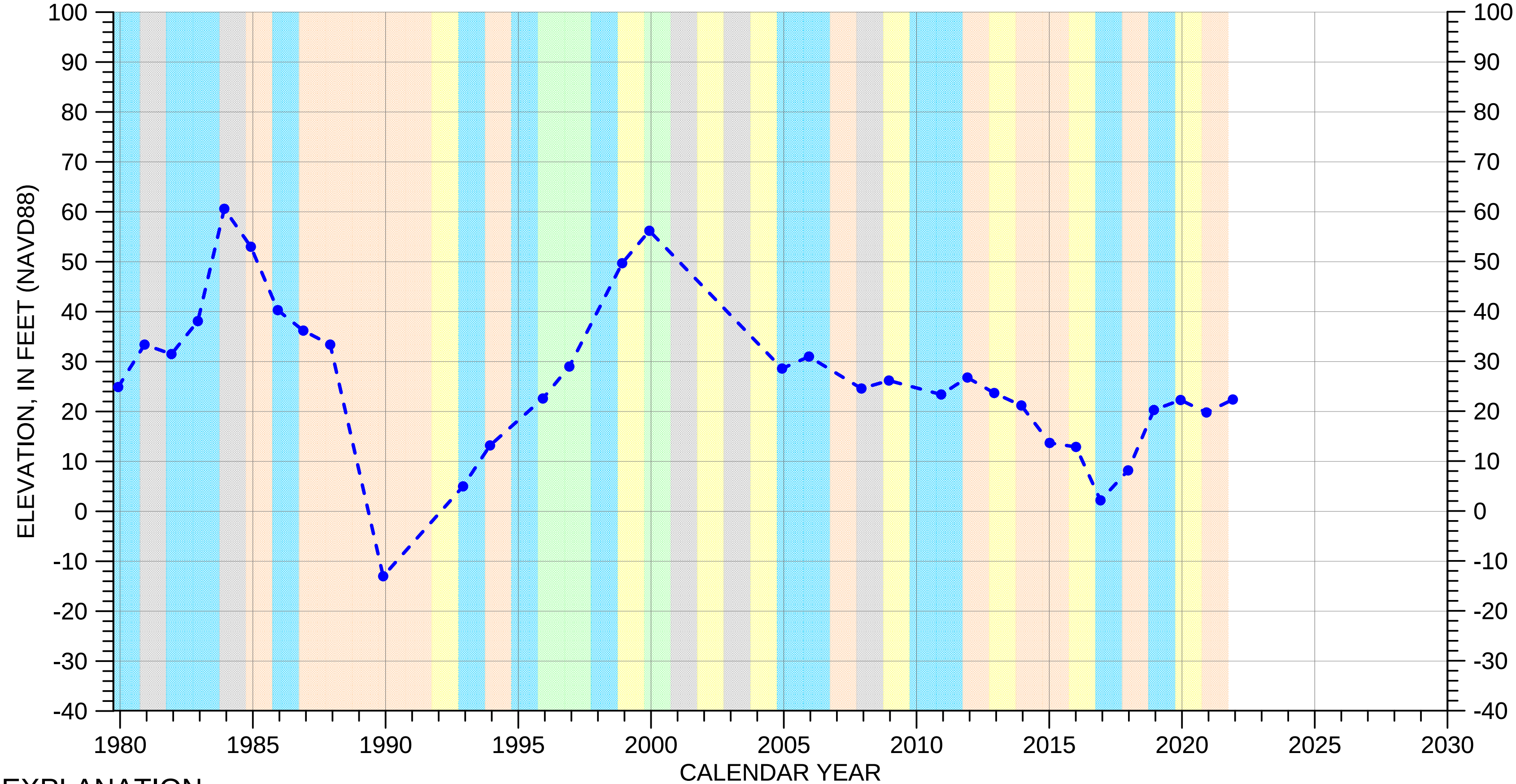
WATER YEAR TYPE DESIGNATION

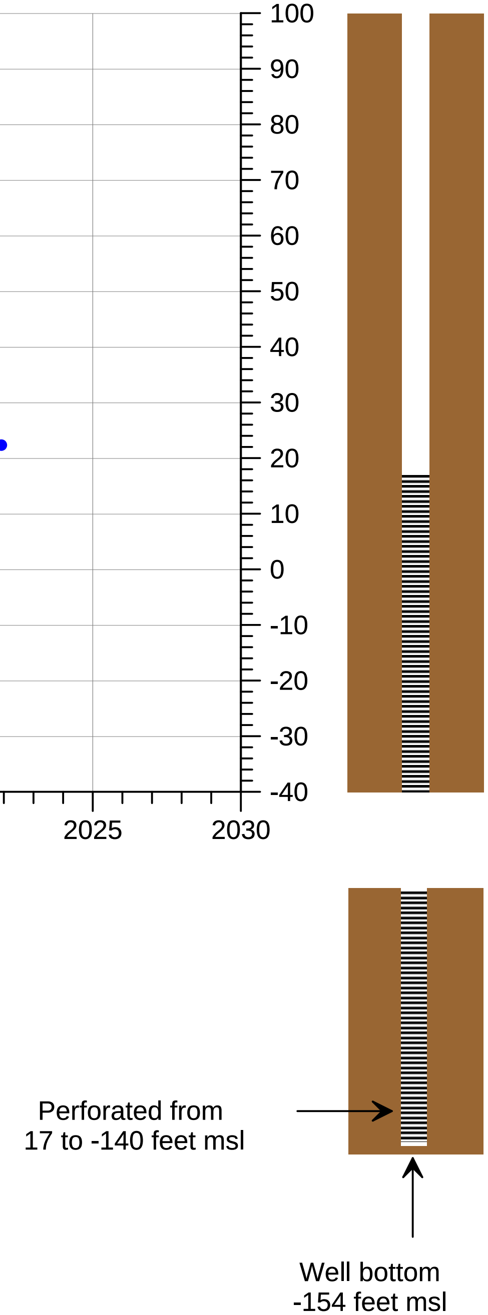
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEW\GRFs_Ch5\15S_04E-27G01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-36H01

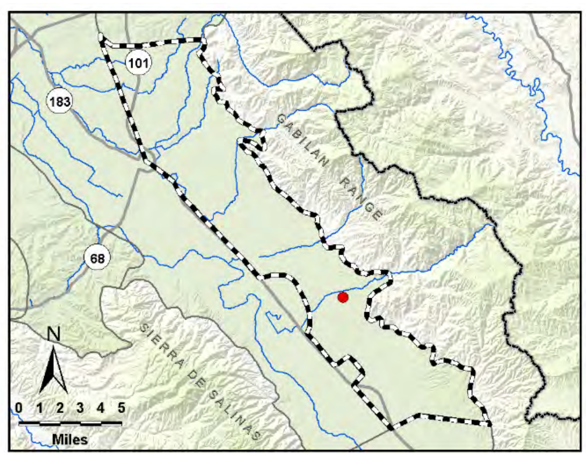
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (334 FT MSL)



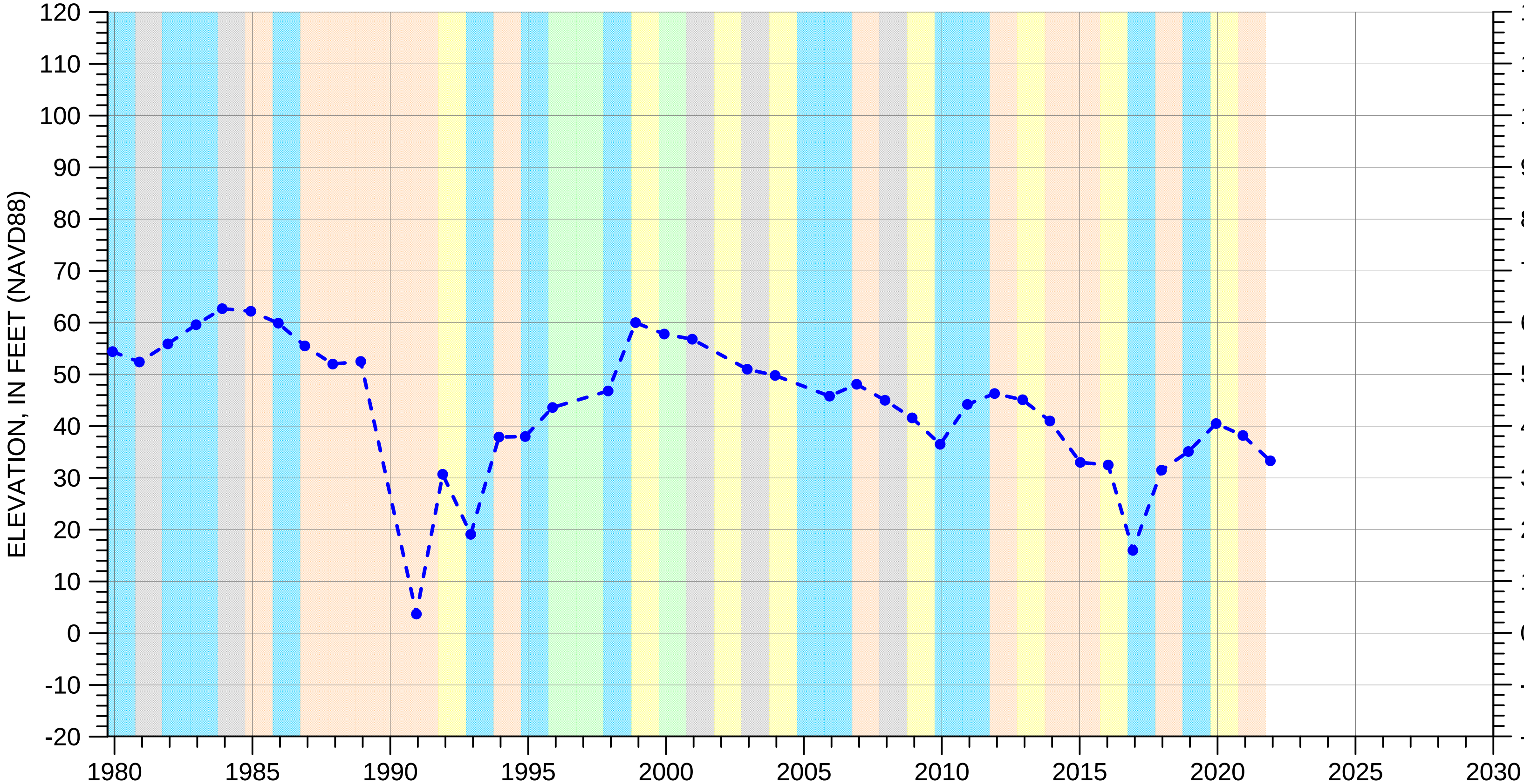
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\15S_04E-36H01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-02Q03

Eastside Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (136 FT MSL)

WATER YEAR TYPE DESIGNATION

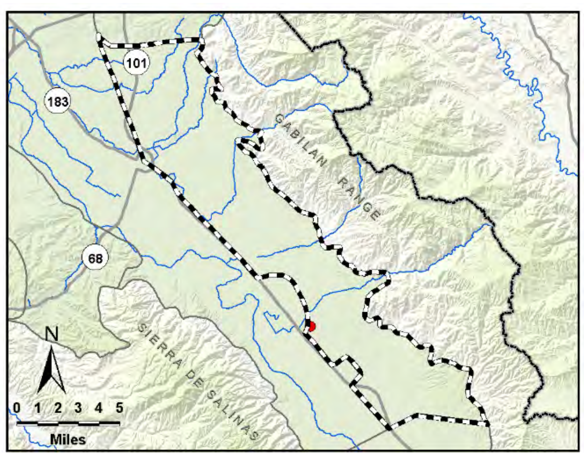
DRY

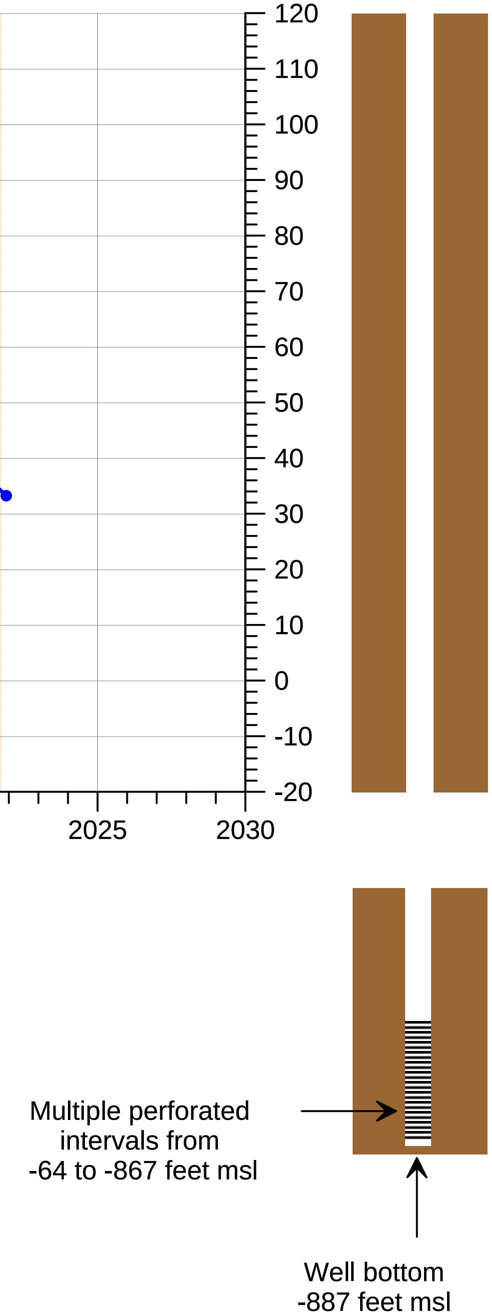
DRY - NORMAL

NORMAL

WET - NORMAL

WET

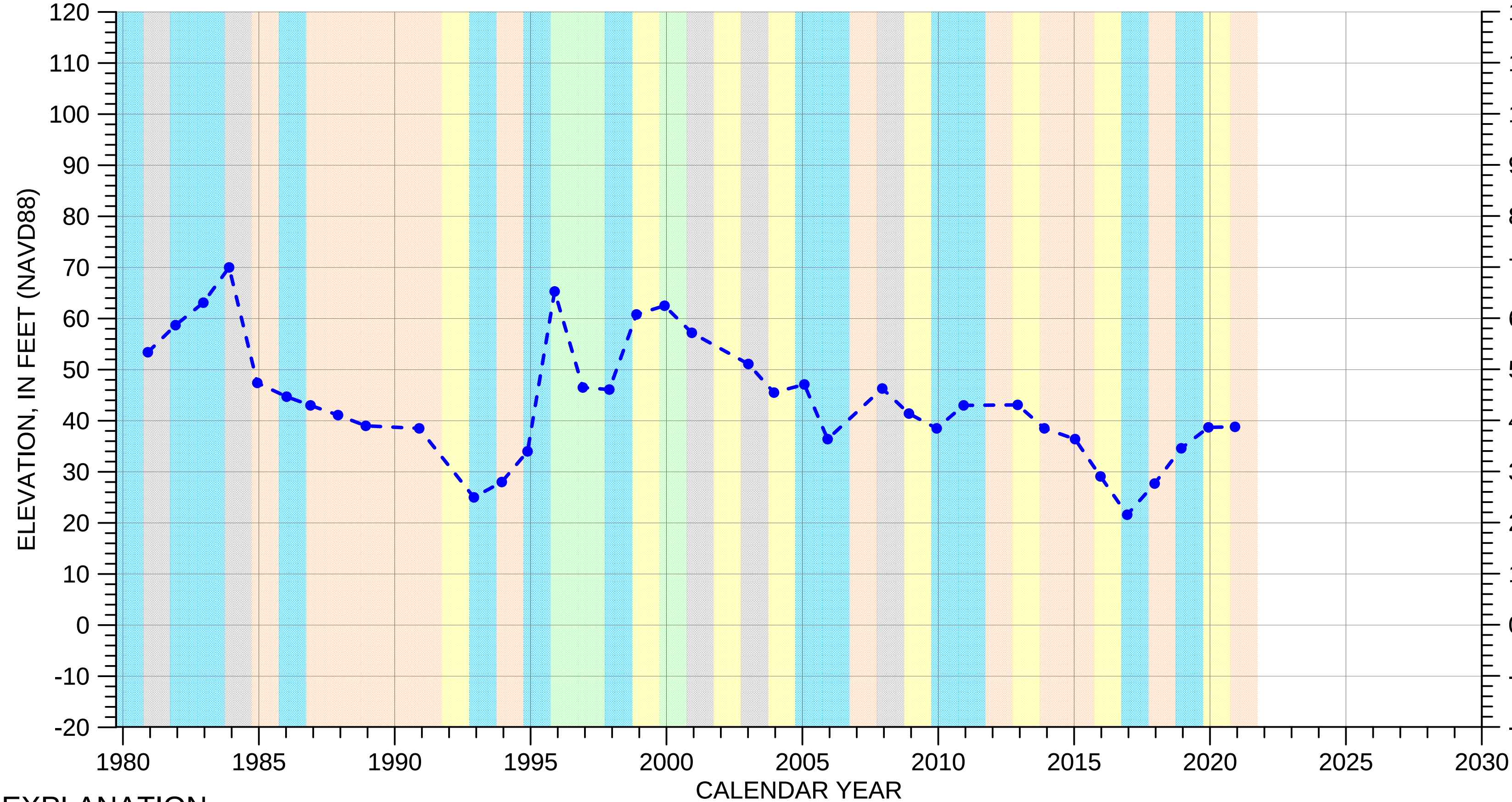


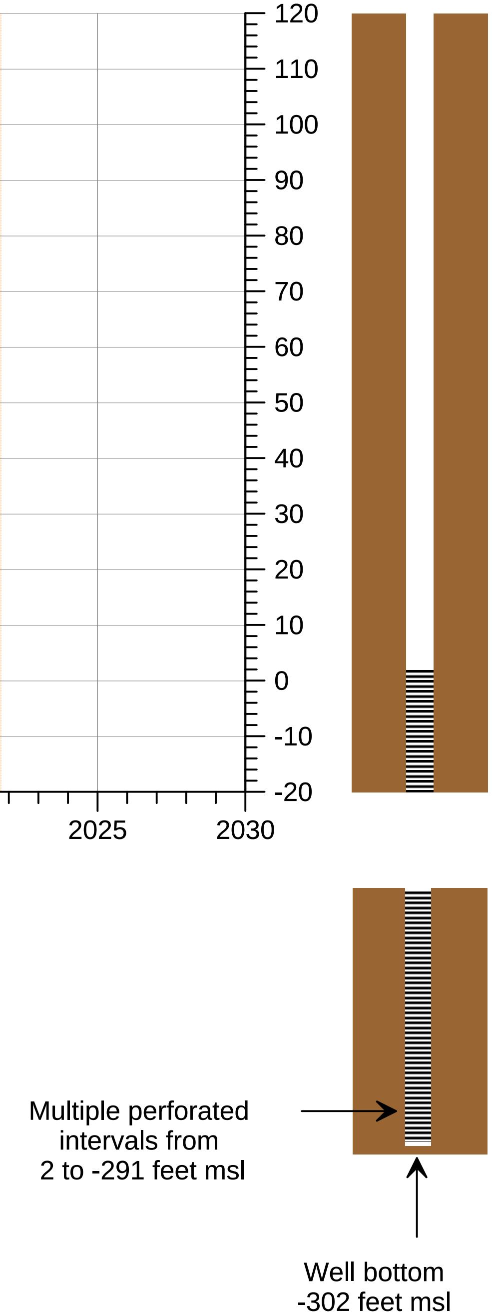


\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\16S_04E-02Q03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-05N01

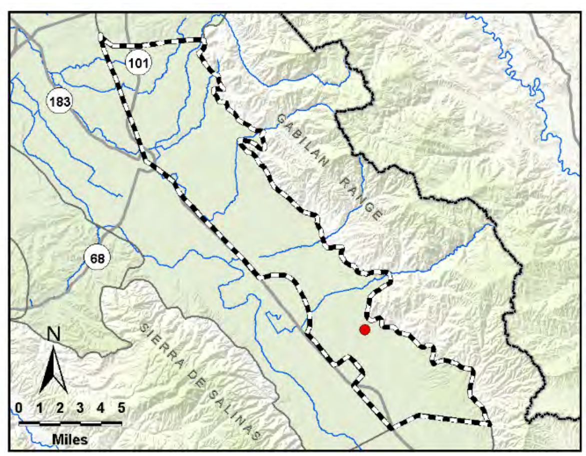
Eastside Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (248 FT MSL)



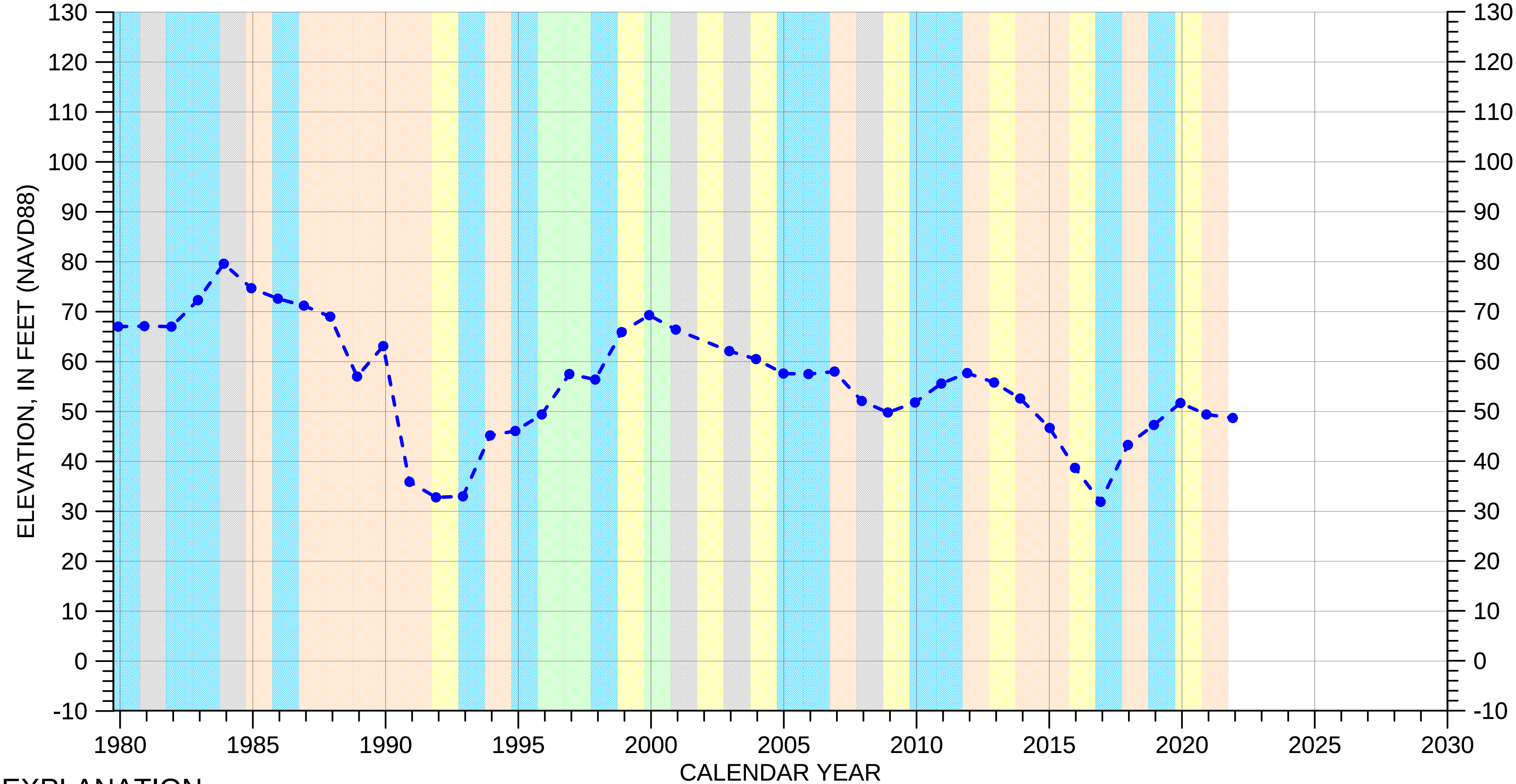
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_05E-05N01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-07G01

Eastside Aquifer Subbasin

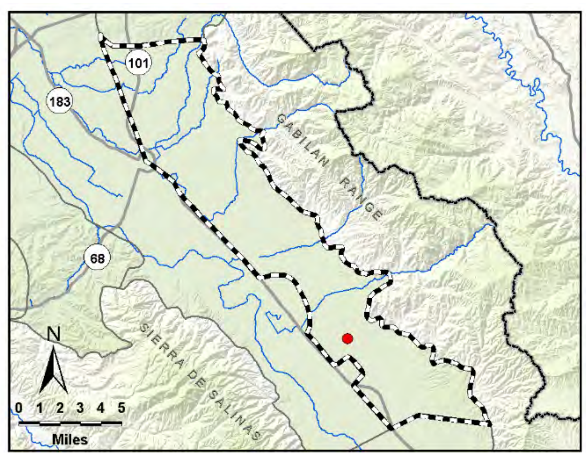


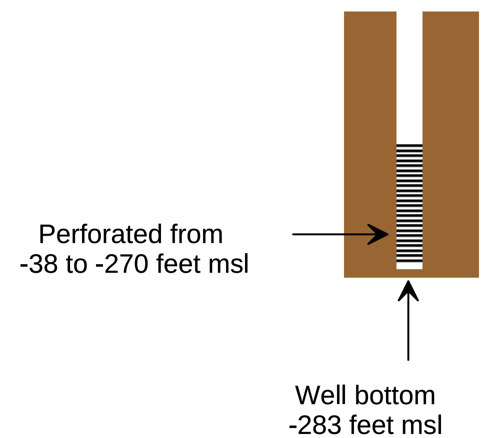
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (193 FT MSL)





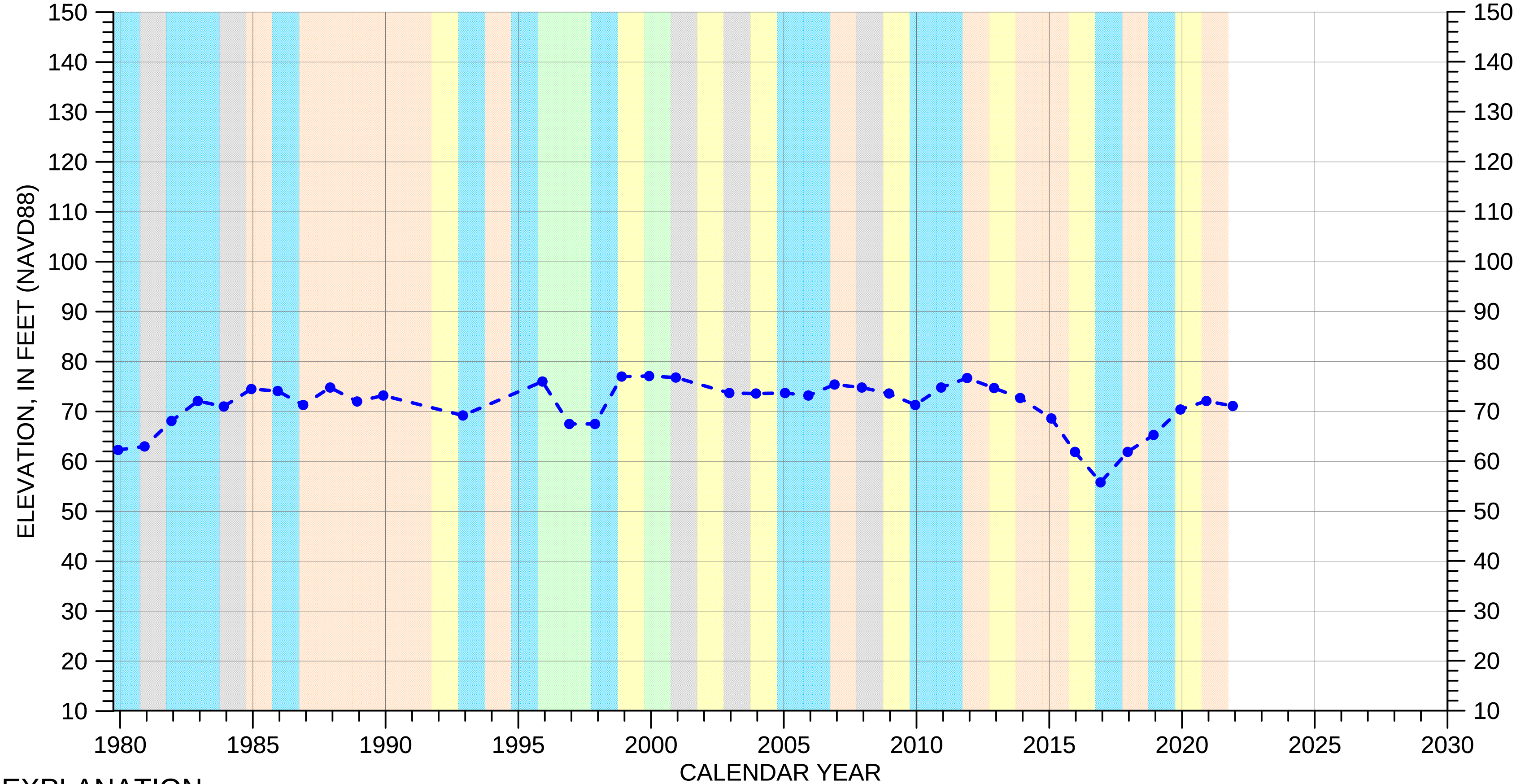
WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\16S_05E-07G01.grf

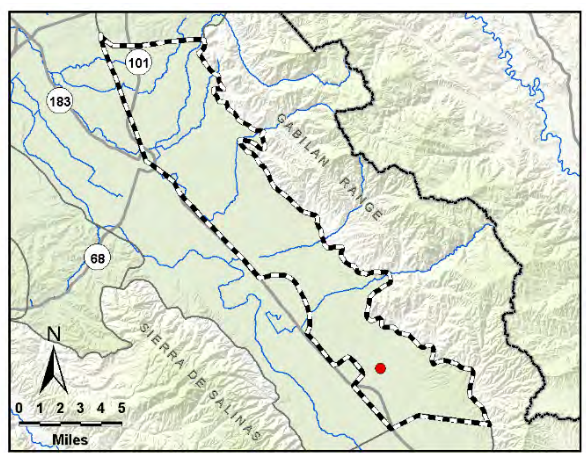
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-17R01

Eastside Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (181 FT MSL)



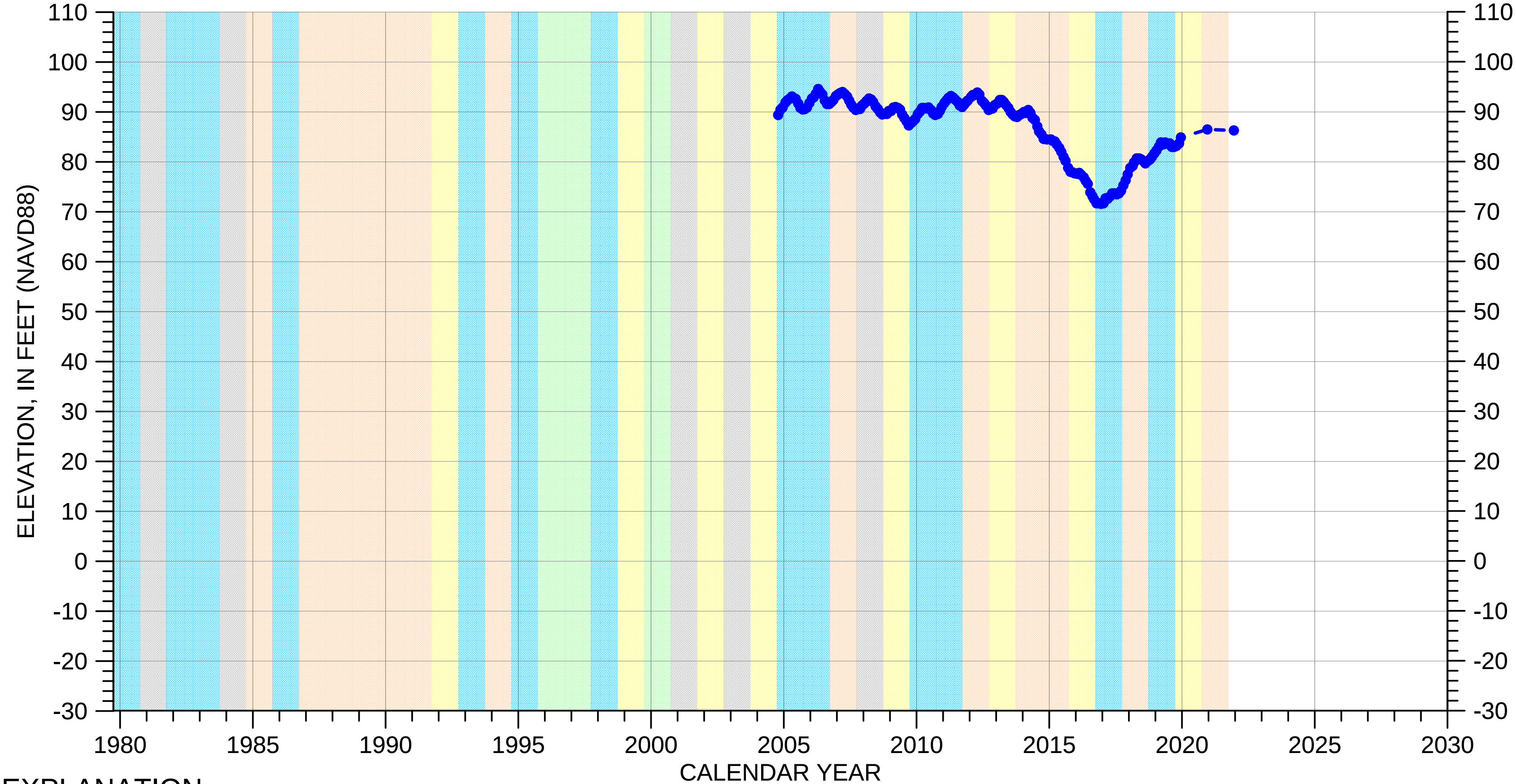
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_05E-17R01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-27G01

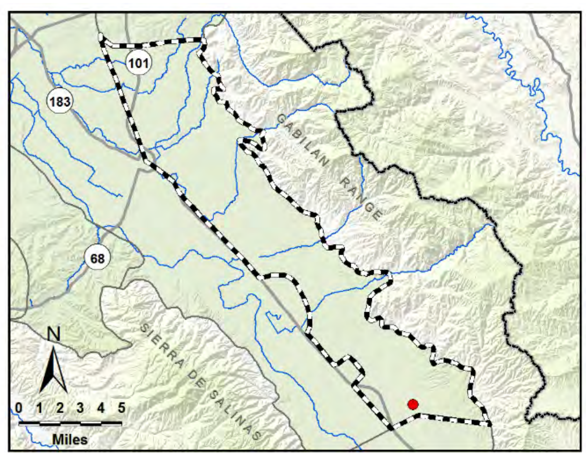
Eastside Aquifer Subbasin

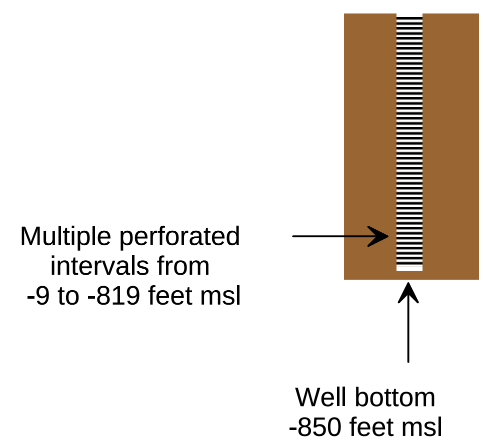


\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_05E-27G01.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (272 FT MSL)





WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET