Groundwater Report

Spring 2024

San Joaquin County

Flood Control and Water Conservation District

San Joaquin County

Flood Control and Water Conservation District

Report Prepared by:

District Staff

Alex Chetley, Deputy Director Developmental Services

Justin Padilla, Engineering Assistant II

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Copies of the 2024 Spring Groundwater Report may be available upon request from:

San Joaquin County Department of Public Works
P.O. Box 1810, Stockton, California 95201

Acknowledgements

This Groundwater Report is a product of the commitment that the San Joaquin County Flood Control and Water Conservation District (District) together with many other interested agencies committed to sustain and enhance the groundwater resources of the Eastern San Joaquin Groundwater Subbasin and the Tracy Groundwater Subbasin. The District extends thanks to:

California Water Service

City of Lathrop

City of Lodi

City of Manteca

City of Stockton Municipal Utilities Department

East Bay Municipal Utility District

Morada Area Association

Pacific Gas and Electric Company

San Joaquin County Department of Public Works

State of California, Department of Water Resources Central District

Stockton East Water District

United States Bureau of Reclamation

United States Geological Survey

Most of all, we would like to thank all the individual well owners, who give us access to their wells and in some cases, their time.

Table of Contents

TABLES

FIGURES

1 Introduction

Since the Fall of 1971, the San Joaquin County Flood Control and Water Conservation District (District) has monitored groundwater levels and groundwater quality and has published the data in semi-annual Groundwater Reports. This report utilizes data from federal, state, and local government agencies, as well as non-governmental sources.

This report represents data from the Eastern San Joaquin Groundwater Subbasin (5-022.01, ESJSb or Subbasin) and Tracy Groundwater Subbasin (5-022.15, TSb). The ESJSb includes portions of Calaveras County, Stanislaus County, and San Joaquin County east of the San Joaquin River. The TSb is located primarily in San Joaquin County west of the San Joaquin River and includes a small portion of Alameda County.

Water level data is collected on a semi-annual basis, during the months of March and October, to observe groundwater levels before and after peak groundwater pumping conditions. Over 250 wells, most of which are measured by County staff, are included in the Monitoring Program. The exact number of wells varies from year to year, depending on circumstances such as well destructions, new well construction, well accessibility, and well condition. The wells used in this report are reassessed year to year based on quality and comparability of the data and fluctuate occasionally.

1.1 Purpose

The purpose of the semi-annual Groundwater Reports is to provide information on groundwater conditions in San Joaquin County (County) and to publish the results of the groundwater monitoring program which consists of the following:

1. Measure groundwater levels on a County-wide basis.
2. Monitor groundwater quality along a North-South line from north of the City of Stockton to the City of Lathrop.

In general, water quality data is more meaningful after peak production which usually occurs during the summer months. Therefore, groundwater quality data is only published for the fall months. The groundwater depth and elevation data are published for both the spring and fall.

Saline intrusion from the west is a continuing concern affecting the quality of groundwater in the San Joaquin County groundwater subbasins (ESJSb and TSb). Groundwater quality analysis is completed on an annual basis and this year, San Joaquin County has decided to use USGS monitoring well clusters constructed specifically to assess saline water intrusion into the ESJSb.

1.2 Procedure

Water level measurements are performed using either a steel tape or sounder. Data is then immediately recorded in field books and then stored in a database for accessibility and reporting requirements.

Groundwater quality sampling has been historically conducted on an annual basis during the month of October, along with the fall measurements. This year sampling was performed at the eight (8) well clusters in late October 2024.

2 Rainfall Distribution

The two groundwater basins in the County (ESJSb and TSb) respond in part to changes in annual precipitation. There are four precipitation stations throughout and adjacent to the County which have historically tracked rainfall; however, rainfall records for one of these stations (Lodi Station) has not been updated since 2017.

Figure 2-1 shows the locations of the three active stations currently providing data. The precipitation records from west to east, are presented on Figures 2-2 through 2-7 for the entire water year. As shown, almost all of the precipitation fell during the winter and spring months. These graphs reflect areas located across the County and one area in neighboring Calaveras County. These stations have been collecting rainfall data since the 1950's. In water year 2024, rainfall so far is about 80 to 90 percent of average. Rainfall increases from west to east across the county into the foothills, as shown below.

Precipitation Station	Average (in)	WY 2024 (Oct-Mar inches)	Note:
Tracy Carbona	9.88	10.77	Above Average
Stockton Airport	13.69	11.75	Above Average
Camp Pardee	21.36	16.45	Below Average

A Water Year (WY) is the period between October 1st and September 30th. The year in which the period ends denote the water year, e.g., September 30th 2024, is the end of WY 2024. Final Water Year type for 2024 will be included in the Fall 2024 groundwater Report.

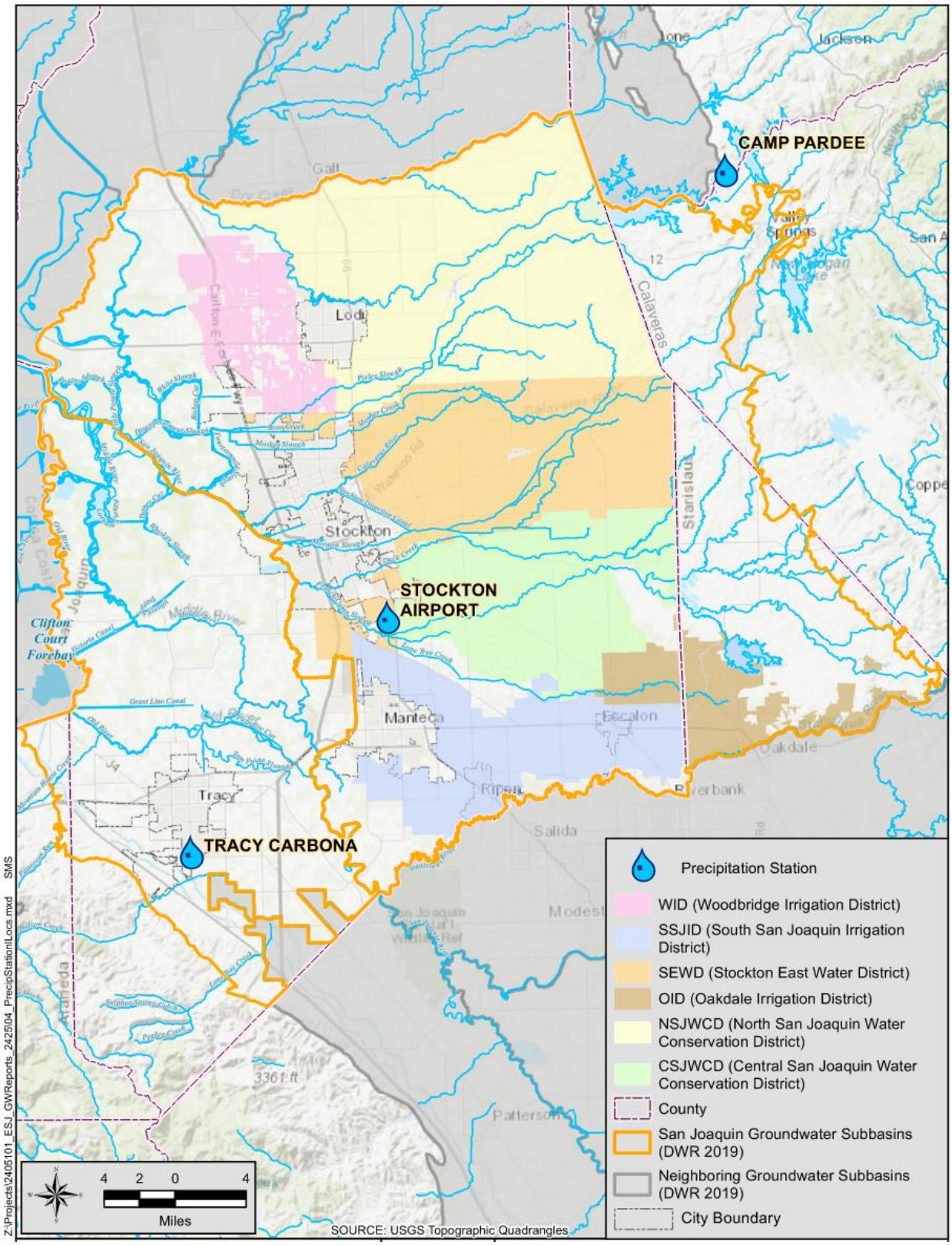

Figure 2-1 Precipitation Station Locations

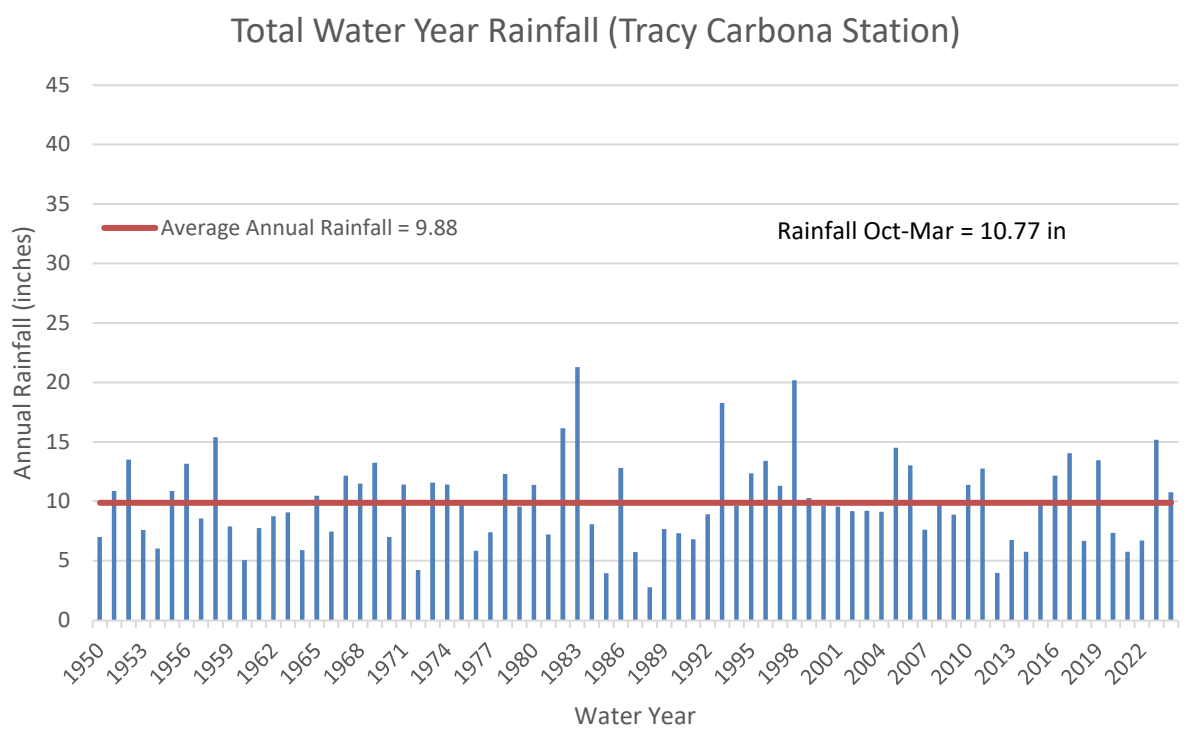

Figure 2-2 Total Annual Rainfall (Tracy Carbona Station)

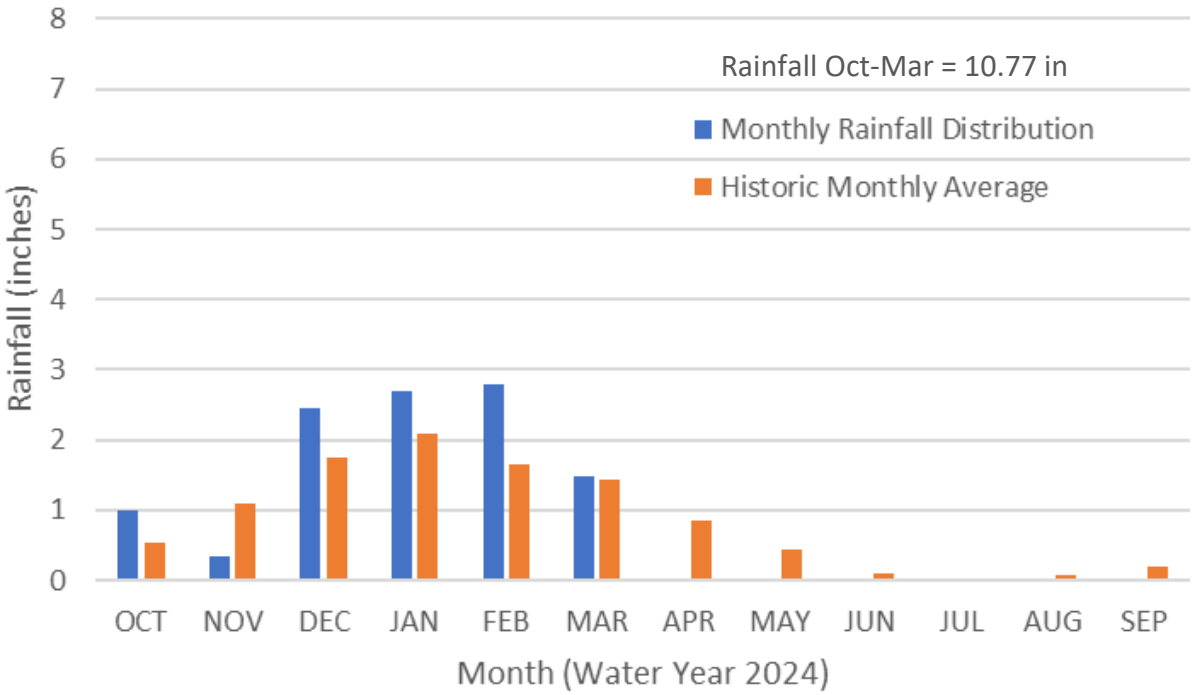

Figure 2-3 Monthly Rainfall Distribution (Tracy Carbona Station)

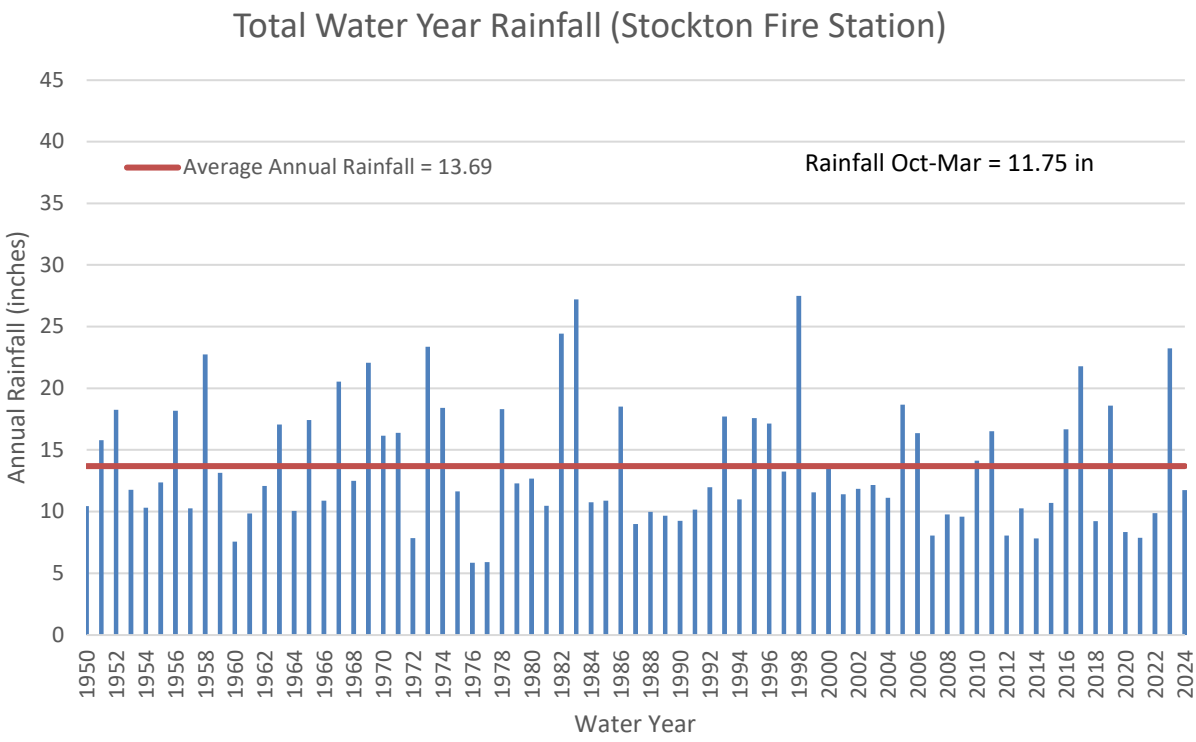

Figure 2-4 Total Annual Rainfall (Stockton Metro AP)

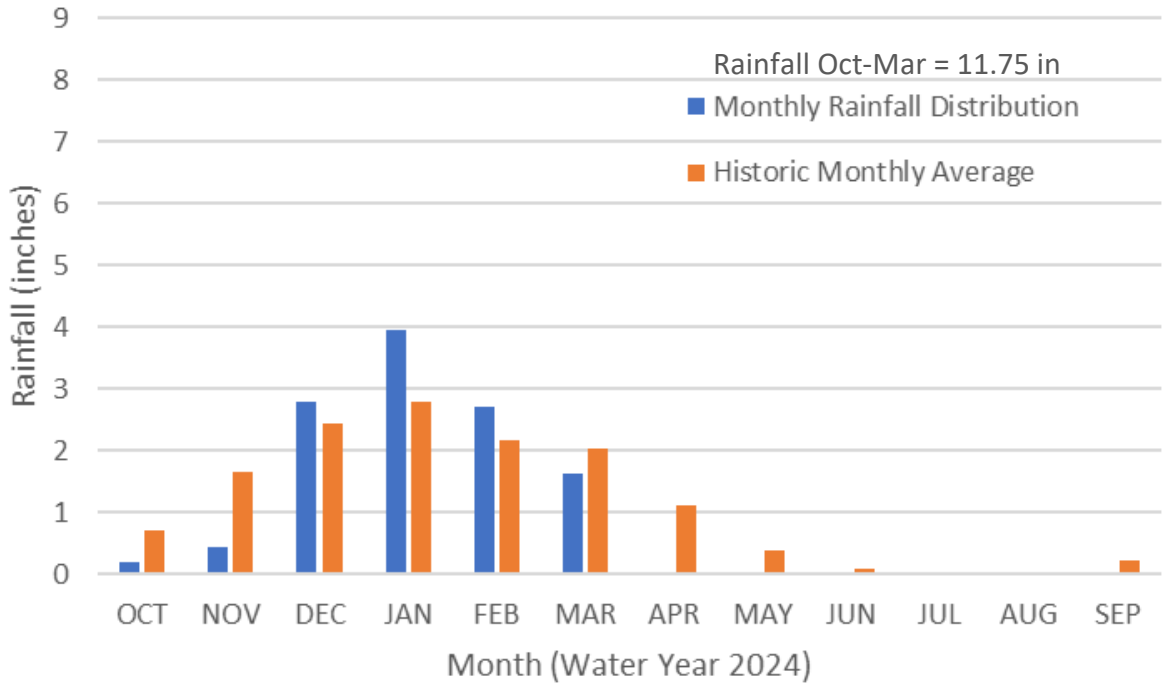

Figure 2-5 Monthly Rainfall Distribution (Stockton Metro AP)

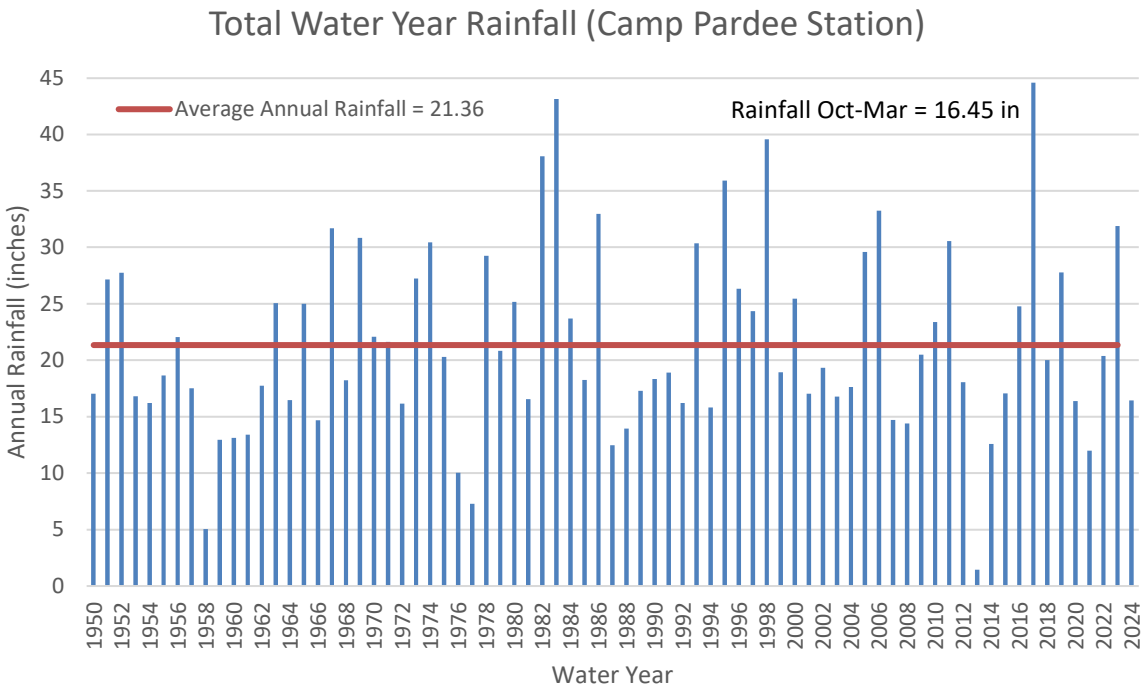

Figure 2-6 Total Annual Rainfall (Camp Pardee Station)

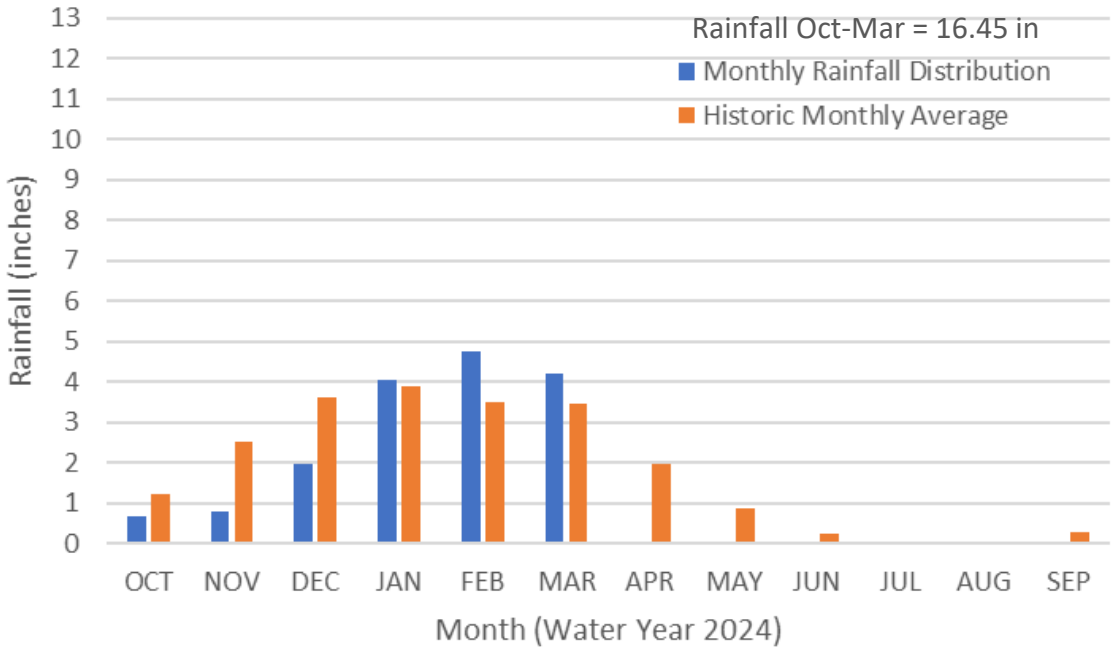

Figure 2-7 Monthly Rainfall Distribution (Camp Pardee Station)

3 Surface Water Levels and Storage

The groundwater levels in the County respond to not only changes in annual precipitation, but also to the amount of surface water in storage and flow in the rivers. Typically, lower amounts of surface water in storage indicates higher amounts of groundwater pumping. Four river gaging stations were selected along the rivers and three reservoir storage stations to represent these conditions.

Figure 3-1 shows the location of these gages and Figures 3-2 through 3-5 provide the recorded reservoir storage and outflows, and river stages for WY 2024. Rain events are shown in the high river flow spikes and reservoir increases, while lower river flow spikes represent the decreases in reservoir levels due to managed outflow. Monthly average river flow data for Mokelumne River at Woodbridge Station is not yet available for WY 2024.

Tables 3-1 and 3-2 detail the station info for each of the flow gages and reservoir storage totals used for Figures 3-1 through 3-5.

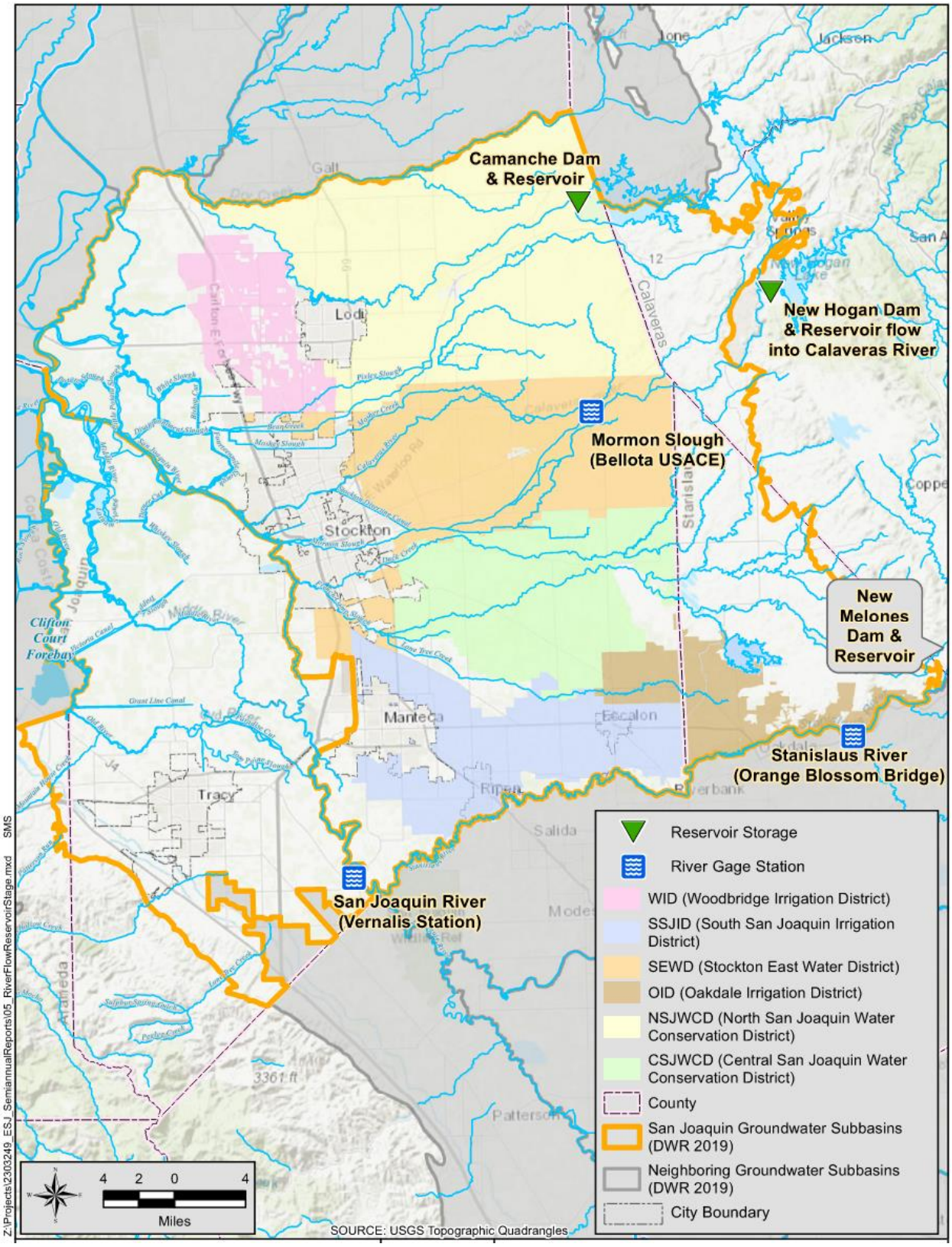

Figure 3-1 Reservoir Storage and River Gage Station Locations

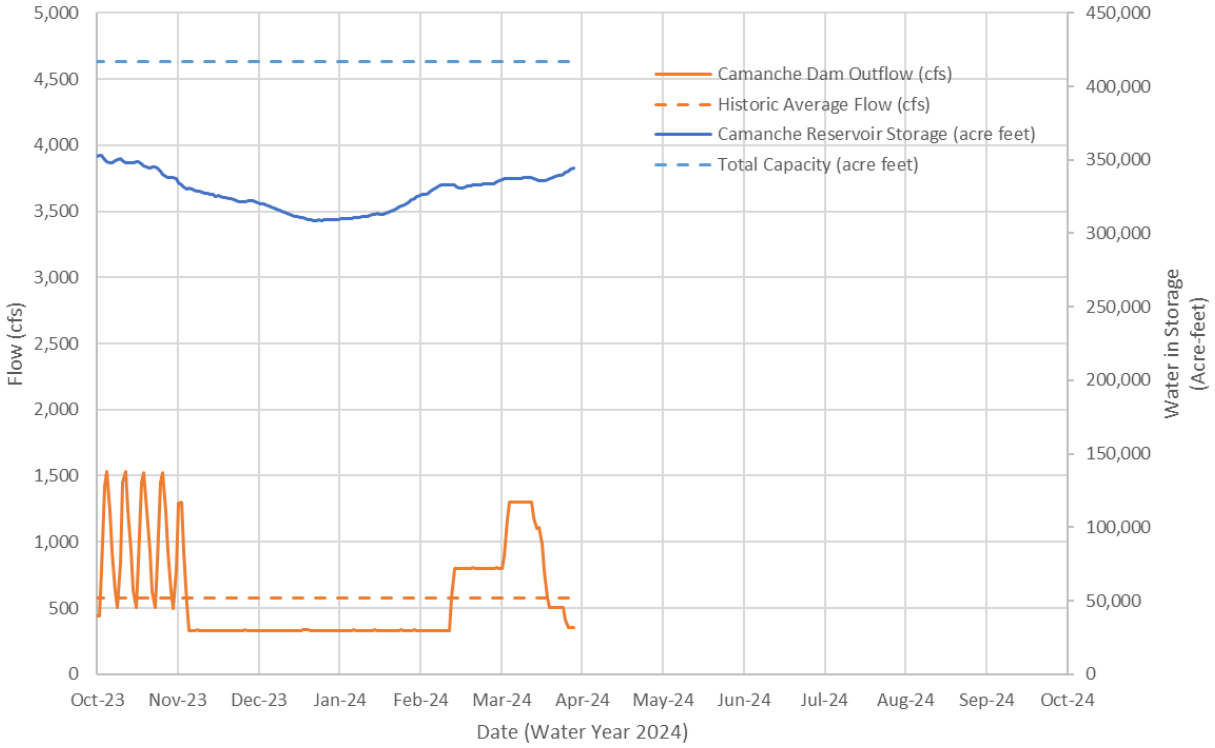

Figure 3-2 Camanche Reservoir

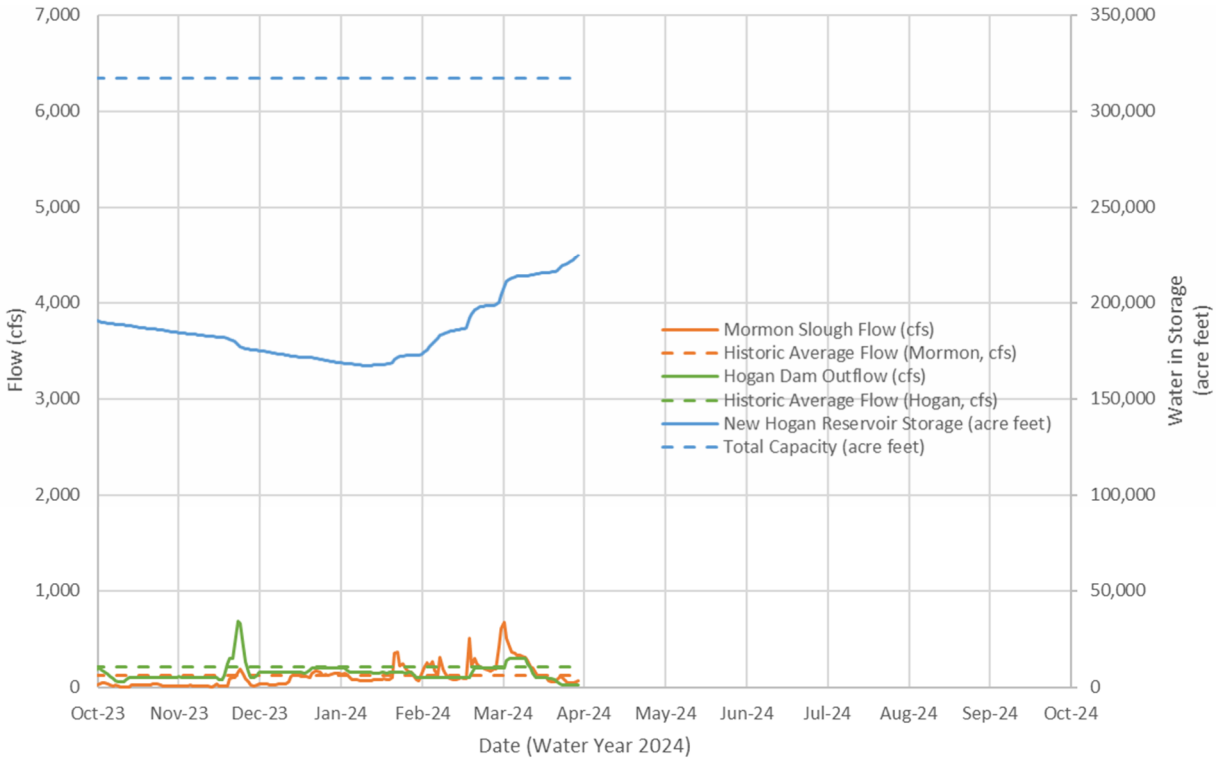

Figure 3-3 New Hogan Dam and Calaveras River (Mormon Slough at Bellota)

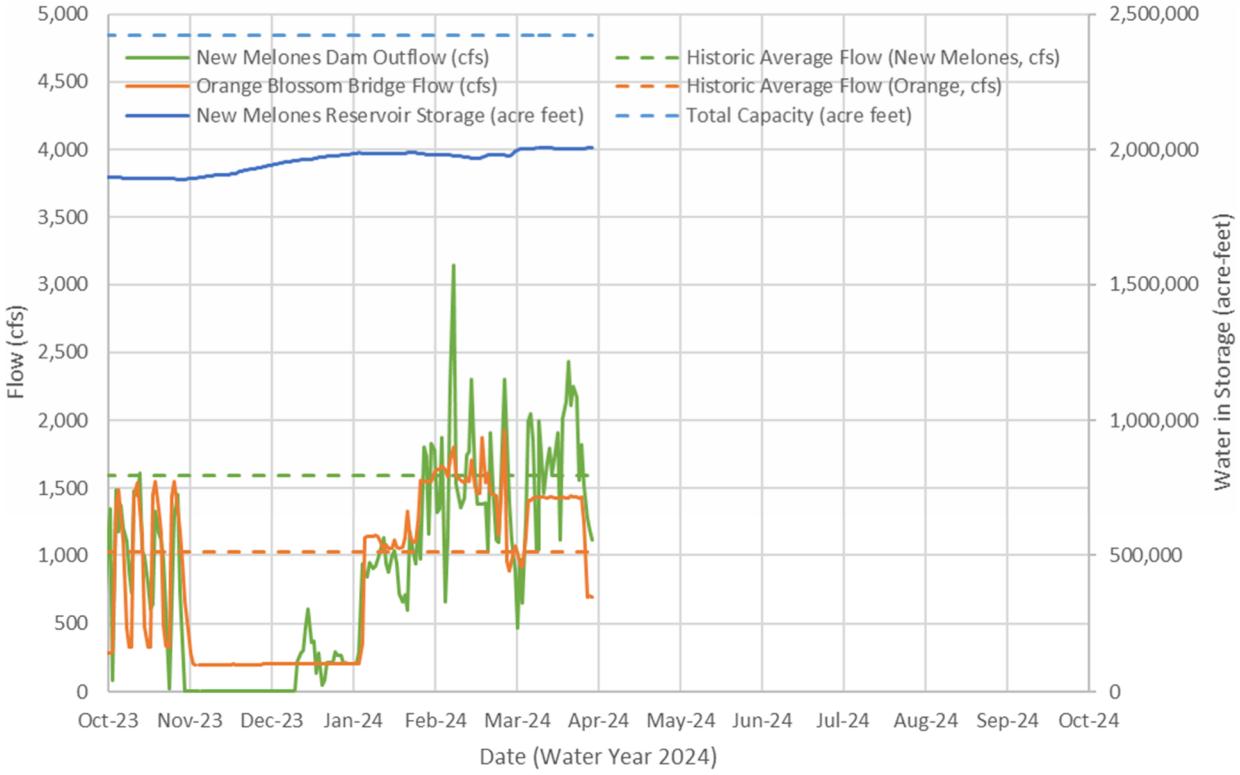

Figure 3-4 New Melones Dam at Stanislaus River (Orange Blossom Bridge)

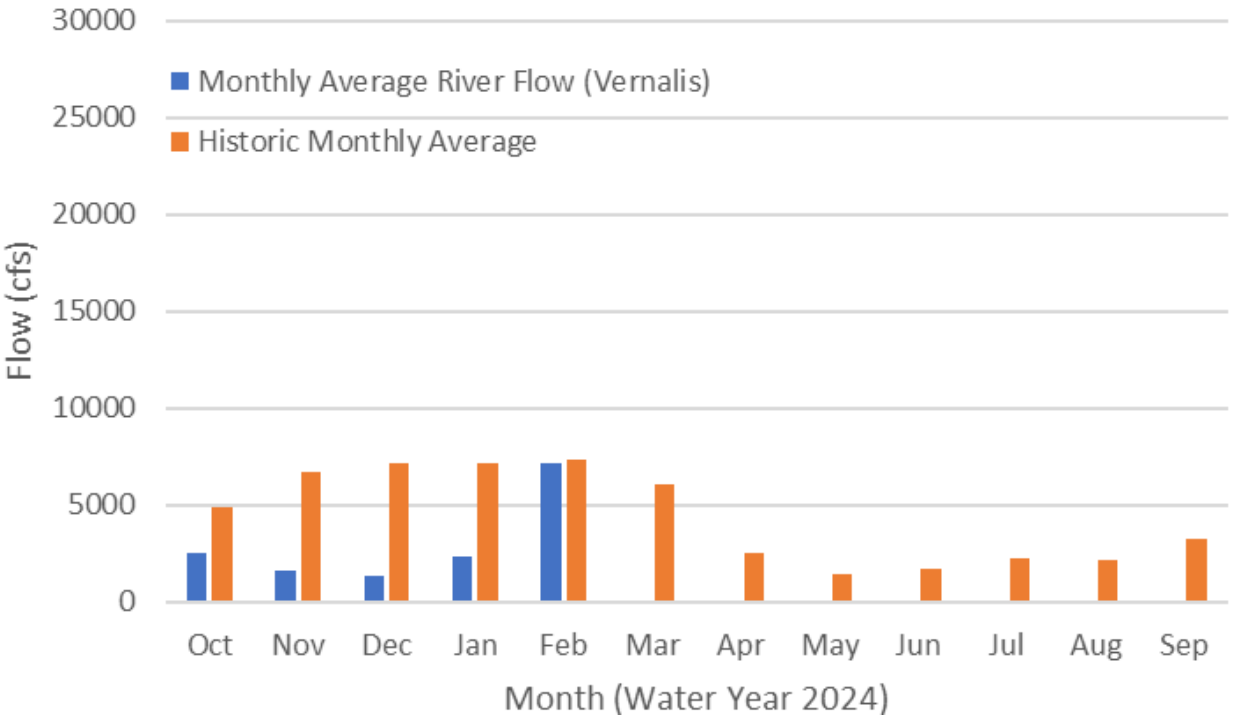

Figure 3-5 San Joaquin River Flow (Vernalis Station) Monthly Average

Table 3-1 Flow Gages

Station Name	River Basin	Station Code	Station Type	Oct-Mar Monthly Average Flow	Unit of Measurement	Historic Average Yearly Total Flow[1]	Oct-Mar % of Historic Average
Camanche Reservoir Releases	Mokelumne River	CMN	USACE Outflow, Discharge	635	cubic feet per second	574	110.66%
Mokelumne River at Woodbridge	Mokelumne River	11325500	USGS River flow, Discharge 00060	No Data[2]	cubic feet per second	6912	--
New Hogan Dam Releases	Calaveras River	NHG	USACE Outflow, Discharge	150	cubic feet per second	208	71.91%
Calaveras River Bellota at Mormon Slough	Calaveras River	NHG	USACE River flow, Discharge	113	cubic feet per second	126	89.51%
New Melones Dam Releases	Stanislaus River	NML	USACE Outflow, Discharge	867	cubic feet per second	1592	54.47%
Stanislaus River at Orange Blossom Bridge	Stanislaus River	NML	USACE River flow, Discharge	858	cubic feet per second	1029	83.38%
San Joaquin River near Vernalis	San Joaquin	11303500	USGS River flow, Discharge 00060	3238	cubic feet per second	52510	40.31%

Notes:

[1] Historic Monthly Average Flow data for USACE (United States Army Corp of Engineers) gages is not available, averages are derived from previous 4 years of data.

[2] Data not yet available for WY 2024.

Table 3-2 Reservoir Storage

Station Name	River Basin	Station Code	Station Type	Total Capacity	Unit of Measurement	Total Storage Start of WY 2024	Total Storage End of Spring 2024	Peak Storage Spring
Camanche Reservoir	Mokelumne River	CMN	USACE Storage	417 Thousand	Acre-feet	352 Thousand AF 84% Capacity	346 Thousand AF 83% Capacity	353 Thousand AF 85% Capacity
New Hogan Dam & Reservoir	Calaveras River	NHG	USACE Storage	317 Thousand	Acre-feet	191 Thousand AF 60% Capacity	225 Thousand AF 71% Capacity	225 Thousand AF 71% Capacity
New Melones Dam & Reservoir	Stanislaus River	NML	USACE Storage	2.5 Million	Acre-feet	1.9 Million AF 78% Capacity	2.01 Million AF 83% Capacity	2.01 Million AF 83% Capacity

4 Groundwater Elevation Monitoring

Groundwater level data was provided by the County and supplemented with data available through the Department of Water Resources California Statewide Groundwater Elevation Monitoring (CASGEM) program. Groundwater levels were gathered by the County for the ESJSb while the data for the TSb, and portions of Calaveras and Stanislaus County were sourced from the CASGEM or Sustainable Groundwater Management Act, Monitoring Network Module (SGMA Data Viewer, or MNM) website.

4.1 Groundwater Levels in San Joaquin County

Wells included in previous reports that had no available construction details, or discontinued measurements have been removed from Tables 4-1 to 4-9. Wells with comparable data are those wells with groundwater level measurements in both Spring 2023 and Spring 2024. Figure 4-1 shows locations of wells with symbols representing increases, decreases, no change, or no data.

Measurements included in the tables are from two sources; County collected, and DWR CASGEM collected. When data is available from both sources, County collected data is prioritized over CASGEM data for consistency. CASGEM data may not be measured within the same timeframe. If County data is not available or the well could not be monitored, CASGEM data was used. If a well was not measured by the County, it is reported as no measurement (NM). If comparable measurements were not available or other entity, it is reported as "--."

Due to well access issues; several monitoring wells were monitored but were not able to be measured in Spring 2024, which affects the total amount of comparable wells for this report. Wells with 'NM' for this water year were still 'monitored' by County or DWR staff attempting to 'measure' the water levels at the site and are kept in the comparison tables due to the measurement history collected previously.

The information gathered is summarized as follows:

Central San Joaquin Water Conservation District (CSJWCD) – Thirty-five (35) wells were monitored in the Spring of 2024, but groundwater levels were measured at twenty-four (24) wells. Nineteen (19) wells have comparable measurements (Table 4-1). In the Spring, eight (8) wells decreased in groundwater levels, while ten (10) increased, and one well had no change. Average groundwater levels rose over one (1.9) feet across the district.

North San Joaquin Water Conservation District (NSJWCD) – Thirty-seven (37) wells were monitored in the Spring of 2024, but groundwater levels were measured at twenty-four (24) wells. Twenty-three (23) wells have comparable measurements (Table 4-2). In the Spring, ten (10) wells decreased in groundwater levels, while thirteen (13) increased. Average groundwater levels rose about four-fifths of a foot (0.8 feet) across the district.

Oakdale Irrigation District (OID) – Two (2) wells were monitored in the Spring of 2024, but one measurement was able to be obtained (Table 4-3). There was one (1) well from the previous year to compare it to, which showed an increase of eight and a half feet (8.5 feet).

Stockton East Water District (SEWD) – Seventy-eight (78) wells were monitored in the Spring of 2024, but groundwater levels were measured at fifty-nine (59) wells. Forty-eight (48) wells have comparable measurements (Table 4-4). Twenty-three (23) wells decreased in groundwater levels; twenty-five (25) wells increased. Average groundwater levels declined by two (2) feet across the district.

South San Joaquin Irrigation District (SSJID) – Twenty-eight (28) wells were monitored in the Spring of 2024, but groundwater levels were measured at twenty-two (22) wells. Twenty (20) wells have comparable measurements (Table 4-5). Groundwater levels in two (2) wells decreased, while sixteen (16) wells increased, and two (2) wells had no change. Average groundwater levels rose by one (1) foot across the district.

Southwest County Area in the Tracy Subbasin – Thirty (30) wells were monitored in the Spring of 2024, and only one (1) was not accessible. Twenty-nine (29) wells have comparable measurements (Table 4-6). Seventeen (17) wells decreased in groundwater levels, eleven (11) increased and one (1) well had no change. Average groundwater levels rose by over one (1.1) foot in the TSb.

Woodbridge Irrigation District (WID) – Nineteen (19) total wells were monitored in the Spring of 2024, and measurements were obtained at nineteen (19) wells. Nineteen (19) wells have comparable measurements (Table 4-7). Eight (8) wells decreased in groundwater levels and eleven (11) wells increased. Average groundwater levels rose by over two (2.2) feet across the district.

Calaveras County – Groundwater measurements have not been uploaded to the CASGEM or MNM websites and therefore were not able to be compared at the time of this report.

Stanislaus County – Eight (8) total wells were monitored in the Spring of 2024, and measurements were obtained at seven (7) wells. Six (6) wells have comparable measurements. Two (2) wells decreased in groundwater levels; four (4) wells increased. Average groundwater levels rose by about three-quarters of a foot (.8) across the district.

Changes in groundwater levels from Spring 2023 through to Spring 2024 throughout the County are summarized on Figure 4-1 with the well location symbol indicating the difference in levels.

4.2 Hydrographs

Twenty-six (26) wells were selected to represent groundwater conditions throughout the basin (A through Z). These wells have historical spring and fall groundwater level measurements. The location and long-term trends of these wells are shown on Figure 4-2. Hydrographs of these selected wells within the County are provided on Figures 4-3 through 4-8 to illustrate the changes in groundwater levels with time in areas across the two subbasins. These hydrographs are grouped based primarily on GSA boundaries but include nearby County GSA wells where located in close proximity.

Hydrographs for Wells D, K, M, N, T, and V are provided but monitoring at these wells has been prevented this period due to well access issues. Work is being done to resolve access.

4.3 Groundwater Level Profiles

Groundwater level profiles were developed to illustrate the relationship of where groundwater levels were increasing or decreasing in relationship to Spring 1986, the historic high groundwater levels, and Fall 1992, the historic low groundwater levels. Spring groundwater levels from WY2023 are also shown for reference to illustrate whether levels are increasing, decreasing, or are stable. Figure 4-9 shows the location of the profiles and Figures 4-10 through 4-12 provide the profiles.

4.4 Groundwater Level Changes

Figure 4-13 shows the contours for depth to groundwater levels from ground surface in Spring WY2024. Figure 4-14 shows a groundwater elevation map that was used to develop Figures 4-10 through 4-12.

5 Summary

WY 2024 is preliminarily classified as an above normal water year and has so far received about 80 to 90 percent of average precipitation by the end of Spring 2024. Combined, surface water storage in Camanche, New Melones and New Hogan reservoirs increased by nearly 2 million AF.

Groundwater levels rose in about 35 percent of the wells measured in comparison to Spring 2023 levels in response to the above normal precipitation. However, groundwater levels declined in about 20 percent of the wells, with comparable measurements. Most of the wells with declines are in the northern half of the County, generally north and east of Stockton. The greatest rises were present near the rivers.

The pumping depression in the central portion of the County continued to be present and the bottom of the depression declined by about 10 feet from Spring 2023 to Spring 2024 and lost the 10 feet of recovery seen in the Spring 2023 measurements following a wet year. Near highway 99, the pumping depression has partially filled, groundwater levels have continued to rise.

Table 4-1 Comparison of CSJWCD Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (Feet)
01N07E11L001	-48	NM	--
01N08E29M002M	NM	-48	--
01N09E19C001M	-72	-73.5	-1.5
01S08E20B001M	-34.2	NM	--
01S09E05H002M	-22.2	-20.7	1.5
01N07E14J002	-68.6	-48.6	20
01N07E26H003	NM	NM	--
01N07E32A001	-9.5	-10.0	-0.4
01N08E11L001	-60.5	-57.6	2.9
01N08E13J001	NM	NM	--
01N08E16G001	-59.5	-55.9	3.6
01N08E16H002	-57.8	-54.4	3.4
01N08E27R002	NM	NM	--
01N08E29M002	NM	-48	--
01N08E35F001	-75.9	-87.4	-11.5
01N08E36F001	NM	-61	--
01N09E13D001	NM	NM	--
01N09E17D001	-43	-41.5	1.5
01N09E17M001	-44.5	-42.7	1.8
01N09E19C001	-72	-73.5	-1.5
01N09E22G002	NM	NM	--
01N09E29R001	-28	-31.5	-3.5
01N09E30C005	-41.7	-42.7	-1
01S07E01J001	-47.6	-36.1	11.5
01S08E05A001	NM	-102.4	--
01S08E05R001	NM	NM	--
01S08E06D001	NM	NM	--
01S08E09Q001	-51.9	-51.9	0
01S08E11F001	NM	NM	--
01S08E14B001	-19.7	-29.7	-10
01S09E05H002	-24.5	-23	1.5
01S09E07A001	NM	NM	--
01S09E07N001	NM	-47.3	--
01S09E09R001	-3.7	-10.7	-7
01S09E19Q002	-34	-9	25

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
35	19	8	10	1	-11.5 to 25	1.9

Table 4-2 Comparison of NSJWCD Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (Feet)
03N06E04C001	NM	NM	--
04N06E27D002M	16.2	NM	--
05N06E36R001	-40.8	-38.8	2
04N07E12E001M	-10.5	NM	--
04N08E32N001M	-50.1	-62.6	-12.5
04N07E33H001M	33.5	27	-6.5
04N08E14K001M	-14.1	-17.1	-3
03N07E02G003	NM	NM	--
03N07E03R001	-34.3	-32.8	1.5
03N07E08E002	-34	-24	10
03N07E09C001	-29.7	-28.2	1.5
03N07E15C004	-49.5	-46.5	3
03N07E17D004	-30	-32.4	-2.4
03N07E18D012	-29.4	-27	2.4
03N07E19J004	NM	-70.5	--
03N07E23C002	NM	NM	--
03N08E07D002	NM	NM	--
03N08E22A001	NM	NM	--
04N06E12C004	-37.5	-37	0.5
04N06E12N002	-34.8	NM	--
04N06E15B002	-17.7	-11.7	6
04N06E23K00	-14	-1	13
04N06E24F001	-22	NM	--
04N06E25R001	-11	-1	10
04N06E27D002	16.2	10.2	-6
04N07E12E001	-10.5	NM	--
04N07E17N001	-58.3	-36	22.3
04N07E19K001	-25.6	-24.1	1.5
04N07E20H003	-32.9	-29.3	3.6
04N07E27C002	-37.5	-49.5	-12
04N07E28J002	-32.7	-24.7	8
04N07E33H001	33.5	27	-6.5
04N07E36L001	-38.4	NM	--
04N08E14K001	-14.1	-17.1	-3
04N08E17J001	-44.1	-44.5	-0.4
04N08E32N001	-50.1	-62.6	-12.5
05N07E34G001	-40.1	NM	--

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
37	24	10	14	0	-12.5 to 22.3	0.9

Table 4-3 Comparison of OID Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
01S09E21J002	13	21.5	8.5
01S09E24R001	NM	NM	--

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
2	1	0	1	0	--	8.5

Table 4-4 Comparison of SEWD Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
01N06E02C001	-10.2	-6.9	3.2
01N06E04J003	-8.3	-7.4	0.9
01N06E04J004	-2.7	-4.0	-1.4
01N06E04J005	1.4	0.9	-0.5
01N06E05M004	NM	NM	--
01N06E36C003	-7.6	-7.1	0.5
01N06E36C004	-1.6	-2.3	-0.7
01N06E36C005	0.6	0.1	-0.5
01N07E02G001	NM	-60.5	--
01N07E04R001	-1	-16	-15
01N07E09E004	NM	NM	--
01N07E09H001	NM	NM	--
01N07E09Q003	-44	-26	18
01N07E10D001	NM	-19	--
01N07E20G001	-16	-10	6
01S06E01C002	1	-2.5	-3.5
01S06E02G002	1.8	1.2	-0.6
01S06E10G001	-4.8	-2.8	2
01S07E06M002	NM	-2.5	--
01S07E08J002	0	-11	-11
02N06E01A001	NM	NM	--
02N06E08N001	-21.6	-19.8	1.8
02N06E08N002	-19.2	-17.7	1.5
02N06E08N003	-15.9	-15.0	0.9
02N06E12H001	NM	NM	--
02N06E20E001	-13.1	-11.5	1.6
02N06E24F001	NM	-27.5	--
02N06E24J002	NM	NM	--
02N06E24J003	NM	NM	--
02N07E03D001	NM	-53.5	--
02N07E08D001	NM	NM	--
02N07E08K003	-54	-50.9	3.1
02N07E08R002	-48.8	-45.6	3.3
02N07E11F001	-97	-77	20
02N07E11R002	-68	-74.5	-6.5
02N07E16F002	NM	NM	--
02N07E16L001	-60.3	-45.8	14.5
02N07E20N002	-46	-26.5	19.5
02N07E21A002	-58.8	-53.3	5.5
02N07E21N001	-59	-42.5	16.5
02N07E23B001	NM	NM	--
02N07E24Q001	-83	-66.6	16.4
02N07E26N001	-66.5	-84.2	-17.7
02N07E28K002	NM	-55	--

Comparison of SEWD Groundwater Elevations (continued)

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
02N07E28N004	NM	NM	--
02N07E28P001	NM	NM	--
02N07E29B001	NM	NM	--
03N07E35L001M	-91.5	-106	-14.5
02N06E24J002M	NM	NM	--
02N07E12A003M	-60.2	-58.3	1.9
02N08E33E001M	-67.6	-90.6	-23
01N07E20G001	-16	-10	6
02N07E31M001	NM	0.2	--
02N07E32J002	-19	NM	--
02N07E32M002	-4.6	-3.2	1.4
02N07E32R001	-8.6	NM	--
02N07E33L001	-19	-15.5	3.5
02N07E34R001	2	-33	-35
02N08E03G002	NM	NM	--
02N08E04C001	NM	-65.5	--
02N08E05C001	-72.5	-80.5	-8
02N08E08N001	NM	-68	--
02N08E09G002	-31	-17	14
02N08E10H002	-67.1	-63.1	4
02N08E14C001	-72	-74	-2
02N08E16D001	-65.1	-74.6	-9.5
02N08E18C001	NM	-98.2	--
02N08E20F001	-63.4	-66.3	-2.9
02N08E24J001	-67.1	-72.1	-5
02N08E28H002	-58.6	-93.6	-35
02N08E33E001	-67.6	-90.6	-23
02N09E05N001	-39.7	-38.8	0.9
02N09E09D001	-10.8	-29.8	-19
02N09E28N001	15.9	NM	--
03N06E35P002	NM	NM	--
03N07E35C002	NM	-57.8	--
03N07E35L001	-91.5	-106	-14.5
03N07E36J001	-75.3	-81.8	-6.5
03N09E25R001	96	NM	--

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
79	48	23	25	0	-35 to 20	-1.8

Table 4-5 Comparison of SSJID Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
01S07E14M001	-19.1	-18.6	0.5
01S09E33J002M	39.5	41.3	1.9
02S08E08A001M	20.4	NM	--
01S07E14P003	-24.8	-24.8	0
01S07E15F002	-22.6	-22.1	0.5
01S07E18L001	6.9	7.3	0.4
01S07E21G001	5.3	5.5	0.2
01S07E25E001	-19	-8	11
01S07E26G001	-14	NM	--
01S07E27K001	-0.9	0	0.9
01S07E30R001	12.5	12.6	0.02
01S07E36D001	5.0	7.0	2.0
01S08E30C002	NM	-10.5	--
01S09E29M002	NM	NM	--
01S09E33J002	39.5	41.3	1.9
01S09E33P001	37.0	37.9	0.9
02S07E07D002	9	12	3
02S07E11N002	NM	24.7	--
02S07E19H001	21	21	0
02S08E04M001	17.5	3.5	-14
02S08E06J001	11	-2	-13
02S08E07R001	11	13.5	2.5
02S08E08A001	18	NM	--
02S08E08E001	2.2	16.2	14
02S08E09J001	NM	--	--
02S08E12D001	31.3	33.1	1.8
02S08E14E001	NM	--	--
02S09E12R001	60.9	67.1	6.2

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
28	20	2	16	2	-14 to 14	1

Table 4-6 Comparison of Southwest County Area in Tracy Subbasin Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
01S05E31R002	1.1	0.6	-0.5
02S04E15R001	51.5	52	0.5
02S06E27E001M	15.9	12.3	-3.6
01S07E15F002	-22.6	-25.1	-2.5
03S05E04H001M	51.3	51.7	0.4
02S07E31N001M	19.9	18.4	-1.5
01S06E04J001M	-1	-1	0
02S05E08B001	0.3	-0.2	-0.5
02S06E25J001	18.2	15.9	-2.3
02S06E31N001	53	45.5	-7.5
03S06E27N001	36.8	55.9	19.1
03S07E06Q001	NM	--	--
MW-1A	-9.4	-12.6	-3.2
MW-1B	-20.4	-10.1	10.3
MW-1C	-18.6	-20.0	-1.4
MW-2A	-17.6	-17.2	0.4
MW-2B	-20.6	-21.0	-0.3
MW-2C	-20.8	-21.0	-0.2
MW-3A	-20.2	-16.7	3.5
MW-3B	-22.1	-14.4	7.7
MW-3C	-24.2	-21.8	2.4
MW-4A	-16.2	-16.6	-0.4
MW-4B	-19.3	-19.9	-0.6
MW-4C	-19.6	-19.7	-0.1
MW-5A	-12.0	-13.6	-1.7
MW-5B	-17.5	-9.2	8.3
MW-5C	-15.9	-15.7	0.1
MW-6A	-12.8	-14.6	-1.9
MW-6B	-17.7	-8.8	8.9
MW-6C	-15.6	-16.8	-1.2

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
30	29	17	11	1	-7.5 to 19.1	1

Note: Monitoring wells MW-1 through MW-6 are measured by City of Tracy. All wells monitor aquifers below the Corcoran Clay at six locations.

Table 4-7 Comparison of WID Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
03N05E14C001	-0.8	-1.8	-1
03N06E29C001M	-23.8	-16.8	7
03N06E05N003	-15	-3	12
03N06E07H003	-9.5	-7	2.5
03N06E17A004	-16.4	-13.2	3.2
03N06E18M003	-16.1	-8.1	8
03N06E20D002	-16	-6	10
03N06E32R001	-19	-15.5	3.5
04N05E10K001	2.1	-0.5	-2.6
04N05E13H001	3	4	1
04N05E13R004	-7.1	4.5	11.6
04N05E14B002	8.1	3.1	-5
04N05E24J004	3.9	6	2.1
04N05E36H003	4.3	3.8	-0.5
04N06E17G004	12.5	6	-6.5
04N06E29N002	0	3.6	3.6
04N06E30E001	12.2	8.7	-3.5
04N06E34J002	26.4	23.9	-2.5
05N05E28L003	1.5	0	-1.5

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
19	19	8	11	0	-6.5 to 12	2.2

Table 4-8 Comparison of Calaveras County Groundwater Elevations

Local Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
CCWD 001	NM	NM	--
CCWD 002	NM	NM	--
CCWD 003	NM	NM	--
CCWD 004	NM	NM	--
CCWD 005	NM	NM	--
CCWD 006	NM	NM	--
CCWD 007	NM	NM	--
CCWD 008	NM	NM	--
CCWD 009	NM	NM	--
CCWD 010	NM	NM	--
CCWD 011	NM	NM	--
CCWD 012	NM	NM	--
CCWD 014	NM	NM	--
CCWD 015	NM	NM	--

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
14	0	0	0	0	--	--

*Calaveras County 2023 & 2024 data has not been uploaded to DWR databases.

Table 4-9 Comparison of Stanislaus Groundwater Elevations

State Well ID	Spring 2023 (WSE, ft)	Spring 2024 (WSE, ft)	Change Spring (feet)
01S10E04C001	53.5	57.8	4.3
01S10E21A001	NM	81.3	--
01S10E26J001	79.9	78.6	-1.3
01S10E27Q001	70.1	69.4	-0.7
01S10E34R001	71.5	72.5	0.9
01S11E25N001	101.3	NM	--
02S10E02P001	84.8	85.9	1.1
02S10E10M002	73.2	73.3	0.1

Number of Wells Spring 2023-2024					Change in Elevation	
Total	Comparable	Decrease WSE	Increase WSE	No Change	Range	Average
8	6	2	4	0	-1.3 to 4.32	0.7

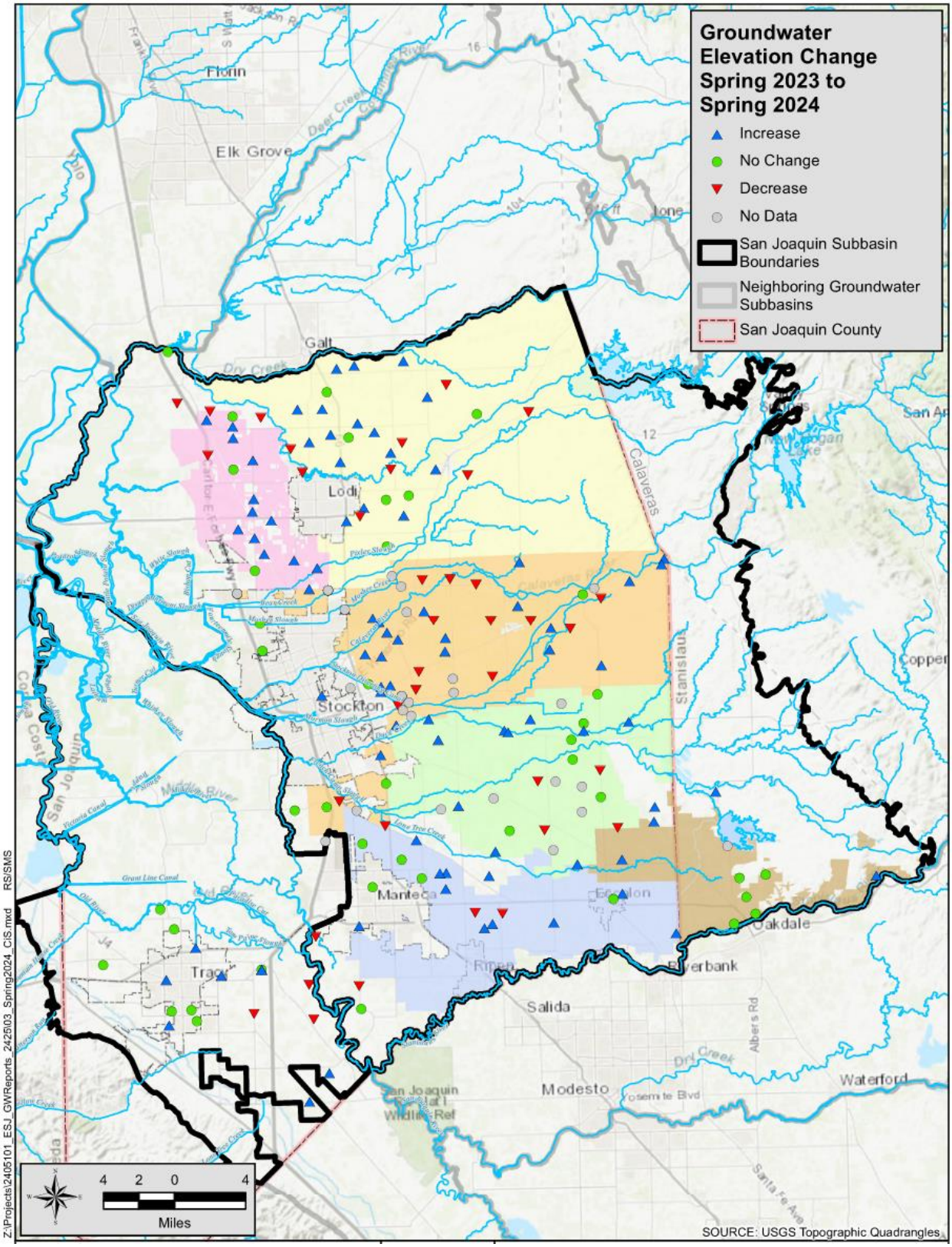

Figure 4-1 Change in Groundwater Elevation – Spring 2023 to Spring 2024

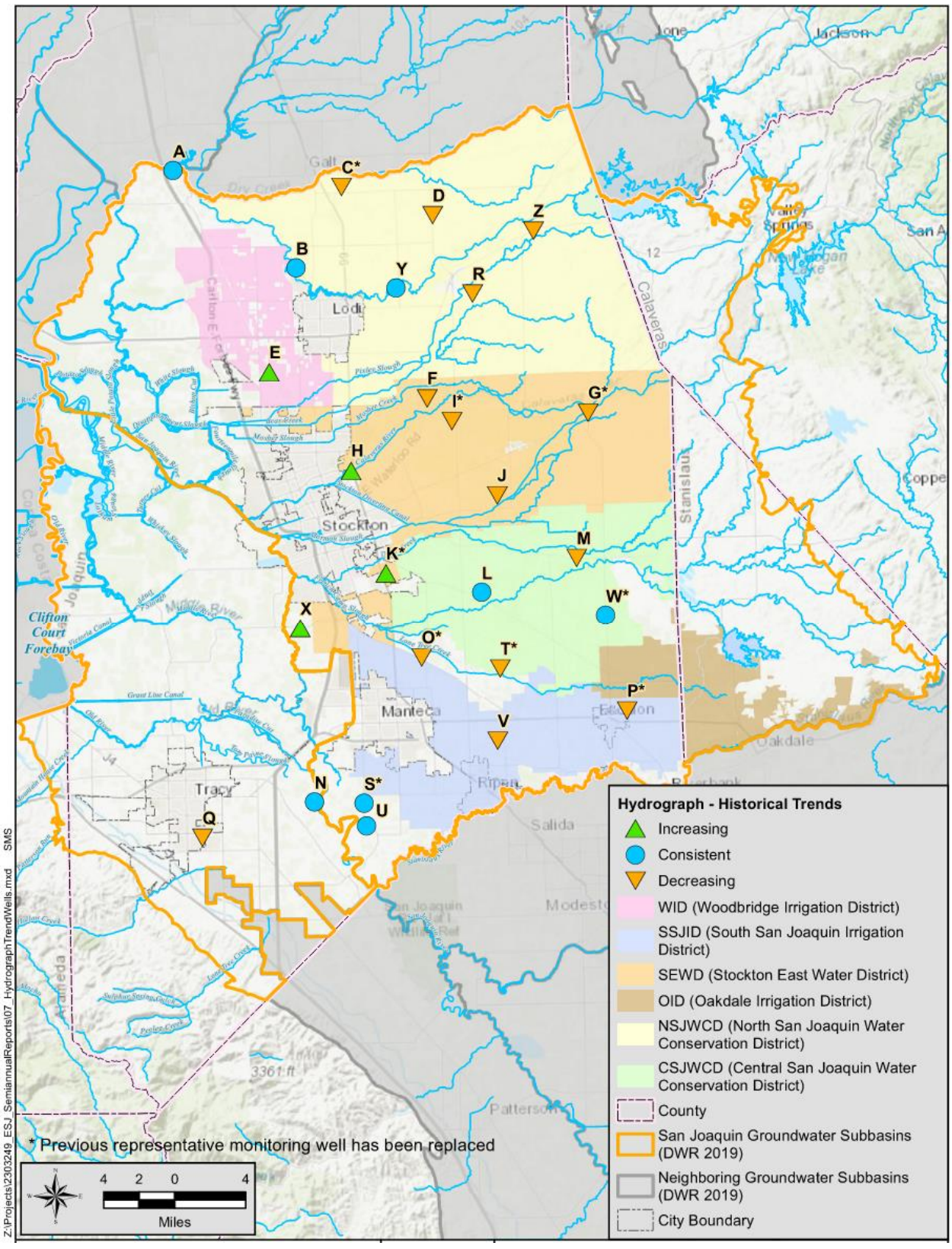

Figure 4-2 Selected Hydrograph Well Historic Trends

Note: Trends are overall historic data averages, not current WY increases or decreases.

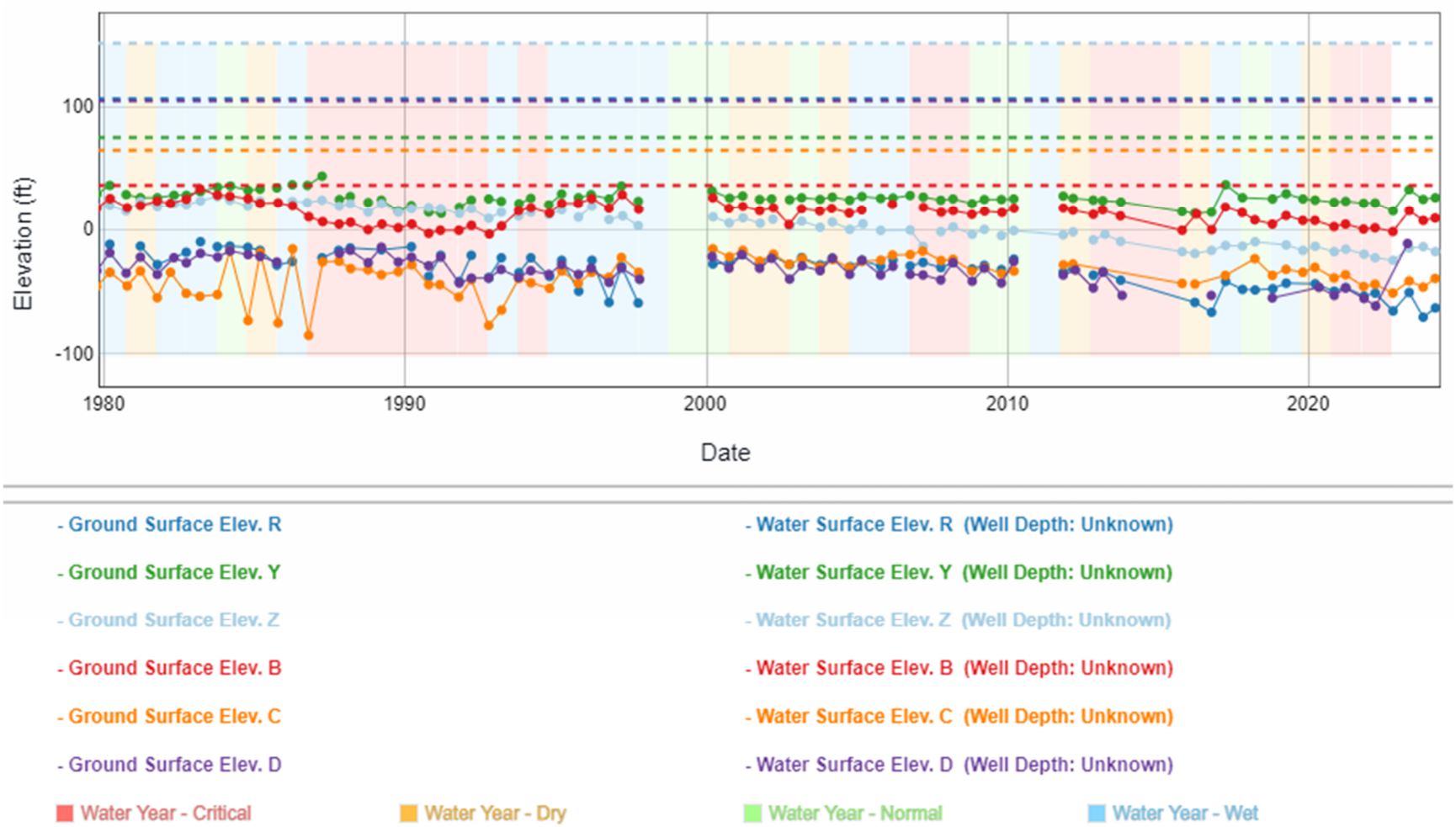

Figure 4-3 NSJWCD Hydrograph Wells B, C, D, R, Y, Z

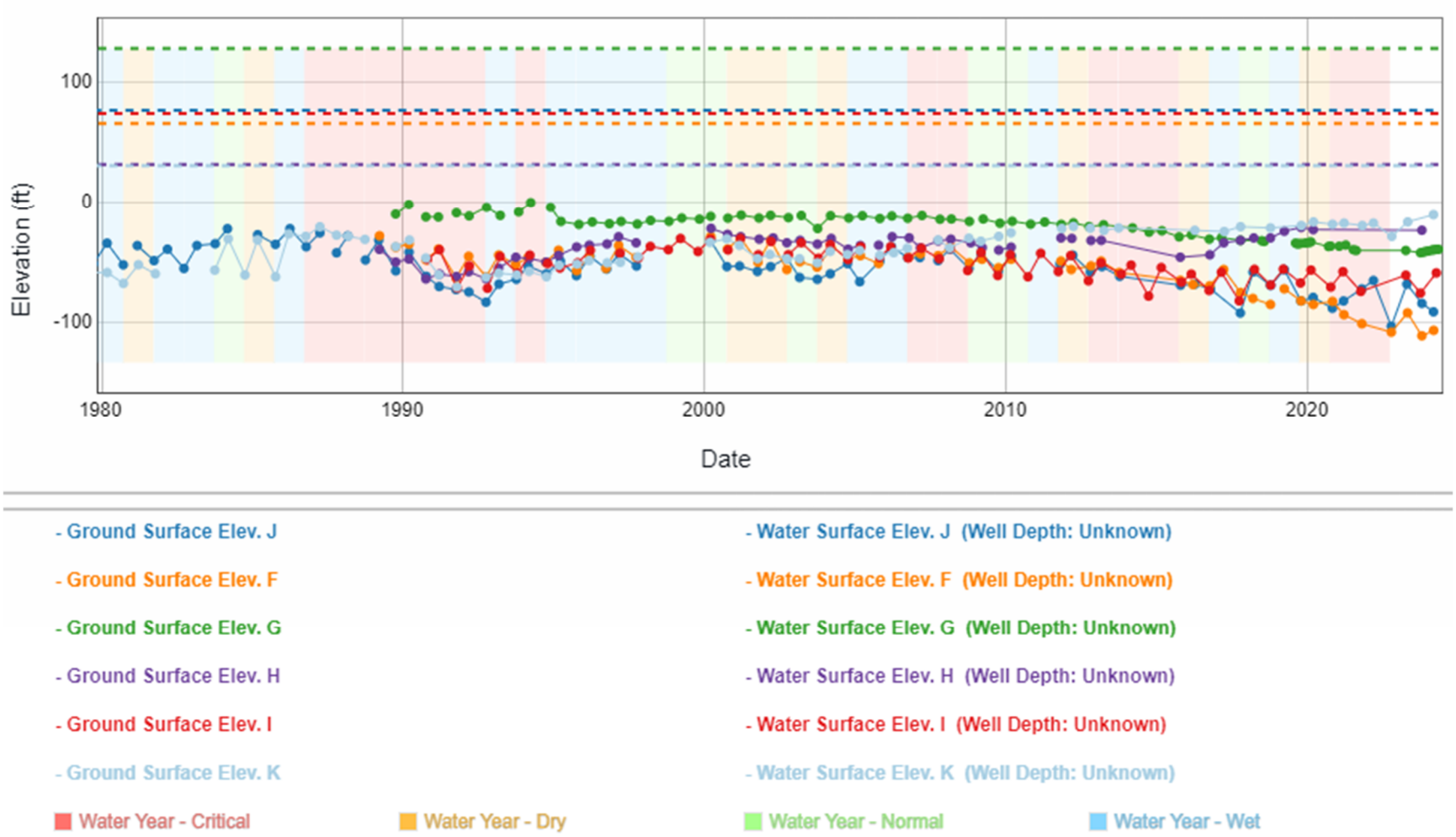

Figure 4-4 SEWD Hydrograph Wells F, G, H, I, J, K

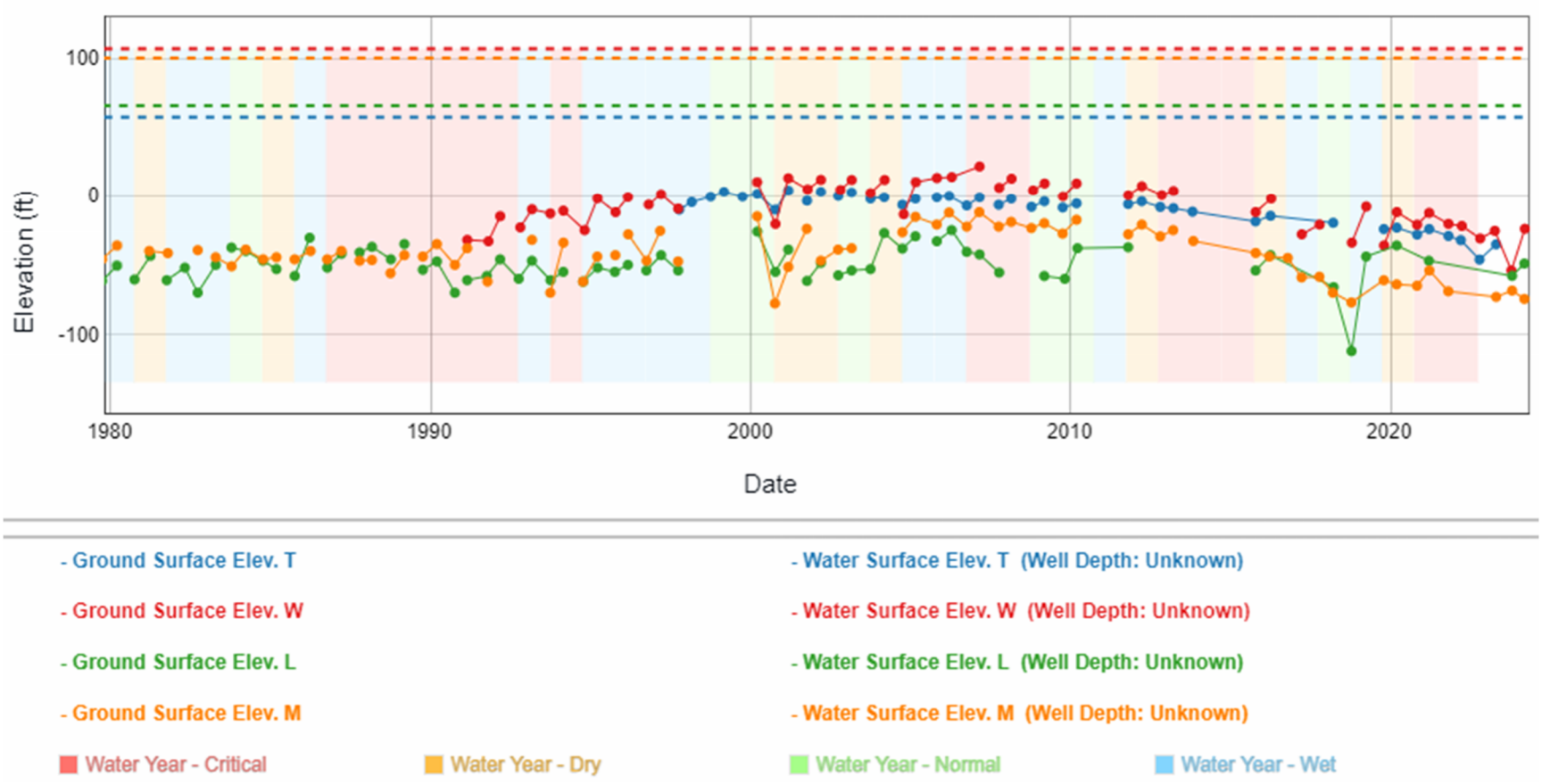

Figure 4-5 CSJWCD Hydrograph Wells L, M, T, W

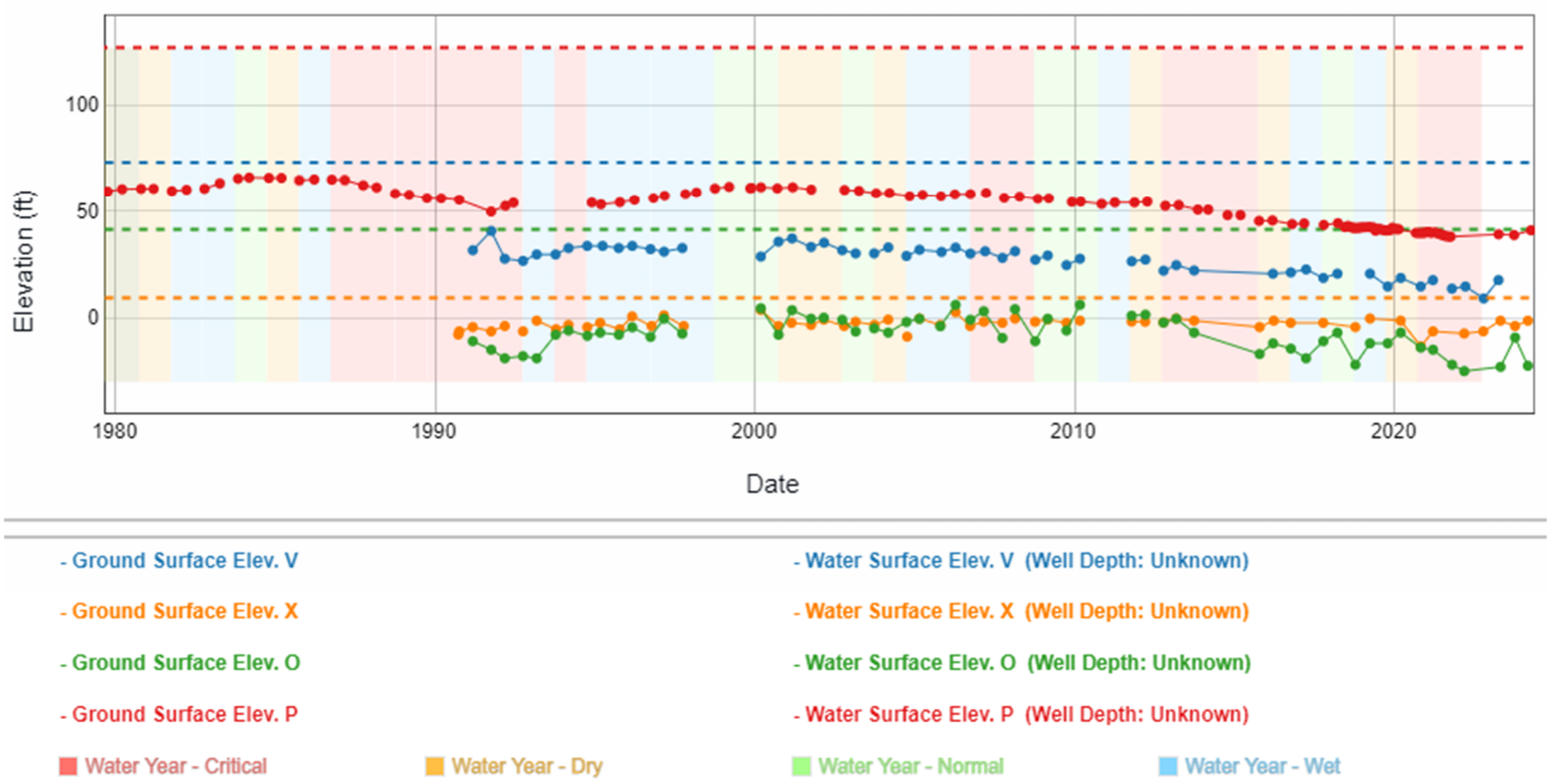

Figure 4-6 SSJID Hydrograph Wells O, P, V, X

Note: Well X is in the San Joaquin County GSA area but was included in the SSJID area due to proximity.

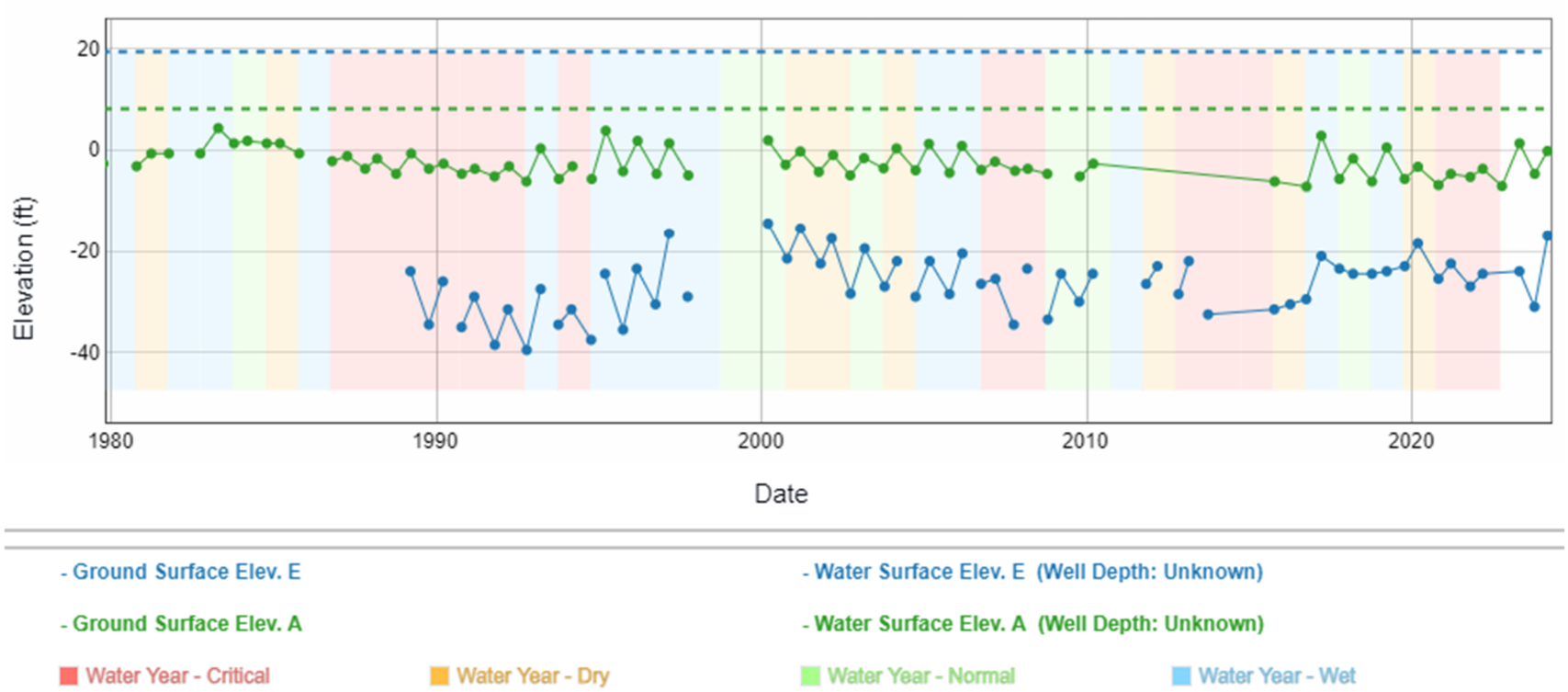

Figure 4-7 WID Area Hydrograph Wells E, A

Note: Well A is in the San Joaquin County GSA area but was included in the WID due to proximity.

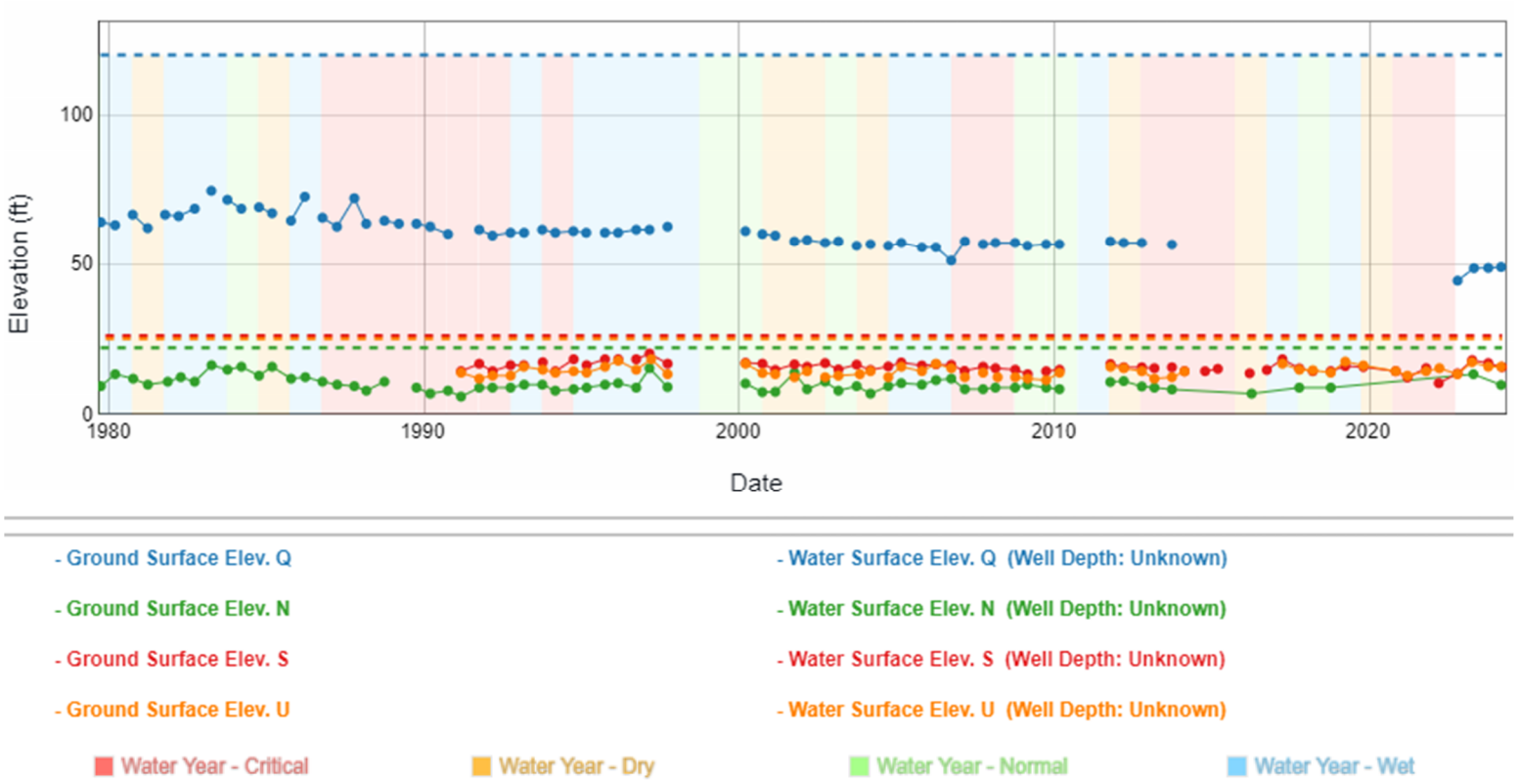

Figure 4-8 Southwest County Hydrograph Wells N, Q, S, U

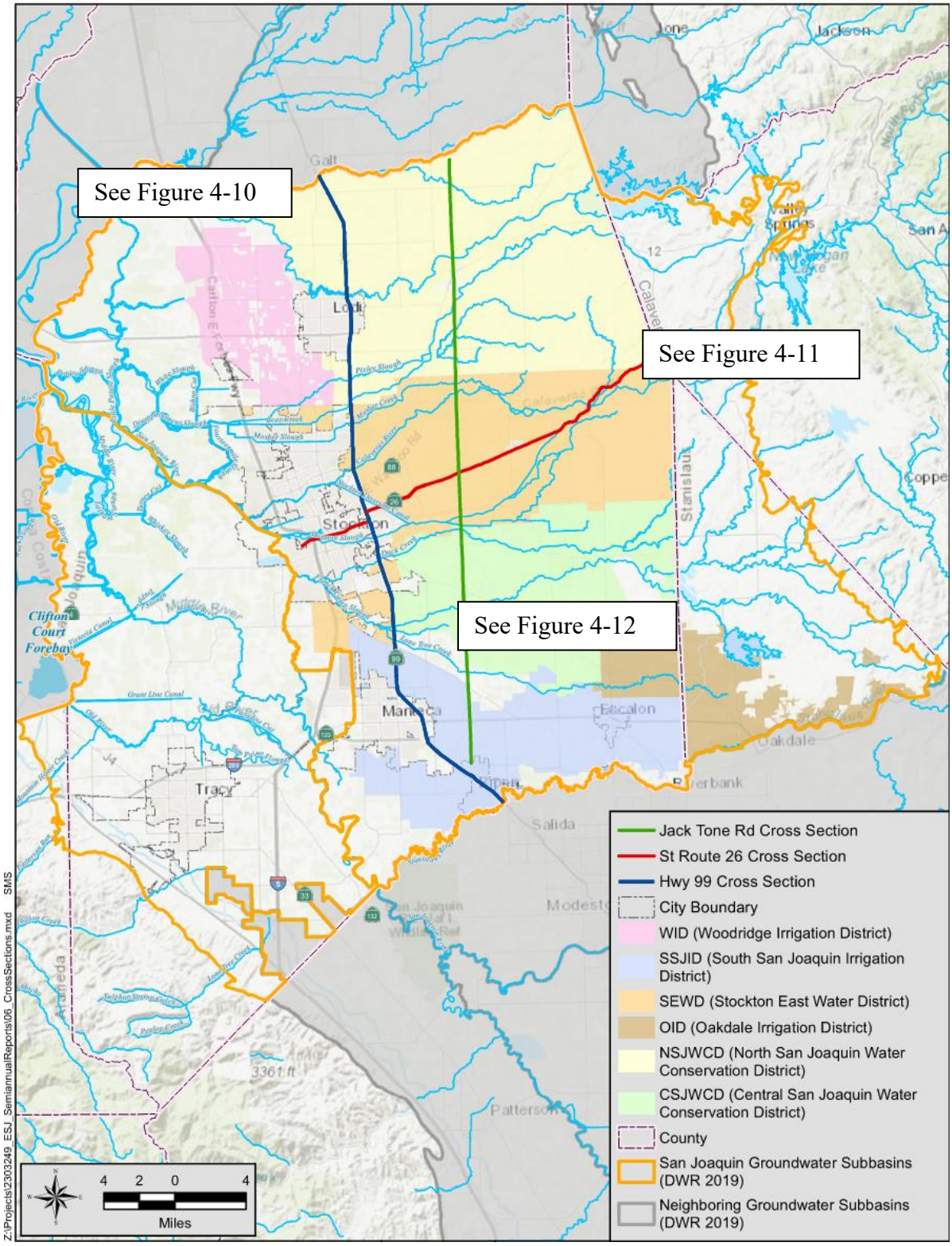

Figure 4-9 Groundwater Surface Cross Sections

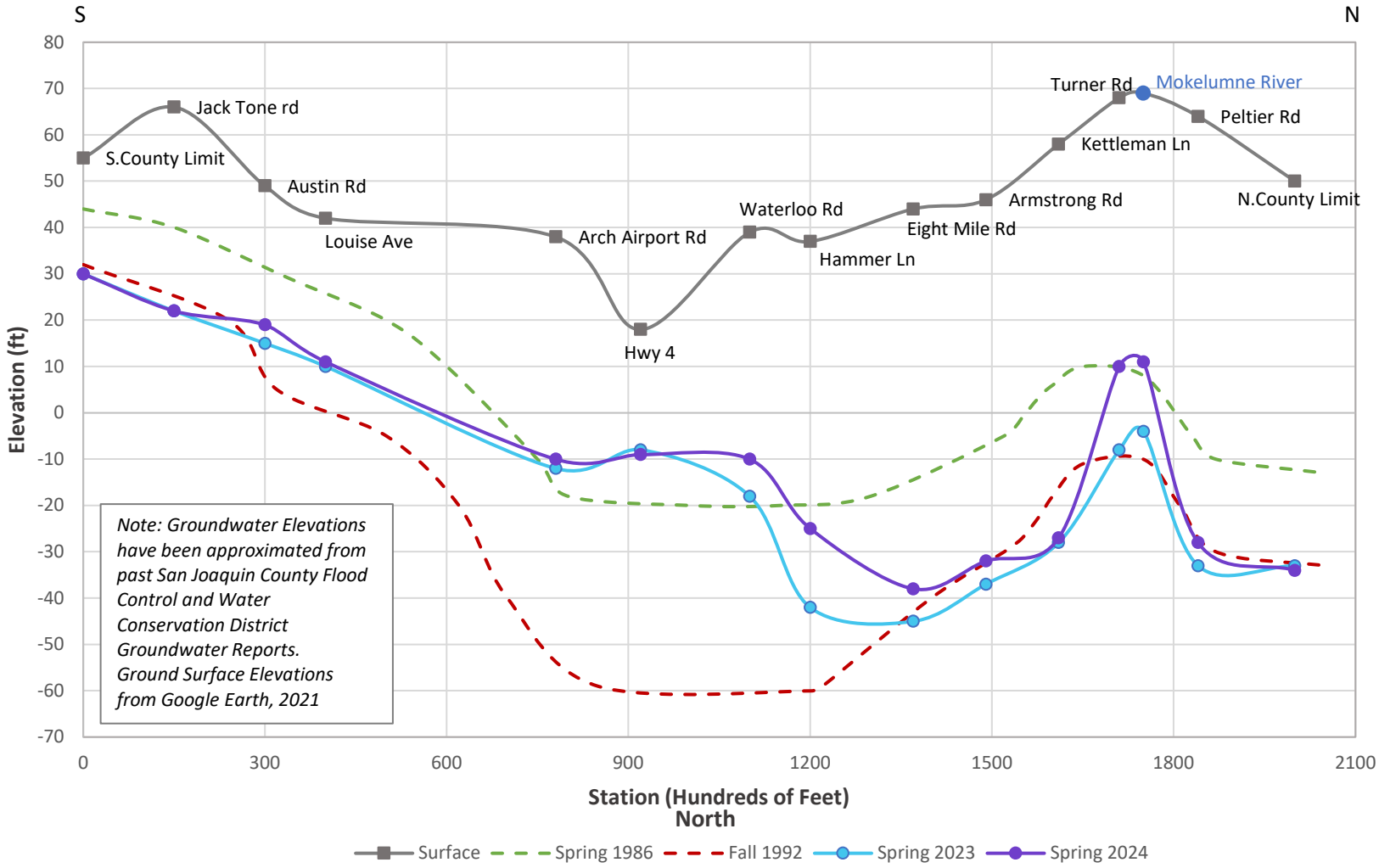

Figure 4-10 Highway 99 Cross Section Spring 2024

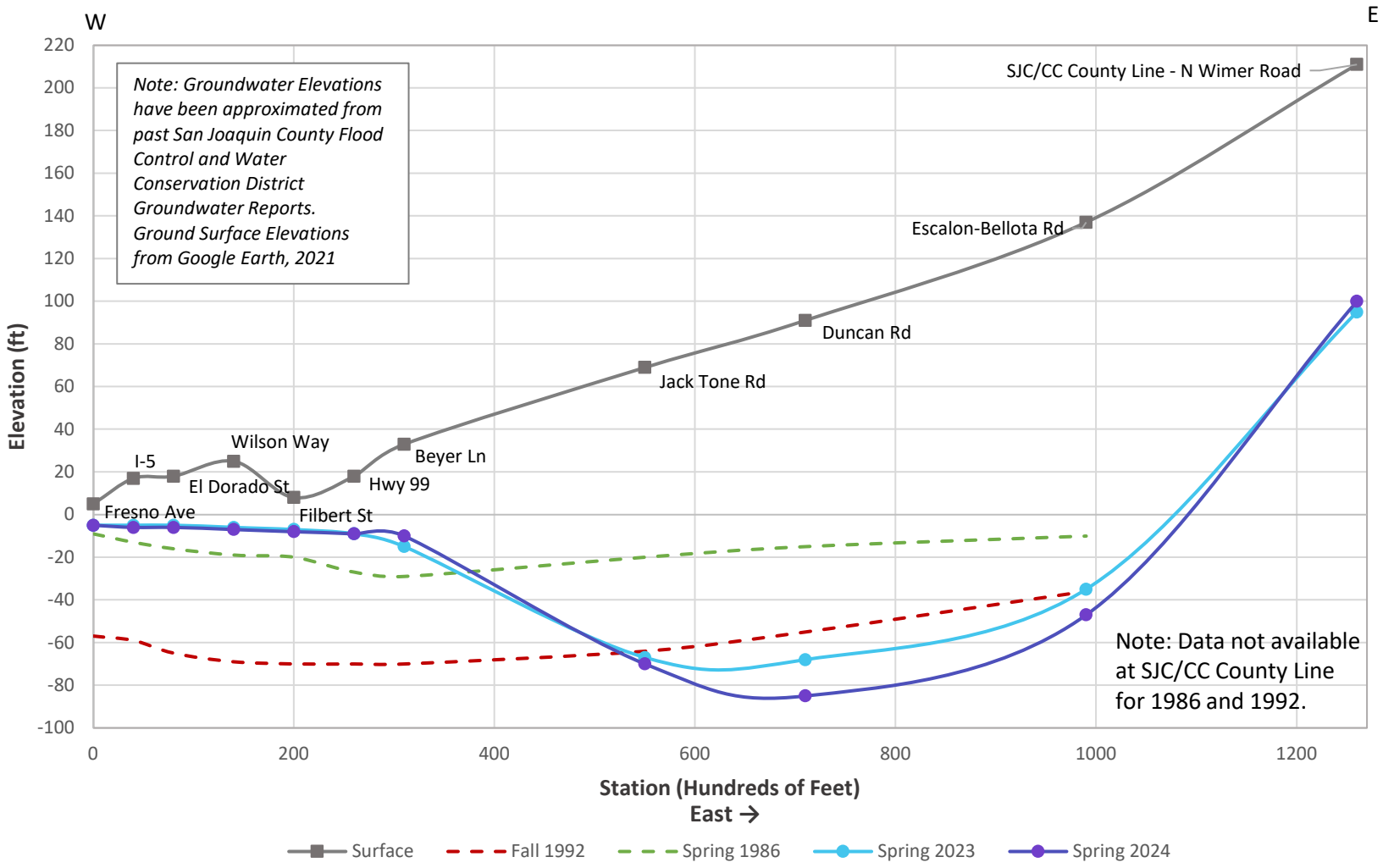

Figure 4-11 Highway 4 & Highway 26 Cross Section Spring 2024

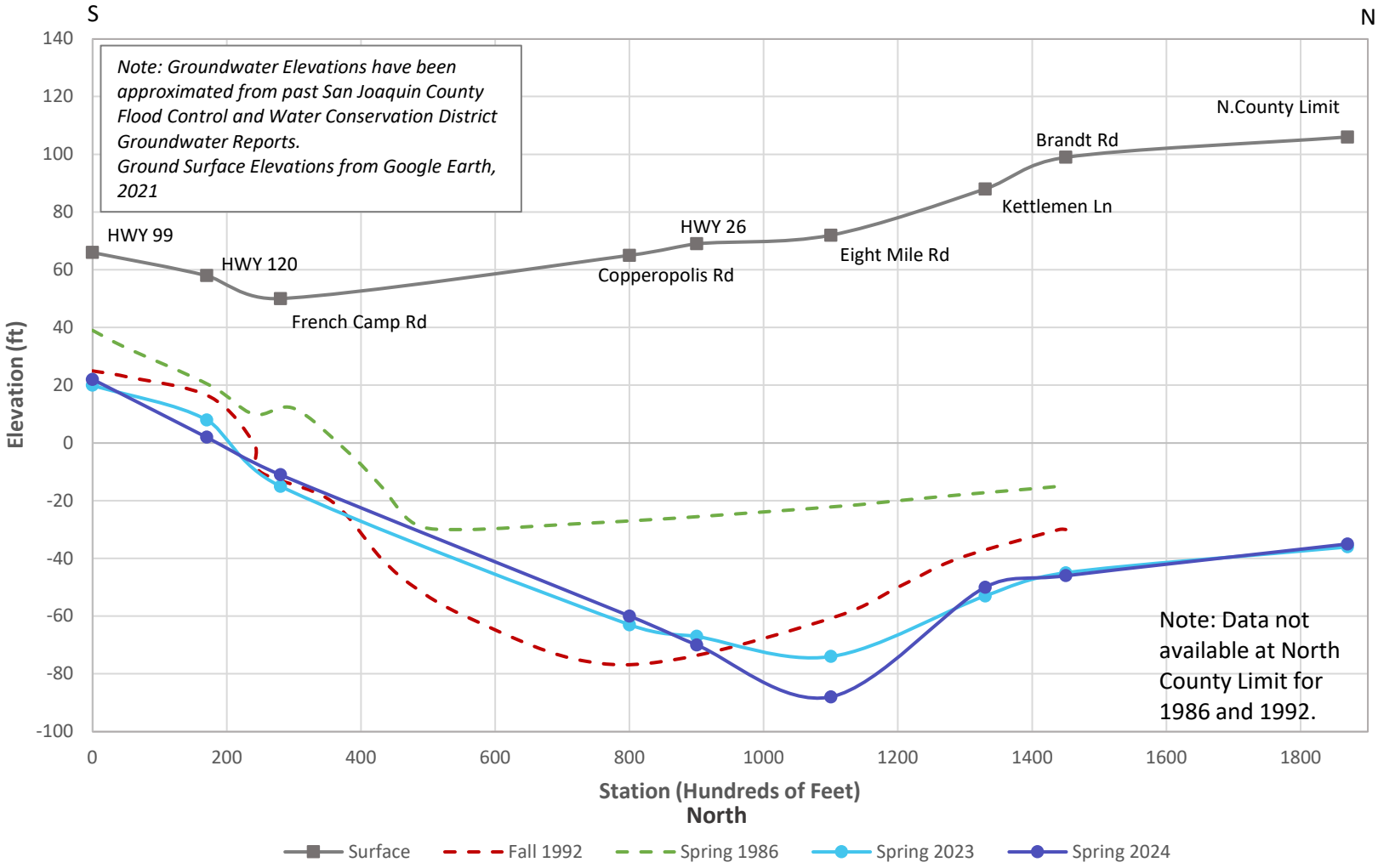

Figure 4-12 Jack Tone Rd Cross Section Spring 2024

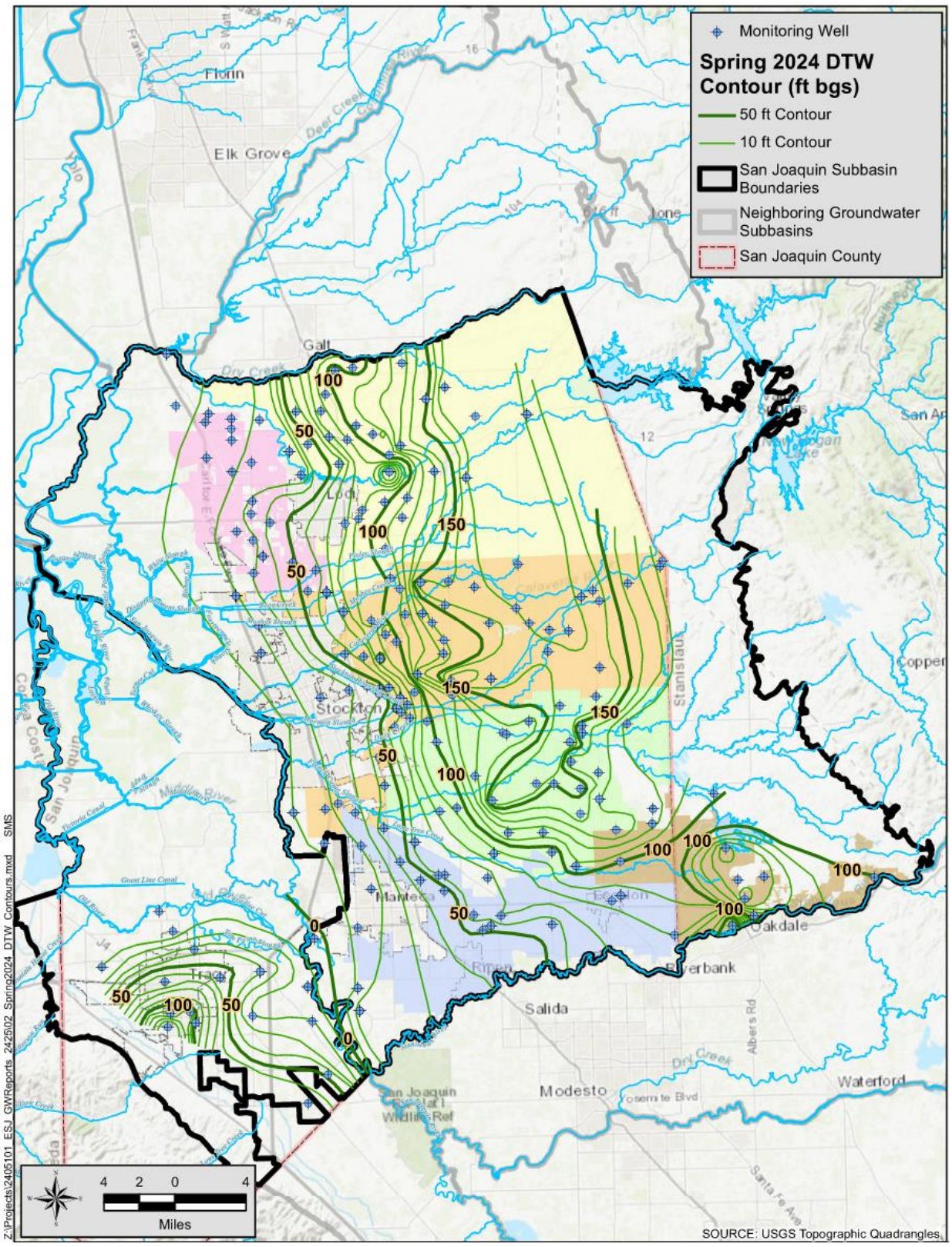

Figure 4-13 Depth to Groundwater – Spring 2024

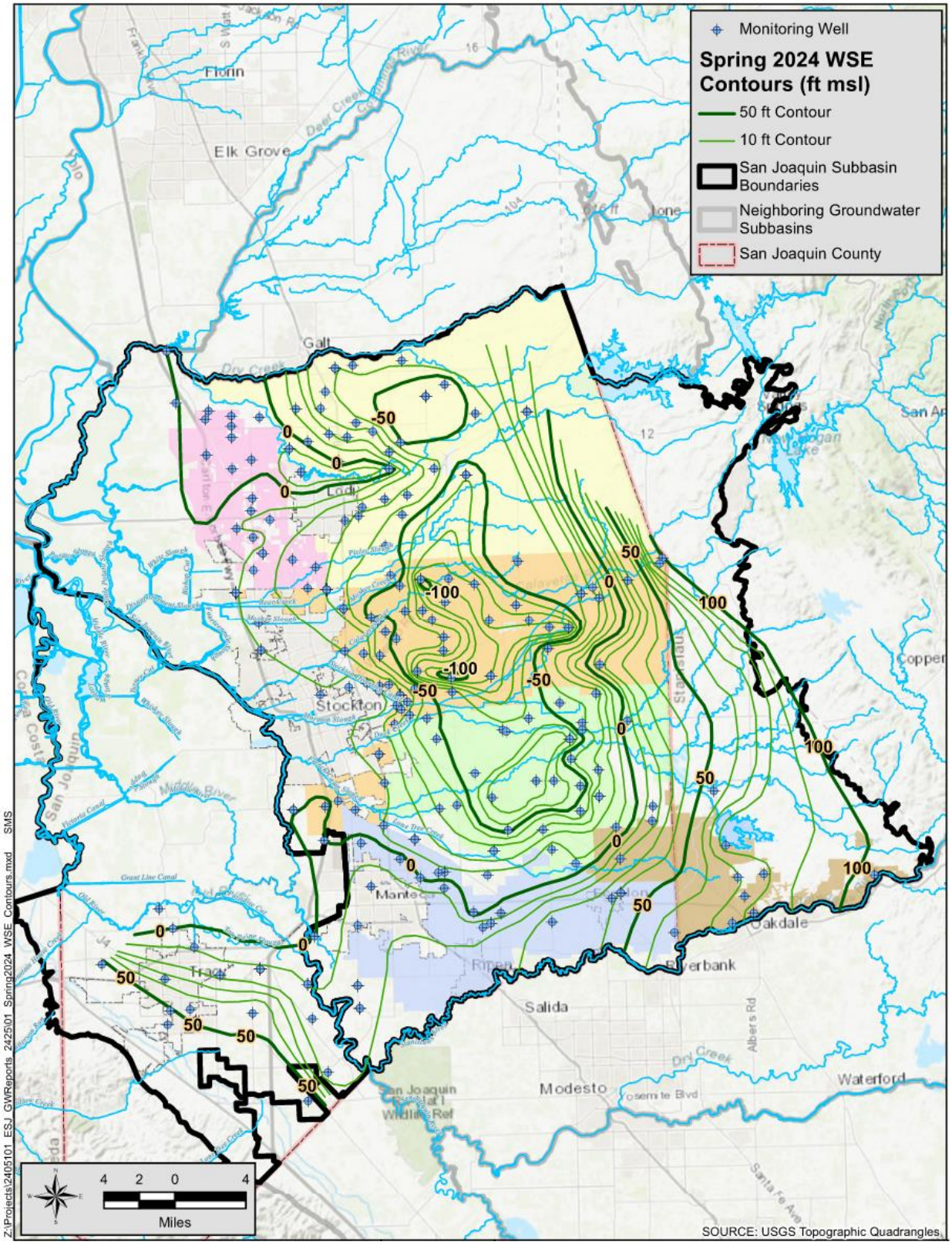

Figure 4-14 Groundwater Surface Elevation – Spring 2024

Note: Tracy Subbasin, only wells above the Corcoran Clay were used for contouring.