Telephonic Meeting of the
Delta-Mendota Subbasin Coordination Committee

Monday, February 8, 2021, 9:30 AM

Click here to join Zoom meeting
Call-in Number: +1 669-900-6833
Meeting ID: 833 6557 5728
Passcode: 159235

Meeting Minutes

Coordination Committee Members and Alternates Present

Vince Lucchesi – Patterson Irrigation District/Northern Delta-Mendota Region
Ben Fenters – San Luis Water District/Central Delta-Mendota Region
Lacey McBride – Merced County/Central Delta-Mendota Region (Alternate)
Jarrett Martin – Central California Irrigation District/SJREC
Jim Stilwell – Farmers Water District
Augie Ramirez – Fresno County
Ric Ortega – Grassland Water District
Ken Swanson – Grassland Water District (Alternate)
Joe Hopkins – Aliso Water District/Provost & Pritchard

San Luis & Delta-Mendota Water Authority Members Present

Scott Petersen
John Brodie
Claire Howard – Provost & Pritchard

Others Present

Ellen Wehr – Grassland Water District
Anthea Hansen – Del Puerto Water District
Larry Harris – Turner Island Water District
Chase Hurley – Pacheco Water District
Leslie Dumas – Woodard & Curran
Kait Palys Bautista – Provost & Pritchard
Rick Iger – Provost & Pritchard
Lauren Layne – Baker Manock & Jensen

1. **Call to Order/Roll Call**

   Jarrett Martin/CCID called the meeting to order at 9:32 AM.

2. **Committee to Consider Corrections or Additions to the Agenda of Items, as authorized by Government Code Section 54950 et seq.**

Claire Howard/P&P requested a closed session section be added to the agenda before the consent calendar. The Committee considered approval of this addition. This addition is reflected in the meeting minutes under items 4 and 5.

3. **Opportunity for Public Comment**

No public comment was shared.

4. **Conference with Legal Counsel – Existing Litigation**

The Committee will meet in closed session to confer with legal counsel pursuant to Paragraph (1), Subdivision (d) of Government Code Section 54956.9.

***California Sportfishing Protection Alliance v. All Persons Interested in the Matter of the Validity of the Northern and Central Delta-Mendota Regions Groundwater Sustainability Plan, et al.*, Stanislaus County Superior Court, Case No. CV-20-001748 [Delta-Mendota Subbasin SGMA Challenge].**

5. **Report Out of Closed Session**

No reportable action was taken.

6. **Committee to Review and Take Action on Consent Calendar, Howard**
   a. **Minutes for the January 11, 2021 Telephonic Meeting of the Delta-Mendota Subbasin Coordination Committee**
   b. **January 2021 Budget to Actual Report**

The Committee reviewed the January 11th meeting minutes and the January 2021 budget to actual report. Scott Petersen/SLDMWA reminded the Committee that SLDMWA is establishing a new fund to track Coordination Committee expenses starting at the new Fiscal Year 2022. Scott also noted that SLDMWA is transitioning to a new accounting and program management platform, NetSuite. The Committee considered approval of the January 11th meeting minutes and the January 2021 budget to actual report. Ric Ortega/Grassland provided the motion and Joe Hopkins/Aliso seconded. The Committee voted by roll call; the motion was passed unanimously by those present.

7. **Committee to Consider Approval to Authorize SLDMWA to Execute an Agreement with a Consultant to Prepare the Delta-Mendota Subbasin Subsidence Characterization Study and Project Feasibility Determination, Brodie**

John Brodie/SLDMWA provided an overview of the recent progress for the Subbasin's subsidence characterization study and project feasibility determination. This project will be supported by the Subbasin's awarded Proposition 68 Sustainable Groundwater Management (SGM) grant. John explained that two proposals were received in response to the request for proposals (RFP): one from a Provost & Pritchard and Ken D. Schmidt & Associates team and one from GSI Environmental Inc. (GSI). During a Subbasin Technical Working Group (TWG) meeting on January 26th, the TWG and Coordination Committee members in attendance reviewed the two received proposals and discussed next steps. The group was interested in getting additional context on the GSI team by meeting with references listed in their proposal. The TWG provided a recommendation to the Coordination Committee to select GSI, pending review of the GSI team's references. Augie Ramirez/Fresno, Ric Ortega/Grassland, and John Brodie/SLDMWA met with the GSI team's references.

Based on the recommendation from the TWG and positive discussions with the references, the Coordination Committee considered approval to authorize SLDMWA to execute an agreement with GSI for the Subbasin's subsidence characterization study and project feasibility determination. Ben Fenters/SLWD provided the motion and Vince Lucchesi/PID seconded. The Committee voted by roll call; the motion was passed unanimously by those present.

8. **Committee to Discuss Water Year 2020 Annual Report and Data Uploading Process for Subbasin Data Management System, Palys/Dumas**

Kait Palys Bautista/P&P and Leslie Dumas/W&C provided an overview of the Water Year 2020 Annual Report development progress. Water surface elevation (WSE) point maps were shared with Ken D. Schmidt & Associates (KDSA) the previous Friday. Kait and Leslie noted that this timing was delayed due to confidentiality concerns with some representative monitoring sites. This delay pushed the schedule one week, which will shift the timing for completing change in storage calculations, which are based on the WSE contour maps. A draft version of the WY20 Annual Report is still anticipated by March 1st for the Committee's review prior to the March 8th Coordination Committee meeting. This draft will note any missing sections that will be incorporated later.

Leslie also shared a status update for data missing from the data management system (DMS) for each GSP Group. A follow-up email will be shared with representatives from each GSP Group as a reminder of outstanding data and next steps to finalize the Annual Report for review. Leslie also reminded the Committee to share proposed changes to the representative monitoring network with Kait and Natalie Cochran/W&C, which will also be described in the Annual Report. Any changes to the representative monitoring network must also be updated in DWR's SGMA Monitoring Network Module.

The Committee also discussed responsibility for uploading publicly accessible subsidence data to the DMS. Jarrett Martin/CCID offered for CCID staff to support the data upload this year, but noted that the Coordination Committee will need to discuss the effort and approach for uploading these data in future years.

9. **Committee to Discuss Monitoring Efforts for 2021 and Changes to Representative Monitoring Networks, Howard**

Claire Howard/P&P reminded the Committee that the spring water level monitoring period officially started February 1st and will end April 30th. Water levels must be monitored at representative monitoring sites during this period to report to DWR via the Monitoring Network Module and for inclusion in the next Annual Report.

10. **Committee to Discuss First 2021 Subbasin Newsletter, Howard**
    a. **2020 Accomplishments and 2021 Proposed Tasks**

Claire Howard/P&P introduced a summary of accomplishments completed in 2020 and proposed tasks for 2021 that the EKI consultant team developed for the Northern and Central Management Committees. Claire noted there are some coordinated tasks both within the 2020 accomplishments and anticipated activities for 2021.

The Committee also discussed the Subbasin's newsletter, which has been used as a form of outreach for each GSP Group during GSP development and now into implementation. To date, the newsletter has provided an overview of Subbasin-wide tasks as well as a brief summary of activities for each GSP Group. The Committee expressed an interest to continue developing and sharing the newsletter, which moved from monthly to quarterly editions after the Subbasin's six

GSPs were submitted in January 2020. The Committee members shared suggestions of removing the GSP Group-specific updates, noting their interest in using the newsletter to highlight Subbasin-wide activities and progress. SLDMWA staff will continue to prepare a quarterly newsletter for the GSP Groups' use that incorporates these suggestions. Coordinated activities highlighted in the 2020 accomplishments/2021 proposed tasks will be used to guide items highlighted in the newsletter.

11. Reminder for GSP Group Representatives – Quarterly Proposition 1/Proposition 68 Grant Submittal Information due February 12th, Brodie

John Brodie/SLDMWA reminded the Committee members that quarterly invoice information is due to Ian Jaffe/W&C for applicable costs reimbursable through the Proposition 1 and Proposition 68 grants. This information is due to Ian by Friday, February 12th.

Anthea Hansen/DPWD asked about the status of grant disbursements that were shared in the recent SLDMWA Board meeting. John noted that he will confirm the status of these disbursements with the accounting team.

12. Committee to Discuss Review of Delta-Mendota Subbasin Coordination Agreement for Implementation, Howard

Claire Howard/P&P explained that the Coordination Committee had previously discussed revisiting the Coordination Agreement following the Subbasin's GSP development and shift into implementation activities. Claire reminded the Committee members of the Implementation Guidelines that were developed in 2019 and approved by the Committee in December 2019. Vince Lucchesi/PID suggested that this topic be revisited following the Annual Report submission by the April 1, 2021 deadline. This topic will be added as a report item to the next quarterly Coordination Committee meeting agenda.

13. Committee to Discuss FSS Inter-basin Coordination Updates, Brodie/Howard

John Brodie/SLDMWA shared that Kirsten Pringle/Stantec, who is leading the Subbasin's Facilitation Support Services (FSS) inter-basin coordination efforts, had explained that neighboring subbasin representatives requested holding regional inter-basin coordination meetings. This is a shift from the previously-discussed inter-basin approach, during which Delta-Mendota Subbasin representatives would separately meet with members from each of three neighboring subbasins: Madera, Chowchilla, and Merced. Based on this shift to a regional group meeting, Kirsten requested that each subbasin identify three representatives to attend on behalf of their subbasin. The Committee determined that Jarrett Martin/CCID, Ben Fenters/SLWD, and Vince Lucchesi/PID will attend on behalf of the Delta-Mendota Subbasin. John will also attend to take notes and share a recap following the meeting.

14. Proposition 68 Implementation Grant Update, Brodie

John Brodie/SLDMWA explained that five participating agencies submitted an application for the Proposition 68 Implementation Sustainable Groundwater Management (SGM) grant in early January. Draft funding awards are anticipated to be announced in March and final awards are anticipated in May. Joe Hopkins/Aliso noted that the special project agreement (SPA) that was developed with the participating agencies and SLDMWA was focused on the cost share for the grant application. Joe explained that his understanding for the grant award, if the group receives funding, will be shared equally. He also noted that if the group does not receive their full requested amount, his understanding is that the group's projects will have

an equal funding reduction. Joe noted that agencies participating in future grant applications should aim to include language regarding their intended approach for funding split.

John Brodie/SLDMWA also clarified that how the participating agencies disperse the grant funds is up to them, based on a previous response from DWR to this question. The difference between funding processes for IRWM and SGMA is in the authorizing language of the bond/bill. Jarrett Martin/CCID, Joe, Anthea Hansen/DPWD, and Ric Ortega/Grassland confirmed their understanding for an even split of any awarded funds.

15. Reports Pursuant to Government Code Section 54954.2(a)(3)

No topics were discussed under this item.

16. Next Steps

- A reminder email will be shared noting outstanding data for each GSP Group that must be uploaded to the DMS for incorporation into the WY20 Annual Report.
- CCID will support uploading publicly available subsidence data to the DMS this year, but the Coordination Committee will revisit this topic to determine an approach for future years.
- The seasonal high/spring water level monitoring for the Subbasin is February 1 – April 30. Representative monitoring sites must be monitored in this window and these data will be reported to DWR via the Monitoring Network Module and to the Subbasin's DMS.
- Quarterly newsletters will continue to be developed to support Subbasin outreach efforts, but moving forward the newsletters will focus on high-level Subbasin-wide activities, and will not include specific updates from GSP Groups.
- SLDMWA staff will confirm the status of grant disbursement information presented in the recent SLDMWA Board meeting.
- The Committee will revisit the Coordination Agreement and previously developed Implementation Guidelines in the first quarterly meeting held after the WY20 Annual Report is submitted.
- The first regional inter-basin coordination meeting will be held in early March, with Jarrett Martin/CCID, Ben Fenters/SLWD, Vince Lucchesi/PID, and John Brodie/SLDMWA attending on behalf of the Delta-Mendota Subbasin. The meeting will include representatives from Madera, Chowchilla, and Merced Subbasins and it will be facilitated by a team from Stantec.

17. ADJOURNMENT

Jarrett Martin/CCID adjourned the meeting at 10:56 AM.

SAN LUIS & DELTA-MENDOTA WATER AUTHORITY
MARCH 1, 2020 - FEBRUARY 28, 2021
SUSTAINABLE GROUNDWATER MANAGEMENT ACT SERVICES AGREEMENT
Coordination Committee Budget to Actual

Report Period 3/1/20 -02/28/21
Committee Meeting 03.08.21

EXPENDITURES	Annual Budget	Paid/ Pending	Additional Pending	Total Expenses	Amount Remaining	% of Amt Remaining
Coordinated Costs:						
Salaries	$ 52,152	$ 25,751	$ -	$25,751	$ 26,401	51%
Outside Counsel		$ 28,304	$ -	$28,304	$ (28,304)	0%
Committee Support			$ -	$ -	$ -	0%
Litigation			$ -	$ -	$ -	0%
Other Professional Services	$ -	$ 30,225	$ -	$30,225	$ (30,225)	0%
Group Meetings	$ -	$ -	$ -	$ -	$ -	0%
Travel/Mileage	$ -	$ 28	$ -	$ 28	$ (28)	0%
Telephone	$ -	$ -	$ -	$ -	$ -	0%
Total Expenditures	$ 52,152	$ 84,308	$ -	$84,308	$ (32,156)	-61.66%

DELTA-MENDOTA SGMA

DRAFT Consolidated WY2020 Annual Report

For the Delta-Mendota Subbasin

Prepared by:

WOODARD &CURRAN

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February 2021

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ATTN: J. Scott Petersen
San Luis and Delta-Mendota Water Authority
842 6th Street
Los Banos, CA 93635
Telephone (209) 597-0232

Email: scott.petersen@sldmwa.org

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Appendices[NC1]

Appendix A – Hydrographs for Representative Monitoring Wells

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Executive Summary

In 2014, the California legislature enacted the Sustainable Groundwater Management Act (SGMA) in response to continued overdraft of California's groundwater resources. The Delta-Mendota Subbasin (Subbasin) (5-022.07) is one of 21 alluvial basins and subbasins identified by the California Department of Water Resources (DWR) as being in a state of critical overdraft. Beginning in 2017, Groundwater Sustainability Agencies (GSAs) within the Subbasin formed to address the long-term reliability of groundwater through the development of six Groundwater Sustainability Plans (GSPs) for the following regions: Aliso Water District, Farmers Water District, Fresno County Management Areas A and B, Grassland, Northern & Central Delta-Mendota Region, and San Joaquin River Exchange Contractors. The six Delta-Mendota Subbasin GSPs were developed in a coordinated fashion with the goal of achieving sustainability for the Subbasin as a whole. The GSPs were adopted by their respective member GSAs and submitted to DWR on January 23, 2020, ahead of the January 31, 2020 deadline.

This Water Year 2020 (WY2020) Annual Report for the Delta-Mendota Subbasin has been prepared as a consolidated effort for the entire Subbasin and is in compliance with California Code of Regulations (CCR) Title 23, Division 2, Chapter 1.5, Subchapter 2, Article 7 Annual Reports and Periodic Evaluations by the Agency. WY2020 includes the period from October 1, 2019 through September 30, 2020. This Annual Report also contains historical information for the period between WY2014 and WY2020, as available and appropriate, in order to provide information and data following the Subbasin's selection of WY2013 as its "current" year in GSP development and to present an understanding of Subbasin conditions through the current reporting year.

Throughout the Subbasin, groundwater elevations during WY2020 were largely above their respective minimum thresholds with the majority of wells operating between their minimum threshold and measurable objective, and some wells operating above their measurable objective. There are a few wells that are currently operating below or fluctuating around their minimum threshold; each GSP region will assess if undesirable results are observed at the locations of those wells and will respond with the appropriate projects and management actions as described in their respective GSPs. All of the six GSP regions are currently on track to either meet their interim goals by 2025 for the chronic lowering of groundwater levels sustainability indicator and change in storage sustainability indicator or will work to implement projects and management actions in order to meet the 2025 interim goals established.

California Code of Regulations - GSP Regulation Sections	Annual Report Elements	Section(s) and page numbers(s) where requirements for Annual Report elements are included
Article 7	**Annual Reports and Periodic Evaluations by Agency**	
§ 356.2	**Annual Reports**	
	Each Agency shall submit an annual report to the Department by April 1 of each year following the adoption of the Plan. The annual report shall include the following components for the preceding water year:	
	(a) General information, including an executive summary and a location map depicting the basin covered by the report.	Executive Summary and General Information Figure 1
	(b) A detailed description and graphical representation of the following conditions of the basin managed in the Plan:	--
	(1) Groundwater elevation data from monitoring wells identified in the monitoring network shall be analyzed and displayed as follows:	--
	(A) Groundwater elevation contour maps for each principal aquifer in the basin illustrating, at a minimum, the seasonal high and seasonal low groundwater conditions.	1. Groundwater Elevation Data Figure 2, Figure 3, Figure 4, Figure 5
	(B) Hydrographs of groundwater elevations and water year type using historical data to the greatest extent available, including from January 1, 2015, to current reporting year.	Appendix A
	(2) Groundwater extraction for the preceding water year. Data shall be collected using the best available measurement methods and shall be presented in a table that summarizes groundwater extractions by water use sector, and identifies the method of measurement (direct or estimate) and accuracy of measurements, and a map that illustrates the general location and volume of groundwater extractions.	2. Groundwater Extraction Data Table 1, Figure 6
	(3) Surface water supply used or available for use, for groundwater recharge or in-lieu use shall be reported based on quantitative data that describes the annual volume and sources for the preceding water year.	3. Surface Water Supply Table 2
	(4) Total water use shall be collected using the best available measurement methods and shall be reported in a table that summarizes total water use by water use sector, water source type, and identifies the method of measurement (direct or estimate) and accuracy of measurements. Existing water use data from the most recent Urban Water Management Plans or Agricultural Water Management Plans within the basin may be used, as long as the data are reported by water year.	4. Total Water Use Table 3
	(5) Change in groundwater in storage shall include the following:	--
	(A) Change in groundwater in storage maps for each principal aquifer in the basin.	5. Change in Groundwater Storage Figure 9, Figure 10
	(B) A graph depicting water year type, groundwater use, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the basin based on historical data to the greatest extent available, including from January 1, 2015, to the current reporting year.	5. Change in Groundwater Storage Figure 7, Figure 8
	(c) A description of progress towards implementing the Plan, including achieving interim milestones, and implementation of projects or management actions since the previous annual report.	6. Plan Implementation

General Information

The Groundwater Sustainability Agencies (GSAs) of the Delta-Mendota Subbasin have collaborated to prepare this Consolidated Annual Report for Water Year 2020 (WY2020), defined as the period from October 1, 2019 to September 30, 2020, in compliance with California Code of Regulations (CCR) Title 23, Division 2, Chapter 1.5, Subchapter 2, Article 7 Annual Reports and Periodic Evaluations by the Agency. CCR 23 §356.2 outlines the annual report's required content. Data and conditions following the Subbasin's "current" water year of WY2013, as defined in the Delta-Mendota Subbasin's Groundwater Sustainability Plans (GSPs), through WY2020 are included in this Annual Report in order to describe trends and fill data gaps leading up to WY2020.

The Delta-Mendota Subbasin (DWR Basin 5-022.07) is located in the northwestern portion of the San Joaquin Valley Groundwater Basin and adjoins nine (9) other subbasins in the San Joaquin Valley Groundwater Basin. The Delta-Mendota Subbasin boundaries generally correspond to DWR's California's Groundwater Bulletin 118 – Update 2003 (Bulletin 118) groundwater basin boundaries descriptions, with jurisdictional boundary modifications incorporated into the 2016 and 2018 Bulletin 118 groundwater basin boundary definition.

The western San Joaquin Valley is a highly agricultural region with an economy dependent on the agricultural industry. There are no large cities or industries in the Delta-Mendota Subbasin to provide an alternative economic base; hence, the availability of Central Valley Project (CVP) imported supplies and other surface water supplies (primarily from the San Joaquin and Kings Rivers) are essential elements to the economic health of the region. Other uses of CVP and local surface water in the Subbasin are for municipal and industrial (M&I) purposes and wildlife refuge water supply. The Delta-Mendota Subbasin, and the six GSP regions it contains, are shown in **Figure 1**.

Groundwater is a key component of overall water supplies in the Delta-Mendota Subbasin. Agricultural and wildlife refuge needs may be supplemented by groundwater for areas with access to CVP water. Other landowners within the Subbasin may rely solely on groundwater for irrigation and/or potable purposes. M&I water use, which is a small share of total water use in the Subbasin, occurs primarily within the cities and local communities that predominantly use groundwater to meet those demands. The largest M&I use areas in the Delta-Mendota Subbasin, based on the 2019 American Community Survey 5-Year Estimates from the U.S. Census Bureau, are the cities of Patterson (population 22,066)[1] and Los Banos (population 38,914)[2].

[1] Source: https://data.census.gov/cedsci/profile?g=1600000US0656112.
[2] Source: https://data.census.gov/cedsci/profile?g=1600000US0644028.

Smaller communities in the Subbasin include Grayson, Tranquillity, Mendota, Firebaugh, Dos Palos, Santa Nella, Newman, Gustine, Crows Landing, Westley, Volta and Vernalis, all of which have economies greatly dependent on agricultural production and groundwater.

This Annual Report is broken into the following six sections:

1. Groundwater Elevation Data
2. Groundwater Extraction Data
3. Surface Water Supply
4. Total Water Use/ Consumptive Use
5. Change in Groundwater Storage
6. Plan Implementation

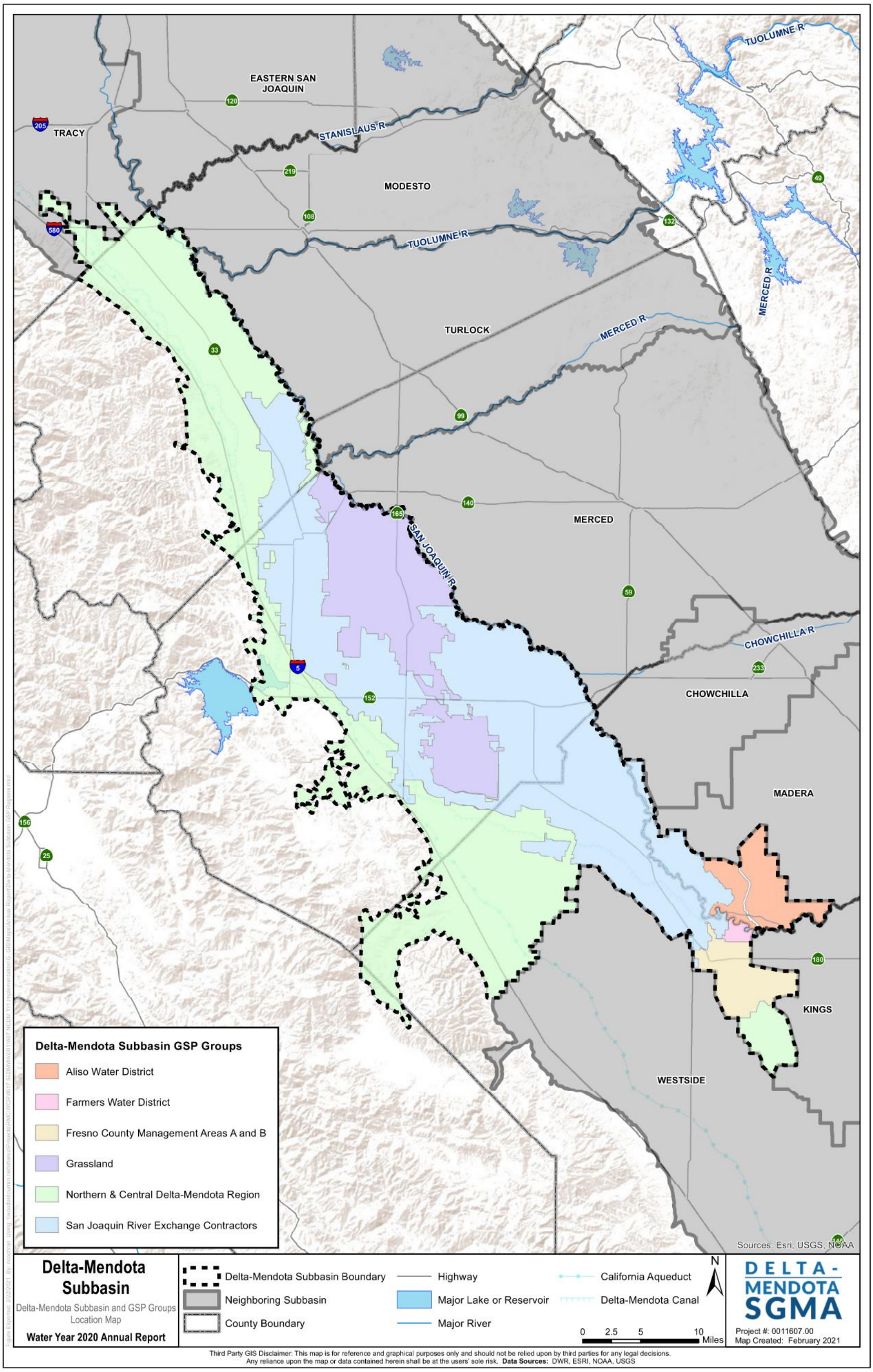

Figure 1. Delta-Mendota Subbasin and GSP Regions

1. Groundwater Elevation Data

Groundwater elevation data are presented below in groundwater surface elevation contour maps. These maps were generated from groundwater elevation data collected from wells in the six Subbasin GSP monitoring networks to illustrate the seasonal high and seasonal low conditions in each principal aquifer (Upper Aquifer and Lower Aquifer) in the Delta-Mendota Subbasin during WY2020, with measurements from additional wells also incorporated in order to provide adequate subbasin-wide coverage. Seasonal high is defined as any groundwater level measurement recorded between February and April, and seasonal low is defined as any groundwater level measurement recorded in September or October.

Hydrographs of groundwater elevations, including historical data through WY2020 and indicating water year type, are included in **Appendix A** for each well in the Subbasin's representative monitoring network for the chronic lowering of groundwater levels sustainability indicator[3]. [NC2]Since the end of the recent drought (starting in WY2017), groundwater elevations have largely recovered to pre-drought levels and are generally similar to or higher than WY2012 pre-drought levels. During WY2019, groundwater elevations remained similar to WY2012 and WY2017 levels. Dry conditions during WY2020 resulted in stable or declining groundwater levels throughout much of the Delta-Mendota Subbasin.

Figure 2 and **Figure 3** present contour maps of groundwater elevations for WY2020 seasonal high (February to April) and seasonal low (September to October), respectively, for the Upper Aquifer. <<Once WY2020 contour maps available, include description of range of groundwater levels and flow direction in the Subbasin and the factors relating to such conditions>>.

Figure 4 and **Figure 5** present groundwater elevations at wells (where available) for WY2020 seasonal high (February to April) and seasonal low (September to October), respectively, for the Lower Aquifer. <<Once WY2020 contour maps available, include description of range of groundwater levels and flow direction in the Subbasin and the factors relating to such conditions>>.

[3] For the Grassland GSP Region, due to the implementation period beginning January 31, 2020, there are instances in which representative monitoring sites do not have historic or current data. Implementation includes monitoring and reporting of data collected from the representative monitoring sites; therefore, data will be collected at those sites moving forward.

<<Figure preparation in progress by KDSA and P&P>>

Figure 2. WY2020 Seasonal High Groundwater Elevations, Upper Aquifer

<<Figure preparation in progress by KDSA and P&P>>

Figure 3. WY2020 Seasonal Low Groundwater Elevations, Upper Aquifer

<<Figure preparation in progress by KDSA and P&P>>

Figure 4. WY2020 Seasonal High Groundwater Elevations, Lower Aquifer

<<Figure preparation in progress by KDSA and P&P>>

Figure 5. WY2020 Seasonal Low Groundwater Elevations, Lower Aquifer

2. Groundwater Extraction Data

The following WY2020 groundwater extraction data, shown in **Table 1**, are a combination of direct measurements and estimates from each of the six GSP regions in the Delta-Mendota Subbasin. The accuracy of the measurements and estimates vary on a GSP region and site-by-site basis. The measurement method also varies across the six Subbasin GSP regions and largely consists of self-reported groundwater extraction volumes from each GSA. The data presented in **Table 1** is a summation of data from the six GSP regions and presents a variety of methods for data calculation and estimation. It should be noted that data presented in **Table 1** for the first four months of WY2020 (October 2019 through January 2020) were collected prior to GSP adoption and submittal and prior to the development of standard data collection protocols as set forth by the Subbasin GSAs and DWR as part of GSP implementation.

Agricultural groundwater pumping is the largest water use sector by volume in the Delta-Mendota Subbasin at an estimated 347,100 acre-feet (AF) of extraction during WY2020, representing approximately 88% of total groundwater extractions in the Delta-Mendota Subbasin (**Table 1**). Urban/Domestic/Municipal (22,800 AF), Industrial (6,800 AF), and Managed Wetlands (17,900 AF) collectively comprise the remaining 12% of total groundwater extractions in the Subbasin during WY2020 (**Table 1**). During WY2019, there were no quantifiable groundwater extractions for Managed Recharge, Native Vegetation, or Outside Subbasin water use sectors. Future annual reports will collect and report extraction data according to the water use sectors identified in **Table 1**.

Table 1. WY2020 Groundwater Extraction by Water Use Sector, Delta-Mendota Subbasin

Groundwater Extraction (Acre-Feet)			
Water Use Sector	**WY2020 Total**	**Measurement Method (Direct or Estimate)**	**Measurement Accuracy (%)**
Urban/Domestic/Municipal	22,800	Estimate	N/A
Industrial	6,800	Estimate	N/A
Agricultural	347,100	Estimate	N/A
Managed Wetlands	17,900	Direct	Unknown
Managed Recharge	0	Estimate	N/A
Native Vegetation	0	Estimate	N/A
Other: Outside Subbasin	0	Estimate	N/A
Total	**394,600**	**Estimate**	**N/A**

Figure 6 shows the general location and volume of groundwater extractions for each of the six GSP regions during WY2020. Overall, groundwater extraction by GSP region is presented by the area covered by the individual GSP and reflects, to some extent, the availability of surface water supplies within each GSP region. For example, Farmers Water District is solely reliant on groundwater while the remaining five GSP regions conjunctively use groundwater and surface water. Surface water rights and contracted imported surface water volumes vary among the GSP regions where, for example, the San Joaquin River Exchange Contractors have ample local and imported surface water available to meet demands and agencies in the central portion of the Northern & Central Delta-Mendota GSP Region hold smaller CVP contracts and are more reliant on pumped groundwater. Refer to the individual six Subbasin GSPs for region-specific information about groundwater use and hydrogeologic conditions unique to each GSP region.

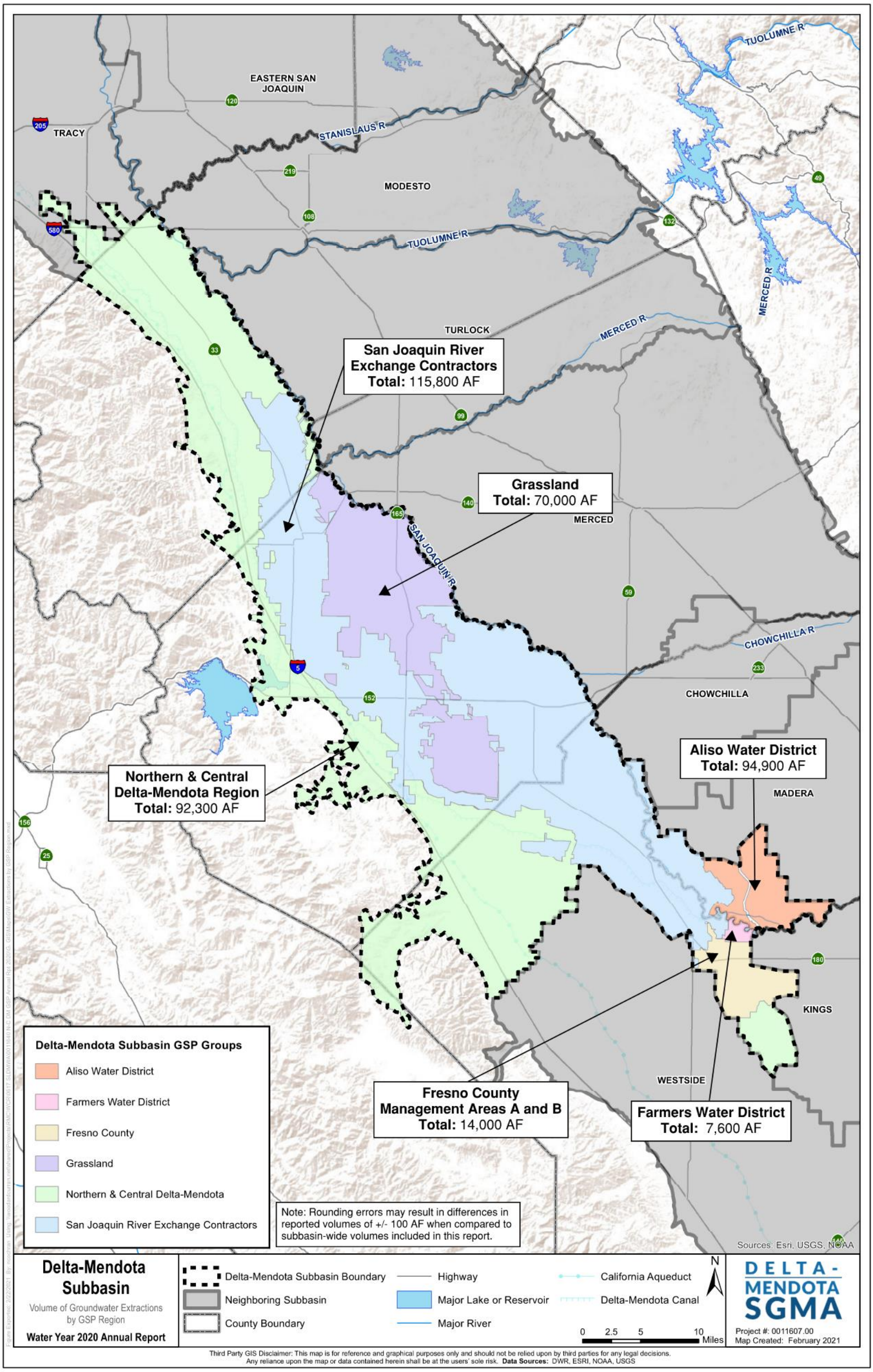

Figure 6. WY2020 General Location and Volume of Groundwater Extractions

3. Surface Water Supply for Recharge

The following surface water supply data are a combination of direct measurements and estimates from each of the six GSP regions in the Delta-Mendota Subbasin. It should be noted that data presented in **Table 2** for the first four months of WY2020 (October 2019 through January 2020) were collected prior to GSP adoption and submittal and prior to the development of standard data collection protocols as set forth by the Subbasin GSAs and DWR as part of GSP implementation.

CVP water accounts for the largest surface water source by volume at an estimated 1,148,600 AF during WY2020, representing approximately 71% of total surface water used within the Delta-Mendota Subbasin (**Table 2**). Water supplies from the Kings and San Joaquin Rivers (Other) account for 171,900 AF (11% of total) of surface water used during WY2020, with an additional 231,500 AF (or 14% of total) sourced from Local Supplies, which include any naturally-occurring creeks or other surface water course other than the Kings or San Joaquin Rivers (**Table 2**). The remaining 4% of surface water supplies during WY2020 consist of State Water Project (SWP) water (2,100 AF), where Oak Flat Water District is the only SWP contractor in the Delta-Mendota Subbasin; Recycled Water (18,900 AF), which is sourced from the North Valley Regional Recycled Water Project and Patterson Irrigation District; and Local Imported Supplies (47,800 AF) (**Table 2**). Agriculture is the predominant surface water use sector within the Delta-Mendota Subbasin, with a lesser volume of CVP water delivered to Urban/Domestic/Municipal users and wildlife refuges.

Table 2. WY2020 Surface Water Supply, Delta-Mendota Subbasin

Surface Water Supply (Acre-Feet)	
Surface Water Source	**WY2020 Total**
Central Valley Project (CVP)	1,148,600
State Water Project (SWP)	2,100
Colorado River Project	--
Local Supplies [1]	231,500
Local Imported Supplies	47,800
Recycled Water	18,900
Desalination	--
Other [2]	171,900
Total	**1,620,900**

[1] Surface water supplies sourced from local creeks, which include any naturally-occurring surface water course other than the Kings or San Joaquin Rivers.

[2] Surface water supplies sourced from the Kings and/or San Joaquin Rivers.

4. Total Water Use

Total water use by water use sector and supply is shown in **Table 3**. The measurement method varies across the six Subbasin GSP regions and largely consists of self-reported volumes from each GSA. The data presented in **Table 3** is a summation of data from the six GSP regions and presents a variety of methods for data calculation and estimation. It should be noted that data presented in **Table 3** for the first four months of WY2020 (October 2019 through January 2020) were collected prior to GSP adoption and submittal and prior to the development of standard data collection protocols as set forth by the Subbasin GSAs and DWR as part of GSP implementation. Additionally, these data are a combination of direct measurements and estimates from each of the six GSP regions in the Delta-Mendota Subbasin. The difference between these values and the sum of the various supplies available to the Subbasin (groundwater, surface water, and recycled/reuse water) reflects water lost through canal leakage, pipe leakage, and other percolating waters.

Agricultural water use comprises approximately 78% of the total water use in the Delta-Mendota Subbasin during WY2020 and is estimated to be 1,232,700 AF (**Table 3**). Managed Wetlands water use comprises approximately 20% of the total water use in the Subbasin during WY2020 at an estimated volume of 322,600 AF (**Table 3**). Collectively, Urban/Domestic/ Municipal (18,500 AF), Industrial (6,700 AF), and Managed Recharge (2,300 AF) comprise the remaining 2% of total water use in the Subbasin during WY2020 (**Table 3**).

Table 3. WY2020 Total Water Use, Delta-Mendota Subbasin

Summary of Total Water Use (Acre-Feet)			
Total Water Use	**WY2020 Total**	**Measurement Method (Direct or Estimate)**	**Measurement Accuracy (%)**
Urban/Domestic/Municipal			
Groundwater	15,700	Estimate	N/A
Surface Water	2,800	Estimate	N/A
Recycled Water	0	Estimate	N/A
Reused Water	0	Estimate	N/A
Other	0	Estimate	N/A
Total	*18,500*	*Estimate*	*N/A*
Industrial			
Groundwater	6,700	Estimate	N/A
Surface Water	1	Estimate	N/A
Recycled Water	0	Estimate	N/A
Reused Water	0	Estimate	N/A
Other	0	Estimate	N/A
Total	*6,700*	*Estimate*	*N/A*

Summary of Total Water Use (Acre-Feet)			
Total Water Use	**WY2020 Total**	**Measurement Method (Direct or Estimate)**	**Measurement Accuracy (%)**
Agricultural			
Groundwater	269,200	Estimate	N/A
Surface Water	936,900	Estimate	N/A
Recycled Water	18,900	Estimate	N/A
Reused Water [1]	7,600	Estimate	N/A
Other	0	Estimate	N/A
Total	*1,232,700*	*Estimate*	*N/A*
Managed Wetlands			
Groundwater	0	Estimate	N/A
Surface Water	322,600	Estimate	N/A
Recycled Water	0	Estimate	N/A
Reused Water	0	Estimate	N/A
Other	0	Estimate	N/A
Total	*322,600*	*Estimate*	*N/A*
Managed Recharge			
Groundwater	0	Estimate	N/A
Surface Water	2,300	Estimate	N/A
Recycled Water	0	Estimate	N/A
Reused Water	0	Estimate	N/A
Other	0	Estimate	N/A
Total	*2,300*	*Estimate*	*N/A*
Native Vegetation			
Groundwater	0	Estimate	N/A
Surface Water	0	Estimate	N/A
Recycled Water	0	Estimate	N/A
Reused Water	0	Estimate	N/A
Other	0	Estimate	N/A
Total	*0*	*Estimate*	*N/A*
Other: Outside Subbasin			
Groundwater	0	Estimate	N/A
Surface Water	0	Estimate	N/A
Recycled Water	0	Estimate	N/A
Reused Water	0	Estimate	N/A
Other	0	Estimate	N/A
Total	*0*	*Estimate*	*N/A*
Total	***1,582,800***	***Estimate***	***N/A***

[1] Includes drain water delivered to the San Joaquin River Improvement Project

5. Change in Groundwater Storage

The change in groundwater storage for the Delta-Mendota Subbasin is shown below in a series of graphs depicting groundwater use and annual change in groundwater storage calculated from seasonal groundwater elevation highs in 2019 and seasonal groundwater elevation highs in 2020, along with the cumulative change in groundwater storage calculated using seasonal groundwater elevation highs from 2013 and seasonal groundwater elevation highs from 2020. **Table 4** also shows the change in groundwater stored by principal aquifer cumulatively during these same periods.

Upper Aquifer change in groundwater storage calculated for the period between 2019 and 2020 seasonal groundwater elevation highs was estimated predominantly using two methods chosen by the respective GSP regions and summed to a Subbasin total: change in groundwater elevation contours used by the Aliso Water District, Farmers Water District, Fresno County Management Areas A and B, Grassland, and Northern & Central Delta-Mendota Region GSP regions; and representative hydrographs used by the San Joaquin River Exchange Contractors GSP region. The results of these estimations are presented in **Table 4**. As calculated, between 2019 seasonal groundwater elevation highs and 2020 seasonal groundwater elevation highs, groundwater stored in the Upper Aquifer <<to include description of Upper Aquifer change in storage and appropriate context pending final change in storage values from Aliso, Grassland, and Northern & Central>> (**Table 4**).

Cumulative change in groundwater storage in the Upper Aquifer between 2013 seasonal groundwater elevation highs and 2020 seasonal groundwater elevation highs is presented in **Table 4** and was estimated utilizing the same methods on an annual basis by GSP region[4] as previously described. Cumulatively, from seasonal groundwater elevation high in 2013 through seasonal groundwater elevation high in 2020, groundwater stored in the Upper Aquifer <<to include description of Upper Aquifer change in storage and appropriate context pending final change in storage values from Aliso, Grassland, and Northern & Central>> (**Table 4**). It should be noted that the period in question included the height of the most recent drought (WY2014 through WY2016) which was then followed by normal and wet conditions through WY2019 and dry conditions in WY2020.

Lower Aquifer change in groundwater storage between the 2019 seasonal high in groundwater elevations and the 2020 seasonal high in groundwater elevations, presented in **Table 4**, was estimated predominantly utilizing two methods chosen by the respective GSP regions and

[4] For Aliso Water District, Upper Aquifer annual change in groundwater storage between seasonal high groundwater elevations in 2013 and seasonal high groundwater elevations in 2017 was derived from the Projected Water Budget presented in the Aliso Water District GSP.

summed for the Subbasin total: change in land surface using the best available data[5,6] [NC3]was used by the Aliso Water District, Grassland, Northern & Central Delta-Mendota Region, and San Joaquin River Exchange Contractors GSP regions; and change in groundwater elevation at GSP monitoring wells as utilized by the Farmers Water District and Fresno Management Areas A and B GSP regions. Between seasonal high groundwater elevations of 2019 and 2020, groundwater stored in the Lower Aquifer <<to include description of Lower Aquifer change in storage and appropriate context pending final change in storage values from Aliso, Grassland, and Northern & Central>> (**Table 4**).

Cumulative change in groundwater storage in the Lower Aquifer from the 2013 seasonal high groundwater elevations through the 2020 seasonal high groundwater elevations was estimated utilizing the same GSP-selected methodologies and sources[7,8],[NC4] on an annual basis, as implemented for estimating change in groundwater storage between the seasonal groundwater elevation highs of 2019 and 2020, as described above. Cumulatively, groundwater stored in the Lower Aquifer <<to include description of Lower Aquifer change in storage and appropriate context pending final change in storage values from Aliso, Grassland, and Northern & Central>> (**Table 4**). As with the Upper Aquifer, it should be noted that the period in question included the height of the most recent drought (WY2014 through WY2016) which was then followed by normal and wet conditions through WY2019 and dry conditions in WY2020.

[5] Inelastic land subsidence is largely the result of groundwater pumping from the Lower Aquifer but is not directly equivalent to Lower Aquifer pumping.

[6] The following source was utilized to calculate Lower Aquifer change in groundwater storage between the 2019 and 2020 seasonal high groundwater elevations for the Aliso Water District, Grassland, Northern & Central Delta-Mendota Region and San Joaquin River Exchange Contractors GSP regions:

San Joaquin River Restoration Program. 2020. *December 2020 Table (Bureau of Reclamation Static GSP Survey for Subsidence Monitoring, Central Valley California*. Retrieved from http://www.restoresjr.net/science/subsidence-monitoring/. Note: Additional refinements provided by Kenneth D. Schmidt & Associates using additional local data.

[7] The following source was utilized to calculate Lower Aquifer change in groundwater storage during between the 2013 and 2020 seasonal high groundwater elevations for Aliso Water District, Grassland, and San Joaquin River Exchange Contractors GSP Regions:

San Joaquin River Restoration Program. 2020. *December 2020 Table (Bureau of Reclamation Static GSP Survey for Subsidence Monitoring, Central Valley California*. Retrieved from http://www.restoresjr.net/science/subsidence-monitoring/. Note: Additional refinements provided by Kenneth D. Schmidt & Associates using additional local data.

[8] Lower Aquifer change in groundwater storage between 2013 and 2019 seasonal high conditions for the Northern & Central Delta-Mendota Region GSP was derived from the current and projected baseline water budgets presented in the GSP (November 2019).

Table 4. Annual and Cumulative Change in Storage by Principal Aquifer from Seasonal High 2013 to Seasonal High 2020, Delta-Mendota Subbasin[NC5]

Change in Storage (Acre-Feet)		
Principal Aquifer	**Annual Change in Storage, Seasonal High 2019 to Seasonal High 2020**	**Cumulative Change in Storage, Seasonal High 2013 to Seasonal High 2020**
Upper Aquifer	52,800	-149,700
Lower Aquifer	-20,500	-356,900
Total	**32,300**	**-506,600**

Figure 7 shows annual change in groundwater stored by water year type with cumulative change in groundwater storage at the Subbasin level as calculated using the methods previously described. In general, groundwater stored largely decreases during Dry and Shasta Critical years and increases during Wet and Normal years. Following the end of the most recent drought (which ended following WY2016), groundwater stored has increased due to increased precipitation and availability of imported surface water supplies. As a result, the negative trend in cumulative change in storage has turned into a positive trend. <<Include description of cumulative change in storage trend when WY2020 change in storage is finalized for all GSP groups>>.

Figure 8 shows annual groundwater extraction estimates with cumulative change in groundwater storage at the Subbasin level. Groundwater extractions are largely greater in volume during Dry and Shasta Critical years as compared to Normal and Wet years, where increased precipitation and availability of imported water supplies result in a reduced reliance on groundwater during Normal and Wet years. **Figure 8** demonstrates an inverse relationship between change in storage and groundwater extraction, where cumulative change in storage becomes more negative as groundwater extraction increases and becomes more positive as groundwater extraction decreases. Cumulative change in storage long-term trends are heavily impacted by consecutive Dry and Shasta Critical years, with limited surface water availability and increased groundwater use, creating a compounding depletion of groundwater storage.

Figure 9 and **Figure 10** present change in groundwater storage by principal aquifer (Upper Aquifer and Lower Aquifer) by GSP region cumulatively for the period from spring 2014 to spring 2020 (periods of high groundwater elevations) and annually between spring 2019 and spring 2020, respectively. Cumulative change in storage depicted in **Figure 9** captures the height of the most recent drought (occurring during WY2014 through WY2016) as well as wetter conditions that occurred during WY2017 through WY2019 and the return of dry conditions in WY2020. Groundwater was a critically important water supply source during the most recent drought with decreased precipitation, higher temperatures, and little to no

available imported surface water supplies. **Figure 9** demonstrates the impact the most recent drought had on the Delta-Mendota Subbasin and differences in water sources available within each of the GSP groups. Wet conditions during WY2019 resulted in increased recharge in the Upper Aquifer due to increased precipitation and imported surface water deliveries as well as reduced reliance on Lower Aquifer pumping due to availability of surface water supplies. <<Include description of WY2020 change in storage by principal aquifer (**Figure 10**) when values are finalized for all GSP groups>>.

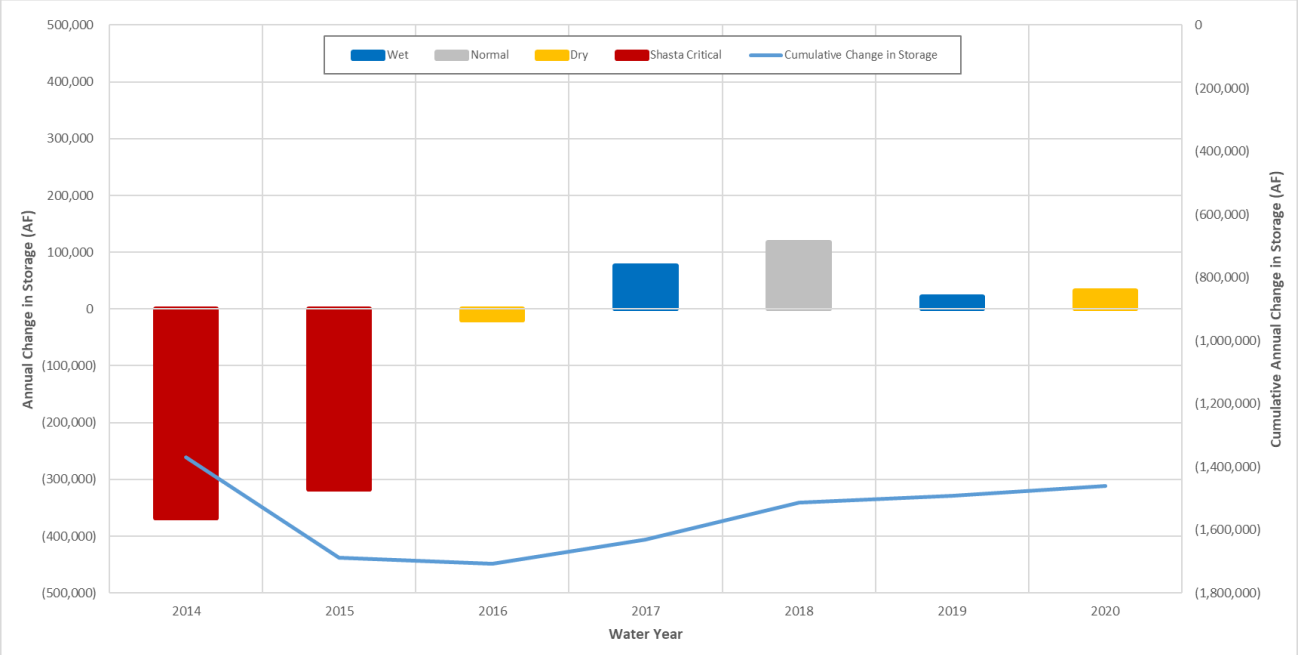

Figure 7. Annual Change in Storage and Cumulative Change in Storage, Seasonal High 2014 to Seasonal High 2020 [9] [NC6]

[9] Water year types are mapped in the following manner to the San Joaquin River Water Year Index water year types: Wet = Wet; Average = Below Normal and Above Normal; Dry = Dry and Critical. Shasta Critical years are designated upon the request of the San Joaquin River Exchange Contractors and Grassland GSP regions as this designation impacts surface water deliveries to exchange contracts and managed wetlands through the CVP. Shasta Critical designations are dependent on inflow to Shasta Reservoir and U.S. Bureau of Reclamation's operating rules for CVP deliveries.

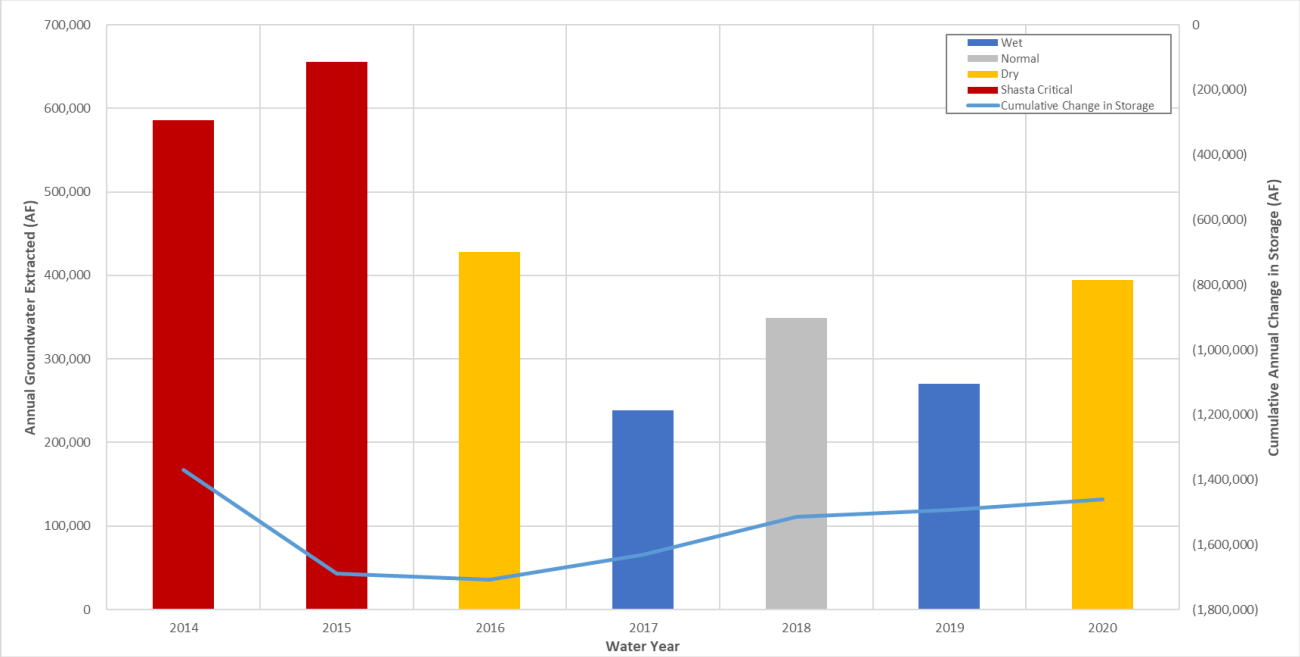

Figure 8. Groundwater Extraction and Cumulative Change in Storage, WY2014 to WY2020 [10] [NC7]

[10] Water year types are mapped in the following manner to the San Joaquin River Water Year Index water year types: Wet = Wet; Average = Below Normal and Above Normal; Dry = Dry and Critical. Shasta Critical years are designated upon the request of the San Joaquin River Exchange Contractors and Grassland GSP regions as this designation impacts surface water deliveries to exchange contracts and managed wetlands through the CVP. Shasta Critical designations are dependent on inflow to Shasta Reservoir and U.S. Bureau of Reclamation's operating rules for CVP deliveries.

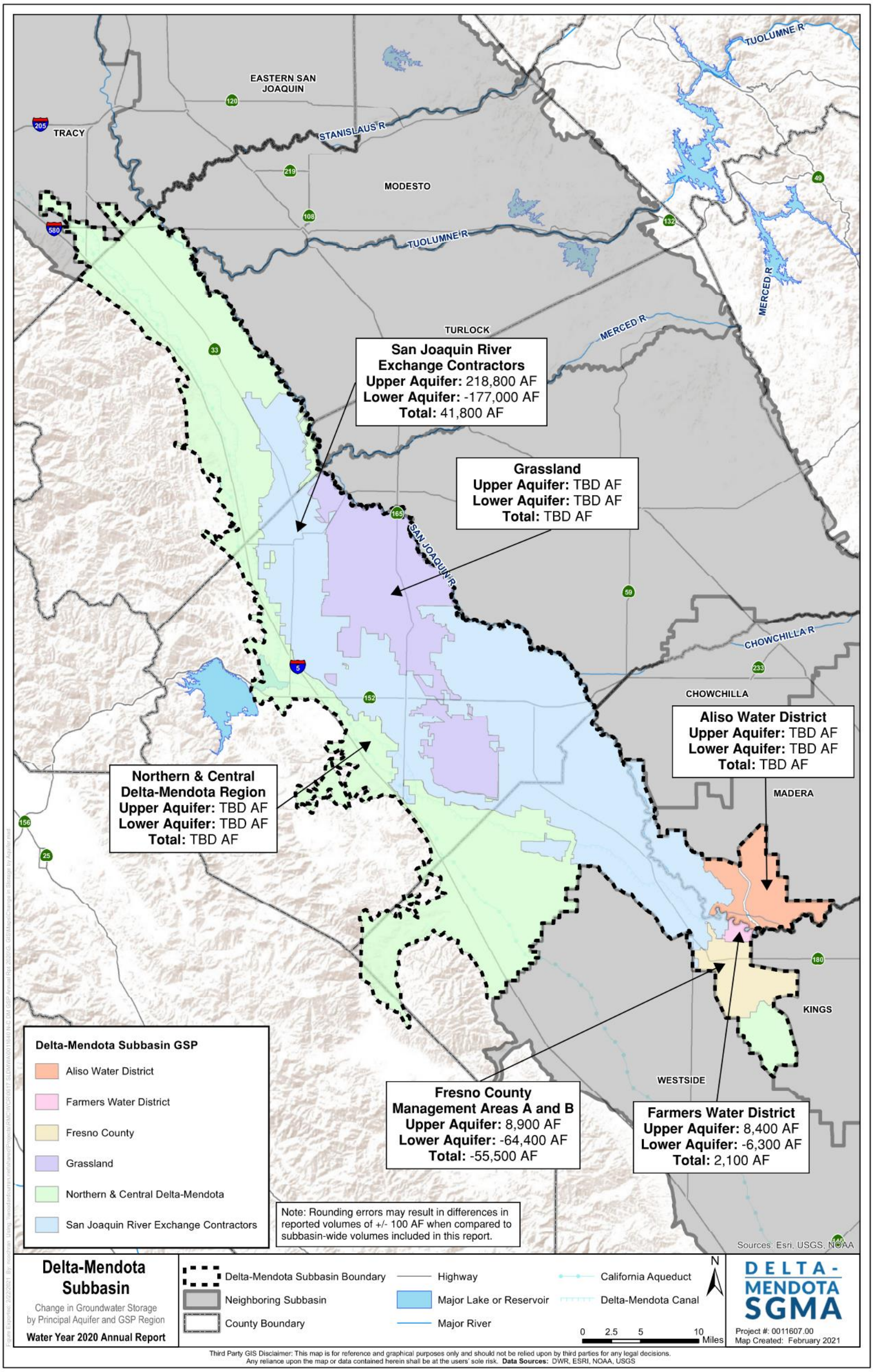

Figure 9. Seasonal High 2014 to Seasonal High 2020 Cumulative Change in Groundwater Storage by Principal Aquifer [LD8]

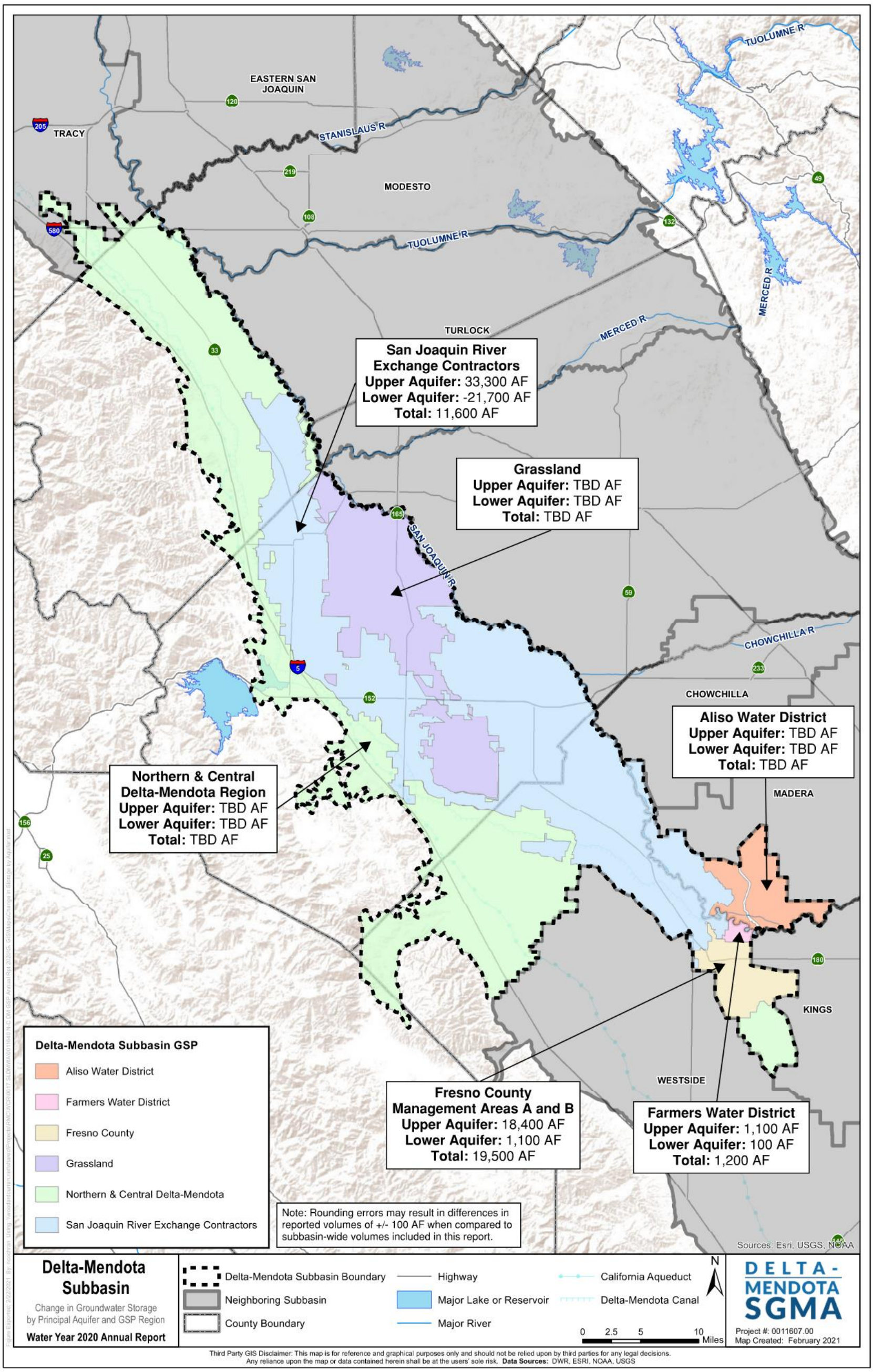

Figure 10. Seasonal High 2019 to Seasonal High 2020 Change in Groundwater Storage by Principal Aquifer [LD9]

6. Plan Implementation

WY2020 marks the first year of GSP implementation for the Delta-Mendota Subbasin. The following subsections describe progress made by each of the six GSP regions toward implementing their respective Plans, including progress towards achieving interim milestones and the implementation of projects and management actions. Cumulatively, these efforts provide the required advancement towards achieving and maintaining groundwater sustainability in the Delta-Mendota Subbasin.

6.1 Aliso Water District GSP Region Progress[NC10]

The Aliso Water District GSA (AWDGSA) historically determined that there had not been significant and unreasonable results within the AWDGSA. However, unforeseen and unpredictable changes in policy, land management, and the environment may impact groundwater conditions and were considered throughout GSP development and when defining Threshold Exceedance. The AWDGSA's historic groundwater level changes and water quality are not indicative of causing significant and unreasonable effects through 2040. However, to defend against the possibility of accelerated rates of subsidence due to increased Lower Aquifer dependence, sustainable management criteria were set to prevent the depletion of the productive layers of the Upper Aquifer. Annual change in groundwater storage (seasonal high 2019 to seasonal high 2020) for the AWDGSA Lower Aquifer has been calculated using subsidence as a basis (0.13 feet) times the area of the AWDGSA (26,600 acres) equaling about 3,600 AF. Note that since the subsidence accuracy is +/- 0.08 feet that the change in storage accuracy would have a similar basis and calculates to +/- 2,100 AF. The AWDGSA continues to progress towards implementing projects and management actions to reach long-term sustainability. This last year the AWDGSA pursued both Temporary and Standard Water Right Applications diverting non-appropriative available San Joaquin flood water from the Chowchilla Bypass. At the time of this Annual Report, AWDGSA was granted a Temporary Water Right Permit for the year 2021, and has submitted a Standard Water Right Application that is currently under review by the State Water Resources Control Board (SWRCB). The AWDGSA has also taken the appropriate first steps towards progressing the Cottonwood Creek Recharge Project, outlined in the GSP. Additionally, to provide operational and capital funding a 218 Engineers report was developed, and an Election was held in February of 2020. Thus, establishing an Operations Assessment Fee and Groundwater Extraction Fee to further fund the operational needs of the GSA and to assist in implementing projects such as water right permitting and construction of the Cottonwood Creek Recharge Project.

6.2 Farmers Water District GSP Region Progress

At this time, conditions in the Farmers Water District Plan Area indicate continued adherence to established Measurable Objectives and Interim Milestones in the areas of groundwater levels, groundwater storage, subsidence, water quality, and interconnected surface waters.

The representative monitoring sites continue to provide adequate data to characterize conditions within the plan area. The District continues to monitor conditions and sustainability indicators at these sites relative to the sustainable management criteria. The District has also implemented Technical Support Services to provide additional monitoring of sites within the plan area. As changes in policy, land use and environmental conditions occur, Farmers Water District will develop project and management actions to prevent undesirable results if needed.

6.3 Fresno Management Areas A and B GSP Region Progress

Conditions in the Farmers Water District Plan Area continue to indicate adherence to established Measurable Objectives and Interim Milestones in the areas of groundwater levels, groundwater storage, subsidence, and water quality.

Plan authorities continue to monitor representative sites and sustainability indicators, which provide data to characterize conditions within the plan area. Outreach to landowners and State agencies continue to fill existing data gaps, especially in the Mendota Wildlife Area and surrounding lands. Filling gaps in data will help to better characterize the interactions between the wildlife area and surrounding agricultural lands. At the current time, trends indicate continued adherence to Measurable Objectives and Minimum Thresholds. In the event of changes to these trends, the Management Area will develop targeted pumping reductions and other actions to prevent undesirable results.

6.4 Grassland GSP Region Progress

<<To be prepared by P&P/Grassland WD>>[NC11]

6.5 Northern & Central Delta-Mendota Region GSP Region Progress

During WY2020, groundwater level measurements were collected during the seasonal high (February through April 2020) and seasonal low (September through October 2020) monitoring events for all wells in the representative groundwater level monitoring network. During the WY2020 seasonal high monitoring event, groundwater level measurements were at or above the established measurable objective or between the established minimum threshold and measurable objective (or within the operational yield) at each representative monitoring site, indicating sustainable conditions. Impacts of dry conditions during WY2020 and the resulting increased reliance on groundwater during the spring and summer months were observed in groundwater level measurements taken during the WY2020 seasonal low event. The majority of representative monitoring sites were at or above their respective measurable objective (9 wells in September, 18 wells in October) or between their respective measurable objective and minimum threshold (15 wells in September, 13 wells in October). Water level measurements were below their respective minimum thresholds at one well in September (Well DMS ID No. 03-002); however, conditions recovered to above the established measurable objective in

November 2020, and two wells in October (Well DMS ID Nos. 01-006 and 07-017). One well (Well DMS ID No. 07-018) was not monitored during the WY2020 seasonal low monitoring event for unknown reasons, but water levels had been monitored in that well in August and November 2020.

Undesirable results relative to the chronic lowering of groundwater levels sustainability indicator were not observed within the Northern and Central Delta-Mendota Regions during WY2020.[11] WY2020 groundwater level conditions indicate continued progress in meeting interim milestones for groundwater levels at each representative monitoring site, where undesirable results were not observed and conditions are at or above the established measurable objective or within the operational yield at the majority of representative monitoring sites. Therefore, the Northern and Central Delta-Mendota Regions are currently on track to meet the Year 5 interim goal to maintain groundwater elevations comparable to WY2012/2017 hydrologic highs and lows.

Recent downward trends in groundwater elevations were observed at the following wells and will be monitored by the GSAs to avoid experiencing undesirable results in the near future: Well DMS ID Nos. 01-001, 01-003, 01-004, 03-001, 03-002, 03-003, and 07-017. Hydrographs for all representative monitoring sites in the groundwater level monitoring network for the Northern and Central Delta-Mendota Regions are included in **Appendix A**.

Table 5 summarizes groundwater level conditions relative to established sustainable management criteria for the WY2020 seasonal high and seasonal low monitoring events. Numeric sustainable management criteria have been recalculated for select wells since adoption of the Northern & Central Delta-Mendota Region GSP (November 2019) due to removal of proxy data and availability of historical records, as well as confusion between depth to water and water surface elevation measurements. Revised numeric sustainable management criteria are presented on the hydrographs included in **Appendix A** and will be presented in the 5-Year GSP Update in 2025.

[11] As defined in the Northern & Central Delta-Mendota Region GSP, undesirable results relative to the chronic lowering of groundwater levels is triggered when groundwater elevations drop below the site-specific minimum threshold at 25 percent of representative monitoring sites in a principal aquifer concurrently over a given year (5 out of 17 wells in the Upper Aquifer and/or 5 out of 18 wells in the Lower Aquifer).

Table 5. Groundwater Level Monitoring Results Summary for WY2020 – Northern & Central Delta-Mendota Region

Monitoring Period	At or Above Respective Measurable Objective	Between Measurable Objective and Minimum Threshold	Below Minimum Threshold
February through April 2020 (35 wells measured)	31 wells: ○ 01-001 ○ 01-002 ○ 01-005 ○ 01-006 ○ 01-007 ○ 01-008 ○ 02-001 ○ 02-002 ○ 03-001 ○ 03-002 ○ 03-003 ○ 04-001 ○ 06-001 ○ 06-003 ○ 06-004 ○ 07-003 ○ 07-004 ○ 07-005 ○ 07-006 ○ 07-007 ○ 07-008 ○ 07-009 ○ 07-010 ○ 07-011 ○ 07-012 ○ 07-014 ○ 07-015 ○ 07-016 ○ 07-017 ○ 07-018 ○ 08-001	4 wells: ○ 01-003 ○ 01-004 ○ 06-002 ○ 07-002	None
September 2020 (25 wells measured) [1]	9 wells: ○ 01-002 ○ 01-007 ○ 07-002 ○ 07-003 ○ 07-004 ○ 07-005 ○ 07-011 ○ 07-016 ○ 08-001	15 wells: ○ 01-001 ○ 01-003 ○ 01-004 ○ 01-005 ○ 01-008 ○ 02-001 ○ 02-002 ○ 03-001 ○ 03-002 ○ 06-001 ○ 06-002 ○ 06-004 ○ 07-006 ○ 07-007 ○ 07-017	1 well: ○ 03-003 [2]
October 2020 (33 wells measured) [1]	18 wells: ○ 01-001 ○ 01-002 ○ 01-007 ○ 01-008 ○ 03-001 ○ 04-001 ○ 06-003 ○ 06-004 ○ 07-002 ○ 07-003 ○ 07-004 ○ 07-007 ○ 07-008 ○ 07-010 ○ 07-011 ○ 07-012 ○ 07-016 ○ 08-001	13 wells: ○ 01-003 ○ 01-004 ○ 01-005 ○ 02-001 ○ 02-002 ○ 03-002 ○ 06-001 ○ 06-002 ○ 07-005 ○ 07-006 ○ 07-009 ○ 07-014 ○ 07-015	2 wells: ○ 01-006 ○ 07-017

[1] Seasonal low monitoring event includes September 2020 (WY2020) and October 2020 (WY2021). A total of 25 wells were monitored in both September and October, one well was monitored in September only, 9 wells were monitored in October only, and one well (Well DMS ID No. 07-018) was not monitored in September or October due to unknown reasons).

[2] This well was below the minimum threshold in September 2020 but recovered to above its measurable objective in November 2020.

Groundwater quality samples were collected between May and August during WY2020 at 21 of the 35 representative monitoring sites (three wells were monitored for groundwater quality in October 2020, outside of the designated monitoring period). Access issues, lack of operational pumps or sampling ports, and miscommunication in monitoring responsibilities are the primary reasons for missing groundwater quality monitoring results for WY2020. Groundwater quality sampling results for WY2020 are presented in **Appendix X**.

Total dissolved solids (TDS) sampling results indicate sustainable conditions at 15 of the 21 representative wells sampled, where sustainable conditions are indicated by a result at or below the established measurable objective. Two wells sampled for TDS during WY2020 are below their respective minimum thresholds but above their measurable objectives (Well DMS ID Nos. 07-014 and 07-015) and four wells are above their minimum thresholds (Well DMS ID Nos. 07-009, 07-010, 07-016, and 07-018). TDS results for two wells (Well DMS ID Nos. 07-009 and 07-010) are considered questionable due to the inability to purge the well. Nitrate as N sampling results indicate sustainable conditions for all 21 representative monitoring sites sampled. Boron sampling results indicate sustainable conditions at 18 of the 21 representative wells sampled during WY2020, where three wells were above their respective minimum thresholds (Well DMS ID Nos. 01-003, 07-016, and 07-018). Water quality sampling results above established measurable objectives of maintaining current groundwater quality for TDS and boron may indicate increasing concentrations at their respective locations.

Sufficient data are not available to determine if undesirable results relative to the degraded water quality sustainability indicator are observed (where undesirable results are defined as exceedances of Maximum Contaminant Levels or water quality objectives over three consecutive sampling events in non-drought years will be evaluated to determine if undesirable results are observed). Interim milestones for the degraded water quality sustainability indicator are to maintain current groundwater quality, where measurable objectives are set as the current regional groundwater quality conditions. WY2020 conditions indicate the Northern and Central Delta-Mendota Regions are on track to meet the Year 5 interim goal for nitrate as N. While conditions above the established measurable objective are observed for TDS (Well DMS ID Nos. 07-014, 07-015, 07-009, 07-010, 07-016, and 07-018) and boron (Well DMS ID Nos. 01-003, 07-016, and 07-018), increasing concentrations will continued to be monitored as additional data are collected annually to ensure progress in meeting the Year 5 interim goal for TDS and boron.

The land subsidence representative monitoring network includes two management areas (MA): the West Stanislaus Irrigation District-Patterson Irrigation District MA (WSID-PID MA) and Tranquillity Irrigation District MA (TRID MA). Baseline land surface elevation measurements were established during calendar year 2019 within the WSID-PID MA and a subsequent elevation survey was performed in December 2020. An elevation survey was performed in the

TRID MA in February 2020 indicating WY2020 conditions are sustainable, where conditions are above the measurable objective at all three sites (DMS ID Nos. 07-019, 07-026, and 07-027). Within the remaining Plan area, benchmark elevation surveys were planned by the United States Bureau of Reclamation (USBR) and the San Luis & Delta-Mendota Water Authority (SLDMWA) in July 2020. Due to the COVID-19 pandemic, benchmark elevation surveys were not performed and instead USBR performed a Light Detection and Ranging (or Lidar) flight during calendar year 2020, where results will be presented in the WY2021 Annual Report (pending data availability from USBR).

Land subsidence monitoring results for WY2020, as presented in **Table 6**, indicate the Northern and Central Delta-Mendota Regions are on track to meet the Year 5 interim milestones for the TRID MA. Results from the WY2021 land elevation survey, in addition to data from the WY2020 survey performed in the WSID-PID MA, are presented in **Table 6** along with the change in elevation between the surveys (with a ± 0.1 feet level of accuracy). The WY2021 survey was performed in December 2020, prior to any substantial rainfall during WY2021, and is likely reflective of elastic rather than inelastic land subsidence. An evaluation of progress in meeting the Year 5 interim milestones for the WSID-PID MA and remaining Plan area will be included in the WY2021 Annual Report.

Table 6. WY 2020 and WY2021 Land Subsidence Monitoring Results – Northern & Central Delta-Mendota Region

DMS ID	Management Area	WY2020 Elevation Survey		WY2021 Elevation Survey		Difference in Elevation (feet, GSE)	Minimum Threshold (feet, GSE) [1]	Measurable Objective (feet, GSE) [1]	Year 5 Interim Milestone (feet, GSE) [1]
		Date	Elevation (feet, ground surface elevation [GSE])	Date	Elevation (feet, GSE)				
03-004	WSID-PID	12/31/2019	102.06	12/31/2020	101.82	-0.24	TBD	TBD	TBD
03-005	WSID-PID	12/31/2019	67.37	12/31/2020	67.16	-0.21	TBD	TBD	TBD
03-006	WSID-PID	12/31/2019	55.37	12/31/2020	55.20	-0.17	TBD	TBD	TBD
04-002	WSID-PID	12/31/2019	Site inaccessible	12/31/2020	Site inaccessible	-	TBD	TBD	TBD
04-003	WSID-PID	12/31/2019	102.96	12/31/2020	102.75	-0.21	TBD	TBD	TBD
04-004	WSID-PID	12/31/2019	171.62	12/31/2020	171.38	-0.24	TBD	TBD	TBD
07-019	TRID	2/10/2020	157.74	Data not yet available	-	-	153.77	155.77	< -0.5
07-026	TRID	2/10/2020	160.56	Data not yet available	-	-	156.54	158.54	< -0.5
07-027	TRID	2/10/2020	169.27	Data not yet available	-	-	165.22	167.22	< -0.5

[1] TBD = To be determined

Quantitative sustainable management criteria, including minimum thresholds, measurable objectives, and interim milestones, will be established for the depletions of interconnected surface water sustainability indicator as part of the 5-Year Update to the Northern & Central Delta-Mendota Region GSP in 2025. During WY2020, the Northern and Central Delta-Mendota Regions began development of a framework for establishing the interconnected surface water representative monitoring network and began conducting a well survey/census to identify existing wells proximate to the San Joaquin River in order to fill this data gap. Progress in establishing the interconnected surface water representative monitoring work and quantitative sustainable management criteria will be documented in the WY2021 Annual Report and subsequent Annual Reports.

Following the WY2020 monitoring events, revisions to the representative groundwater level monitoring network, groundwater quality monitoring network, and land subsidence monitoring network have been identified due to site access issues, inability to monitor according to established monitoring protocols, improved understanding of groundwater or site conditions, or other circumstances impacting the ability to implement the original monitoring networks. Revisions to the networks will be implemented during WY2021 and associated monitoring results will be presented in the WY2021 Annual Report. A summary of representative monitoring network revisions is included in **Appendix X**.

Table 7

Table 8 provide updates on projects and management actions, respectively, that occurred in the Northern and Central Delta-Mendota Regions during WY2020. For more detailed descriptions of all projects and management actions, refer to Chapter 7 *Sustainability Implementation* of the Northern & Central Delta-Mendota Region GSP.[12]

[12] The adopted Groundwater Sustainability Plan for the Northern & Central Delta-Mendota Region (November 2019) can be accessed at https://sgma.water.ca.gov/portal/gsp/preview/13.

Table 7. Northern & Central Delta-Mendota Region WY2020 Projects Updates, Tier 1 and Tier 2

Project	Tier	Project Proponent	Status
Los Banos Creek Recharge and Recovery Project	1	San Luis Water District	Preliminary design completed in 2018; Pending funding for CEQA/permitting, design, and construction
Orestimba Creek Recharge and Recovery Project	1	Del Puerto Water District	Preliminary design completed; CEQA/Permitting anticipated to be completed by Fall 2022; Design anticipated to be completed by January 2022; Construction anticipated to be completed by Fall 2023
North Valley Regional Recycled Water Program (NVRRWP) – Modesto and Early Turlock Years	1	Del Puerto Water District	Completed in March 2020
Kaljian Drainwater Reuse Project	1	San Luis Water District	Preliminary Design and CEQA/Permitting anticipated for Fall 2020; Design planned between 2020 and 2025; Construction planned in phases beginning in 2021
West Stanislaus Irrigation District Lateral 4-North Recapture and Recirculation Reservoir	1	West Stanislaus Irrigation District	Feasibility study in progress and anticipated to be completed in 2021
Revision to Tranquillity Irrigation District Lower Aquifer Pumping	1	Tranquillity Irrigation District	Well Water Operations Plan established in 2017 and implemented on an annual basis
Del Puerto Canyon Reservoir Project	2	Del Puerto Water District	Preliminary design is anticipated to be complete in 2021; CEQA/Permitting and Design are anticipated to be complete in 2024; Construction is estimated to be complete in 2028
Little Salado Creek Groundwater Recharge and Flood Control Basin	2	Stanislaus County	Scheduled for development in subsequent phases of the Crows Landing Industrial Business Park
Patterson Irrigation District Groundwater Bank and/or Flood-Managed Aquifer Recharge (MAR)-type Project	2	Patterson Irrigation District	Feasibility study to be complete in 2021

Table 8. Northern & Central Delta-Mendota Region WY2020 Management Actions Updates, Tier 1

Management Action	Status
Lower Aquifer Pumping Rules for Minimizing Subsidence	GSAs have been coordinating on completing lower aquifer pumping rules, as appropriate, and developing rules to increase GSA access to and input into on well permits. Drought contingency planning in urban areas will be conducted on a city-specific basis as part of the upcoming 2020 Urban Water Management Plans.
Maximize Use of Other Water Supplies	
Increasing GSA Access to and Input on Well Permits	
Drought Contingency Planning in Urban Areas	
Fill Data Gaps	

During WY2020, the Northern and Central Delta-Mendota GSAs worked collaboratively to implement the Fill Data Gaps management action. The Northern and Central Delta-Mendota GSAs are participating in the subbasin-wide Well Census and Inventory project and Subsidence Characterization and Project Feasibility Determination project, described in further detail in **Section 6.7**. Additionally, the Northern and Central Delta-Mendota GSAs are working to identify well locations and construction information within their districts in collaboration with landowners. In July 2020, one nested (4 depth interval) monitoring well was installed in the Central Delta-Mendota GSA service area under DWR's Technical Support Services program which will be incorporated into the groundwater levels and groundwater quality representative monitoring networks during WY2021.

The Northern and Central Delta-Mendota GSAs continued to hold regular board and council meetings (with topics including GSP implementation updates) as well as Northern and Central Delta-Mendota Activity Management Committees meetings during WY 2020 according to the Brown Act, despite the COVID-19 pandemic. Individual GSAs included SGMA/GSP information with water bills to customers, on their respective websites, and/or as part of noticing of local board and council meetings. The Northern and Central Delta-Mendota Region GSAs also contributed towards publishing and distribution of the Subbasin Quarterly Stakeholder Newsletter throughout WY2020 and maintaining updated meeting and GSP information on their website. GSAs in the Northern and Central Delta-Mendota Regions are committed to continued implementation of the GSP in an open and transparent process.

6.6 San Joaquin River Exchange Contractors GSP Region Progress

The SJREC have been sustainably managing groundwater. Groundwater management for the second annual report is consistent with the SJREC GSP submitted to DWR in January 2020.

Projects and Management Actions will continually be reviewed and implemented to maintain regional sustainability.

The SJREC have partnered with Del Puerto Water District to expand the Orestimba Creek Recharge and Recovery project to reduce impacts to lands in their respective districts which are subject to multiple hazards including flooding and drought. The California Department of Water Resources has awarded Central California Irrigation District (CCID) $809,264 through the Integrated Regional Water Management (IRWM) Grant Program. In February 2021, CCID was awarded an additional $5,597,986 through the Proposition 1 Storm Water Grant Program, Round 2 Implementation Grant by the State Water Resources Control Board for the project. The project is currently under Design and Environmental review with construction scheduled in 2022. One component of the project includes reducing flood impacts through capturing and recharging some of the Orestimba Creek flood flows before they reach the City of Newman; a DAC. The total 80-acre facility is expected to recharge up to 15,000 acre-feet per year to provide enhanced water resource management through drought periods.

The SJREC have partnered with Grassland Water District (GWD) and San Luis Water District (SLWD) on the Los Banos Creek Storage Project. A Proof-of-Concept project to convey project participant water into available storage in the Los Banos Creek Detention Reservoir is scheduled for WY2022. The project includes the installation of a temporary pipeline and filter station to convey project participant water from an existing SLWD facility into the reservoir. More details on the Proof-of-Concept will be included in the next annual report.

During WY2021, SJREC added four sites to its representative subsidence monitoring network. These sites include PT 150, PT 146, PT AC5729, and PT 129, which are monitored by the Bureau of Reclamation as part of the San Joaquin River Restoration Program (data available at https://www.restoresjr.net/science/subsidence-monitoring/). SJREC will access data from these sites collected by the Bureau of Reclamation on an annual basis beginning during WY2021 and will submit collected data to the Delta-Mendota Subbasin DMS as well as DWR's SGMA Monitoring Network Module.

6.7 Subbasin-Wide GSP Progress

During WY2020, the six Delta-Mendota Subbasin GSP groups completed and submitted the WY2019 Consolidated Annual Report to DWR on April 1, 2020. Additionally, the Delta-Mendota Subbasin GSP groups initiated the Well Census and Inventory project and Subsidence Characterization and Project Feasibility Determination project, both of which are funded under the Proposition 68 Sustainable Groundwater Management Planning Grant – Round 3.

The Well Census and Inventory project includes a subbasin-wide well census and development of a well inventory to identify wells and their associated construction not previously identified

as part of GSP development. The Well Census project will summarize the results in a report showing locations of existing wells in the Subbasin, basic well construction information, and an analysis of identified wells to define active and inactive wells for use in other analyses. The Well Census and Inventory Report is anticipated to be complete by December 2021. An update on project progress will be included in the WY2021 Annual Report with a summary of findings of the completed project to be included in the WY2022 Annual Report.

The Subsidence Characterization and Project Feasibility Determination project (or Subsidence Study) will identify areas of concern for inelastic land subsidence in the Subbasin using existing data sources (both publicly-available and collected as part of GSP implementation) to inform the subsidence causation evaluation and tool development. Input from Subbasin GSAs will be used to recommend wells for installation of flow totalizing meters, transducers, and/or other instrumentation and/or benchmarks and/or extensometers to establish a correlation between groundwater use, groundwater levels, and subsidence. A Master Plan will be developed to address additional data collection needs, tool development, potential projects and management actions, and the timing and cost estimates for implementation. The Subsidence Study is anticipated to be complete in February 2022. An update on project progress will be included in the WY2021 Annual Report with a summary of findings of the completed project to be included in the WY2022 Annual Report.

Representatives of the six Delta-Mendota GSP groups continued to meet monthly as part of the Delta-Mendota Coordination Committee, with meeting notices, agenda and minutes posted on the Delta-Mendota Subbasin website (www.deltamendota.org). The six GSP groups have also worked to prepare and issue quarterly newsletters providing updated information on GSP implementation progress in the Subbasin. These newsletters are also available on the Subbasin website.

Appendix A. Hydrographs for Representative Monitoring Wells

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Table A-1. Chronic Lowering of Groundwater Levels Representative Monitoring Wells, by GSP Group

DMS Site ID	Local Well ID	Aquifer Designation	GSP Group
09-001	2480-72	Upper	Aliso Water District GSP
09-002	12S16E31G001M	Upper	Aliso Water District GSP
09-003	13S15E14M001M	Upper	Aliso Water District GSP
09-004	13S16E30A001M	Upper	Aliso Water District GSP
10-001		Upper	Farmers Water District GSP
12-001	SPRECK-MW-7	Upper	Fresno County GSP
13-001	HANS-7C1	Upper	Fresno County GSP
13-002	KRCDA06	Upper	Fresno County GSP
13-003	TL-HS-3	Upper	Fresno County GSP
13-004	USGS-31J6	Lower	Fresno County GSP
11-001	WF 300	Lower	Grassland GSP
11-002	WF 530	Lower	Grassland GSP
11-003	WF 630	Lower	Grassland GSP
11-004	WF 730	Lower	Grassland GSP
11-005	V1 Deep	Lower	Grassland GSP
11-006	V2 Deep	Lower	Grassland GSP
11-007	V1 Shall	Upper	Grassland GSP
11-008	V1 mid	Upper	Grassland GSP
11-009	V2 Shall	Upper	Grassland GSP
11-013	BSS	Upper	Grassland GSP
11-014		Upper	Grassland GSP
11-015		Upper	Grassland GSP
11-016		Upper	Grassland GSP
11-017		Upper	Grassland GSP
19-003	AB	Upper	Grassland GSP
01-001	MP030.43R	Lower	Northern & Central Delta-Mendota Region GSP
01-002	MP033.71L	Lower	Northern & Central Delta-Mendota Region GSP
01-003	MP45.78R	Lower	Northern & Central Delta-Mendota Region GSP
01-004	MC10#2	Upper	Northern & Central Delta-Mendota Region GSP
01-005	MP058.28L	Upper	Northern & Central Delta-Mendota Region GSP
01-006	91	Lower	Northern & Central Delta-Mendota Region GSP
01-007	MP021.12L	Lower	Northern & Central Delta-Mendota Region GSP
01-008	MP051.66L	Lower	Northern & Central Delta-Mendota Region GSP
02-001	MP037.32L	Upper	Northern & Central Delta-Mendota Region GSP
02-002	WELL 02 - NORTH 5TH STREET	Lower	Northern & Central Delta-Mendota Region GSP
03-001	PIDMW2	Upper	Northern & Central Delta-Mendota Region GSP
03-002	MW-3	Upper	Northern & Central Delta-Mendota Region GSP
03-003	WSJ003	Upper	Northern & Central Delta-Mendota Region GSP
04-001	121	Lower	Northern & Central Delta-Mendota Region GSP
06-001	P259-1	Lower	Northern & Central Delta-Mendota Region GSP
06-002	P259#3	Upper	Northern & Central Delta-Mendota Region GSP
06-003	WSID3	Lower	Northern & Central Delta-Mendota Region GSP
06-004	MP031.31L1-L2Well1	Upper	Northern & Central Delta-Mendota Region GSP
07-002	MC15-1	Lower	Northern & Central Delta-Mendota Region GSP
07-003	MC15-2	Upper	Northern & Central Delta-Mendota Region GSP
07-004	MP81.08R	Upper	Northern & Central Delta-Mendota Region GSP
07-005	MP091.68R	Lower	Northern & Central Delta-Mendota Region GSP
07-006	MP094.26L	Lower	Northern & Central Delta-Mendota Region GSP
07-007	MC18-1	Lower	Northern & Central Delta-Mendota Region GSP
07-008	PWD 48	Lower	Northern & Central Delta-Mendota Region GSP
07-009	KRCDTID03	Upper	Northern & Central Delta-Mendota Region GSP
07-010	KRCDTID02	Upper	Northern & Central Delta-Mendota Region GSP
07-011	MP099.24L	Upper	Northern & Central Delta-Mendota Region GSP
07-012	GDA003	Upper	Northern & Central Delta-Mendota Region GSP
07-014	TW-4	Lower	Northern & Central Delta-Mendota Region GSP
07-015	TW-5	Lower	Northern & Central Delta-Mendota Region GSP
07-016	Well 01	Lower	Northern & Central Delta-Mendota Region GSP
07-017	Well 1	Upper	Northern & Central Delta-Mendota Region GSP
07-018	WSJ001	Upper	Northern & Central Delta-Mendota Region GSP
08-001	MP102.04R	Upper	Northern & Central Delta-Mendota Region GSP
07-001	MC15-2	Upper	San Joaquin River Exchange Contractors GSP
14-001	CCID Well #2	Upper	San Joaquin River Exchange Contractors GSP
14-002	1005	Upper	San Joaquin River Exchange Contractors GSP
14-003	1006	Upper	San Joaquin River Exchange Contractors GSP
14-004	1008	Upper	San Joaquin River Exchange Contractors GSP
14-005	1011	Upper	San Joaquin River Exchange Contractors GSP
14-006	1014	Upper	San Joaquin River Exchange Contractors GSP
14-007	1043	Upper	San Joaquin River Exchange Contractors GSP
14-008	2410	Upper	San Joaquin River Exchange Contractors GSP
23-001	3199	Upper	San Joaquin River Exchange Contractors GSP

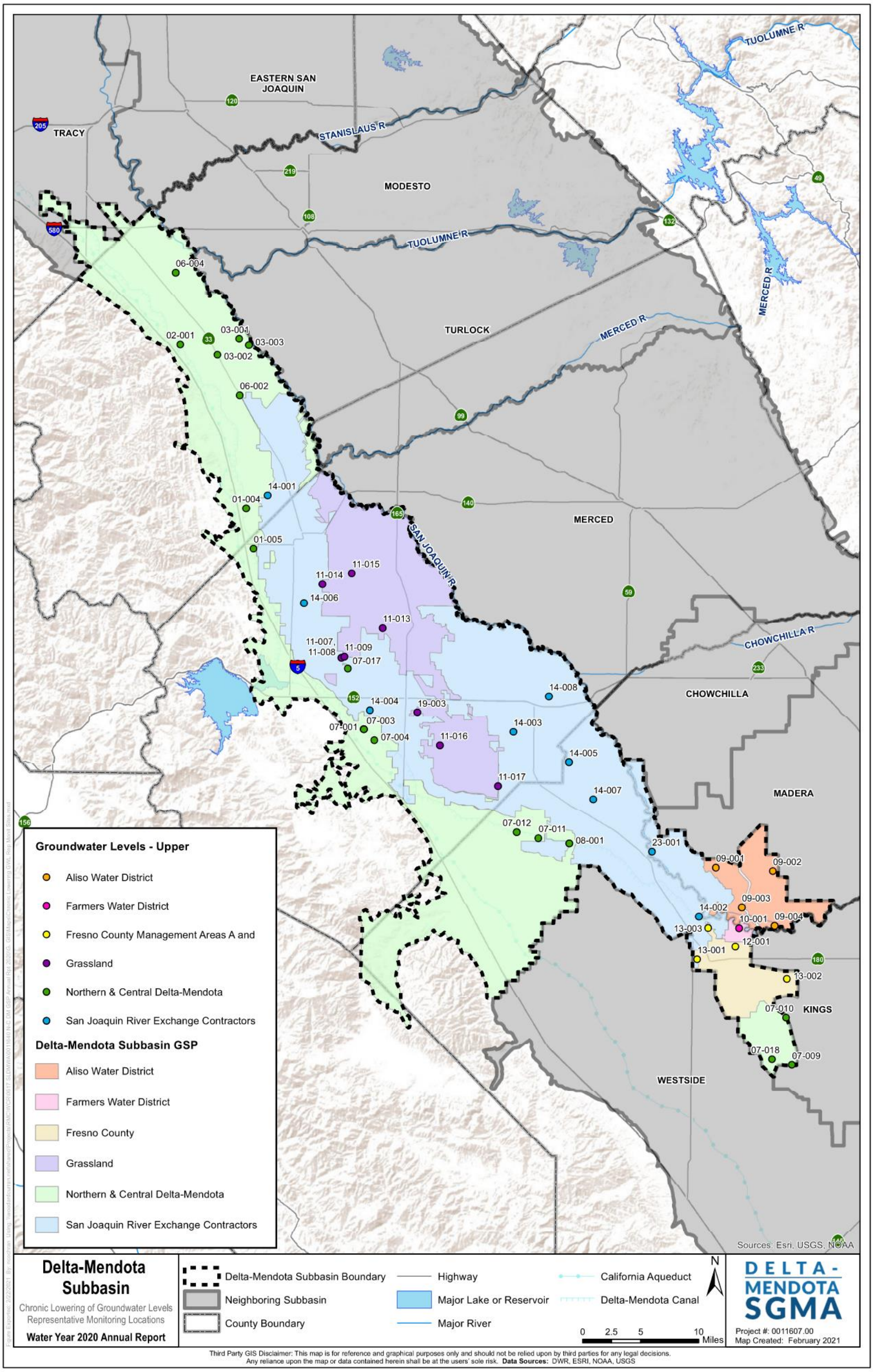


Figure A-1. Chronic Lowering of Groundwater Levels Representative Monitoring Network, Upper Aquifer

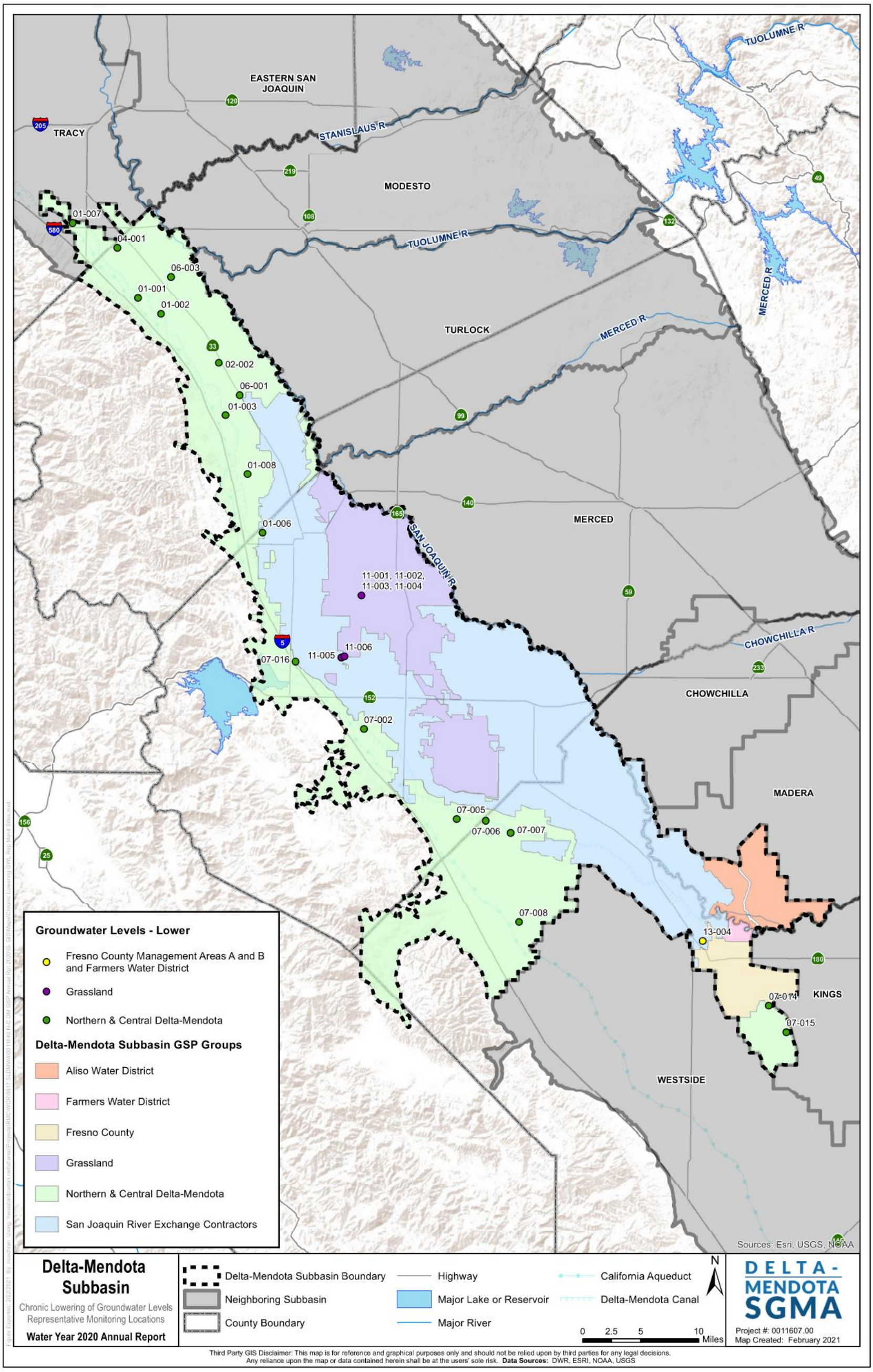
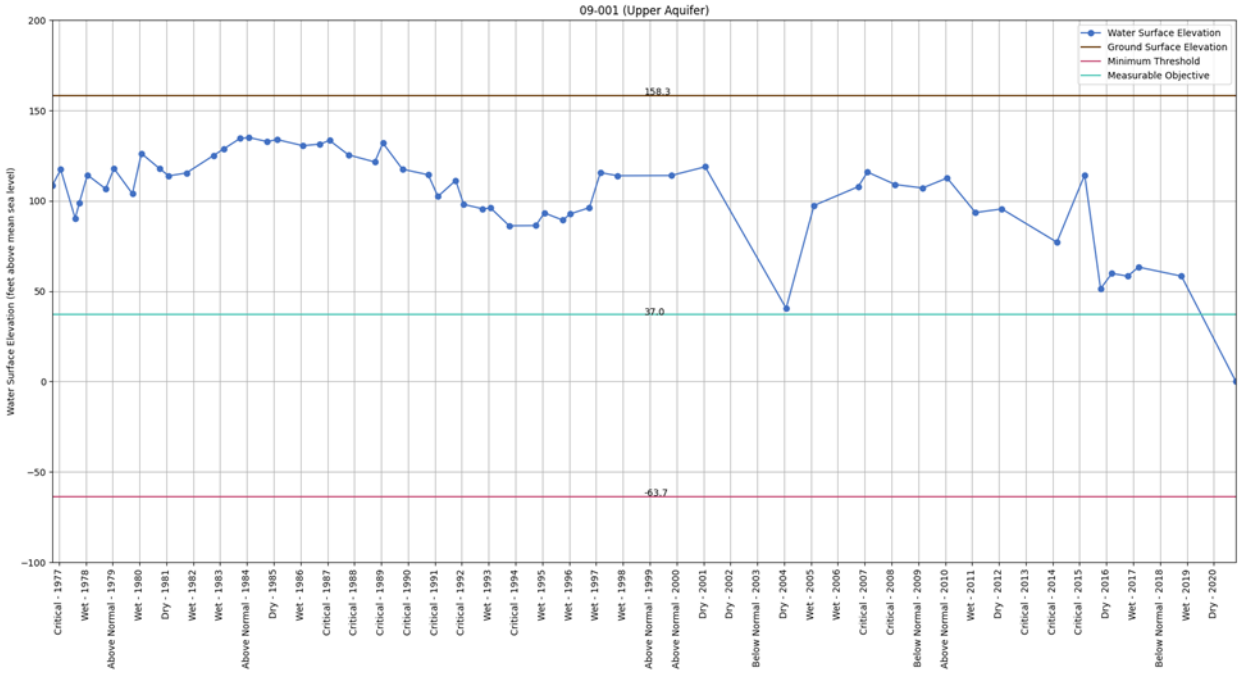
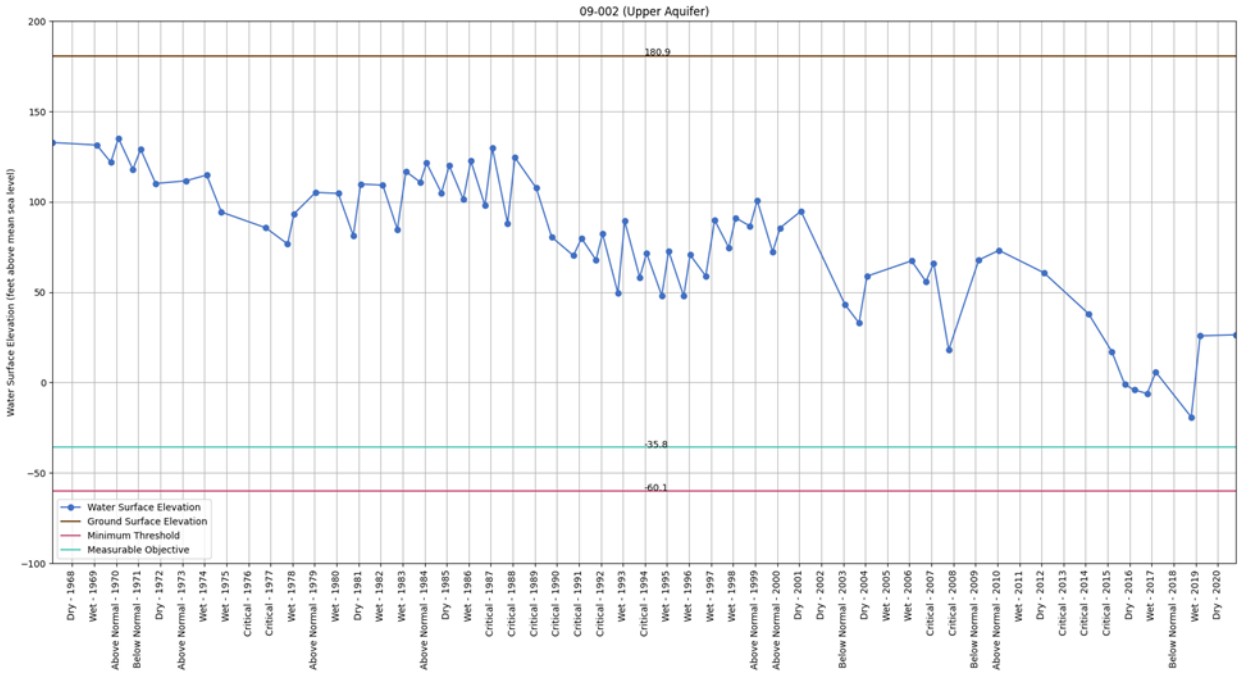
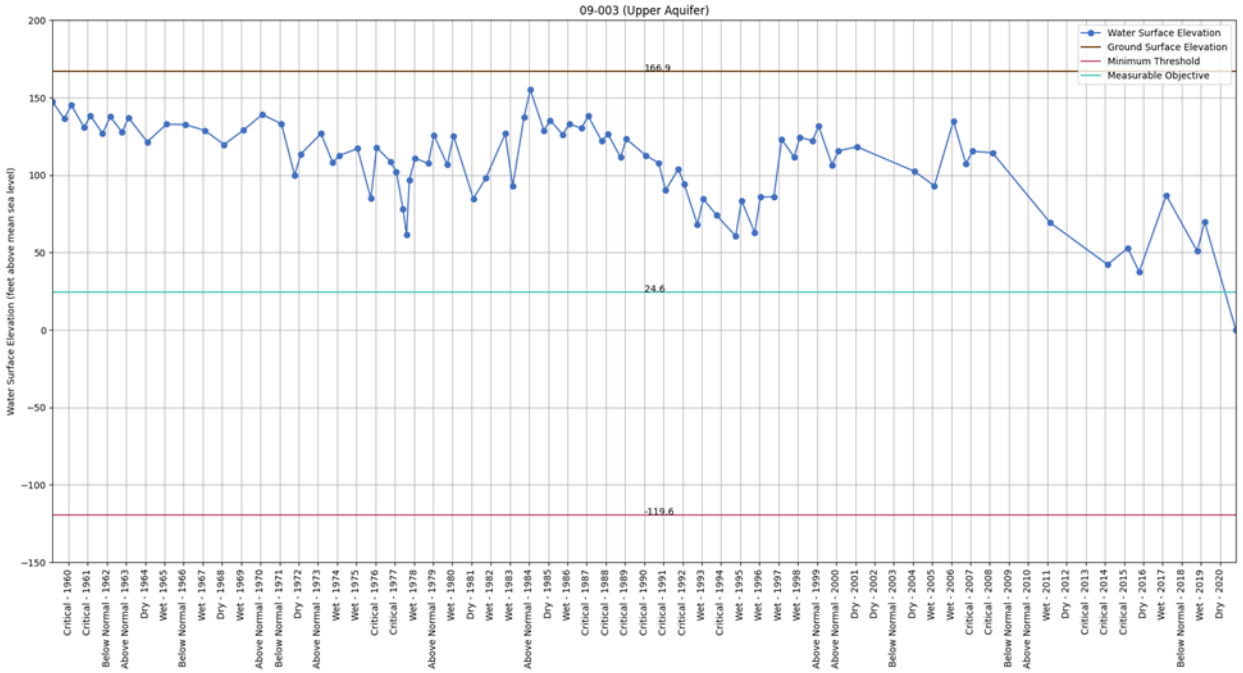
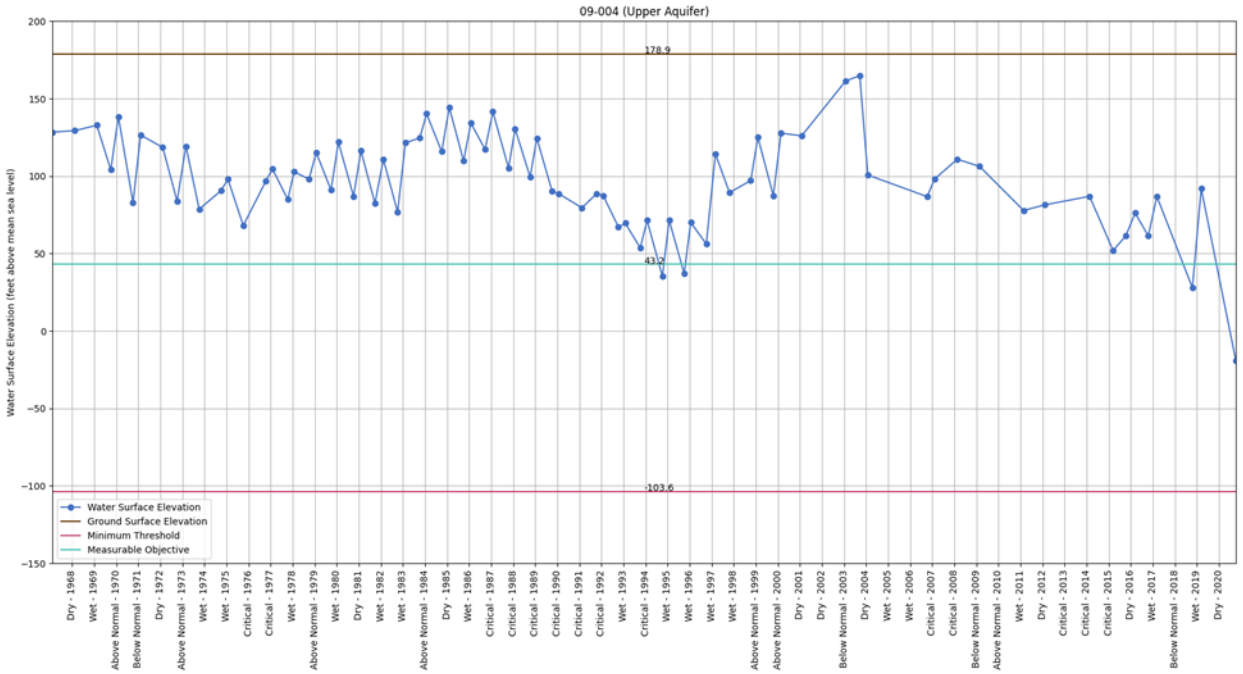


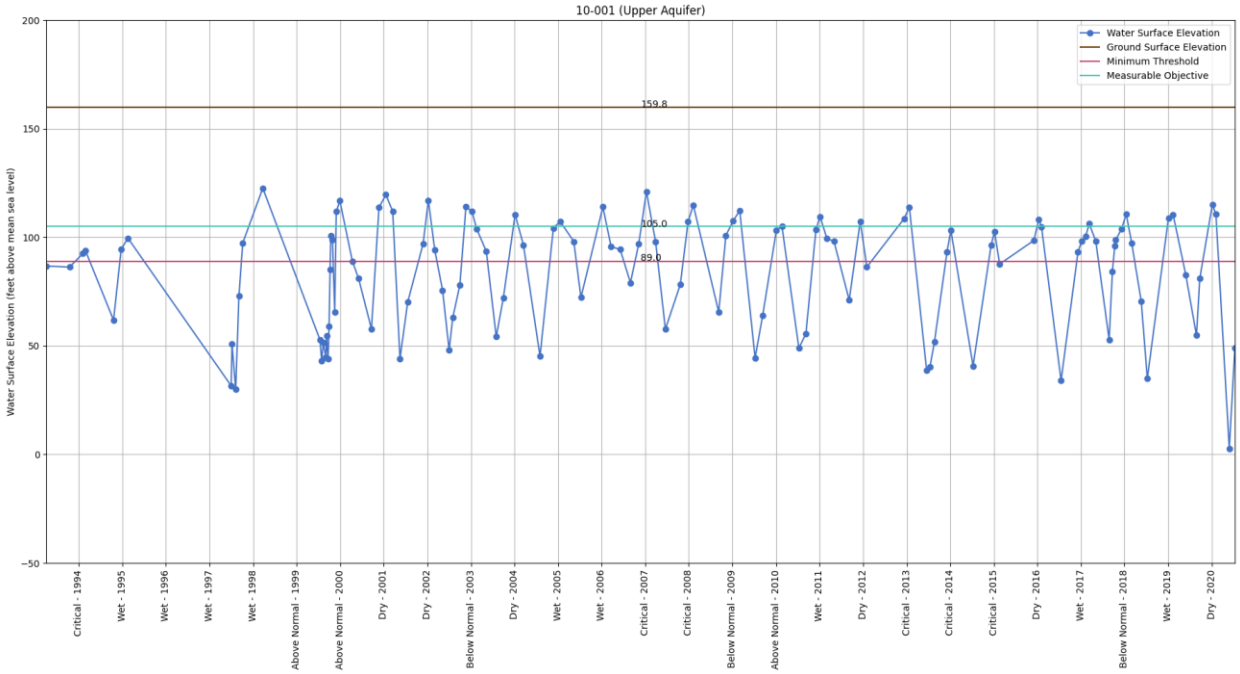
Figure A-2. Chronic Lowering of Groundwater Levels Representative Monitoring Network, Lower Aquifer

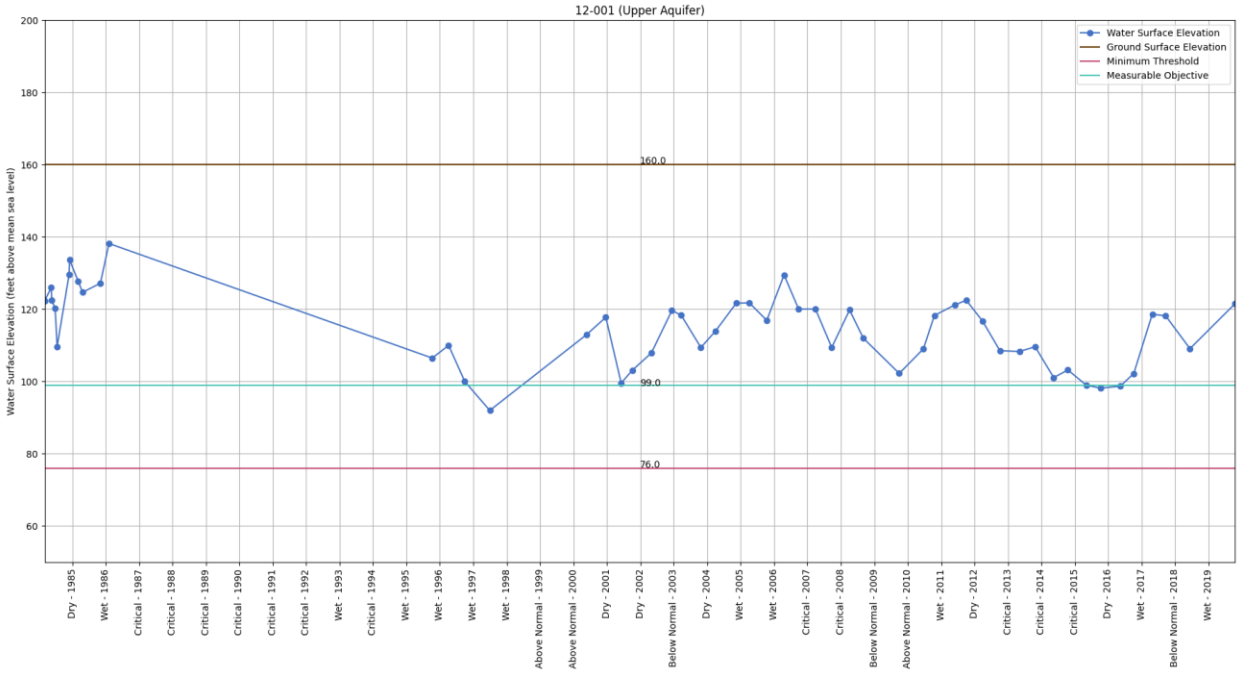

09-001 (Upper Aquifer)
Water Surface Elevation (feet above mean sea level)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
158.3
37.0
-63.7

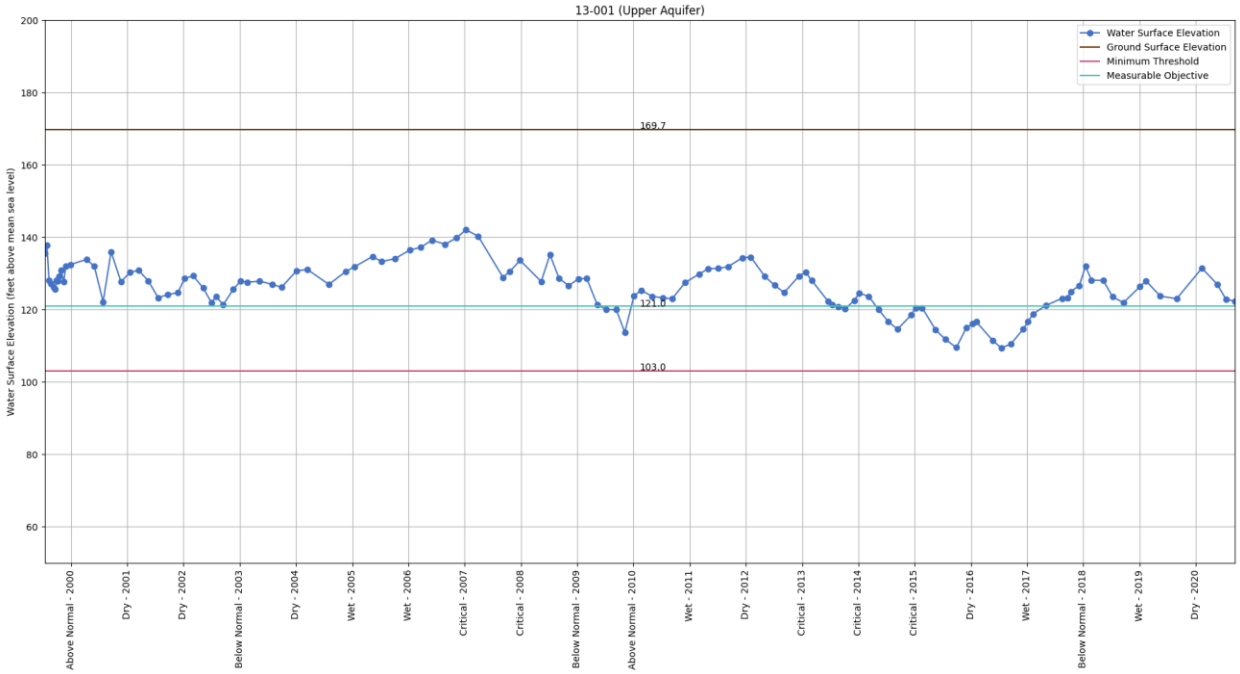

09-002 (Upper Aquifer)
Water Surface Elevation (feet above mean sea level)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
180.9
-35.8
-60.1

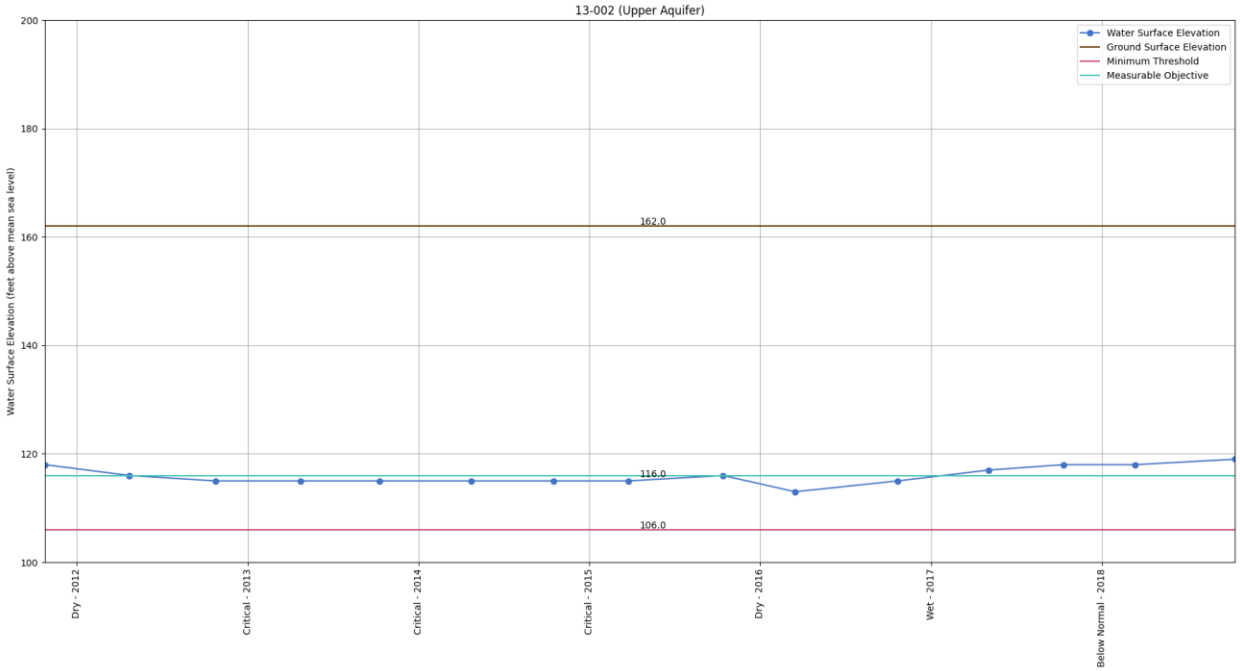

09-003 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
166.9
24.6
-119.6
Water Surface Elevation (feet above mean sea level)

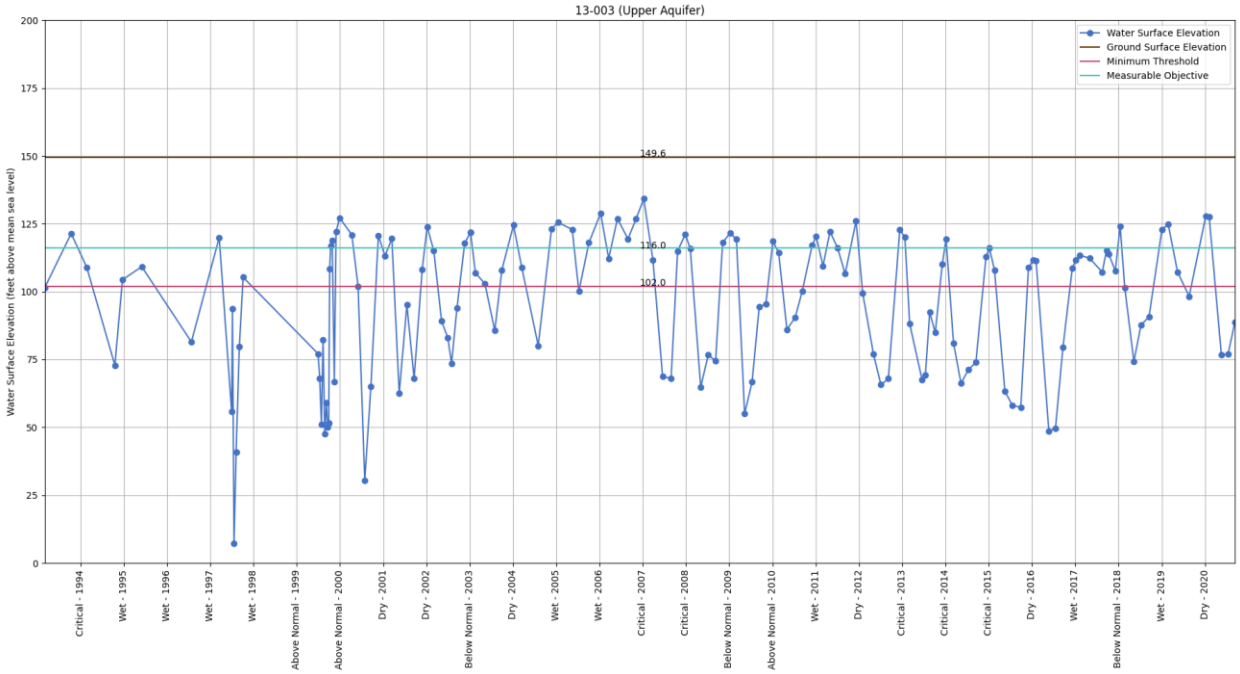

09-004 (Upper Aquifer)
178.9
43.2
-103.6
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)

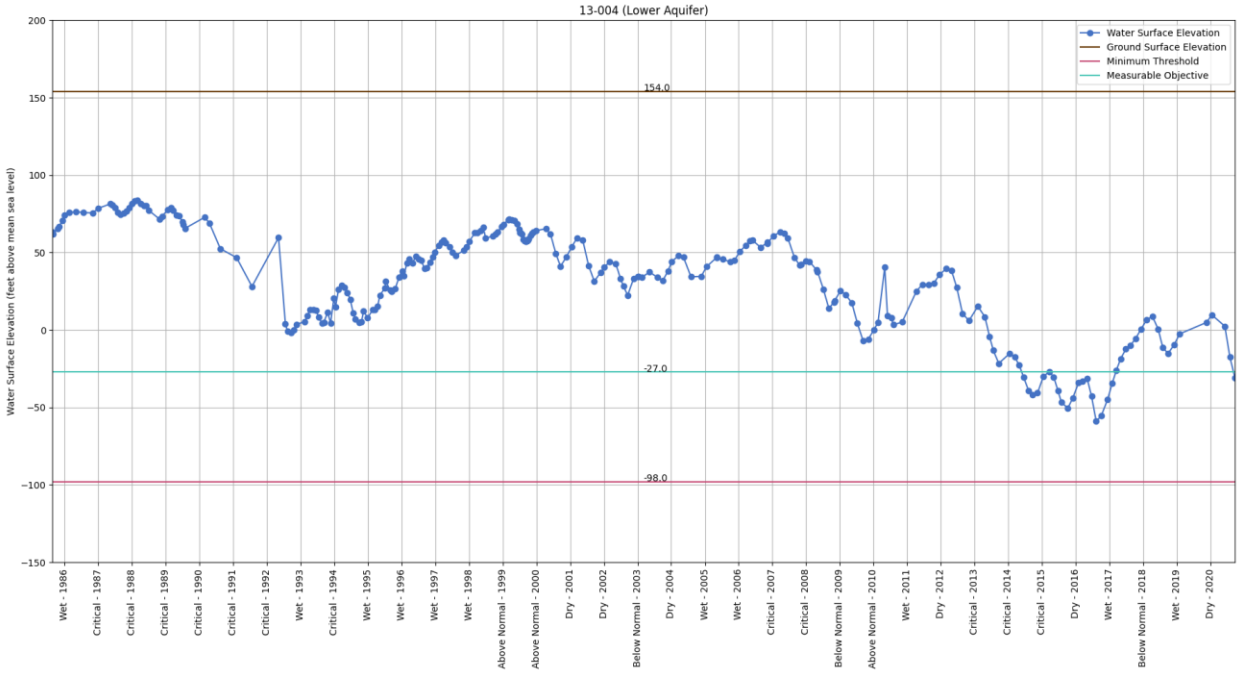

10-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
159.8
105.0
89.0
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

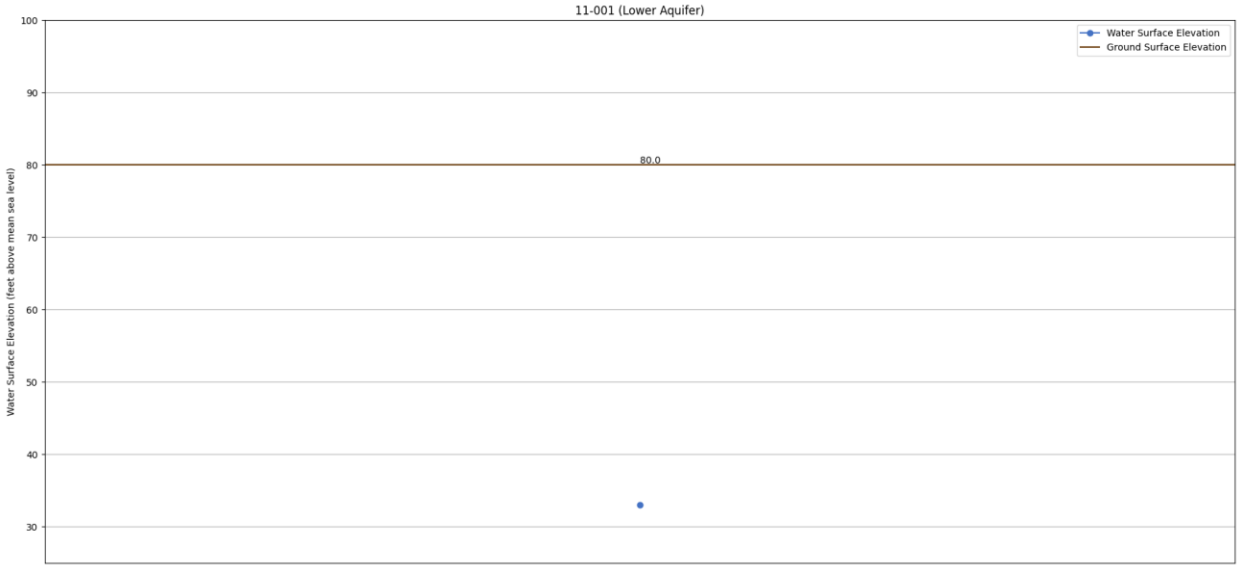

12-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
160.0
99.0
76.0
Water Surface Elevation (feet above mean sea level)
200
180
160
140
120
100
80
60
Dry - 1985
Wet - 1986
Critical - 1987
Critical - 1988
Critical - 1989
Critical - 1990
Critical - 1991
Critical - 1992
Wet - 1993
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019


13-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
169.7
121.0
103.0
200
180
160
140
120
100
80
60
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

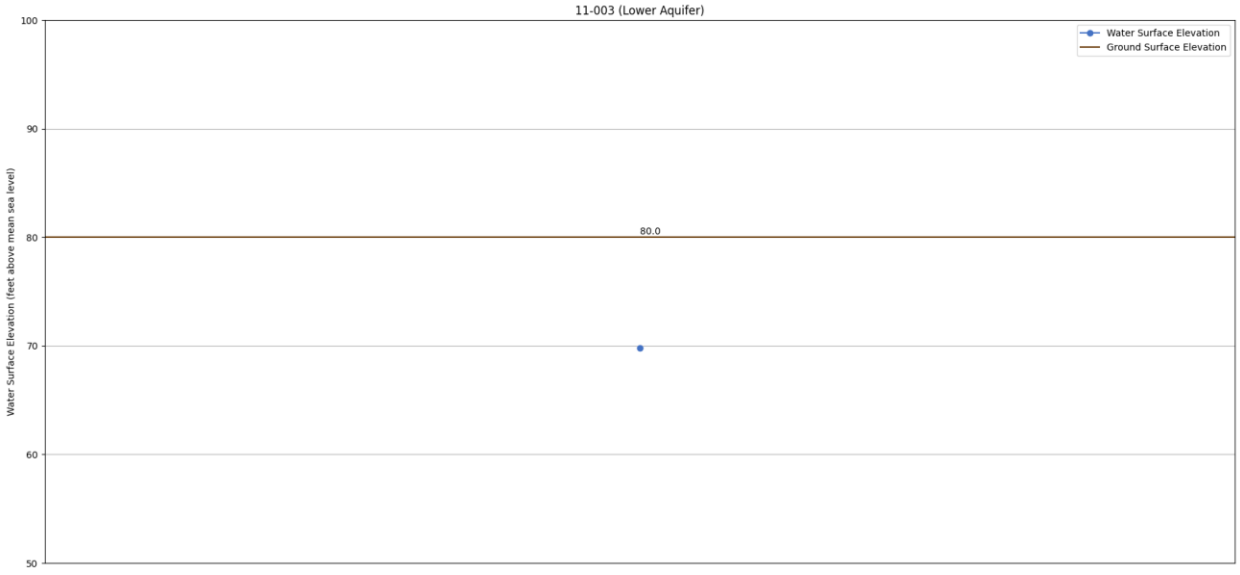

13-002 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
162.0
116.0
106.0
200
180
160
140
120
100
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018

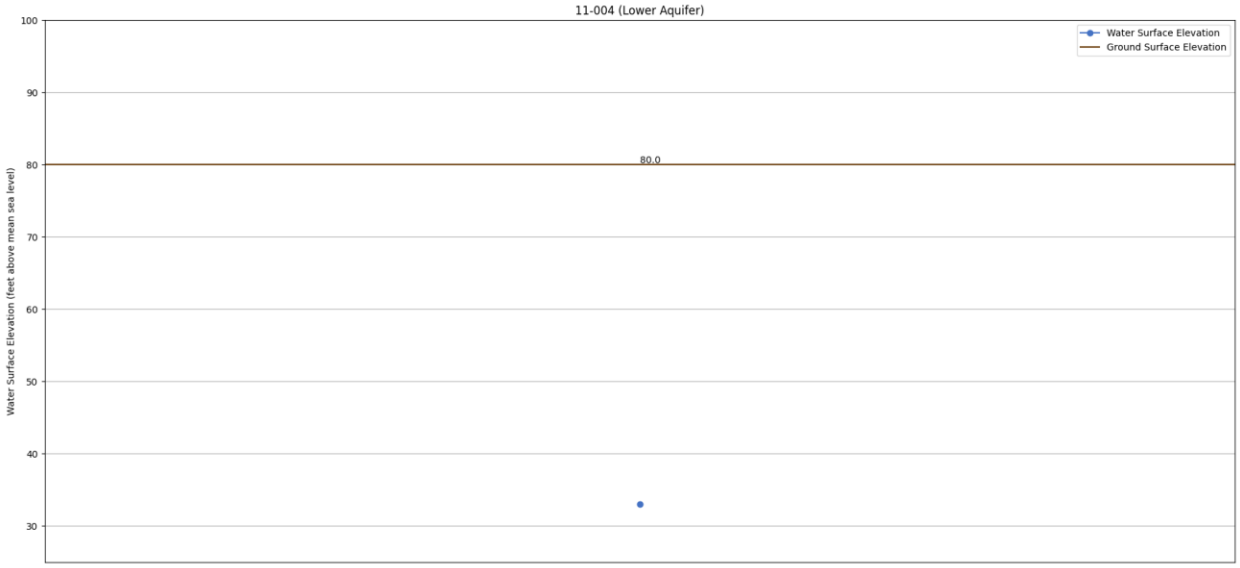

13-003 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
149.6
116.0
102.0
Water Surface Elevation (feet above mean sea level)
200
175
150
125
100
75
50
25
0
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

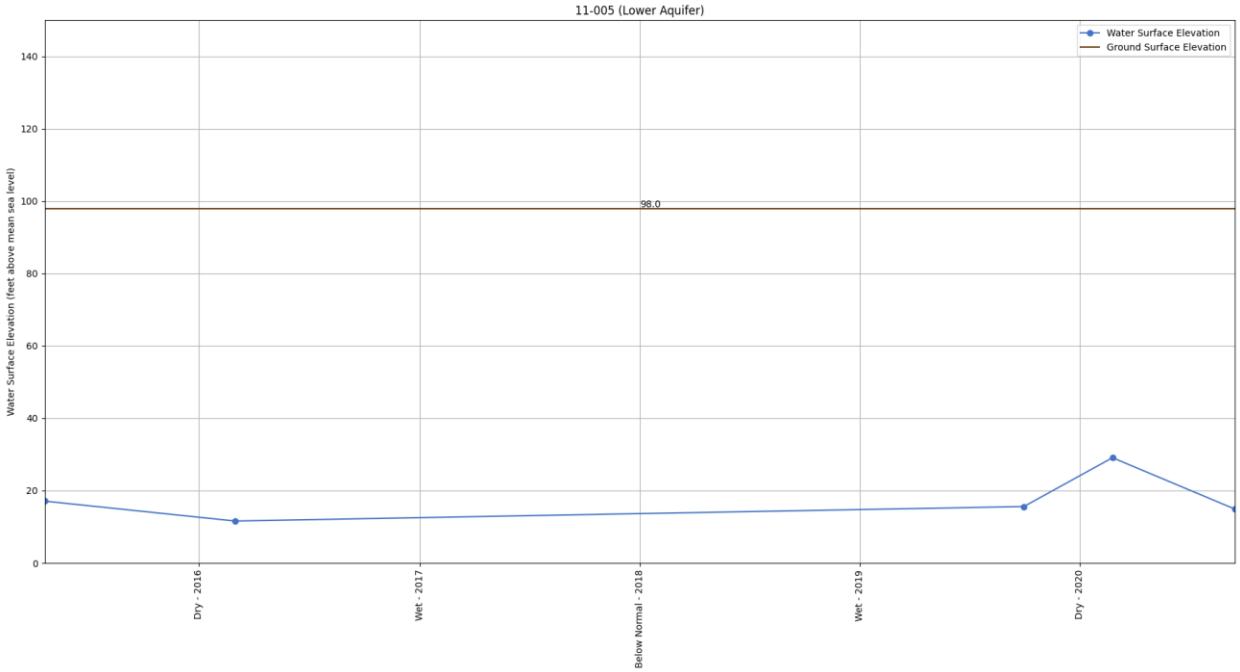

13-004 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
154.0
-27.0
-98.0
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
−150
Wet - 1986
Critical - 1987
Critical - 1988
Critical - 1989
Critical - 1990
Critical - 1991
Critical - 1992
Wet - 1993
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

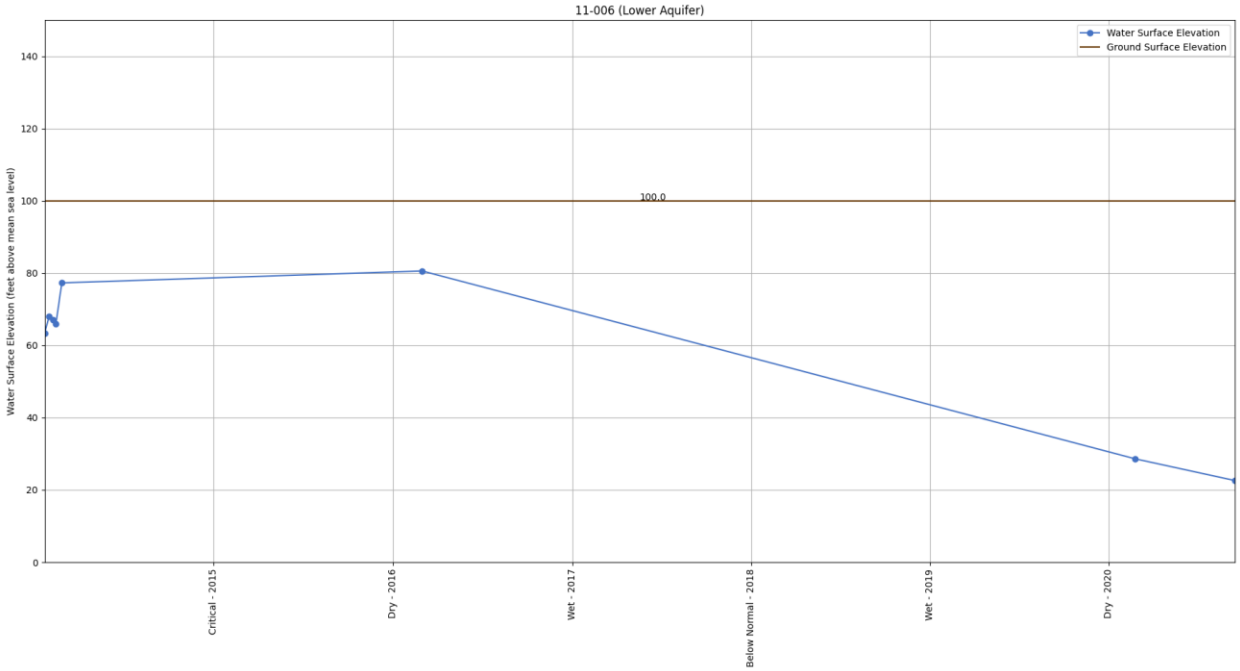

11-001 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
40
30
80.0

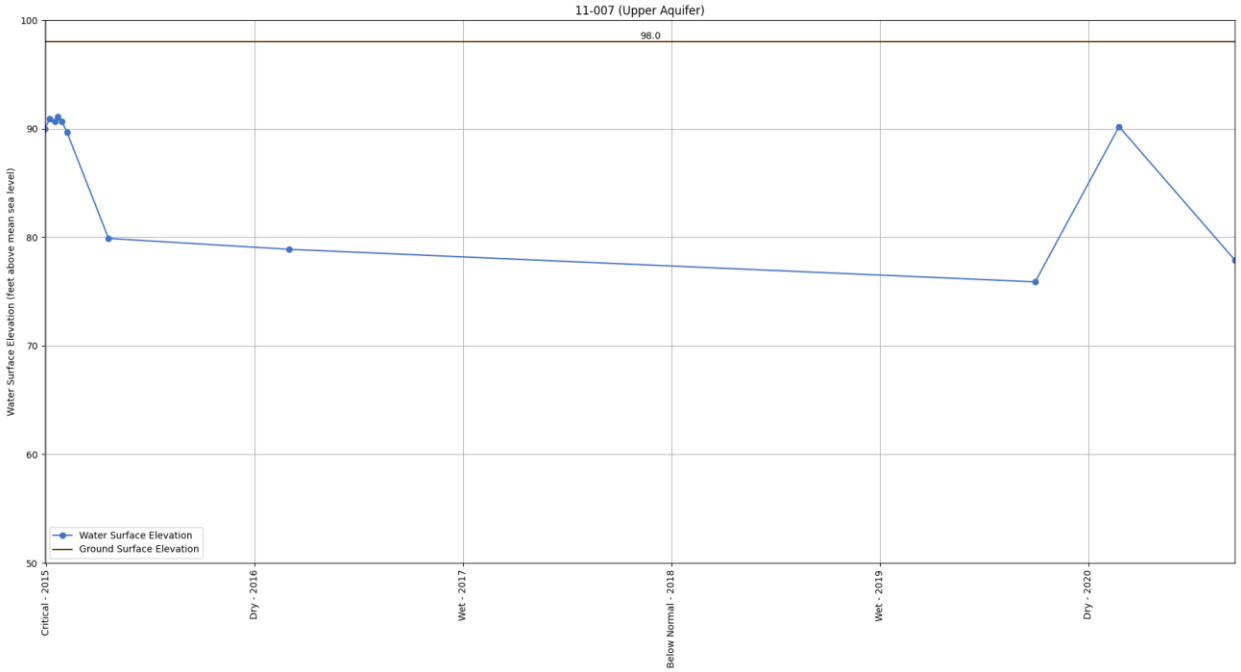
11-002 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
40
30
80.0

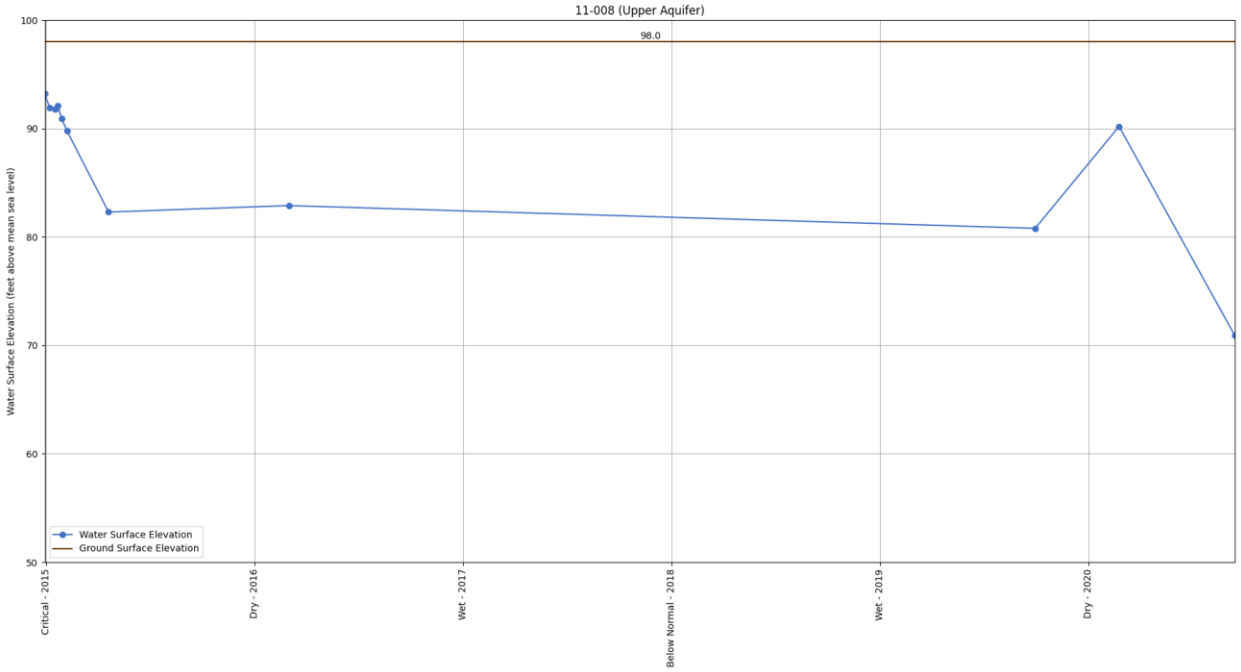

11-003 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
80.0

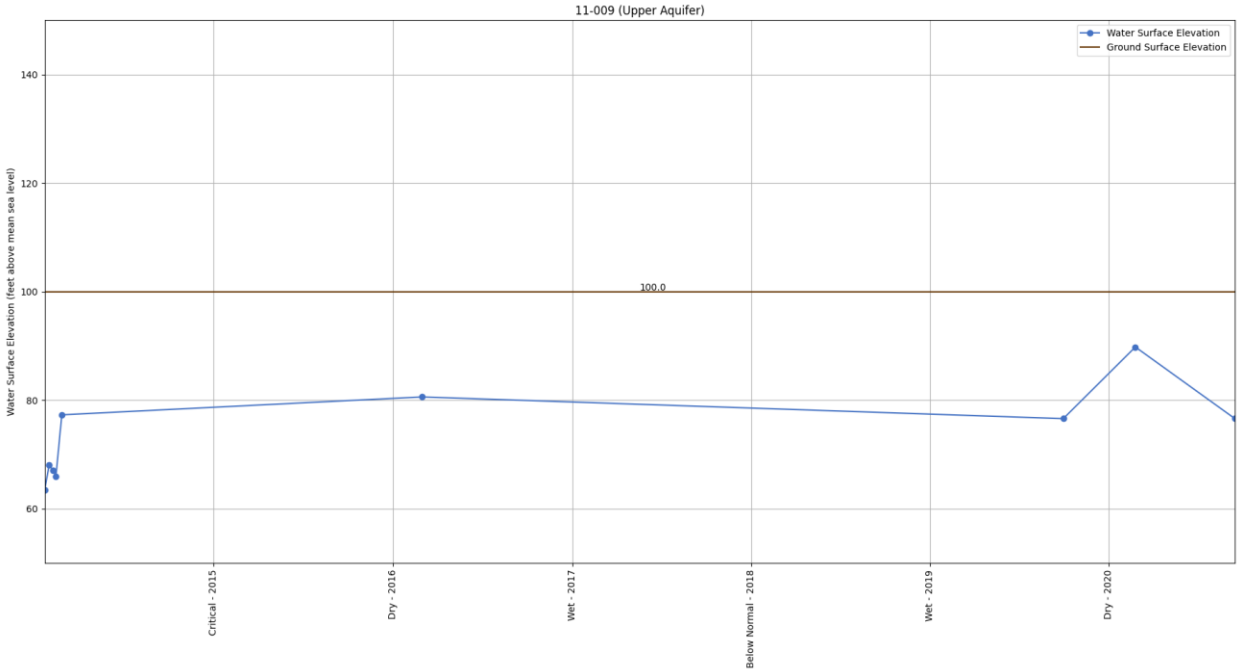

11-004 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
40
30
80.0

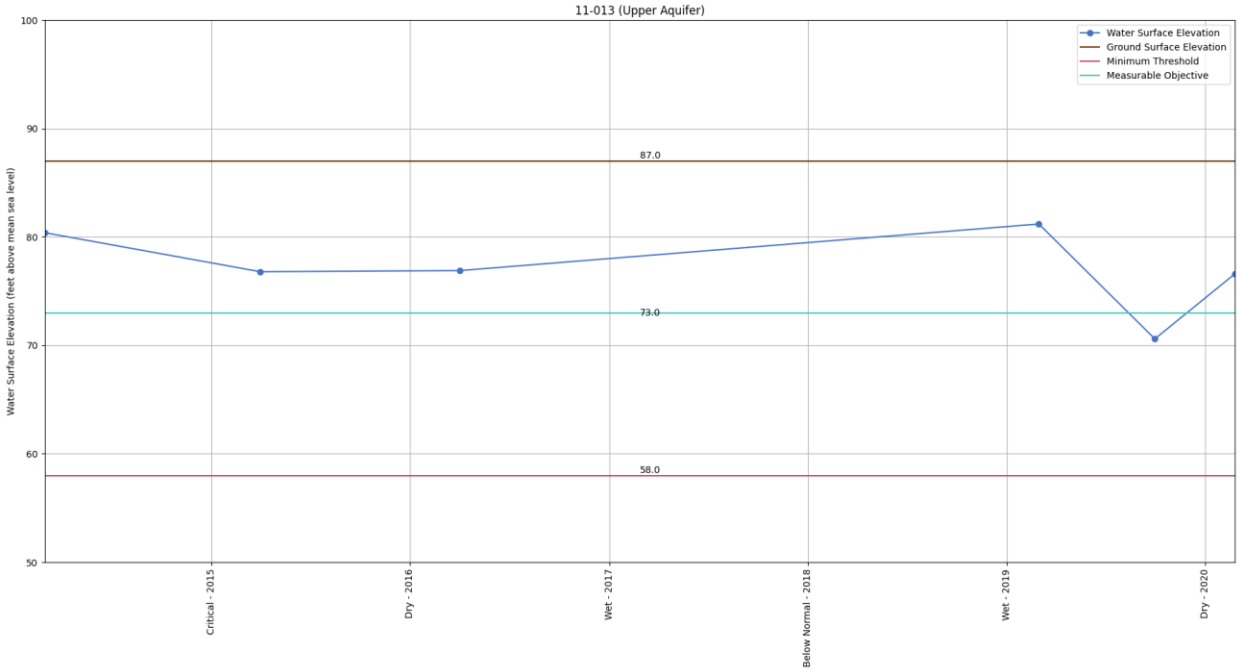

11-005 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
98.0
0
20
40
60
80
100
120
140
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

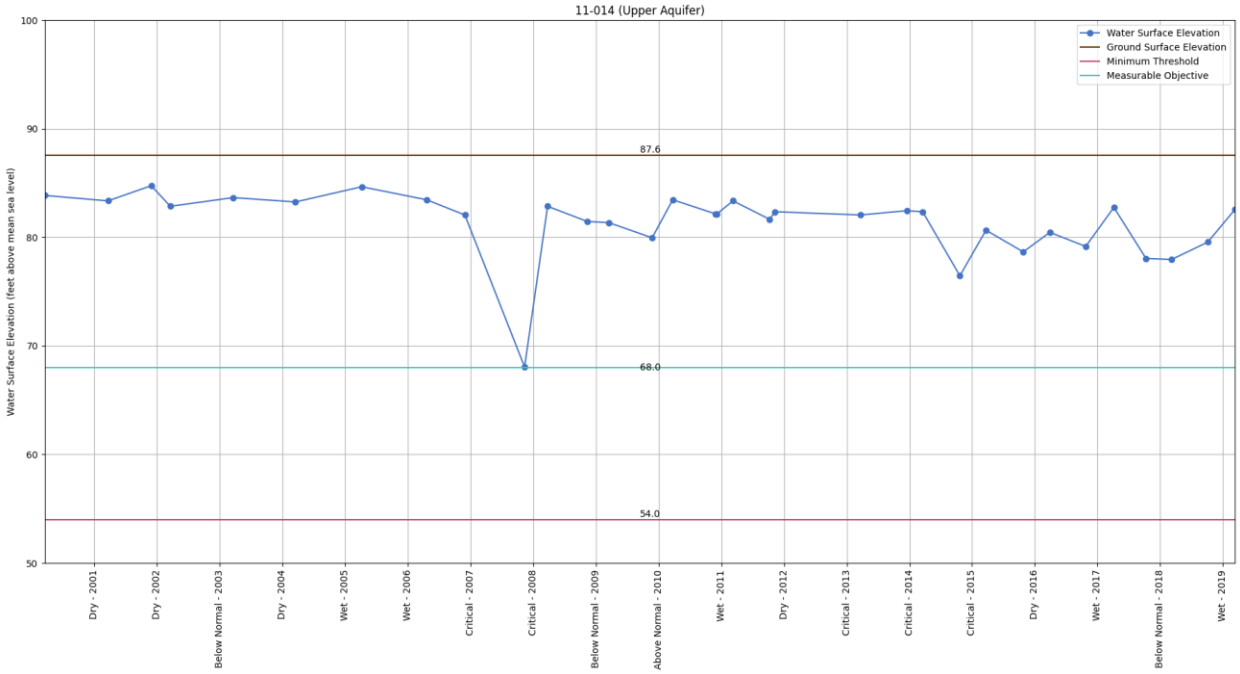

11-006 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
100.0
0
20
40
60
80
100
120
140
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

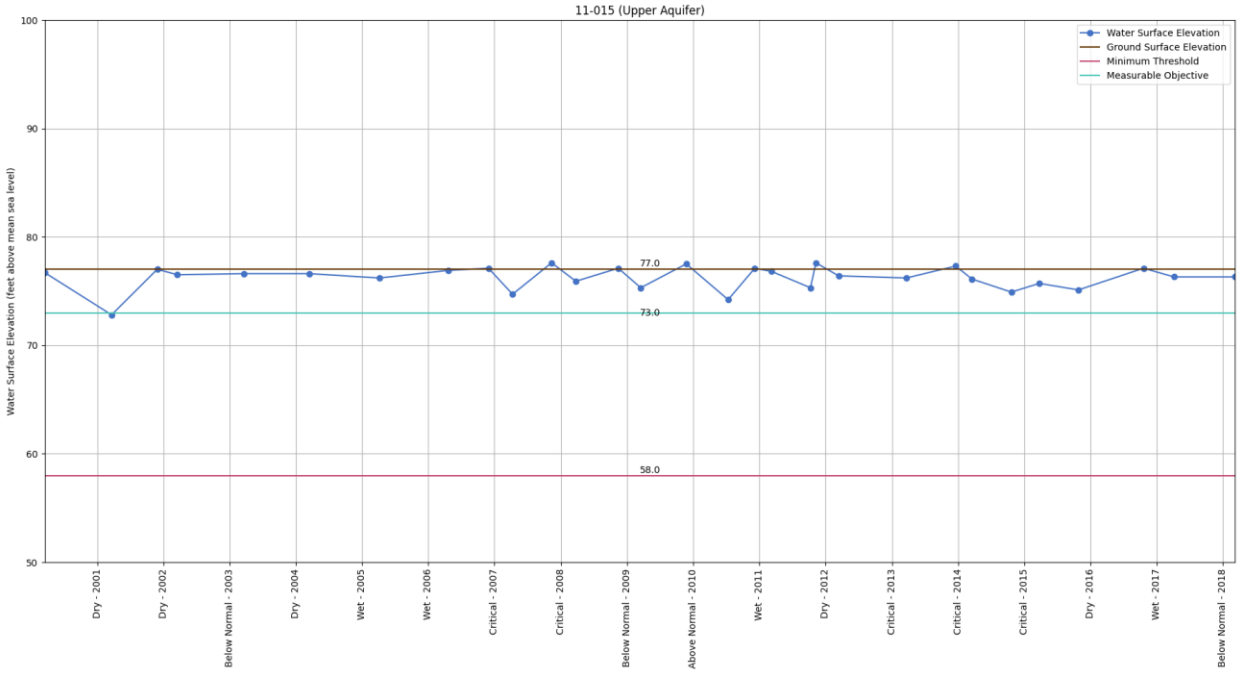

11-007 (Upper Aquifer)
98.0
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
Water Surface Elevation
Ground Surface Elevation
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

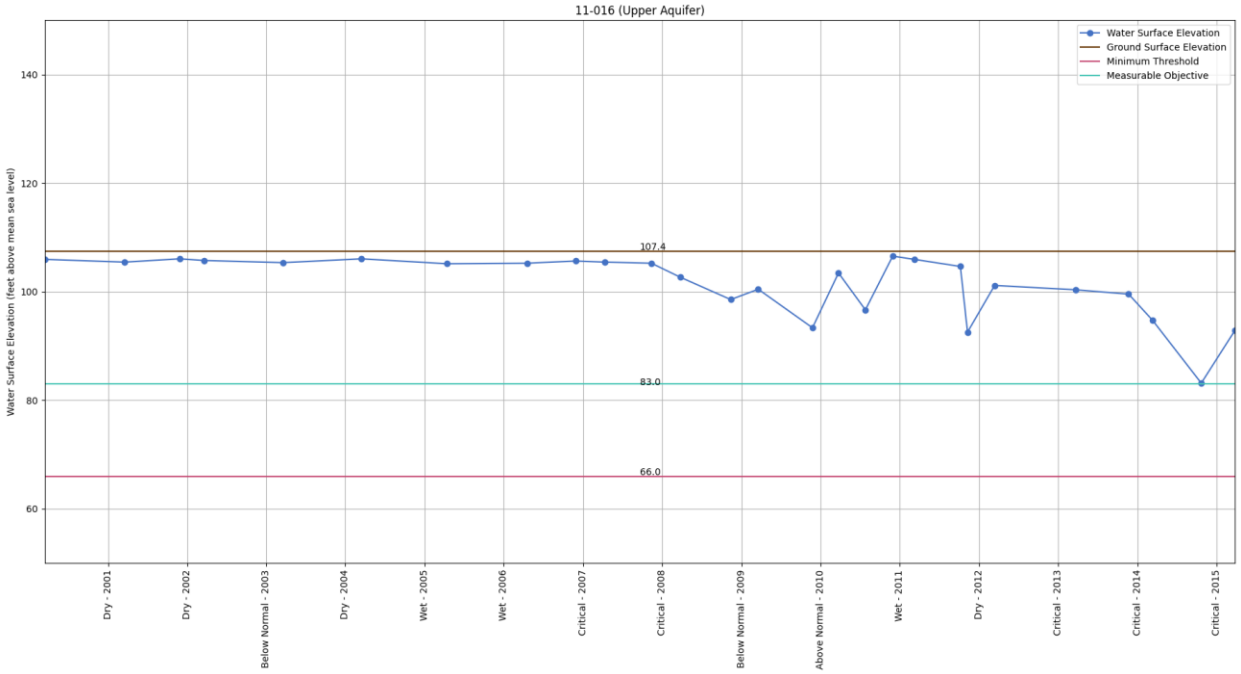

11-008 (Upper Aquifer)
98.0
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
Water Surface Elevation
Ground Surface Elevation
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

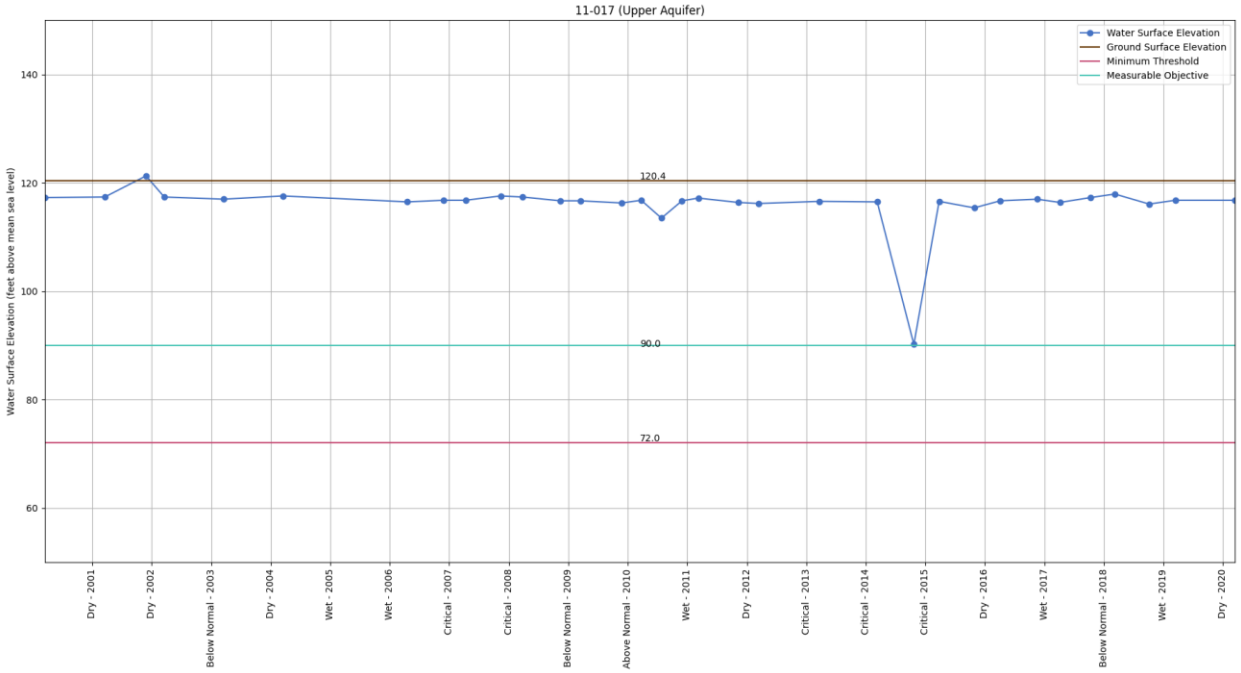

11-009 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
100.0
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

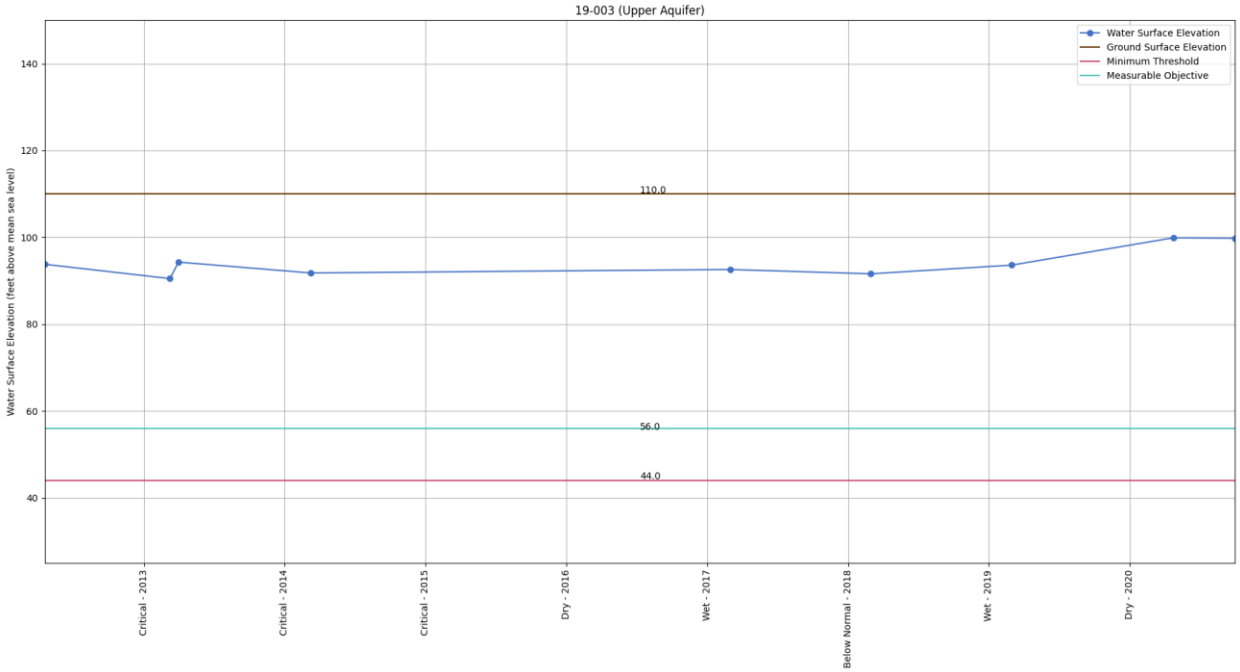

11-013 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
100
90
80
70
60
50
87.0
73.0
58.0
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

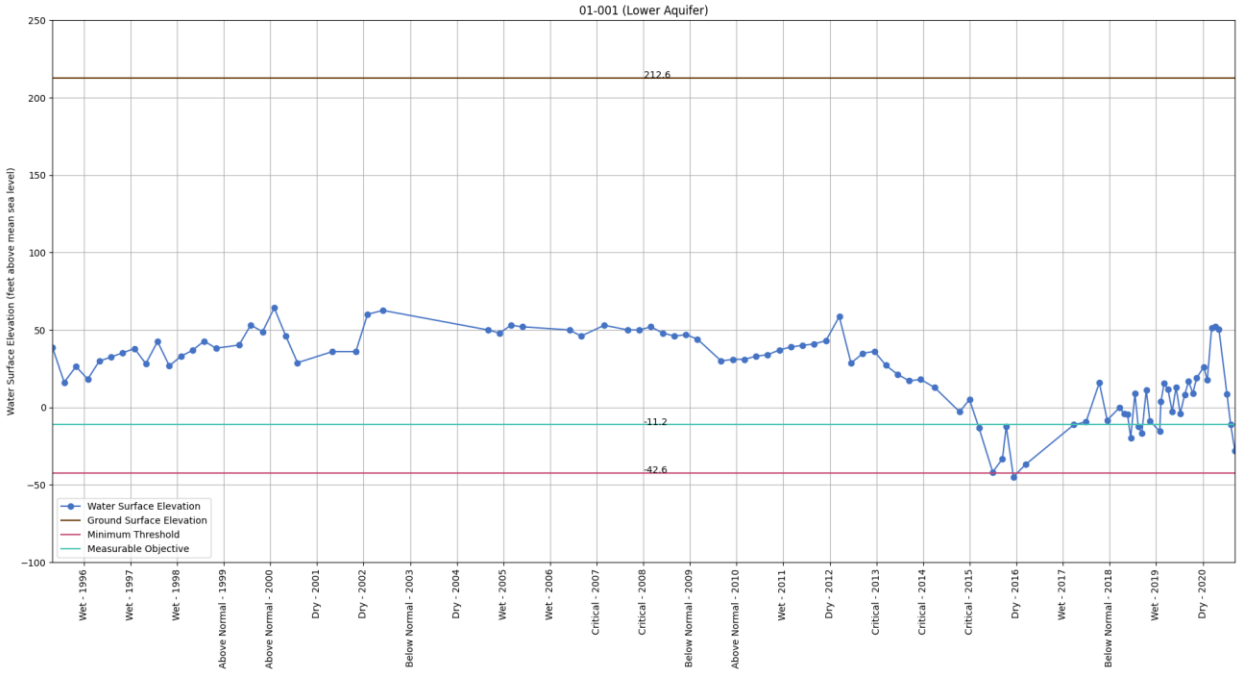

11-014 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
87.6
68.0
54.0
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019

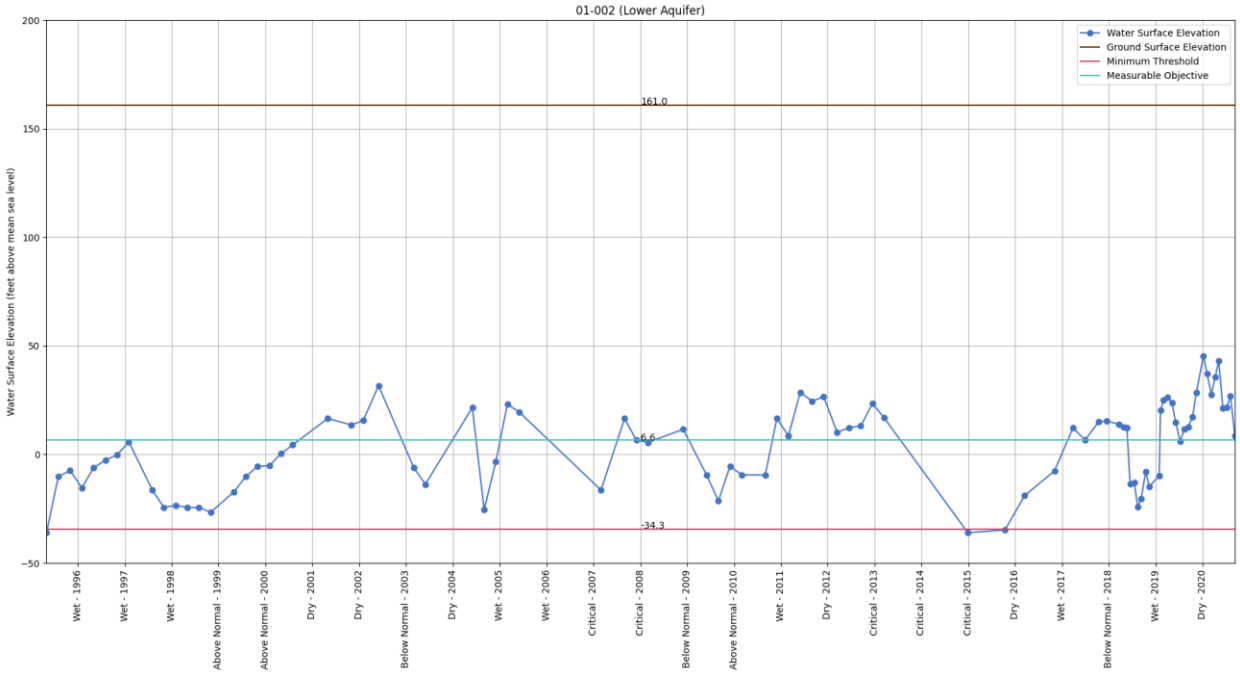

11-015 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
77.0
73.0
58.0
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018

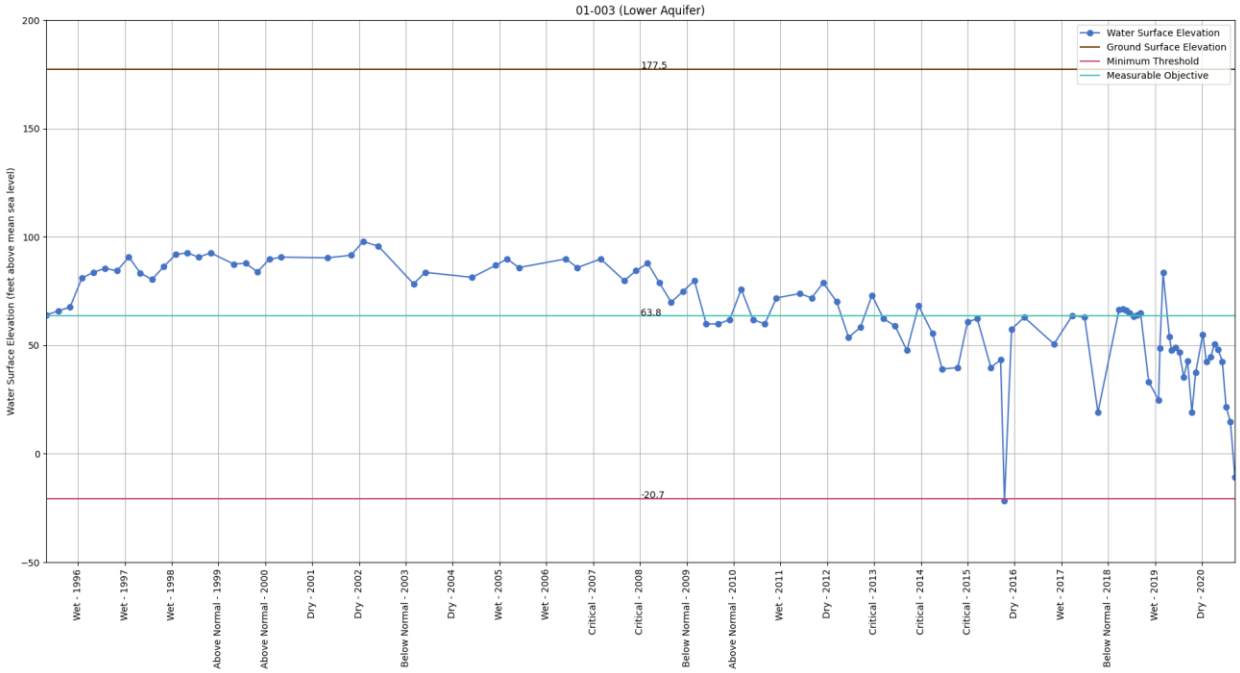

11-016 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
107.4
83.0
66.0
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015

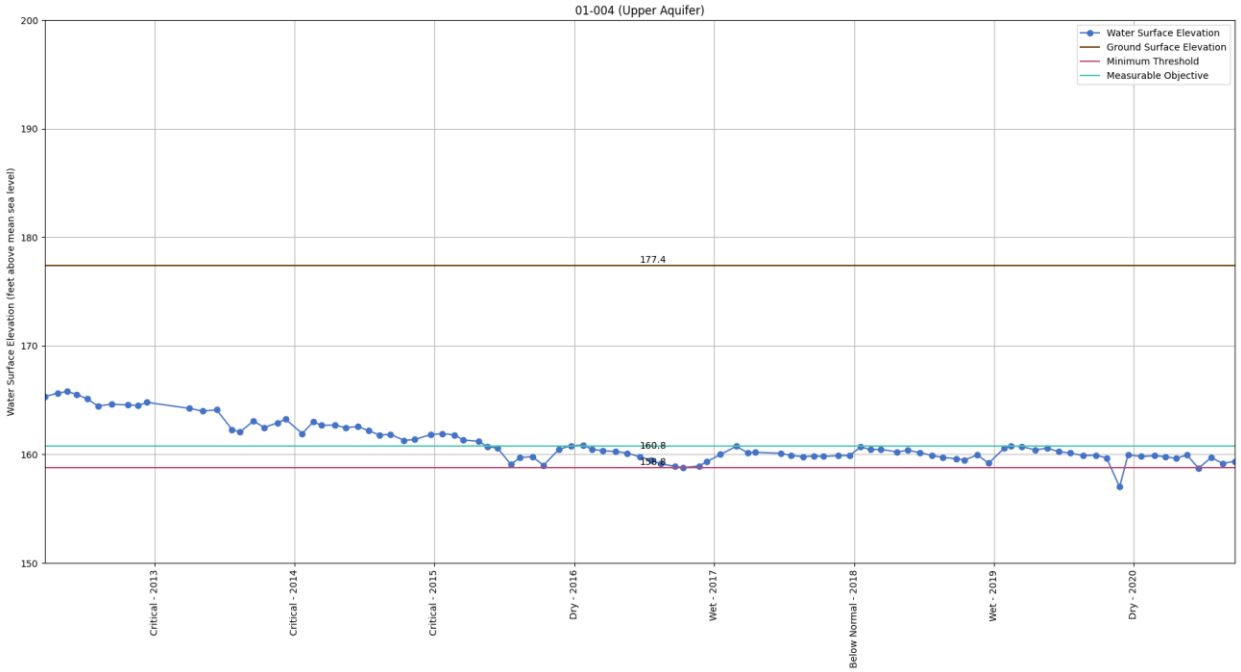

11-017 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
120.4
90.0
72.0
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

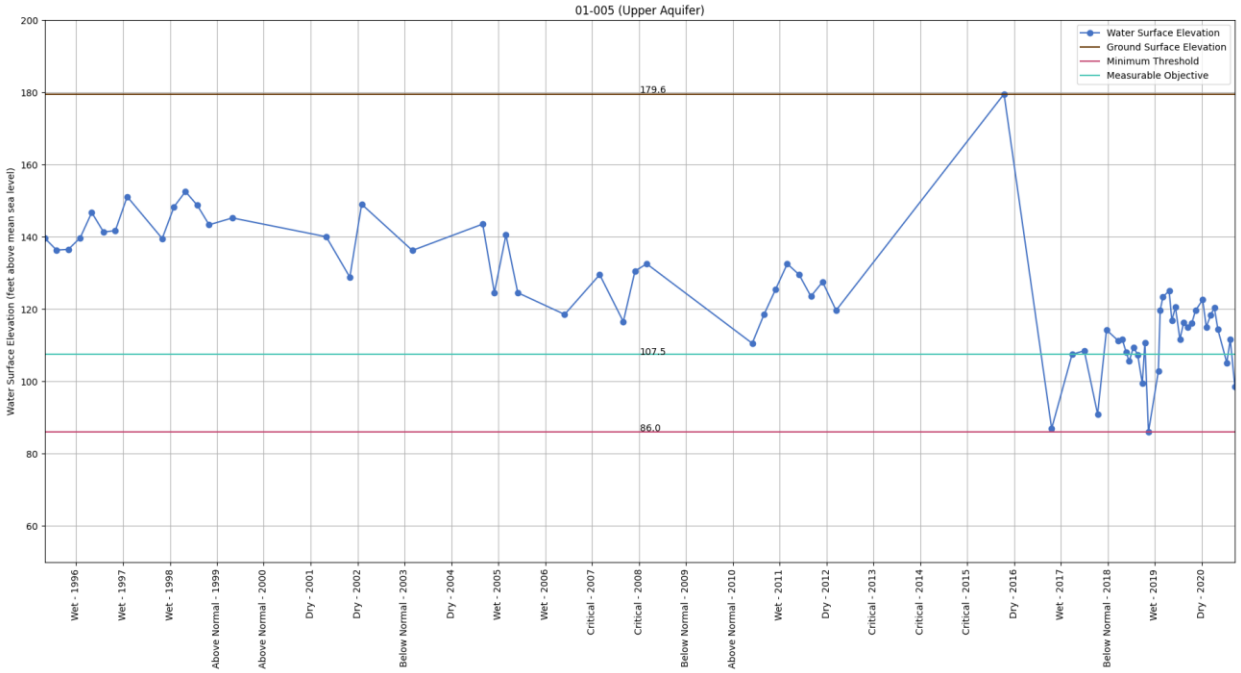

19-003 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
40
110.0
56.0
44.0
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

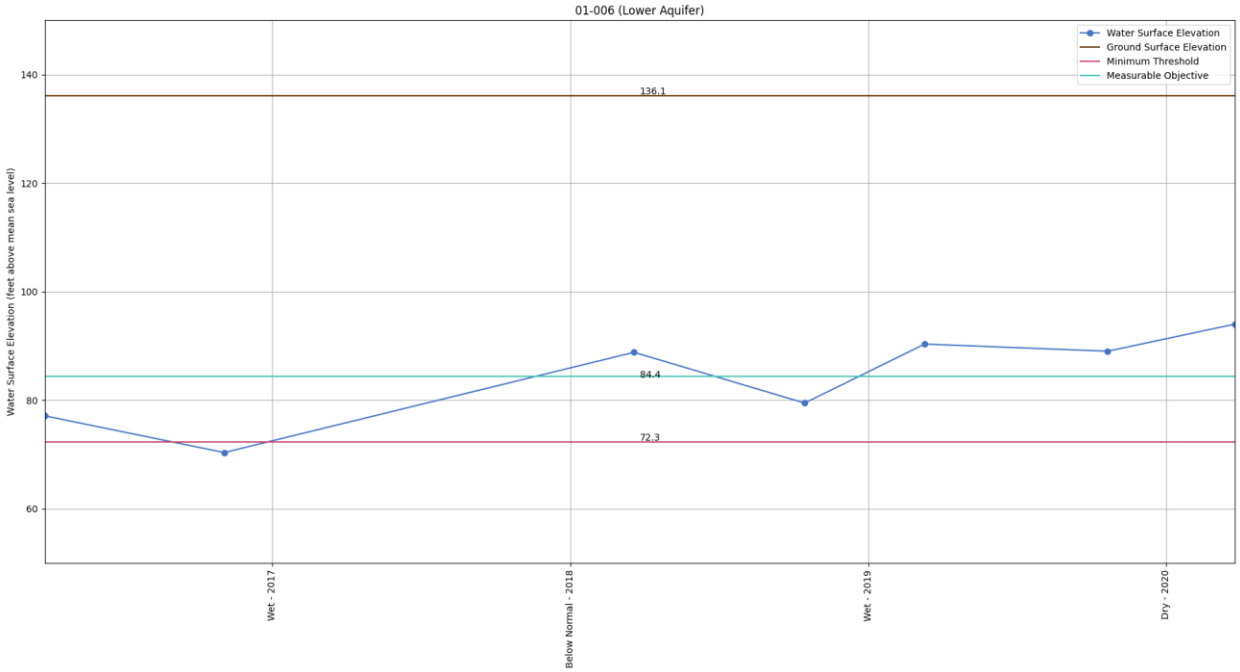

01-001 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
250
200
150
100
50
0
−50
−100
212.6
-11.2
-42.6
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

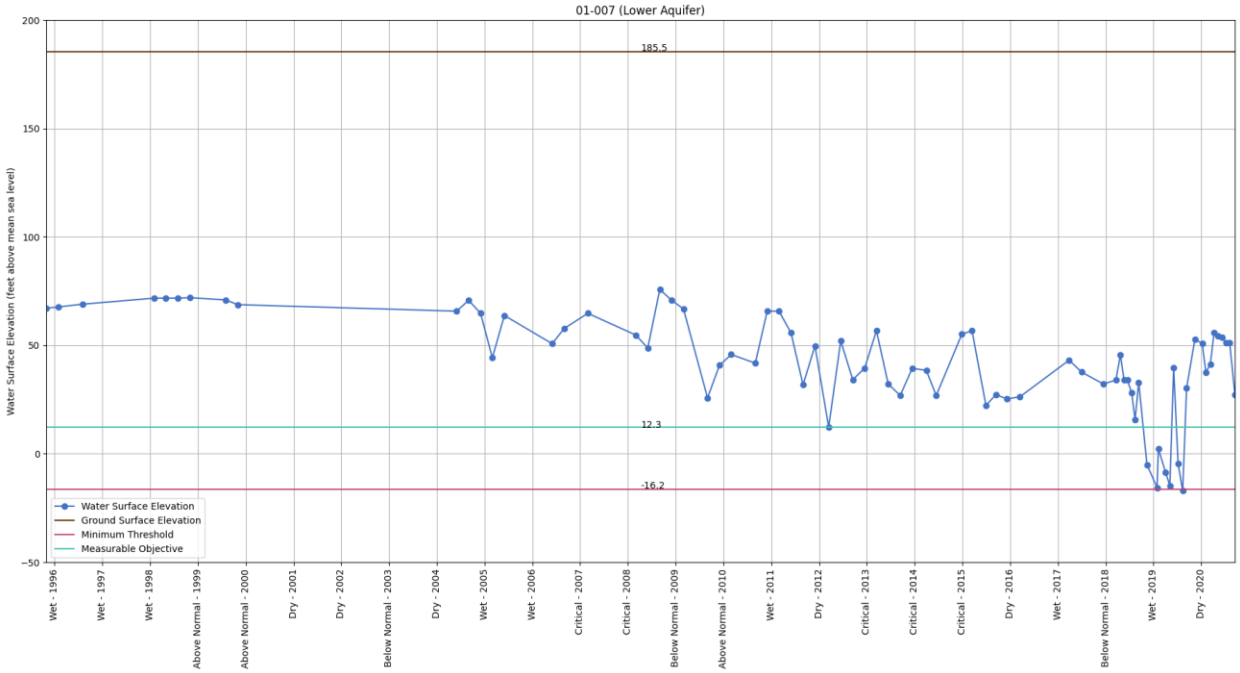

01-002 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
161.0
8.6
-34.3
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

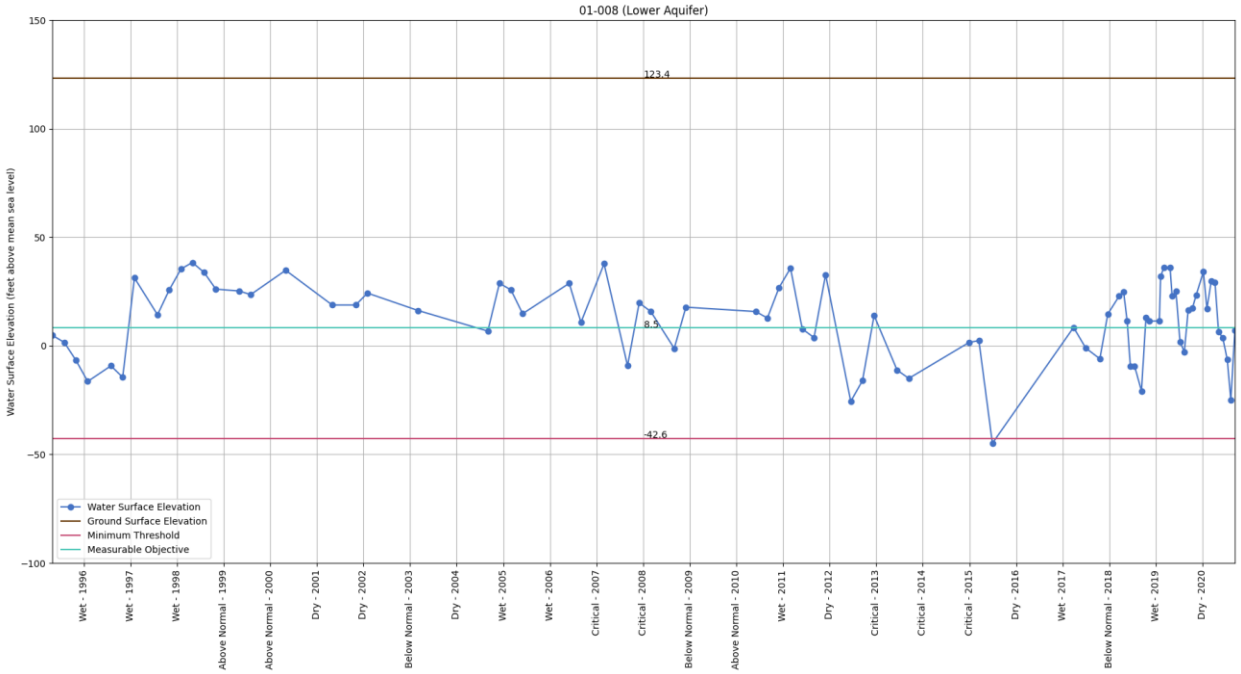

01-003 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
177.5
63.8
-20.7
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

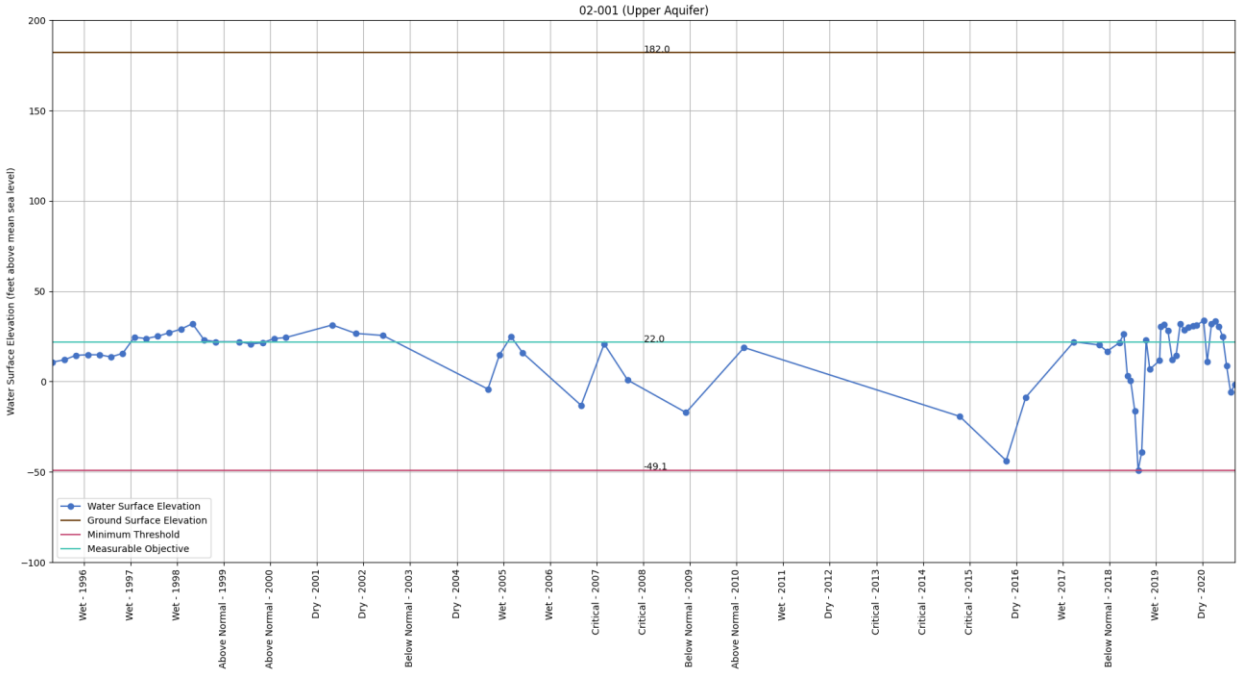

01-004 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
200
190
180
170
160
150
177.4
160.8
158.8
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

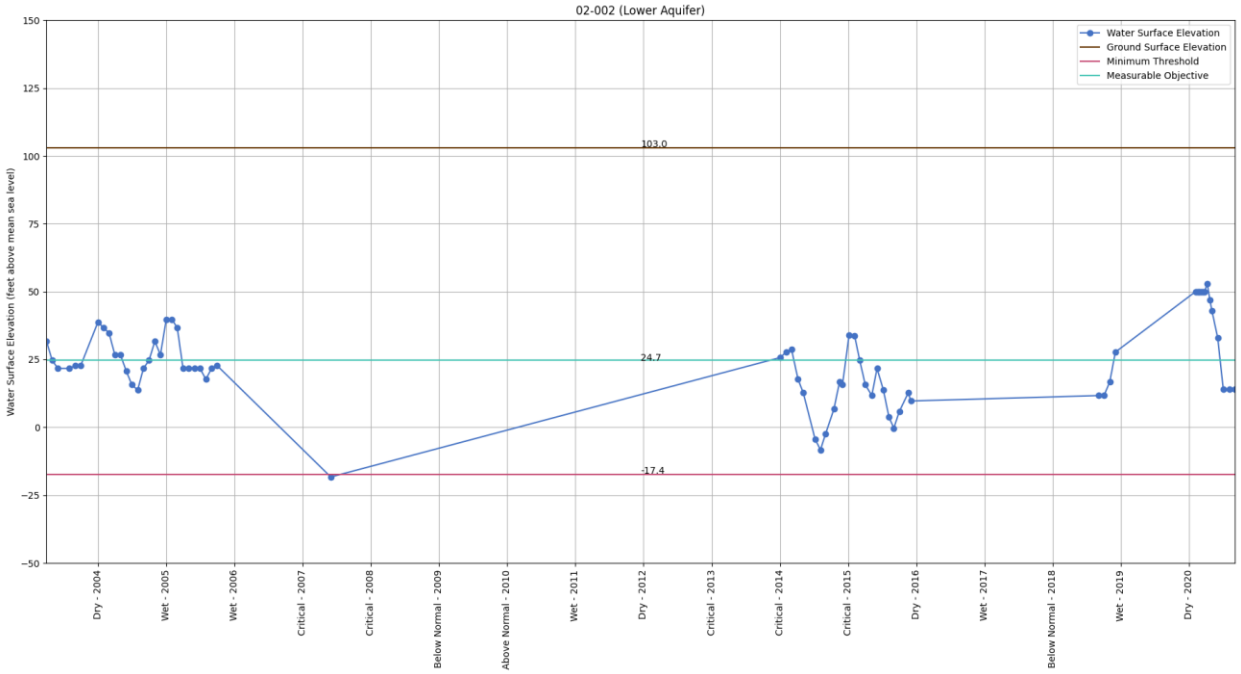

01-005 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
200
180
160
140
120
100
80
60
179.6
107.5
86.0
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

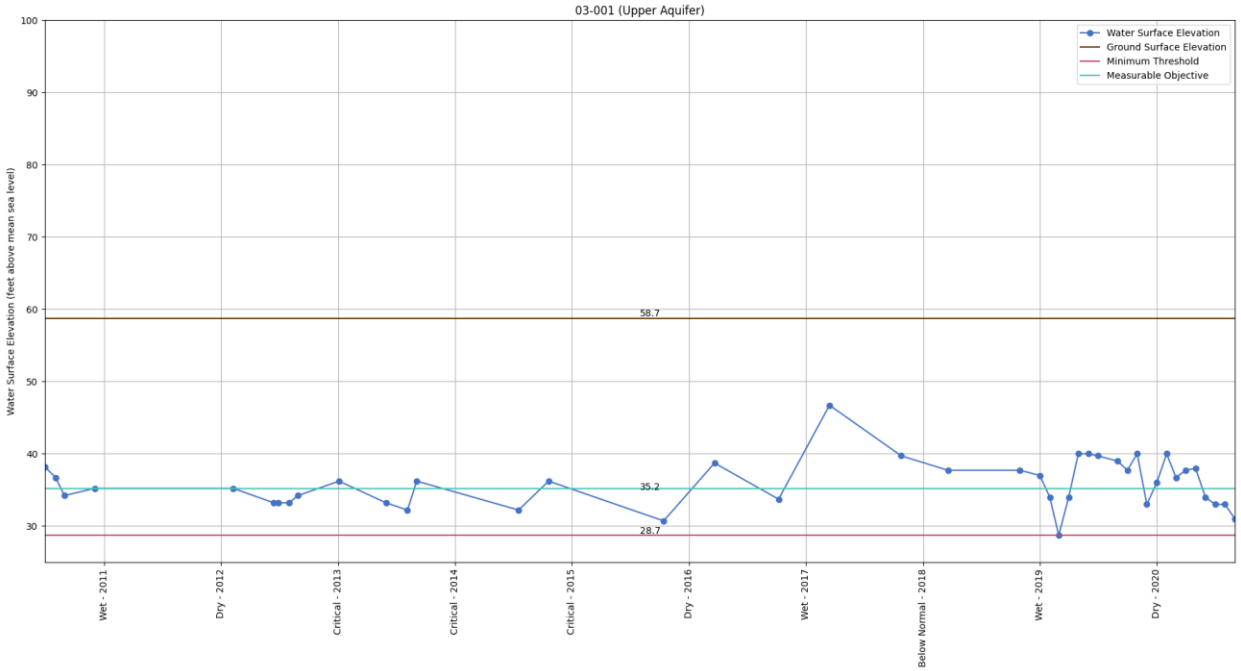

01-006 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
136.1
84.4
72.3
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

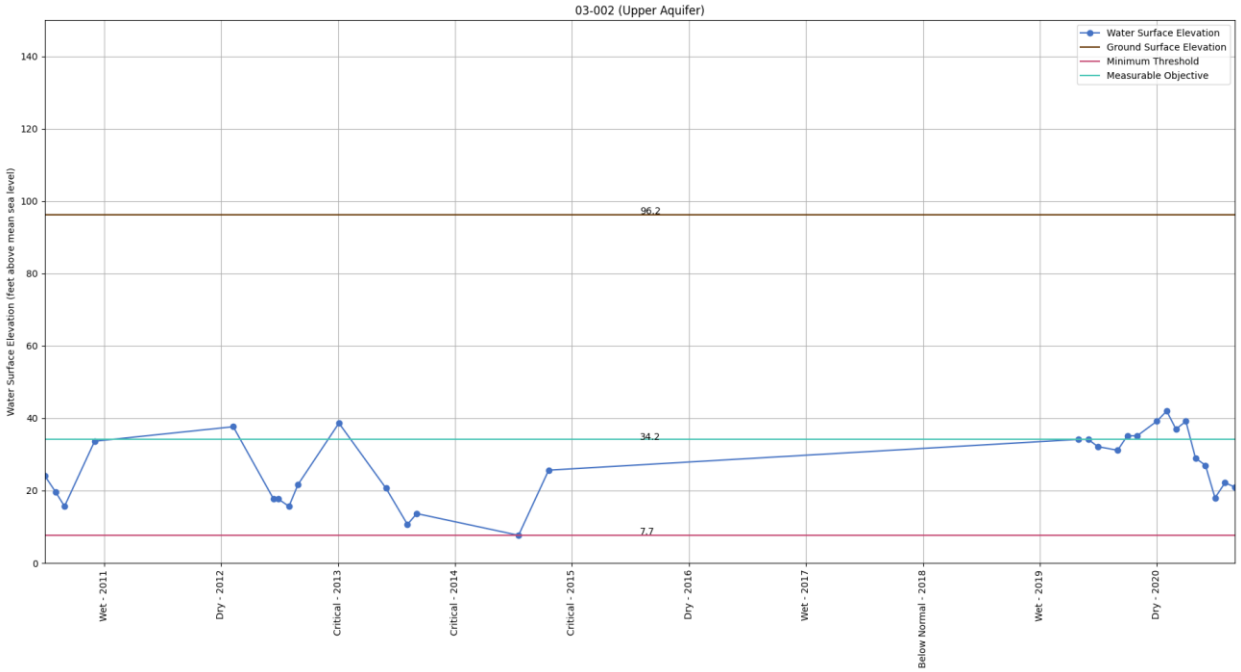

01-007 (Lower Aquifer)
185.5
12.3
-16.2
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

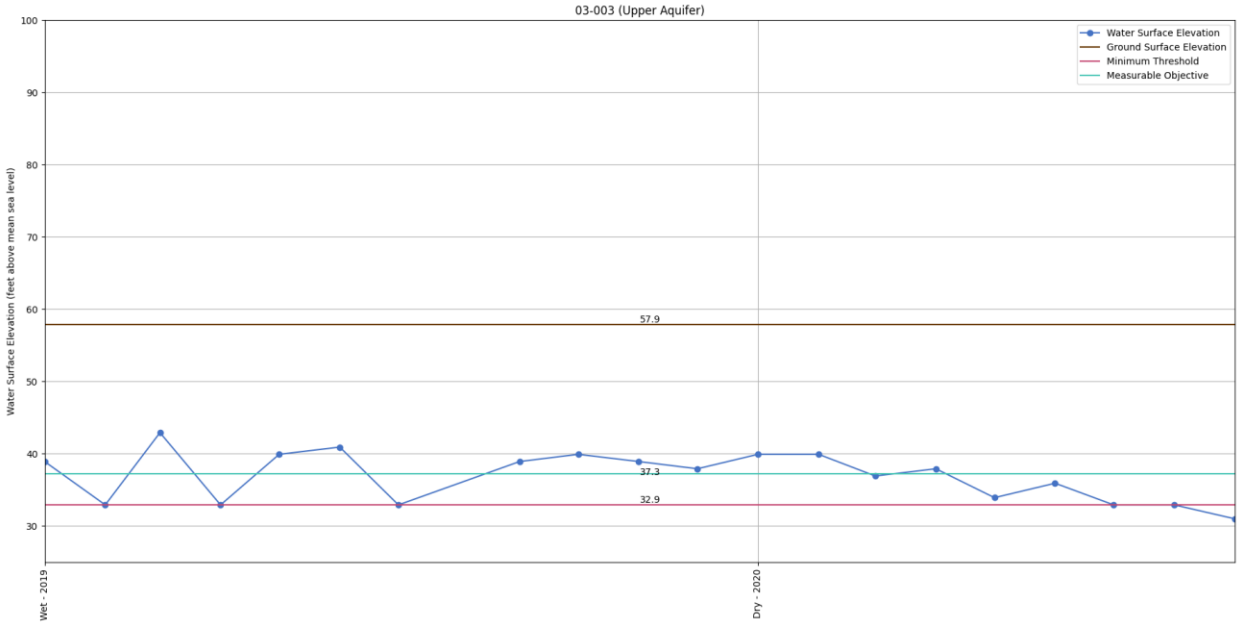

01-008 (Lower Aquifer)
Water Surface Elevation (feet above mean sea level)
123.4
8.5
-42.6
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

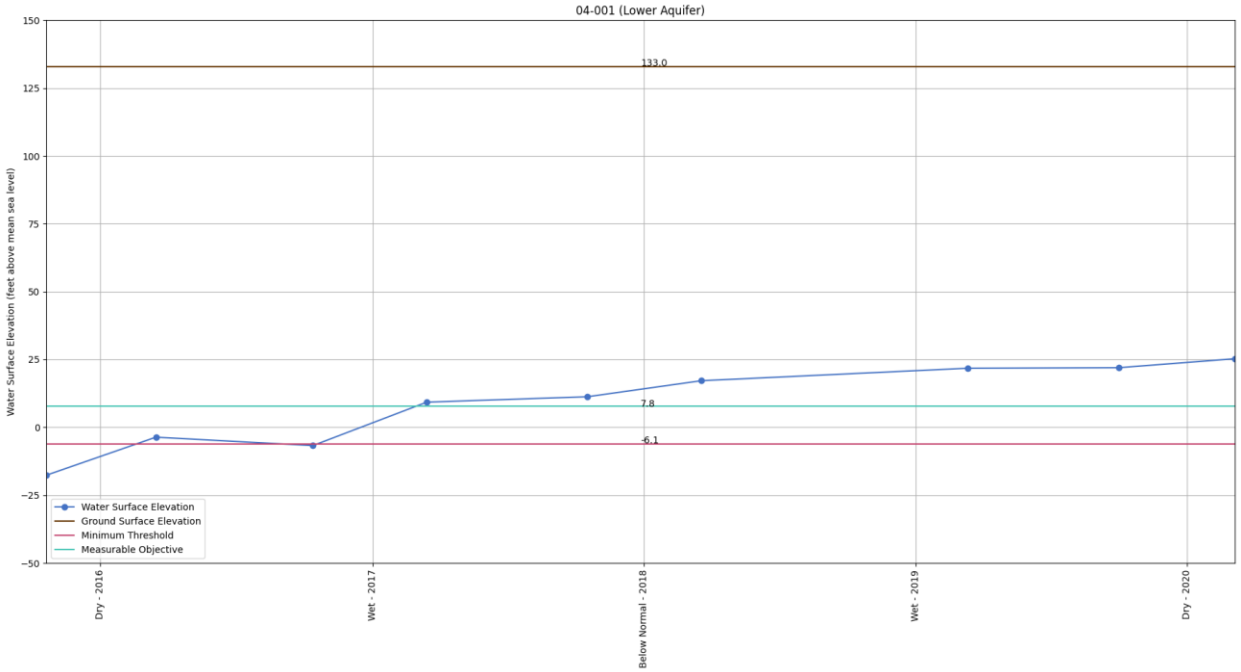

02-001 (Upper Aquifer)
Water Surface Elevation (feet above mean sea level)
182.0
22.0
-49.1
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

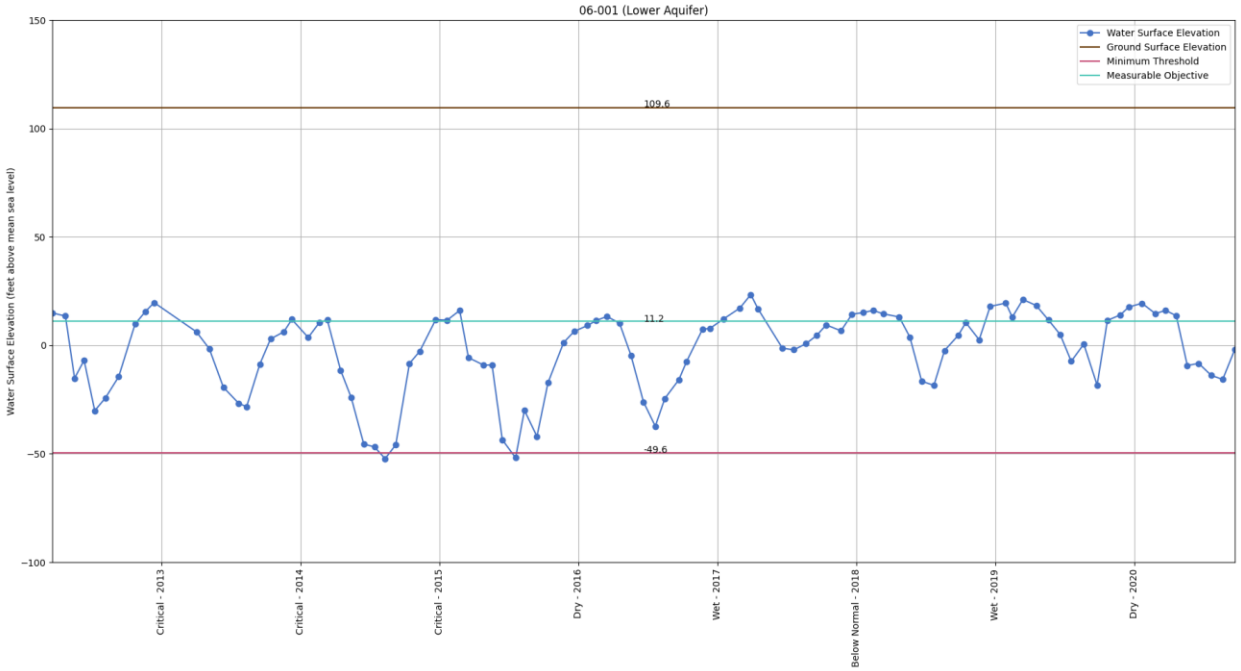

02-002 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
103.0
24.7
-17.4
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

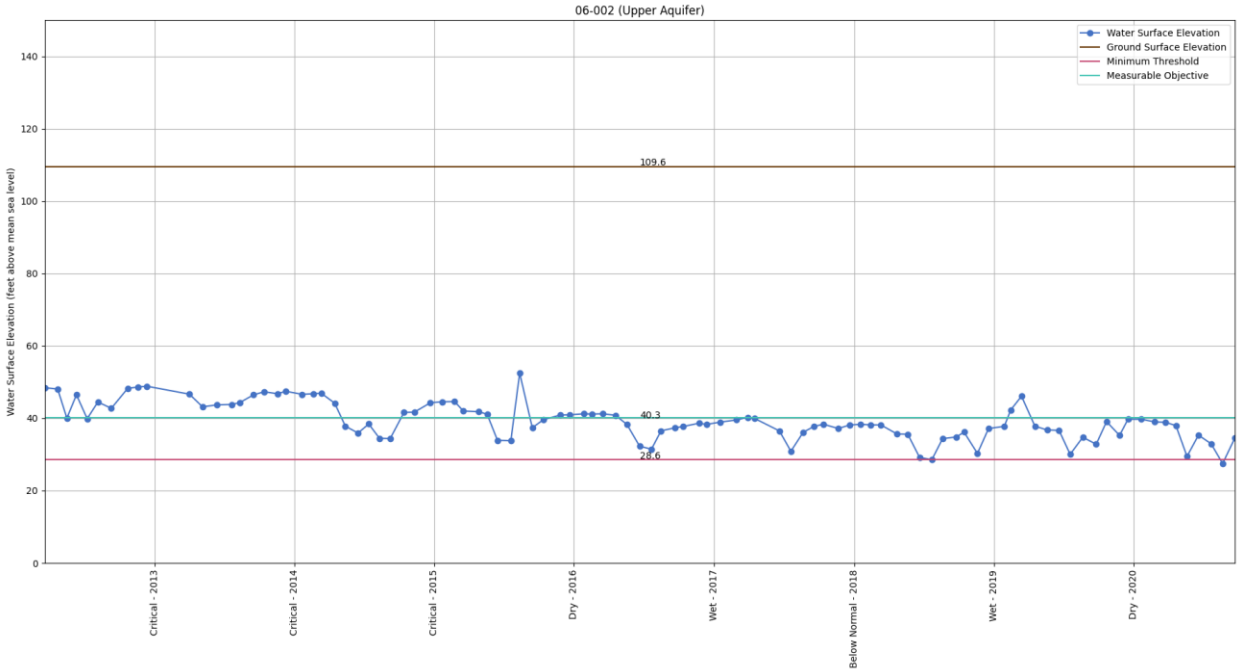

03-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
58.7
35.2
28.7
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

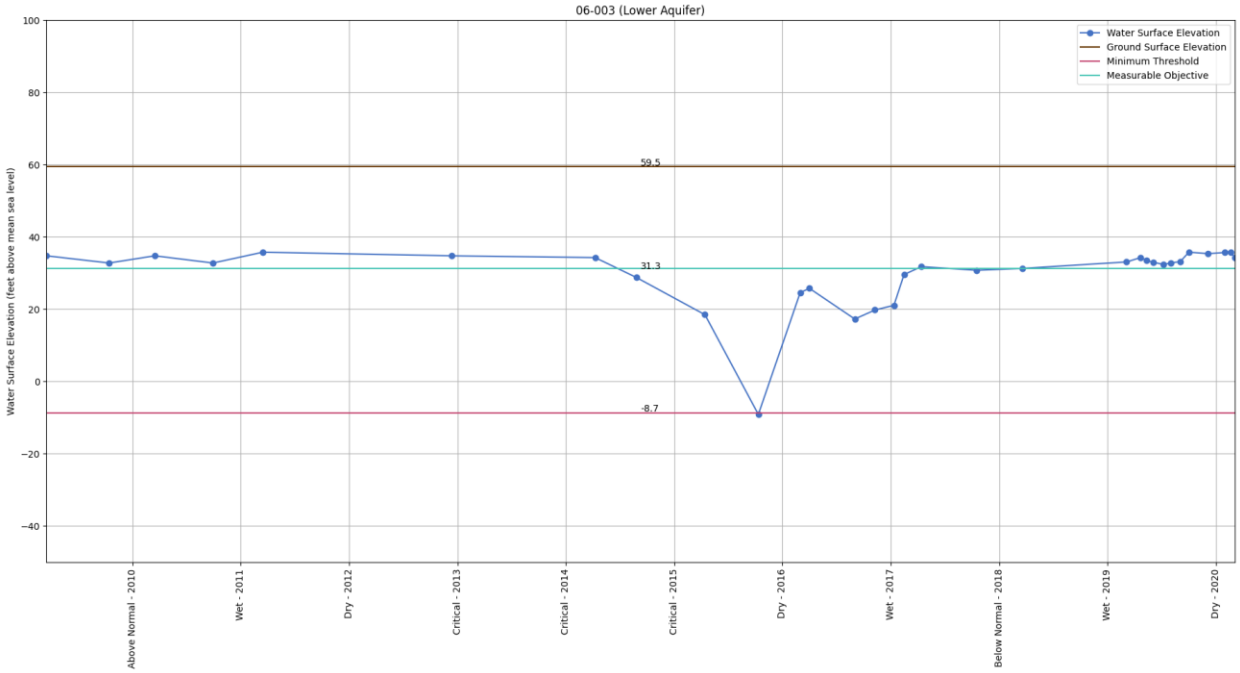

03-002 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
96.2
34.2
7.7
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

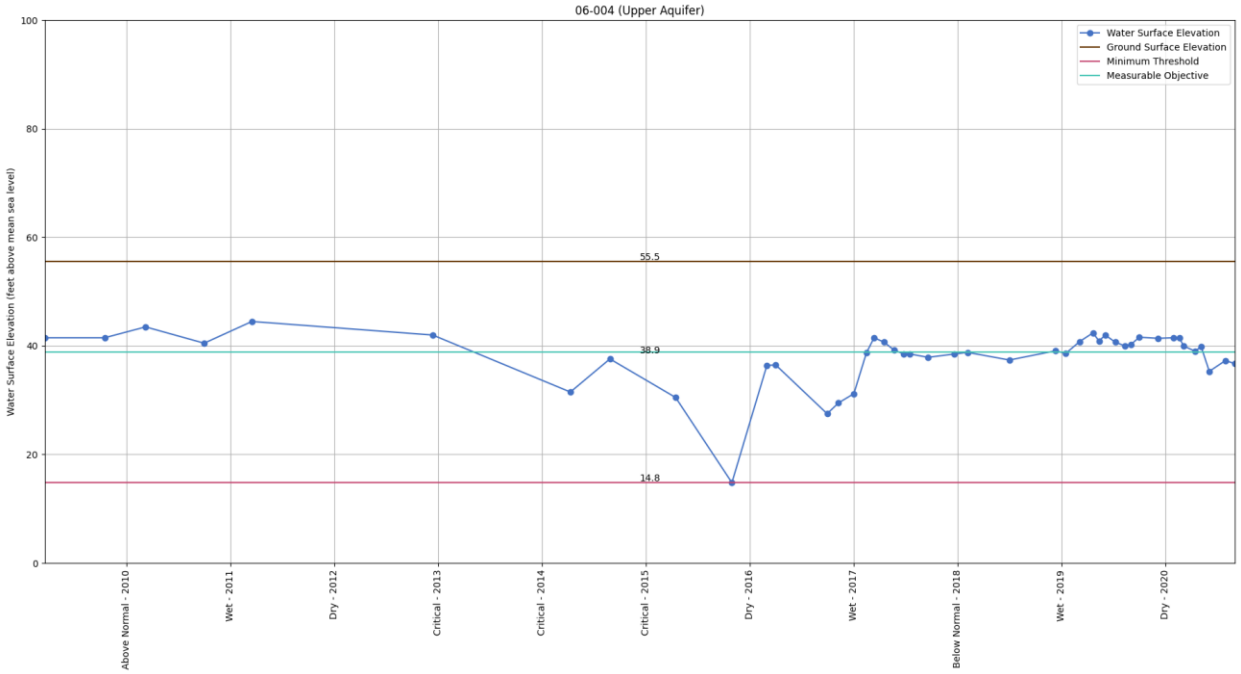

03-003 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
57.9
37.3
32.9
Wet - 2019
Dry - 2020

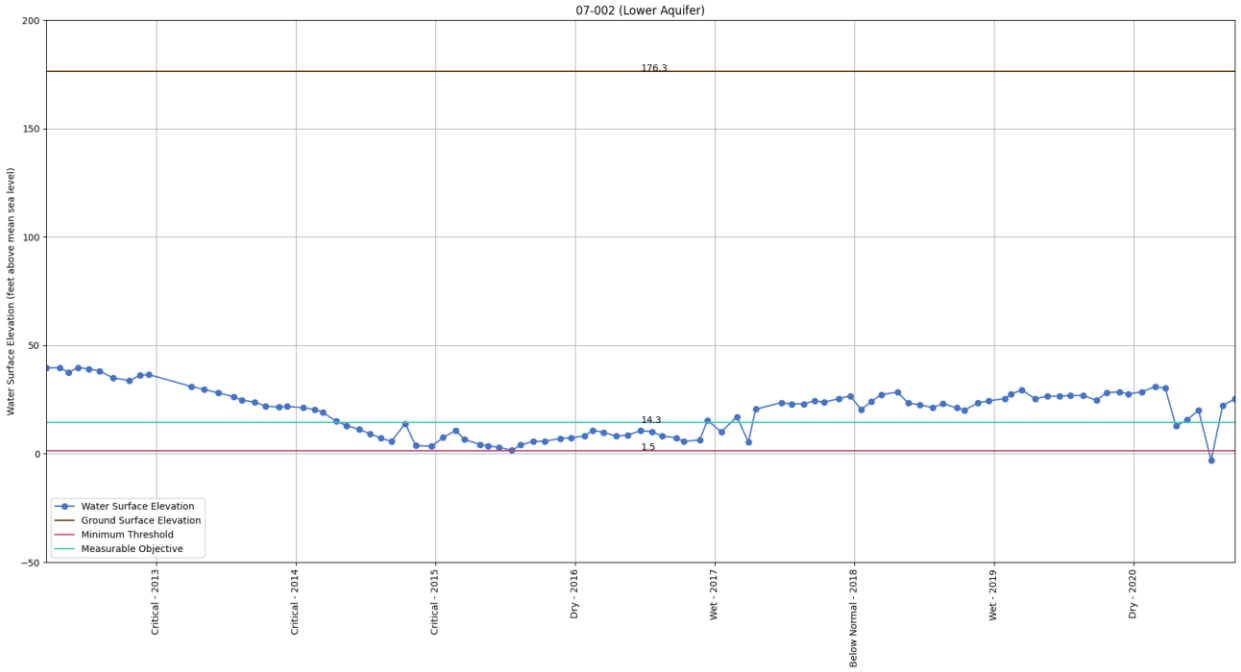

04-001 (Lower Aquifer)
Water Surface Elevation (feet above mean sea level)
150
125
100
75
50
25
0
−25
−50
133.0
7.8
-6.1
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

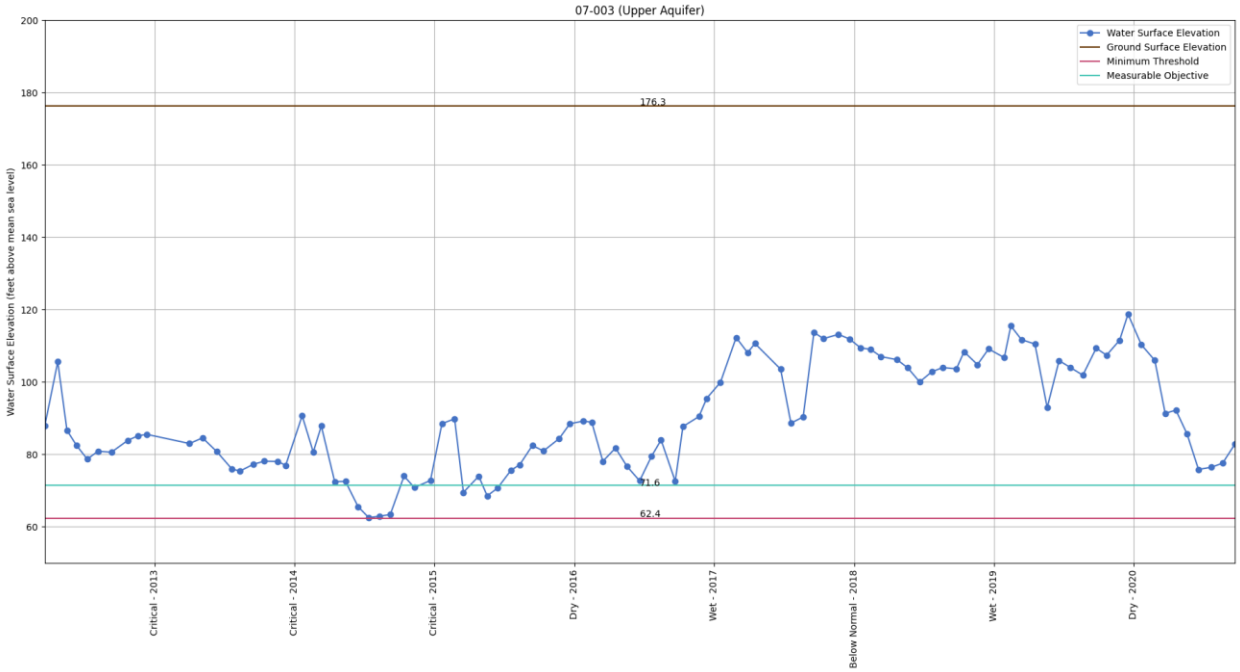

06-001 (Lower Aquifer)
Water Surface Elevation (feet above mean sea level)
150
100
50
0
−50
−100
109.6
11.2
-49.6
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

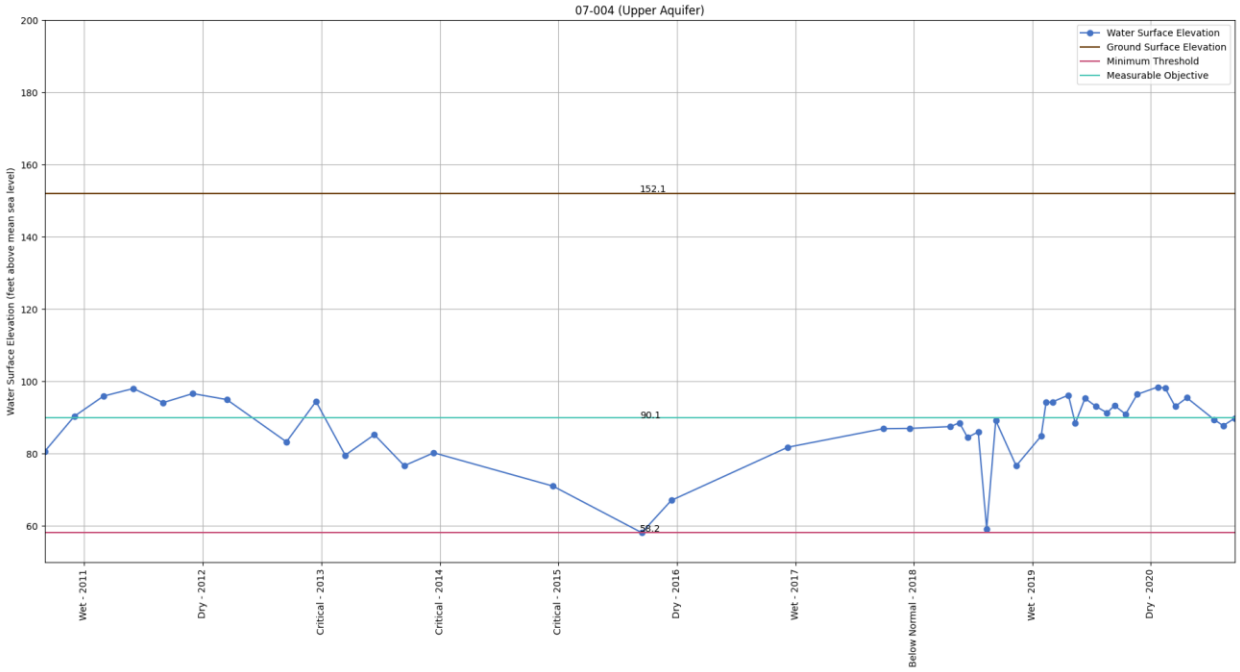

06-002 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
109.6
40.3
28.6
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

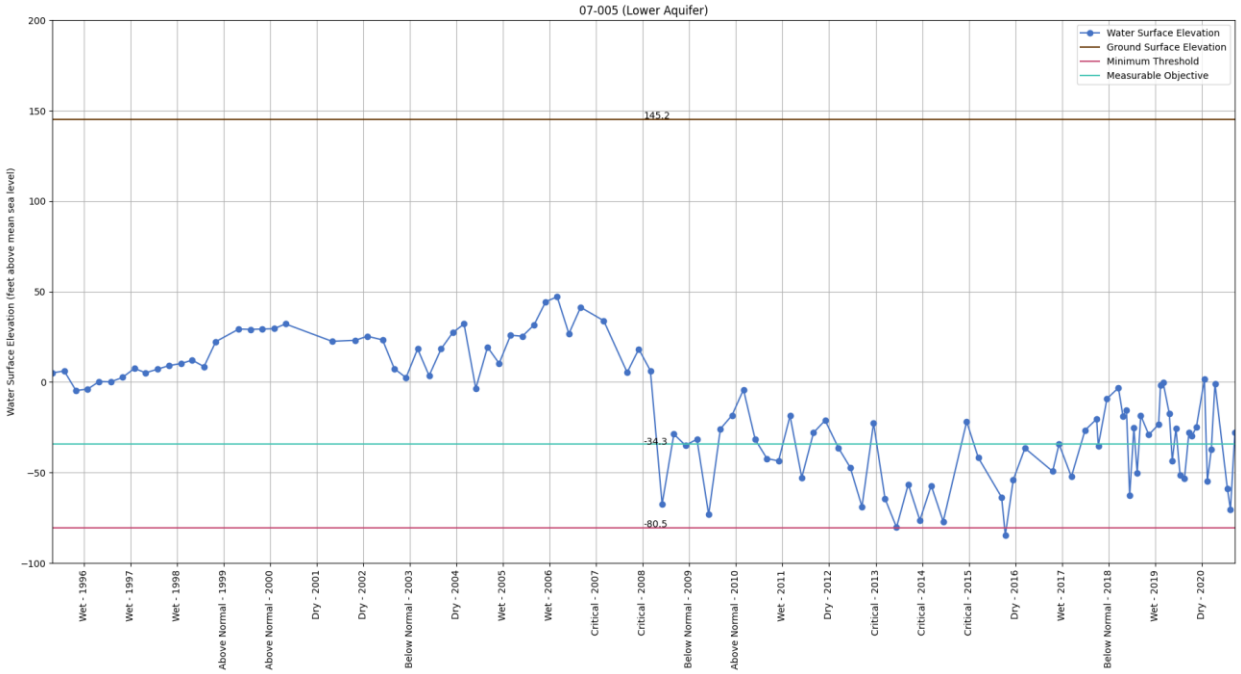

06-003 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
59.5
31.3
-8.7
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

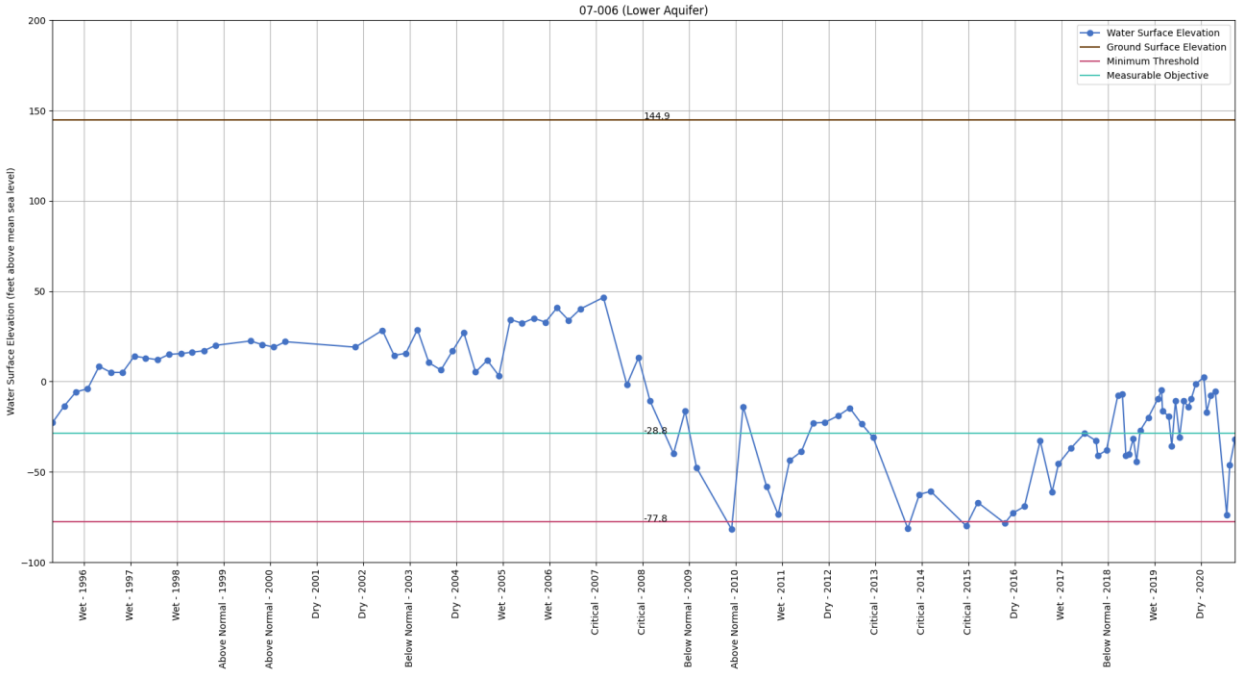

06-004 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
100
80
60
40
20
0
55.5
38.9
14.8
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

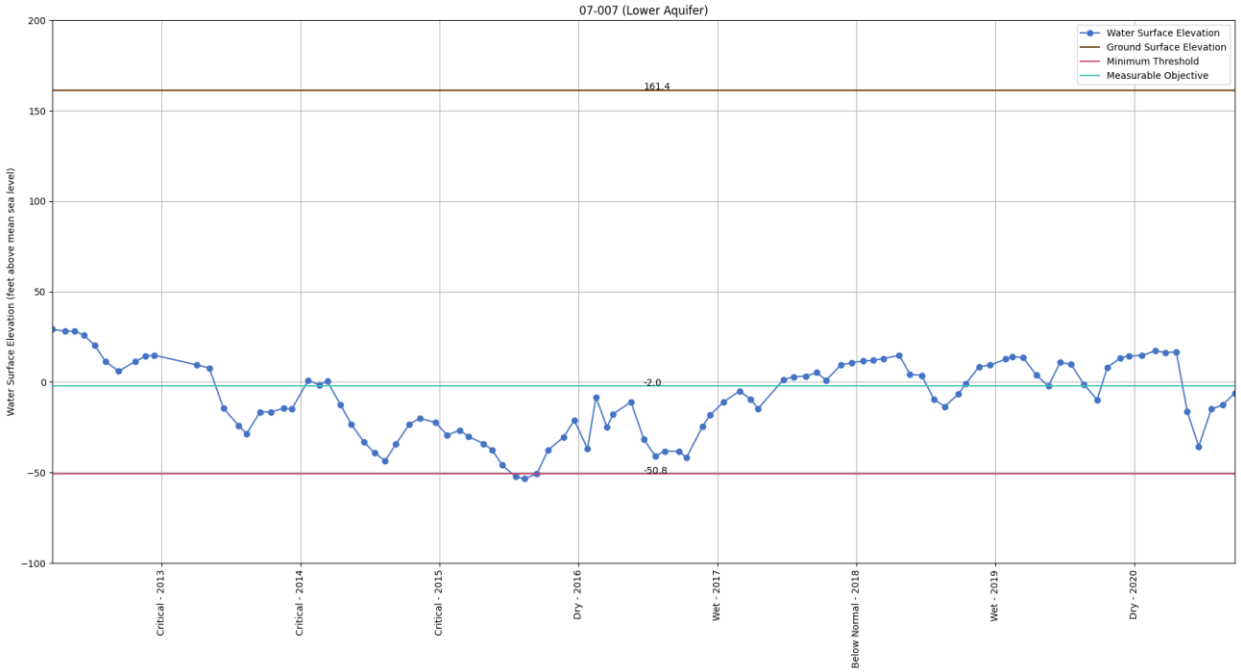

07-002 (Lower Aquifer)
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
176.3
14.3
1.5
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

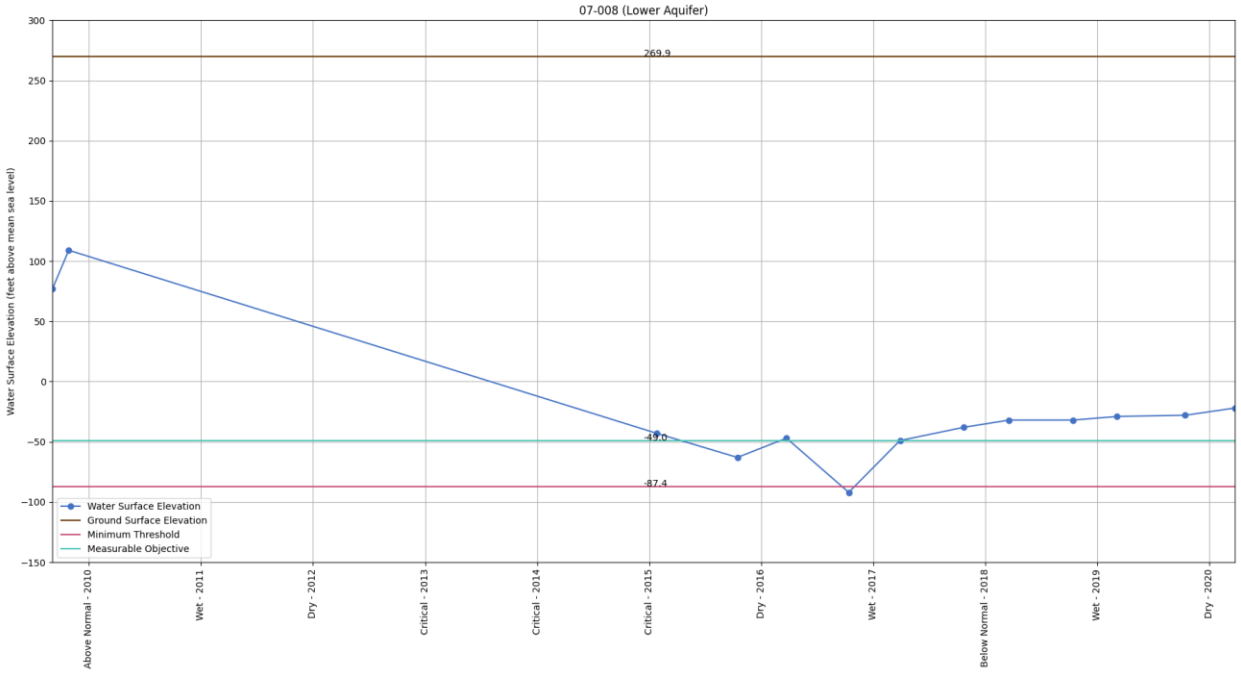

07-003 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
176.3
71.6
62.4
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

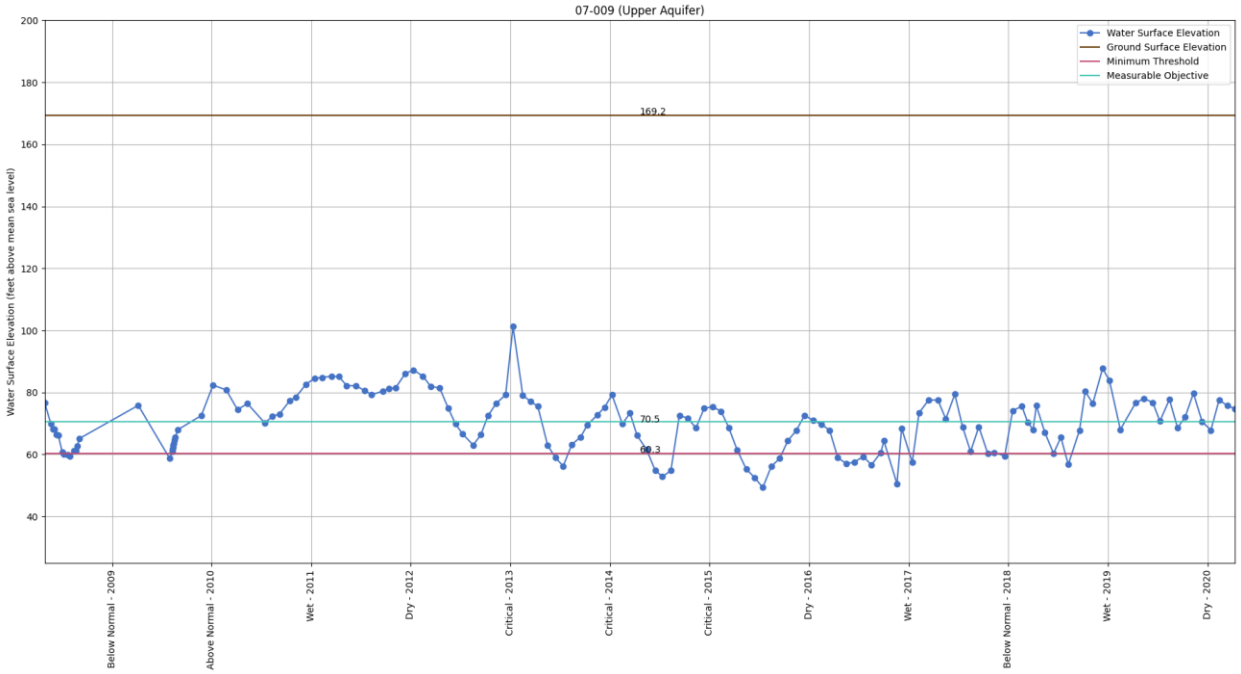

07-004 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
152.1
90.1
58.2
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

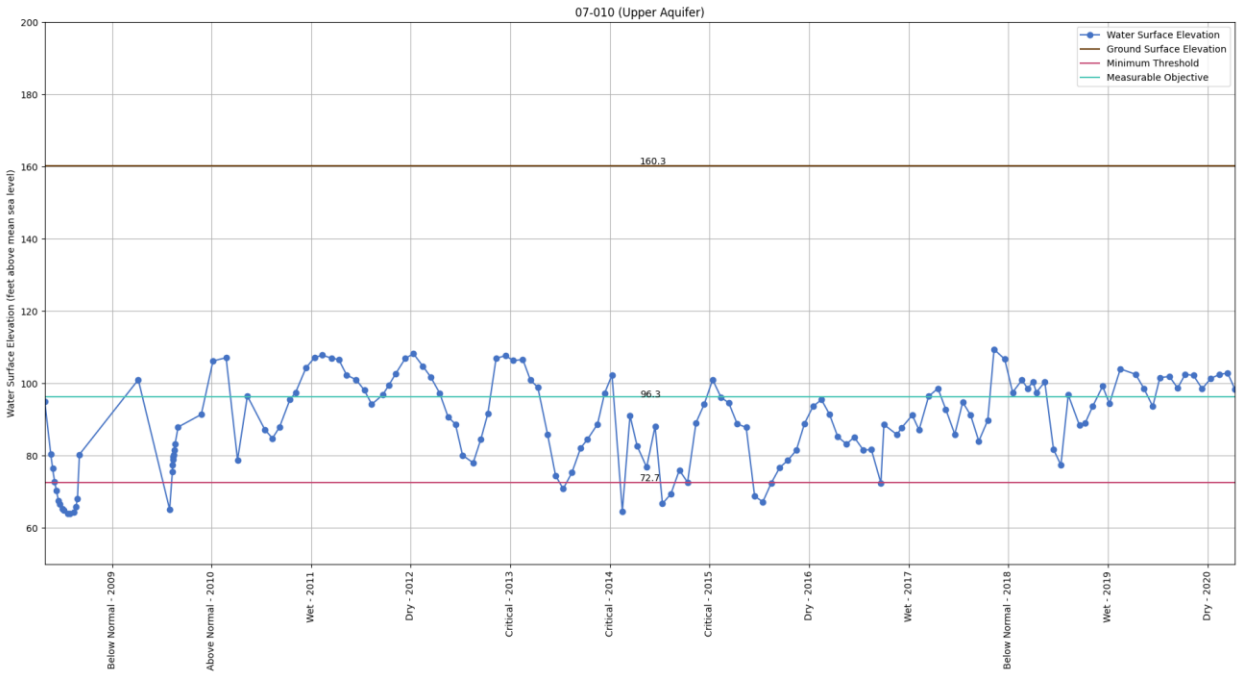

07-005 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
145.2
-34.3
-80.5
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

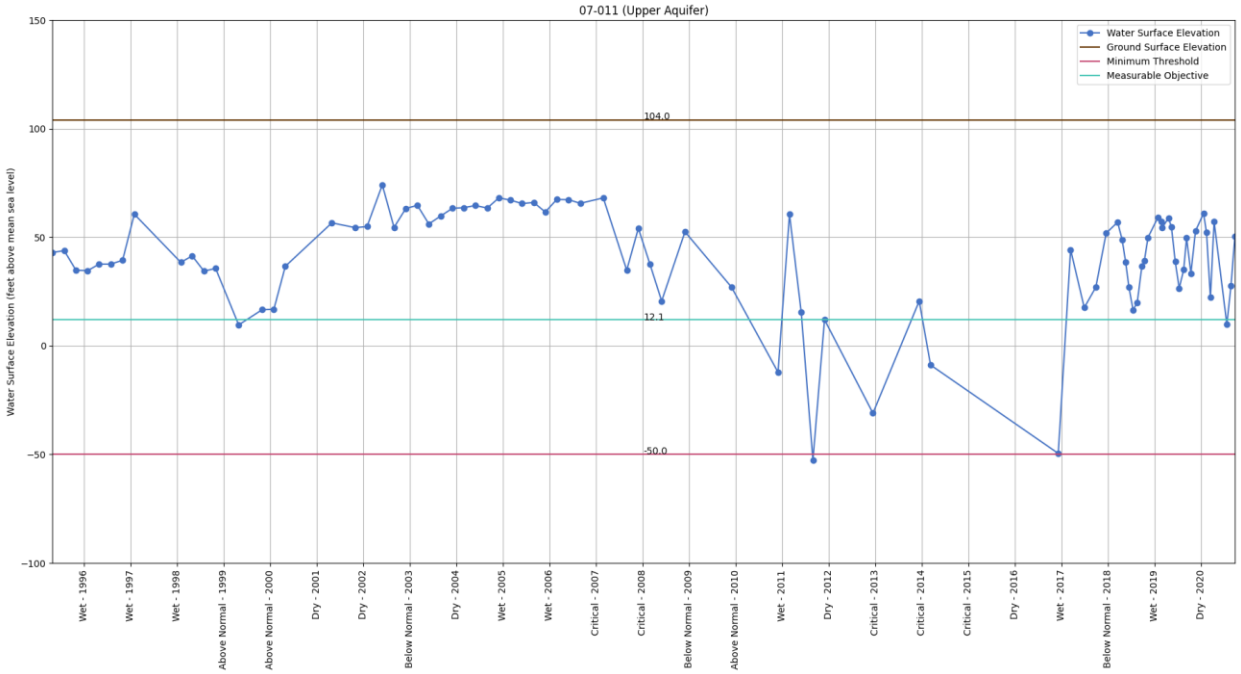

07-006 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
144.9
-28.8
-77.8
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

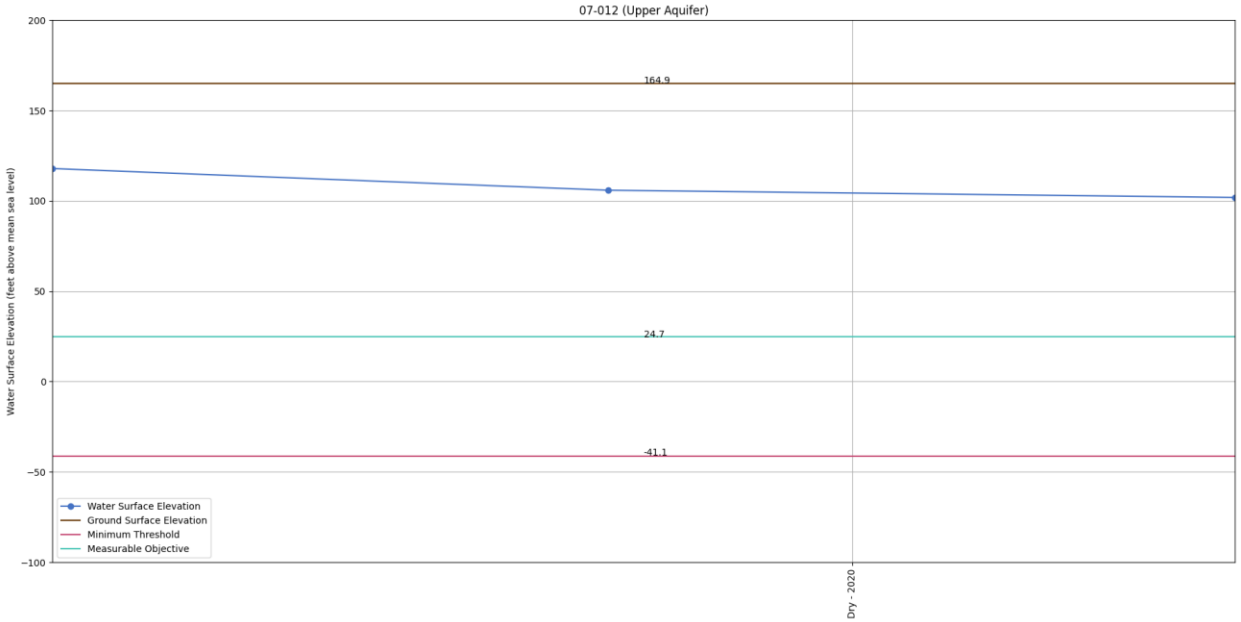

07-007 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
161.4
-2.0
-50.8
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

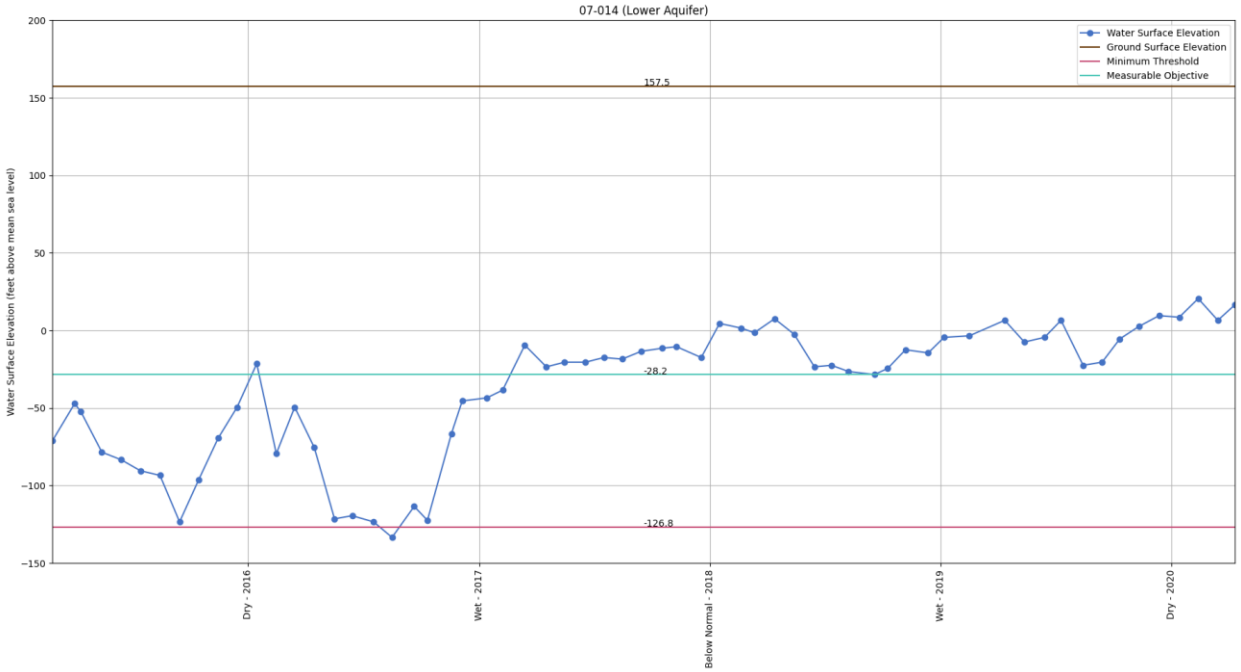

07-008 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
269.9
-49.0
-87.4
Water Surface Elevation (feet above mean sea level)
300
250
200
150
100
50
0
−50
−100
−150
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

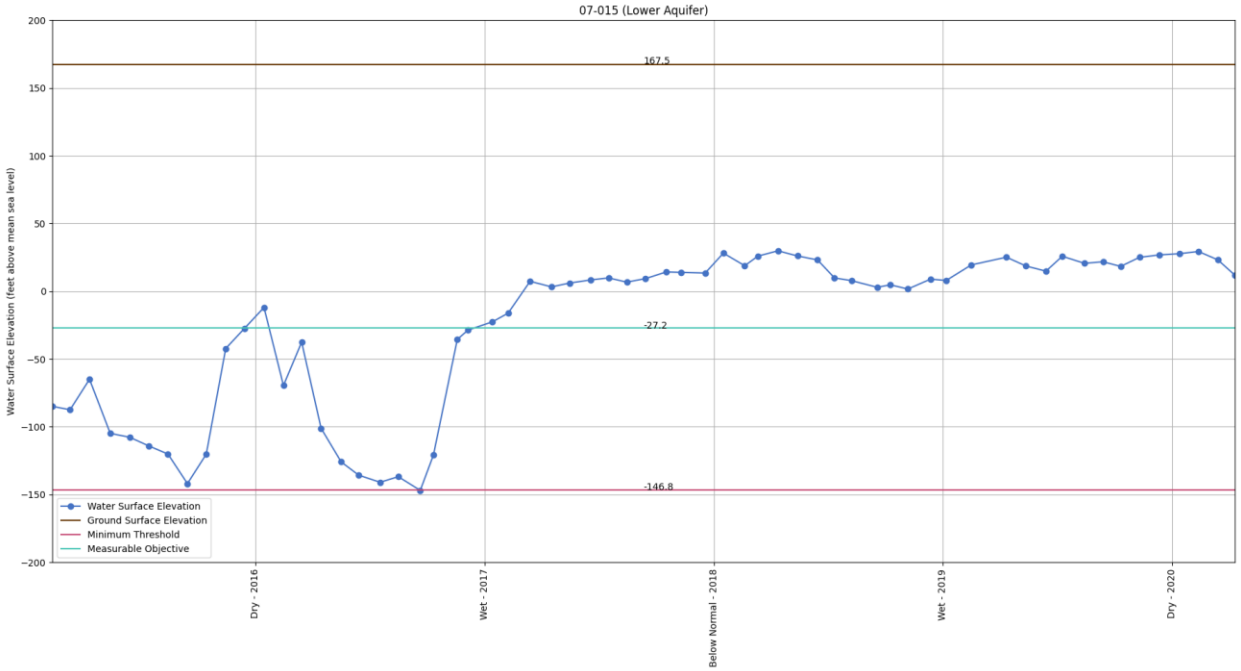

07-009 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
169.2
70.5
60.3
Water Surface Elevation (feet above mean sea level)
200
180
160
140
120
100
80
60
40
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

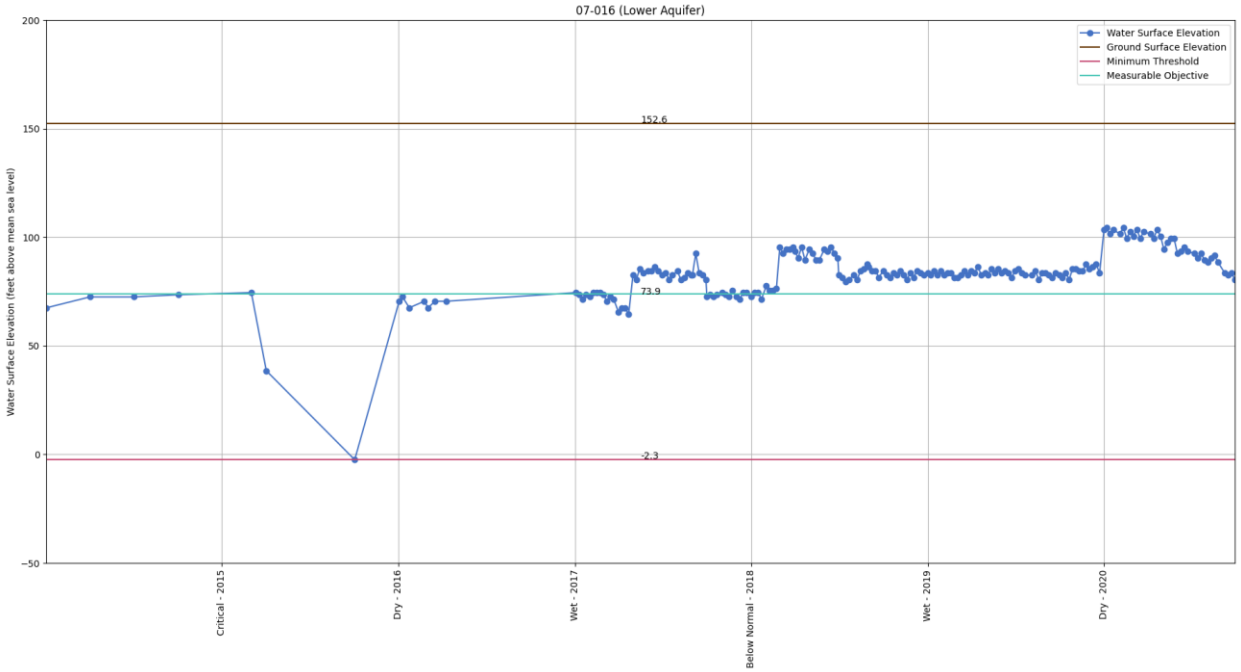

07-010 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
160.3
96.3
72.7
Water Surface Elevation (feet above mean sea level)
200
180
160
140
120
100
80
60
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

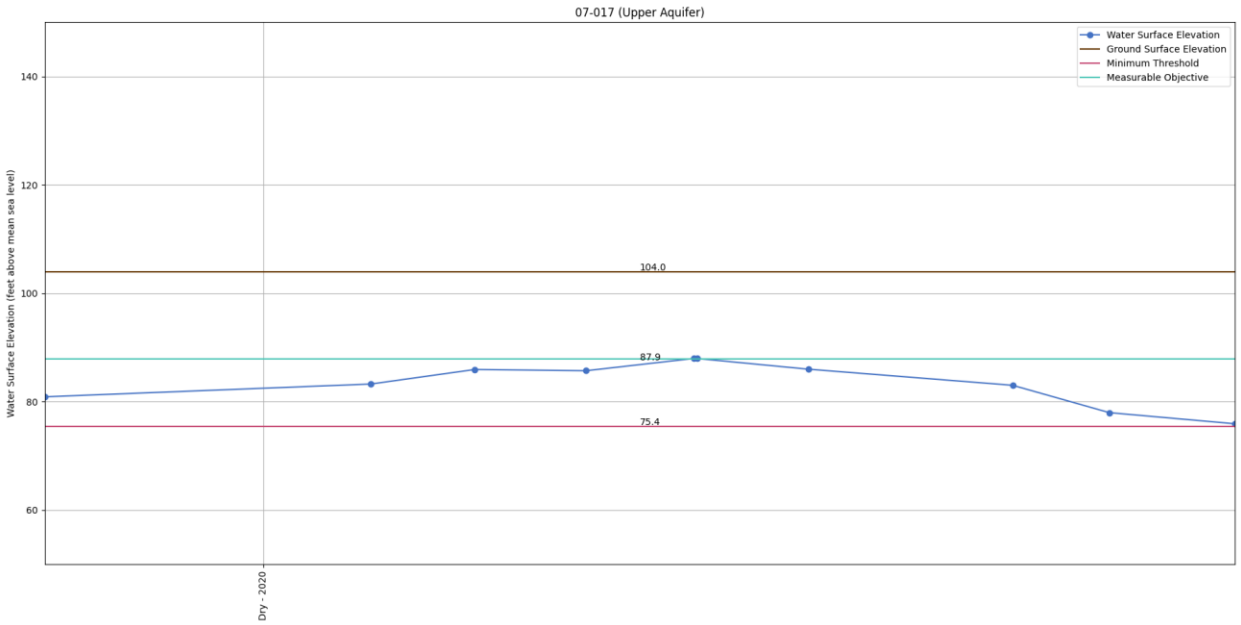

07-011 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
104.0
12.1
-50.0
Water Surface Elevation (feet above mean sea level)
150
100
50
0
−50
−100
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

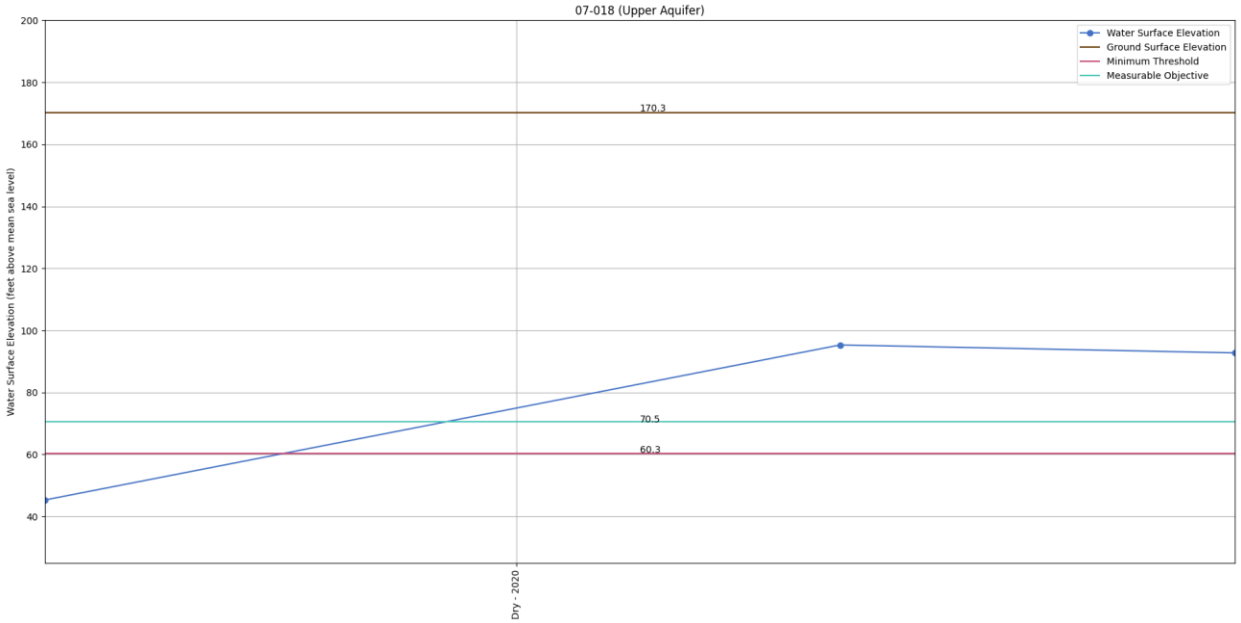

07-012 (Upper Aquifer)
164.9
24.7
-41.1
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
Dry - 2020

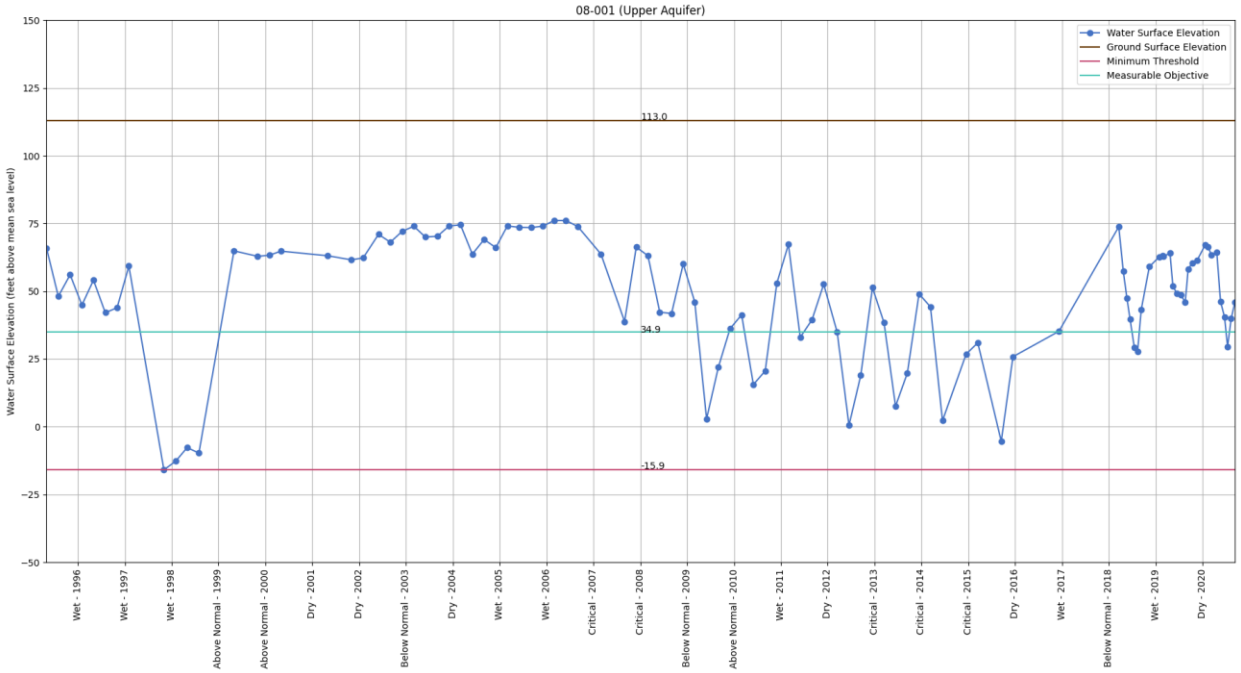

07-014 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
157.5
-28.2
-126.8
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
−150
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

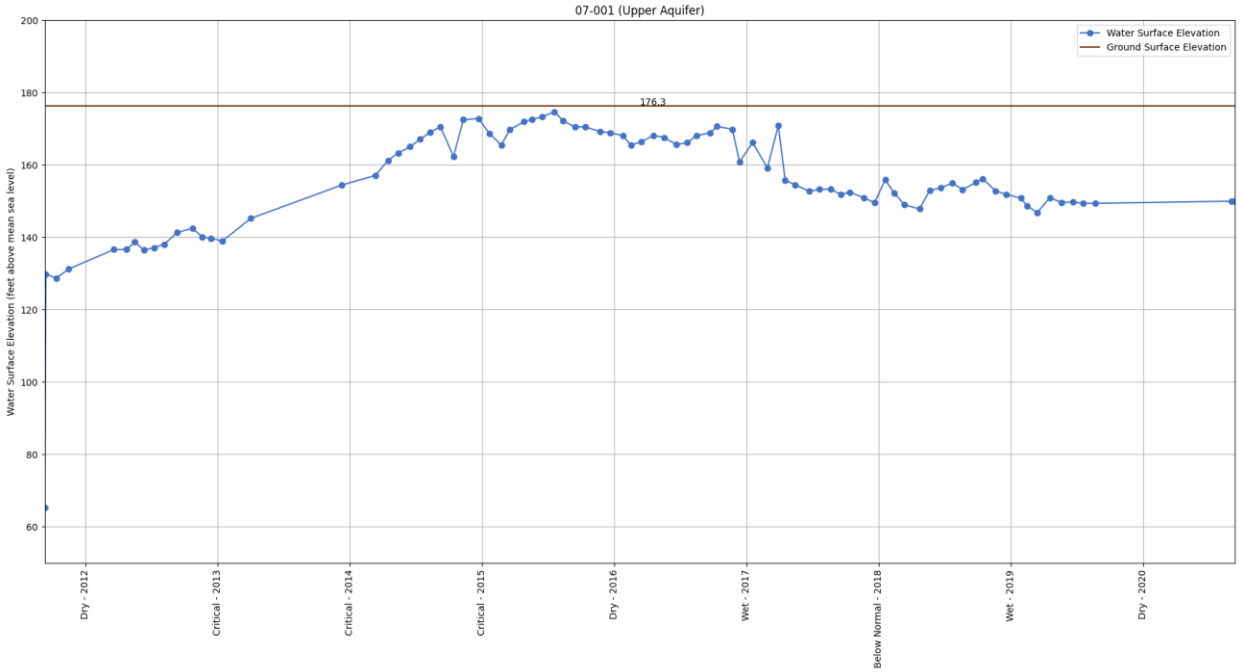

07-015 (Lower Aquifer)
167.5
-27.2
-146.8
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
−100
−150
−200
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

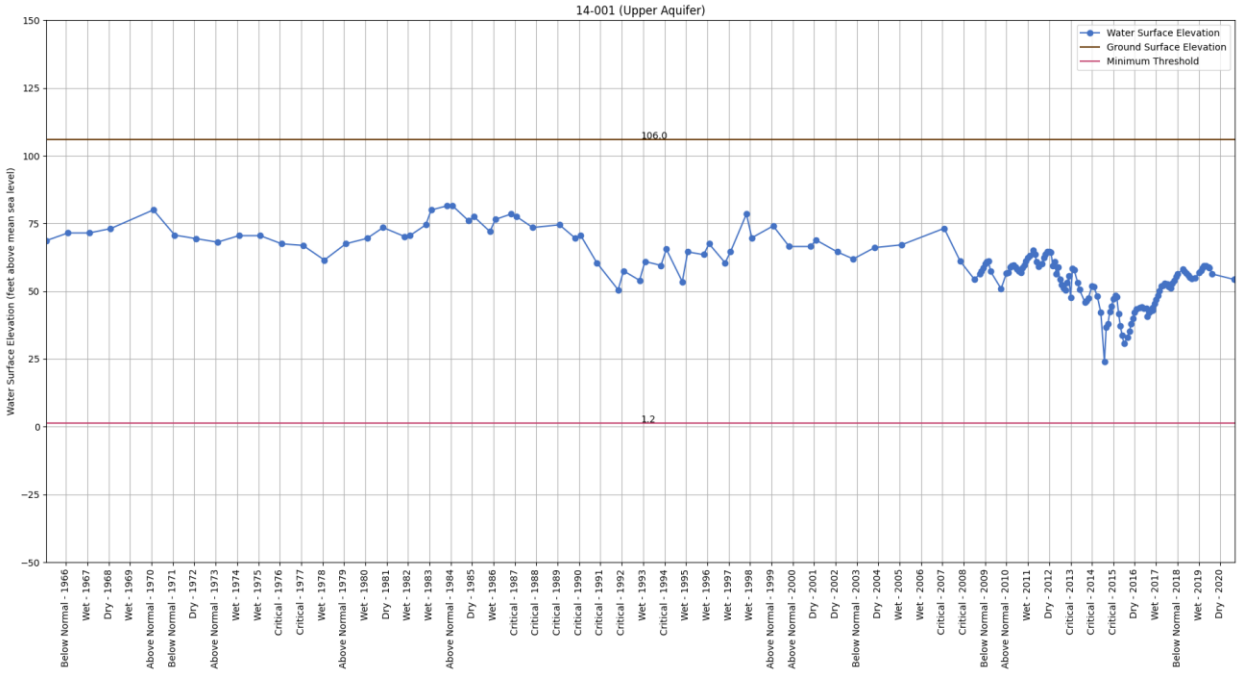

07-016 (Lower Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
152.6
73.9
-2.3
Water Surface Elevation (feet above mean sea level)
200
150
100
50
0
−50
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

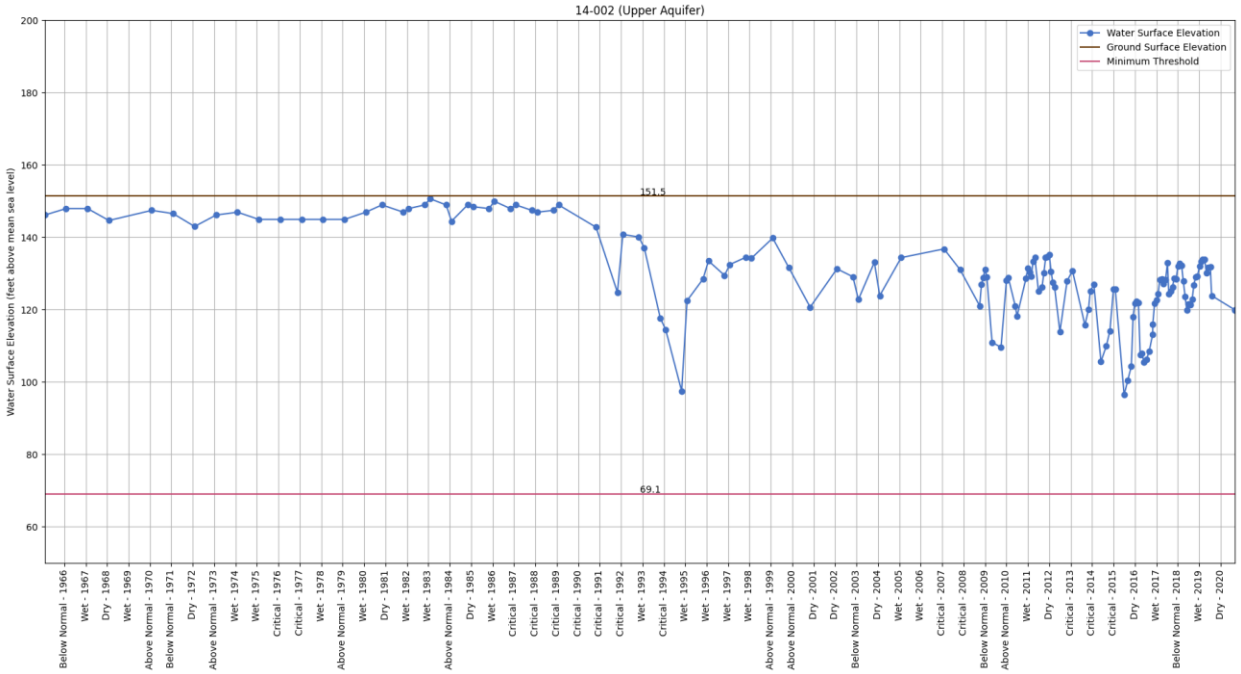

07-017 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
104.0
87.9
75.4
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
Dry - 2020

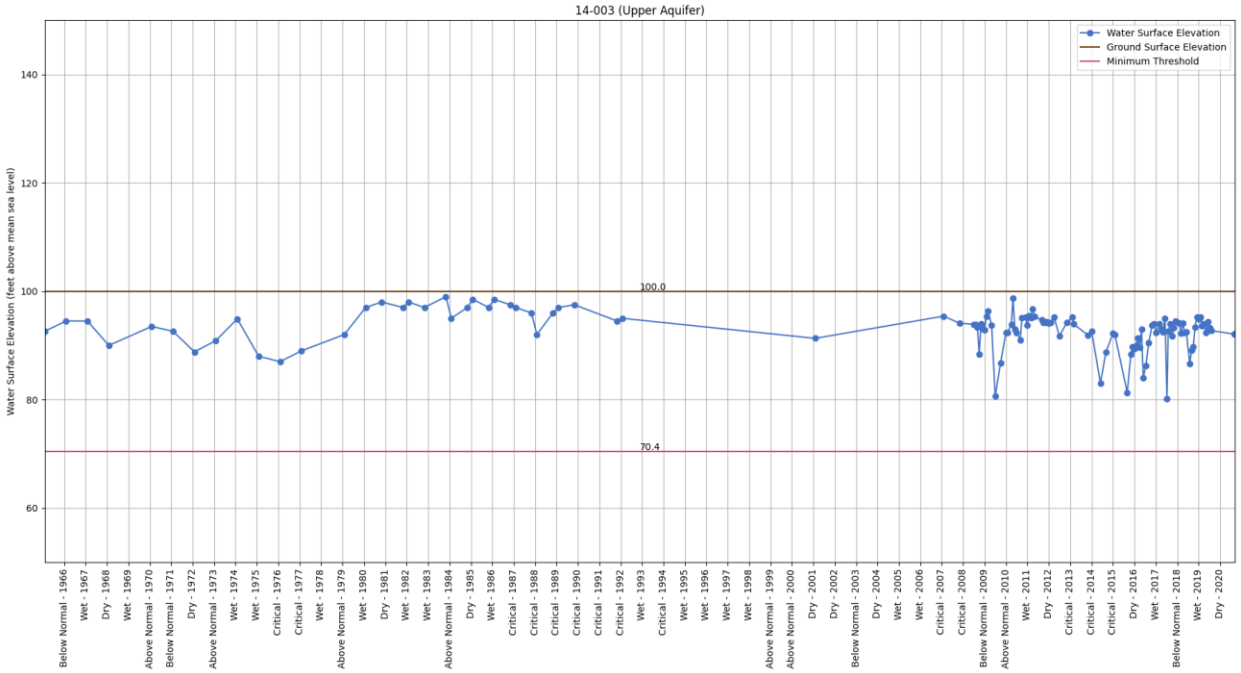

07-018 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
170.3
70.5
60.3
Dry - 2020

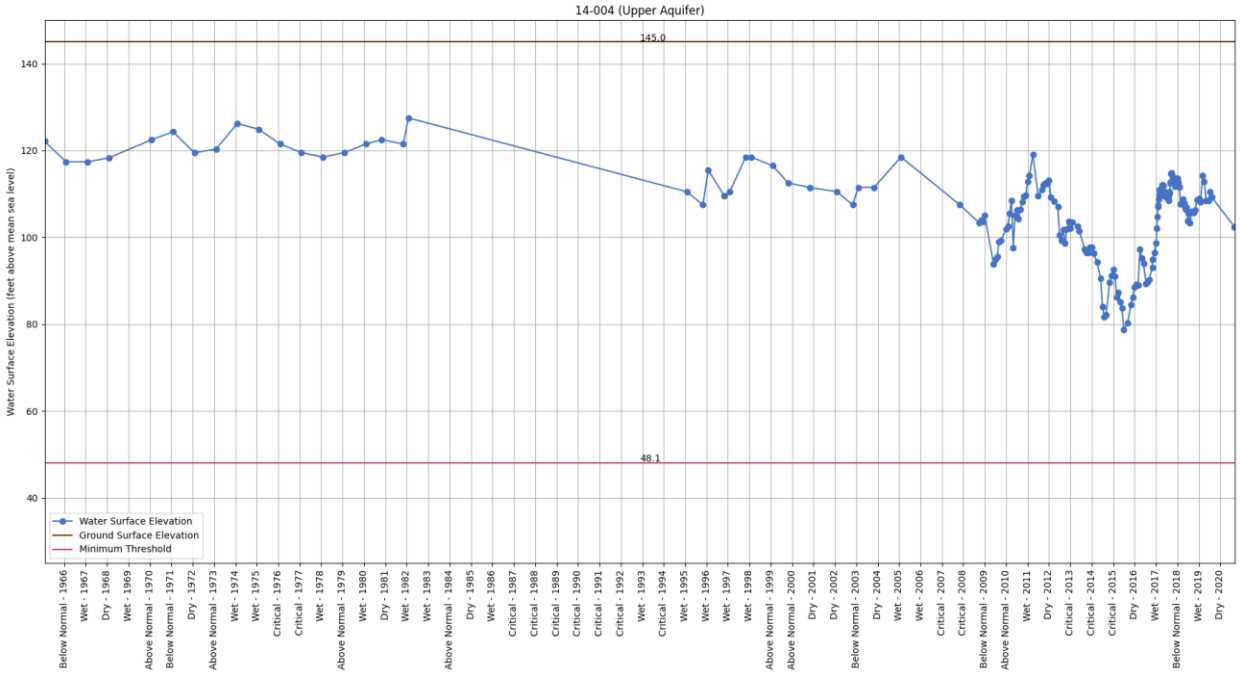

08-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Measurable Objective
Water Surface Elevation (feet above mean sea level)
113.0
34.9
-15.9
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

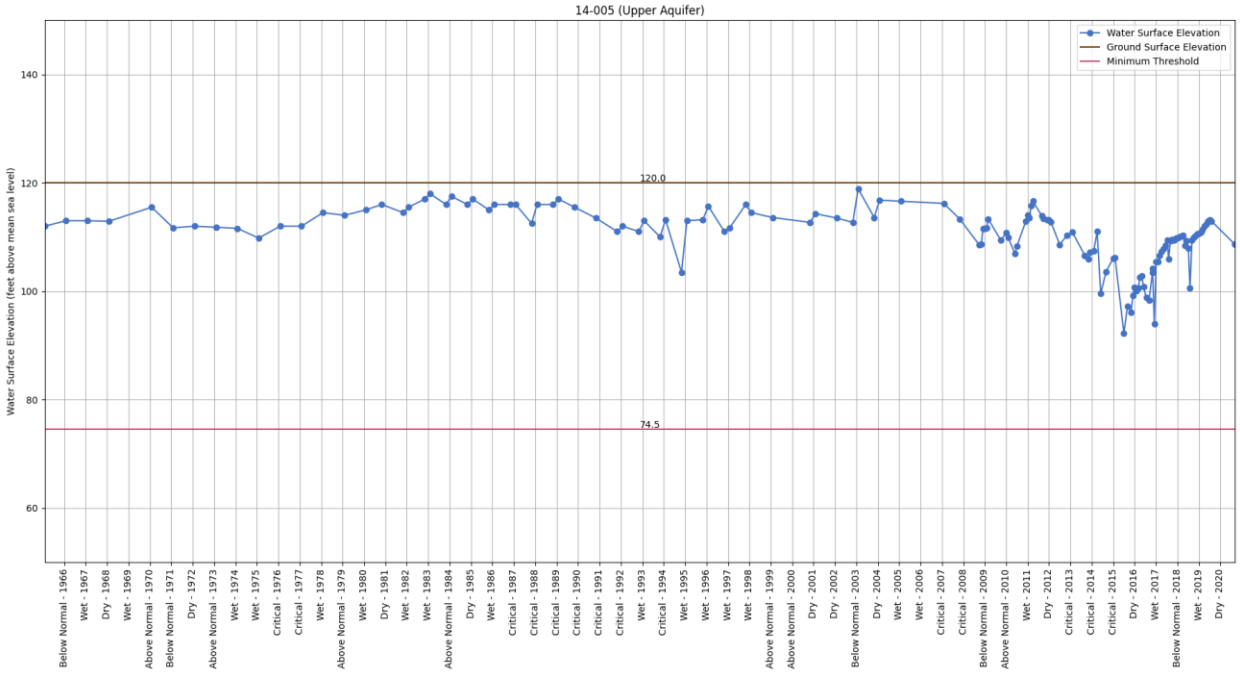

07-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
176.3
Water Surface Elevation (feet above mean sea level)
200
180
160
140
120
100
80
60
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

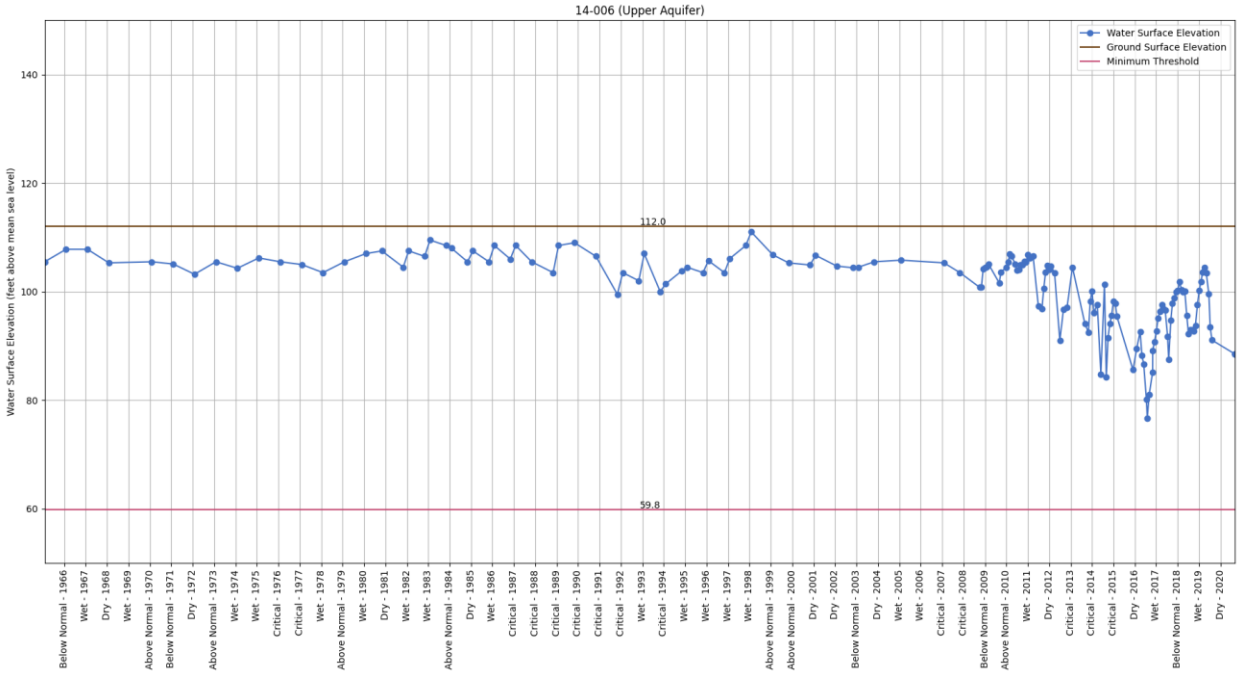

14-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
106.0
1.2
Water Surface Elevation (feet above mean sea level)
150
125
100
75
50
25
0
−25
−50
Below Normal - 1966
Wet - 1967
Dry - 1968
Wet - 1969
Above Normal - 1970
Below Normal - 1971
Dry - 1972
Above Normal - 1973
Wet - 1974
Wet - 1975
Critical - 1976
Critical - 1977
Wet - 1978
Above Normal - 1979
Wet - 1980
Dry - 1981
Wet - 1982
Wet - 1983
Above Normal - 1984
Dry - 1985
Wet - 1986
Critical - 1987
Critical - 1988
Critical - 1989
Critical - 1990
Critical - 1991
Critical - 1992
Wet - 1993
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020

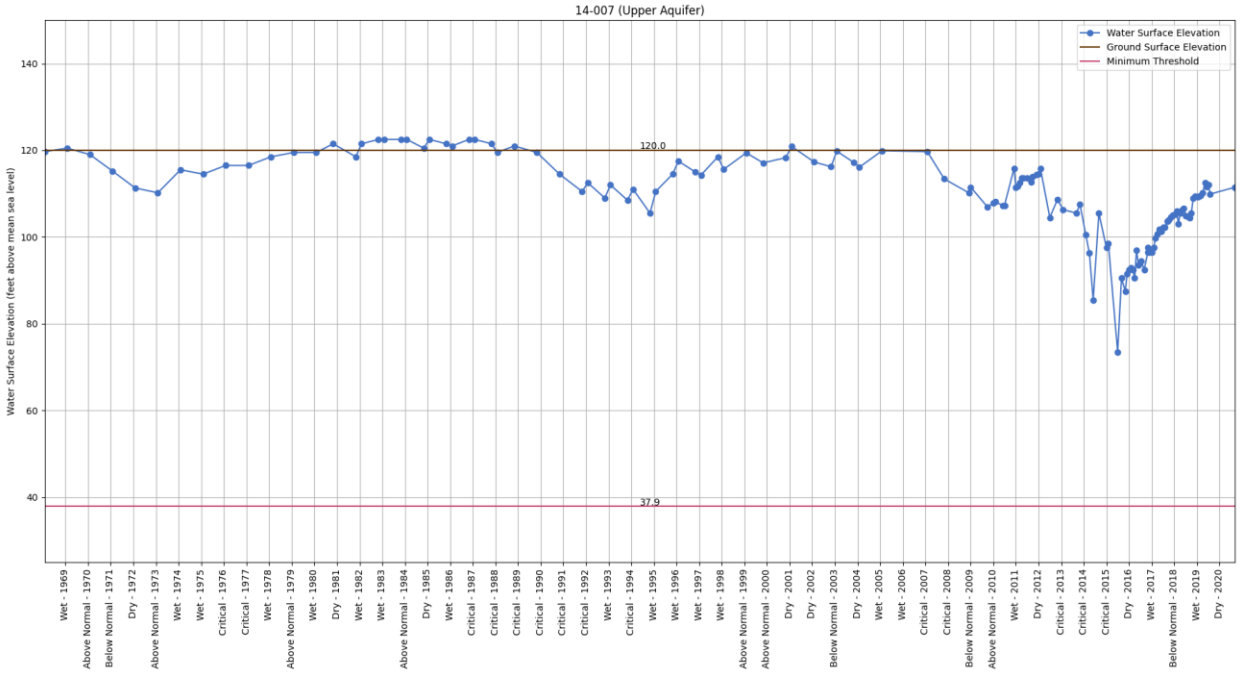

14-002 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Water Surface Elevation (feet above mean sea level)
151.5
69.1

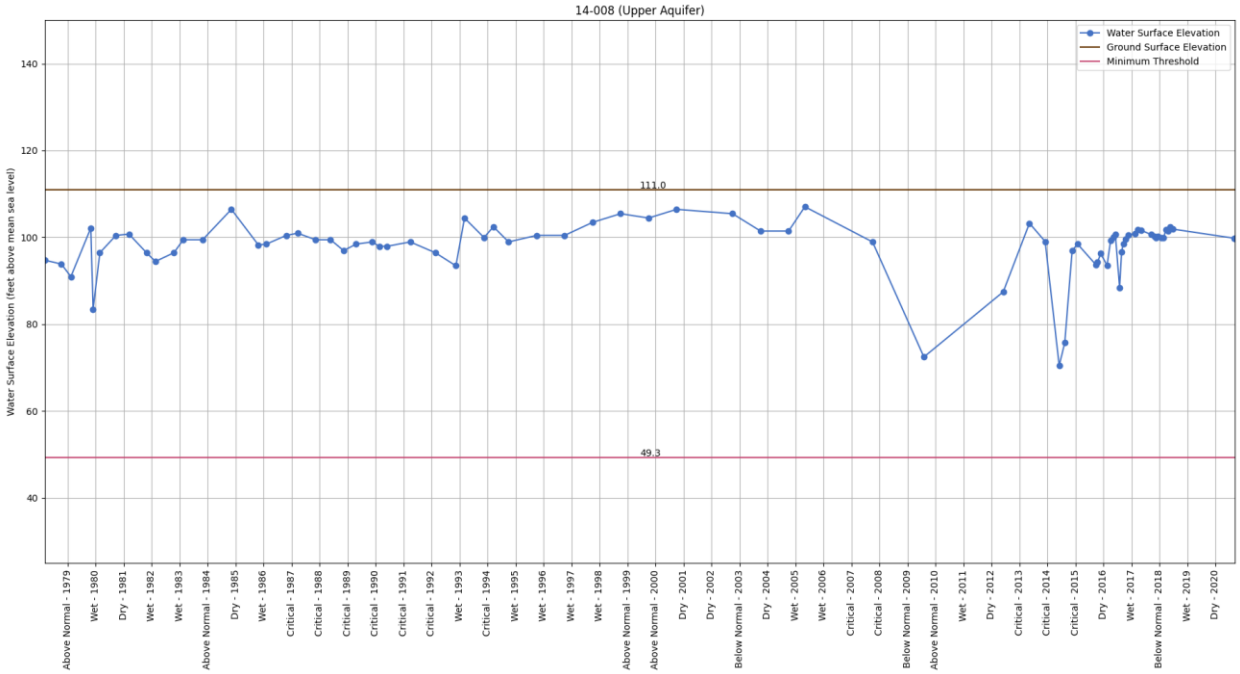

14-003 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Water Surface Elevation (feet above mean sea level)
100.0
70.4

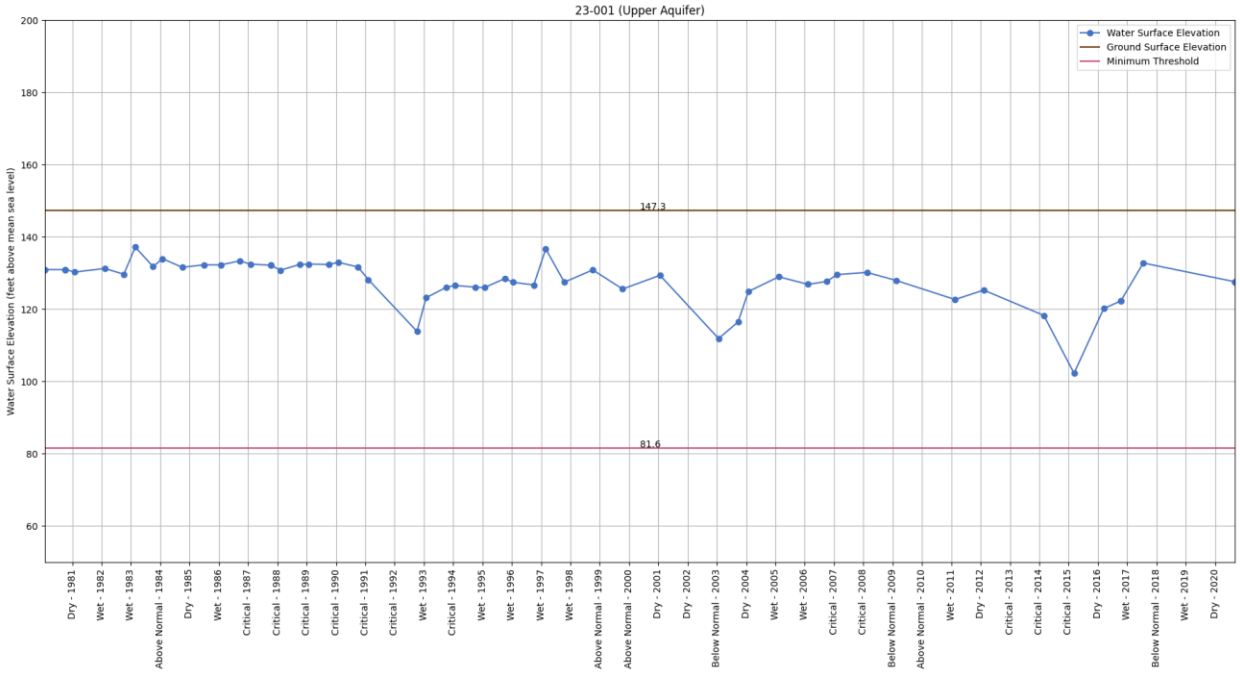

14-004 (Upper Aquifer)
145.0
48.1
Water Surface Elevation (feet above mean sea level)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold


14-005 (Upper Aquifer)
120.0
74.5
Water Surface Elevation (feet above mean sea level)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold


14-006 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
112.0
59.8
Below Normal - 1966
Wet - 1967
Dry - 1968
Wet - 1969
Above Normal - 1970
Below Normal - 1971
Dry - 1972
Above Normal - 1973
Wet - 1974
Wet - 1975
Critical - 1976
Critical - 1977
Wet - 1978
Above Normal - 1979
Wet - 1980
Dry - 1981
Wet - 1982
Wet - 1983
Above Normal - 1984
Dry - 1985
Wet - 1986
Critical - 1987
Critical - 1988
Critical - 1989
Critical - 1990
Critical - 1991
Critical - 1992
Wet - 1993
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020


14-007 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Water Surface Elevation (feet above mean sea level)
140
120
100
80
60
40
120.0
37.9
Wet - 1969
Above Normal - 1970
Below Normal - 1971
Dry - 1972
Above Normal - 1973
Wet - 1974
Wet - 1975
Critical - 1976
Critical - 1977
Wet - 1978
Above Normal - 1979
Wet - 1980
Dry - 1981
Wet - 1982
Wet - 1983
Above Normal - 1984
Dry - 1985
Wet - 1986
Critical - 1987
Critical - 1988
Critical - 1989
Critical - 1990
Critical - 1991
Critical - 1992
Wet - 1993
Critical - 1994
Wet - 1995
Wet - 1996
Wet - 1997
Wet - 1998
Above Normal - 1999
Above Normal - 2000
Dry - 2001
Dry - 2002
Below Normal - 2003
Dry - 2004
Wet - 2005
Wet - 2006
Critical - 2007
Critical - 2008
Below Normal - 2009
Above Normal - 2010
Wet - 2011
Dry - 2012
Critical - 2013
Critical - 2014
Critical - 2015
Dry - 2016
Wet - 2017
Below Normal - 2018
Wet - 2019
Dry - 2020


14-008 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Water Surface Elevation (feet above mean sea level)
111.0
49.3


23-001 (Upper Aquifer)
Water Surface Elevation
Ground Surface Elevation
Minimum Threshold
Water Surface Elevation (feet above mean sea level)
147.3
81.6

Appendix X. Northern & Central Delta-Mendota GSP Region WY2020 Annual Report Supplemental Information

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Table X-1. WY2020 Groundwater Quality Monitoring Results – Northern & Central Delta-Mendota GSP Region

DMS ID	State Well Number	CASGEM ID (if applicable)	Local ID	Status	Well Use	Aquifer	Sample Date	TDS Result (mg/L)	Nitrate as N Result (mg/L)	Boron Result (mg/L)	If not sampled, why?	Comments
01-001	04S06E36C001M	375509N1212609W001	MP030.43R	Inactive	Irrigation	Lower	8/25/2020	630	6.7	2.3		
01-002	05S07E05F001M	375313N1212242W001	MP033.71L	Inactive	Irrigation	Lower	-	-	-	-	Well pump not in service and no accessible port for sampling, well owner is in the process of repairing pump	
01-003	06S08E20D002M	374061N1211212W001	MP045.78R	Inactive	Irrigation	Lower	8/25/2020	1,400	9	0.73		
01-004	07S08E28R002M	372907N1210875W002	MC10-2	Active	Monitoring	Upper	8/24/2020	400	13	0.13		
01-005	08S08E15G001M	372424N1210754W001	MP058.28L	Active	Irrigation	Upper	-	-	-	-	Misunderstanding with field crew regarding which well to be sampled	
01-006		372604N1210611W001	91	Active	Irrigation	Lower	-	-	-	-	Well pump not in service and no accessible port for sampling, well owner is in the process of repairing pump	
01-007			MP021.12L	Unknown	Unknown	Lower	-	-	-	-	Well pump not in service and no accessible port for sampling, well owner is in the process of repairing pump	
01-008			MP051.66L	Unknown	Unknown	Lower	8/25/2020	660	7.2	0.32		
02-001	05S07E15N002M	374934N1211934W001	MP037.32L	Active	Irrigation	Upper	-	-	-	-	City didn't have access to well and SLDMWA says well hasn't been operational for 4-7 years	
02-002			WELL 02 - NORTH 5TH STREET	Unknown	Public Supply	Lower	8/25/2020	970	7.5	0.5		
03-001		375015N1211011W001	MW-2	Active	Monitoring	Upper	7/21/2020	1,530	11.1	0.946		
03-002			MW-3	Unknown	Monitoring	Upper	-	-	-	-	Wires got crossed and sampled a	

DMS ID	State Well Number	CASGEM ID (if applicable)	Local ID	Status	Well Use	Aquifer	Sample Date	TDS Result (mg/L)	Nitrate as N Result (mg/L)	Boron Result (mg/L)	If not sampled, why?	Comments
											different well; Homeless problem near MW-3	
03-003	05S/08E-16R		WSJ003	Unknown	Irrigation	Upper	7/21/2020	1,850	0.28	1.03		
04-001		376129N1212942W001	121	Active	Irrigation	Lower	-	-	-	-	Doesn't pump and must be sent for repairs; Won't be able to monitor until next year	
06-001	06S08E09E001M	374316N1210994W001	P259-1	Active	Monitoring	Lower	10/21/2020	620	6.4	0.38		Sampled outside of the designated water quality monitoring period (May through August) due to misunderstanding in monitoring responsibility
06-002	06S08E09E003M	374316N1210994W003	P259-3	Active	Monitoring	Upper	8/24/2020	660	12	0.4		
06-003		375774N1212096W001	WSID 3	Active	Monitoring	Lower	8/18/2020	1,420	16.7	1.85		
06-004			MP031.31L1-L2Well1	Unknown	Unknown	Upper	-	-	-	-	Non-operational	
07-002	10S10E32L001M	370173N1208999W001	MC15-1	Active	Monitoring	Lower	10/21/2020	380	1.7	0.74		Sampled outside of the designated water quality monitoring period (May through August) due to misunderstanding in monitoring responsibility
07-003	10S10E32L002M	370173N1208999W002	MC15-2	Active	Monitoring	Upper	8/24/2020	440	1.8	0.68		
07-004	11S10E04L001M		MP081.08R	Unknown	Unknown	Upper	-	-	-	-	Miscommunication about monitoring responsibilities	
07-005	12S11E03Q001M	369097N1207554W001	MP091.68R	Inactive	Irrigation	Lower	-	-	-	-	Does not have a pump	
07-006	12S12E07E001M	369044N1207092W001	MP094.26L	Inactive	Irrigation	Lower	-	-	-	-	High concentration of boron and hasn’t been used in about 3 years; Nowhere to place the purge water; MP093.27L sampled instead (well video report provided to confirm construction)	

DMS ID	State Well Number	CASGEM ID (if applicable)	Local ID	Status	Well Use	Aquifer	Sample Date	TDS Result (mg/L)	Nitrate as N Result (mg/L)	Boron Result (mg/L)	If not sampled, why?	Comments
07-007	12S12E16E003M	368896N1206702W001	MC18-1	Active	Monitoring	Lower	10/21/2020	990	ND	1.7		Sampled outside of the designated water quality monitoring period (May through August) due to misunderstanding in monitoring responsibility
07-008	13S12E22F001M	367885N1206510W001	PWD 48	Active	Irrigation	Lower	-	-	-	-	Shaft locked (not working)	
07-009		366000N1202300W001	KRCDTID03	Active	Irrigation	Upper	8/25/2020	3,000	ND	2.2		Converted production wells; 2-inch hole on the surface and 16-inch hole underneath; Not sure how to purge 3 volumes of water; HydraSleeve grab sample; TDS results are questionable
07-010		366500N1202500W001	KRCDTID02	Active	Irrigation	Upper	8/30/2020	5,700	ND	1.9		Converted production wells; 2-inch hole on the surface and 16-inch hole underneath; Not sure how to purge 3 volumes of water; HydraSleeve grab sample; TDS results are questionable
07-011		368835N1206270W001	MP099.24L	Inactive	Irrigation	Upper	-	-	-	-	Shaft locked (not working)	
07-012	12S/12E-16B		GDA003	Unknown	Irrigation	Upper	-	-	-	-	Doesn't have a pump	
07-014			TW-4	Unknown	Monitoring	Lower	8/30/2020	790	ND	0.95		
07-015			TW-5	Unknown	Nested Monitoring	Lower	8/30/2020	840	ND	1.1		
07-016			Well 01	Unknown	Public Supply	Lower	7/28/2020	1,300	1.2	3.62		
07-017			Well 1	Unknown	Public Supply	Upper	8/18/2020	510	2.9	0.668		
07-018	15S/16E-20		WSJ001	Unknown	Domestic	Upper	8/21/2020	2,300	ND	2.9		
08-001			MP102.04R	Active	Irrigation	Upper	8/19/2020	3,140	ND	1.6		

Table X-2. Representative Monitoring Network Revisions, Groundwater Levels

DMS ID	Local ID	Aquifer	To Be Revised?	If so, what well was replaced?	Construction Available?	Aquifer Designation for Well Revision	Comments
01-001	MP030.43R	Lower	No	-	-	-	
01-002	MP033.71L	Lower	No	-	-	-	
01-003	MP045.78R	Lower	No	-	-	-	
01-004	MC10-2	Upper	No	-	-	-	
01-005	MP058.28L	Upper	No	-	-	-	
01-006	91	Lower	No	-	-	-	
01-007	MP021.12L	Lower	No	-	-	-	
01-008	MP051.66L	Lower	No	-	-	-	
02-002	WELL 02 - NORTH 5TH ST	Lower	No	-	-	-	
02-009	Keystone well	Upper	Yes	02-001 (MP037.32L)	Yes	Upper	Revision requested due to well access concerns
03-001	MW-2	Upper	No	-	-	-	
03-002	MW-3	Upper	No	-	-	-	
03-003	WSJ003	Upper	No	-	-	-	
04-001	121	Lower	No	-	-	-	
06-001	P259-1	Lower	No	-	-	-	
06-002	P259-3	Upper	No	-	-	-	
06-003	WSID 3	Lower	No	-	-	-	
06-004	MP031.31L1-L2Well1	Upper	No	-	-	-	
07-002	MC15-1	Lower	No	-	-	-	
07-003	MC15-2	Upper	No	-	-	-	
07-005	MP091.68R	Lower	No	-	-	-	
07-007	MC18-1	Lower	No	-	-	-	

DMS ID	Local ID	Aquifer	To Be Revised?	If so, what well was replaced?	Construction Available?	Aquifer Designation for Well Revision	Comments
07-008	PWD 48	Lower	No	-	-	-	Break in casing or issue with pump discovered in September 2020; Revision will be evaluated after condition assessment of PWD 48
07-009	KRCDTID03	Upper	No	-	-	-	
07-010	KRCDTID02	Upper	No	-	-	-	
07-012	GDA003	Upper	No	-	-	-	
07-014	TW-4	Lower	No	-	-	-	
07-015	TW-5	Lower	No	-	-	-	
07-016	Well 01	Lower	No	-	-	-	
07-017	Well 1	Upper	No	-	-	-	
07-018	WSJ001	Upper	No	-	-	-	
07-028	MP093.27L (Well 500)	Lower	Yes	07-006 (MP094.26L)	Yes	Lower	Revision requested to both groundwater level and groundwater quality monitoring networks to streamline monitoring activities
07-029	Little Panoche Creek	Both	Yes	N/A – New well	Yes	Both	Additional nested monitoring well funded by DWR's Technical Support Services Program
08-002	Well M-1/MP102.04L	Upper	Yes	08-001 (MP102.04R)	Yes	-	Replacing well that collapsed and was abandoned in August 2020

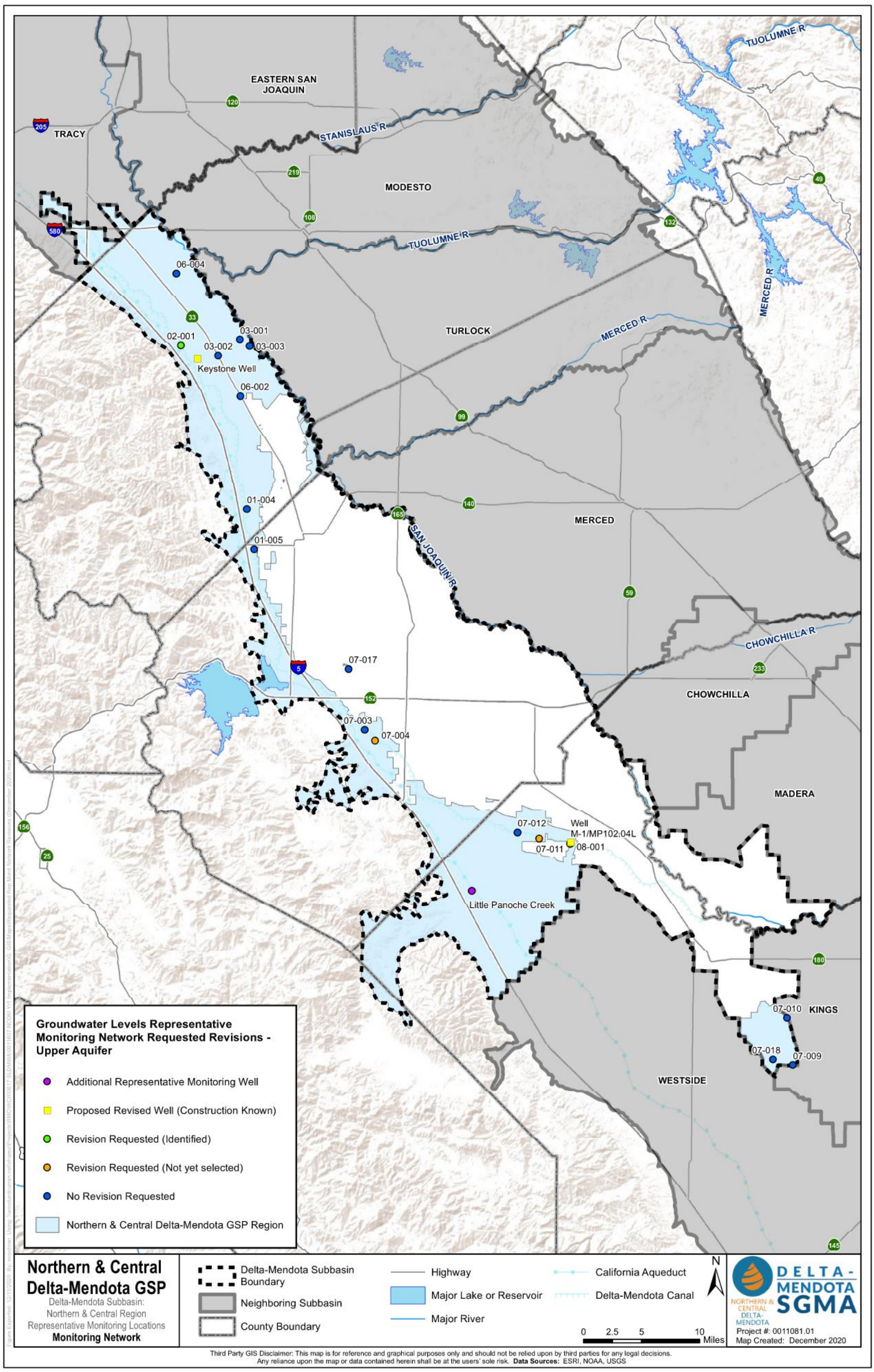

Figure X-1. Groundwater Levels Monitoring Network Revisions, Upper Aquifer

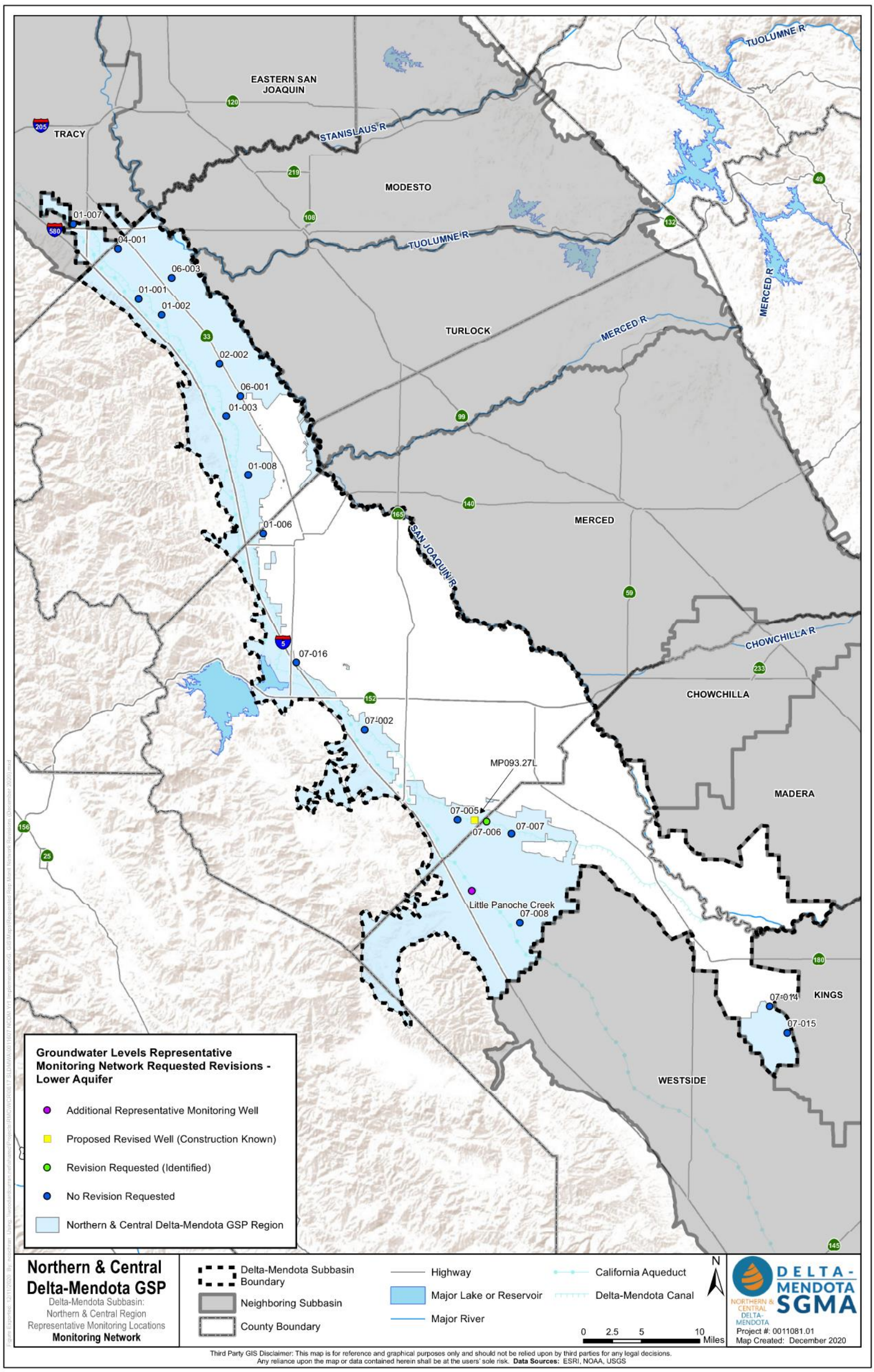

Figure X-2. Groundwater Levels Monitoring Network Revisions, Lower Aquifer

Table X-3. Representative Monitoring Network Revisions, Groundwater Quality

DMS ID	Local ID	To Be Revised?	If so, what Well is being Replaced?	Construction Available?	Aquifer Designation for Well Revision	Comments
01-001	MP030.43R	No	-	-	-	
01-002	MP033.71L	No	-	-	-	
01-003	MP045.78R	No	-	-	-	
01-004	MC10-2	No	-	-	-	
01-006	91	No	-	-	-	
01-007	MP021.12L	No	-	-	-	
01-008	MP051.66L	No	-	-	-	
01-018	Sandhu well	Yes	01-005 (MP058.28L)	Pending	Upper	Revision requested due to well access concerns; Del Puerto WD to provide construction details and historic data available
02-002	WELL 02 - NORTH 5TH ST	No	-	-	-	
02-009	Keystone well		02-001 (MP037.32L)	Yes	Upper	Revision requested due to well access safety concerns
03-001	MW-2	No	-	-	-	
03-003	WSJ003	No	-	-	-	
03-007	MW-1	Yes	03-002 (MW-3)	Yes	Upper	Revision requested due to sampling safety concerns
04-001	121	No	-	-	-	
06-001	P259-1	Yes	See “Comments”	-	-	Evaluation of potential revision will take place following completion of the Well Census and Inventory project
06-002	P259-3	Yes	See “Comments”	-	-	Evaluation of potential revision will take place following completion of the Well Census and Inventory project
06-003	WSID 3	No	-	-	-	
06-004	MP031.31L1-L2Well1	Yes	See “Comments”	-	-	Evaluation of potential revision will take place following completion of the Well Census and Inventory project
07-002	MC15-1	No	-	-	-	
07-003	MC15-2	No	-	-	-	
07-004	MP081.08R	Yes	See “Comments”	-	-	Revision requested due to well access concerns; To be removed, with suitable replacement to be identified following completion of the Well Census and Inventory project
07-007	MC18-1	No	-	-	-	
07-008	PWD 48	No	-	-	-	Break in casing or issue with pump discovered in September 2020; Revision will be evaluated after condition assessment of PWD 48
07-009	KRCDTID03	Yes	See “Comments”	-	-	Revision requested due to inability to purge the well; Tranquillity Irrigation District will look into submitting

DMS ID	Local ID	To Be Revised?	If so, what Well is being Replaced?	Construction Available?	Aquifer Designation for Well Revision	Comments
						a TSS application for an Upper Aquifer replacement well
07-011	MP099.24L	Yes	See “Comments”	-	-	Issues with pump due to crystalized salts or corrosion, revision requested to both groundwater level and groundwater level monitoring networks to streamline monitoring activities; Three alternative wells available in surrounding area, to be selected following status check on pumps
07-012	GDA003	No	-	-	-	
07-014	TW-4	No	-	-	-	
07-015	TW-5	No	-	-	-	
07-016	Well 01	No	-	-	-	
07-017	Well 1	No	-	-	-	
07-018	WSJ001	No	-	-	-	
07-028	MP093.27L (Well 500)	Yes	07-006 (MP094.26L)	Yes	Lower	Revision requested due to inability to retrieve water quality sample
07-029	Little Panoche Creek	-	N/A – New well	Yes	-	Additional nested monitoring well funded by DWR’s Technical Support Services Program
07-030	TW-4 (upper component)	No	07-010 (KRCDTID02)	-	-	Revision requested due to inability to purge well KRCDTID02
07-031	MP092.20R	Yes	07-005 (MP091.68R)	No	Unknown	Continued sampling of MP091.68R dependent on purchase of pump by Pacheco Water District to perform groundwater quality sampling
08-002	Well M-1/MP102.04L	Yes	08-001 (MP102.04R)	Yes	-	Well MP102.04R collapsed and was abandoned in August 2020; Working to get Well M-1/MP102.04L operational and will have more information in January 2021

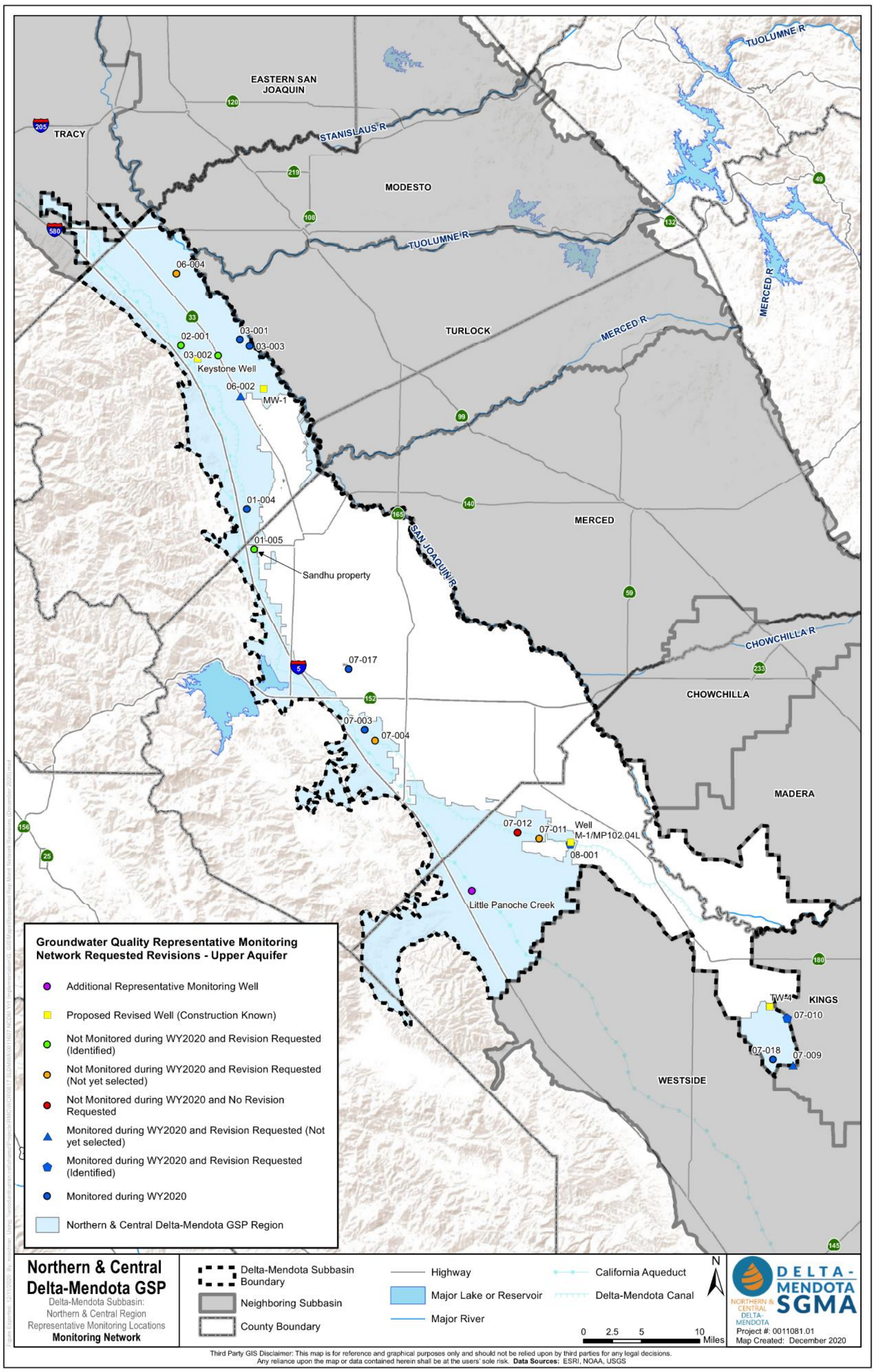

Figure X-3. Groundwater Quality Monitoring Network Revisions, Upper Aquifer

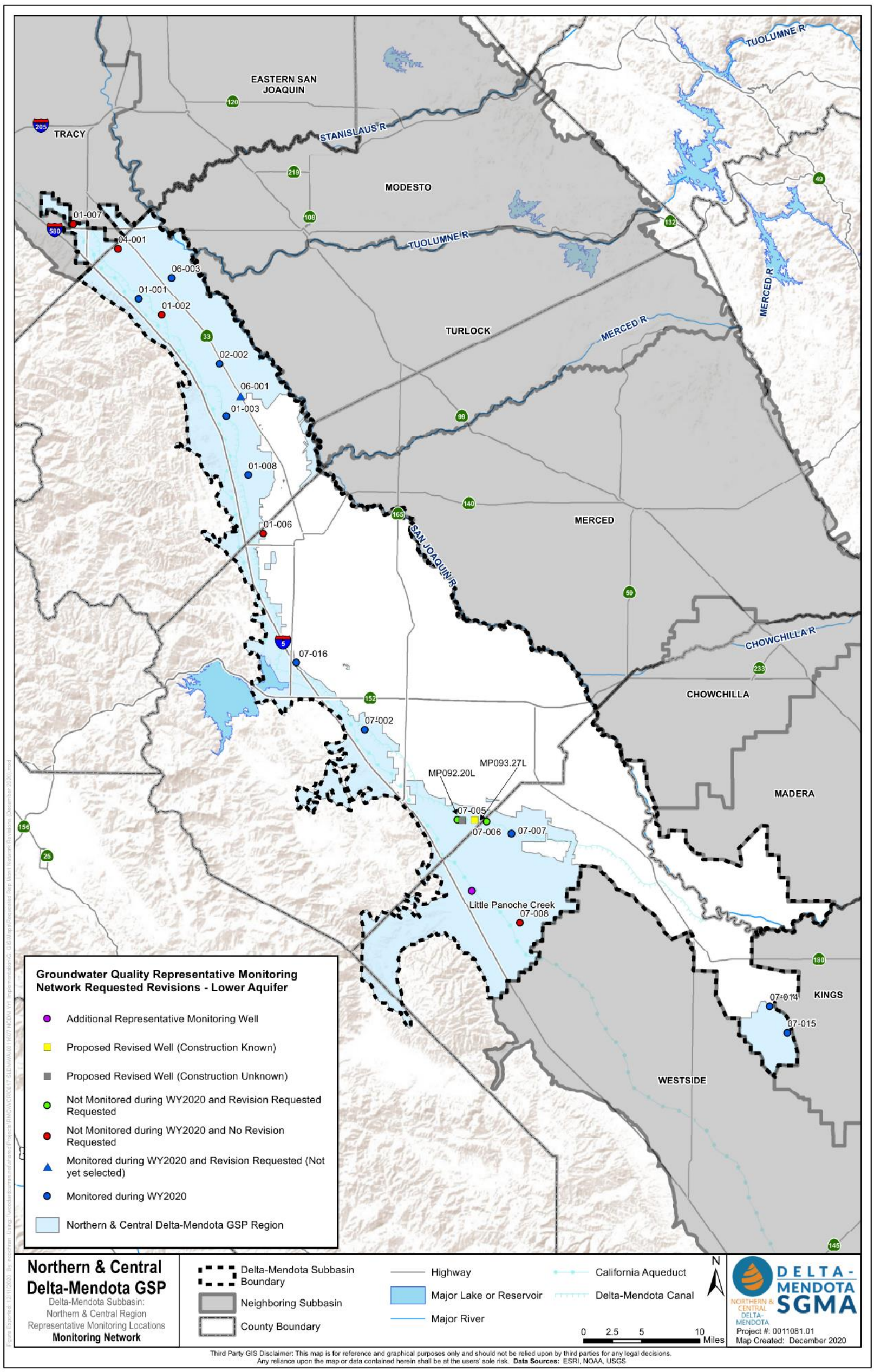

Figure X-4. Groundwater Quality Monitoring Network Revisions, Lower Aquifer

Table X-4. Representative Monitoring Network Revisions, Land Subsidence

DMS ID	Local ID	Monitoring Entity	Site Type	Management Area	To Be Revised?	If so, what site was replaced?	Monitoring Frequency	Comments
02-003	Floragold Well	City of Patterson	Benchmark	N/A	No	-	Every other year during even years	
02-008	Well 11	City of Patterson	Benchmark	N/A	No	-	Every other year during even years	
02-005	Well 2	City of Patterson	Benchmark	N/A	No	-	Every other year during even years	
02-006	Well 4	City of Patterson	Benchmark	N/A	No	-	Every other year during even years	
02-007	Well 6	City of Patterson	Benchmark	N/A	No	-	Every other year during even years	
03-004	Locust Avenue Well	Patterson Irrigation District	Benchmark	WSID-PID	No	-	Baseline survey in 2019; Subsequent surveys in 2020 and 2023	
03-005	Pumping Plant No. 2	Patterson Irrigation District	Benchmark	WSID-PID	No	-	Baseline survey in 2019; Subsequent surveys in 2020 and 2023	
03-006	River Station	Patterson Irrigation District	Benchmark	WSID-PID	No	-	Baseline survey in 2019; Subsequent surveys in 2020 and 2023	
01-010	Subsidence Monitoring Point #1	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-011	Subsidence Monitoring Point #2	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-012	Subsidence Monitoring Point #3	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-013	Subsidence Monitoring Point #4	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-014	Subsidence Monitoring Point #5	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
02-004	Subsidence Monitoring Point #6	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
04-003	WSID 11	West Stanislaus Irrigation District	Benchmark	WSID-PID	No	-	Baseline survey in 2019; Subsequent surveys in 2020 and 2023	
04-004	WSID 21	West Stanislaus Irrigation District	Benchmark	WSID-PID	No	-	Baseline survey in 2019; Subsequent surveys in 2020 and 2023	
04-005	WSID 2	West Stanislaus Irrigation District	Benchmark	WSID-PID	Yes	04-002 (WSID 1)	Baseline survey in 2019; Subsequent surveys in 2020 and 2023	WSID 1 no longer accessible
01-015	Subsidence Monitoring Point #7	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
06-006	Subsidence Monitoring Point #8	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-016	Subsidence Monitoring Point #9	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-017	Subsidence Monitoring Point #10	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
07-021	Subsidence Monitoring Point #11	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
01-009	P252	University NAVSTAR Consortium (UNAVCO)	CGPS	N/A	No	-	Every other year during even years	
07-022	Subsidence Monitoring Point #12	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
07-023	Subsidence Monitoring Point #13	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
07-020	MP104.18 [1]	San Luis Water District	Benchmark	N/A	No	-	Every other year during even years	
07-024	Subsidence Monitoring Point #14	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
07-025	Subsidence Monitoring Point #15	USBR / SLDMWA	Benchmark	N/A	No	-	Every other year during even years	
07-019	AG-24	Tranquillity Irrigation District	Benchmark	TRID	No	-	Annual	
07-026	TID A	Tranquillity Irrigation District	Benchmark	TRID	No	-	Annual	
07-027	TID B	Tranquillity Irrigation District	Benchmark	TRID	No	-	Annual	

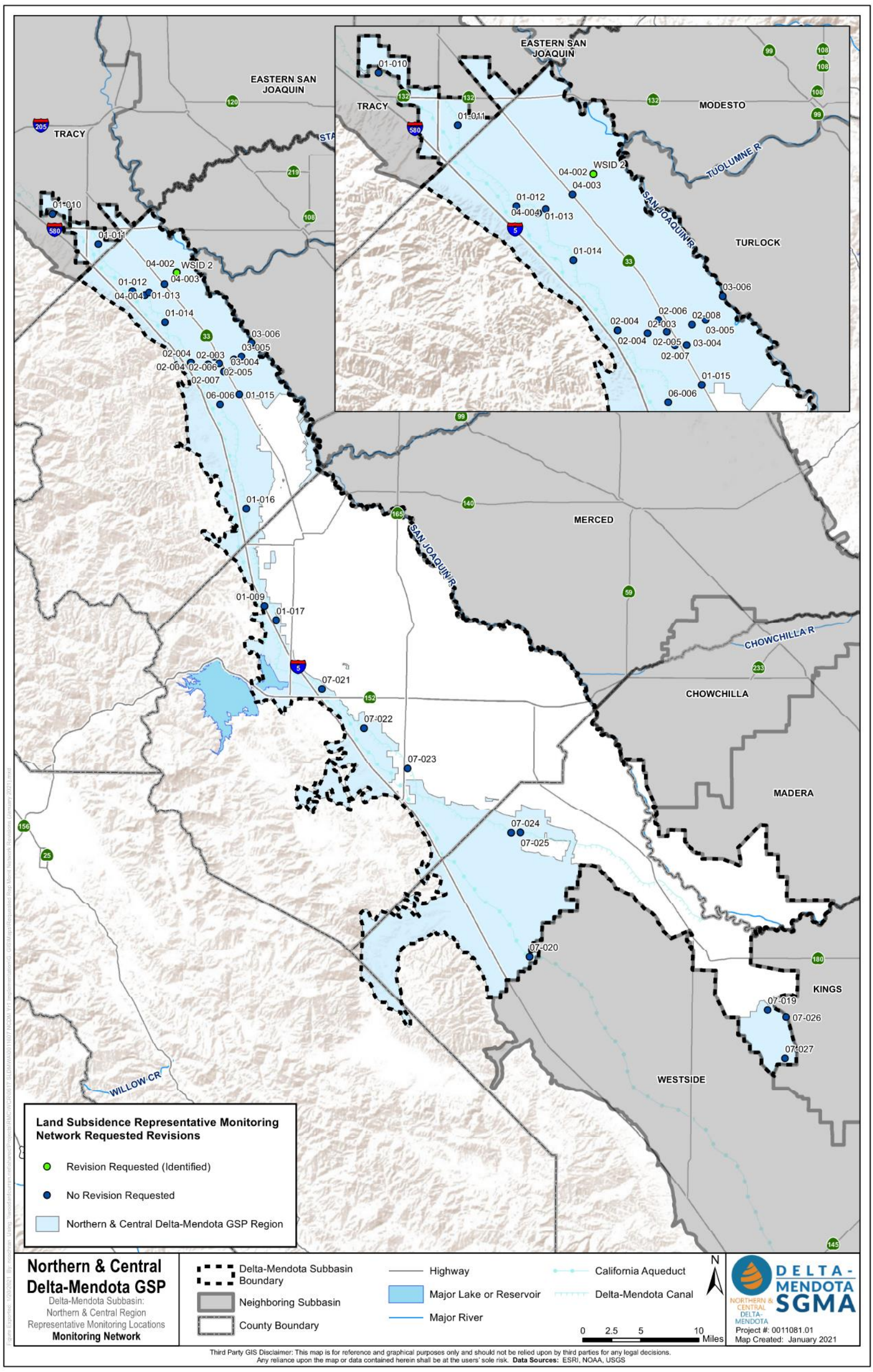

Figure X-5. Land Subsidence Monitoring Network Revisions

MEMORANDUM

TO: Delta-Mendota Subbasin Coordination Committee Members and Alternates

FROM: Scott Petersen, Water Policy Director

DATE: March 8, 2021

RE: Approval for Authorization of Fiscal Year 2022 Task Orders for Coordination Committee Activities

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BACKGROUND

The Coordination Committee approved the coordinated budget for Fiscal Year 2022 (FY22) on January 11, 2021. Included within these budgets are several projects or activities that will be supported by consultants. Consultant activities for the Coordination Committee during FY22 are included within the following proposed task orders:

- Woodard & Curran
    - Proposition 1/68 grant administration for supplemental GSP development, well census and inventory, and subsidence characterization study (ongoing from FY21)
    - Coordinated activities for Water Year 2021 (WY21) Annual Report *(detail for this item is included in the Recommendation, Analysis, and Budget sections)*
        - The base of Woodard & Curran's experience with the first year of GSP implementation (FY21) has further refined coordinated costs associated with WY20 Annual Report development
        - Note: this task includes sub-consultant support from Ken D Schmidt & Associates (KDSA) for map development as well as Provost & Pritchard for data analysis and report preparation
- GSI Environmental Inc.
    - Subbasin-wide subsidence characterization study and project feasibility determination
- Houston Engineering Inc.
    - Data management system (DMS) hosting, staff support and approved enhancements
- Provost & Pritchard
    - Staff augmentation support for the Coordination Committee

Detail for these task orders for the Coordination Committee is included in the table below:

Vendor	Task	Task Order Number*	Task Order Amount	FY22 Budget Amount
Woodard & Curran	Proposition 1/68 grant administration	W&C FY22-002	$42,096[1]	$30,000
Woodard & Curran	Water Year 2021 Coordinated Annual Report	W&C FY22-003	$52,262[2]	$10,500
GSI Environmental Inc.	Subsidence characterization study	GSI FY22-001	$88,760[3]	$85,000
Houston Engineering Inc.	Data management system (DMS) hosting, support, enhancements	HEI FY22-001	$14,923.50	$14,943
Provost & Pritchard	Subbasin staff augmentation support	P&P FY22-002	$19,941	$19,941

**Task Order numbers subject to change based on internal SLDMWA tracking needs*
[1]This amount includes $9,792 contingency. Anticipated difference between project completion and final grant reimbursement spread across two fiscal years.
[2]This task order estimate is based on the FY21 costs for WY20 Annual Report development. The cost share between the Northern and Central Regions and the Coordination Committee portions of the WY21 Annual Report will be confirmed in advance of the second dues collection based on the actual costs from FY21.
[3]Anticipated difference between project completion and final grant reimbursement spread across two fiscal years

ISSUE FOR DECISION

Whether the Coordination Committee should approve authorization of the outlined task orders for activities in FY22.

RECOMMENDATION

SLDMWA staff recommend approval of the outlined task orders, noting that details for cost share and dues collection for the proposed W&C FY22-003 task order for the WY21 Annual Report will be determined in mid-2021. The WY20 Annual Report development process, which is due to DWR by April 1, 2021, has provided greater detail on the breakdown of costs between the Northern and Central Management Committees and the Coordination Committee.

Staff recommend using the relative proportion of costs between the Northern and Central Regions and overall Coordination Committee costs within the WY20 Annual Report as a guide to determine cost share detail for WY21 Annual Report development. Staff also recommend that costs associated with the WY21 Annual Report be collected in the second dues, anticipated in August 2021, to allow staff and Coordination Committee members time to confirm this cost share detail and ensure agreement with this approach.

ANALYSIS

Providing approval for final authorization of the outlined task orders will ensure adherence to project timelines and continued support for consultant-supported projects. SLDMWA staff's proposed approach for task order W&C FY22-003 for the WY21 Annual Report development, will allow staff to confirm the cost breakdown with Coordination Committee members prior to second dues collection in August 2021. This proposed timing and approach is consistent with the dues collection process and schedule for some activities supported by the Subbasin's ongoing Proposition 1/68 grant.

BUDGET

The WY21 Annual Report item has a higher anticipated budget than was included for this project in the approved FY22 coordinated SGMA budget. This increase is due to additional detail determined from the WY20 Annual Report development process that was not available when the FY22 budget was developed and adopted. Once all WY20 Annual Report costs are totaled, staff will be able to refine and finalize the process for WY21 and beyond.

Providing this approval for final authorization has no impact on the budget. The outlined task orders are for projects or activities included within the approved FY22 budgets for SGMA activities.

Optional Tasks and Fees			
Task	**Sr. GIS Project Manager ($190)**	**Software Engineer II ($129)**	**Total Fee**
Optional 4A - Configurable Water Year		4	$516.00
Optional 4B - Convert Water Level Data to DWR Template	1.5	9	$1,446.00
Optional 4C - Convert Extraction and Use Data to DWR Template	2	9	$1,541.00
Optional 4D - Create Water Level Pop-up Hydrographs	1	10	$1,480.00
Total Optional Tasks	**4.5**	**32**	**$4,983.00**