BEDFORD COLDWATER
Groundwater Sustainability Authority

SGMA Annual Report
Water Year 2024
Bedford-Coldwater Basin

| MARCH 2025 |

TODD GROUNDWATER

BEDFORD COLDWATER
Groundwater Sustainability Authority

SGMA ANNUAL REPORT WATER YEAR 2024

BEDFORD-COLDWATER BASIN

March 2025

TODD GROUNDWATER

1301 Marina Village Parkway, Suite 320
Alameda, CA 94501
510.747.6920
www.toddgroundwater.com

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Acronyms

Actions	Management Actions
AF	acre-feet
AFY	acre-foot per year
Basin	Bedford-Coldwater Subbasin
BCGSA	Bedford-Coldwater Groundwater Sustainability Agency
CIMIS	California Irrigation Management Information System
Corona	City of Corona
DMS	Data Management System
DWR	California Department of Water Resources
DWSAP	Drinking Water Source Water Assessment Program
EMWD	Eastern Municipal Water District
ET	evapotranspiration
EVMWD	Elsinore Valley Municipal Water District
GSA	Groundwater Sustainability Agency
GSE	Ground Surface Elevation
GSP	Groundwater Sustainability Plan
InSAR	Interferometric Synthetic Aperture Radar
JPA	Joint Powers Authority
M&I	municipal, commercial, and industrial
MCL	Maximum Contaminant Level
Metropolitan	Metropolitan Water District of Southern California
mg/L	milligrams per liter
MO	Measurable Objective
MODFLOW	United States Geological Survey modular finite-difference flow model
msl	mean sea level
MT	Minimum Threshold
NAVD88	North American Vertical Datum of 1988
NOAA	National Oceanic and Atmospheric Administration
Projects	Projects to support sustainability
SCADA	Supervisory Control and Data Acquisition
SGMA	Sustainable Groundwater Management Act
TDS	Total Dissolved Solids
TVWD	Temescal Valley Water District
USGS	United States Geological Survey
WMWD	Western Municipal Water District
WRF	Water Reclamation Facility

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EXECUTIVE SUMMARY

This annual groundwater report describes groundwater conditions in the Bedford-Coldwater Subbasin (Basin) of the Elsinore Groundwater Basin (8-004.02) and fulfills the reporting requirements of California's Sustainable Groundwater Management Act (SGMA) which was enacted in California to regulate and sustainably manage groundwater basins throughout the state. SGMA requires sustainable management of priority groundwater basins and empowers local Groundwater Sustainability Agencies (GSAs) to manage groundwater resources.

The Bedford-Coldwater Groundwater Sustainability Authority (BCGSA) was established in 2017 under SGMA. The BCGSA is responsible for implementing SGMA in the Basin and its goal is to achieve long-term groundwater sustainability. The BCGSA consists of three local agencies – the City of Corona, Elsinore Valley Municipal Water District, and Temescal Valley Water District.

The Bedford-Coldwater GSP was prepared from June 2018 through December 2021 with active outreach and public participation throughout the process. The 2022 GSP was adopted by BCGSA on December 18, 2021 and was submitted to the California Department of Water Resources (DWR) in January 2022. The 2022 GSP provides the basic information, analytical tools, and projects and management actions for continued groundwater management, guided by SGMA and by locally defined sustainability goals, objectives, and metrics. As of print, DWR is still reviewing the GSP but has indicated that as a very low-priority basin, Bedford-Coldwater is not subject to state intervention under SGMA (DWR 2024).

This annual groundwater report for the BCGSA documents groundwater conditions including groundwater elevations and storage, water supplies and use, an updated water balance, and groundwater sustainability progress for water year 2024. This report also details the six Sustainable Management Criteria and their respective Minimum Thresholds (MTs). Water year 2024 was an above average water year (the second consecutive above average water year), characterized by above normal rainfall and increased groundwater storage across the Basin, and no MTs were triggered during the water year. In water year 2024 the BCGSA continued collaborative management of the Basin, including ongoing groundwater elevation and quality monitoring, groundwater use tracking, and significant effort towards completion of the projects included in the GSP. BCGSA has made progress on the Projects and Management Actions identified in their GSP, specifically the first phases of Projects 1 and 3, *Investigate Groundwater/Surface Water Interaction at Temescal Wash and Install Monitoring Wells* and *Evaluation of the Effects of Aggregate Pits on Groundwater Flow and Quality*, respectively, and finished Project 2 – Initiate a Survey of Active Private Wells.

This annual report reflects the changing scope of groundwater management in the Basin and thus involves adapted methods, for example, annual model updates to track sustainability. It builds on the GSP and presents updated groundwater conditions, ongoing post-GSP assessment of sustainability, and progress on implementing the GSP's projects and management actions.

1. INTRODUCTION

The Sustainable Groundwater Management Act (SGMA), effective January 1, 2015, was enacted in California to regulate and sustainably manage groundwater basins throughout the State. SGMA provides a framework to guide local public agencies and Groundwater Sustainability Agencies (GSAs) in the management of their underlying groundwater basins, especially those considered critically affected as defined by the Department of Water Resources (DWR). The Bedford-Coldwater Groundwater Sustainability Authority (BCGSA) prepared a Groundwater Sustainability Plan (GSP) to maintain long-term groundwater sustainability in the Bedford-Coldwater Groundwater Subbasin (Basin, **Figure 1-1**) of the Elsinore Groundwater Basin and submitted the plan to the DWR in January 2022. As of March 2025, DWR is still reviewing the GSP for the Basin. However, DWR sent a letter to the BCGSA on January 31, 2024 stating that they have prioritized evaluation of GSPs submitted for medium- and high-priority basins to meet statutory deadlines for those plans in which state intervention applies. DWR also provided that as a very low-priority basin, Bedford-Coldwater is not required to be managed under a GSP and is not subject to state intervention under Chapter 11 of SGMA. The letter further encouraged the BCGSA to continue implementation of the GSP and submission of annual reports by April 1 each year and committed to evaluate and provide assessment and determination on the BCGSA GSP as soon as practicable now that the evaluation of medium- and high-priority-basin GSPs has been completed (DWR 2024).

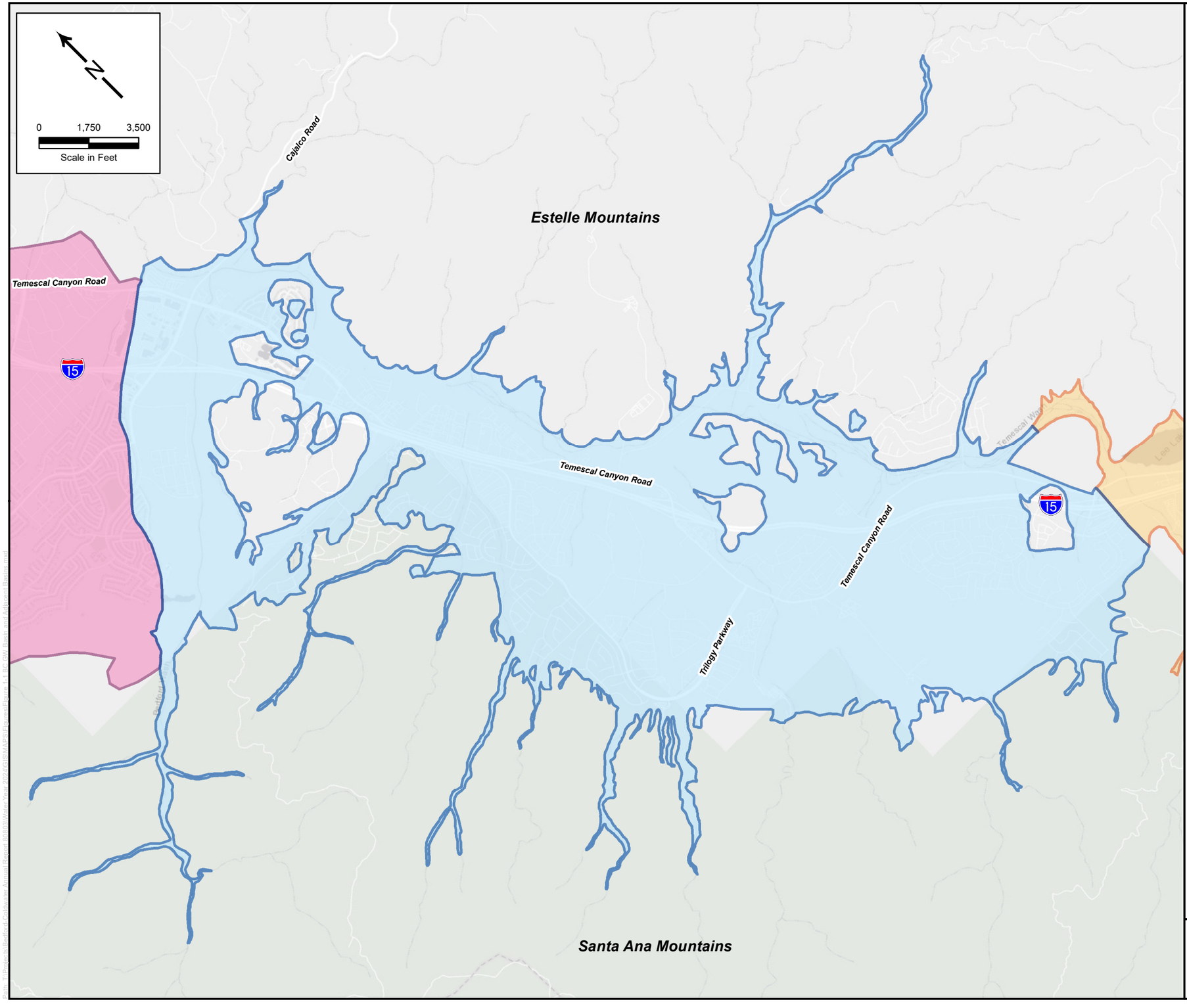
The BCGSA elected to prepare a GSP for the Basin even though it is designated as very low-priority and does not require a GSP (DWR 2019). The BCGSA is committed to protecting and maintaining the current sustainable conditions into the future through SGMA.

1.1. PURPOSE OF THE SGMA ANNUAL REPORT

SGMA requires local agencies that have developed a GSP to report annually on groundwater conditions related to sustainability and to show implementation of the plan through the preparation of annual reports.

The purpose of the annual report is to provide periodic updates to basic groundwater conditions information for Basin, report on changes in groundwater storage and water use, and provide an update on implementation of the GSP.

In accordance with SGMA, this annual report documents water supply sources and use, and groundwater elevations and storage from October 2023 through September 2024. The SGMA elements guide, detailing the required SGMA components, is included in **Appendix A**.



Bedford-Coldwater Basin and Groundwater Sustainability Agency

Temescal Basin

Elsinore Valley Basin

TODD GROUNDWATER

Figure 1-1
Bedford-Coldwater Groundwater Basin, GSA, and Adjacent Basins

1.2. SUSTAINABILITY GOAL

The BCGSA prepared the GSP with the goal of sustaining groundwater resources for current and future beneficial uses of the Basin in a manner that is adaptive and responsive to the following objectives:

- Provide a long-term, reliable, and efficient groundwater supply for municipal, industrial, and other uses;
- Provide reliable storage for water supply resilience during droughts and shortages;
- Protect groundwater quality;
- Support beneficial uses of interconnected surface waters; and
- Support integrated and cooperative water resource management.

This goal is consistent with SGMA and was developed by the BCGSA during preparation of the GSP, including outreach to local stakeholders. Additional information related to the sustainability goal is presented in the GSP (Todd et al. 2021).

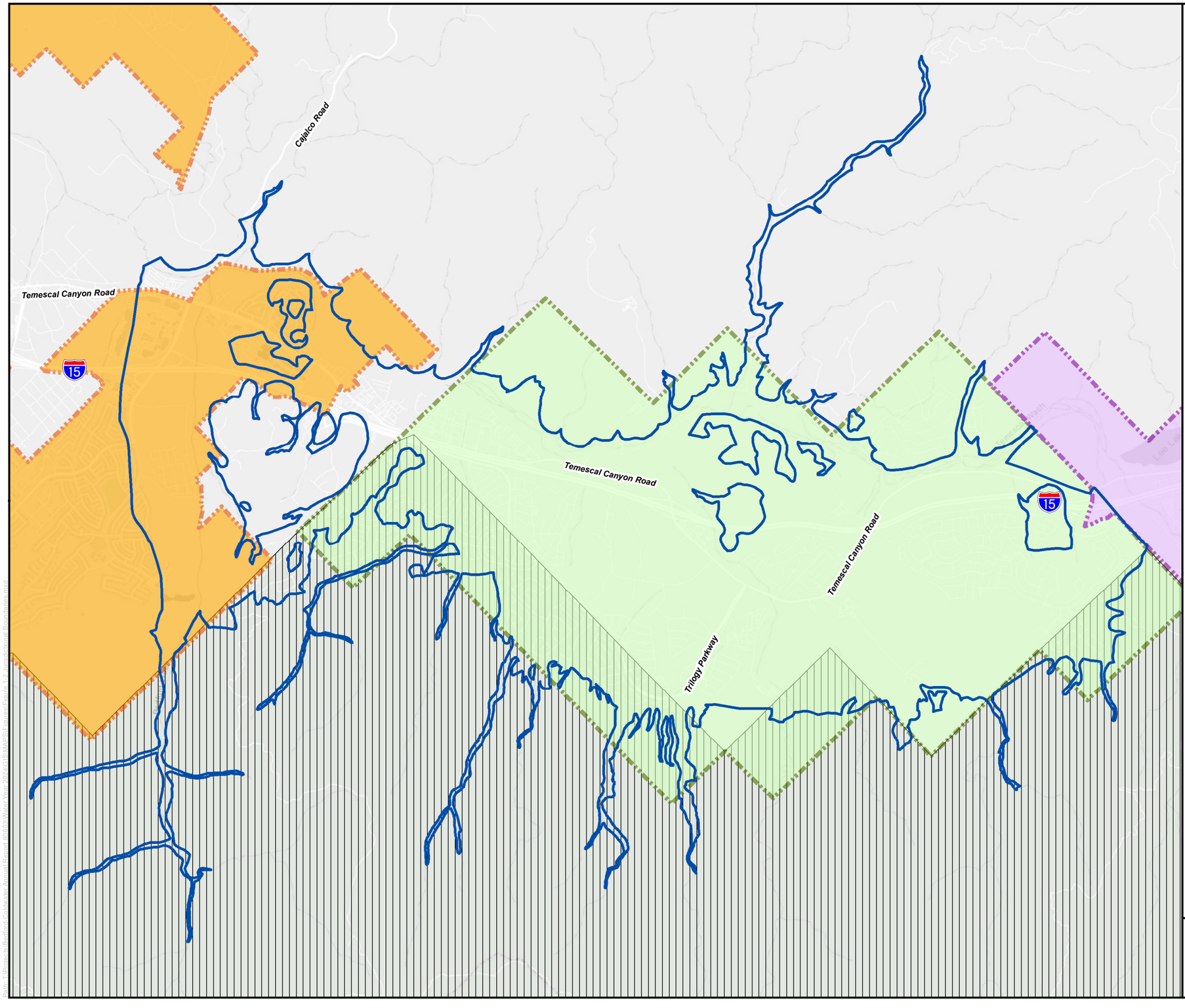
1.3. PLAN AREA

The Basin has been the focus of historical and ongoing collaborative groundwater basin management among three key agencies: the City of Corona (Corona), the Elsinore Valley Municipal Water District (EVMWD), and the Temescal Valley Water District (TVWD). These agencies collaborated to manage the Basin for many years prior to SGMA; they formed the BCGSA through a Joint Powers Authority (JPA) agreement in 2017 and have committed to ongoing sustainable management through the GSP.

Figure 1-1 shows the Basin and the adjacent Temescal Basin to the northwest (separated by a groundwater divide near Bedford Wash) and Elsinore Valley Subbasin located on the southern boundary. GSPs were also developed for these neighboring basins by the Temescal Basin GSA and the Elsinore Valley GSA, and preparation of the Bedford-Coldwater GSP was coordinated with those GSAs. The Bedford-Coldwater Basin is bound on the east and west by consolidated rocks of Estelle Mountain and the Santa Ana Mountains, respectively. The major drainage is the Temescal Wash, which traverses the three groundwater basins noted above along its 26-mile course from Lake Elsinore to the Santa Ana River.

Figure 1-2 shows the jurisdictional boundaries of the three agencies of the BCGSA and the area of the federal lands within the Basin, which are the United States Department of Agriculture Forest Service – Cleveland National Forest managed by the United States Forest Service.

There are no disadvantaged communities (DACs) or severely disadvantaged communities (SDACs) mapped within the Basin (DWR 2022).



Bedford-Coldwater Basin and Groundwater Sustainability Agency

City of Corona

Elsinore Valley Municipal Water District

Temescal Valley Water District (formerly Lee Lake WD)

US Forest Service Property

N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 1-2
Jurisdictional Boundaries
Bedford-Coldwater Basin

1.4. WATER SUPPLY SOURCES

Sources for water supply for Municipal and Industrial (M&I), agricultural, and domestic uses include groundwater, imported water, and recycled water. Metropolitan Water District of Southern California (Metropolitan) is the wholesaler for imported water and its sources of water include the Colorado River and the State Water Project. **Figure 1-3** shows the service areas of these providers and imported water wholesalers. Imported water and other water infrastructure are shown on **Figure 1-4**.

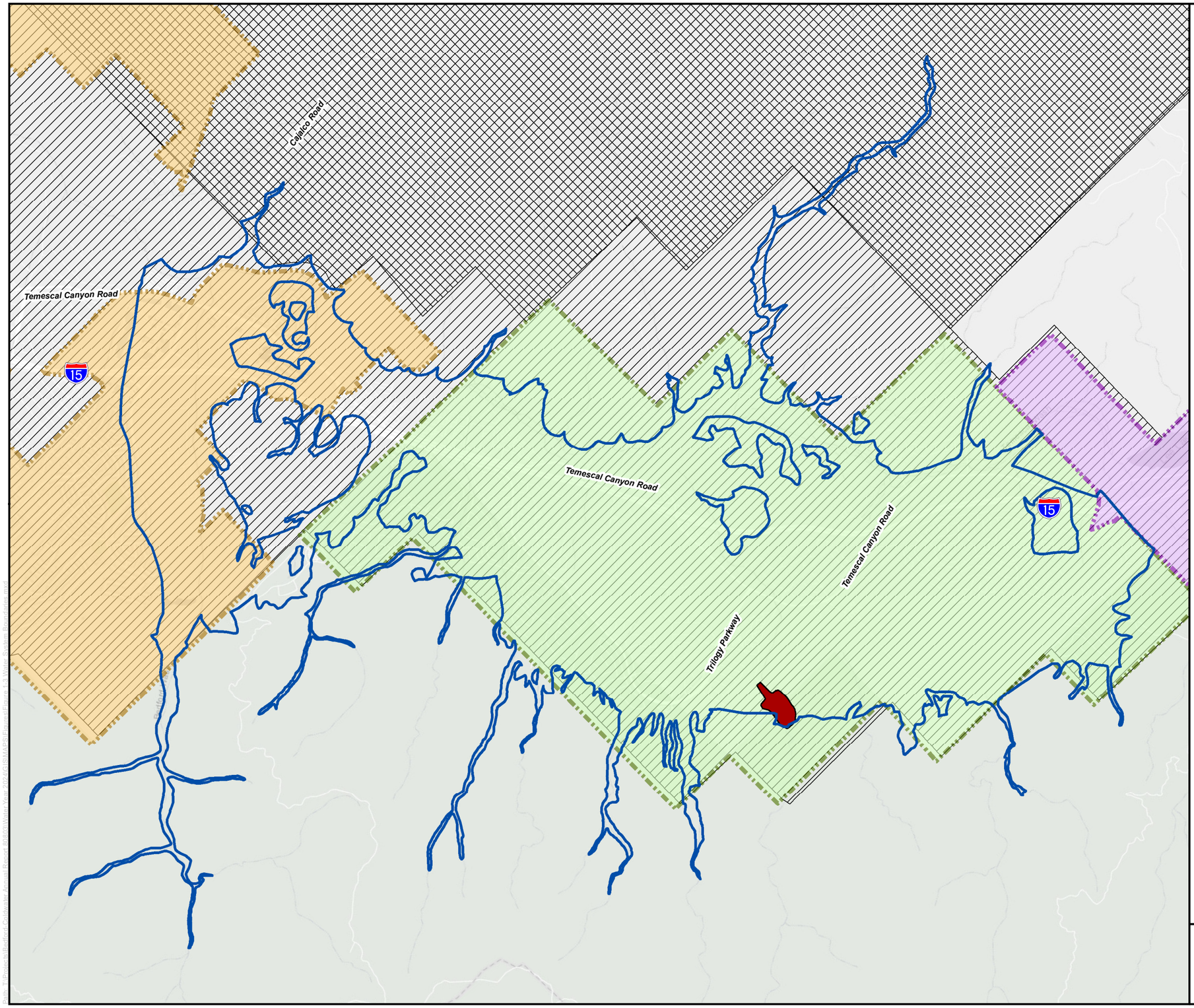
- **Groundwater**. Groundwater is currently a main source of water supply in the Basin. Corona, EVMWD, and TVWD all pump groundwater from the Basin. Corona and EVMWD distribute this supply to users within and outside the Basin, while TVWD only supplies groundwater to users within the Basin. Outside of the three major purveyors, there is only one public water system; Glen Ivy Hot Springs has one well and serves an estimated population of 750 people. The Glen Ivy Hot Springs well is located in the southwestern portion of the Basin (**Figure 1-3**).
- **Imported Water**. Corona, TVWD, and EVMWD rely on imported water from Metropolitan and Western Municipal Water District (WMWD).
- **Recycled Water.** Water recycling occurs in both Corona and TVWD. Recycled water use is a relatively small but increasing supply.

1.5. PHYSICAL SETTING AND TOPOGRAPHY

The Basin underlies a portion of the Elsinore Valley in western Riverside County and covers approximately 11 square miles. The Basin is adjacent to two other groundwater basins: the Temescal Subbasin of the Upper Santa Ana Basin to the north and the Elsinore Valley Subbasin of the Elsinore Basin to the south. **Figure 1-5** illustrates the topography of the Basin and surrounding uplands.

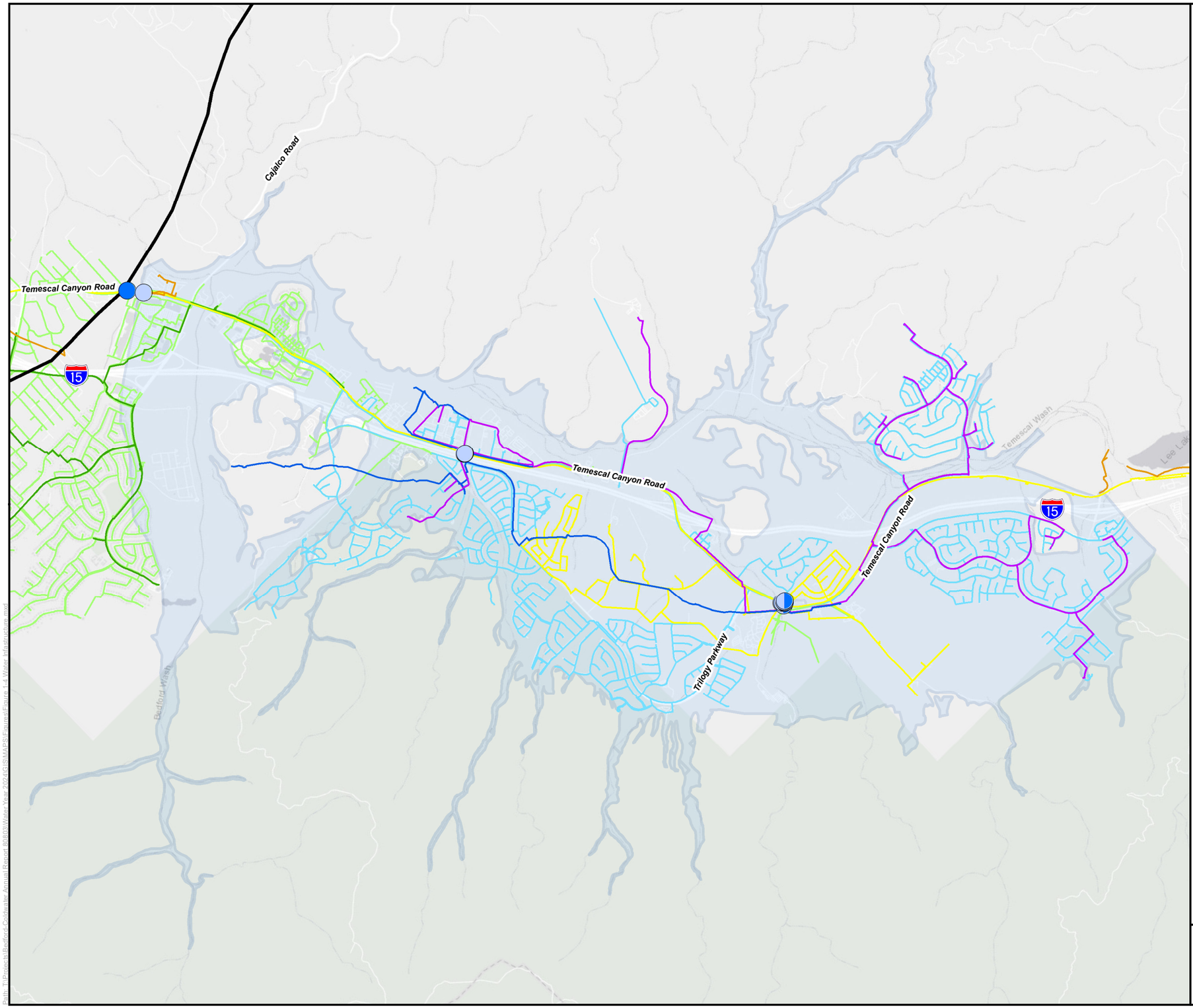
Ground surface elevations along the valley floor are generally flat. Elevations range from approximately 1,000 feet above mean sea level (msl) at the northern boundary to approximately 1,200 feet above msl to the south, as shown by 200-foot contours on **Figure 1-5**. The tributary watersheds reach up to more than 5,600 feet msl at the highest peak in the Santa Ana Mountain watersheds west of the Basin. Watersheds east of the Basin are significantly lower in elevation and rise only to about 1,800 feet.

Annual precipitation varies from below 12 inches to more than 26 inches over the Basin and surrounding watersheds. The long-term average annual rainfall is between 12 and 14 inches per year on the Basin floor and increases to more than 20 inches along the top of the local watersheds in the Santa Ana Mountains to the west.



TODD GROUNDWATER

Figure 1-3
Water Purveyor Boundaries
Bedford-Coldwater Basin



City of Corona Potable Water Intertie

EVMWD Imported Water Connection and Intertie

Metropolitan Water District Imported Water Pipeline

Corona Potable Water Main Pipeline

Corona Non-Potable and Recycled Water Pipeline

EVMWD Potable Main Pipeline

EVMWD Non-Potable Water Pipeline

TVWD Potable Main Pipeline

TVWD Non-Potable (Agricultural) Pipeline

TVWD Recycled Water Pipeline

Bedford-Coldwater Basin

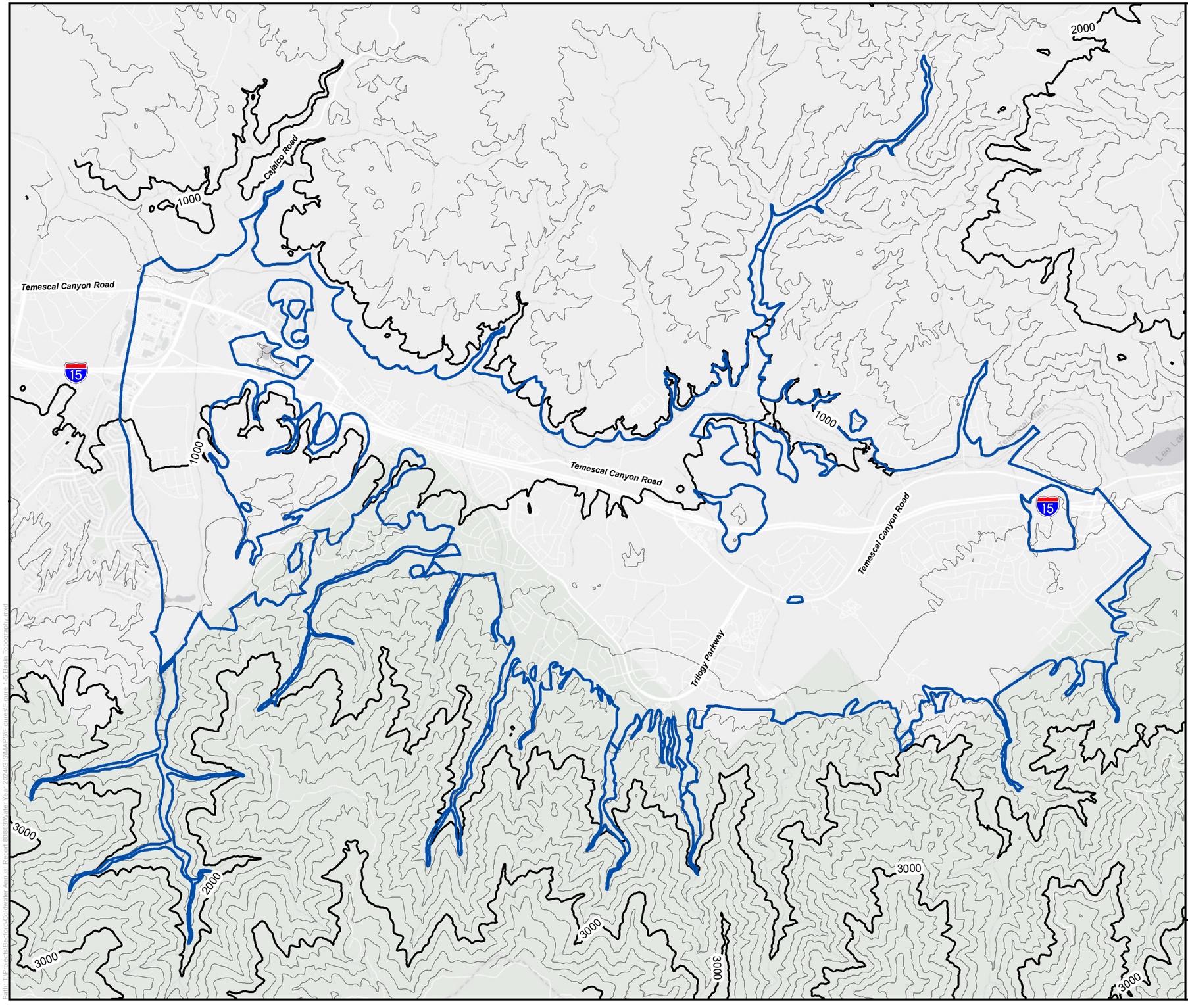
N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 1-4
Water Infrastructure
Bedford-Coldwater Basin



1,000 foot Ground Surface Elevation Contour

200 foot Ground Surface Elevation Contour

Bedford-Coldwater Basin

N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 1-5
Basin Topography

1.6. SURFACE WATER FEATURES

Figure 1-6 shows surface water features including rivers, streams, springs, seeps, lakes, and ponds. The sub-watershed boundaries that drain into and through the Basin are shown on **Figure 1-7**.

The Basin covers a portion of the Santa Ana River watershed and Temescal Wash is the major drainage within the Basin. The Temescal Wash is tributary to the Santa Ana River and flows through the Basin from the southeast to northwest. The Bedford Wash flows toward the northeast into the Temescal Wash along the northern boundary of the Basin. These waterways are ephemeral and are dry much of the year, flowing mainly during the winter.

1.7. MANAGEMENT AREAS

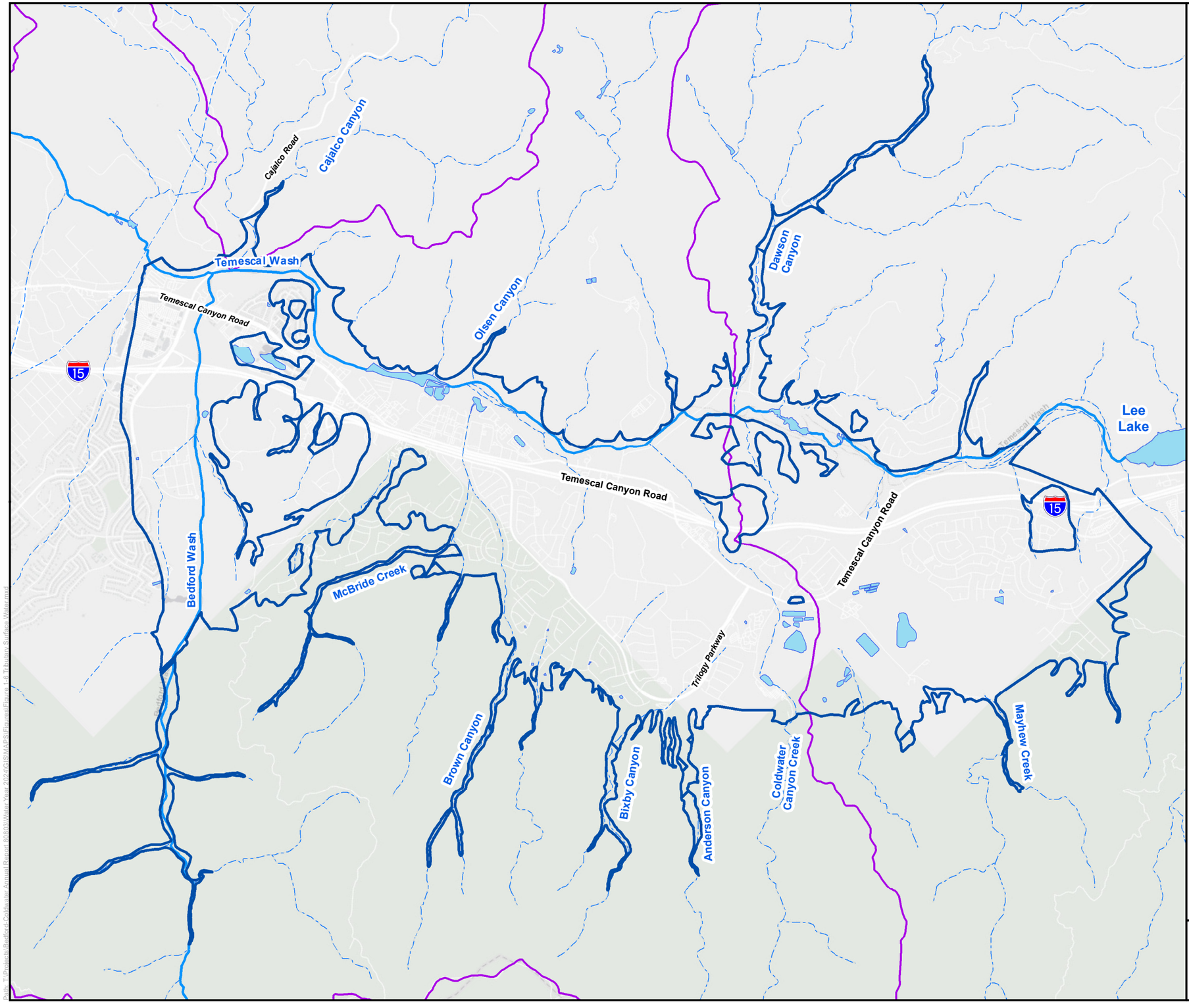
As defined in GSP regulations, a management area is an area within a basin for which the GSP may identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors. The Basin has been divided into two management areas. They are described below and in more detail in the GSP, and their boundaries are shown in **Figure 1-8**.

1.7.1. Bedford Management Area

The Bedford management area occupies roughly the eastern two-thirds of the Basin. It is separated from the Coldwater management area by the Glen Ivy Fault, which is a partial barrier to groundwater flow. The Bedford management area connects to the Elsinore Subbasin in the south and the Temescal Basin at the north end of the Basin. Some subsurface inflow from the Elsinore Subbasin to the south, and subsurface outflow to the Temescal Basin is also possible. Temescal Wash flows along the length of the Bedford management area. It also exits the north end of the Basin but traverses a bedrock reach before entering the Temescal Basin.

1.7.2. Coldwater Management Area

The Coldwater management area is the part of the Basin west of the Glen Ivy Fault. Because of downward movement on that side of the fault, Basin thickness is much greater than in the Bedford management area. A large open-pit aggregate mine is located in the southern part of this management area. Several streams enter the Coldwater management area from watersheds on the eastern slopes of the Santa Ana Mountains.



Major Streams
Minor Streams
Bedford-Coldwater Basin
Lake or Pond
Reservoir
Tributary Watershed Boundaries

N

0 1,750 3,500
Scale in Feet

TODD GROUNDWATER

Figure 1-6
Surface Water Bodies Tributary to Basin

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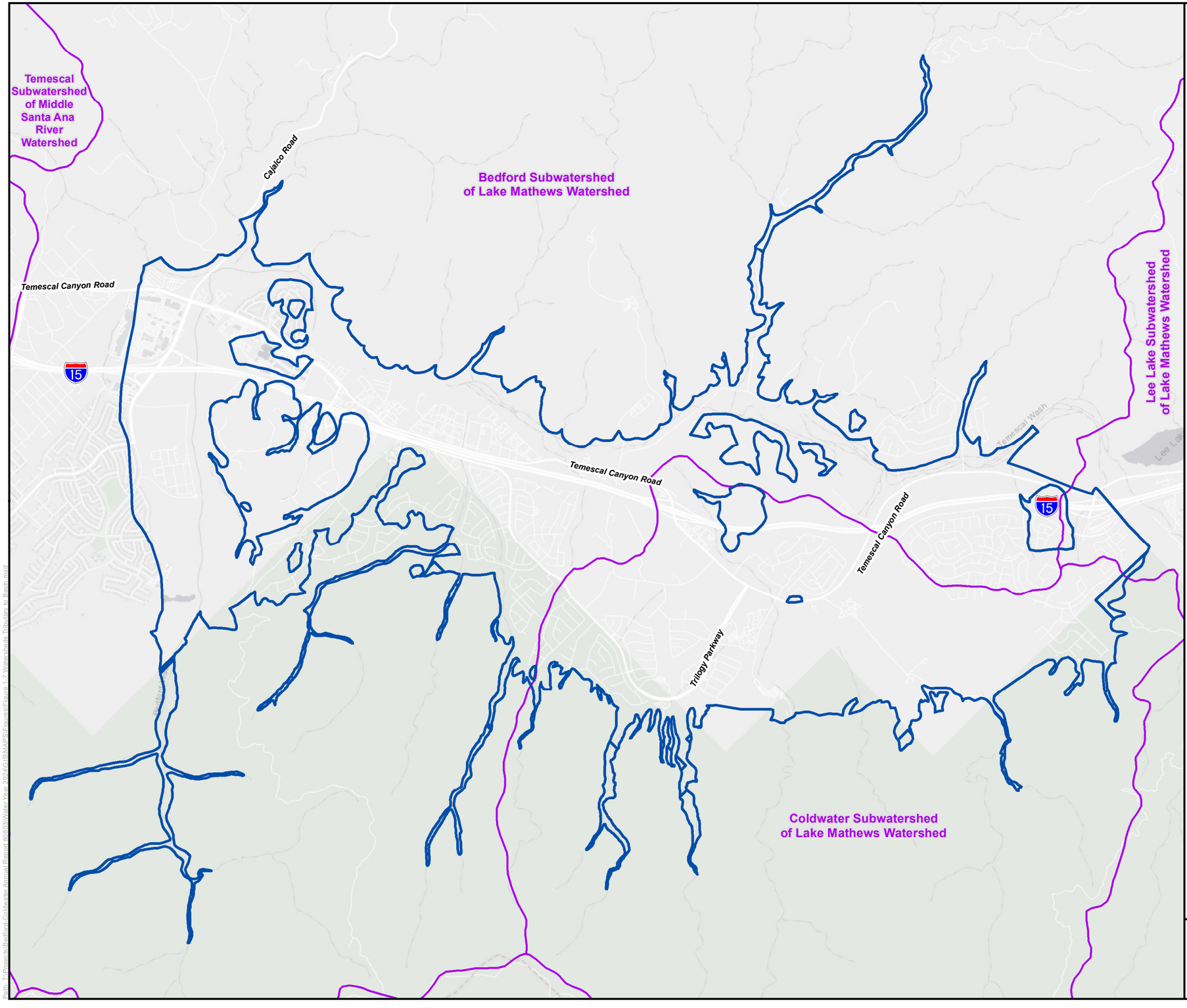


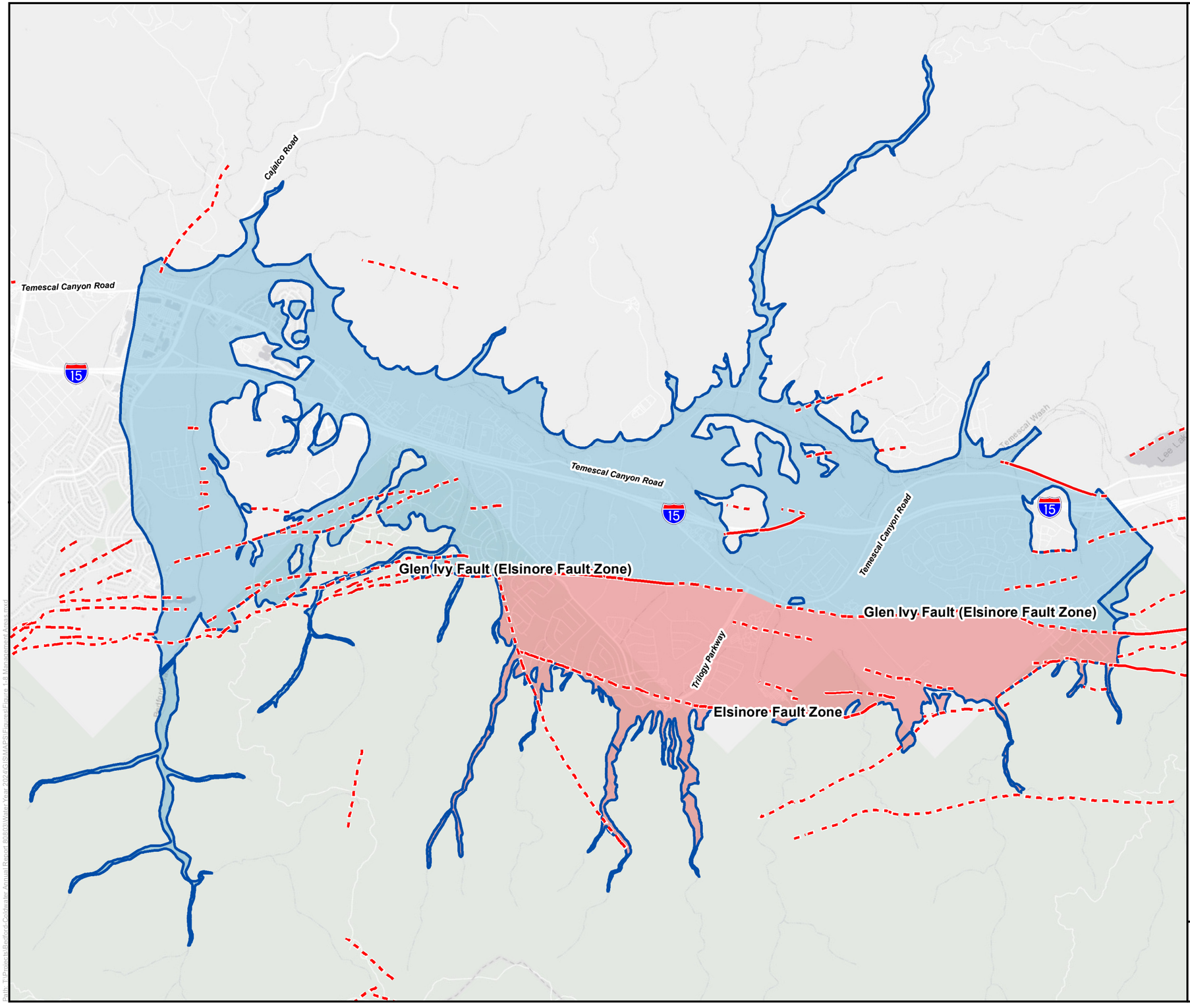
Bedford-Coldwater Basin
Tributary Subwatershed Boundaries

N

0 1,750 3,500
Scale in Feet

TODD GROUNDWATER

Figure 1-7
Subwatersheds Tributary to Basin



Bedford-Coldwater Basin
Bedford Management Area
Coldwater Management Area
Fault Location, dashed where uncertain

N

0 1,750 3,500
Scale in Feet

TODD GROUNDWATER

Figure 1-8
Management Areas

2. GROUNDWATER CONDITIONS

The section summarizes groundwater conditions within the Basin including climate, groundwater elevations, and groundwater level trends.

2.1. CLIMATE

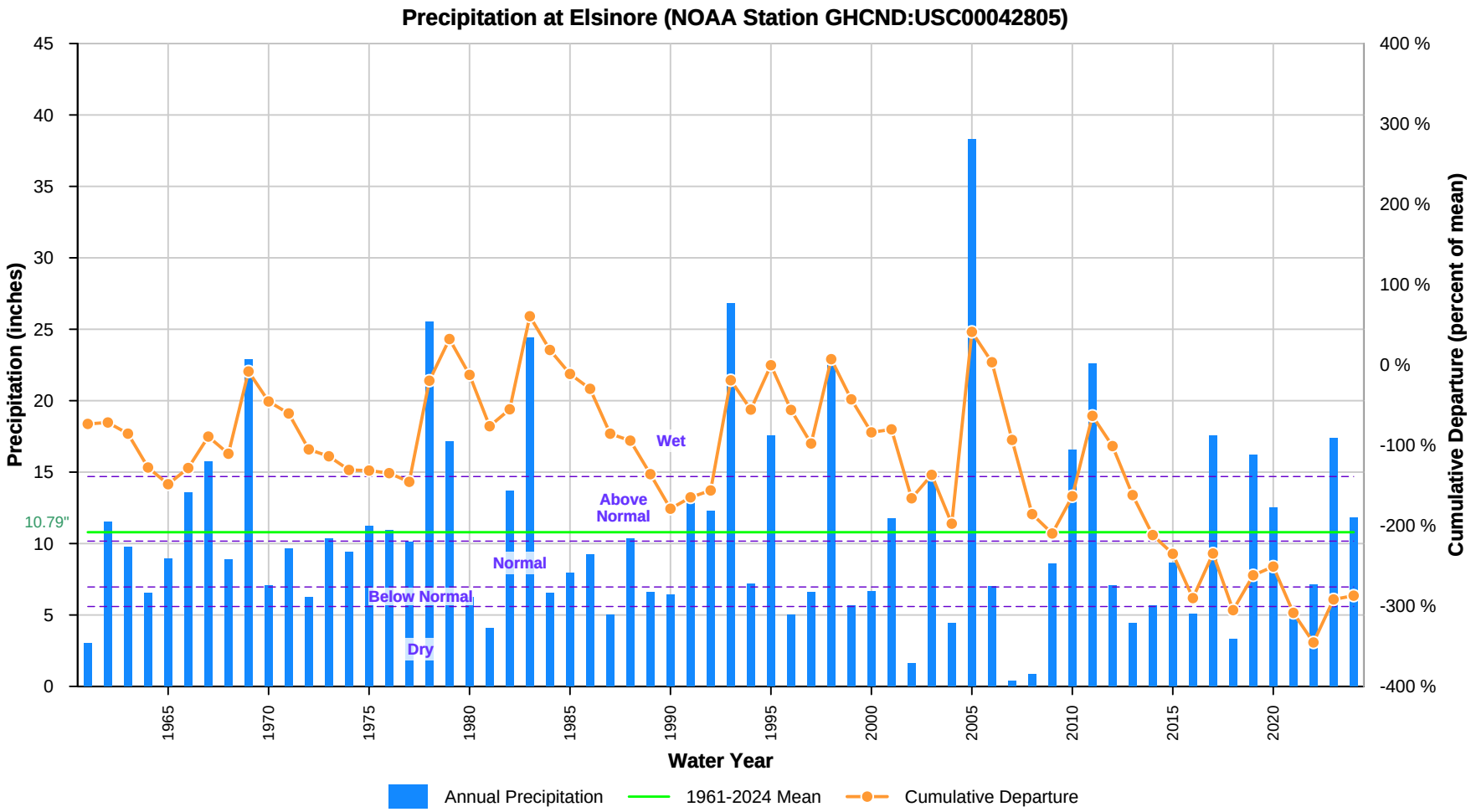
Overall, water year (WY) 2024 was a wet year with a total of 11.83 inches of precipitation, well above the average of 10.79 inches (WRCC 2024). Climate data collection stations and records have been reviewed and assessed for the Basin and surrounding areas in the preparation of this annual report. Previous investigations (Todd et al. 2021, Todd and AKM 2008, SAIC 2007, MWH 2004) revealed substantial variability in precipitation distribution because of elevation differences between the Temescal Valley and Santa Ana Mountains. These orographic effects result in significantly more precipitation on the upland areas of the watersheds that contribute to the Basin. There are three currently active climate monitoring stations near the Basin: the Lake Elsinore station maintained by the National Oceanic Atmospheric Administration (NOAA), the Santiago Peak station maintained by Orange County, and the UC Riverside California Irrigation Management Information System (CIMIS). The Lake Elsinore and UC Riverside stations include daily precipitation and evapotranspiration data; the Santiago Peak station collects monthly precipitation data. **Figure 2-1** shows annual precipitation at Elsinore (National Oceanic and Atmospheric Administration (NOAA) Station GHCND:USC00042805) for WYs 1899 through 2024.

Dry and wet periods in historical hydrology can be identified on the basis of individual years or sequences of dry and wet years. GSP Regulations require assessment of water year type, which is a classification based on the amount of annual precipitation. Water year types are indicated on **Figure 2-1** and are assigned to five categories corresponding to quintiles of annual precipitation and the 1899 to 2024 average of 10.79 inches. The categories used here (dry, below normal, normal, above normal, and wet) accurately describe the quintiles. These categories differ from the nomenclature commonly used in the Central Valley (critical, dry, below normal, above normal, and wet) and elsewhere that do not accurately describe local categories and are based on the Sacramento River Index, which has little relevance to conditions in the Basin. The quintile divisions for precipitation at the Elsinore station are shown in **Table 2-1**.

Table 2-1. Water Year Type Classification (Lake Elsinore station)

Water Year Type		Range as Percent of Mean	Precipitation Range (inches)
Wet	W	>139	> 16.5
Above Normal	AN	101 to 139	12.0 to 16.5
Normal	N	75 to 101	8.9 to 12.0
Below Normal	BN	56 to 75	6.6 to 8.9
Dry	D	<56	< 6.6

Average precipitation for 1899 to 2024 was 10.79 inches per year



TODD GROUNDWATER

Figure 2-1
Cumulative Departure of Annual Precipitation at Lake Elsinore

2.2. GROUNDWATER ELEVATIONS

Groundwater in the Basin is present in one principal aquifer, as documented in the GSP (Todd et al. 2021). The principal aquifer is unconfined and there are no data to suggest distinct vertical zones or to provide zone-specific groundwater elevation hydrographs or maps.

As described in the GSP, there are currently 17 Key Wells in the Basin for which water level and/or interconnected surface water minimum thresholds (MTs) and measurable objectives (MOs) have been established. These 17 wells also comprise the historical water level monitoring well network. Two additional dedicated monitoring wells (BCGSA MW-1 and BCGSA MW-2) were constructed during GSP preparation and were added to the monitoring network in 2022. However, MTs and/or MOs have not been established for these wells. For the periodic evaluation due in 2027, the GSA will assess the Key Well Network and assess the MTs based on quantifiable undesirable results. **Figure 2-2** shows the 19 wells in the monitoring network, including the two new wells. All monitoring wells are monitored by the BCGSA or its member agencies and incorporated into the data management system (DMS) developed as part of the GSP.

2.2.1. Groundwater Elevations and Trends

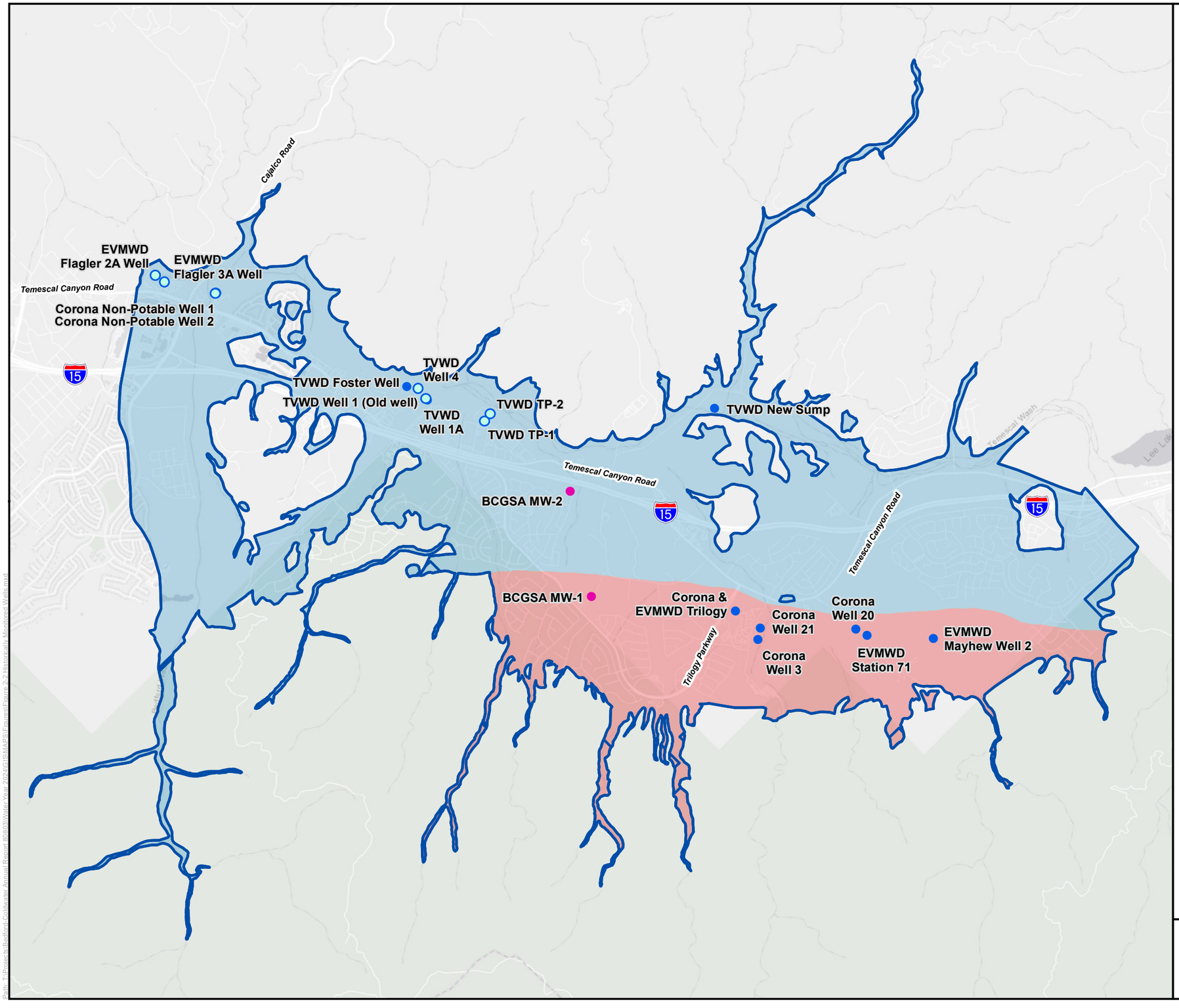
Hydrographs showing groundwater elevation trends over time were prepared for the 17 Key Wells and two dedicated monitoring wells, as shown on **Figures 2-3 through 2-20**. The GSP assessed conditions through the end of 2018 and the first Annual Report updated the groundwater model from 2018 through 2021. Each following Annual Report summarizes the changes over the past water year. Water levels remain in the historical ranges of all monitored wells in both management areas.

The hydrographs show the difference in water levels and trends in the two management areas in the Basin. The wells in the Coldwater management area (Corona Wells 20, 21, 3, Corona & EVMWD Trilogy Well, and EVMWD Wells Station 71 and Mayhew 2) all show variable elevations in response to differences in precipitation and resulting recharge in the management area. The water levels in the Coldwater management area historically tracked very closely with cumulative departure of annual precipitation (**Figure 2-1**), as shown most clearly in the hydrograph for Corona Well 3 on **Figure 2-5**. Since 2017 water levels in Coldwater have trended upward despite flat to falling cumulative departure in precipitation due to reduced pumping in the management area. In 2024, water levels in the Coldwater management area (**Figure 2-3 through 2-8**) show increasing trends, reflecting the past two years of above average precipitation and continued limited pumping.

The wells in the Bedford management area (Corona Non-Potable Wells 1 and 2, EVMWD Flagler 2A and 3A Wells, and TVWD Wells 1, 1A, 4, TP-1, TP-2, Foster, and New Sump) show more stable water levels that fluctuate very little in response to variations in precipitation (**Figures 2-9 through 2-12 and 2-13 through 2-19**). These hydrographs show that groundwater elevations in the Bedford management area are more reflective of conditions in the Temescal Wash. In WY 2024, water levels in the Beford management area remain stable or show a slight

decrease from the wet year conditions in WY 2023. All water levels remain above the MTs in both the Coldwater and Bedford management areas.

Figure 2-20 shows the transducer data for the two dedicated monitoring wells (MW-1 and MW-2) as well as Corona Well 20. In WY 2024 the transducer for MW-2 experienced failed and the data was unable to be recovered by the GSA administrator or the transducer manufacturer. Both MW-1 and Corona Well 20 show an increase in water levels in February 2024 corresponding with increased precipitation in this month (5.52 inches, 47 percent of the annual total). The rising groundwater elevations in Corona Well 20 continued through the summer of 2024 while those in MW-1 remained relatively stable following the initial rise in February.



Water Level Key Well

Water Level Monitoring Well

Water Level and Interconnected Surface Water Key Well

Bedford-Coldwater Basin

Bedford Management Area

Coldwater Management Area

N

0 1,750 3,500

Scale in Feet

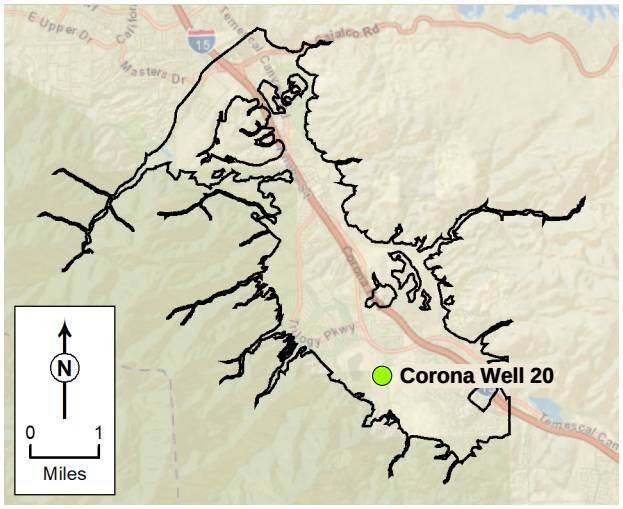
TODD GROUNDWATER

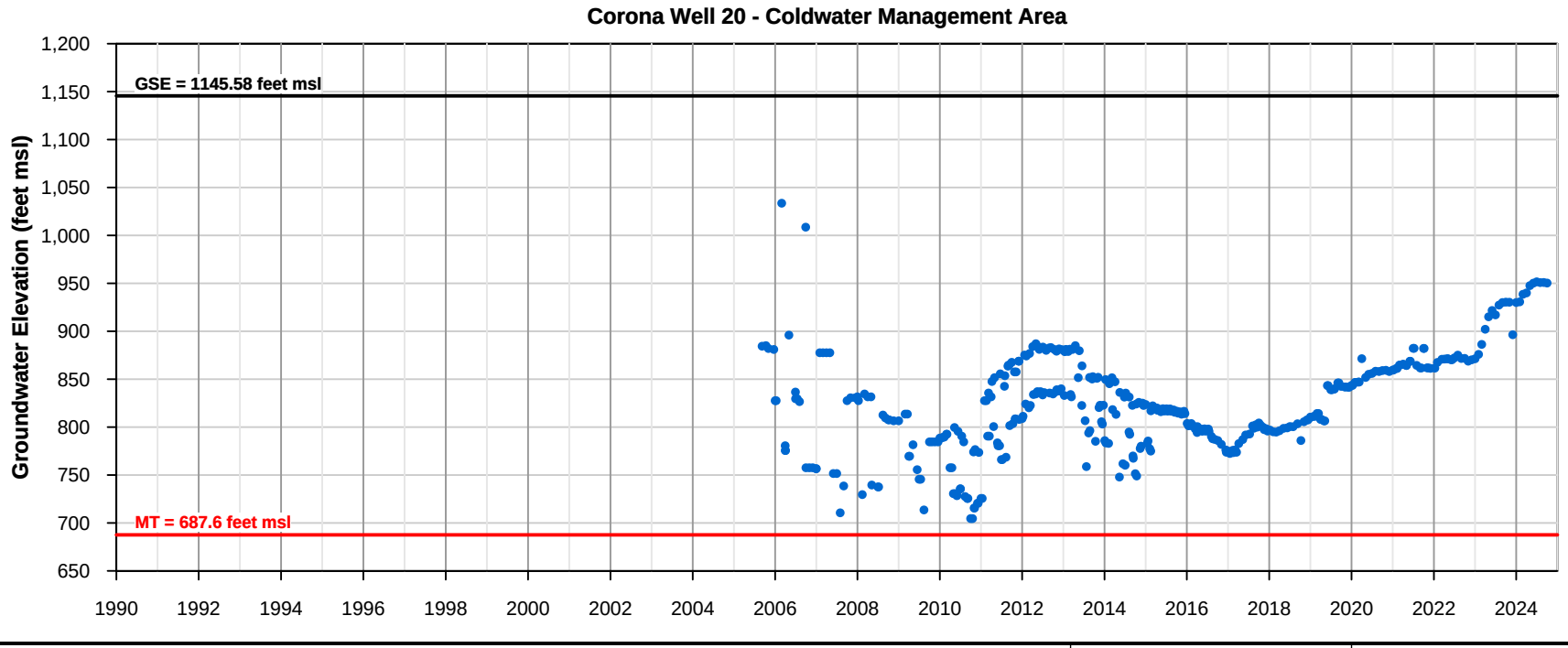
Figure 2-2
Water Level and Interconnected Surface Water Monitoring Wells

Path: T:\Projects\Bedford-Coldwater\Annual Report 2020\GIS\MXD\Figure 2-2 Interconnected Monitored Wells.mxd

Well Information

Site Code:	337556N1174811W001
Local Well Name:	Corona Well 20
State Well Name:	05S06W11D001S
Montoring Network Type:	SGMA Representative
Station ID:	57100
Latitude:	33.7556
Longitude:	-117.481
Well Depth (feet bgs):	660
Top Perforation (feet bgs):	200
Bottom Perforation (feet bgs):	580
Ground Surface Elevation (GSE):	1145.58
Reference Point Elevation:	1147.58
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

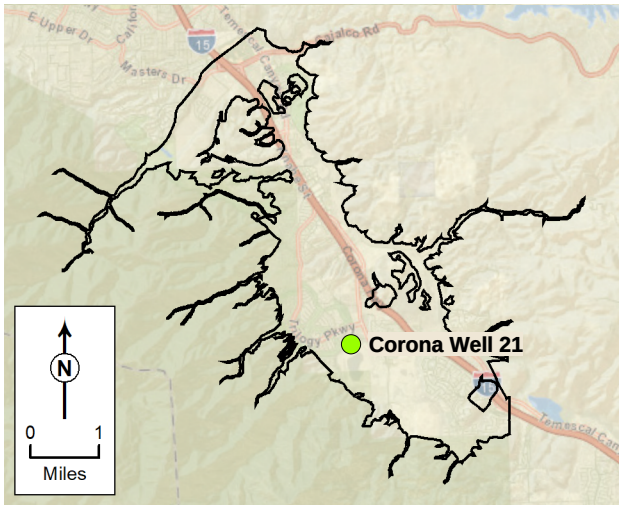
January 2025

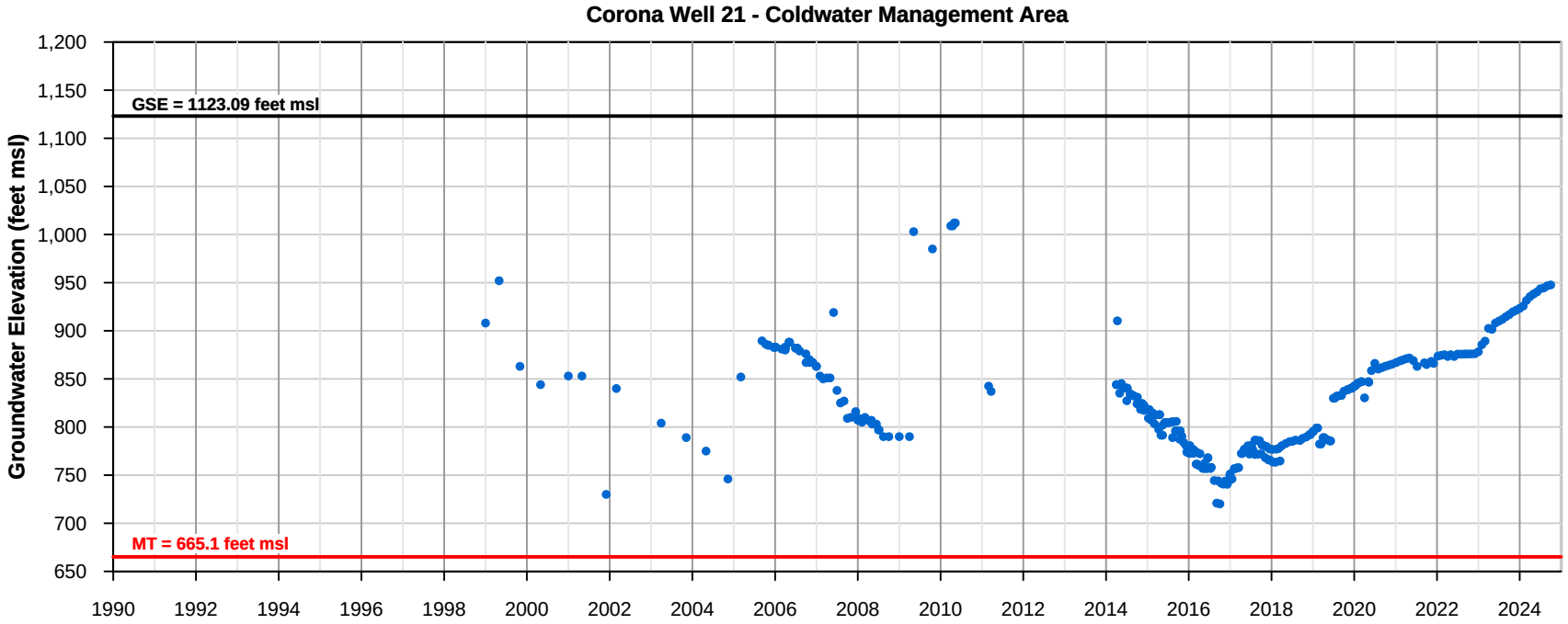
TODD GROUNDWATER

Figure 2-3
Corona Well 20
Hydrograph

Well Information

Site Code:	337622N1174890W001
Local Well Name:	Corona Well 21
State Well Name:	05S06W03J005S
Montoring Network Type:	SGMA Representative
Station ID:	57097
Latitude:	33.7622
Longitude:	-117.489
Well Depth (feet bgs):	660
Top Perforation (feet bgs):	200
Bottom Perforation (feet bgs):	580
Ground Surface Elevation (GSE):	1123.09
Reference Point Elevation:	1125.09
Sustainability Indicators:	Groundwater Levels





- Groundwater Measurement (feet msl)
- Minimum Threshold for Water Level (feet msl)
- Ground Surface Elevation (feet msl)

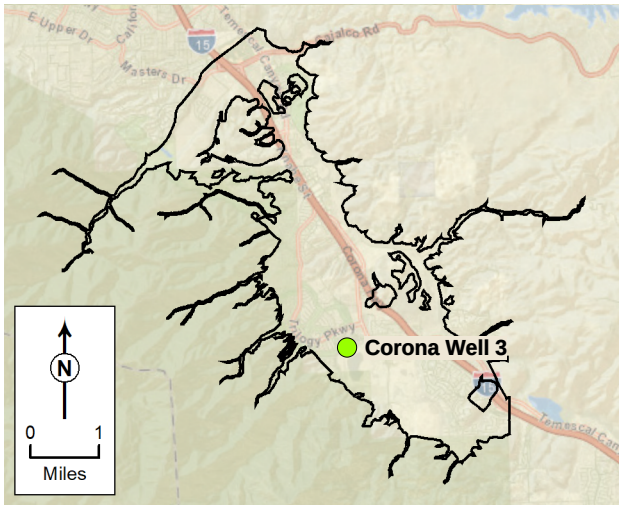
January 2025

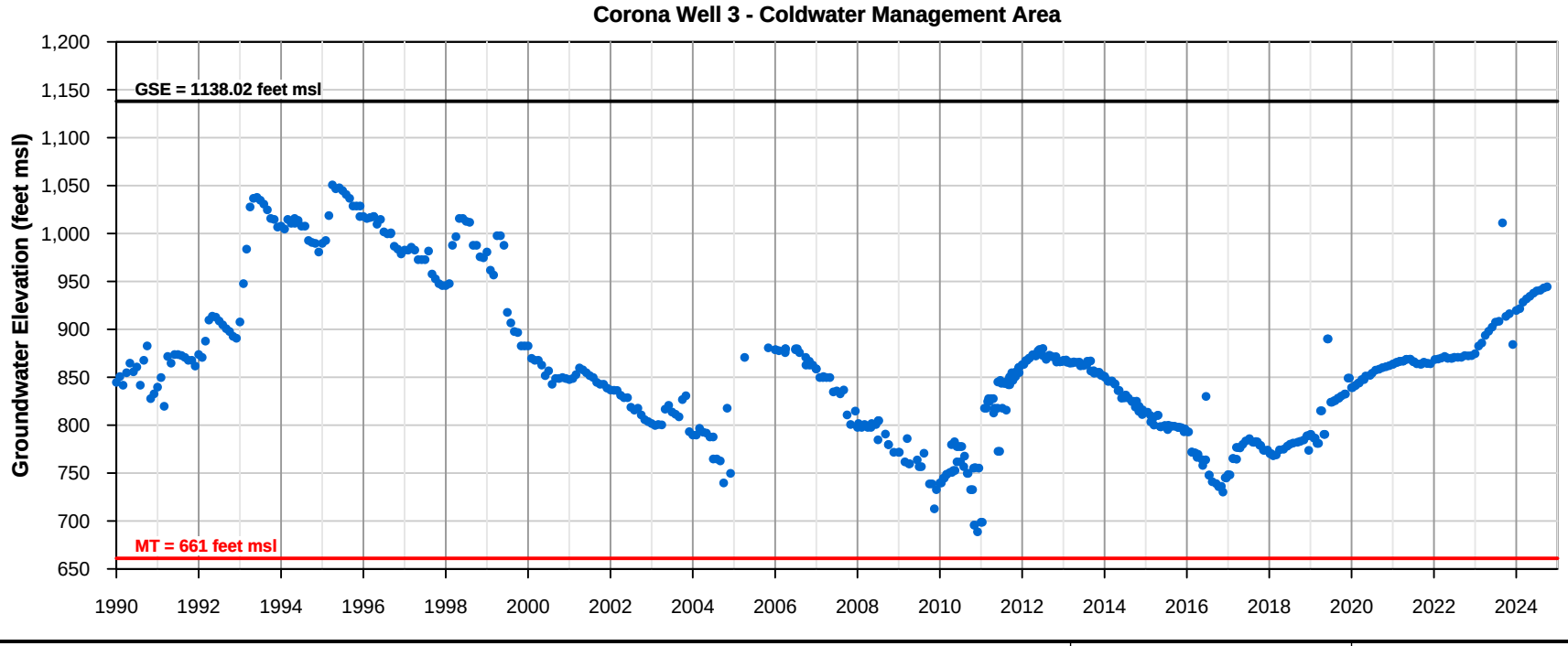
TODD GROUNDWATER

Figure 2-4
Corona Well 21
Hydrograph

Well Information

Site Code:	337615N1174901W001
Local Well Name:	Corona Well 3
State Well Name:	05S06W03K001S
Montoring Network Type:	SGMA Representative
Station ID:	57098
Latitude:	33.7615
Longitude:	-117.49
Well Depth (feet bgs):	543
Top Perforation (feet bgs):	100
Bottom Perforation (feet bgs):	543
Ground Surface Elevation (GSE):	1138.02
Reference Point Elevation:	1140.02
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)
Minimum Threshold for Water Level (feet msl)
Ground Surface Elevation (feet msl)

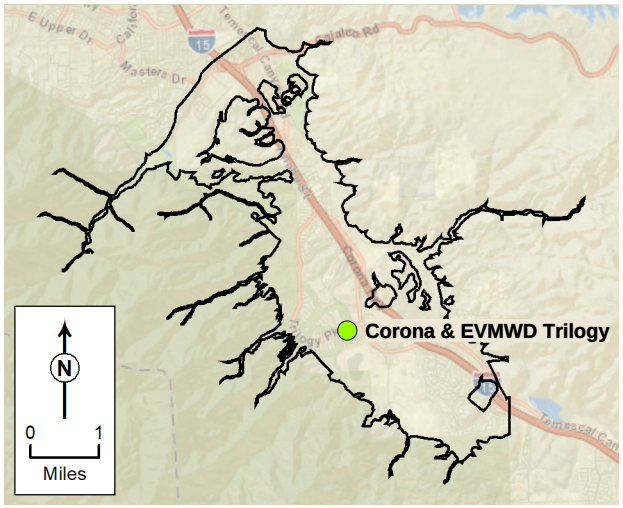
January 2025

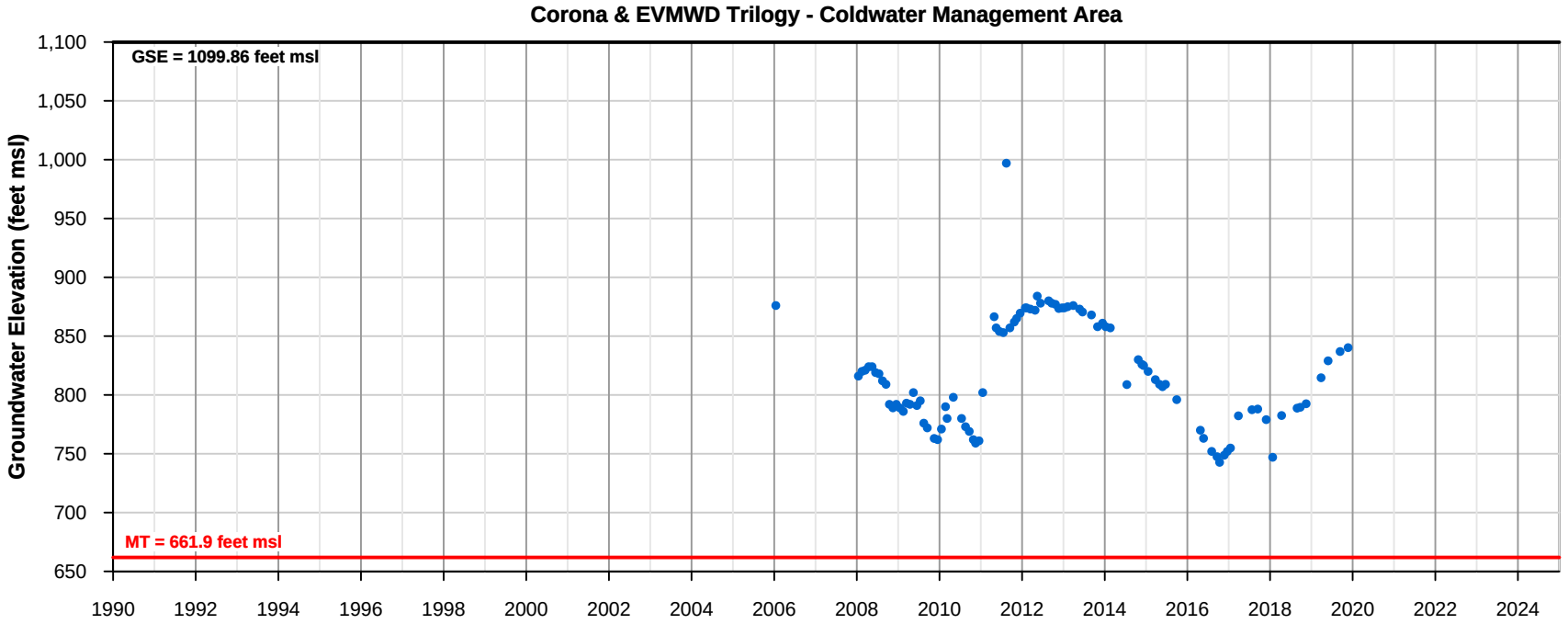
TODD GROUNDWATER

Figure 2-5
Corona Well 3
Hydrograph

Well Information

Site Code:	337650N1174896W001
Local Well Name:	Corona & EVMWD Trilogy
State Well Name:	
Montoring Network Type:	SGMA Representative
Station ID:	57096
Latitude:	33.7651
Longitude:	-117.49
Well Depth (feet bgs):	579
Top Perforation (feet bgs):	250
Bottom Perforation (feet bgs):	450
Ground Surface Elevation (GSE):	1099.86
Reference Point Elevation:	1101.86
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)
Minimum Threshold for Water Level (feet msl)
Ground Surface Elevation (feet msl)

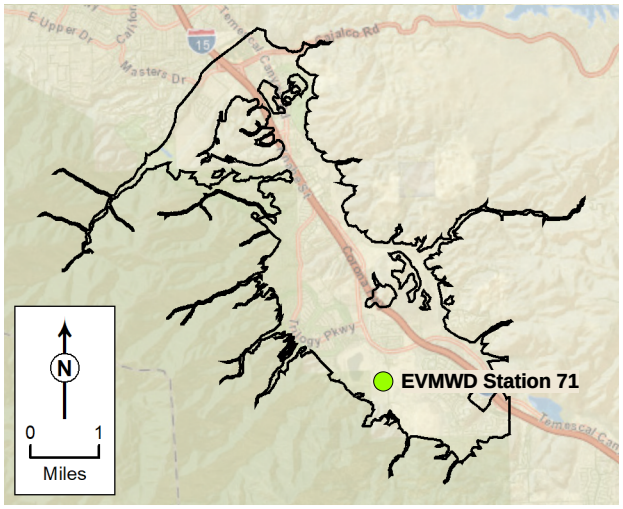
January 2025

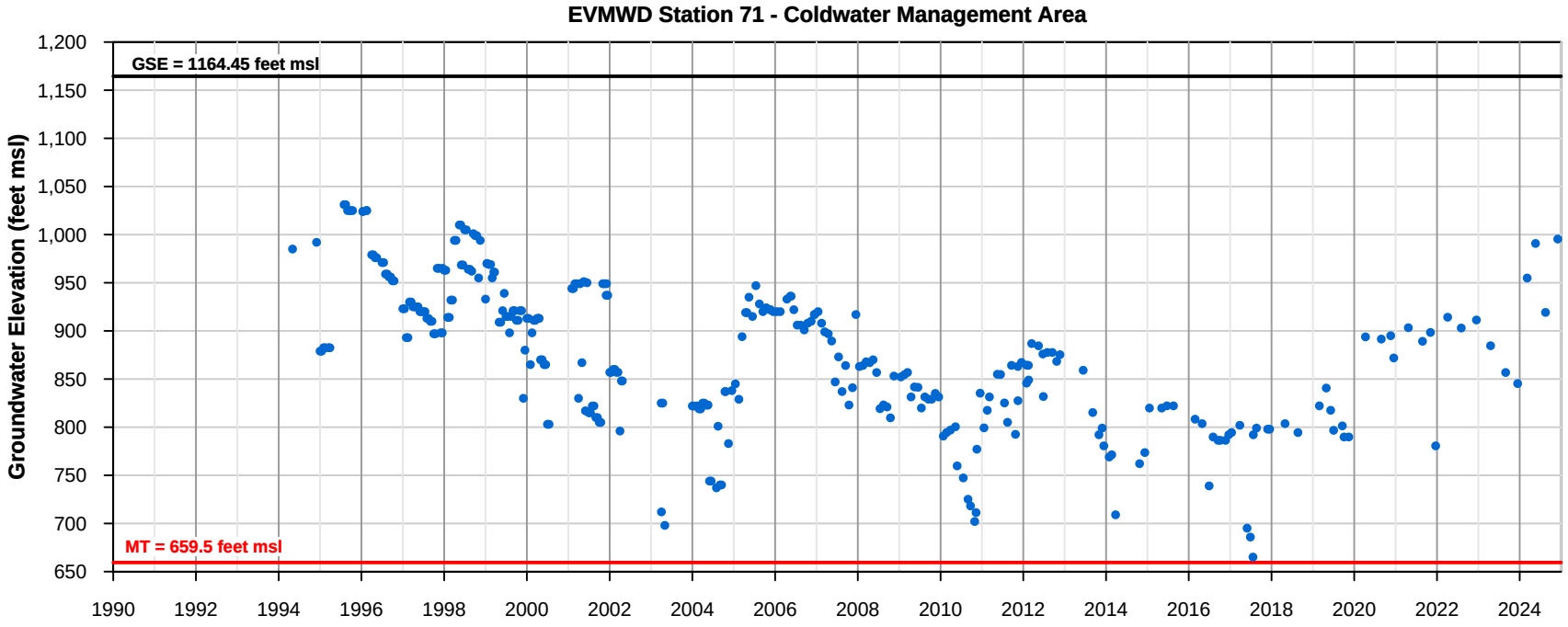
TODD GROUNDWATER

Figure 2-6
Corona & EVMWD Trilogy Hydrograph

Well Information

Site Code:	337496N1174753W001
Local Well Name:	EVMWD Station 71
State Well Name:	05S06W11C001S
Montoring Network Type:	SGMA Representative
Station ID:	57099
Latitude:	33.75440092
Longitude:	-117.4807
Well Depth (feet bgs):	600
Top Perforation (feet bgs):	239
Bottom Perforation (feet bgs):	588
Ground Surface Elevation (GSE):	1164.45
Reference Point Elevation:	1166.45
Sustainability Indicators:	Groundwater Levels





- Groundwater Measurement (feet msl)
- Minimum Threshold for Water Level (feet msl)
- Ground Surface Elevation (feet msl)

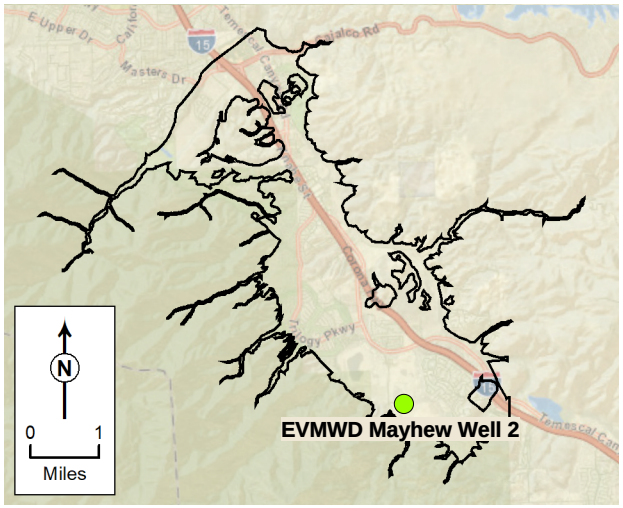
January 2025

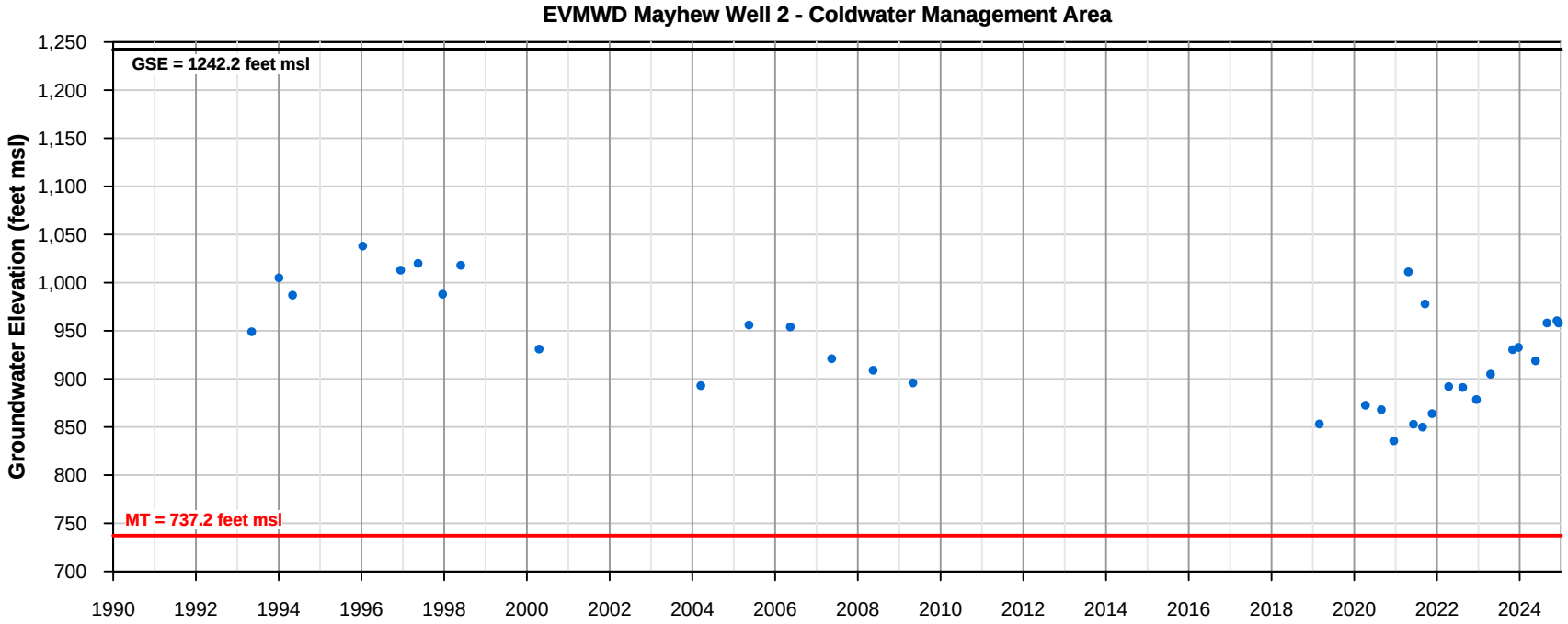
TODD GROUNDWATER

Figure 2-7
EVMWD Station 71
Hydrograph

Well Information

Site Code:	338031N1174988W001
Local Well Name:	EVMWD Mayhew Well 2
State Well Name:	05S06W11G001S
Montoring Network Type:	SGMA Representative
Station ID:	57101
Latitude:	33.7496
Longitude:	-117.4753
Well Depth (feet bgs):	740
Top Perforation (feet bgs):	300
Bottom Perforation (feet bgs):	730
Ground Surface Elevation (GSE):	1242.2
Reference Point Elevation:	1244.2
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)
Minimum Threshold for Water Level (feet msl)
Ground Surface Elevation (feet msl)

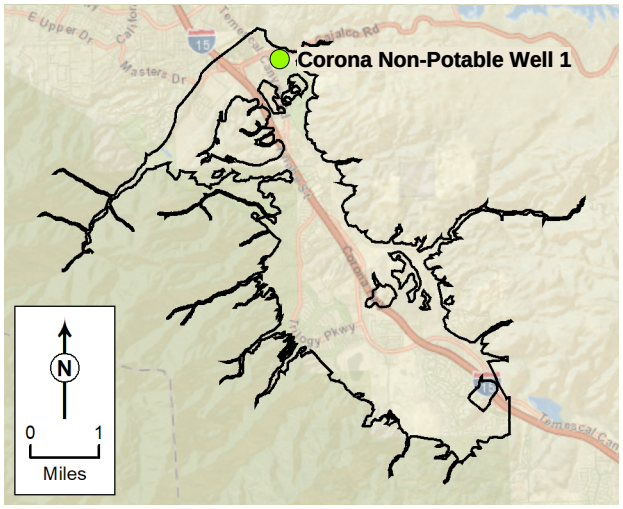
March 2025

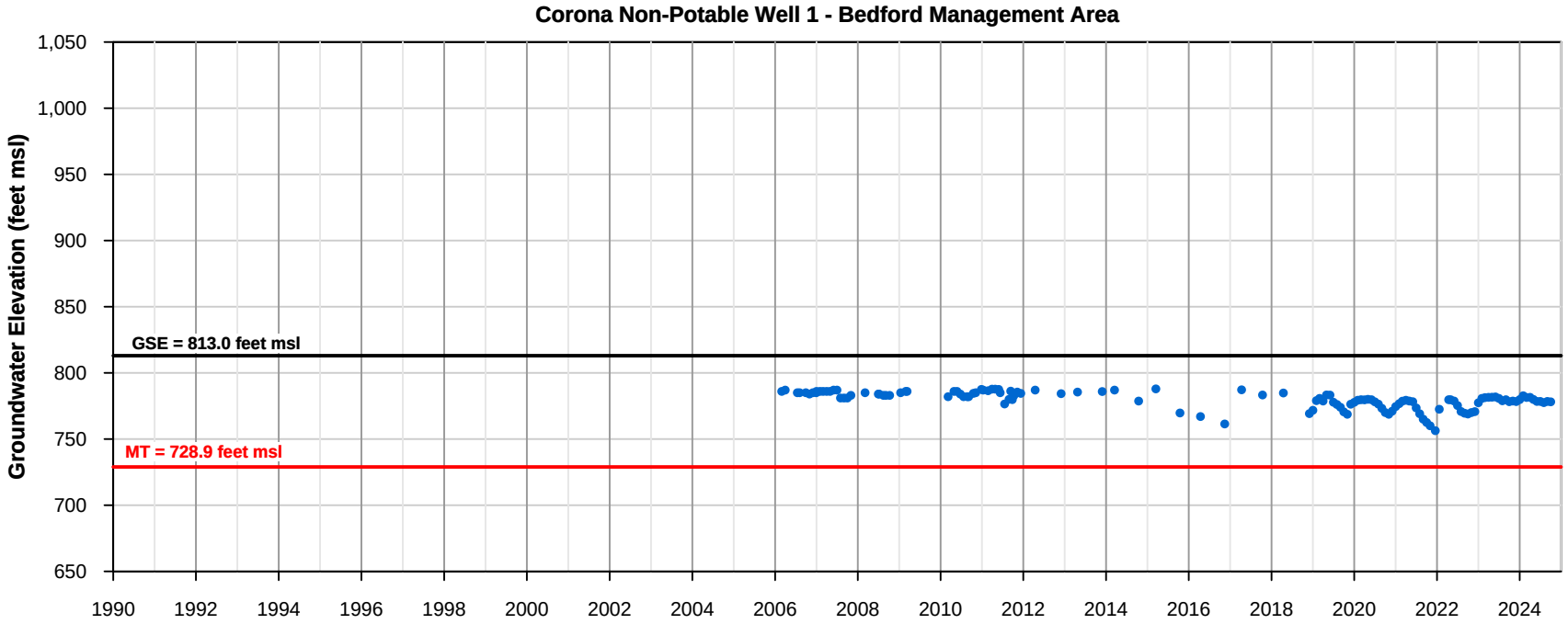
TODD GROUNDWATER

Figure 2-8
EVMWD Mayhew Well 2 Hydrograph

Well Information

Site Code:	338227N1175073W001
Local Well Name:	Corona Non-Potable Well 1
State Well Name:	
Montoring Network Type:	SGMA Representative
Station ID:	46729
Latitude:	33.8225
Longitude:	-117.508
Well Depth (feet bgs):	Unknown
Top Perforation (feet bgs):	Unknown
Bottom Perforation (feet bgs):	Unknown
Ground Surface Elevation (GSE):	806.92
Reference Point Elevation:	808.92
Sustainability Indicators:	Groundwater Levels





- Groundwater Measurement (feet msl)
- Minimum Threshold for Water Level (feet msl)
- Ground Surface Elevation (feet msl)

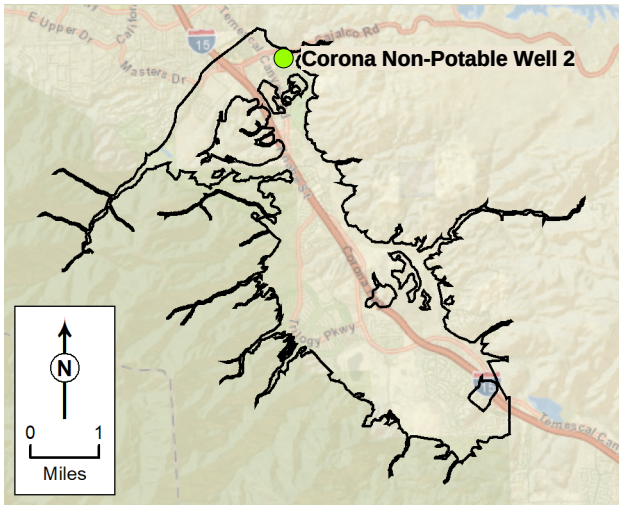
January 2025

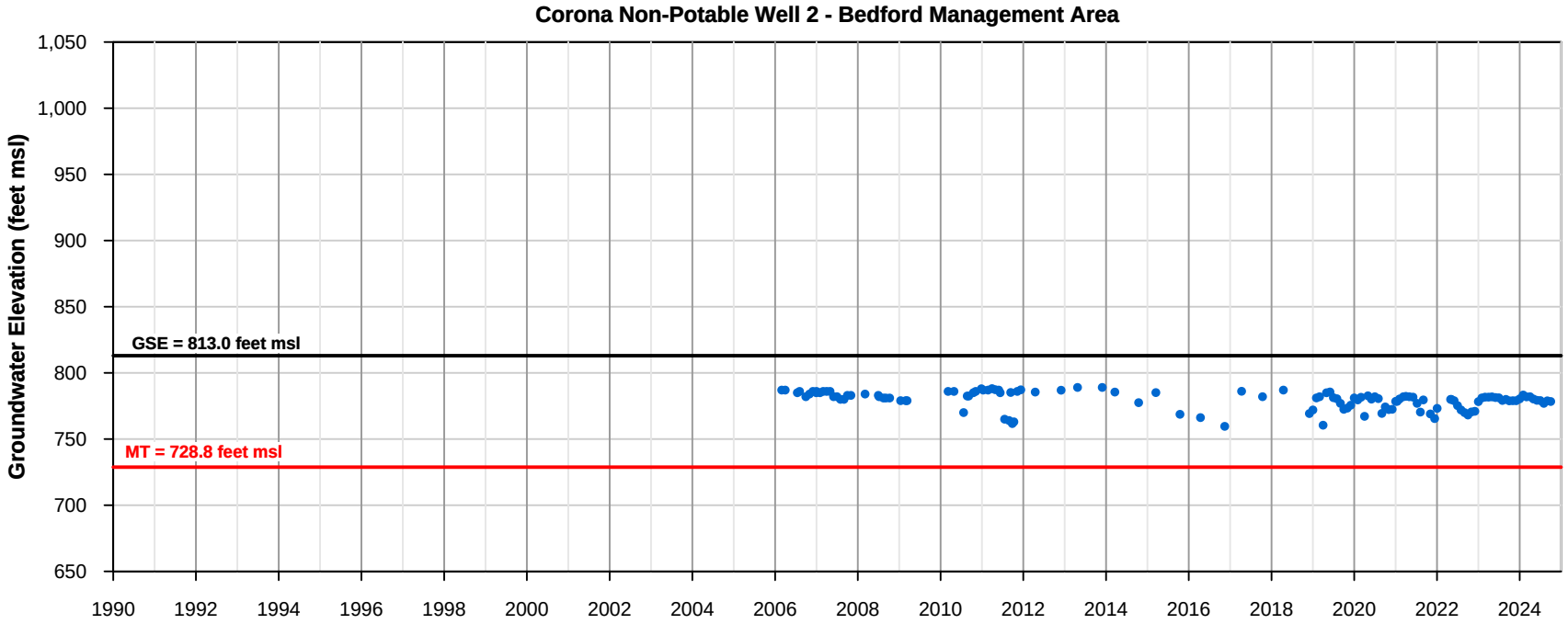
TODD GROUNDWATER

Figure 2-9
Corona Non-Potable Well 1 Hydrograph

Well Information

Site Code:	338227N1175072W001
Local Well Name:	Corona Non-Potable Well 2
State Well Name:	
Montoring Network Type:	SGMA Representative
Station ID:	46730
Latitude:	33.8227
Longitude:	-117.507
Well Depth (feet bgs):	Unknown
Top Perforation (feet bgs):	Unknown
Bottom Perforation (feet bgs):	Unknown
Ground Surface Elevation (GSE):	806.77
Reference Point Elevation:	808.77
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

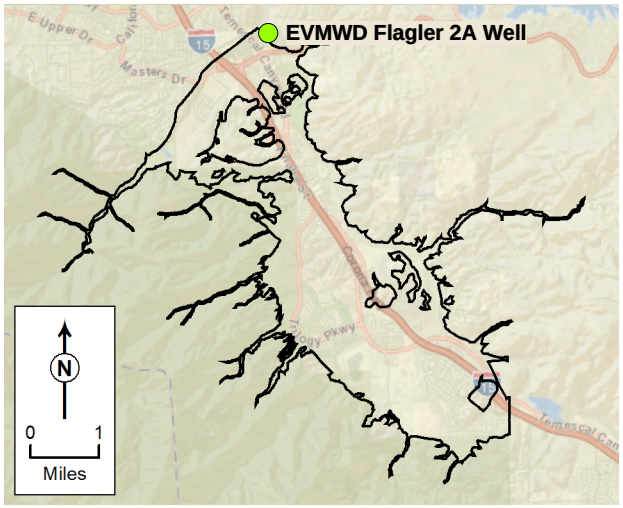
January 2025

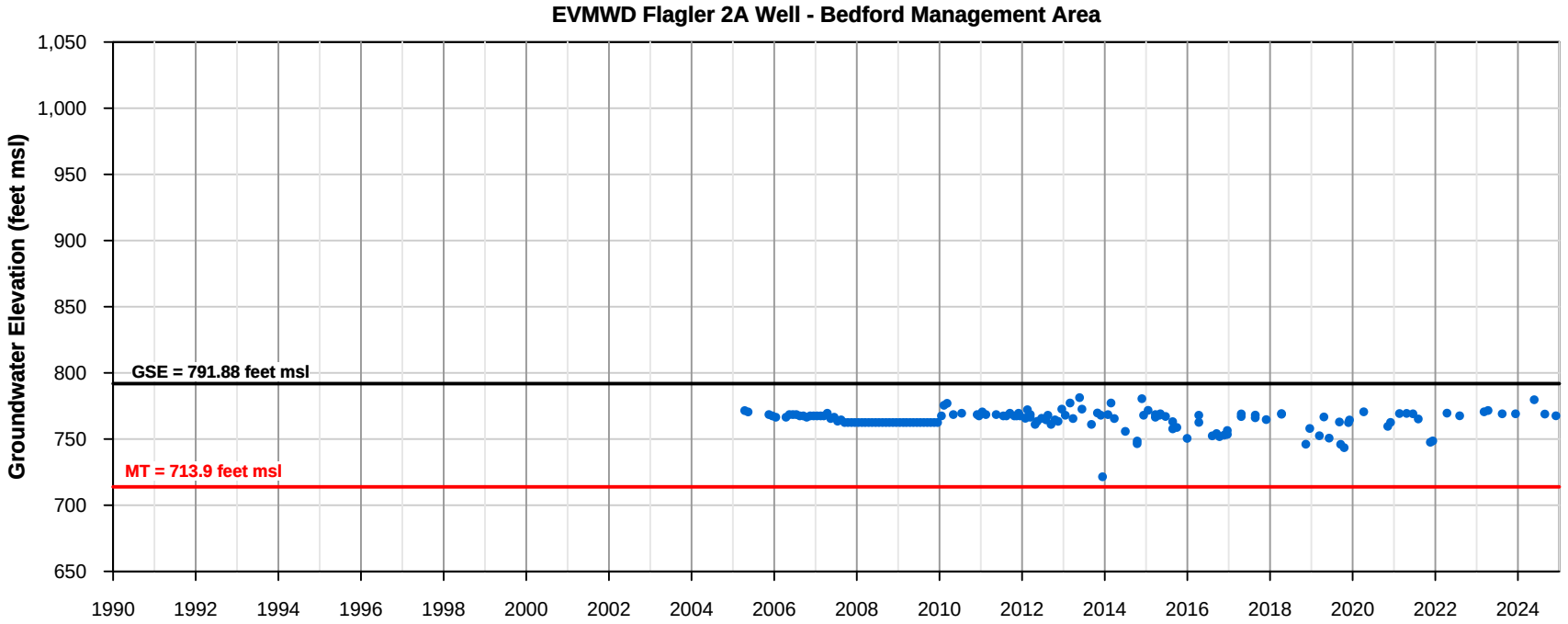
TODD GROUNDWATER

Figure 2-10
Corona Non-Potable Well 2 Hydrograph

Well Information

Site Code:	338280N1175100W001
Local Well Name:	EVMWD Flagler 2A Well
State Well Name:	04S06W16C003S
Montoring Network Type:	SGMA Representative
Station ID:	46732
Latitude:	33.828
Longitude:	-117.511
Well Depth (feet bgs):	105
Top Perforation (feet bgs):	51
Bottom Perforation (feet bgs):	92
Ground Surface Elevation (GSE):	791.88
Reference Point Elevation:	793.88
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

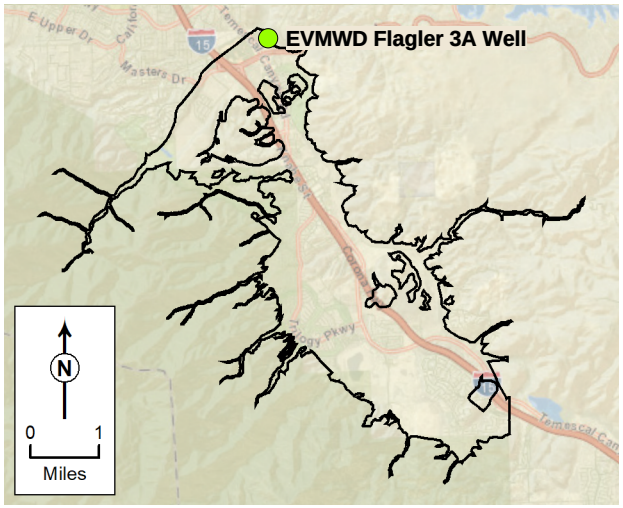
January 2025

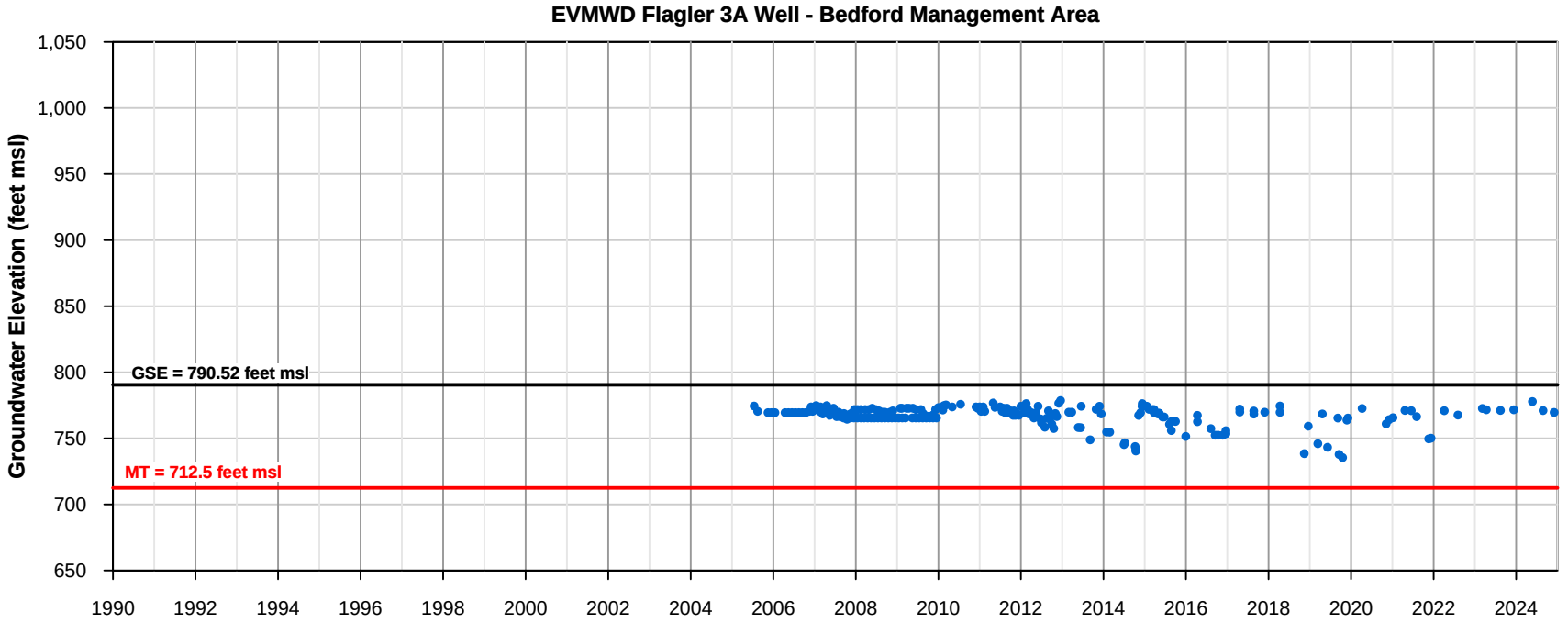
TODD GROUNDWATER

Figure 2-11
EVMWD Flagler 2A Well Hydrograph

Well Information

Site Code:	338270N1175100W001
Local Well Name:	EVMWD Flagler 3A Well
State Well Name:	04S06W16C002S
Montoring Network Type:	SGMA Representative
Station ID:	46733
Latitude:	33.8269
Longitude:	-117.511
Well Depth (feet bgs):	100
Top Perforation (feet bgs):	51
Bottom Perforation (feet bgs):	90
Ground Surface Elevation (GSE):	790.45
Reference Point Elevation:	792.45
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)
Minimum Threshold for Water Level (feet msl)
Ground Surface Elevation (feet msl)

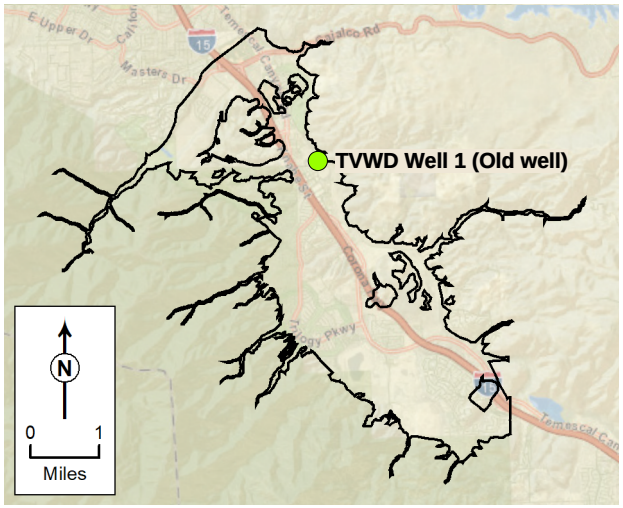
January 2025

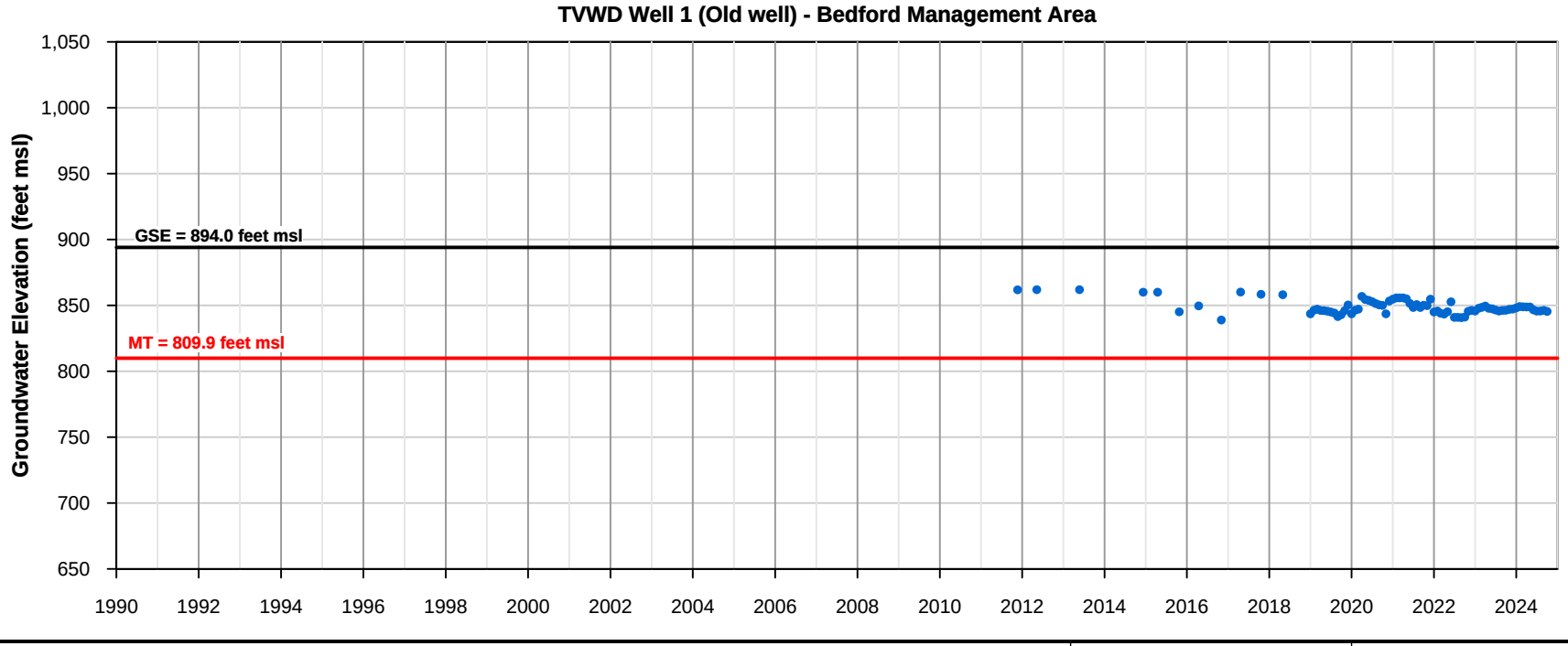
TODD GROUNDWATER

Figure 2-12
EVMWD Flagler 3A Well Hydrograph

Well Information

Site Code:	338010N1174983W001
Local Well Name:	TVWD Well 1 (Old well)
State Well Name:	04S06W22P003S
Montoring Network Type:	SGMA Representative
Station ID:	47944
Latitude:	33.801
Longitude:	-117.498
Well Depth (feet bgs):	100
Top Perforation (feet bgs):	40
Bottom Perforation (feet bgs):	80
Ground Surface Elevation (GSE):	877.9
Reference Point Elevation:	879.9
Sustainability Indicators:	Groundwater Levels





- Groundwater Measurement (feet msl)
- Minimum Threshold for Water Level (feet msl)
- Ground Surface Elevation (feet msl)

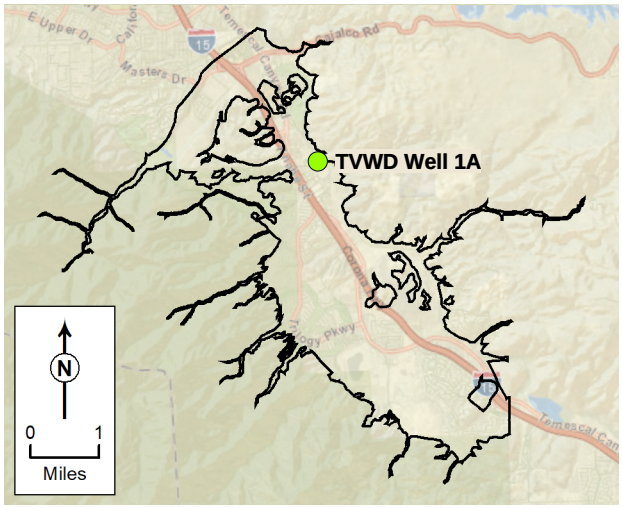
January 2025

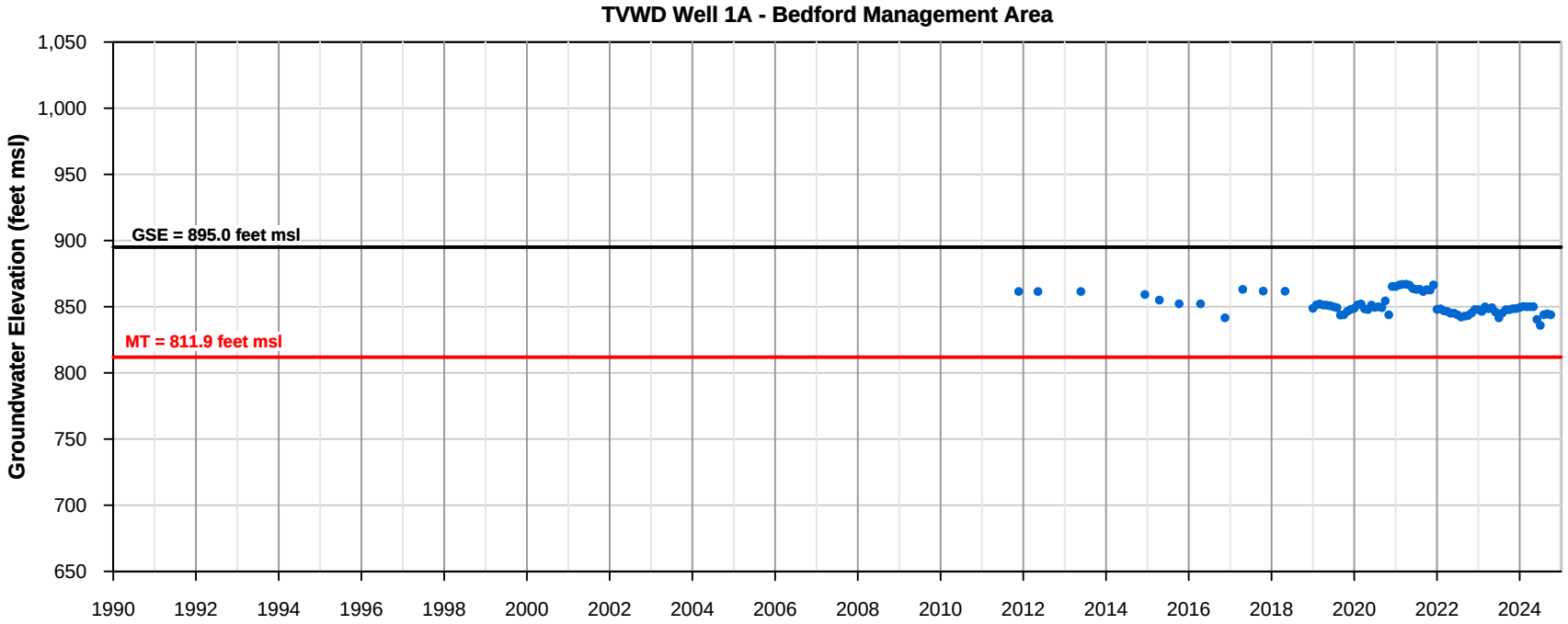
TODD GROUNDWATER

Figure 2-13
TVWD Well 1 (Old well) Hydrograph

Well Information

Site Code:	338009N1174983W001
Local Well Name:	TVWD Well 1A
State Well Name:	
Montoring Network Type:	SGMA Representative
Station ID:	47943
Latitude:	33.8009
Longitude:	-117.498
Well Depth (feet bgs):	100
Top Perforation (feet bgs):	40
Bottom Perforation (feet bgs):	80
Ground Surface Elevation (GSE):	879.88
Reference Point Elevation:	881.88
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

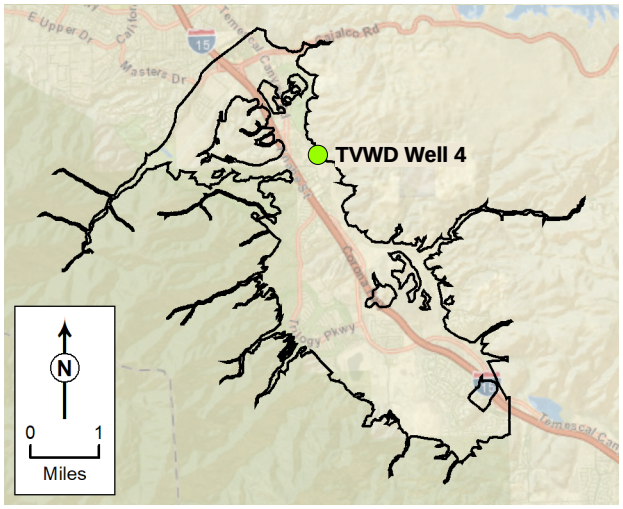
January 2025

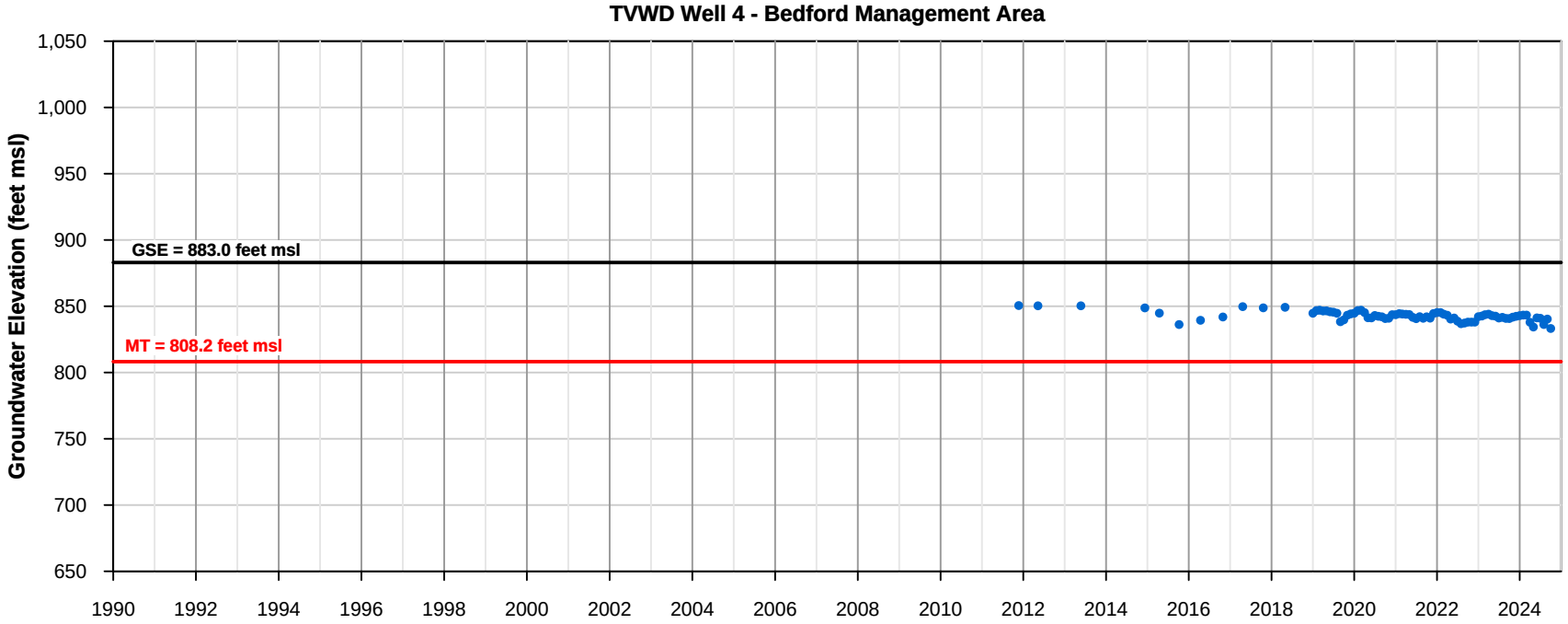
TODD GROUNDWATER

Figure 2-14
TVWD Well 1A
Hydrograph

Well Information

Site Code:	338023N1174981W001
Local Well Name:	TVWD Well 4
State Well Name:	04S06W22P004S
Montoring Network Type:	SGMA Representative
Station ID:	47945
Latitude:	33.8023
Longitude:	-117.498
Well Depth (feet bgs):	100
Top Perforation (feet bgs):	40
Bottom Perforation (feet bgs):	80
Ground Surface Elevation (GSE):	876.22
Reference Point Elevation:	878.22
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

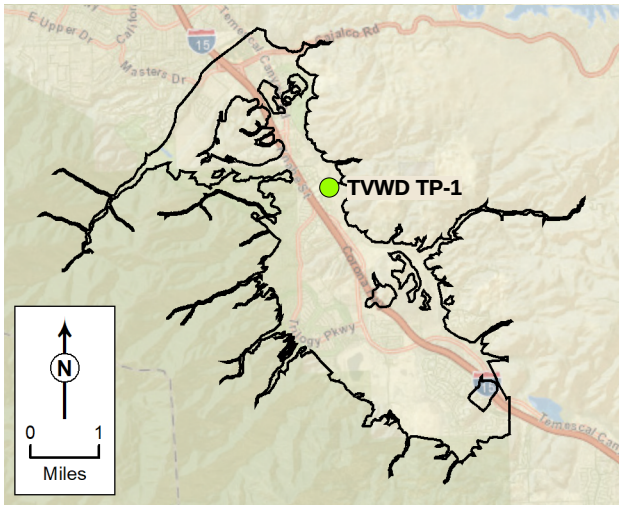
January 2025

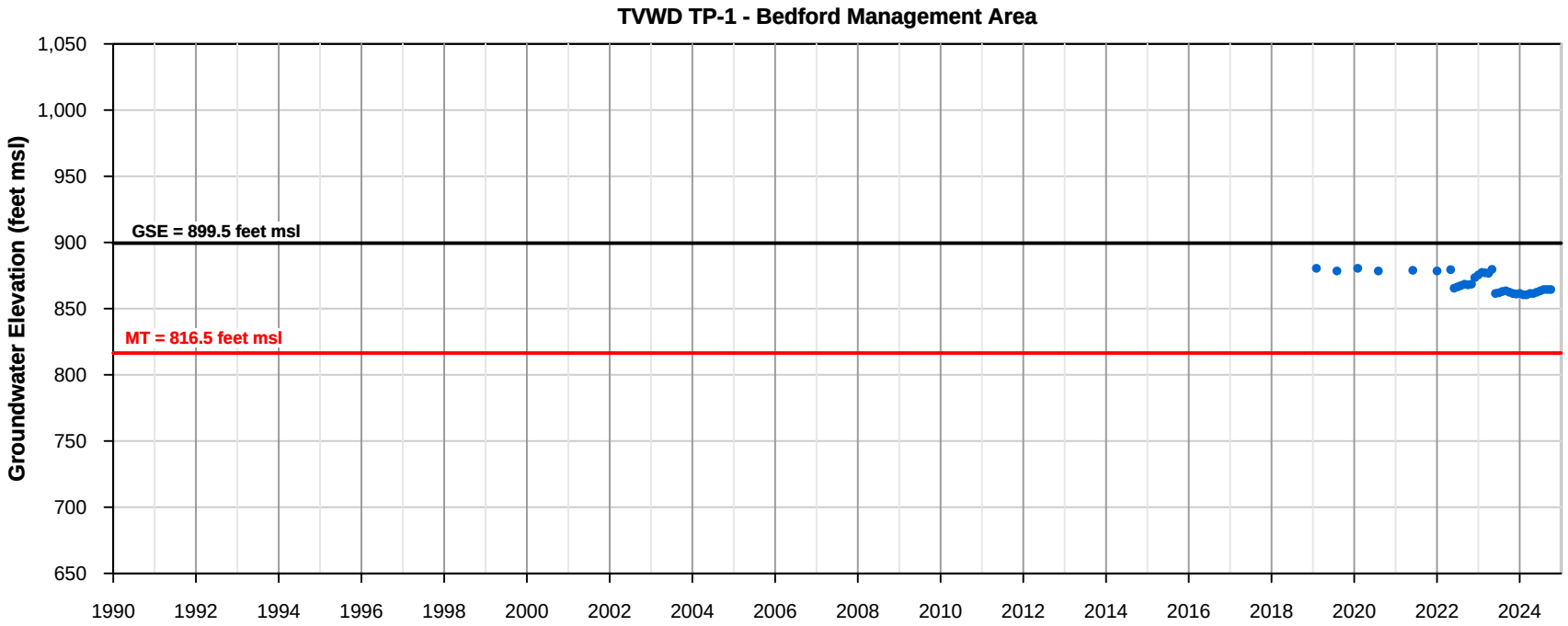
TODD GROUNDWATER

Figure 2-15
TVWD Well 4
Hydrograph

Well Information

Site Code:	337954N1174952W001
Local Well Name:	TVWD TP-1
State Well Name:	
Montoring Network Type:	SGMA Representative
Station ID:	57095
Latitude:	33.7954
Longitude:	-117.495
Well Depth (feet bgs):	103
Top Perforation (feet bgs):	39
Bottom Perforation (feet bgs):	99
Ground Surface Elevation (GSE):	899.46
Reference Point Elevation:	901.46
Sustainability Indicators:	Groundwater Levels





- Groundwater Measurement (feet msl)
- Minimum Threshold for Water Level (feet msl)
- Ground Surface Elevation (feet msl)

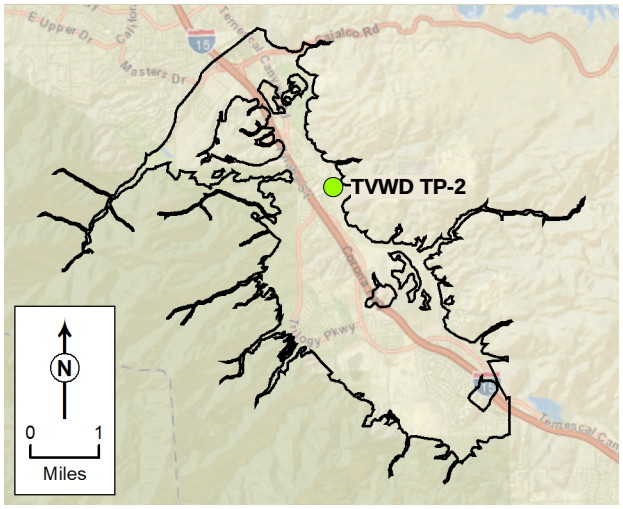
January 2025

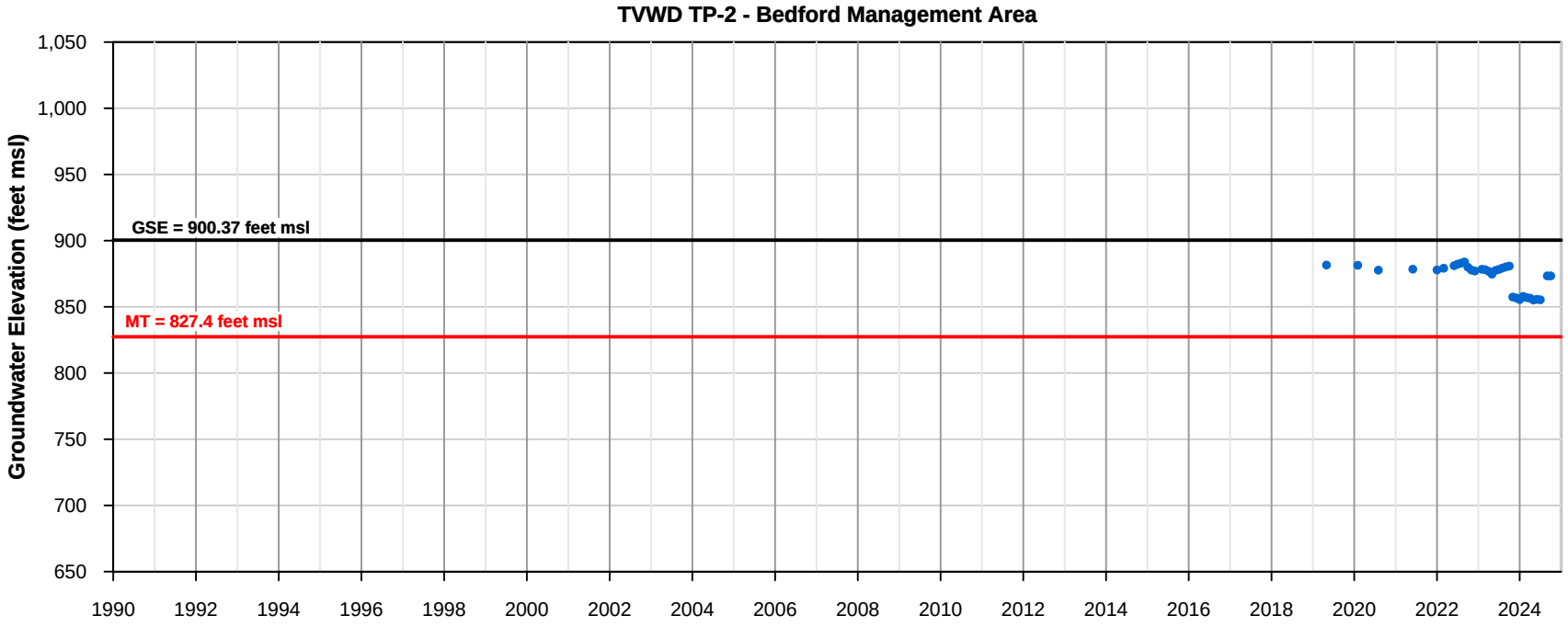
TODD GROUNDWATER

Figure 2-16
TVWD TP-1
Hydrograph

Well Information

Site Code:	337954N1174941W001
Local Well Name:	TVWD TP-2
State Well Name:	
Montoring Network Type:	SGMA Representative
Station ID:	57094
Latitude:	33.7955
Longitude:	-117.494
Well Depth (feet bgs):	90
Top Perforation (feet bgs):	30
Bottom Perforation (feet bgs):	85
Ground Surface Elevation (GSE):	900.37
Reference Point Elevation:	902.37
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

Note:
A new transducer was installed in September 2024.

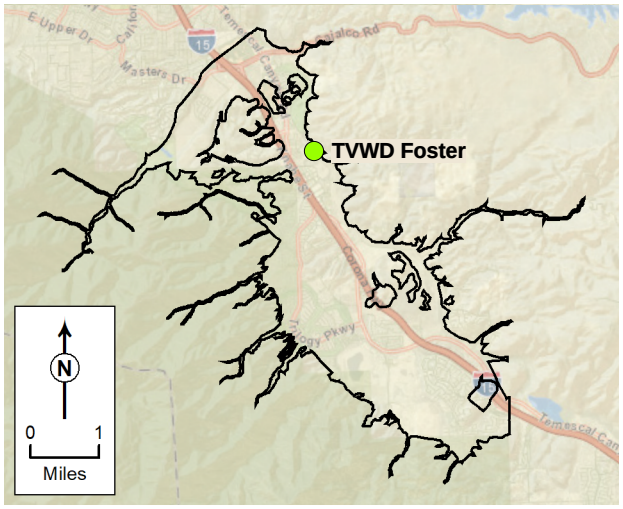
January 2025

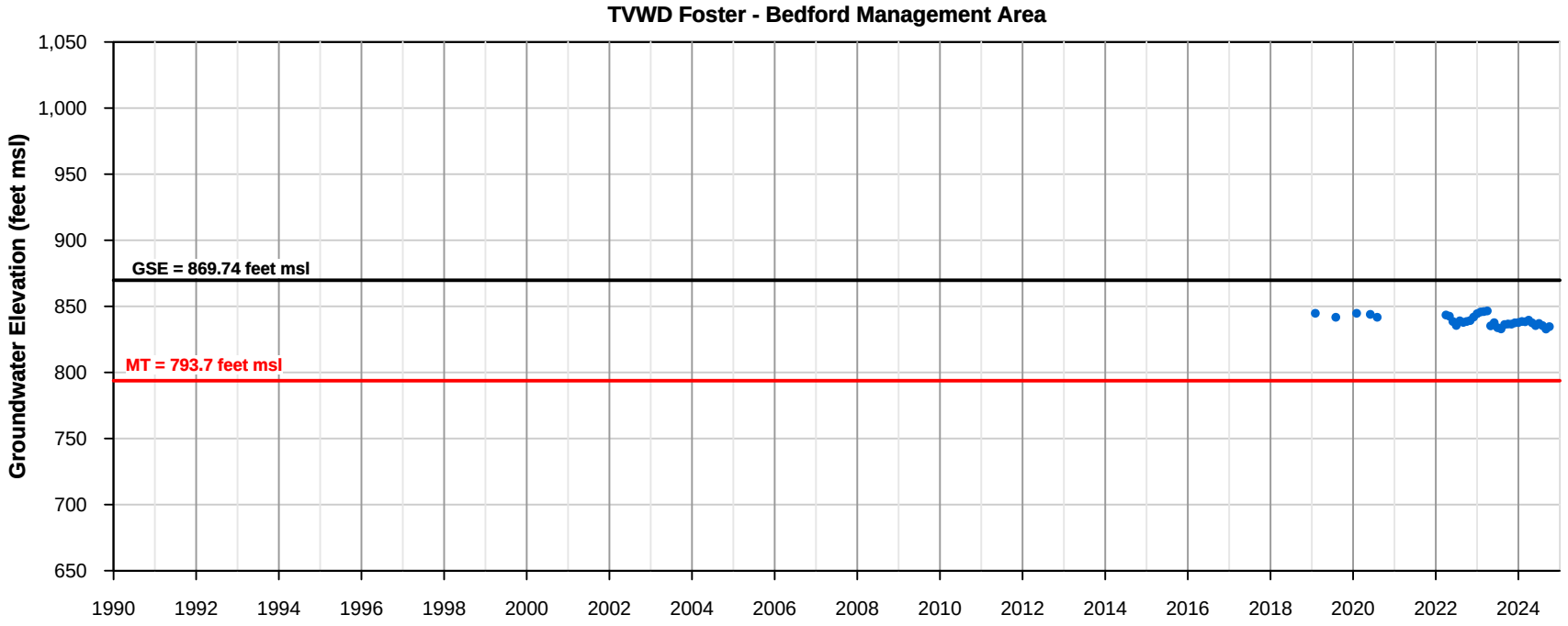
TODD GROUNDWATER

Figure 2-17
TVWD TP-2
Hydrograph

Well Information

Site Code:	337544N1174806W001
Local Well Name:	TVWD Foster
State Well Name:	04S06W22N002S
Montoring Network Type:	SGMA Representative
Station ID:	57093
Latitude:	33.8031
Longitude:	-117.4988
Well Depth (feet bgs):	93
Top Perforation (feet bgs):	38
Bottom Perforation (feet bgs):	88
Ground Surface Elevation (GSE):	869.74
Reference Point Elevation:	871.74
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

Minimum Threshold for Water Level (feet msl)

Ground Surface Elevation (feet msl)

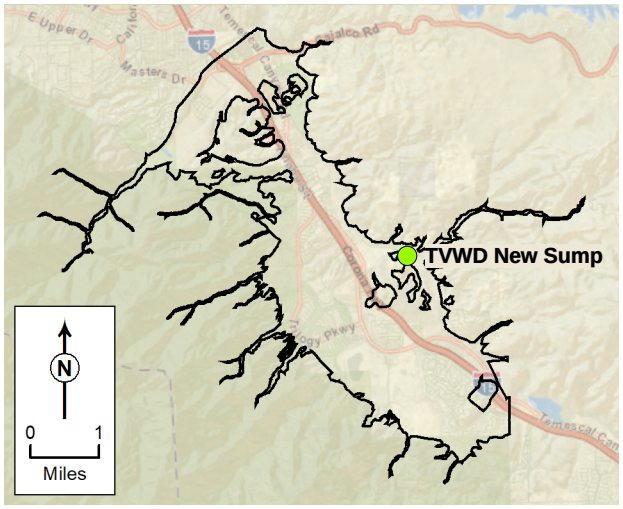
January 2025

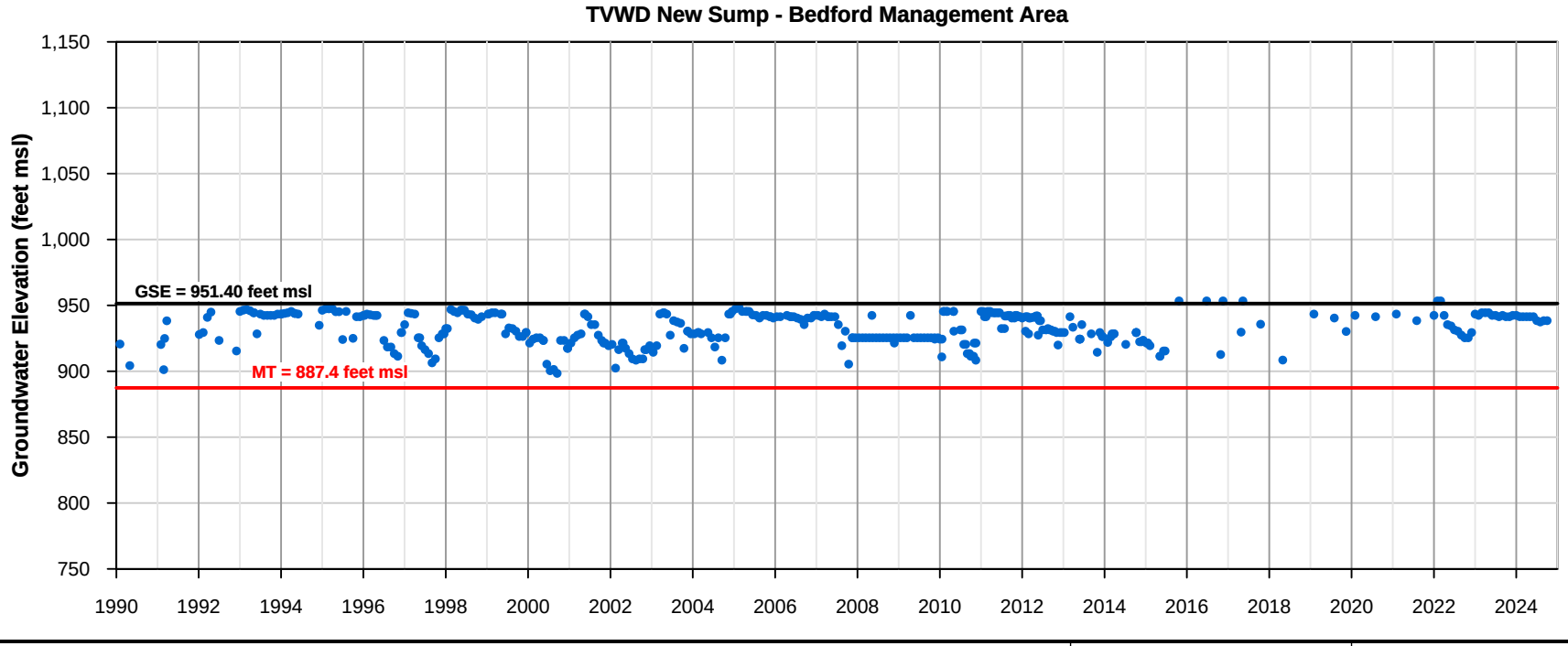
TODD GROUNDWATER

Figure 2-18
TVWD Foster
Hydrograph

Well Information

Site Code:	337810N1174740W001
Local Well Name:	TVWD New Sump
State Well Name:	04S06W35G002S
Montoring Network Type:	SGMA Representative
Station ID:	47928
Latitude:	33.7811
Longitude:	-117.475
Well Depth (feet bgs):	74
Top Perforation (feet bgs):	Unknown
Bottom Perforation (feet bgs):	Unknown
Ground Surface Elevation (GSE):	951.4
Reference Point Elevation:	953.4
Sustainability Indicators:	Groundwater Levels





Groundwater Measurement (feet msl)

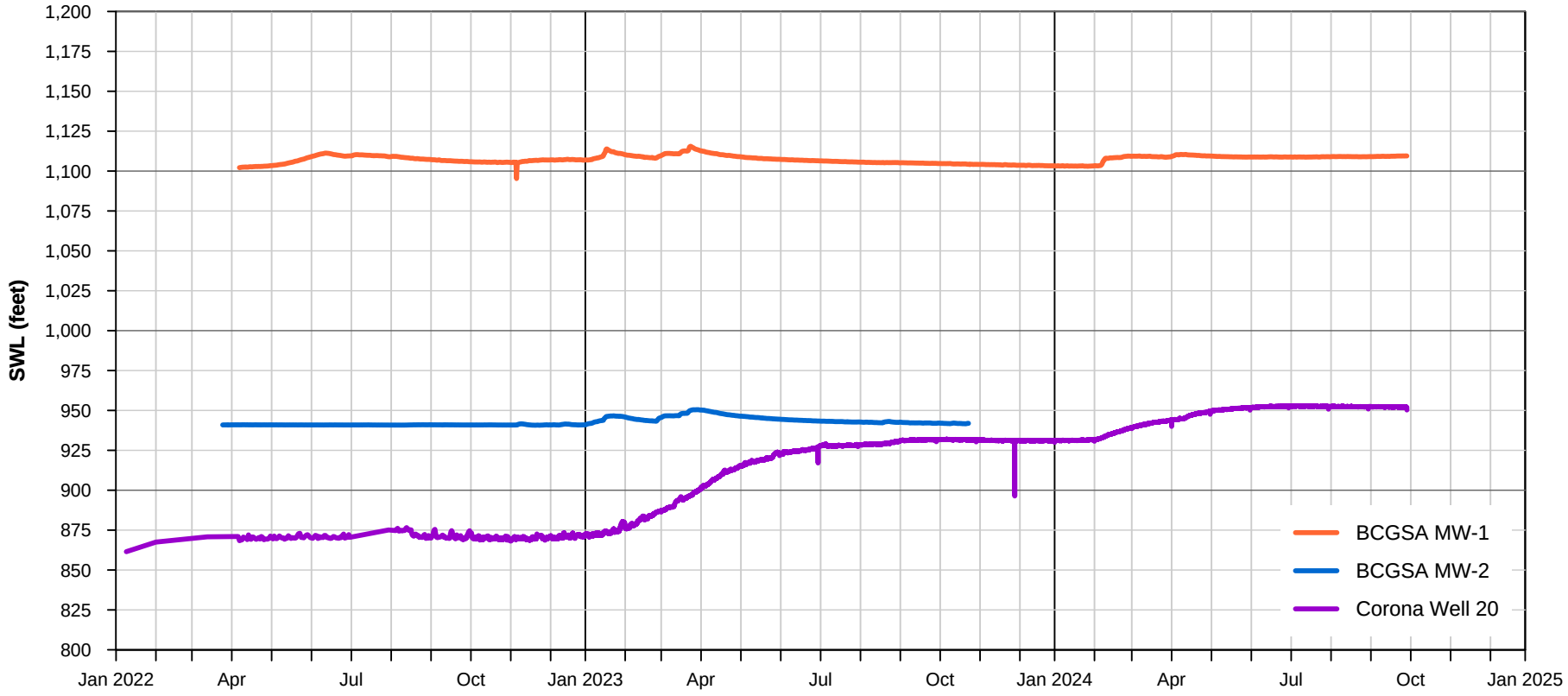
Minimum Threshold for Water Level (feet msl)

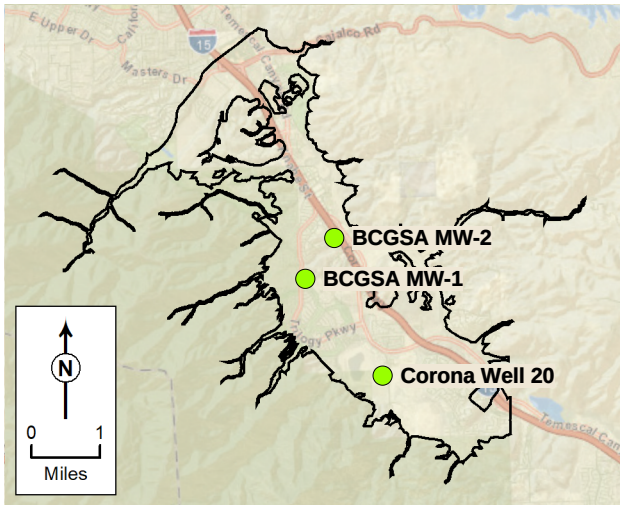
Ground Surface Elevation (feet msl)

January 2025

TODD GROUNDWATER

Figure 2-19
TVWD New Sump Hydrograph





TODD GROUNDWATER

Figure 2-20
BCGSA MW-1, MW-2, and Corona 20 Hydrograph

2.3. GROUNDWATER FLOW

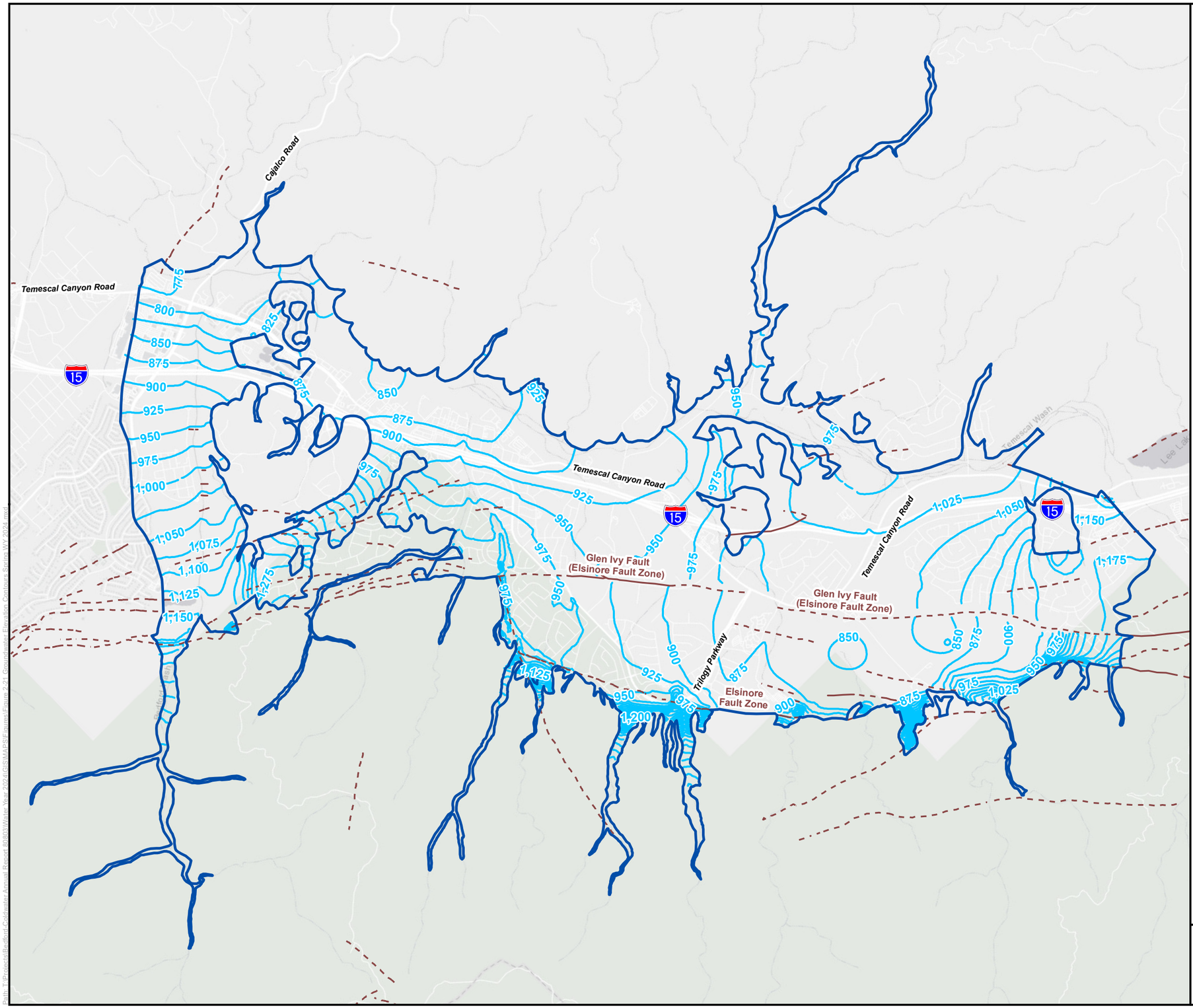
Figures 2-21 and 2-22 are groundwater elevation contour maps that show groundwater elevation surface conditions in the spring and fall of 2024 representing seasonal high and low conditions, respectively. The groundwater elevation surface represented by these contours were generated using the calibrated numerical model of the Basin constructed as part of the GSP. The groundwater model provides estimates of water levels throughout the Basin for every month of the model period.

SGMA requires the inclusion of groundwater contours for the entire Basin in each annual report. A consequence of this basin-wide requirement is inclusion of areas with limited or no groundwater monitoring. As a result, contouring with relatively simple software tools or by hand is difficult, subjective, and often inconsistent from year to year. However, the calibrated groundwater model, which is updated annually, provides simulation of groundwater elevations for every month of the model period in a way that is internally consistent with the hydrogeologic conceptualization of the Basin and the water budget. Using contours from the model produces groundwater surface elevation representations that are consistent with the water budget and change in storage estimates.

The pattern of contours in **Figures 2-21 and 2-22** are similar for both the spring and fall seasons. The spring contours show slightly higher elevations in many portions of the Basin, including within the Coldwater management area where flow from tributaries during wet weather recharges the basin. In both time periods, groundwater in the Coldwater management area flows from the high elevation areas in the west of the management area and then towards a local depression in the southern part of the management area. In the Bedford management area groundwater flows from the south and west towards and along the Temescal Wash.

2.4. SUSTAINABLE MANAGEMENT CRITERIA FOR GROUNDWATER LEVELS

The GSP defined MTs and MOs for each of the 17 Key Wells. These MTs and MOs were defined to avoid undesirable results in the Basin, which is described in detail in the GSP (Todd et al. 2021). The MTs for each well are shown on the individual Key Well hydrographs (**Figures 2-3 through 2-19**) and the MTs are also in **Table 2-2**. The sustainable management criteria are discussed on more detail in Section 5.



25-foot groundwater elevation contours, feet msl

Fault Location, dashed where uncertain

Bedford-Coldwater Basin

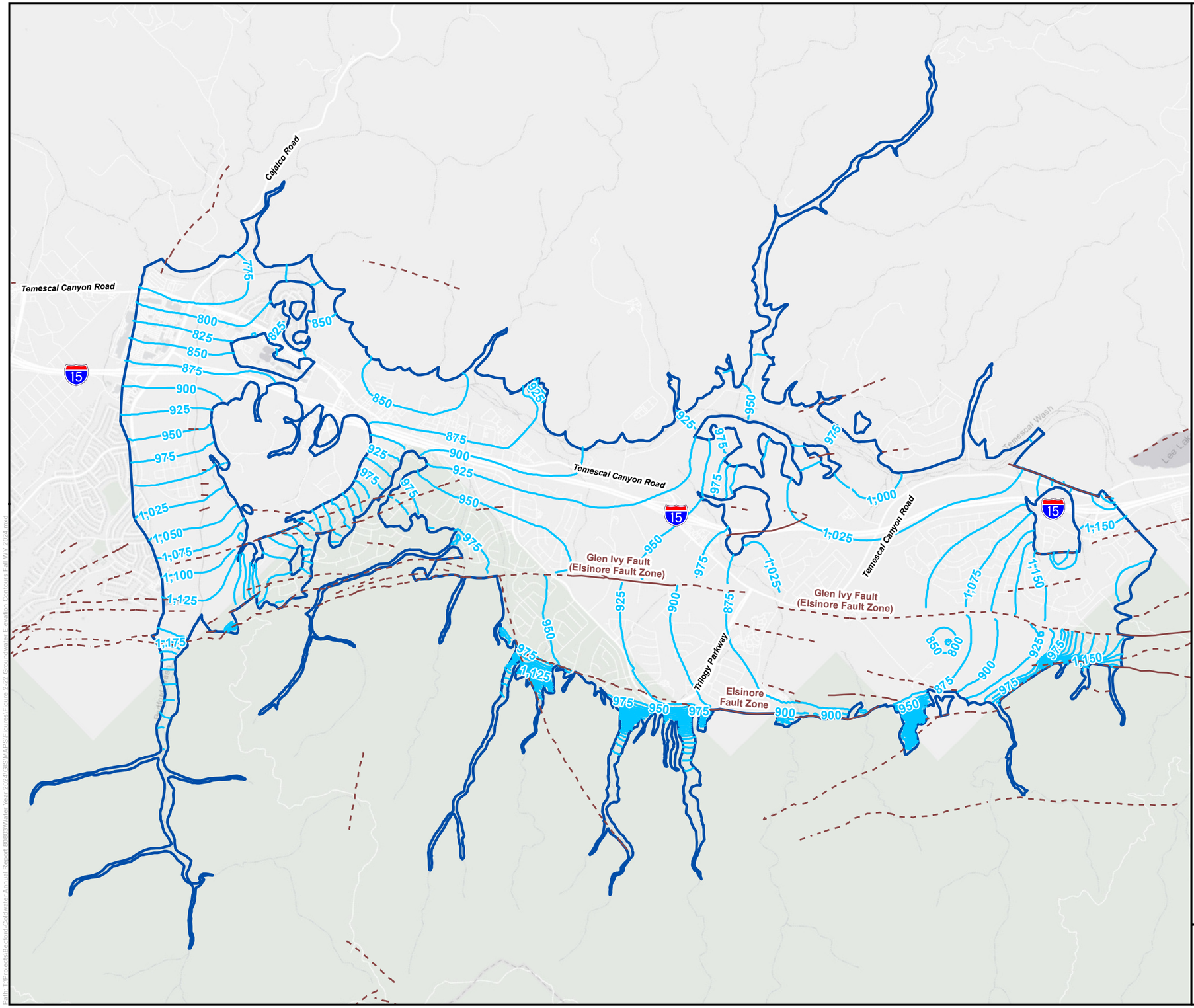
N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 2-21
Groundwater Elevation Contours Spring 2024



25-foot groundwater elevation contours, feet msl

Fault Location, dashed where uncertain

Bedford-Coldwater Basin

N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 2-22
Groundwater Elevation Contours Fall 2024

Table 2-2. Minimum Thresholds for Groundwater Levels

Local Well Name	State Well Number	DWR Well Number	Management Area	Agency	Monitoring Frequency	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Minimum Threshold Depth to Water (feet)	Minimum Threshold Elevation (ft NAVD 88)
Corona Well 20	005S006W11D001	337556N1174811W001	Coldwater	Corona	Static - Monthly	1147.58	1145.58	460	687.58
Corona Well 21	005S006W03J005	337622N1174890W001	Coldwater	Corona	Static - Monthly	1125.09	1123.09	460	665.09
Corona Well 3	005S006W03K001	337615N1174901W001	Coldwater	Corona	Static - Monthly	1140.02	1138.02	479	661.02
Corona Non-Potable Well 1	004S006W16G004S	338227N1175073W001	Bedford	Corona	Continuous (SCADA)	808.92	813	80	728.92
Corona Non-Potable Well 2	004S006W16G005S	338227N1175072W001	Bedford	Corona	Continuous (SCADA)	808.77	813	80	728.77
EVMWD Flagler 2A Well	004S006W16C003S	338280N1175100W001	Bedford	EVMWD	Continuous (SCADA)	793.88	791.88	80	713.88
EVMWD Flagler 3A Well	004S006W16C002S	338270N1175100W001	Bedford	EVMWD	Continuous (SCADA)	792.52	790.52	80	712.52
Corona & EVMWD Trilogy		337650N1174896W001	Coldwater	EVMWD	Quarterly	1101.86	1099.86	440	661.86
EVMWD Station 71	005S006W11C001	337496N1174753W001	Bedford	EVMWD	Quarterly	1166.45	1164.45	507	659.45
EVMWD Mayhew Well 2	005S006W11G001	338031N1174988W001	Coldwater	EVMWD	Quarterly	1244.2	1242.2	507	737.2
TVWD Well 1 (Old well)	004S006W22P003S	338010N1174983W001	Bedford	TVWD	Continuous (SCADA)	879.9	894	70	809.9
TVWD Well 1A		338009N1174983W001	Bedford	TVWD	Continuous (SCADA)	881.88	895	70	811.88
TVWD Well 4	004S006W22P004S	338023N1174981W001	Bedford	TVWD	Continuous (SCADA)	878.22	883	70	808.22
TVWD TP-1		337954N1174952W001	Bedford	TVWD	Continuous (SCADA)	901.46	899.46	85	816.46
TVWD TP-2		337954N1174941W001	Bedford	TVWD	Continuous (SCADA)	902.37	900.37	75	827.37
TVWD Foster	004S006W22N002	337544N1174806W001	Bedford	TVWD	Continuous (SCADA)	871.74	869.74	78	793.74
TVWD New Sump	004S006W35G002	337810N1174740W001	Bedford	TVWD	Continuous (SCADA)	953.4	951.4	66	887.4

3. WATER SUPPLIES AND USE

This SGMA annual report documents groundwater extractions and water use from other sources in the Basin. Groundwater use volumes by management area are shown on **Table 3-1**. In addition to groundwater, water from imported and recycled water sources is used in the Basin, as shown on **Table 3-1.** These data are also reported to DWR; copies of the tables submitted to DWR are included in **Appendix B**.

Imported water and other water infrastructure are shown on **Figure 1-4**. A map showing the locations of agricultural and municipal, commercial, industrial, and domestic pumping is presented in **Figure 3-1**. Measured and estimated annual pumping volumes are displayed as circles with areas proportional to annual pumping in WY 2024. Pumping in Bedford remained similar to WY 2022 and WY 2023 but is 44 percent less than pumping in WY 2021. The long-term cause of this trend is a combination of increased recycled water use and ongoing water conservation implemented during recent droughts. In 2024, pumping rose slightly from WY 2023 due to the extreme wet hydrologic conditions in WY 2023. Pumping in Coldwater also remained similar to WY 2022 and WY 2023 conditions. Pumping in Coldwater is 26 percent less than WY 2021 volumes, when pumping was increased in response to extreme dry conditions. Total pumping in the basin has remained steady at around 2,700 acre-feet per year (AFY) while total demand increased by 700 AFY (10 percent) from WY 2023 to 2024, largely due to the increased imported water delivered to TVWD (600 AFY).

3.1. GROUNDWATER

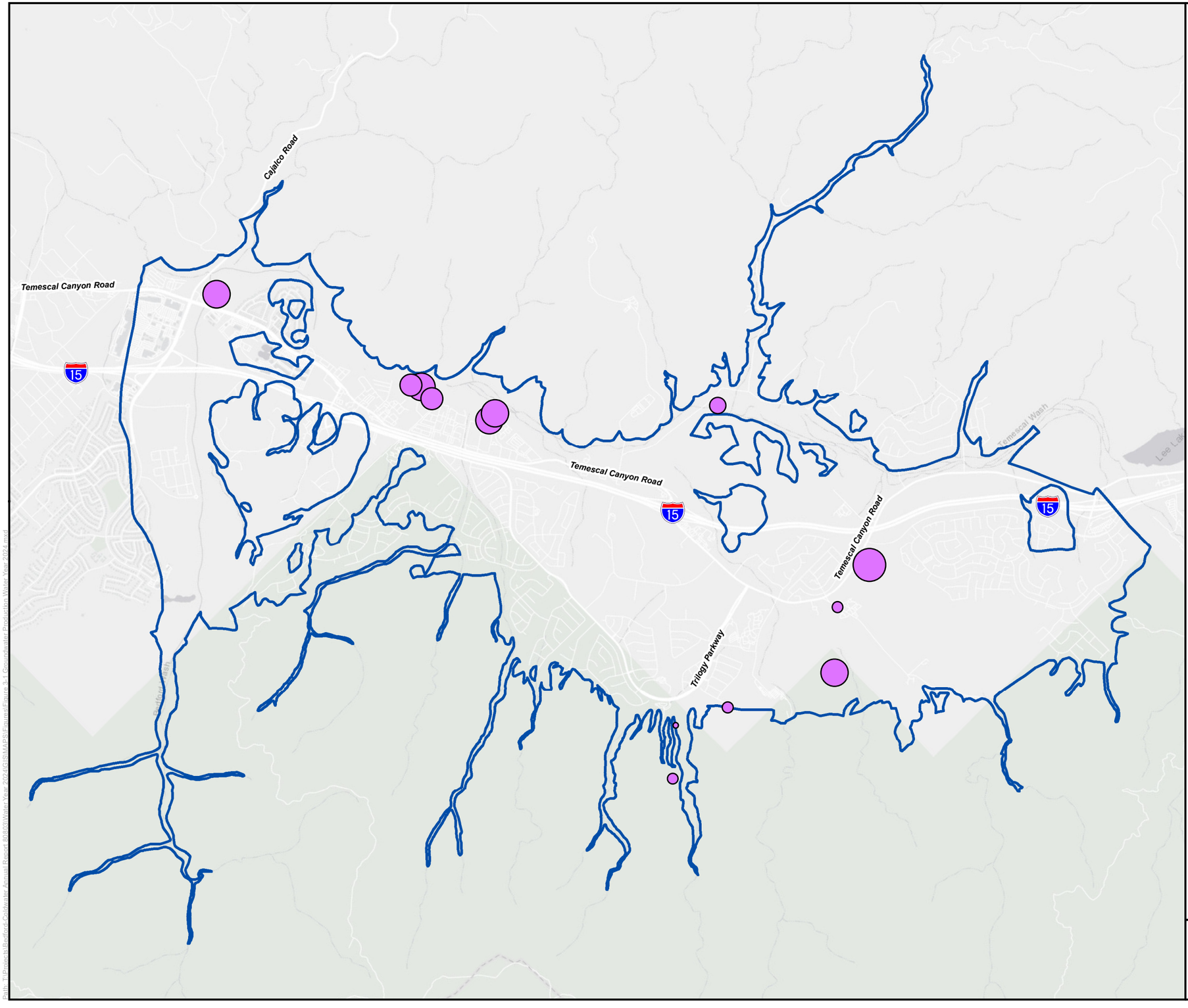
3.1.1. Municipal Groundwater Use

Pumping from M&I wells has been measured and recorded for many years by Corona, EVMWD, and TVWD. These data along with other significant groundwater production are reported to the Santa Ana River Watermaster, with WMWD serving as the party responsible for data management. Total pumping for both management areas was about 11,000 AFY in the 1990s and decreased to around 3,000 AFY by 2018. In WY 2024, total pumping was 2,722 acre-feet (AF), similar to the 2023 total of 2,791 AF. This trend began with the replacement of groundwater-supplied citrus orchards and conversion to urban land uses supplied almost entirely by imported water and continues through increased use of recycled water and demand management. In the Bedford management area, TVWD and Corona pump groundwater to supplement recycled water used for irrigation and other non-potable uses. In the Coldwater management area, groundwater is pumped for municipal use in the Corona and EVMWD service areas in the Bedford-Coldwater Basin and the Temescal and Elsinore Subbasins. Total pumping is expected to remain around current volumes but the portion pumped in each management area may change in the future.

3.1.2. Other Groundwater Use

There is limited private groundwater pumping within the Basin. Significant groundwater uses are reported to WMWD in their role as stewards of the Santa Ana River and fulfilling the

requirements of California Water Code Section 4999. The source of water used for agriculture in the Coldwater management area has been shifting for years and is now almost exclusively water pumped from the Bedford management area delivered by TVWD. Known and estimated private groundwater pumping data are included in the water budget and modeling and reported in **Table 3-1** and to DWR (**Appendix B**).



Groundwater Production by Location (WY 2024)

- 0 to 10 Acre Feet
- 10 to 50 Acre Feet
- 50 to 100 Acre Feet
- 100 to 200 Acre Feet
- 200 to 500 Acre Feet
- 500 to 750 Acre Feet
- Bedford-Coldwater Basin

N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 3-1
Groundwater Production
Water Year 2024

Table 3-1. Water Use by Management Area

Water Year	Groundwater Pumping (acre-feet)				Imported Water (acre-feet)	Recycled Water (acre-feet)
	Bedford Management Area		Coldwater Management Area			
	M&I	Ag[1]	M&I[2]	Ag	M&I	M&I[3]
2019	1,981	0	610	562	3,323	884
2020	2,221	125	819	1,179	3,520	1,098
2021	2,292	249	1,001	732	3,877	1,188
2022	959	535	1,210	53	3,428	1,045
2023	657	522	1,566	46	3,436	992
2024	910	522	1,238	53	4,047	1,192

Notes:

1: Pumped in Bedford but used in Coldwater

2: Includes estimated Industrial pumping

3: Recycled water is only used in the Bedford MA

3.1.3. Quarry Operations and Losses

Quarry outflows represent flow out of the Basin associated with active or passive quarry operations to account for observed water conditions within the deeper quarry pits. In the Coldwater management area, excavations continued within the large quarry pits following periods of high groundwater levels for the period from 1990 to 2010. During model calibration, it was necessary to assume that additional pumping or other groundwater removal occurred during these operational periods to maintain the observed groundwater levels. Since 2010, it is our understanding that no additional pumping to maintain quarry water levels at the elevations necessary for deepening pits has occurred, which is supported by the historical model calibration.

In the Bedford management area, the rim of the Mobile Sand quarry located just north of the TVWD water reclamation facility (WRF) is low enough to allow surface flow between the pit and Temescal Wash when water levels in the pit or Wash are high. To estimate these flows, the groundwater model applies a boundary condition based on the observed water levels in the pit and Wash to estimate the volume of into or out of the pit. This is a head-dependent boundary condition that is able to calculate either quarry recharge or outflow based on groundwater conditions. The GSAs continue to work with the quarries to understand their water use and management practices (see Section 6).

3.2. IMPORTED WATER

Corona, TVWD, and EVMWD rely on imported water from Metropolitan. Metropolitan imports water to Southern California from two main sources: the Sacramento and San Joaquin Rivers through the State Water Project (SWP) and the Colorado River via the Colorado River Aqueduct. Corona receives imported water from Metropolitan through WMWD. TVWD receives State Water Project imported by Metropolitan and treated at the Henry J. Mills Treatment Plant in Riverside. In WY 2024, TVWD imported 3,636 AF of supply to the Basin. EVMWD also receives imported water from Metropolitan through WMWD, but only distributes to domestic users if groundwater is insufficient. In WY 2024, the volume imported by EVMWD was 7 AF. For the City of Corona service area, the amount of imported water used in Bedford and Coldwater is estimated from the potential customers in the serve area and totals 403 AF. Total imported water 4,047 AF was approximately 18 percent greater than the volume imported last WY, likely due to increased availability during a two year period of above average conditions.

3.3. RECYCLED WATER

Use of recycled water occurs in both the Corona and TVWD service areas in the Basin. Recycled water use is a relatively small but increasing supply. In TVWD, recycled water is distributed to multiple sites within TVWD's service area within the Bedford management area, including the Retreat Golf Course in the northern portion of the Basin and the Deleo Sports Park along Sycamore Creek in the south Basin (RMC and Woodard & Curran 2017). The amount of recycled water used in Bedford in WY 2024 was 1,044 AF, reported by TVWD. This

is a five percent increase in use likely due to slightly lower irrigation demand resulting from cooler weather during WY 2023, a wet hydrologic year. WY 2024 recycled water use is similar to WY 2022 use. An additional 717.6 AF of reclaimed water was percolated in the Bedford management area in WY 2024. There is no recycled water used in the Coldwater management area.

4. WATER BALANCE

For the GSP, a quantitative assessment of the water balance (or water budget) of the Basin was developed. That water balance included estimates of inflows and outflows for the two management areas and used the GSP numerical model to simulate surface water and groundwater flow over the period 1990 through 2018. The numerical model was updated through the end of WY 2021 for the 2021 annual report and has subsequently been updated every year as part of annual reporting. The WY 2024 annual report includes information through the end of the water year, including an updated water balance. The model provides a dynamic and comprehensive quantification of the water balance wherein all estimated water balance elements are reconciled and are calibrated to groundwater level changes over time. Accordingly, the model continues to be the best tool to quantify those water balance components.

Basic information about the numerical model is presented below, and additional information can be found in the GSP. **Table 4-1** shows the updated water balances for each management area. **Figure 4-1** shows the inflows and outflows to the water balance for the entire model period.

4.1. METHOD OF ANALYSIS

The water balance used for the GSP and updated here is a combined rainfall-runoff-recharge surface water model and groundwater flow model. Complete, itemized surface water and groundwater balances were estimated by combining measured data (e.g., rainfall, stream flow, municipal pumping, wastewater percolation) with model-simulated values. Collectively, the models simulate the entire hydrologic system, but each model or model module focuses on part of the system, as described below. In general, the models were used to estimate flows in the surface water and groundwater balances that are difficult to measure directly or that depend on current groundwater levels. These include surface and subsurface inflows from tributary areas, percolation from stream reaches within the Basin, groundwater discharge to streams, subsurface flow to and from neighboring basins and between management areas, locations and discharges of flowing wells, consumptive use of groundwater by riparian vegetation, and changes in groundwater storage. The two separate models collectively referred to as the Bedford-Coldwater Basin GSP model are the surface water and groundwater models, described below.

4.1.1. Surface Water Model

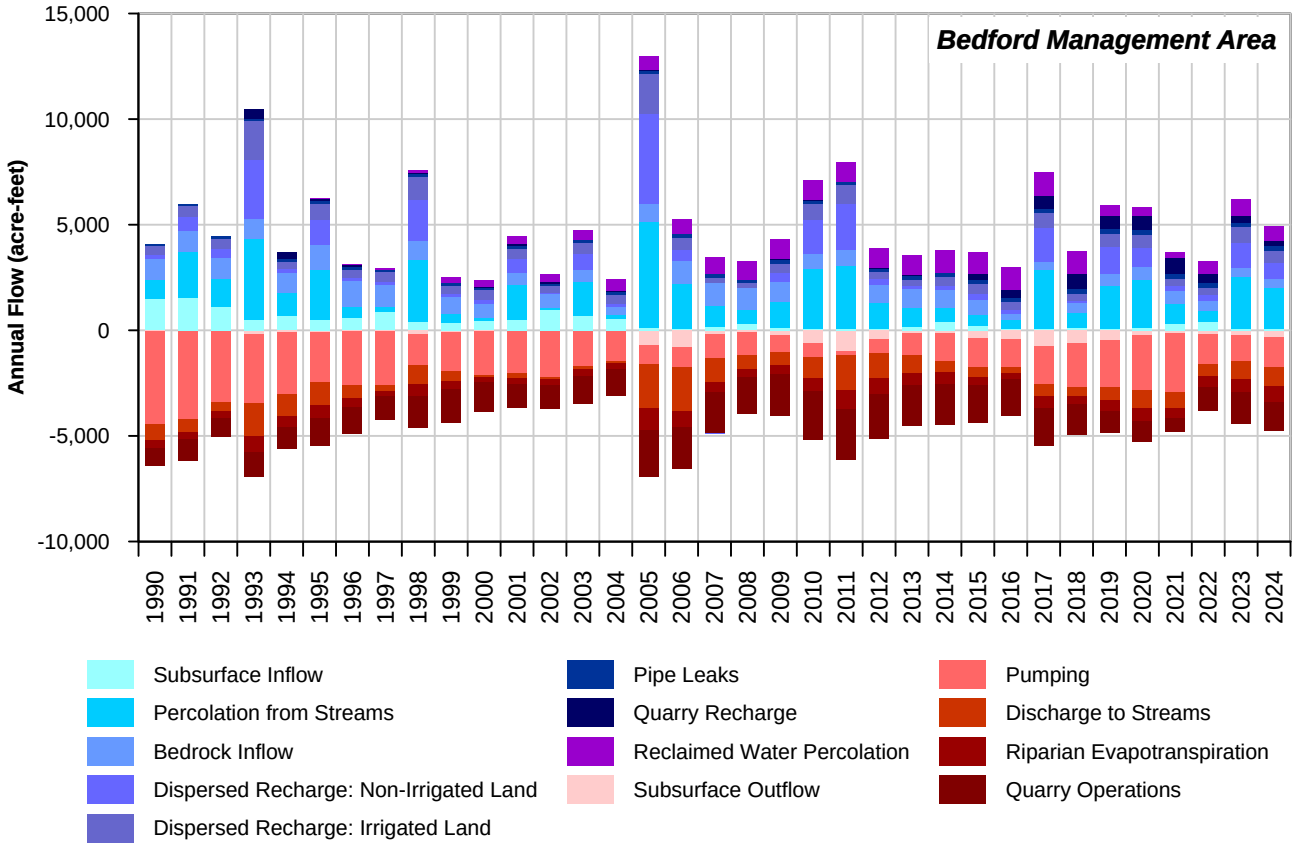
The surface water model simulates hydrologic processes that occur over the entire land surface, including precipitation, interception, infiltration, runoff, evapotranspiration, irrigation, effects of impervious surfaces, pipe leaks in urban areas, deep percolation below the root zone, and shallow groundwater flow to streams and deep recharge.

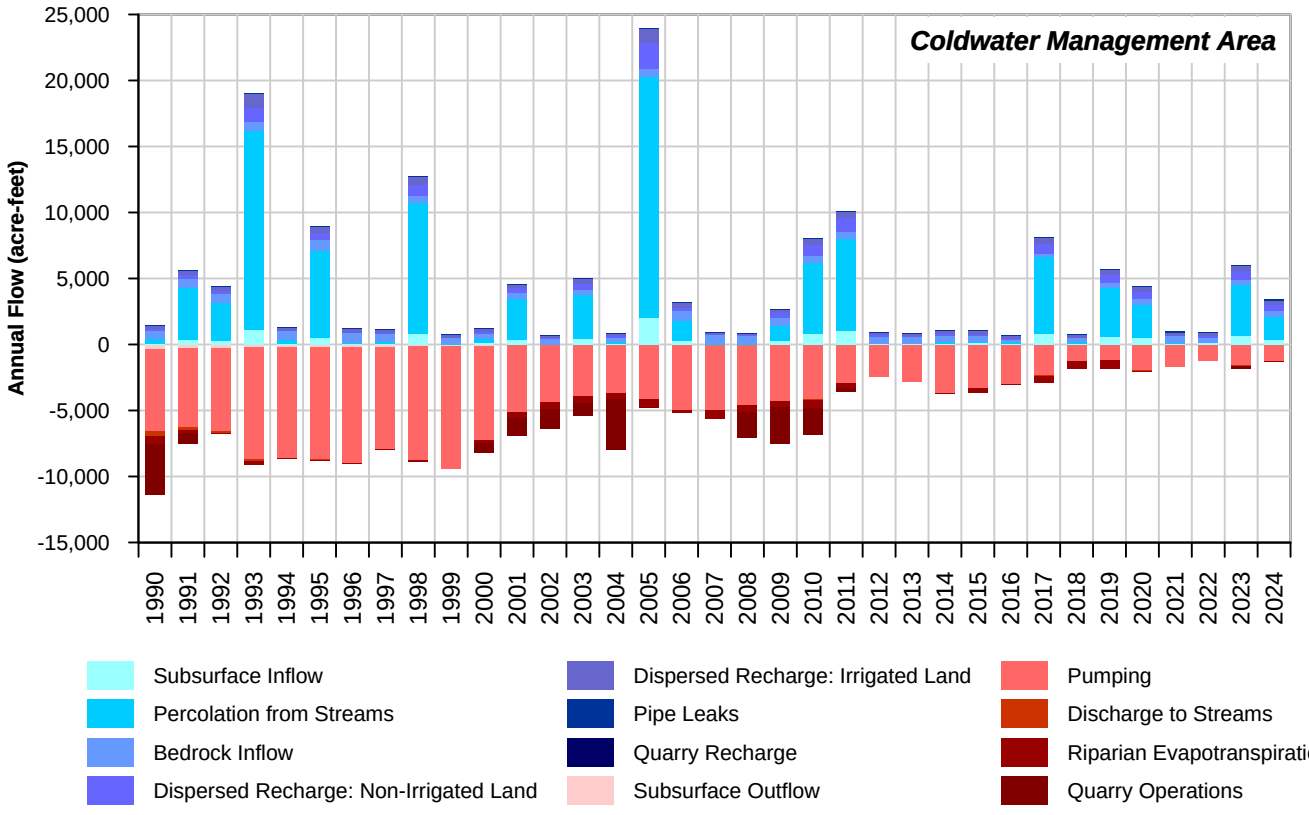
Table 4-1. Water Balance Update

Water Balance Items	Bedford Management Area						Coldwater Management Area					
	Water Year 2019	Water Year 2020	Water Year 2021	Water Year 2022	Water Year 2023	Water Year 2024	Water Year 2019	Water Year 2020	Water Year 2021	Water Year 2022	Water Year 2023	Water Year 2024
Groundwater Inflow												
Subsurface inflow	80	95	332	384	77	77	122	120	109	105	114	109
Percolation from streams	2,046	2,313	908	548	2,444	1,940	3,719	2,511	25	72	3,859	1,770
Bedrock inflow	558	632	647	483	440	455	327	455	522	411	395	455
Dispersed recharge: non-irrigated land	1,245	855	243	247	1,194	710	623	512	71	78	655	380
Dispersed recharge: irrigated land	660	628	335	363	735	585	373	354	182	199	418	329
Pipe leaks	219	232	237	229	217	252	58	60	76	75	72	87
Reclaimed water percolation	506	411	248	597	795	666	0	0	0	0	0	1
Quarry recharge	600	684	764	423	297	256	0	0	0	0	0	0
Total Inflow	**5,915**	**5,849**	**3,713**	**3,273**	**6,199**	**4,941**	**5,221**	**4,011**	**985**	**941**	**5,513**	**3,130**
Groundwater Outflow												
Subsurface outflow	-460	-255	-159	-170	-216	-330	0	0	0	0	0	0
Pumping	-2,233	-2,652	-2,857	-1,492	-1,270	-1,431	-1,280	-2,972	-3,068	-1,263	-1,621	-1,290
Groundwater discharge to streams	-628	-859	-746	-571	-818	-909	-2	-3	0	0	-2	-1
Riparian evapotranspiration	-488	-609	-492	-477	-652	-735	-621	-60	0	0	-46	-5
Quarry Operations / Losses	-1,025	-972	-631	-1,104	-1,486	-1,337	0	0	0	0	-196	0
Total Outflow	**-4,833**	**-5,346**	**-4,885**	**-3,815**	**-4,443**	**-4,742**	**-1,903**	**-3,036**	**-3,068**	**-1,263**	**-1,865**	**-1,296**
Net Change in Storage												
MODFLOW Calculated	1,143	502	-1,173	-542	1,757	199	3,318	975	-2,083	-321	3,648	1,834

Notes:

Total pumping shown is reported by the GSAs and WMWD, simulated pumping may vary slightly in response to numerical model condtions.





TODD GROUNDWATER

Figure 4-1
Annual Groundwater Budgets, 1990 to 2024

4.1.2. Groundwater Model

The groundwater flow model uses the MODFLOW 2005 code developed by the U.S. Geological Survey, with pre- and post-processing facilitated using Groundwater Vistas, a readily available commercial software package. The model produces linked simulation of surface water and groundwater, as described below. MODFLOW simulates subsurface flow by combining equations representing flow through porous sediments (the Darcy Equation) with equations that enforce conservation of mass. The equations are implemented numerically, which means they are applied simultaneously between all adjoining cells in a model grid through an iterative process. Dispersed recharge to the top layer of the model grid from deep percolation of rainfall, irrigation water and pipe leaks is obtained from the rainfall-runoff-recharge model.

4.2. WATER BALANCE INFLOWS

The rainfall-runoff-recharge model and groundwater model were updated to reflect conditions for WY 2024. Data, assumptions, and calculations for individual hydrologic processes and groundwater inflows are described below. Most groundwater inflows to the Basin are controlled by hydrologic conditions. Natural stream percolation and deep percolation from rainfall are related to the volume and distribution of rainfall. The availability of imported water similarly reflects wet and dry conditions in the source area, which for imported water is the Sierra Nevada and Rocky Mountains. Because they are related to rainfall, almost all Basin inflows are higher in wet years and lower in dry years. In contrast, deep percolation from return flows is generally similar from year to year. In 2024, inflow to the Coldwater management area was above average but less than the wet year inflow from 2023. The Bedford management area also showed above average inflow but less than the proceeding wet year.

4.2.1. Precipitation and Evaporation

Precipitation and evaporation on the land surface are accounted for in the rainfall-runoff-recharge model. Data are obtained from local climate stations as described above.

4.2.2. Imported Water

Imported water delivered to and distributed by the municipal water agencies in the Basin is tracked and reported by those agencies. These data are incorporated into the water balance as they affect groundwater, specifically imported water are a component of M&I water supply in the Basin and a portion of that water results in pipe leaks and other return flows.

4.2.3. Dispersed Recharge

Dispersed recharge from rainfall and to a lesser extent applied irrigation water is estimated by the rainfall-runoff-recharge model. The model simulates soil moisture storage in the root zone, which derives from rainfall infiltration and irrigation, and outflows to evapotranspiration and deep percolation. Simulation is on a daily basis. When soil moisture exceeds the root zone storage capacity, any excess rainfall or irrigation becomes deep

percolation. Rainfall and irrigation water comingle in the root zone and in deep percolation. In urban recharge zones, pipe leaks are included in the amount shown as rainfall recharge. The resulting net recharge is passed to the top layer of the groundwater model.

4.2.4. Percolation from Streams

Percolation from streams depends on the flow, stage, width, length, and bed permeability of stream reaches, as well as the elevation difference between the stream surface and groundwater in the underlying model cell. Point sources of recharge (such as wastewater percolation facilities) are entered into the top model layer as if they were injection wells. Surface inflows to the stream network in the surface water module of the groundwater model include a combination of gauged flows, and simulated runoff from tributary watersheds and valley floor areas obtained from the rainfall-runoff-recharge model. Valley floor areas are flatter than the tributary watersheds, and the amount of runoff per acre is consequently smaller. The rainfall-runoff-recharge model simulates runoff from valley floor areas, and those flows are added to the inflows of nearby stream segments in the groundwater model.

4.2.5. Reclaimed Water Percolation

Percolation of reclaimed water in wastewater disposal ponds has historically occurred in the Bedford management area at facilities operated by TVWD, who tracks discharge locations and volume. When WRF discharges go to ponds, percolation is assumed to be the plant inflow less net evaporation.

4.2.6. Subsurface Groundwater Inflow

Two types of subsurface inflow are listed separately in the water balance tables. Subsurface inflow enters the Basin from the upstream Elsinore Valley Subbasin at the southern end of the Bedford management area. This inflow is small and is estimated as the outflow from the Elsinore Valley Subbasin based on modeling completed during GSP preparation for that subbasin. Subsurface flow also occurs between the two management areas within the Basin and is included in the Subsurface inflow term in **Table 4-1**. Along the rest of the Basin perimeter, small amounts of subsurface inflow result from recharge percolating through fractured bedrock in tributary watershed areas. Bedrock inflow is simulated as shallow injection wells along the perimeter of the Basin.

4.3. WATER BALANCE OUTFLOWS

Major outflows from the Basin are pumping (municipal, industrial, and agricultural), groundwater seepage into streams, subsurface outflow, and evapotranspiration by riparian vegetation. In 2024, groundwater outflow in the Coldwater management area was the second lowest on record reflecting many wells in the basin are prevented from pumping due to proximity to the quarries. The Bedford management area, total outflows were about average flows due to average levels of groundwater pumping.

4.3.1. Pumping

Pumping by municipal providers is measured, as is pumping by smaller community water systems and self-supplied commercial and industrial facilities. Actual pumping and well locations are used in the numerical model. Groundwater production by location is shown on **Figure 3-1**.

4.3.2. Subsurface Outflow

Subsurface outflows to other basins and between management areas were calculated using the groundwater model by the same methods used to simulate subsurface inflows.

4.3.3. Groundwater Discharge to Streams

Discharges from the Basin to surface water bodies are simulated by the groundwater model based on stream bed wetted area and permeability and the relative of simulated groundwater elevation and model stream cell simulated surface water elevation. When groundwater elevation is higher, there is discharge to the stream. This occurs primarily in the Bedford management area where there is often discharge to the Temescal Wash.

4.3.4. Riparian Evapotranspiration

The presence of dense, vigorous trees and shrubs along a stream channel is often a sign that the roots of the vegetation extend to the water table and have access to groundwater throughout the dry season. Plants that draw water directly from groundwater are called phreatophytes. In the groundwater model, riparian evapotranspiration (ET) is a function of water table depth, decreasing from unrestricted water use when the water table is at the ground surface to zero when it is 15 feet or more below the ground surface. This reflects a reasonable range of root depth distribution for a mix of riparian shrub and tree species.

4.4. CHANGE IN GROUNDWATER STORAGE

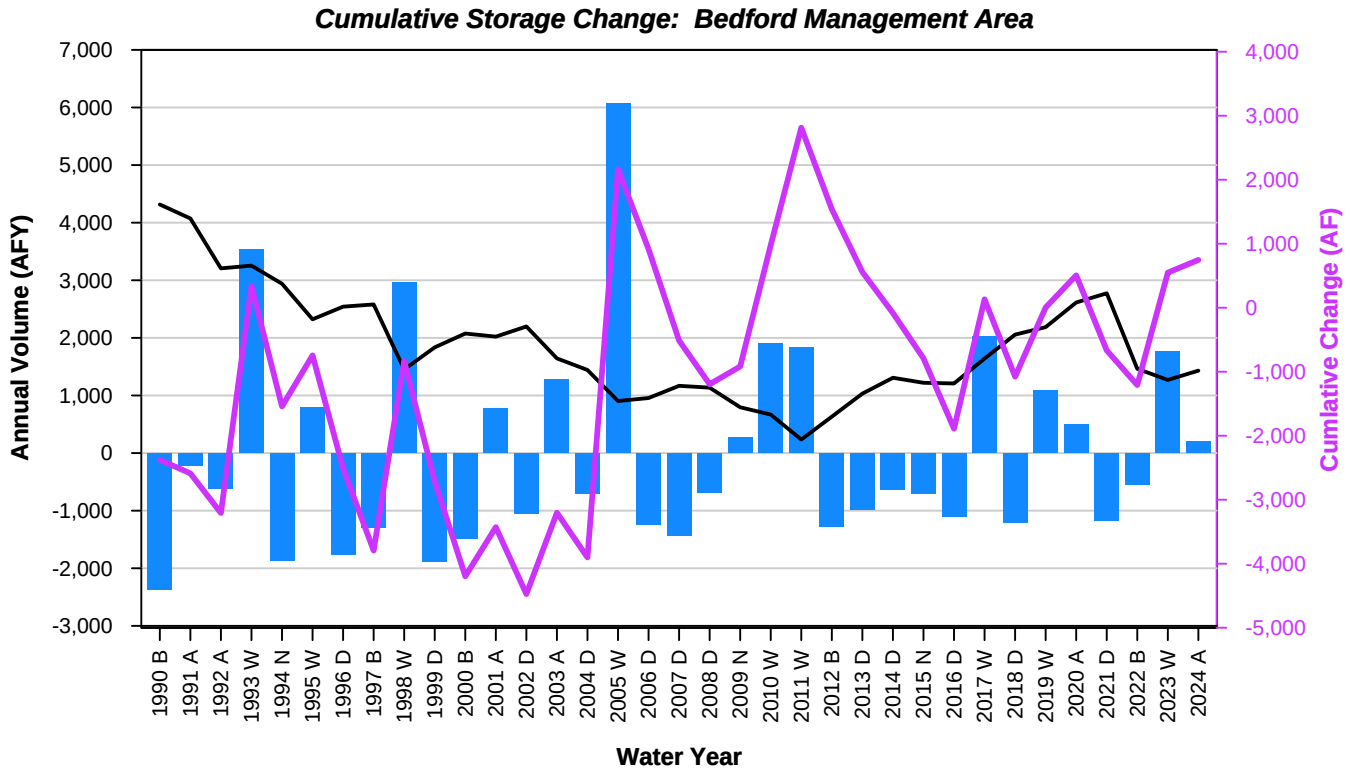
Figure 4-2 shows the annual change in storage, pumping, and water year type along with cumulative change in storage from the model for the two management areas from 1990 through 2024.

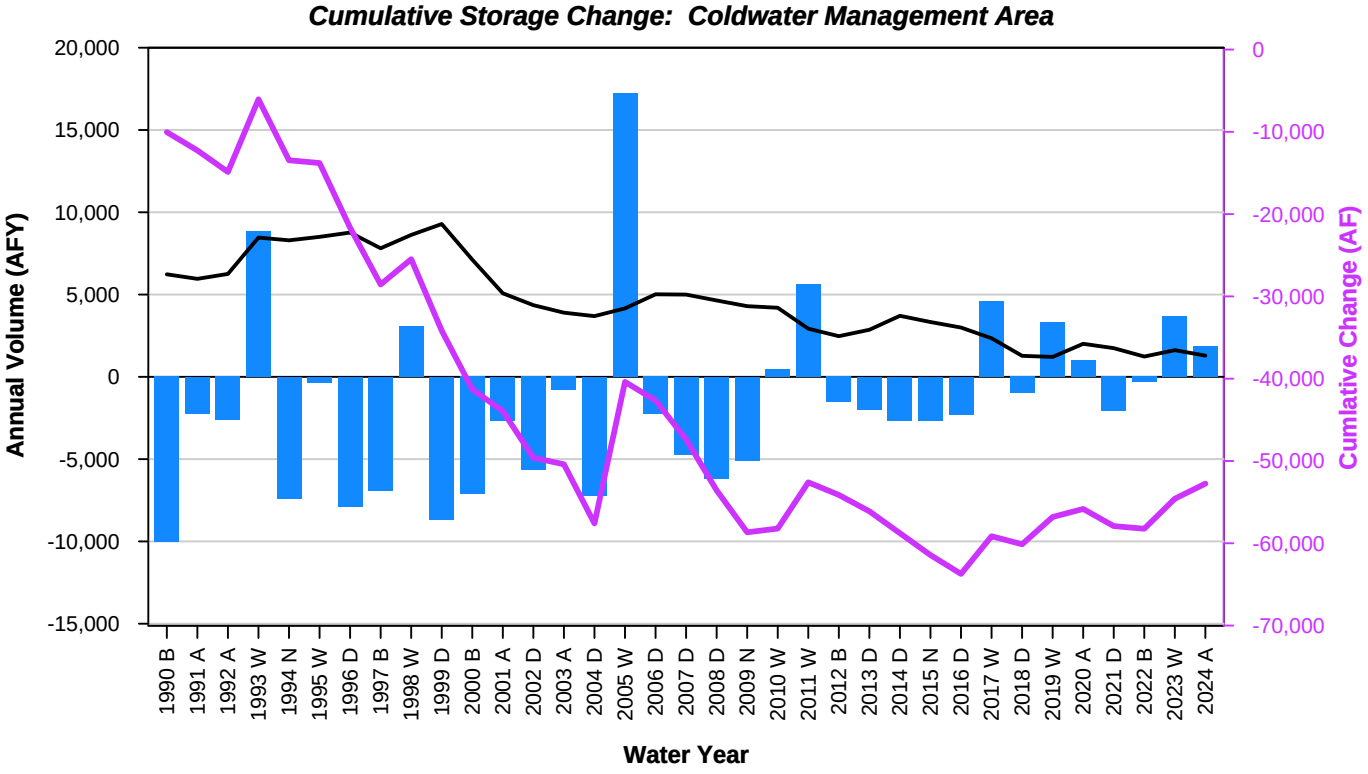
As shown, groundwater storage in the Bedford management area was variable but general remained in equilibrium from 1990 to 2004, generally following the pattern of water year types. This is illustrated by the storage increase in the 2005 wet year and then the decline in the subsequent dry years. The water balance shows significantly more inflow to the management area during wet periods as a result of the interaction with Temescal Wash. The management area has remained above 1990 groundwater storage levels since 2005, even through the critically dry year of 2021 and the below average year of 2022. In 2024, groundwater in storage in the Bedford management area increased by 199 AF and cumulative change in storage at the end of WY 2024 was higher than any year since 2012, before passage of SGMA.

Figure 4-2 also shows the cumulative change in storage for the Coldwater management area. Simulated historical storage in the Coldwater management area declined by a cumulative total of 60,000 AF from 1990 to 2004. EVMWD and Corona entered into an agreement to limit pumping to the safe (or sustainable) yield in the management area following these declines (Corona and EVMWD 2008). As a result, the rate of cumulative decline slowed from 2005 to 2016. However, the critical drought of 2006 to 2009 resulted in a decline of 10,000 AF from storage and the dry years from 2012 through 2016 resulted in a similar loss of storage. BCGSA's management has reversed these declining storage trends; from 2017 to 2024, storage increased by 10,000 AF. The rate of annual increase in storage was similar in WY 2024 to that observed in WY 2023 and other recent wet and above normal years in the management area. Similar to the Bedford management area, the wet conditions during WY 2024 also resulted in an increase in storage in the Coldwater management area amounting to 1,814 AF. The cumulative storage over the model period in the Coldwater management area is still net negative; while storage declines have been less significant since the Corona and EVMWD agreement, recovery from pumping at higher volumes in the 1990s and early 2000s will require continued pumping management. **Figures 4-1 and 4-2** also show that storage recovery in the Coldwater management area is not solely a function of water year type but is also related to pumping.

Figure 4-3 shows the net change in groundwater elevation during the WY from September 2023 to September 2024. The net change during WY 2024 was an increase in water levels in both the Bedford and Coldwater management areas. The change map does show areas of limited declines in groundwater elevation along the southern and eastern boundary of the Coldwater management area associated with reductions in water levels following the wet year in 2023. Changes in the Bedford management area were generally limited, with small areas of increased storage in the north of the management area. The changes in storage in 2024 did not result in water levels below the MTs in either management area.

Figure 4-4 shows the net change in groundwater storage during the water year from September 2023 to September 2024, a requirement of SGMA Annual Reports. While the change in storage is related to change in elevation it is also a function of the hydraulic parameters, namely storativity. As storativity is fairly similar across the basin, the change in storage shows a similar pattern to the change in groundwater elevations.





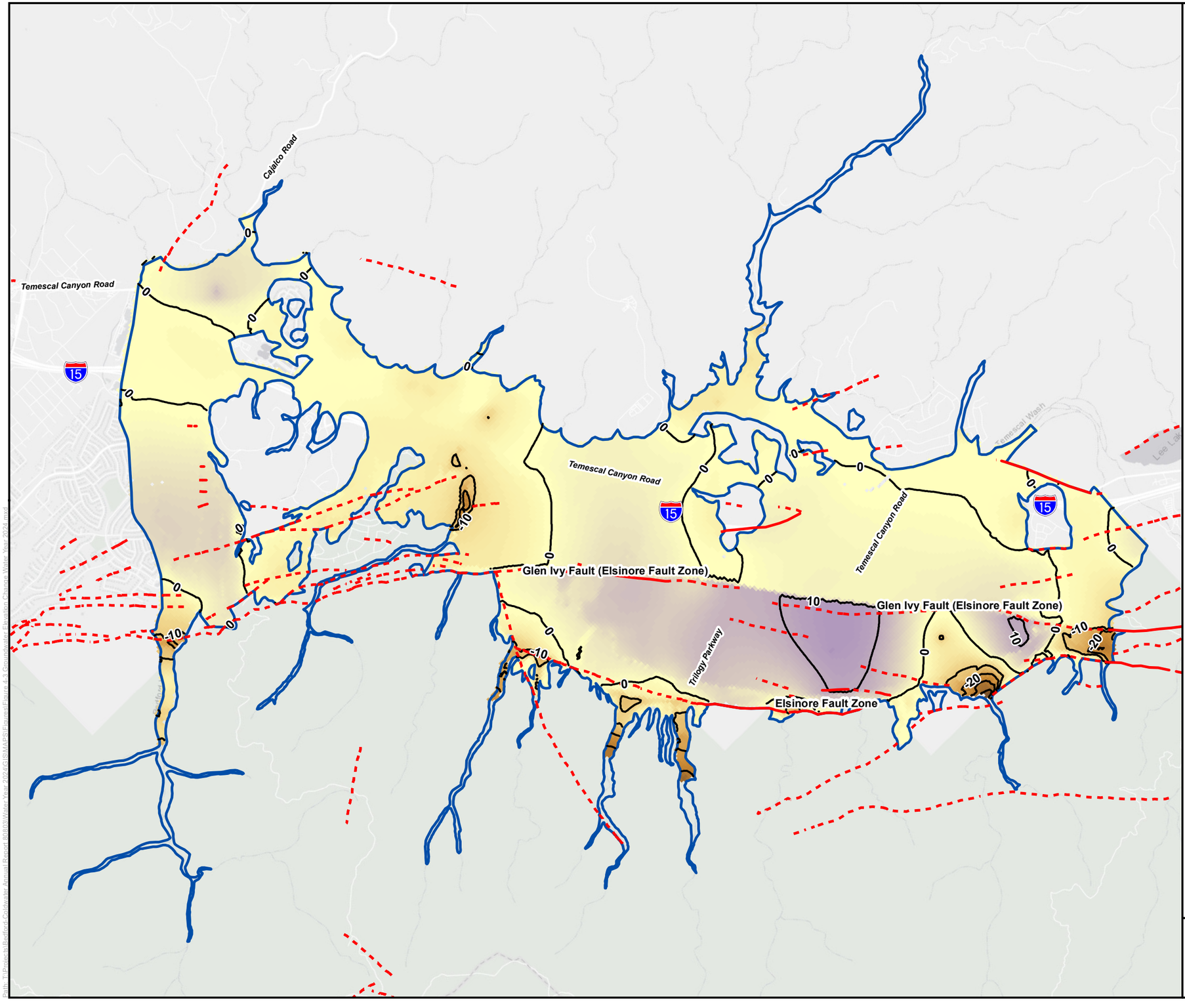
Cumulative Storage Change
Pumping
Annual Storage Change

W – Wet
A – Above Normal
N – Normal
B – Below Normal
D – Dry

TODD GROUNDWATER

Figure 4-2
Cumulative Storage Change 1990 to 2024

Path: T:\Projects\Bedford-Coldwater Annual Report 80803\Water Year 2024\GRAPHICS\[Figure 4-2 Cumulative Storage Changes 1990-2024.grp]



10-foot groundwater elevation change contours

Bedford-Coldwater Basin

Fault Location, dashed where uncertain

Groundwater Elevation Change, feet

High : 50

Low : -50

N

0 1,750 3,500

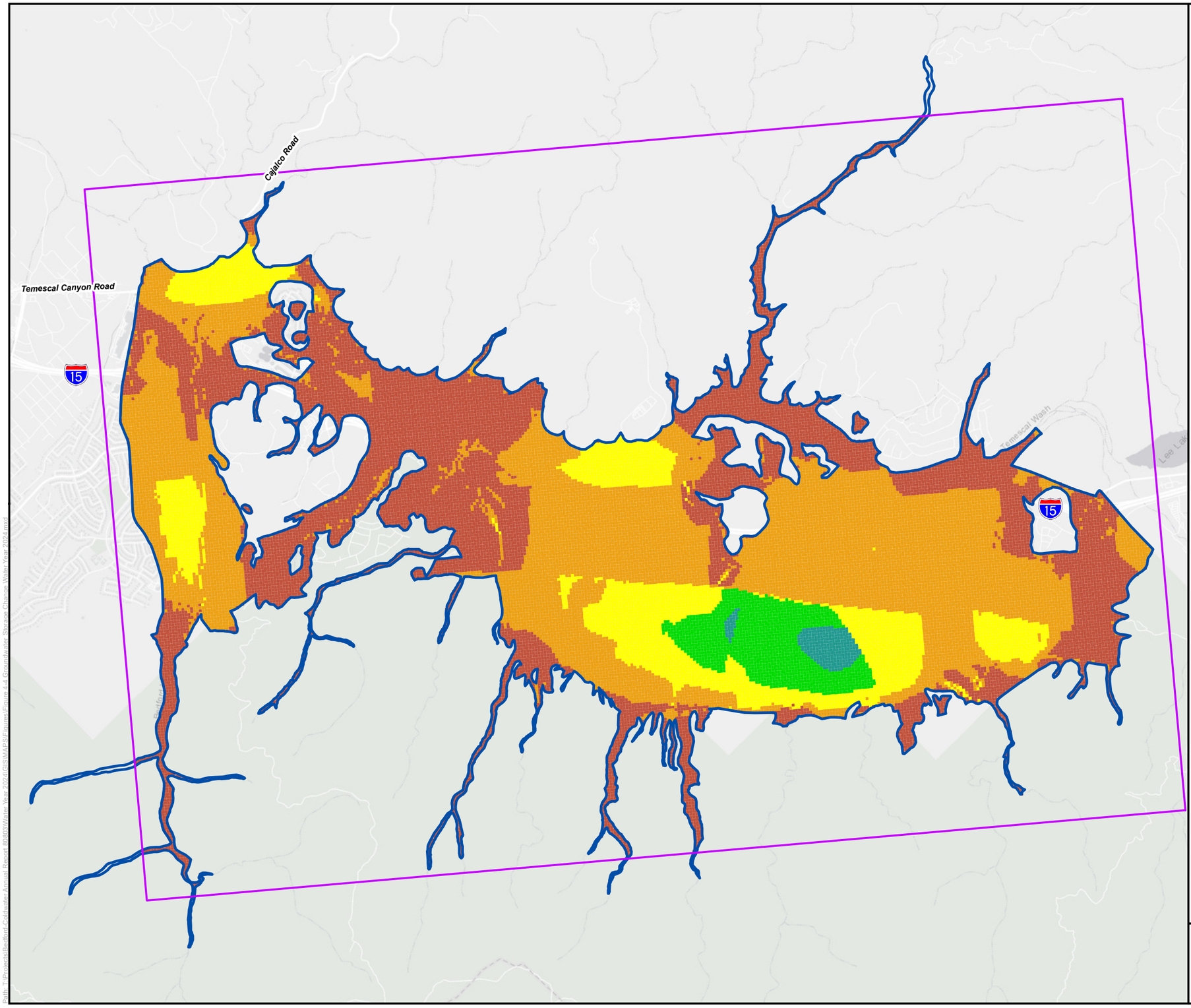
Scale in Feet

Notes:

Figure 4-3 shows the net change in groundwater elevation during the water year from September 2023 to September 2024. The range of changes during this period was approximately -50 to +12 feet. The color ramp displays a range of -50 to +50 to highlight the relative positive and negative changes.

TODD GROUNDWATER

Figure 4-3
Groundwater Elevation Change Water Year 2024



Bedford-Coldwater Basin

Model Extent

Storage Change (Acre-Feet Per Model Cell)

-0.05 to 0.00 AF

0.00 to 0.05 AF

0.05 to 0.50 AF

0.50 to 1 AF

> 1 AF

N

0 1,750 3,500

Scale in Feet

TODD GROUNDWATER

Figure 4-4
Groundwater Storage Change Water Year 2024

5. GROUNDWATER SUSTAINABILITY

5.1. SUSTAINABILITY INDICATORS AND MINIMUM THRESHOLDS

There are six sustainability criteria that must be assessed for SGMA, and five of these are relevant in the Basin (seawater intrusion is not relevant to the Basin because it is more than 20 miles from a high-salinity water body). As documented in the GSP, the Basin has been and is being managed sustainably relative to all criteria. Accordingly, sustainability does not need to be achieved, but it does need to be maintained through planning and implementation. This involves continuation and improvement of existing management actions—most notably ongoing use of imported and recycled water and conjunctive use with groundwater. It also will include improvement and expansion of management actions and monitoring, as defined in the GSP.

While the Basin has been managed sustainably, the following sustainability criteria were defined in the GSP (Todd et al. 2021) because the potential exists for future undesirable results:

- The Minimum Threshold for defining undesirable results relative to chronic lowering of groundwater levels is defined at each Key Well by operational considerations to maintain water levels at or above current pump intakes or screen bottoms (whichever is higher) in municipal water supply wells. Undesirable results are indicated when two consecutive exceedances occur in each of two consecutive years, in two-thirds or more of the currently monitored wells in each management area.
- The Minimum Threshold for reduction of groundwater storage for all management areas is fulfilled by the minimum threshold for groundwater levels as proxy.
- The Minimum Threshold for land subsidence is defined as a cumulative decline equal to or greater than one foot of decline since 2015, which represents current conditions and the SGMA start date. This is equivalent to a rate of decline equal to or greater than 0.2 feet in any five-year period. The extent of cumulative subsidence across the Basin will be monitored and evaluated using Interferometric Synthetic Aperture Radar (InSAR) data available through the SGMA Data Viewer during the 5-year GSP updates. Subsidence as a result of groundwater elevation decline is closely linked to groundwater levels and it is unlikely that significant inelastic subsidence would occur if groundwater levels remain above their minimum thresholds.
- The Minimum Thresholds for degradation of water quality address nitrate and total dissolved solids (TDS) for the entire Basin.
    - The Nitrate Minimum Threshold (in both management areas) is defined as 5-year average concentrations of all monitored wells not exceeding the 10 milligrams per liter (mg/L) drinking water maximum contaminant level (MCL) for Nitrate as Nitrogen.
    - The TDS Minimum Threshold (in both management areas) is defined as the 5-year average concentrations not exceeding the 1,000 mg/L secondary MCL for TDS.

- The Minimum Threshold for depletion of interconnected surface water is the amount of depletion associated with the lowest water levels recorded during the 2010 to 2015 drought. Specifically, undesirable results would occur if more than half of monitored wells near Temescal Wash had static water levels lower than 35 feet below the adjacent riparian vegetation ground surface elevation for a period of more than one year.

Table 5-1. SGMA Sustainability Indicators and Assessment

Sustainability Indicator		Annual Sustainability Assessment
	Lowering Groundwater Levels	Compile water level data and compare elevations in Key Wells with minimum threshold(s)
	Reduction of Groundwater Storage	Estimate groundwater storage change and compare elevations in Key Wells with minimum threshold(s)
	Degraded Water Quality	Compile and review water quality data from all sources
	Land Subsidence	Download and review InSAR data from DWR
	Depletion of Interconnected Surface Water	Review depth to water at interconnected surface water Key Wells/locations

5.2. SGMA SUSTAINABILITY INDICATOR UPDATES

5.2.1. Chronic Lowering of Groundwater Levels

Sustainability criteria (minimum thresholds and measurable objectives) for groundwater levels rely on a network of representative monitoring wells (Key Wells). The minimum threshold for specific wells was established to avoid undesireable results associated with operational parameters, as defined in the GSP. **Table 5-2** lists the 17 keys wells and their respective minimum thresholds, as well as the minimum groundwater elevation for WY 2024. The locations of the Key Wells are shown on **Figure 2-2**. One well was not monitored in WY 2024 due to access issues that the GSA is investigating and addressing. Current water levels in all monitored Key Wells are above their respective minimum threshold. On average, groundwater elevations are 99.4 feet above the individual well threshold, an increase of 5

feet from WY 2023. The minimum water level in TVWD Well 1A was the closest of all the Key Wells to its individual threshold with a minimum water level 24 feet above the threshold. However, this water level was within the range of historical annual variation for TVWD Well 1A, as shown on **Figure 2-14**. However, if water levels in this well continue to decline the GSA should investigate if there is nearby pumping impactign water levels. The maintenance of water levels well above thresholds in all Key Wells indicates the Basin was not subject to chronic lowering of groundwater levels in 2024.

Table 5-2. Groundwater Elevation Key Well Minimum Thresholds and 2024 Minimum Groundwater Elevations

Local Well Name	State Well Number	DWR Well Number	Management Area	Agency	Active Production Well	Monitoring Frequency	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Minimum Threshold Depth to Water (ft-bgs)	Minimum Threshold Elevation (ft NAVD 88)	Water Year 2024 Minimum Groundwater Elevation (ft NAVD 88)	Water Year Minimum Elevation Above Minimum Threshold?
Corona Well 20	005S006W11D001	337556N1174811W001	Coldwater	Corona	No	Static - Monthly	1,147.58	1,145.58	460	687.58	896.38	Yes
Corona Well 21	005S006W03J005	337622N1174890W001	Coldwater	Corona	No	Static - Monthly	1,125.09	1,123.09	460	665.09	919.60	Yes
Corona Well 3	005S006W03K001	337615N1174901W001	Coldwater	Corona	No	Static - Monthly	1,140.02	1,138.02	479	661.02	884.20	Yes
Corona Non-Potable Well 1	004S006W16G004S	338227N1175073W001	Bedford	Corona	Yes	Continuous (SCADA)	808.92	813.00	80	728.92	777.52	Yes
Corona Non-Potable Well 2	004S006W16G005S	338227N1175072W001	Bedford	Corona	Yes	Continuous (SCADA)	808.77	813.00	80	728.77	776.97	Yes
EVMWD Flagler 2A Well	004S006W16C003S	338280N1175100W001	Bedford	EVMWD	Yes	Continuous (SCADA)	793.88	791.88	80	713.88	768.88	Yes
EVMWD Flagler 3A Well	004S006W16C002S	338270N1175100W001	Bedford	EVMWD	Yes	Continuous (SCADA)	792.52	790.52	80	712.52	771.02	Yes
Corona & EVMWD Trilogy		337650N1174896W001	Coldwater	EVMWD	No	Quarterly	1,101.86	1,099.86	440	661.86	Not Available	
EVMWD Station 71	005S006W11C001	337496N1174753W001	Bedford	EVMWD	Yes	Quarterly	1,166.45	1,164.45	507	659.45	845.30	Yes
EVMWD Mayhew Well 2	005S006W11G001	338031N1174988W001	Coldwater	EVMWD	Yes	Quarterly	1,244.20	1,242.20	507	737.20	918.80	Yes
TVWD Well 1 (Old well)	004S006W22P003S	338010N1174983W001	Bedford	TVWD	No	Continuous (SCADA)	879.90	894.00	70	809.90	845.66	Yes
TVWD Well 1A		338009N1174983W001	Bedford	TVWD	Yes	Continuous (SCADA)	881.88	895.00	70	811.88	835.88	Yes
TVWD Well 4	004S006W22P004S	338023N1174981W001	Bedford	TVWD	Yes	Continuous (SCADA)	878.22	883.00	70	808.22	834.32	Yes
TVWD TP-1		337954N1174952W001	Bedford	TVWD	Yes	Continuous (SCADA)	901.46	899.46	85	816.46	860.46	Yes
TVWD TP-2		337954N1174941W001	Bedford	TVWD	Yes	Continuous (SCADA)	902.37	900.37	75	827.37	855.17	Yes
TVWD Foster	004S006W22N002	337544N1174806W001	Bedford	TVWD	Yes	Continuous (SCADA)	871.74	869.74	78	793.74	863.47	Yes
TVWD New Sump	004S006W35G002	337810N1174740W001	Bedford	TVWD	Yes	Continuous (SCADA)	953.40	951.40	66	887.40	937.40	Yes

5.2.2. Reduction of Groundwater Storage

This indicator is tracked using the groundwater levels at key wells as a proxy and the change in storage simulated by the model, as described in Section 4. Groundwater storage in the Basin increased in WY 2024 by a total of 2,033 AF (**Table 4-1**), consistent with statewide above average hydrologic conditions. The Basin-wide storage rise represented increases of 199 AF and 1,834 AF in the Beford and Coldwater management areas respectively. The Basin is not at risk for reduction of storage at this time.

5.2.3. Degraded Water Quality

Water quality (i.e., TDS, nitrate, etc.) continues to be monitored in the Basin by the BCGSA agencies. Water quality data from 2023 throuh 2024 were collected from from the BCGSA agencies as well as the State Division of Drinking Water (for the Glen Ivy Water System), and the Regulated Facilities program. These data were reviewed for trends and added to the DMS.

The water quality minimum thresholds are based on five year averages, which will be assessed in the periodic update of the GSP. Until that time, water quality data will continue to be collected, reviewed, and incorporated into the DMS.

5.2.4. Land Subsidence

InSAR data provided by DWR on its SGMA Data Viewer (DWR 2025) provide information on vertical displacement of the land surface across a broad area of California. During GSP preparation monthly InSAR data from from June 2015 through June 2018 were assessed and there was no indication of land surface changes in the Basin; this represents current conditions as defined in the GSP. DWR recently released additional InSAR data through October 1, 2024, which also shows no negative displacement in the Basin. InSAR data were downloaded and incorporated into the DMS for the Basin. A more comprehensive analysis of the potential for subsidence will be included in the periodic update of the GSP.

5.2.5. Depletion of Interconnected Surface Water

Eight wells that are currently monitored for water levels are near stream reaches where interconnected surface water has been identified. These wells are listed below and shown on **Figure 2-2**:

- TVWD TP-1 and TP-2
- TVWD Well 1 (old well)
- TVWD Well 4
- EVMWD Flagler 2A and 3A
- Corona Non-Potable Wells 1 and 2

The minimum threshold for interconnected surface water is water levels lower than 35 feet below the adjacent riparian vegetation ground surface elevation for a period of more than one year. **Table 5-3** shows the eight Key Wells for interconnected surface water and the range

of depth to water measurements for WY 2024. The table also identifies the ground surface elevation of the nearby riparian vegetation. These elevations were not set in the GSP but updated in the WY 2021 Annual Report. For WY 2024, the nearby riparian vegetation elevation was updated for two wells based on a review of nearby vegetation, previously the riparian elevation had been identified as higher than the ground surface of the well location. The riparian elevation for TVWD Well 1 and Well 4 was set as 875 feet, based on a desktop review of the well location and nearby vegetation. All of the riparian elevations will be reviewed during the next GSP periodic evaluation. Two of the eight wells fell below the 35-foot threshold for a portion of the year. None of the wells were below the threshold for the entire year. As noted above, undesirable results would occur if more than half of monitored wells near Temescal Wash had static water levels lower than 35 feet below the adjacent riparian vegetation ground surface elevation for a period of more than one year. BCGSA has been implementing a GSP project to further assess interconnected surface water conditions in the Basin since late 2022. The findings from that project were described in the WY 2023 Annual Report. BCGSA is awaiting DWR guidance on evaluation of interconnected surface water conditions and development of sustainable management criteria for interconnected surface water (ISW) and groundwater dependent ecosystems (GDEs) before implementing recommendations from the ISW investigation project completed in 2023. The GSA will continue to evaluate ISW conditions in the Basin and assess changes in monitoring and management following release of the DWR guidance expected in 2025.

Table 5-3. Interconnected Surface Water Key Well Minimum Thresholds and 2024 Groundwater Elevations

Local Well Name	State Well Number	DWR Well Number	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Adjacent Riparian Vegetation Ground Surface Elevation** (ft NAVD 88)	Water Year 2024 Minimum Groundwater Elevation (ft NAVD 88)	Water Year 2024 Maximum Groundwater Elevation (ft NAVD 88)	Water Year 2024 Range of Groundwater Depth Below Riparian Vegetation (ft-bgs)	
								Maximum	Minimum
Corona Non-Potable Well 2	004S006W16G004S	338227N1175072W001	808.8	807	801	777.0	783.3	24.0	17.7
Corona Non-Potable Well 1	004S006W16G005S	338227N1175073W001	808.9	807	801	777.5	782.7	23.5	18.3
EVMWD Flagler 3A Well	004S006W16C002S	338270N1175100W001	792.5	790	781	771.0	777.9	10.0	3.1
EVMWD Flagler 2A Well	004S006W16C003S	338280N1175100W001	793.9	792	782	768.9	779.7	13.1	2.3
TVWD TP-1		337954N1174952W001	901.5	899	891	860.5	864.5	30.5	26.5
TVWD TP-2		337954N1174941W001	902.4	900	898	855.2	873.4	42.8	24.6
TVWD Well 1 (Old well)	004S006W22P003S	338010N1174983W001	879.9	878	875	845.7	849.1	29.3	25.9
TVWD Well 4	004S006W22P004S	338023N1174981W001	878.2	876	875	834.3	843.3	40.7	31.7

6. SUSTAINABLE MANAGEMENT ACTIVITIES

As presented in the GSP, the BCGSA agencies have been actively managing their local groundwater resources for decades with various projects and management actions. The GSP summarizes ongoing efforts, indicates supplementary work on those efforts, and identifies potential future projects and management actions (Todd et al. 2021). As defined in the GSP, *Projects* are substantial efforts designed to reduce uncertainty in areas where data gaps were identified in the GSP. *Actions* defined in the GSP are focused on data collection, storage, and reporting necessary to monitor sustainability and assess when additional tasks may be required (e.g., when minimum thresholds are approached or exceeded). The three projects and five management actions outlined in the GSP are listed in **Table 6-1** along with the ongoing work by the BCGSA. In addition, the implementation progress for each of the three projects is described in additional detail in this section.

The projects and actions were presented in the GSP with an Implementation Plan that extends to 2045 in five-year intervals; the last interval includes the 2042 deadline for the 20-year implementation to achieve and demonstrate sustainability. The BCGSA completed several projects in WY 2023 and continues to implement projects and actions in WY 2024.

6.1. PROJECT 1 – INVESTIGATE GROUNDWATER / SURFACE WATER INTERACTION AT TEMESCAL WASH AND INSTALL MONITORING WELLS

In WY 2023 BCGSA made significant progress towards completion of Project 1. The GSA contracted a specialty consulting firm to complete a study assessing ISW and GDE conditions on Temescal Wash. That study (Rincon and Todd 2024) employed a variety of techniques including historical satellite and aerial imagery evaluation, vegetation mapping survey to assess potential GDE riparian vegetation and upland communities, an aerial LiDAR survey to develop an updated and refined digital elevation model (DEM), and a reach-by-reach hydrologic analysis along the length of the Temescal Wash within the Basin. The study also reviewed existing groundwater elevation, groundwater and surface water quality, and wastewater treatment and discharge data collected by the BCGSA agencies, stream gage data from the United States Geological Survey (USGS), and climactic data from public sources. This evaluation found a wide variety of vegetation communities, including special status botanical species in the Basin that are largely tied to the hydrology of the Temescal Wash. It also concluded that the area surrounding the wash has undergone significant changes in channel morphology, riparian vegetation cover, land use, and development since 1953, including increased developed, partial channelization of the Wash, and increased riparian vegetation.

The study recommended maintenance of existing, and construction of new monitoring wells designed to further understanding of interconnected surface water in the Basin and monitor for potential impacts to riparian vegetation. The study identified six potential new monitoring well locations associated with areas of interconnected surface water and riparian vegetation. The study recommended construction of monitoring wells in at least four of these locations,

pending resolution of site access and environmental issues and guidance from DWR referenced above. Complete documentation of this study was included in an appendix to the WY 2023 Annual Report (Todd 2024).

6.2. PROJECT 2 – INITIATE A SURVEY OF ACTIVE PRIVATE WELLS

A survey of active private wells was included as one of the Projects and Management Actions outlined in the GSP with the aim of reducing uncertainty regarding the existence and operation of these existing private wells. The GSP recognized that the primary groundwater uses in the Basin are municipal pumping, with limited private pumping for small water system, commercial, and residential users. This project was designed to locate and characterize the construction and use of existing private domestic wells so that they can be more integrated into the sustainable management of the Basin and was completed in WY 2023 and documented in the Annual Report for that water year. The BCGSA and GSA Administrator Water Systems Consulting (WSC) conducted a thorough data evaluation and well canvass (WSC 2023) that included coordination with and data requests to relevant internal and external agencies, and an assessment of historical databases. A field survey of potential private well locations was also completed to confirm well locations and ongoing active use. The data review and field survey located wells within and adjacent to the Basin in three community areas: Weirick Road, Leroy Road, and Spanish Hills. The wells in both the Spanish Hills and Weirick Road were identified as private domestic water supply sources that are mostly located outside of the Basin boundaries in bedrock formations.

The well survey recommended that the BCGSA initiate communication with property owners in the Weirick Road area to identify and potentially include a subset of private domestic wells suitable for integration into the BCGSA's water level monitoring program. The goal of this effort would be to facilitate evaluation of the connection between the bedrock formations in which these wells are completed and the adjacent alluvial aquifer of the Basin. The results of the outreach and analysis of the Weirick Road area will be documented in future annual reports and the sustainable management criteria can be evaluated as part of the GSP periodic evaluation.

6.3. PROJECT 3 – EVALUATION OF THE EFFECTS OF AGGREGATE PITS ON GROUNDWATER FLOW AND QUALITY

The GSP hydrogeologic conceptual model, numerical groundwater model, and water budget analyses all identified uncertainty relating to the relationship between the existing aggregate mines and groundwater in the Basin. Project 3 was included in the GSP to further assess these relationships and the effects of mine presence and operation on groundwater flow and quality in the Basin. These mines are located in the Coldwater management area adjacent to streams tributary to the Temescal Wash. Prior to mining the natural materials in these areas were very coarse grained and likely served as important recharge locations in Coldwater. Mining has removed much of the coarse material, may have resulted in lower water levels locally, and has diverted streamflow from providing recharge to Coldwater. In WY 2023 the BCGSA initiated an investigation into the effects of mine operation on groundwater conditions and

future managed aquifer recharge (MAR) in the area once the mines reach the end of their useful life and are closed. Progress on this project was made in WY 2024 and the BCGSA had productive discussions with the mine owners and operators.

A plan was developed for working with the mine owners and operators, refining the conceptual and numerical groundwater model in this portion of the Basin, and simulating potential future MAR in the area. However, as that plan was beginning the mine was sold to new owners who took over operation of the mine in late 2024. The BCGSA is in contact with the new mine owners. The initial meetings with the new owners have been positive and a working relationship is being developed. The BCGSA will continue to work with the new mine owners to evaluate historical mine operation, local monitoring information, and future mining and mine closure plans in WY 2025.

Table 6-1. Project and Management Action Update

Project	Completed in WY 2024	Ongoing for WY 2025
Project 1 – Investigate Groundwater/Surface Water Interaction at Temescal Wash and Install Monitoring Wells.	The GSA completed the first phase of the project in WY 2023, including assessment of interconnected surface water and riparian vegetation conditions and identification of potential monitoring well locations.	The GSA is evaluating construction of monitoring wells while awaiting interconnected surface water assessment and management guidance from DWR.
Project 2 – Initiate a Survey of Active Private Wells	The survey of private wells was completed in WY 2023.	Coordination with private well owners for inclusion in GSP implementation.
Project 3 – Evaluation of the Effects of Aggregate Pits on Groundwater Flow and Quality	Ongoing coordination with mine owners and planning for collaborative investigation and assessment of post-closure conversion to recharge facilities was underway in 2024 when the Chandler mine was sold. Initial meetings with the new mine owners have occurred and a working relationship is being developed.	Discussions with the new mine owners and operators will continue, focused on assessing updated mine operation plans, evaluation of historical information and monitoring, and exploration of options for the future of the mine properties.

Management Action	Completed in WY 2024	Ongoing for WY 2025
Action 1 – Provide for Collection, Compilation, and Storage of Information Required for Annual Reports and Submit Annual Reports	The GSA continues to use an online SharePoint system designed to facilitate data review and storage among the three agencies. The DMS was updated for the Annual Report.	
Action 2 – Routinely Record Groundwater Levels and Take Action if Necessary	Water levels were monitored.	Problems with transducers and well access will be investigated and addressed.
Action 3 – Monitor Selected Groundwater Quality Constituents and Coordinate with the Regional Water Quality Control Board as Appropriate	Water quality was monitored and data added to the DMS	
Action 4 – Track Trends in Groundwater Levels near Temescal Wash and Take Action as Necessary	See MTs	
Action 5 – Review Interferometric Synthetic Aperture Radar (InSAR) Data on the California Department of Water Resources (DWR) DataViewer During 5-Year Updates	Reviewed and documented in the Annual Report	

7. ONGOING IMPLEMENTATION ACTIVITIES

BCGSA agency policies and programs have served to effectively manage water resources in the Basin for many years. The BCGSA agencies have developed and managed multiple sources of supply to address drought, established active and effective water conservation programs, has initiated programs to protect water quality, has improved delivered water quality to many municipal customers, and has repeatedly committed to sustainably managing groundwater in the Basin. The BCGSA will continue to manage the Basin sustainably and will pursue the following ongoing implementation activities.

- Continue to implement management actions and improve the collection and reporting of groundwater condition and water use information. Specifically:
    - Monitor water levels consistently in all Key Wells
    - Refine and improve agency water use monitoring and reporting, including tracking all groundwater production and tracking where imported water is used within the Basin
    - Work with WMWD to collect water use data earlier so that it is available for use in SGMA annual report preparation
- Continue and expand conjunctive use throughout the Basin

8. REFERENCES

California Department of Water Resources (DWR), 2019, SGMA 2019 Basin Prioritization, Spreadsheets and CNRA Open Data, available at: https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization, last accessed March.

California Department of Water Resources (DWR), 2022, SGMA Data and Tools, including SGMA Data Viewer and Disadvantaged Communities (DAC) Mapping Tool Map Applications, available at: https://water.ca.gov/programs/groundwater-management/data-and-tools, last accessed March.

California Department of Water Resources (DWR), 2024, Letter to Bedford-Coldwater Groundwater Sustainability Agency RE: Elsinore – Bedford-Coldwater Subbasin – Groundwater Sustainability Plan, January 31, available at https://sgma.water.ca.gov/portal/service/gspdocument/download/10020.

California Department of Water Resources (DWR), 2025, SGMA Data Viewer, https://sgma.water.ca.gov/, Last accessed March 2025.

California Irrigation Management Information System (CIMIS), 2024, UC Riverside Station #44, Last accessed January 23.

City of Corona (Corona) and Elsinore Valley Municipal Water District (EVMWD), 2008, Agreement Concerning Water Production from Coldwater, December.

MWH, 2004, Elsinore Valley Municipal Water District, Coldwater Basin Recharge Feasibility Study, March.

National Oceanic and Atmospheric Administration – California Nevada River Forecast Center, 2024, Monthly Precipitation Elsinore Stations, https://www.cnrfc.noaa.gov/rainfall_data.php#monthly, Last accessed January 23.

Rincon Consultants, Inc. (Rincon) and Todd Groundwater (Todd), 2024, Groundwater/Surface Water Interactions at Temescal Wash Monitoring Workplan, Bedford-Coldwater Groundwater Subbasin, January.

RMC and Woodard & Curran, 2017, 2015 Urban Water Management Plan, Temescal Valley Water District, December, available at: https://www.temescalvwd.com/pdf/TVWD_UWMP_Public%20Draft%20w%20Appendices.pdf

SAIC, 2007, Draft Coldwater Groundwater Basin Summary of the Hydrologic Inventory and Change in Groundwater Storage, October 23.

Todd Engineers and AKM Consulting Engineers (Todd and AKM), 2008, AB3030 Groundwater Management Plan, prepared for City of Corona, June.

Todd Groundwater, Stantec, and H&H Water Resources, 2021, Groundwater Sustainability Plan, Bedford-Coldwater Basin, November.

Todd Groundwater (Todd), 2024, SGMA Annual Report, Water Year 2024, Bedford-Coldwater Basin, March.

Water Systems Consulting (WSC), 2023, Private Well Survey in the Bedford-Coldwater Basin, June 30.

Western Regional Climate Center, 2024, Elsinore Station Precipitation, https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2805, Last accessed January 23,2025

APPENDIX A

SGMA Annual Report Elements Table

Groundwater Sustainability Plan Annual Report Elements Guide

Basin Name	8-004.02 Bedford-Coldwater		
GSP Local ID			
California Code of Regulations - GSP Regulation Sections	***Groundwater Sustainability Plan Elements***	**Document *page number(s) that address the applicable GSP element.***	***Notes: Briefly describe the GSP element does not apply.***
Article 5	**Plan Contents**		
Subarticle 4	***Monitoring Networks***		
§ 354.40	**Reporting Monitoring Data to the Department**		
	Monitoring data shall be stored in the data management system developed pursuant to Section 352.6. A copy of the monitoring data shall be included in the Annual Report and submitted electronically on forms provided by the Department.	80:85	
	Note: Authority cited: Section 10733.2, Water Code. Reference: Sections 10728, 10728.2, 10733.2 and 10733.8, Water Code.		
Article 7	**Annual Reports and Periodic Evaluations by the 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.	8,10	
	(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.	45:46	
	(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.	21:22,25:43	
	(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.	50:51,86:90	
	(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.	51,86:90	
	(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.	51,86:90	
	(5) Change in groundwater in storage shall include the following:		
	(A) Change in groundwater in storage maps for each principal aquifer in the basin.	62:63	
	(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.	61	
	(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.	64:74	

APPENDIX B

Key Well Groundwater Elevations, Water Years 2023 and 2024

Appendix B. Key Well Groundwater Elevations, Water Years 2023 and 2024

Local Well Name	DWR Well Number	Management Area	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Measurement Date	Groundwater Elevation (ft NAVD 88)
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	11/1/2022	770.02
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	12/1/2022	770.72
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	1/1/2023	777.42
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	2/1/2023	780.72
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	3/1/2023	781.32
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	4/1/2023	781.52
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	5/1/2023	781.62
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	6/1/2023	781.82
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	7/1/2023	780.72
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	8/1/2023	778.92
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	9/1/2023	779.72
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	10/1/2023	778.22
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	11/1/2023	778.72
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	12/1/2023	778.32
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	1/1/2024	779.82
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	2/1/2024	782.72
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	3/1/2024	781.42
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	4/1/2024	781.52
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	5/1/2024	779.92
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	6/1/2024	778.42
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	7/1/2024	778.42
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	8/1/2024	777.52
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	9/1/2024	778.42
Corona Non-Potable Well 1	338227N1175073W001	Bedford Management Area	808.92	806.92	10/1/2024	778.12
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	11/1/2022	770.47
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	12/1/2022	770.97
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	1/1/2023	778.27
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	2/1/2023	781.07
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	3/1/2023	781.67
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	4/1/2023	781.67
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	5/1/2023	781.87
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	6/1/2023	781.37
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	7/1/2023	781.17
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	8/1/2023	779.17
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	9/1/2023	779.97
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	10/1/2023	778.87
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	11/1/2023	778.97
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	12/1/2023	778.97
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	1/1/2024	780.37
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	2/1/2024	783.27
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	3/1/2024	781.87
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	4/1/2024	781.97
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	5/1/2024	780.27
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	6/1/2024	779.27
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	7/1/2024	779.07
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	8/1/2024	776.97
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	9/1/2024	778.87
Corona Non-Potable Well 2	338227N1175072W001	Bedford Management Area	808.77	806.77	10/1/2024	778.37
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	11/1/2022	868.78
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	12/1/2022	870.18
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	1/1/2023	871.28
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	2/1/2023	875.88
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	3/1/2023	886.28
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	4/1/2023	902.08
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	5/1/2023	915.08
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	6/1/2023	921.68
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	7/1/2023	917.08
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	8/1/2023	927.28
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	9/1/2023	929.98
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	10/1/2023	930.38
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	11/1/2023	930.28
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	12/1/2023	896.38
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	1/1/2024	929.98
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	2/1/2024	930.68
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	3/1/2024	938.58
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	4/1/2024	939.98
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	5/1/2024	947.58
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	6/1/2024	950.18
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	7/1/2024	951.58
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	8/1/2024	950.78
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	9/1/2024	950.88
Corona Well 20	337556N1174811W001	Coldwater Management Area	1147.58	1145.58	10/1/2024	950.28
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	11/1/2022	876

Appendix B. Key Well Groundwater Elevations, Water Years 2023 and 2024

Local Well Name	DWR Well Number	Management Area	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Measurement Date	Groundwater Elevation (ft NAVD 88)
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	12/1/2022	876.1
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	1/1/2023	878.2
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	2/1/2023	885.5
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	3/1/2023	889.2
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	4/1/2023	902.5
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	5/1/2023	901.5
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	6/1/2023	908.1
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	7/1/2023	910
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	8/1/2023	911.9
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	9/1/2023	914.6
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	10/1/2023	916.8
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	11/1/2023	919.6
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	12/1/2023	921.3
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	1/1/2024	923.3
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	2/1/2024	925.7
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	3/1/2024	931.5
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	4/1/2024	935.5
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	5/1/2024	938.1
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	6/1/2024	940.3
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	7/1/2024	943.6
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	8/1/2024	944.5
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	9/1/2024	946.7
Corona Well 21	337622N1174890W001	Coldwater Management Area	1125.09	1123.09	10/1/2024	947.6
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	11/1/2022	872.3
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	12/1/2022	872.6
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	1/1/2023	874.6
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	2/1/2023	882.6
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	3/1/2023	885.7
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	4/1/2023	893.7
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	5/1/2023	898
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	6/1/2023	902.3
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	7/1/2023	907.5
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	8/1/2023	908.4
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	9/1/2023	1011.1
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	10/1/2023	913.5
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	11/1/2023	916.3
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	12/1/2023	884.2
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	1/1/2024	919.7
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	2/1/2024	921.6
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	3/1/2024	928.4
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	4/1/2024	931.8
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	5/1/2024	934.5
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	6/1/2024	937.7
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	7/1/2024	940.1
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	8/1/2024	940.8
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	9/1/2024	943.2
Corona Well 3	337615N1174901W001	Coldwater Management Area	1140.02	1138.02	10/1/2024	944.4
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	3/8/2023	770.58
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	4/12/2023	771.58
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	8/15/2023	769.08
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	12/11/2023	769.08
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	5/24/2024	779.7
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	8/26/2024	768.88
EVMWD Flagler 2A Well	338280N1175100W001	Bedford Management Area	793.88	791.88	12/2/2024	767.58
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	3/8/2023	772.62
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	4/12/2023	771.62
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	8/15/2023	771.12
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	12/11/2023	771.62
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	5/24/2024	777.85
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	8/26/2024	771.02
EVMWD Flagler 3A Well	338270N1175100W001	Bedford Management Area	792.45	790.45	12/2/2024	769.62
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	12/15/2022	878.53
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	4/19/2023	904.9
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	10/31/2023	930.4
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	12/21/2023	932.7
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	5/20/2024	918.8
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	8/29/2024	958.1
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	11/25/2024	960.4
EVMWD Mayhew 2	338031N1174988W001	Bedford Management Area	1244.2	1242.2	12/9/2024	958.1
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	12/15/2022	911.33
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	4/19/2023	884.6
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	8/30/2023	856.8
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	12/14/2023	845.3

Appendix B. Key Well Groundwater Elevations, Water Years 2023 and 2024

Local Well Name	DWR Well Number	Management Area	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Measurement Date	Groundwater Elevation (ft NAVD 88)
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	3/7/2024	954.92
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	5/20/2024	990.8
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	8/16/2024	919.2
EVMWD Station 71	337496N1174753W001	Bedford Management Area	1166.45	1164.45	12/2/2024	995.4
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	10/1/2022	838.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	11/1/2022	839.24
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	12/1/2022	841.84
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	1/1/2023	844.44
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	2/1/2023	845.74
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	3/1/2023	846.04
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	4/1/2023	846.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	5/1/2023	835.24
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	6/1/2023	837.64
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	7/1/2023	833.84
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	8/1/2023	832.94
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	9/1/2023	836.24
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	10/1/2023	836.64
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	11/1/2023	836.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	12/1/2023	837.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	1/1/2024	837.74
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	2/1/2024	838.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	3/1/2024	838.34
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	4/1/2024	839.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	5/1/2024	837.54
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	6/1/2024	835.44
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	7/1/2024	837.04
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	8/1/2024	835.44
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	9/1/2024	832.84
TVWD Foster	337544N1174806W001	Coldwater Management Area	871.74	869.74	10/1/2024	834.64
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	10/1/2022	925.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	11/1/2022	925.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	12/1/2022	929.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	1/1/2023	943.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	2/1/2023	942.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	3/1/2023	944.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	4/1/2023	944.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	5/1/2023	944.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	6/1/2023	942.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	7/1/2023	942.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	8/1/2023	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	9/1/2023	942.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	10/1/2023	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	11/1/2023	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	12/1/2023	942.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	1/1/2024	942.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	2/1/2024	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	3/1/2024	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	4/1/2024	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	5/1/2024	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	6/1/2024	941.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	7/1/2024	938.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	8/1/2024	937.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	9/1/2024	938.4
TVWD New Sump	337810N1174740W001	Bedford Management Area	953.4	951.4	10/1/2024	938.4
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	10/1/2022	867.96
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	11/1/2022	868.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	12/1/2022	873.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	1/1/2023	875.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	2/1/2023	877.36
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	3/1/2023	877.06
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	4/1/2023	876.71
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	5/1/2023	879.66
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	6/1/2023	861.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	7/1/2023	861.96
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	8/1/2023	862.96
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	9/1/2023	863.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	10/1/2023	862.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	11/1/2023	861.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	12/1/2023	861.01
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	1/1/2024	861.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	2/1/2024	860.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	3/1/2024	860.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	4/1/2024	861.46

Appendix B. Key Well Groundwater Elevations, Water Years 2023 and 2024

Local Well Name	DWR Well Number	Management Area	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Measurement Date	Groundwater Elevation (ft NAVD 88)
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	5/1/2024	861.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	6/1/2024	862.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	7/1/2024	863.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	8/1/2024	864.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	9/1/2024	864.46
TVWD TP-1	337954N1174952W001	Coldwater Management Area	901.46	899.46	10/1/2024	864.46
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	10/1/2022	879.87
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	11/1/2022	877.77
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	12/1/2022	877.07
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	1/1/2023	837.37
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	2/1/2023	878.37
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	3/1/2023	878.07
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	4/1/2023	876.87
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	5/1/2023	874.67
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	6/1/2023	877.47
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	7/1/2023	878.27
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	8/1/2023	879.27
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	9/1/2023	880.17
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	10/1/2023	880.77
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	11/1/2023	857.37
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	12/1/2023	856.69
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	1/1/2024	855.47
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	2/1/2024	857.87
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	3/1/2024	856.97
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	4/1/2024	856.57
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	5/1/2024	855.17
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	6/1/2024	855.67
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	7/1/2024	855.31
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	8/1/2024	
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	9/1/2024	873.37
TVWD TP-2	337954N1174941W001	Coldwater Management Area	902.37	900.37	10/1/2024	873.37
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	1/1/2023	845.7
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	2/1/2023	847.8
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	3/1/2023	848.5
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	4/1/2023	849.5
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	5/1/2023	847.8
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	6/1/2023	847.4
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	7/1/2023	846.5
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	8/1/2023	845.7
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	9/1/2023	846.2
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	10/1/2023	846.3
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	11/1/2023	847
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	12/1/2023	847.2
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	1/1/2024	848.1
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	2/1/2024	849.1
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	3/1/2024	848.9
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	4/1/2024	848.8
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	5/1/2024	848.8
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	6/1/2024	846.6
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	7/1/2024	845.66
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	8/1/2024	845.7
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	9/1/2024	846.2
TVWD Well 1 (Old well)	338010N1174983W001	Bedford Management Area	879.9	877.9	10/1/2024	845.4
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	1/1/2023	847.78
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	2/1/2023	846.48
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	3/1/2023	849.88
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	4/1/2023	848.48
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	5/1/2023	849.28
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	6/1/2023	845.98
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	7/1/2023	841.58
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	8/1/2023	845.28
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	9/1/2023	847.78
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	10/1/2023	847.68
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	11/1/2023	848.48
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	12/1/2023	848.58
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	1/1/2024	849.38
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	2/1/2024	850.18
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	3/1/2024	849.98
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	4/1/2024	849.98
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	5/1/2024	849.98
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	6/1/2024	840.38
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	7/1/2024	835.88
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	8/1/2024	843.98

Appendix B. Key Well Groundwater Elevations, Water Years 2023 and 2024

Local Well Name	DWR Well Number	Management Area	Reference Point Elevation (ft NAVD 88)	Ground Surface Elevation (ft NAVD 88)	Measurement Date	Groundwater Elevation (ft NAVD 88)
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	9/1/2024	844.58
TVWD Well 1A	338009N1174983W001	Bedford Management Area	881.88	879.88	10/1/2024	843.88
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	10/1/2022	838.02
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	11/1/2022	838.02
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	12/1/2022	838.02
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	1/1/2023	842.12
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	2/1/2023	842.62
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	3/1/2023	843.62
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	4/1/2023	844.02
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	5/1/2023	842.92
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	6/1/2023	842.52
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	7/1/2023	841.12
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	8/1/2023	841.62
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	9/1/2023	840.82
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	10/1/2023	840.72
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	11/1/2023	841.77
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	12/1/2023	842.42
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	1/1/2024	842.92
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	2/1/2024	843.32
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	3/1/2024	843.32
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	4/1/2024	837.92
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	5/1/2024	834.32
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	6/1/2024	841.22
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	7/1/2024	840.92
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	8/1/2024	836.22
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	9/1/2024	840.32
TVWD Well 4	338023N1174981W001	Bedford Management Area	878.22	876.22	10/1/2024	833.22

APPENDIX C

SGMA Required Water Use Table

Bedford Coldwater Annual SGMA Portal A Groundwater Extractions

Basin Number	8-004.02
Water Year	2024 (Oct. 2023 - Sept. 2024)
Total Groundwater Extractions (AF)	2,722
Water Use Sector Urban (AF)	1,713
Water Use Sector Industrial (AF)	434
Water Use Sector Agricultural (AF)	575
Water Use Sector Managed Wetlands (AF)	-
Water Use Sector Managed Recharge (AF)	-
Water Use Sector Native Vegetation (AF)	-
Water Use Sector Other (AF)	-
Water Use Sector Other Description	

Basin Number	8-004.02
Water Year	2024 (Oct. 2023 - Sept. 2024)
Meters Volume (AF)	2,295
Meters Description	Flow meters from retailers
Meters Type	Direct
Meters Accuracy (%)	90-100 %
Meters Accuracy Description	Reported meter accuracy over range of measurement
Electrical Records Volume (AF)	0
Electrical Records Description	
Electrical Records Type	
Electrical Records Accuracy (%)	
Electrical Records Accuracy Description	
Land Use Volume (AF)	0
Land Use Description	
Land Use Type	
Land Use Accuracy (%)	
Land Use Accuracy Description	
Groundwater Model Volume (AF)	0
Groundwater Model Description	Estimated Ag Pumping
Groundwater Model Type	Estimate
Groundwater Model Accuracy (%)	50-60 %
Groundwater Model Accuracy Description	Standard for agricultural water use estimate from land use
Other Method(s) Volume (AF)	487
Other Method(s) Description	Estimated by User and Reported to WMWD
Other Method(s) Type	Estimate
Other Method(s) Accuracy (%)	30-40 %
Other Method(s) Accuracy Description	Estimate based on uncertainty and variation in data

Basin Number	8-004.02
Water Year	2024 (Oct. 2023 - Sept. 2024)
Methods Used To Determine	Meters
Water Source Type Central Valley Project (AF)	-
Water Source Type State Water Project (AF)	4,047
Water Source Type Colorado River Project (AF)	-
Water Source Type Local Supplies (AF)	-
Water Source Type Local Imported Supplies (AF)	-
Water Source Type Recycled Water (AF)	1,192
Water Source Type Desalination (AF)	-
Water Source Type Other (AF)	-
Water Source Type Other Description	

Basin Number	8-004.02
Water Year	2024 (Oct. 2023 - Sept. 2024)
Total Water Use (AF)	7,961
Methods Used To Determine	Meters and estimated pumping from private pumpers
Water Source Type Groundwater (AF)	2,722
Water Source Type Surface Water (AF)	4,047
Water Source Type Recycled Water (AF)	1,192
Water Source Type Reused Water (AF)	-
Water Source Type Other (AF)	-
Water Source Type Other Description	
Water Use Sector Urban (AF)	5,908
Water Use Sector Industrial (AF)	434
Water Use Sector Agricultural (AF)	1,619
Water Use Sector Managed Wetlands (AF)	-
Water Use Sector Managed Recharge (AF)	-
Water Use Sector Native Vegetation (AF)	-
Water Use Sector Other (AF)	-
Water Use Sector Other Description	