Kaweah Subbasin

Annual Monitoring Report

April 2023

Prepared for:
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Greater Kaweah Groundwater Sustainability Agency
Mid-Kaweah Groundwater Sustainability Agency
Tulare and Kings Counties

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Acronyms & Abbreviations

A Clay..... Shallower Corcoran Clay, more prominent in western areas of Subbasin
AF .....Acre-Foot
AFY .....acre-feet per year
CASGEM..... California Statewide Groundwater Elevation Monitoring
COC..... Constituents of Concern
CVP .....Central Valley Project
DBCP 1,2-Dibromo-3-chloropropane
DWR.....Department of Water Resources
E Clay..... Deeper Corcoran Clay, more prominent throughout majority of the Valley
EKGSA .....East Kaweah Groundwater Sustainability Agency
ET ..... evapotranspiration
FKC .....Friant-Kern Canal
GKGSA..... Greater Kaweah Groundwater Sustainability Agency
GSA .....Groundwater Sustainabliity Agency
GSP .....Groundwater Sustainability Plan
HZ .....Hydrologic Zone
KDWCD.....Kaweah Delta Water Conservation District
KSHM..... Kaweah Subbasin Hyrdologic Model
JPA .....Joint Powers Authority
M&I .....Municipal & Industrial
MCL..... Maximum Contaminant Level
MKGSA .....Mid-Kaweah Grounwater Sustainability Agency
MO ..... Mearuable Objective
MT ..... Minimum Threshold
NOAA..... National Oceanic and Atmospheric Administration
PCE .....Tetrachloroethene
PPB ..... parts per billion
PPM ..... parts per million
PPT .....parts per trillion
SGMA.....Sustainable Groundwater Management Act
SMC .....Sustainable Management Criteria
SWRCB.....State Water Resources Control Board

TDS ..... Total Dissolved Solids
TCP 1,2,3-Trichloropropane
USBR ..... United States Bureau of Reclamation
USGS ..... United States Geologic Survey
WMS ..... Water Marketing Strategy
WQO ..... Water Quality Objectives
WY ..... Water Year

Executive Summary

In accordance with §356.2 of the Sustainable Groundwater Management Act (SGMA) Regulations, each Groundwater Sustainability Agency (GSA) in the Kaweah Subbasin is to submit an annual report to California's Department of Water Resources (DWR) by April 1 of each year following the adoption of the first Groundwater Sustainability Plan (GSP) which includes data from the previous Water Year (WY). This Annual Report will provide data for the 2022 Water Year (WY) (October 1, 2021 to September 30, 2022) and, as a basis for comparison, will also include data for the 2021 WY (October 1, 2020 to September 30, 2021). The Annual Report will document the groundwater conditions within the Subbasin for WY 2022, the status of the GSP implementation, and the trend towards achieving the interim milestones.

The three Kaweah Subbasin GSAs are coordinating to submit one annual report that will collectively address the status of the GSP implementation for the Kaweah Subbasin. This report contains sub-sections that independently detail the water year accounting for each GSA to allow tracking with individual submitted GSPs. This Annual Report is laid out in the following chapters:

- *Chapter 1 Introduction & Plan Area* – Introduces the area covered by the report.
- *Chapter 2 Groundwater Monitoring* – Provides groundwater monitoring information through contour maps and hydrographs.
- *Chapter 3 Water Supply Accounting* – Provides estimates of surface and groundwater supplies and total water use in the Subbasin for WYs 2021 and 2022.
- *Chapter 4 Implementation Status* – Provides an update on the implementation of submitted GSPs.
- *Chapter 5 Sustainable Management Criteria* – Provides overview on sustainability indicators at initial GSP implementation.
- *Chapter 6 References* – Lists references used in developing the report.
- *Appendix* – Contains appendices referenced in the report text.

During the reported two-year period included in this report, the Kaweah Subbasin has experienced very dry water year types. WY 2021 was the second driest water year on record for the State of California (DWR, 2021). More specifically to the Kaweah Subbasin, according to data for the Kaweah River watershed, runoff in WY 2021 was less than 20% over the historical average and was less than 40% of the historical average in WY 2022. This was reflected in the availability of surface water each year. Total water use in the Subbasin (including both surface and groundwater) was approximately 1.12 Million acre-feet (AF) and 1.08 Million AF in WY 2021, and 2022, respectively. While the total water use numbers in WY 2021 and 2022 were similar, the surface water available was noticeably higher which impacted how the total demand was met. During WY 2021, surface water use was approximately 84,000 AF and in WY 2022 surface water use was over 153,000 AF. This remaining water use was met with groundwater uses of approximately 1,038,000 AF and 925,000 AF in WY 2021 and WY 2022, respectively. **Table ES-1** provides a summary of the total water use for WY 2021 and 2022.

There was a negative change in groundwater storage for the Kaweah Subbasin in both WY 2021 and 2022. In WY 2021, the Visalia National Oceanic and Atmospheric Administration (NOAA) station recorded rainfall totals 49% of the annual average. The corresponding loss in groundwater storage was approximately 502,000 AF. In WY 2022, the Visalia NOAA station recorded rainfall totals 79% of the annual average and there was a corresponding loss in groundwater storage was approximately 342,000 AF. **Table ES-2** summarizes the Subbasin rainfall and the change in groundwater storage for WY 2021 and 2022.

It is important to note that the estimates provided in this report are based on seasonal data collected at specific points in time and sometime limited spatially. The aquifers of the Kaweah Subbasin are dynamic and complex in nature. Providing information at a snapshot in time needs to be understood as it does not necessarily capture the trends and/or impacts seen or experienced seasonally or over multiple years. Over time, more data and better understanding of the aquifers may yield different estimates and/or conclusions.

Table ES-1 Kaweah Subbasin Total Water Use Summary

Source	Total	Agriculture	M&I
WY 2021			
Groundwater	1,037,700	951,300	86,400
Surface Water	82,700	81,300	1,400
Total	1,120,400	1,032,600	87,800
WY 2022			
Groundwater	924,900	842,700	82,200
Surface Water	153,400	151,900	1,500
Total	1,078,300	994,600	83,700

Note: All values rounded to nearest 100 Acre-Feet (AF).
Municipal & Industrial (M&I) includes Urban, small systems, rural domestic and industrial uses.

Table ES-2 Kaweah Subbasin Change in Groundwater Storage

Water Year	Rainfall*			Change in Storage
	Inches	% of Average	Water Period	
2021	4.53	48%	Dry	-520,000
2022	7.37	79%	Dry	-360,000

Note: Change in storage values rounded to nearest 1,000 Acre-Feet (AF).
*Rainfall data from Visalia NOAA station

1 Introduction & Plan Area

Legal Requirements:
§356.2(a) General information, including an executive summary and a location map depicting the basin covered by the report.

In accordance with §356.2 of the Sustainable Groundwater Management Act (SGMA) Regulations, each GSA in the Kaweah Subbasin shall provide an annual report to California's Department of Water Resources (DWR) by April 1 of each year following the adoption of the first Groundwater Sustainability Plan (GSP) which includes data from the previous Water Year (WY). This Annual Report will provide data for the 2022 WY (October 1, 2021 to September 30, 2022) and, as a basis for comparison, will also include data for the 2021 WY (October 1, 2020 to September 30, 2021). The Annual Report will document the groundwater conditions within the Subbasin for WY 2022, the status of the GSP implementation, and the trend towards achieving the interim milestones. The three Kaweah Subbasin Groundwater Sustainability Agencies (GSA) are coordinating to submit one annual report that will collectively address the status of the GSP implementation for the Kaweah Subbasin. This report contains sub-sections that independently detail the water year accounting for each GSA to allow tracking with individual submitted GSPs.

1.1 Plan Area Description

The Kaweah Subbasin, as defined by DWR Bulletin 118 (2016), lies in the Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin. The Subbasin is bounded by the Kings Subbasin to the north, the Tulare Lake Subbasin to the west, the Tule Subbasin to the south, and the Sierra Nevada Mountains to the east.

There are three GSAs located in the Kaweah Subbasin: East Kaweah GSA (EKGSA), Greater Kaweah GSA (GKGSA), and Mid-Kaweah GSA (MKGSA). The GKGSA and MKGSA are roughly bisected by California State Route 99 (SR 99). The Kaweah and St. Johns Rivers and Cottonwood and Mill Creeks flow from the Sierra Nevada through the northern portion of the EKGSA and GKGSA jurisdictional areas, turning southwest and toward the Tulare Lake Subbasin. Yokohl and Lewis Creeks also flow from the Sierra Nevada and emerge along the eastern portion of the EKGSA. **Figure 1-1** is a map of the Kaweah Subbasin and member GSAs.

The Kaweah Subbasin is mostly located in Tulare County, but the western portions of the Subbasin are located in Kings County. The cities of Visalia and Tulare are located in the MKGSA jurisdictional area. The cities of Exeter, Farmersville, and Woodlake, as well as a portion of the City of Hanford are in the GKGSA jurisdictional area. The City of Lindsay is in the EKGSA jurisdictional area. Several small communities are also spread throughout the Subbasin. The land use within the cities located in the Subbasin is classified as urban, while the majority of the Subbasin's acreage is classified as agricultural with various crops such as field crops, grain and hay crops, pasture, citrus, and deciduous fruits and nuts.

1.2 Agency Information

The following is more specific detail for each of the Kaweah Subbasin GSAs.

1.2.1 East Kaweah Groundwater Sustainability Agency (EKGSA)

Agency's Name:	East Kaweah GSA
Agency's Address: 315 E.	Lindmore Street, Lindsay, CA 93247
Agency's Mailing Address:	P.O. Box 908, Lindsay, CA 93247
Agency's Phone Number:	(559) 562-2534
Agency's Website:	ekgsa.org
Contact Person:	Michael D. Hagman
Contact Person's Title:	Executive Director

The EKGSA is a Joint Powers Authority (JPA) with seven member agencies. The EKGSA has an 11-member governing board, all of whom are appointed. Seven board members are elected officials from the member agencies and are appointed by their respective agency boards (one per agency). Two of the members are appointed by Wutchumna Water Company and Sentinel Butte Mutual Water Company. Both water companies are corporations formed pursuant to various provisions of the California Water Code and California Water Code Appendix with the power to acquire water supplies for their areas and manage such supply. One member is appointed by the County of Tulare and approved by the EKGSA Board of Directors. One board member is appointed at-large by the EKGSA Board of Directors.

1.2.2 Greater Kaweah Groundwater Sustainability Agency (GKGSA)

Agency Name:	Greater Kaweah GSA
Agency Address:	2975 Farmersville Rd, Farmersville, CA 93223
Agency Phone Number:	(559) 747-5601
Agency Website:	greaterkaweahgsa.org
Contact Person:	Mark Larsen
Contact Person Title:	General Manager

The GKGSA is a JPA formed by five member agencies. The GKGSA has a 9-member governing board comprised of one representative from each member agency, except the Kaweah Delta Water Conservation District (KDWCD), which has two representatives. In addition, the Board of Directors includes one representative from a Rural Communities Committee, one representative from a Stakeholder Committee, and one representative from California Water Service Company (who develops Visalia's water supply).

1.2.3 Mid-Kaweah Groundwater Sustainability Agency (MKGSA)

Agency's Name:	Mid-Kaweah GSA
Agency's Address:	6826 Avenue 240, Tulare, CA 93274
Agency's Phone Number:	(559) 686-3425
Agency's Website:	midkaweah.org
Contact Person:	Aaron Fukuda
Contact Person's Title:	Interim General Manager

The MKGSA is a JPA formed by three member agencies, the City of Tulare, the City of Visalia, and Tulare Irrigation District (TID). The governing body of the JPA consists of a six-member Board of Directors that includes two representatives from each of the founding JPA members. Members eligible to sit on the Board of Directors are the elected officials of each member agency, with the City of Tulare able to appoint a member of the Tulare Board of Public Utilities to serve on its behalf. Members may also appoint up to two members to serve as an alternate in the event of an absence.

Public agencies participating in the Kaweah Subbasin GSAs are summarized in **Table 1-1**.

Table 1-1 Kaweah Subbasin Participating Public Agencies

Public Agency	East Kaweah GSA	Greater Kaweah GSA	Mid-Kaweah GSA
City of Lindsay	X		
City of Tulare			X
City of Visalia			X
Exeter Irrigation District	X		
Ivanhoe Irrigation District	X		
Kaweah Delta Water Conservation District		X	
Kings County Water District		X	
Lakeside Irrigation District		X	
Lindmore Irrigation District	X		

Public Agency	East Kaweah GSA	Greater Kaweah GSA	Mid-Kaweah GSA
Lindsay-Strathmore Irrigation District	X		
St Johns Water District		X	
Stone Corral Irrigation District	X		
Tulare Irrigation District			X
County of Tulare	X	X	

1.2.4 Updates/Changes to Coordination Agreement

The Kaweah Subbasin GSAs developed a Coordination Agreement as part of developing their separate GSPs ahead of the January 31, 2020 deadline.

In January 2022, DWR provided an Incomplete Determination for the 2020 Kaweah Subbasin GSPs. The Incomplete Determination focused on deficiencies for three sustainability indicators: for chronic lowering of groundwater levels, subsidence, and interconnected surface water. Within these deficiencies was the need for the Kaweah Subbasin to reevaluate components of its Coordination Agreement. During the 180-day response period to DWR's Incomplete Determination, the Kaweah Subbasin GSAs revised Appendix 6 to the Coordination Agreement. Appendix 6 defines the Subbasin-wide Sustainability Goal and Undesirable Results definitions. The revised Appendix 6 provided updated analysis and basis for Minimum Thresholds (MT) and Measurable Objectives (MO) for three deficient sustainability indicators. The Kaweah Subbasin GSAs also committed to a Mitigation Program to be further detailed in 2023. A framework was provided in the revised Appendix 6. This was provided to shed light on the items to be further detailed through each GSA's committees, stakeholders, legal counsels, and consultants.

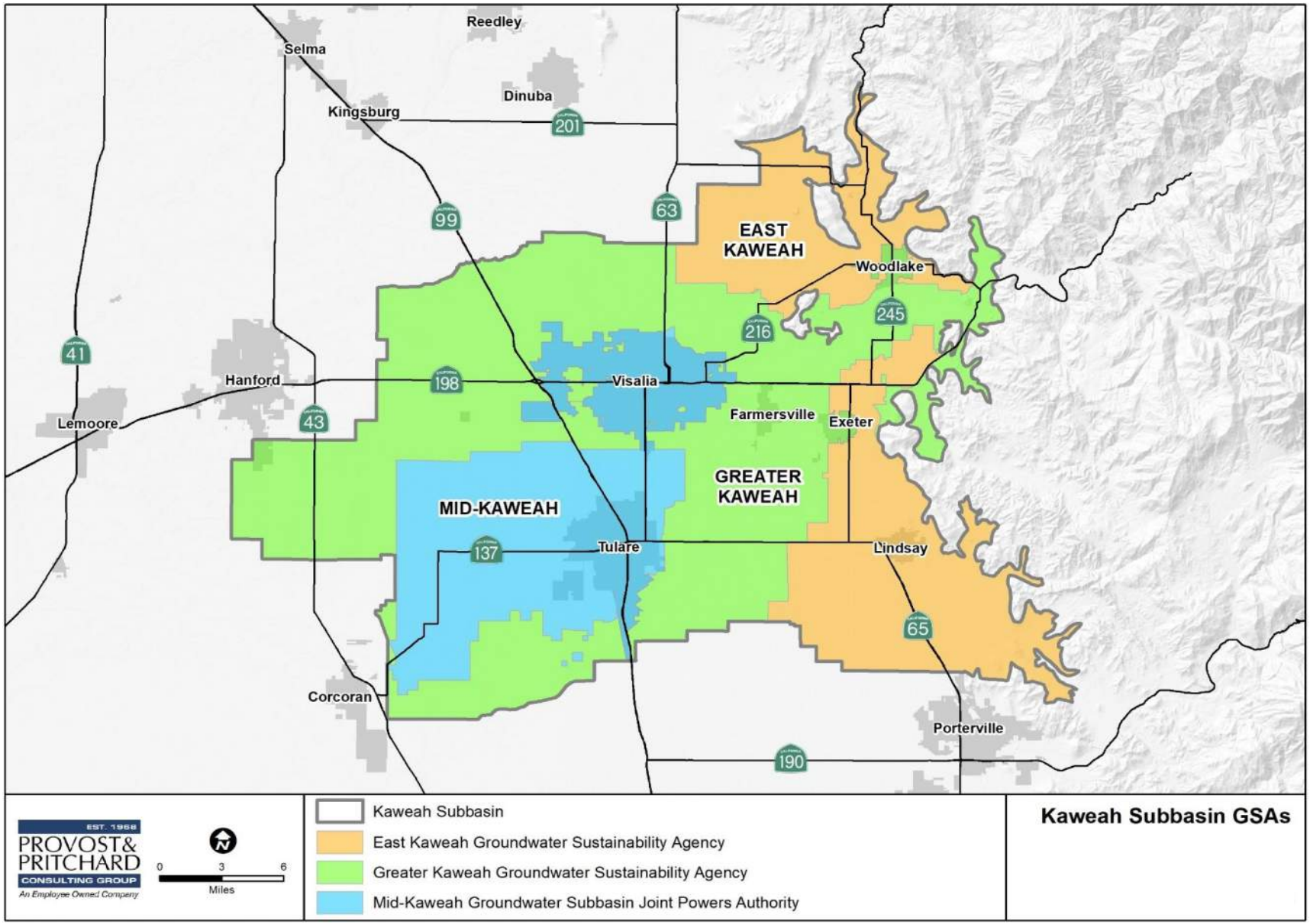

Figure 1-1 Kaweah Subbasin and GSAs

2 Groundwater Monitoring

Legal Requirements:
§356.2(b) A detailed description and graphical representation of the following conditions of the basin managed by the Plan:
(1) Groundwater elevation data from monitoring wells 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.
(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.

Per the regulations, the annual report is to contain a description and graphical representation of groundwater elevation data from the monitoring network wells established through development of the GSPs. This chapter includes descriptions and information related to the Kaweah Subbasin groundwater elevation monitoring network for Water Years 2021 and 2022.

2.1 Kaweah Subbasin Monitoring Network

In the Kaweah Subbasin, there have been hundreds of wells used by agencies to monitor groundwater, develop groundwater contour maps, and estimate changes in groundwater storage. During the development of the three GSPs in the Subbasin, approximately 120 wells were selected for inclusion in the Monitoring Network. **Figure 2-1** is a map showing the current wells in the Monitoring Network.

Appendix A contains groundwater level data for the monitoring network wells for the Spring and Fall of WYs 2021 and 2022. Individual hydrographs for these Monitoring Network wells are included in **Appendix B**. These hydrographs graphically show groundwater level readings (where available) from WYs 1997 through 2022. WY 1997 represents the start of the hydrologic base period for which "current" conditions were established in the GSPs. The hydrographs also include the current Measurable Objective, Minimum Threshold, and Interim Milestones for each well. The hydrographs have labels corresponding to the State Well Number, which are also included in **Figure 2-1**.

In general, since 2015, water levels continued to decline through the end of a historic drought and in some cases, they reached the lowest points recorded. A wet winter in WY 2017 showed groundwater levels stabilizing and/or rising in areas across the Subbasin. WY 2018 was a relatively normal water year type and some groundwater levels showed slight declines. WY 2019 again had a wet winter and resulted in many wells responding with rebounding groundwater levels. The groundwater levels in the monitoring network hydrographs have generally decreased since WY 2020 as dry hydrologic conditions have been present since WY 2019. WY 2021 was the second driest year on record in California with emergency drought declared throughout most of the San Joaquin Valley, including Tulare County. WY 2022 continued the dry conditions exasperating some of the drought related impacts, such as drying wells and land subsidence. Overall, throughout the Subbasin, groundwater levels tend to decrease during the drought, with groundwater levels recovering in wet years after drought.

2.2 Groundwater Elevation Contour Maps

Water surface elevation contour maps were generated for the Fall of 2021 and Spring and Fall of 2022 based on available water level data. The seasonal highs typically correspond with Spring contours following winter precipitation and reduced groundwater pumping. Seasonal lows typically correspond with Fall contours following the summer months of increased pumping for irrigation and lack of precipitation.

During development of the GSPs, two principal aquifer systems were identified in the Kaweah Subbasin. One aquifer system is the unconfined aquifer that encompasses the entirety of the Subbasin. The other aquifer system is the confined aquifer beneath the Corcoran Clay (E Clay) formation, which begins approximately in the Highway 99 area and continues west outside of the Kaweah Subbasin into the Tulare Lake Subbasin.

The contours for this report were generated using a similar methodology as the contours developed for the GSPs. Well locations and groundwater elevations were plotted on Subbasin maps for the Spring and Fall periods. Groundwater elevation contours were generated utilizing ArcGIS software and then the contours were reviewed and edited for consistency, and to remove anomalous data. Groundwater level elevations that appeared inconsistent with the majority of other wells in an area were typically not used. Wells with significantly different water levels may be influenced by other factors such as perforations spanning multiple aquifer systems, located in shallow groundwater above the A Clay (where present along the western edge of the subbasin), or other localized formation effects. If a well reading was significantly different than other wells in the immediate vicinity, this data point was marked as likely erroneous or anomalous (well pumping nearby, well recently pumped, oil, etc.). Data points marked erroneous were not included in contour analysis.

2.2.1 Unconfined Aquifer Contours

The water surface elevation contours representing the unconfined aquifer are those that are above bedrock or estimated base of the aquifer on the eastern side of the Subbasin and those above the Corcoran Clay (E Clay) on the western side of the Subbasin. In the very western extent of the Subbasin (south of the City of Hanford) the shallow A Clay is present. Contouring of the unconfined aquifer is meant to represent the portion of the aquifer below the A Clay but above the E Clay. The contours for the Unconfined Aquifer for Fall for 2021 and Spring and Fall 2022 are included in **Appendix C**.

In review of the unconfined aquifer contours, the general gradient from the northeast to the southwest (Lake Kaweah towards Corcoran) remains consistent. Comparing the contour maps on the "Fall to Fall" basis between Fall 2021 and Fall 2022, corresponding with WY 2022, generally shows declining groundwater elevations between the two years consistent with a dry 2022 year. Comparing the contours from "Spring to Fall" for the reporting period shows the anticipated alternating seasonal high and low. The Fall contours begin to show where some higher intensity pumping is occurring as depression spots are present. Many of these spots experience some recovery by the following Spring. However, as the Subbasin continues monitoring the entire Subbasin, there may be locations in areas that the GSAs will need to be monitoring more closely going forward.

The Spring and Fall contours for WY 2021 and 2022 largely have the same characteristics of historical contour mapping, with flows generally moving from the northeast to the southwest in both years. Contours generally show more influence of flow into the Kaweah Subbasin from the north (Kings Subbasin). For both the 2021 and 2022 WY, this influence was less pronounced than in prior years with wetter hydrology. The southern boundary with the Tule Subbasin appears to have relatively balanced inflows and outflows between the two subbasins. Apart from some localized pumping influences, the contours generally run perpendicular to the Kaweah-Tule Subbasins boundary, likely being influenced by flows in the Tule River just to the south of the boundary line. The western Kaweah-Tulare Lake Subbasins boundary has more complexity due to the influence of multiple clay layers, surface water deliveries, and groundwater pumping. Contours show a mix of outflow from the Kaweah Subbasin to the Tulare Lake Subbasin and vice versa. In the far western extent of the Kaweah Subbasin, where the Tulare Lake Subbasin borders on three sides, there appears to be some pass through from north to southwest.

2.2.2 Confined Aquifer Contours

There are only a few locations in the Subbasin where wells are known to be perforated solely below the Corcoran Clay. This lack of information was a data gap encountered during the development of the Basin Settings of the GSPs. Generally, there is insufficient geographic distribution of data from wells known to be perforated below the Corcoran Clay to contour the lower confined aquifer zone. For this reason, contours for the Confined Aquifer for Fall 2021 and Spring and Fall 2022 have not been developed. As part of GSP implementation, the Subbasin GSAs have and will continue to gather more data to better define and map the confined aquifer contours in the future. For example, the Mid-Kaweah GSA has begun reaching out to landowners to obtain well video logs and more well construction information and data to assist in filling data gaps. In the absence of confined aquifer contours, the change in groundwater storage for the confined aquifer will be estimated using subsidence data. **Section 3.4** describes this estimate in more detail.

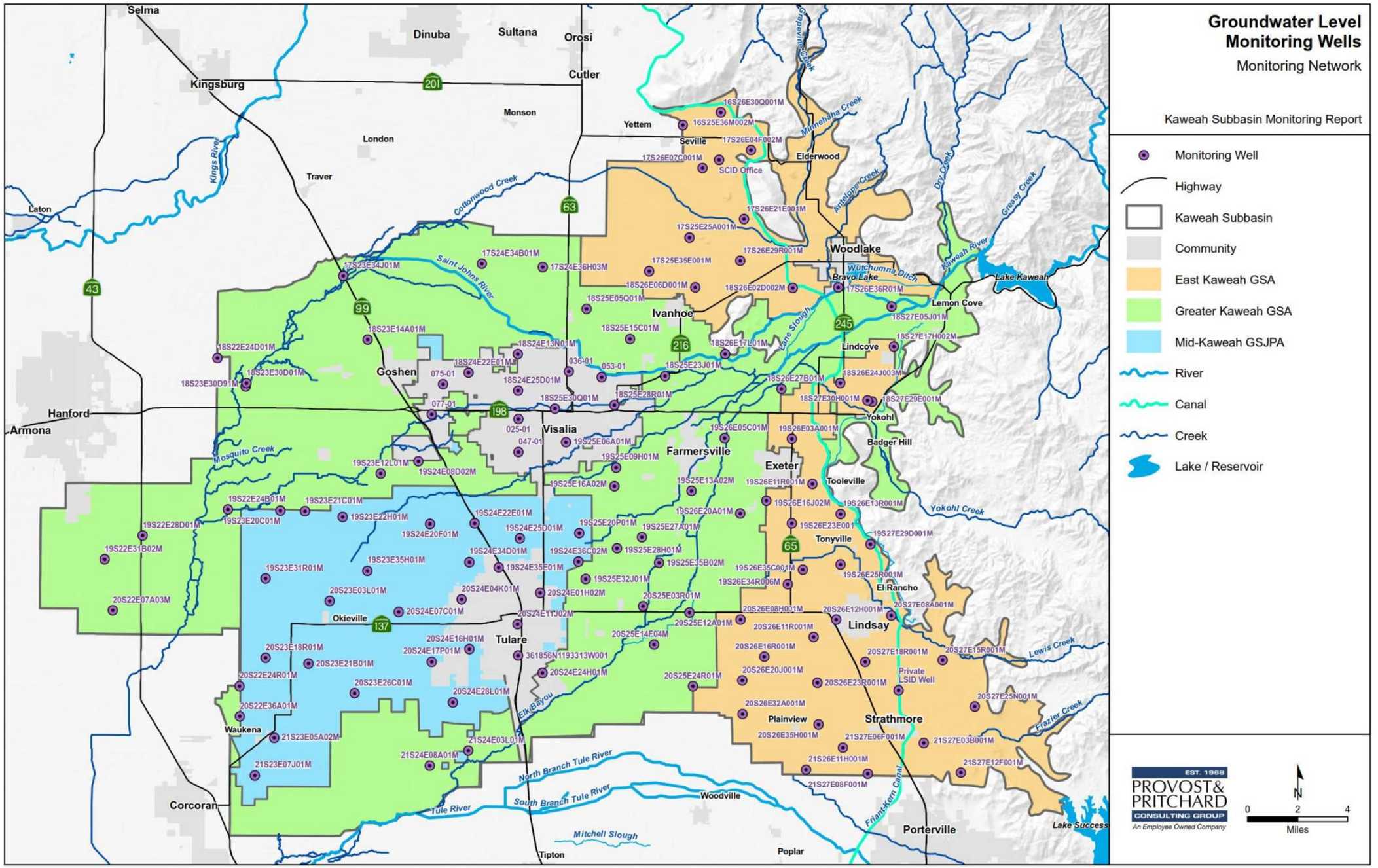

Figure 2-1 Kaweah Subbasin Monitoring Network

3 Water Supply Accounting

Per the regulations, the annual report is to contain a description and graphical representation of groundwater extraction, surface water supplies, and total water use in the Subbasin. This chapter will summarize the estimated quantities of water used, by water use sector, in the Kaweah Subbasin for WYs 2021 and 2022.

3.1 Surface Water Supply

Legal Requirements:
§356.2(b) A detailed description and graphical representation of the following conditions of the basin managed by the Plan:
(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.

Surface water in the Kaweah Subbasin primarily comes from the Kaweah River and Friant Division of the Central Valley Project (CVP). Smaller amounts of supply come from other local supplies (Kings and Tule River) and treated effluent from cities (i.e., Hanford, Tulare, and Visalia). In WY 2021, the Kaweah River provided approximately 51% of the surface water used in the Subbasin. CVP supplies comprised approximately 36% of surface water use in the Subbasin. The remaining 13% of surface water comes from the other local supplies and treated effluent. In WY 2022, the Kaweah River provided approximately 65% of the surface water used in the Subbasin. CVP supplies comprised approximately 29% of surface water use in the Subbasin. The remaining 6% of surface water comes from the other local supplies and treated effluent.

3.1.1 Hydrologic Period

Table 3-1 shows the water year type for WYs 2021 and 2022 based on precipitation at the NOAA station in Visalia, which accounts for an approximate average for the Kaweah Subbasin. The water year types were defined based on the percentage of average precipitation for the station from 1997-2022, which is 9.28 inches. The water year types include: Dry (<90%), Normal (90%-110%) and Wet (>110%).

Table 3-1 WY 2021-2022 Water Year Type

Water Year	Precipitation* (in.)	% of Average	Water Year Type
2021	4.53	49%	Dry
2022	7.37	79%	Dry
Average**	**9.28**		

**Note: Precipitation from Visalia NOAA station.*
***Average based on WY 1997 – 2022.*

3.1.2 Surface Water Deliveries

The following tables summarize the estimated total surface water diversions and the surface water use by sector for WYs 2021 and 2022. Information related to estimates of use within each GSA area is provided in **Appendix D**. The majority of the surface water is secured, managed, and supplied by local ditch companies and irrigation districts for agricultural use. Two communities (City of Lindsay and Strathmore Public Utility District) are Friant CVP contractors and deliver surface water for Municipal and Industrial (M&I) use.

In evaluating the surface water diversions and surface water use, the amount of surface water used is less than the water diverted. Many of the conveyance facilities within the Kaweah Subbasin are unlined open channels that experience losses in every year type. This quantity of water is not viewed as 'managed' or 'controlled' in terms of water use. Therefore, the surface water use quantities are the diversions less the conveyance losses.

Table 3-2 Kaweah Subbasin Surface Water Diversions

Water Year	Total Diversions	Kaweah River	CVP Supplies	Other
2021	93,700	48,200	33,200	12,300
2022	191,000	123,900	54,900	12,200
Average*	402,600	279,500	114,500	8,700

**Average based on WY 2015 – 2022.*
Note: All values rounded to nearest 100 Acre-Feet (AF).

Table 3-3 Kaweah Subbasin Surface Water Use

Water Year	Total	Agriculture	M&I	Recharge	Conveyance Losses
2021	93,700	75,400	1,400	5,900	11,000
2022	191,000	140,000	1,500	11,900	37,600
Average*	402,600	242,200	1,600	80,100	78,700

**Average based on WY 2015-2022*
Note: All values rounded to nearest 100 Acre-Feet (AF).

3.2 Groundwater Extraction

Legal Requirements:
§356.2(b) A detailed description and graphical representation of the following conditions of the basin managed by the Plan:
(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.

The following sections discuss groundwater extraction in the Kaweah Subbasin, including the groundwater use sectors, pumping volumes, and the method for derivation.

3.2.1 Groundwater Use Sectors

The primary groundwater use sectors within the Kaweah Subbasin are Agricultural and M&I which is often a combination of urban communities, rural domestic, and industrial uses such as dairy.

3.2.1.1 Agricultural Groundwater Use

Groundwater is used extensively for crop irrigation throughout the Kaweah Subbasin. Groundwater used for irrigation is pumped from private wells. At this time, metered pumping data for private wells is generally not available to the GSAs. Thus, groundwater pumping from private wells is estimated through a water budget approach with an estimated accuracy of ±20%. Per the extraction methods provided by DWR, this method would be categorized as the 'Land Use' method, since it is based largely on the water demands of the land use. The process to estimate agricultural groundwater extraction is detailed in the following discussion.

Starting in WY 2021 and continued in WY 2022, the Kaweah Subbasin began working with LandIQ for performing and analyzing agricultural demand through ET analysis. This analysis only looks at the consumed, or net, use by the crop and does not make an analysis of an estimated applied, or gross, water used to meet agricultural demand. The estimated applied, or gross, water used approach was used during development of the 2020 GSPs through a process performed by Davids Engineering. To make a relatively similar comparison to data from WY 2020 and earlier, the LandIQ annual totals were increased using an assumed 85% efficiency average across the Subbasin. Surface water deliveries were then subtracted from this value to estimate the agricultural pumping, as shown in the equation below. The Kaweah Subbasin will continually evaluate how it tracks demand and the available data set(s). With the transition from a modeled approach estimating for applied water to a consumption model through ET, as is the transition from the Davids Engineering method to the LandIQ method, the Kaweah Subbasin may revise its process for estimating agricultural demands in the future.

Surface water delivered for agriculture (Table 3-3), is estimated by the following formula:

Surface Water Deliveries to Growers = Headgate diversions – System losses – Intentional recharge

where System Losses = Channel losses (i.e., seepage) + Operational Spills out of the system

The resulting formula to estimate agricultural pumping demand is:

Agricultural Groundwater Pumping = ET Applied irrigation water – Surface Water Deliveries to Growers

3.2.1.2 M&I Groundwater Use

M&I use includes pumping for cities and small community systems, rural domestic pumping, and industrial uses such as dairies and golf courses. Much of the M&I groundwater pumping for cities and community systems is metered and recorded with ±5% accuracy. Some groundwater pumping records were not available for a few small water agencies and had to be estimated.

Groundwater pumping from rural domestic wells and small water systems is not currently measured and extraction estimates were calculated based on census data and or rural dwelling density. Demand was assumed at two acre-feet per year (AFY) per household. However, according to Dziegielewski and Kiefer (2010), 70% of rural domestic groundwater pumping is estimated to ultimately return to groundwater, resulting in a net 30% extraction from the Subbasin. The net extraction estimates have an accuracy of ±20% and are included in Section 3.2.2 below. The GSPs and this annual report used the same methodology for estimating M&I extraction.

Industrial use estimates such as dairy and golf courses were estimated using methods from the GSPs which evaluated the dairy cow population from County Records, and the estimated amount of groundwater net demand of 75 gallons per day per cow, or 0.084 AFY, per cow.

Overall, the groundwater demand for M&I use is a small percentage of the overall use reported for the Subbasin.

3.2.2 Groundwater Extraction Summary

The following table summarizes the total groundwater extraction by sector and method of estimation for the 2021 and 2022 WYs. More detailed breakdown by GSA is provided in **Appendix D**.

Table 3-4 Kaweah Subbasin Groundwater Extraction Summary

Use	Method	Accuracy	WY 2021	WY 2022
Agricultural	Land Use	±20%	951,300	842,700
Urban	Meter	±5%	64,600	60,400
Other	Estimated	±20%	21,800	21,800
		Total	1,037,700	924,900

Note: All values are rounded to nearest 100 Acre-Feet (AF).
"Urban" includes the metered pumping from larger cities and communities.
"Other" includes Small systems, rural domestic, and M&I.

Maps depicting general location and volumes of groundwater extraction for each of the GSAs for the 2022 WY is provided in **Appendix E**.

3.3 Total Water Use

Legal Requirements:
§356.2(b) A detailed description and graphical representation of the following conditions of the basin managed by the Plan:
(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.

The following table summarizes the total water use by sector for the 2021 and 2022 WYs. Refer to discussions in previous sections for information on measurement methods and accuracy. As a reminder, the conveyance losses have been removed from the surface water use volumes shown in **Section 3.1.2** as this water was not applied to an Agricultural or M&I use.

Table 3-5 Kaweah Subbasin Total Water Use Summary

Source	Total	Agriculture	M&I
2021			
Groundwater	1,037,700	951,300	86,400
Surface Water	82,700	81,300	1,400
Total	1,120,400	1,032,600	87,800
2022			
Groundwater	924,900	842,700	82,200
Surface Water	153,400	151,900	1,500
Total	1,078,300	994,600	83,700

Note: All values are rounded to nearest 100 Acre-Feet (AF).
M&I includes Urban, small systems, rural domestic, and industrial uses

A more detailed breakdown by GSA using the DWR Total Water Use table is provided in **Appendix D**.

The data presented in **Table 3-5** is an overview of recent water conditions and is not necessarily representative of long-term average hydrology. This information was not used to develop an annual water budget for comparison to change in groundwater storage. An annual water budget would likely not be accurate due to time lags in various forms of recharge, and inaccuracies that tend to balance out over longer time periods. However, this information will eventually be used in a long-term multi-year water budget analysis.

3.4 Change in Groundwater Storage

Legal Requirements:
§356.2(b) A detailed description and graphical representation of the following conditions of the basin managed by the Plan:
(5) Change in groundwater storage shall include the following:
(A) Change in groundwater in storage maps for each principal aquifer in the basin.
(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.

The following section discusses the change in groundwater storage for Kaweah Subbasin between WYs 2021 and 2022.

During GSP development, the method for estimating the change in groundwater storage largely relied upon using the "Inventory Method" of Water Budget Accounting (i.e., on-paper water budget) with some inputs from the Kaweah Subbasin Hydrologic Model (KSHM). The Water Budget is discussed in detail in the submitted GSPs.

For this Annual Report, the KSHM was not re-run to update numbers. Rather than re-running the KSHM, change in storage estimations were performed using different computational methods for the Unconfined and Confined Aquifer.

1. Unconfined Aquifer: Utilizing the contour maps to calculate the change in groundwater levels from year to year and apply the difference to average estimates of Specific Yield for the Subbasin. The average estimate of Specific Yield is calculated from multiple sources, as described below.
2. Confined Aquifer: Utilizing subsidence InSAR data available from DWR (when available) to calculate the volume of water expelled from the compression of clay layers.

To be consistent with the change in groundwater storage estimates developed in the GSPs, the Unconfined Aquifer change in storage values were calculated using the groundwater levels from "Fall to Fall" to account for an entire water year. For example, for estimating the change in storage for WY 2021, the change in groundwater elevations between Fall 2020 and Fall 2021 were used for the computations.

The groundwater elevation change was then applied against three different specific yield values. The first was specific yield estimates for the Kaweah Subbasin based on the U.S. Geologic Survey (USGS) Professional Paper 1401. The second specific yield estimates used were based on the Water Resources Investigation report developed by Fugro and updated for the Kaweah Subbasin during the GSP development by the GEI and GSI consultant team. The last specific yield estimate applied was a 10% specific yield average across the entire Subbasin, which has been a local estimation method for average conditions. The three specific yield estimates were used to develop an estimate of the change in storage volumes. These estimates fell within ±20% of each other, ±20% was accepted as an acceptable accuracy range. The average of these three methods for each GSA was used to develop the annual change in storage for WYs 2021 and 2022 for the Unconfined Aquifer.

For estimating the Confined Aquifer change in storage, the InSAR data available through DWR was used for WY 2021 and 2022. The InSAR data provides an annual change from year to year which can be used to estimate the change in groundwater storage. The average total subsidence for a given year across a GSA was applied across the acreage within the GSA having subsidence data available. Note, the subsidence data is not continuous across the entire Subbasin and these gaps were generally not interpolated across due to varying complexities of the geology. This vertical elevation change (feet) applied across a GSA area (acres) results in a volume (AF) of estimated change in groundwater storage. **Figure 3-1** is a map showing the subsidence in the Kaweah Subbasin from June 2015 through September 2022. While the InSAR data shows at least a minimal amount of subsidence present across the majority of the Subbasin, the bulk of the subsidence is occurring in the western portion of the Subbasin where the Corcoran Clay is present. **Figure 3-2** is a map showing the subsidence in the Kaweah Subbasin between Fall 2021 and Fall 2022, corresponding with WY 2022.

Local data sets are utilized to track localized subsidence in the Kaweah Subbasin, however some areas are lacking significant history, particularly on the east side of the Subbasin. The East Kaweah GSA established its Subsidence Monitoring Network in 2020. There is now the ability to compare year over year change for the critical infrastructure (Friant-Kern Canal and Plainview Well) in that area.

This method uses the following key assumptions for estimating the Confined Aquifer storage change.

1. The change in groundwater storage estimate due to subsidence is assumed to be in the Confined Aquifer zone. It is understood that there is some interaction and influence between the Confined Aquifer below and the Unconfined Aquifer above, however the magnitude of this interaction and influence is unknown with the current data available.
2. It is assumed the volume of water released due to subsidence is a 1:1 ratio to ground surface deformation. This assumption is made based on the Confined Aquifer being saturated (no air space) and the Specific Storage being very near zero for the Corcoran Clay.

Table 3-6 summarizes the volumes of the Change in Storage for the Kaweah Subbasin in WYs 2021 and 2022. **Table 3-7** then depicts the annual and cumulative change in storage for three periods.

1. *The first corresponds with change in storage since the beginning of the Baseline period established in the GSPs (WY 1997).*
2. *The second corresponds with the change in storage since SGMA was implemented (WY 2015).*
3. *The last is the change in storage for the SGMA Implementation period (WY 2020).*

Figure 3-3 is a graphical representation of the change in storage and groundwater extraction for WYs 2015-2022. Each year is noted as either Wet, Normal, or Dry water year types based on the average precipitation at the Visalia NOAA station. A figure depicting the change in groundwater levels between Fall of 2021 and Fall 2022, and by proxy the change in groundwater storage for the Unconfined Aquifer, for WY 2022 is in **Appendix F**.

Table 3-6 Principal Aquifer Change in Groundwater Storage

Water Year	Aquifer	EKGSA	GKGSA	MKGSA	Total
2021	Unconfined	-141,000	-276,000	-89,000	-506,000
	Confined	0	-8,000	-6,000	-14,000
	Total	**-141,000**	**-284,000**	**-95,000**	**-520,000**
2022	Unconfined	-67,000	-157,000	-118,000	-342,000
	Confined	0	-9,000	-8,000	-17,000
	Total	**-67,000**	**-168,000**	**-126,000**	**-359,000**

Note: Change in storage values are rounded to nearest 1,000 Acre-Feet (AF).

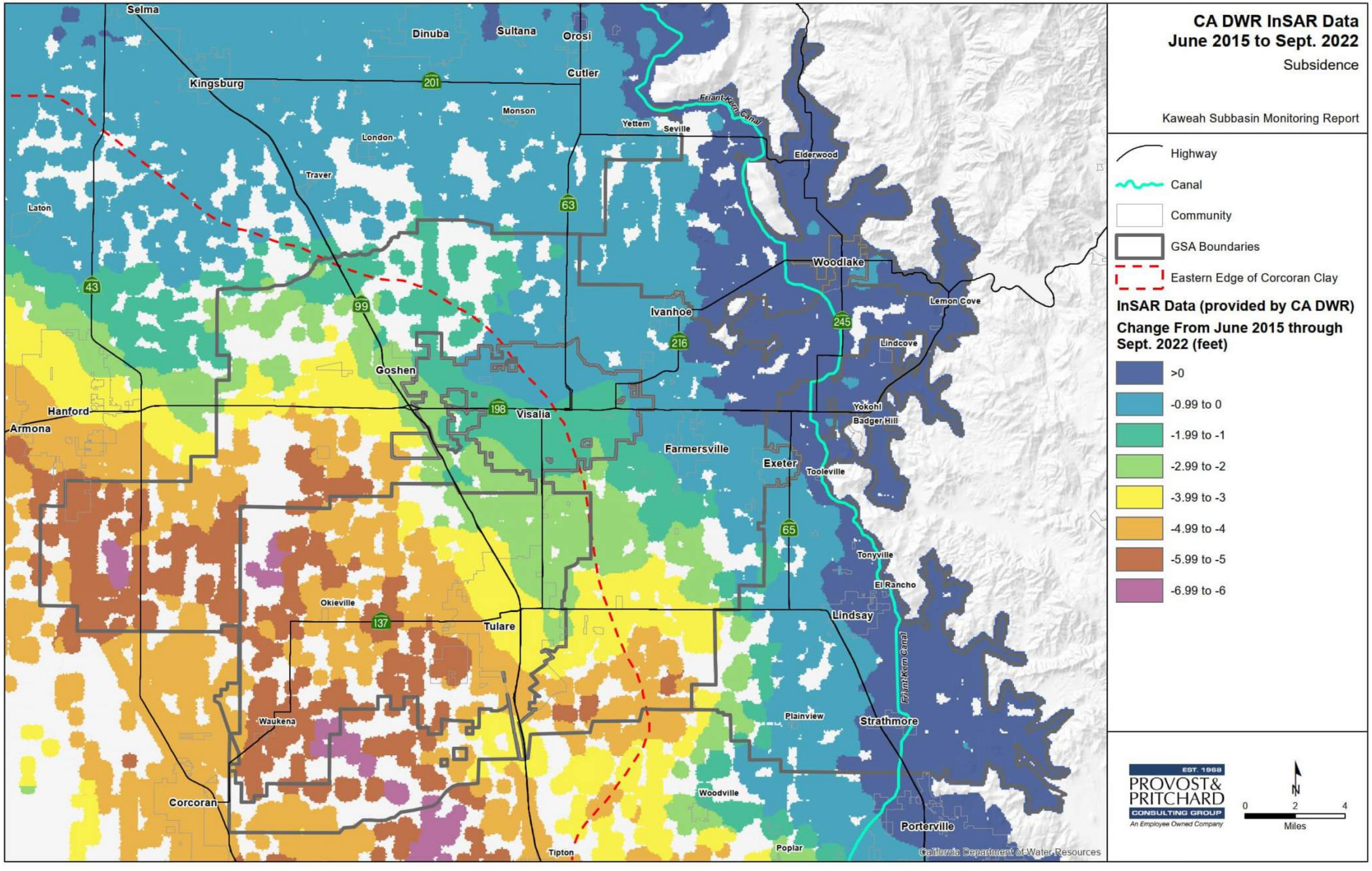

Figure 3-1 Kaweah Subbasin Subsidence from 2015 through 2022

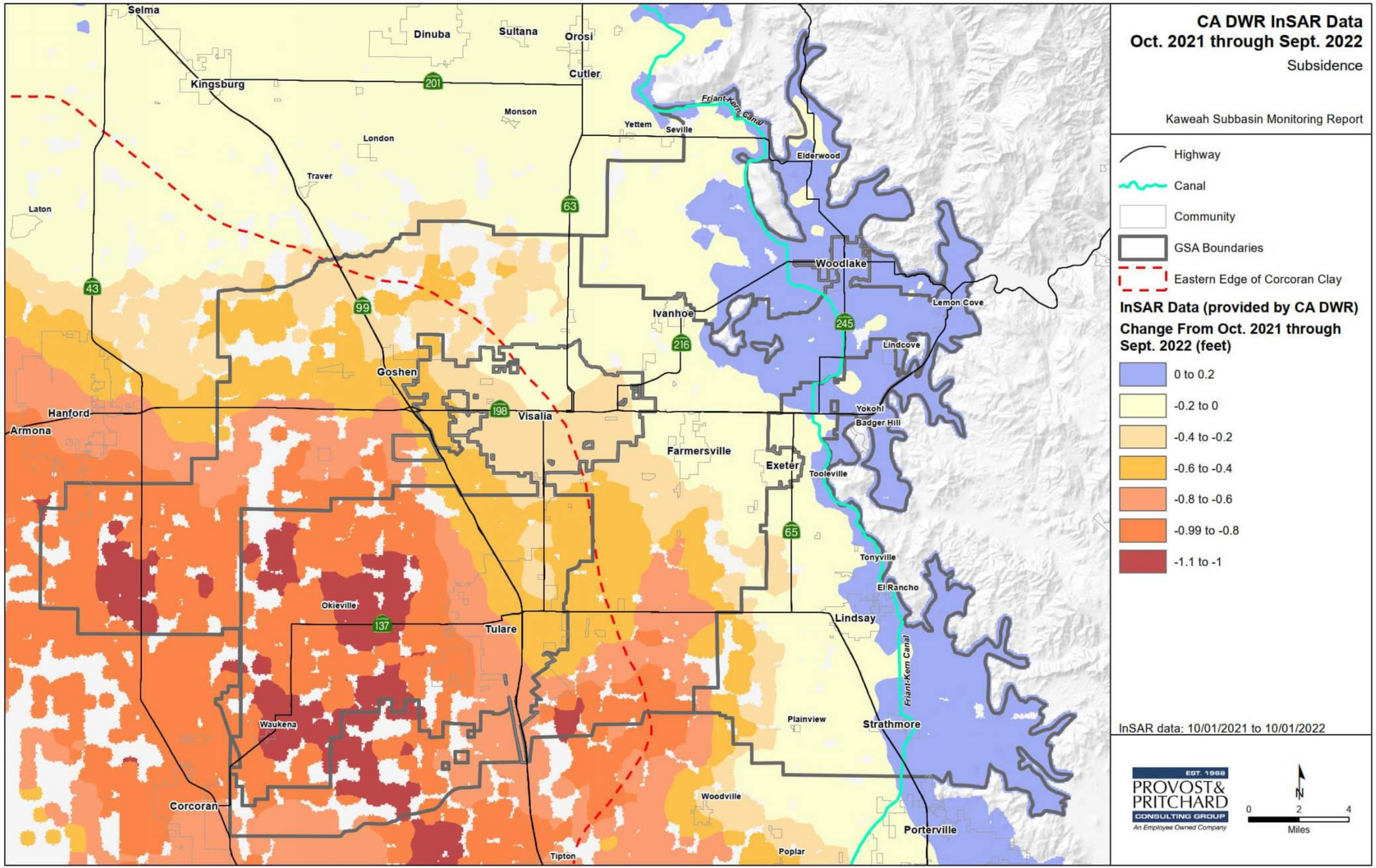

Figure 3-2 WY 2022 Subsidence Monitoring

Table 3-7 Kaweah Subbasin Change in Groundwater Storage Table

								Kaweah Subbasin			
Water Year	Rainfall			EKGSA Change in Storage	GKGSA Change in Storage	MKGSA Change in Storage	Change in Storage	Cumulative Change in Storage Since WY 1997	Cumulative Change in Storage Since WY 2015	Cumulative Change in Storage Since WY 2020	GW Extraction
	Inches	% of Average	Water Period								
2015	6.16	66%	Dry	-140,000	-293,000	-182,000	-615,000	-2,301,000	-615,000		1,067,600
2016	9.77	105%	Normal	-40,000	-80,000	-69,000	-189,000	-2,490,000	-804,000		807,500
2017	13.96	151%	Wet	56,000	512,000	293,000	861,000	-1,629,000	57,000		511,400
2018	6.17	67%	Dry	-53,000	-243,000	-102,000	-398,000	-2,027,000	-341,000		903,800
2019	10.74	116%	Wet	52,000	91,000	66,000	209,000	-1,818,000	-132,000		686,300
2020	8.03	87%	Dry	-41,000	-194,000	-183,000	-418,000	-2,236,000	-550,000	-418,000	1,023,200
2021	4.53	49%	Dry	-141,000	-276,000	-89,000	-506,000	-2,742,000	-1,056,000	-924,000	1,038,200
2022	7.37	79%	Dry	-67,000	-157,000	-118,000	-342,000	-3,084,000	-1,398,000	-1,266,000	925,400
Max	22.75	245%		56,000	512,000	293,000	861,000				1,067,600
Min	3.81	41%		-141,000	-293,000	-183,000	-615,000				511,400
Average	9.28	100%		-47,000	-80,000	-48,000	-175,000				870,400

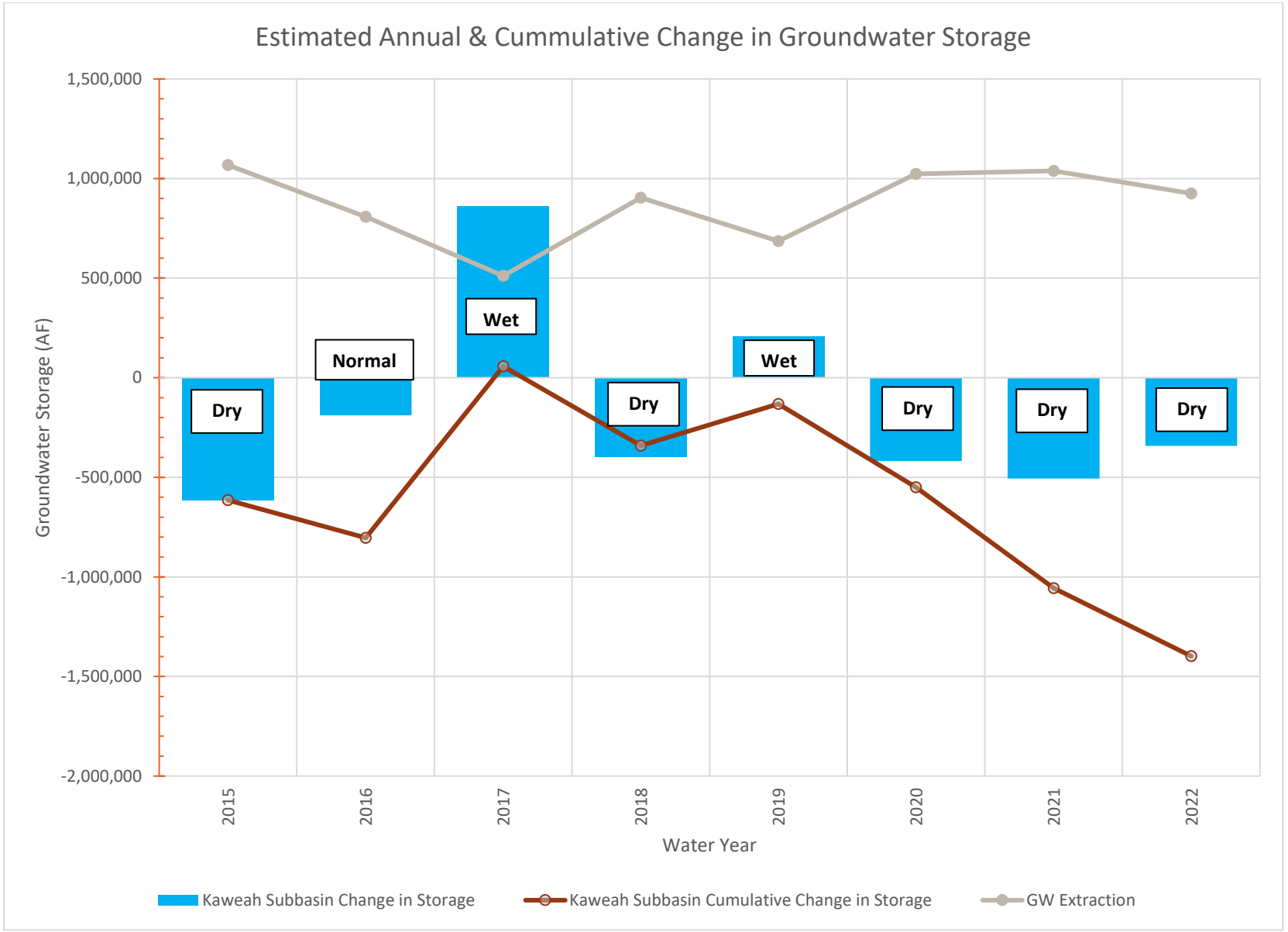

Figure 3-3 Kaweah Subbasin Groundwater Change in Storage

4 Implementation Status

Legal Requirements:
§356.2(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.

The Kaweah Subbasin GSAs are three years into the implementation of their respective GSPs A significant portion of WY 2022 was also dedicated to revising the GSP following DWR's Incomplete determination. This revised GSP was submitted in July 2022. In the WY 2022, continuing implementation work efforts included developing/finding funding sources, groundwater pumping policy discussion and development, and gathering of information to fill data gaps. More detail is anticipated to be provided in future reports.

4.1 2022 GSP Revision

In January 2022, DWR issued its initial determination of the 2020 Kaweah Subbasin GSPs and Coordination Agreement. DWR issued an Incomplete Determination with three deficiencies needing to be addressed during a 180-day response period that ended near the end of July 2022. The deficiencies were:

1. *The GSPs do not set the Sustainable Management Criteria for lowering groundwater levels in the manner required by SGMA and the GSP Regulations.*
2. *The GSPs do not set the Sustainable Management Criteria for subsidence in the manner required by SGMA and the GSP Regulations.*
3. *The GSPs do not consistently identify interconnect surface water system, or the quantity and timing of depletion of those systems due to groundwater use. The GSPs do not consistently define Sustainable Management Criteria for depletion of interconnected surface water in the manner required by SGMA and the GSP Regulations.*

The Kaweah Subbasin GSA staff, legal counsels, committees, and consultants worked diligently through the 180-day period to evaluate the Sustainable Management Criteria (SMC) for lowering groundwater levels and subsidence to be protective of beneficial uses and users within the Kaweah Subbasin. The SMC for lowering groundwater levels were adjusted to be protective of the 90th percentile depths for all well uses. A corresponding framework for a well mitigation plan was developed with the intention of having a fully developed well mitigation plan developed during WY 2023. The SMC for subsidence was adjusted to have no more than 10 inches of subsidence in the eastern portion of the Kaweah Subbasin, focusing on limiting any impacts to the Friant-Kern Canal. On the western side of the Kaweah Subbasin, subsidence was set to be limited to a total of nine (9) feet to protect conveyance facilities, wells, and regional flooding. The Measurable Objective for subsidence is zero subsidence. Interconnected surface waters were listed as a data gap with preliminary SMC set in the interim while the East Kaweah and Greater Kaweah GSAs work through a work plan to gather data and better understand any presence of interconnected surface water and potential depletions that could be caused by groundwater pumping.

4.2 Filling Data Gaps

Since the submittal of the GSP, the Kaweah GSAs have been focusing on filling data gaps listed in their respective GSPs to bolster the understanding of the Subbasin and improve management of groundwater. Some of the priority data gaps the Kaweah GSAs are evaluating are listed below. This is not intended to be an exhaustive list, but those where action has begun since the GSPs were submitted.

- Location, construction information, and use of groundwater wells throughout the Subbasin. The Kaweah Subbasin was successful in Round 3 of the Prop 68 grant to fund video logging of representative monitoring wells. The goal of this effort is to gain construction information on key wells across the subbasin. Due to a third straight dry year in WY 2022, progress on video logging wells was not successful due to continued use of the wells. Due to the timing of the grant funding, DWR allowed the Kaweah Subbasin to shift scope to other data gap filling needs prior to the sunset of the funding

window. The Kaweah GSAs used the remaining funds for three activities which were: drilling four new monitoring wells in the eastern portion of the Subbasin, purchasing additional subsidence monitoring equipment to bolster the network previously set in place by Kaweah Delta Water Conservation District, and purchasing water quality sampling equipment to improve the capability of testing groundwater quality. The monitoring network well construction details are still a data gap needing to be filled, which the Kaweah GSAs are evaluating approaches to accomplish.

- The Monitoring Networks continue to gather data on groundwater levels, water quality, and subsidence to monitor and manage the groundwater aquifers. Areas where the monitoring currently implemented is insufficient have been identified and plans are being developed to answer outstanding questions, especially regarding aquifer designations and identification of new or alternative wells to replace wells that will not serve for monitoring purposes.
- Water Demand Analysis. The Kaweah Subbasin is evaluating methods for monitoring and tracking water demand and groundwater use. Methods being evaluated are well metering, use of power meter records, and satellite ET imaging through firms such as LandIQ.
- Water Marketing Strategy (WMS). Funding through a USBR WaterSMART application has been awarded to the Tulare Irrigation District to evaluate a framework for a water market within the Subbasin, should one look to be put in place as a management action. In WY 2021 a Strategy Committee was established with representatives from across the Subbasin. This Committee selected a consultant team to assist in developing a marketing strategy for the Kaweah Subbasin. In WY 2022, the consultant and Strategy Committee held several meetings and opportunities for stakeholders to provide input on items to be included in the WMS. The target is for a WMS document to be developed and available for consideration by the three Kaweah Subbasin GSAs late in WY 2023 to early WY 2024.
- Resource Conservation Investment Strategy (RCIS). The Kaweah Subbasin was successfully awarded grant funding to work with partners to evaluate a potential land conservation strategy. A draft strategy document was developed late in WY 2021. A public comment period and corresponding edits were held through WY 2022. The RCIS document is now essentially complete. Additionally, the Kaweah Subbasin was one of the Subbasins to apply and be awarded funding through the Multi-Benefit Land Repurposing Program. This awarded $10 Million to the Kaweah Subbasin to support conservation and land fallowing programs.
- Integration of subsidence modeling is being undertaken. The Kaweah Subbasin has partnered with Stanford University to incorporate a land subsidence package into the existing Kaweah Subbasin groundwater model. Land subsidence modeling is informed from SkyTEM electromagnetic data and NASA InSAR land surface mapping. Data resulting from this effort are currently under analysis.
- Interconnected Surface Water Work Plan During the 2022 GSP revisions following the DWR Incomplete Determination, the East Kaweah and Greater Kaweah GSAs developed work plans to fill data gaps and understand if there are interconnected surface waters within the Kaweah Subbasin and, if so, what impacts could groundwater pumping be contributing to depletions. The goal of the work plan is to have more information in place to update the Sustainable Management Criteria related to Interconnected Surface Water by the 2025 GSP Update.

4.3 Projects

In April 2021, the Kaweah Subbasin GSAs were successful on a Prop 68 Implementation Grant application for four recharge projects that were in their GSPs. Two projects in the EKGSA and one each in the GKGSA and MKGSA. In WY 2022, significant progress was made on all four projects. Two, the Lindsay Basin for EKGSA and the Paragein Basin Expansion for GKGSA were put into construction and nearly completed by the end of 2022. Both are slated to be completed during WY 2023. The remaining two projects, the Lewis Creek Recharge Project for EKGSA and Okieville Basin for MKGSA have finalized design plans and construction is anticipated to begin in WY 2023 with completion early in WY 2024.

Additionally, agencies within the Kaweah Subbasin have been focused on recharge pre-SGMA. Projects through agencies such as Lindmore ID, Tulare ID and Kaweah Delta WCD have been undertaken to provide more ability to control and recharge surplus surface water supplies. Tulare ID, Consolidated Peoples Ditch Company, and Visalia and Kaweah Water Company have commenced the permitting process for the Seaborn and McKay Point reservoirs, which will provide additional storage and more efficient delivery of surface water, especially when surplus supplies are available. Seeking funding opportunities and sources is also underway. The Lindsay-Strathmore ID has continued its review and analysis of a potential banking project on its property known as the Rancho de Kaweah. Further analysis will continue into WY 2023 that will set the next steps for the project.

The Kaweah Subbasin GSAs will continuously evaluate and vet new projects and management actions through the Implementation Period. Through GSP development several projects and management actions were listed, but it was understood that those included in the GSPs were not a comprehensive list of all the projects or management actions that may be undertaken during the Implementation Period. The Kaweah Subbasin GSAs intend to follow a similar process to the Integrated Regional Water Management (IRWM) Program that continually evaluates and vets projects in public settings through discussion at advisory committees and Board meetings. These projects will be memorialized in future Annual Monitoring Reports as these annual submittals provide more frequent documentation opportunity than 5-year GSP updates. The individual GSAs will also house an active projects and management actions list on their websites.

New projects were proposed in response to the 2021 Implementation Grant opportunity that was due in February 2022. These new projects are listed below and thereby incorporated into the Kaweah GSA's Project Lists. The Kaweah Subbasin was successful on the 2021 Implementation Grant and executed a new funding agreement with DWR in September 2022. The projects receiving funding are noted.

- *East Kaweah GSA*
  - *Lindsay-Strathmore ID Upper Lewis Creek Recharge Project (receiving 2021 Implementation Grant funding)*
  - *Sentinel Butte MWC Flood Capture Project (receiving 2021 Implementation Grant funding)*
- *Greater Kaweah GSA*
  - *Kings County WD Delta View Project (receiving 2021 Implementation Grant funding)*
  - *KDWCD Kaweah Oaks Preserve Flood Control and Recharge Project (receiving 2021 Implementation Grant funding)*
  - *St. Johns WD Vandestelt Recharge Basin (receiving 2021 Implementation Grant funding)*
- *Mid-Kaweah GSA*
  - *City of Visalia Cameron Creek Linear Recharge Project (receiving 2021 Implementation Grant funding)*
  - *City of Visalia North Cameron Creek Recharge Basin Project*
  - *City of Visalia South Cameron Creek Recharge Basin Project*
  - *City of Tulare Catron Basin*

At the end of 2022, the GSAs applied for a SGMA Implementation Round 2 Implementation grant through the SGM Grant Program. Within this application were two components a project and a management action. The project included was the City of Tulare Catron Basin Project within the MKGSA. The other component was associated with the newly developed mitigation program during the 2022 GSP Revision and to be further developed in WY 2023. The application set aside substantial funds to assist in supporting impacted wells, largely within disadvantaged communities (DAC), to have access to drinking water supplies.

4.4 Management Actions

Some of the most significant action taken during WY 2022 in the Kaweah Subbasin is development and implementation of groundwater demand reduction management actions. In response to a third year of dry conditions and growing impacts to wells, the Kaweah Subbasin showed adaptive management and moved forward with measures to reduce groundwater pumping much sooner than originally anticipated in the 2020 GSPs. Rules and Regulations related to groundwater pumping allocations were in development for much of

WY 2022 for the EKGSA and GKGSA. The EKGSA had a groundwater allocation in place for all of WY 2022. The MKGSA Emergency Ordinance went into effect May 1, 2022, thus in place for almost half of WY 2022 and during the irrigation season when the largest amount of groundwater is pumped. The GKGSA spent a significant time evaluating a land fallowing program and established a committee of stakeholders to assist in development. The program, once enacted, would be the first in the Kaweah Subbasin. Further development of the rules and procedures are being developed in WY 2023.

5 Sustainable Management Criteria

This chapter contains a report on the status of the relevant Sustainable Management Criteria (SMC) in the Kaweah Subbasin. The status of the five applicable criteria (groundwater levels, groundwater storage, subsidence, water quality, and interconnected surface water) will be discussed. For the Kaweah Subbasin seawater intrusion is not an applicable sustainability indicator. Therefore, no progress indicators for seawater intrusion will be discussed in this chapter.

5.1 Sustainability Goal

The three Kaweah Subbasin GSPs developed one sustainability goal collaboratively through the submitted Coordination Agreement. The GSP revision included an updated Executed Kaweah Subbasin Coordination Agreement. The revised sustainability goal for the Kaweah Subbasin is for each GSA to manage groundwater resources to preserve the viability of existing agricultural enterprises of the region, domestic wells, and the smaller communities that provide much of their job base in the Subbasin, including the school districts serving these communities. The goal will also be to strive to fulfill the water needs of existing and amended county and city general plans that commit to continued economic and population growth within Tulare County and portions of Kings County.

This goal will be achieved by:

- *The implementation of the EKGSA, GKGSA and MKGSA GSPs, each designed to identify phased implementation of measures (projects and management actions) targeted to ensure that the Kaweah Subbasin is managed to avoid undesirable results and achieve measurable objectives by 2040 or as may be otherwise extended by DWR.*
- *Collaboration with other agencies and entities to arrest chronic groundwater-level and groundwater storage declines, reduce or minimize land subsidence where significant and unreasonable, decelerate ongoing water quality degradation where feasible, and protect the local beneficial uses and users.*
- *Assessments at each interim milestone of implemented projects and management actions and their achievements towards avoiding undesirable results as defined herein.*
- *Continuance of projects and management actions implementation by the three GSAs, as appropriate, through the planning and implementation horizon to maintain this sustainability goal.*

The Kaweah Subbasin's sustainability goal aims to be an iterative, long-term, and qualitative target to eliminate undesirable results in the Subbasin over the next twenty years. In addition, each GSA designed their resulting quantitative sustainable management criteria to ultimately steer the basin towards the sustainability goal. Therefore, annual progress towards the qualitative goal will be communicated for each sustainability criteria via progress against interim-milestones and toward measurable objectives.

5.2 Overview of Management Areas & Threshold Regions

§354.20 allows each GSA to define one or more management areas within the GSA to facilitate the implementation of the GSP. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout the basin. Due to the diversity of geopolitical and hydrogeologic patterns within the Subbasin some Kaweah Subbasin GSAs, to facilitate the implementation of their individual GSPs, subdivided their respective GSAs into management areas. The following sections describe these management areas, if applicable.

5.2.1 EKGSA

The EKGSA sub-divided the EKGSA into nine management areas and ten threshold regions. These management areas and threshold regions are applicable across all five sustainability indicators applicable to the Kaweah Subbasin. To assist in implementation of the EKGSA GSP, the management areas were determined primarily by geopolitical boundaries of membership agencies within the GSA. To better account for

hydrogeologic behavior, these management areas were subdivided to create threshold regions. A full explanation of the management area and threshold region development process can be found in the **EKGSA GSP Section 3.3** and **Appendix 3-A**.

5.2.2 GKGSA

The GKGSA has not currently designated any management areas at this time but may elect to in the future. However, during the 2022 GSP Revision, Analysis Zones were developed across the entire Kaweah Subbasin to support revisions to SMC. During the 2022 GSP Revision, these analysis zones were developed to group wells that would experience similar impacts by accounting for GSP management areas, groundwater elevations, base of aquifer, aquifer type, beneficial user type, land use, and similar completed well depths. A total of 39 spatial analysis zones were delineated. Twenty-three zones (analysis zones 1-23) cover the Single Aquifer System east of the limit of the Corcoran Clay, Zones 11-21 are within the GKGSA. Sixteen zones (analysis zones 24-39) underlain by Corcoran Clay are split into an Upper and Lower Aquifer System based on the depth of the Corcoran Clay. Zones 24, 25, and 32-38 are within the GKGSA.

5.2.3 MKGSA

MKGSA established three management areas within the GSAs' boundary. The three areas consist of the respective jurisdictional areas of MKGSA's three members, City of Visalia, City of Tulare, and the Tulare Irrigation District. In addition to political boundaries, management area delineations took into consideration historical well hydrograph trends. A full explanation of the management area development process can be found in the **MKGSA GSP Section 2.6**. During the 2022 GSP Revision, the analysis zones (described above) were also developed within the MKGSA to support revisions to SMC. Of the 23 Single Aquifer System east of the limit of the Corcoran Clay, Zones 22 and 23 are within the MKGSA. Of the 16 underlain by Corcoran Clay are split into an Upper and Lower Aquifer System based on the depth of the Corcoran Clay, Zones 26-31 and 39 are within the MKGSA.

5.3 Groundwater Level Sustainable Management Criteria

5.3.1 Kaweah Subbasin Groundwater Level Undesirable Result

With respect to groundwater level declines, the Kaweah Subbasin determined that undesirable results occur when one-third of the representative monitoring sites across all three GSAs exceed their respective minimum threshold water level elevations. Should this happen, a determination shall be made of the then-current GSA water budgets and resulting indications on net reduction in storage. Through this evaluation, water budgets in neighboring subbasins will also be reviewed and discussed with the appropriate neighboring GSAs to ascertain if the causes of an undesirable result are due to external factors.

In the Kaweah Subbasin, changes in groundwater storage will be measured by proxy via the set groundwater level Minimum Thresholds (MT), interim milestones, and Measurable Objectives (MO). Therefore, any progress on the changes in groundwater storage with respect to Sustainable Management Criteria will not be measured directly. Rather progress will be reported based on the current status of meeting groundwater level interim milestones and the final Measurable Objective in each of the Subbasin GSAs. These management criteria were established by each GSA in their respective GSPs. Full explanations of the methodology for determining criteria can be found in **EKGSA GSP Appendix 3-A** for East Kaweah, **GKGSA GSP Section 5.3** and **Appendix 5-B** for the Greater Kaweah, and **MKGSA GSP Appendix 5B** for the Mid-Kaweah.

Generally, all Groundwater Level Monitoring Network locations experienced lowering during the WY 2022 period. Several wells are at or approaching their MTs due to the dry conditions. However, the Kaweah Subbasin is working to remedy this through adaptive management of the Subbasin. At this time, the current Subbasin-wide definition of Undesirable Result occurring when one-third of representative sites reach their MT, is not occurring. However, there are several wells unable to get readings due to heavy reliance on groundwater and wells having to run frequently.

5.3.2 Progress of Groundwater Levels

Groundwater level monitoring is performed by various agencies within the Kaweah Subbasin, with much of the historical data being previously reported through the CASGEM program. A significant portion of the Monitoring Network for the Kaweah Subbasin leaned on the existing CASGEM framework for a starting point. The Spring and Fall readings available for the Kaweah Subbasin Groundwater Level Monitoring Network are provided in **Appendix A**. A summary of where wells are with respect to the MO and MT is provided **Table 5-1** below. This table reflects the changes to some of the MOs and MTs made in the July 2022 GSP revision; the values for each season for 2021 and 2022 were compared to these updated thresholds and reflect the number of wells in the revised GSP. Wells within the Margin of Operational Flexibility (MoOF) are those that are below its MO and above its MT. Additionally, as can be seen in the table, there are several wells being incorporated into the respective GSA monitoring that do not have data available for this report. This was because the wells were pumping at the time of measurement or access was not granted to the wells. Additionally, there are some new monitoring wells that were listed in the 2020 GSP that don't have MOs and MTs in the 2022 GSP because there were not enough data to establish them. The Kaweah Subbasin GSAs will continually evaluate the respective MO and MT at Monitoring Network Wells for appropriateness.

Table 5-1 Groundwater Levels Monitoring Network Comparison to Sustainable Management Criteria

East Kaweah GSA	Spring 2021	Fall 2021	Spring 2022	Fall 2022
Above MO	16	8	9	6
In MoOF	6	7	9	9
Within 20% of MT	7	6	6	7
Below MT	1	5	3	8
Dry	-	-	0	1
No Data Available	11	15	13	9
Greater Kaweah GSA	**Spring 2021**	**Fall 2021**	**Spring 2022**	**Fall 2022**
Above MO	21	22	20	23
In MoOF	1	2	0	0
Within 20% of MT	1	1	1	1
Below MT	0	0	0	2
Dry	-	-	-	-
No Data Available	16	14	18	13
Mid-Kaweah GSA	**Spring 2021**	**Fall 2021**	**Spring 2022**	**Fall 2022**
Above MO	15	19	12	14
In MoOF	0	1	1	1
Within 20% of MT	0	1	-	-
Below MT	1	1	1	1
Dry	-	-	-	-
No Data Available	22	16	22	19
No MO/MT	-	-	3	4

5.4 Water Quality

5.4.1 Kaweah Subbasin Water Quality Undesirable Result

A water quality undesirable result will occur if one-third of all Subbasin designated water quality monitoring sites exhibit a minimum threshold exceedance, and those exceedances are all associated with GSA management actions and/or projects. Groundwater quality degradation will be evaluated relative to established Maximum Contaminant Levels (MCLs) or other agricultural constituents of concern (COC) by applicable regulatory agencies where appropriate. Based upon historical water quality data and the respective beneficial uses of each monitoring site, each GSA selected a unique suite of COCs to test for throughout the monitoring networks.

Explanations of the methodology for determining criteria can be found in **EKGSA GSP Appendix 3-B** for East Kaweah, **GKGSA GSP Section 5.6** for the Greater Kaweah, and **MKGSA GSP Section 5.6** for the Mid-Kaweah.

5.4.2 Progress of Groundwater Quality

Groundwater quality monitoring in the Kaweah Subbasin is one of the more challenging data sets as historically there has not been consistent, wide-spread monitoring for several COC. The most consistent monitoring is related to individual drinking water systems focusing in a discrete, rather than regional, understanding. The Groundwater Quality Monitoring Networks developed through the GSPs will strive to bolster this data set going forward with the goal to provide more understanding on the groundwater quality and how it may be impacted and/or changing through groundwater management activities.

The following tables are a summary of the COC 10-year average concentrations, by GSA, for the wells with data available. Given that SGMA implementation is in its infancy under the GSAs, well concentrations above the threshold limit are considered a baseline condition that will be used for evaluating future COC change.

As shown in **Table 5-2**, the primary COC in the Kaweah Subbasin is Nitrogen. This is a legacy issue that has largely been the focus of the Irrigated Lands Regulatory Program (ILRP). While undesirable results are not yet occurring with respect to this constituent, the Kaweah Subbasin intends to work with local ILRP coalitions where feasible during implementation of groundwater management actions.

Table 5-2 Groundwater Quality Monitoring Network Comparison to Sustainable Management Criteria

Area	Attribute	Constituent									
		AS	CL	CR6	DBCP	NA	NO3N	PCATE	PCE	1,2,3-TCP	TDS
EKGSA	Count of Exceedances	2	2	0	1	11	20	1	-	1	2
GKGSA	Count of Exceedances	5	2	1	0	0	18	0	0	1	1
MKGSA	Count of Exceedances	4	0	0	0	0	19	0	2	4	0
Subbasin	Count of Total Wells	228	228	228	228	228	228	228	228	228	228
Subbasin	Count of Exceedances	11	4	1	1	11	57	1	2	6	3
Subbasin	Percent of Exceedances	5%	2%	0%	0%	5%	25%	0%	1%	3%	1%

Table 5-3 EKGSA Water Quality Summary

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	1,2,3-TCP	TDS
Threshold Level		10	500	20	0.2	50	10	6	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	mg/L
Well ID	Well Name									
5400550-001	Seville WC Well 01	1.35	33.50	-	-	36.50	**25.49**	-	-	337.50
5400550-003	Seville WC Well 02	1.63	58.33	0.38	-	41.00	**21.24**	-	-	350.00
5400567-001	Tooleville Well 01	-	286.67	12.12	-	**110.00**	**20.87**	-	-	703.33
5400567-002	Tooleville Well 02	-	**719.17**	-	-	**295.00**	**20.24**	-	-	**1,383.33**
5400647-001	Yokohl MWC Well 01	-	22.00	1.30	-	39.33	**13.91**	-	-	310.00
5400647-003	Yokohl MWC Well 03	-	34.00	1.20	-	46.00	**29.35**	-	-	340.00
5400682-001	Plainview Well 01	2.80	23.00	3.10	-	47.50	**23.47**	-	-	260.00
5403043-001	Yettem WS Well 01	2.90	20.80	-	-	42.20	**16.05**	-	-	273.33
5403043-002	Yettem WS Well 02	2.66	17.33	-	-	42.83	**12.93**	-	-	245.00
5410003-002	Exeter Well E06W	-	38.00	2.30	0.061	48.67	-	-	-	460.00
5410003-004	Exeter Well E09W	-	18.33	2.10	0.056	45.67	**13.60**	-	-	386.67
5410003-007	Exeter Well E11W	-	12.33	1.70	-	41.00	**13.95**	-	-	316.67
5410003-016	Exeter Well E14W	-	76.33	2.50	-	**65.67**	-	-	-	306.67
5410006-014	Lindsay Well 14	-	206.00	4.45	**0.228**	**124.00**	**14.87**	-	-	614.00
5410006-015	Lindsay Well 15	-	**891.11**	4.20	-	**250.00**	7.28	-	-	**1,808.11**
5410007-003	No. Lindsay Hts	**12.03**	106.67	4.98	-	**94.67**	-	**9.464**	-	360.00
5410007-004	No. Section 8 #2	-	46.00	-	0.013	**58.00**	**48.67**	-	-	500.00
5410007-005	So. Lindsay Hts	**11.70**	110.00	5.75	-	**101.33**	**35.53**	-	-	463.33
5410007-006	So. Section 8	-	51.33	3.10	-	**66.67**	-	-	-	486.67
5410007-007	Stark Section 8 #2	-	97.50	2.00	-	**63.50**	**50.45**	-	-	525.00
5410012-002	Strathmore Well 02	-	35.50	2.10	-	**60.50**	**33.31**	-	-	362.50
5410019-002	Ivanhoe PUD Well 02	-	23.33	1.10	-	39.67	**24.69**	-	**0.016**	403.33
5410019-004	Ivanhoe PUD Well 04	-	8.87	-	-	20.67	6.18	-	-	230.00
5410019-006	Ivanhoe PUD Well 06	-	25.50	1.30	-	39.50	-	-	-	430.00
5410019-007	Ivanhoe PUD Well 07	-	53.00	1.45	0.044	46.00	**31.05**	-	-	536.67

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	1,2,3-TCP	TDS
Threshold Level		10	500	20	0.2	50	10	6	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	mg/L
Well ID	Well Name									
5410020-004	Woodlake Well 08	-	4.20	-	-	14.00	-	-	-	180.00
5410020-005	Woodlake Well 09	-	3.35	-	-	12.75	-	-	-	162.50
5410020-006	Woodlake Well 10	-	18.50	-	-	25.00	4.94	-	-	260.00
5410020-007	Woodlake Well 11	-	23.75	-	-	24.75	3.46	-	-	230.00
5410020-008	Woodlake Well 12	-	15.25	-	-	24.50	**16.01**	-	-	275.00
5410039-002	Plainview South Well	2.40	20.00	3.20	0.087	47.00	**20.08**	-	-	320.00
5410039-004	Plainview Well 03	4.00	12.00	3.20	-	45.00	7.01	-	-	210.00

Table 5-4 GKGSA Water Quality Summary

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	250	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
1600013-001	Lakeside Elementary School	7.50	**260.00**	-	-	140.00	-	-	-	-	630.00
1600249-001	Del Monte Foods, Inc. Plant #24	**71.53**	27.67	-	-	70.67	-	-	-	-	172.67
1600249-003	Del Monte Foods, Inc. Plant #24	-	14.25	-	-	83.80	-	-	-	-	257.50
1600249-004	Del Monte Foods, Inc. Plant #24	**85.00**	32.00	-	-	71.00	-	-	-	-	210.00
1600249-005	Del Monte Foods, Inc. Plant #24	**19.04**	11.75	-	-	84.25	-	-	-	-	242.50
1600602-001	Nichols Farms	3.90	34.60	0.32	-	47.45	7.76	-	-	-	200.00
1600602-002	Nichols Farms	3.95	6.80	0.53	-	35.00	3.60	-	-	-	157.00
1610004-001	Corcoran, City of	**11.31**	36.50	2.70	-	82.75	**51.07**	-	-	-	392.50
1610004-002	Corcoran, City of	**20.99**	**29.33**	2.50	-	77.00	**19.96**	-	-	-	373.33
5400519-001	Palo Verde School	8.01	-	0.78	-	-	7.54	-	-	-	-
5400583-003	Cutler Park	-	-	-	-	8.10	1.58	-	-	-	-
5400616-001	Lemon Cove Water Co	-	26.33	-	-	38.00	**25.79**	-	-	-	563.33
5400631-001	Linnell Farm Labor Center	-	8.07	-	-	13.33	5.46	-	-	-	206.67
5400631-002	Linnell Farm Labor Center	-	8.87	-	-	12.33	4.64	-	-	-	210.00
5400709-001	Sequoia Union Elementary School	-	70.00	-	-	56.00	**20.16**	-	-	-	670.00
5400709-002	Sequoia Union Elementary School	-	36.00	2.80	-	50.00	**20.58**	-	-	-	470.00
5400710-001	Badger Hill Estates	3.37	33.33	1.30	-	48.00	7.92	-	-	-	340.00
5400710-002	Badger Hill Estates	2.70	29.33	-	-	38.00	7.76	-	-	-	306.67
5400714-001	Sundale Union School	4.63	3.60	0.51	-	16.35	6.88	-	-	-	138.00
5400819-002	Mountain View MHP	-	8.70	0.80	-	15.33	7.92	-	-	-	223.33
5400844-002	Elbow Creek School	-	5.00	1.20	-	27.00	8.74	-	-	**0.017**	230.00
5400846-002	Elbow School	-	-	-	-	-	**18.61**	-	-	-	-
5400850-002	Packwood School	-	-	-	-	-	-	-	-	-	-
5400873-001	Union School	-	8.30	-	-	11.00	4.44	-	-	-	150.00
5400881-001	Sunrise Mutual Water Co.	-	2.50	-	-	13.44	-	-	-	-	122.50

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	250	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5400881-002	Sunrise Mutual Water Co.	-	2.78	-	-	11.60	2.63	-	-	-	137.50
5400903-001	Tract 92 CSD	-	5.60	0.60	-	13.50	3.90	-	-	-	125.00
5400903-002	Tract 92 CSD	-	5.05	0.60	-	10.50	-	-	-	-	135.00
5400928-003	Visalia Sales Yard	-	-	-	-	6.70	1.50	-	-	-	-
5400969-002	Peninsula Packaging Co.	-	4.30	-	-	23.00	6.50	-	-	-	160.00
5400972-001	Outside Creek School	-	8.90	0.54	-	20.10	**13.14**	-	-	-	290.00
5401044-001	Cal Trans-Visalia Maintenance Station	-	-	0.67	-	-	4.81	-	-	-	-
5402027-001	Tulare County Road Yard 2/3	-	11.30	1.10	-	12.50	-	-	-	-	355.00
5402038-001	Patterson Tract CSD	2.00	6.33	1.10	-	19.00	3.70	-	-	-	153.33
5402038-002	Patterson Tract CSD	2.00	6.25	1.30	-	18.75	4.75	-	-	-	175.00
5403030-001	Jack Griggs Inc.	-	16.00	-	-	42.33	**35.47**	-	-	-	516.67
5403031-001	Sun Pacific - Tulare	-	10.20	-	-	11.00	**11.83**	-	-	-	240.00
5403031-002	Sun Pacific - Tulare	-	14.00	1.27	-	12.00	**23.32**	-	-	-	290.00
5403032-001	Monrovia Nursery - Nursery	-	-	1.60	-	-	7.17	-	-	-	-
5403050-002	Tulare County Hauling	-	5.60	**12.00**	-	13.00	1.00	-	-	-	120.00
5403055-001	Monrovia Nursery - Office	-	-	-	-	-	9.32	-	-	-	-
5403076-002	Central Cal Tristeza Erad	-	-	-	-	18.90	**15.28**	-	-	-	-
5403090-001	In & Out FoodMart	-	16.00	-	-	31.00	9.47	-	-	-	300.00
5403121-001	International Paper- Exeter Bulk	-	6.00	1.20	-	37.00	7.21	-	-	-	290.00
5403122-001	PC's Food Mart	2.50	22.00	-	-	21.00	**22.40**	-	-	-	350.00
5403130-001	Eleanor Roosevelt Comm Learning Ctr	-	12.70	-	-	8.50	-	-	-	-	165.00
5403141-001	Hellwig Products Co., Inc.	-	5.53	-	-	10.00	3.50	-	-	-	120.00
5403144-002	Ali Mutual Water Co	2.60	4.80	2.00	-	16.50	3.62	-	-	-	255.00
5403147-001	Exeter Kingdom Hall	-	4.80	-	-	27.00	3.17	-	-	-	200.00
5403148-001	Courage to Change	-	9.00	1.30	-	30.00	6.47	-	-	-	270.00
5403154-002	Willitts Equipment Co., Inc.	4.25	62.30	-	-	74.00	-	-	-	-	283.00

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	250	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5410003-002	Exeter, City of	-	38.00	2.30	0.061	48.67	-	-	-	-	460.00
5410003-004	Exeter, City of	-	18.33	2.10	0.056	45.67	**13.60**	-	-	-	386.67
5410003-007	Exeter, City of	-	12.33	1.70	-	41.00	**13.95**	-	-	-	316.67
5410003-012	Exeter, City of	-	64.67	1.80	-	71.00	-	-	-	-	276.67
5410003-014	Exeter, City of	-	26.00	1.90	-	45.33	**12.56**	-	-	-	330.00
5410004-001	Farmersville, City of	-	2.50	-	-	7.25	1.60	-	-	-	95.00
5410004-003	Farmersville, City of	-	3.67	-	-	12.00	1.97	-	-	-	116.67
5410004-004	Farmersville, City of	-	2.33	-	-	7.00	1.12	-	-	-	90.00
5410004-005	Farmersville, City of	-	2.75	-	-	6.50	2.02	-	-	-	100.00
5410004-006	Farmersville, City of	-	2.67	-	-	9.67	2.66	-	-	-	116.67
5410004-007	Farmersville, City of	-	5.25	-	-	15.00	2.69	-	-	-	165.00
5410004-014	Farmersville, City of	-	5.50	-	-	17.75	0.96	-	-	-	105.00
5410006-015	Lindsay, City of	-	**891.11**	4.20	-	250.00	7.28	-	-	-	1808.11
5410015-069	Tulare, City of	5.23	8.89	-	-	44.38	-	-	-	-	150.00
5410016-178	CWS - Visalia	-	3.63	-	-	6.43	2.57	-	-	-	109.33
5410016-179	CWS - Visalia	-	4.08	-	-	9.30	3.91	-	-	-	102.50
5410016-182	CWS - Visalia	4.84	6.57	2.40	-	31.00	3.56	-	-	-	113.33
5410019-004	Ivanhoe Public Utility Dist	-	8.87	-	-	20.67	6.18	-	-	-	230.00
5410019-006	Ivanhoe Public Utility Dist	-	25.50	1.30	-	39.50	-	-	-	-	430.00
5410019-007	Ivanhoe Public Utility Dist	-	53.00	1.45	0.044	46.00	**31.05**	-	-	-	536.67
5410019-008	Ivanhoe Public Utility Dist	-	17.50	1.15	-	30.50	**10.57**	-	-	-	285.00
5410020-004	Woodlake, City of	-	4.20	-	-	14.00	-	-	-	-	180.00
5410020-005	Woodlake, City of	-	3.35	-	-	12.75	-	-	-	-	162.50
5410020-006	Woodlake, City of	-	18.50	-	-	25.00	4.94	-	-	-	260.00
5410020-007	Woodlake, City of	-	23.75	-	-	24.75	3.46	-	-	-	230.00
5410020-008	Woodlake, City of	-	15.25	-	-	24.50	**16.01**	-	-	-	275.00

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	250	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5410020-009	Woodlake, City of	4.35	7.25	-	-	19.00	0.90	-	-	-	160.00
5410020-010	Woodlake, City of	5.45	6.37	-	-	16.50	-	-	-	-	123.00
5410041-004	CWS - Tulco Water Company	-	5.28	1.20	-	24.50	8.00	-	-	-	170.00

Table 5-5 MKGSA Water Quality Summary

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	500	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5400679-001	99 Palms Inn and Suites	-	3.00	-	-	9.00	2.69	-	-	-	110.00
5400538-001	Accelerated Charter High School	-	9.50	-	-	19.50	5.16	-	-	-	210.00
5400816-002	Bedel Mutual Water Co	-	4.75	-	-	9.00	6.59	-	-	-	160.00
5400816-003	Bedel Mutual Water Co	-	3.00	0.60	-	12.00	1.98	-	-	-	106.67
5400919-001	Buena Vista School	-	35.00	-	-	69.00	**30.55**	-	-	-	290.00
5400919-002	Buena Vista School	**11.77**	25.00	-	-	59.00	-	-	-	-	200.00
5410016-010	CWS - Visalia	-	3.97	-	-	10.67	6.25	-	-	-	150.00
5410016-014	CWS - Visalia	-	3.68	1.20	-	19.25	2.48	-	-	-	97.75
5410016-015	CWS - Visalia	-	2.82	-	-	9.84	1.36	-	-	-	92.40
5410016-016	CWS - Visalia	-	14.75	-	0.15	15.25	8.71	-	**6.05**	-	177.50
5410016-017	CWS - Visalia	-	3.83	-	-	12.00	2.36	-	-	-	113.33
5410016-018	CWS - Visalia	-	3.33	-	-	9.03	3.55	-	-	-	106.67
5410016-023	CWS - Visalia	-	7.40	-	-	14.33	8.68	-	-	-	176.67
5410016-024	CWS - Visalia	-	2.53	-	-	10.67	1.95	-	-	-	102.67
5410016-026	CWS - Visalia	-	4.60	-	-	18.00	2.25	-	-	-	103.33
5410016-027	CWS - Visalia	-	11.20	-	0.02	16.80	5.61	-	-	-	130.00
5410016-028	CWS - Visalia	-	3.28	-	-	9.48	2.29	-	-	-	117.50
5410016-029	CWS - Visalia	-	11.40	1.00	-	17.75	6.60	-	-	-	152.50
5410016-030	CWS - Visalia	-	6.78	1.00	-	18.75	3.52	-	-	-	127.50
5410016-031	CWS - Visalia	-	7.30	-	-	14.50	6.82	-	-	**0.055**	147.50
5410016-035	CWS - Visalia	-	7.15	-	-	11.50	**11.34**	-	-	-	210.00
5410016-036	CWS - Visalia	-	25.00	-	-	16.00	5.72	-	-	-	183.33
5410016-037	CWS - Visalia	-	25.00	-	-	16.75	**15.55**	-	**49.27**	-	237.50
5410016-040	CWS - Visalia	-	11.93	-	-	15.75	**12.14**	-	-	-	172.50
5410016-043	CWS - Visalia	-	2.60	-	-	6.83	2.93	-	-	-	120.00

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	500	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5410016-044	CWS - Visalia	-	9.08	-	-	17.75	8.73	-	-	-	210.00
5410016-045	CWS - Visalia	-	16.00	-	-	23.00	**10.54**	-	-	-	187.50
5410016-046	CWS - Visalia	-	11.33	-	-	18.33	6.94	-	-	-	130.00
5410016-047	CWS - Visalia	-	22.00	-	-	16.00	8.36	-	1.32	-	226.67
5410016-048	CWS - Visalia	-	25.00	-	-	14.33	7.80	-	-	-	240.00
5410016-053	CWS - Visalia	-	17.67	-	-	19.33	**10.77**	-	-	-	223.33
5410016-054	CWS - Visalia	-	6.33	1.50	-	20.67	**11.38**	-	-	-	136.67
5410016-055	CWS - Visalia	-	24.67	-	-	18.00	**11.22**	-	-	-	193.33
5410016-056	CWS - Visalia	-	3.40	-	-	13.33	2.91	-	-	-	116.67
5410016-057	CWS - Visalia	-	10.13	-	-	14.50	**12.94**	-	-	-	232.50
5410016-058	CWS - Visalia	-	2.63	-	-	6.97	2.14	-	-	-	102.67
5410016-059	CWS - Visalia	-	20.00	-	-	20.67	**14.44**	-	-	-	243.33
5410016-060	CWS - Visalia	-	5.10	-	-	14.33	5.62	-	-	-	133.33
5410016-061	CWS - Visalia	-	2.63	-	-	7.37	1.12	-	-	-	92.33
5410016-064	CWS - Visalia	-	2.67	-	-	18.67	2.18	-	-	-	108.00
5410016-065	CWS - Visalia	-	4.47	-	-	18.67	5.94	-	-	-	116.67
5410016-066	CWS - Visalia	-	6.20	1.20	-	21.00	2.48	-	-	-	112.67
5410016-067	CWS - Visalia	-	4.07	-	-	9.37	6.56	-	-	-	170.00
5410016-069	CWS - Visalia	-	6.10	1.60	-	23.00	2.76	-	-	-	89.33
5410016-070	CWS - Visalia	-	6.30	-	-	16.67	5.17	-	-	-	123.33
5410016-080	CWS - Visalia	-	10.53	1.80	-	26.33	8.36	-	-	-	146.67
5410016-081	CWS - Visalia	-	5.23	1.40	-	19.67	7.20	-	-	-	140.00
5410016-087	CWS - Visalia	-	20.67	-	-	33.00	**10.11**	-	-	-	193.33
5410016-089	CWS - Visalia	-	5.36	-	-	22.60	6.76	-	-	-	138.00
5410016-090	CWS - Visalia	-	10.45	-	-	15.50	**10.00**	-	-	-	192.50
5410016-091	CWS - Visalia	-	3.40	-	-	12.13	2.19	-	-	-	116.50

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	500	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5410016-092	CWS - Visalia	-	7.33	2.10	-	22.67	2.97	-	-	-	93.67
5410016-093	CWS - Visalia	-	6.93	-	-	14.50	8.21	-	-	-	162.50
5410016-094	CWS - Visalia	-	5.28	1.00	-	17.75	5.46	-	-	-	122.50
5410016-098	CWS - Visalia	-	2.65	-	-	9.75	1.60	-	-	-	104.00
5410016-154	CWS - Visalia	-	6.13	-	-	16.00	3.75	-	-	-	112.00
5410016-156	CWS - Visalia	-	5.55	-	-	12.75	5.60	-	-	-	137.50
5410016-158	CWS - Visalia	-	3.03	1.70	-	21.67	2.15	-	-	-	109.33
5410016-159	CWS - Visalia	-	5.60	1.20	-	13.67	5.36	-	-	-	130.00
5410016-166	CWS - Visalia	-	10.07	-	-	15.33	3.70	-	-	-	126.67
5410016-167	CWS - Visalia	-	2.33	1.10	-	20.00	2.22	-	-	-	110.00
5410016-185	CWS - Visalia	-	6.80	-	-	28.00	0.97	-	-	-	102.00
1610004-003	Corcoran, City Of	-	17.33	1.50	-	58.00	**12.86**	-	-	-	266.67
1610004-015	Corcoran, City Of	16.06	8.17	-	-	46.00	-	-	-	-	153.33
1610004-016	Corcoran, City Of	15.42	9.78	-	-	51.50	-	-	-	-	160.00
5401033-001	Horizon Nut LLC	-	3.55	-	-	11.50	1.34	-	-	-	120.00
5403074-002	Kraft Heinz Foods Co	9.20	-	-	-	-	-	-	-	-	292.00
5403074-004	Kraft Heinz Foods Co	6.99	50.43	-	-	83.57	-	-	-	-	228.33
5403146-001	Liberty Elementary School	-	5.60	-	-	21.50	2.23	-	-	-	94.00
5402050-001	Milk Specialties Global	-	3.70	0.60	-	12.00	2.42	-	-	-	100.00
5402050-002	Milk Specialties Global	-	5.20	0.50	-	13.00	4.96	-	-	-	130.00
5400951-003	Mooney Grove Park	-	10.00	-	-	18.00	8.14	-	-	-	160.00
5400951-004	Mooney Grove Park	-	9.10	-	-	17.00	3.78	-	-	-	130.00
5400713-001	Oak Valley School	16.91	3.30	-	-	35.00	-	-	-	-	130.00
5403217-001	Okieville Highland Acres Mwc	6.21	265.00	-	-	210.00	-	-	-	-	535.00
5402031-001	Preet Market	-	-	-	-	28.00	-	-	-	-	-
5403118-001	Saputo Dairy Food USA	-	26.50	1.10	-	36.33	**11.91**	-	-	-	223.33

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	500	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5403208-002	Soults Pump & Equipment Co	8.55	22.00	-	-	67.50	-	-	-	-	190.00
5400880-001	The Lakes Association	-	5.98	1.00	-	20.25	**14.29**	-	-	-	137.50
5400880-002	The Lakes Association	-	6.00	0.70	-	19.75	7.53	-	-	-	152.50
5401039-001	Tulare County Civic Center	-	15.00	-	-	18.00	4.97	-	-	-	-
5401039-002	Tulare County Civic Center	-	14.00	-	-	-	6.48	-	-	-	-
5401039-003	Tulare County Civic Center	-	14.00	-	-	19.00	9.49	-	-	-	-
5410015-001	Tulare, City Of	5.09	6.22	2.45	-	37.83	2.76	-	-	-	113.33
5410015-011	Tulare, City Of	3.40	6.15	2.12	-	39.67	4.73	-	-	-	123.33
5410015-012	Tulare, City Of	-	17.57	-	-	27.14	8.94	-	-	-	172.86
5410015-013	Tulare, City Of	-	10.32	1.45	-	27.20	**19.76**	-	-	-	174.00
5410015-014	Tulare, City Of	4.88	26.33	-	-	83.50	-	-	-	-	212.00
5410015-015	Tulare, City Of	-	5.26	1.50	-	23.00	6.92	-	-	-	126.00
5410015-017	Tulare, City Of	-	8.23	1.84	-	46.14	5.18	-	-	-	130.71
5410015-021	Tulare, City Of	-	5.00	2.43	0.03	29.80	3.58	-	-	-	116.00
5410015-025	Tulare, City Of	6.02	10.00	-	-	40.43	5.96	-	-	-	131.43
5410015-026	Tulare, City Of	-	10.07	1.96	-	27.43	6.19	-	-	-	118.57
5410015-033	Tulare, City Of	-	5.20	-	-	31.00	-	-	-	-	104.00
5410015-047	Tulare, City Of	3.91	13.00	-	-	47.43	-	-	-	-	141.43
5410015-048	Tulare, City Of	-	6.66	1.30	-	26.00	7.32	-	-	-	157.50
5410015-051	Tulare, City Of	3.69	12.86	1.57	-	41.71	4.56	-	-	**0.009**	151.43
5410015-052	Tulare, City Of	-	3.77	2.32	-	25.17	1.45	-	-	-	96.00
5410015-055	Tulare, City Of	-	12.00	1.45	-	30.17	**13.38**	-	-	**0.024**	171.67
5410015-056	Tulare, City Of	-	7.13	1.49	-	24.14	7.92	-	-	**0.011**	142.86

Constituents - 10 Year Average		AS	CL	CR6	DBCP	NA	NO_3N	PCATE	PCE	1,2,3-TCP	TDS
Threshold Level		10	500	10	0.2	N/A	10	6	5	0.005	1000
Units		ug/L	mg/L	ug/L	ug/L	N/A	mg/L	ug/L	ug/L	ug/L	mg/L
Well ID	System Name										
5410015-057	Tulare, City Of	-	4.38	2.20	-	24.00	2.51	-	-	-	108.00
5410015-061	Tulare, City Of	-	12.91	-	-	54.00	-	-	-	-	153.75
5410015-065	Tulare, City Of	-	49.11	-	-	97.56	-	-	-	-	248.75
5410015-073	Tulare, City Of	-	7.94	1.80	-	37.44	2.52	-	-	-	121.11
5410015-075	Tulare, City Of	-	11.80	-	-	31.90	2.21	-	-	-	120.00
5410015-077	Tulare, City Of	-	3.19	-	-	21.22	-	-	-	-	103.89
5400795-001	Waukena Elementary School	-	18.00	-	-	55.00	**23.64**	-	-	-	350.00
5402030-002	Waukena Market	-	21.00	-	-	49.00	**17.42**	-	-	-	300.00
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-
NA	Tulare Irrigation District	-	-	-	-	-	-	-	-	-	-

5.5 Land Subsidence

5.5.1 Kaweah Subbasin-Wide Undesirable Result

Land subsidence may be considered significant and unreasonable if there is a loss of a functionality of a structure or a facility to the point that, due to subsidence, the structure or facility cannot reasonably operate without either significant repair or replacement. Explanations of the methodology for determining criteria can be found in **EKGSA GSP Section 3.4.3.2** for East Kaweah, **GKGSA GSP Section 5.5** for the Greater Kaweah, and **MKGSA GSP Section 5.5** for the Mid-Kaweah.

5.5.2 Progress of Land Subsidence

Subsidence monitoring has been tracked at the local level more closely since 2015, primarily on the western side of the Subbasin. The Kaweah Delta Water Conservation District, a member agency of the GKGSA, established a network covering approximately three-quarters of the Subbasin. This network and maps are provided in **Section 3.4** of this report. The Subsidence Monitoring for the EKGSA covering the portion not within the Kaweah Delta Water Conservation District network was established in WY 2020, thus starting with WY 2021 there is now ability to track year over year change in ground elevation for the EKGSA subsidence, which primarily focuses on the Friant-Kern Canal for its evaluation. The following tables summarize the Subsidence Monitoring, per GSA for the WY 2022 period where data were available.

Most of the Subsidence Monitoring Network locations experienced subsidence during the WY 2022 period, however, none of the locations exceed their MT at this time.

Table 5-6 EKGSA Subsidence Monitoring Summary

Subsidence Monitoring Station	Responsible Agency	MT (cumulative feet)	MO[2] (cumulative feet)	2020 Elevation	2021 Elevation	2022 Elevation	WY2022 Subsidence[1] (ft)	Cumulative Subsidence[1] (ft)
BR01	USBR	0.79	0	433.8	433.88	433.86	0.02	-0.06
Dodge Ave. Check	EKGSA	0.79	0	439.75	-	-	-	-
Dodge Ave. Check (Replacement)	EKGSA	0.79	0	-	438.52	438.53	-0.01	-0.01
Rocky Hill Check	EKGSA	0.79	0	429.55	429.62	429.59	0.03	-0.04
Plainview Well 03	EKGSA	0.79	0	355.43	355.35	355.17	0.18	0.26
Ave. 394 Bridge	EKGSA	0.79	0	439.88	439.91	439.88	0.03	0
GT0731	Cal Trans	0.79	0	-	-	-	-	-
Ave. 188 Bridge	EKGSA	0.79	0	421.04	421.1	421.01	0.09	0.03
GT0758	Cal Trans	0.79	0	439.64	439.65	439.57	0.08	0.07
5th Ave. Check	EKGSA	0.79	0	423.12	423.11	423.06	0.05	0.06
Kaweah River Check	EKGSA	0.79	0	430.89	430.87	430.85	0.02	0.04

[1]*Negative subsidence value indicates a rise in surface elevation*
[2]*EKGSA Measurable Objective is to have no subsidence impacts to CVP deliveries via the FKC*

Table 5-7 GKGSA Subsidence Monitoring Summary

Subsidence Monitoring Station	Responsible Agency	MT (cumulative feet)	MO (cumulative feet)	2020 Elevation	2021 Elevation	2022 Elevation	WY2022 Subsidence[1] (ft)	Cumulative Subsidence[1,2] (ft)
DH6686	Cal Trans	3.5	0	318.97	318.87	318.47	0.399	0.496
DH6691	Cal Trans	1.4	0	-	-	-	-	-
DH6719	Cal Trans	9.0	0	-	-	-	-	-
DH6739	Cal Trans	9.0	0	255.65	255.07	254.39	0.681	1.264
GT2135	Cal Trans	9.0	0	-	-	-	-	-
K001	KDWCD	0.8	0	462.45	462.46	462.37	0.097	0.084
K003	KDWCD	2.7	0	363.71	363.53	363.66	-0.126	0.05
K00X	KDWCD	1.5	0	-	-	-	-	-
K012	KDWCD	9.0	0	223.1	222.09	221.12	0.969	1.981
K015	KDWCD	9.0	0	298.28	297.98	297.62	0.36	0.663
K016	KDWCD	9.0	0	335.16	334.84	334.58	0.257	0.576
K02A1	KDWCD	0.8	0	414.68	414.73	414.77	-0.046	-0.093
S228	CHSTP	9.0	0	219.3	218.37	217.38	0.994	1.92

[1]*Negative subsidence value indicates a rise in surface elevation*
[2]*Cumulative subsidence calculated as difference in elevation between 2020 and most recent year*

Table 5-8 MKGSA Subsidence Monitoring Summary

Subsidence Monitoring Station	Responsible Agency	MT (cumulative feet)	MO (cumulative feet)	2020 Elevation	2021 Elevation	2022 Elevation	WY2022 Subsidence[1] (ft)	Cumulative Subsidence[1,2] (ft)
DH6683	Cal Trans	5.9	0	218.28	217.03	-	-	-
DH6770	Cal Trans	3.1	0	-	-	-	-	-
K007	KDWCD	2.9	0	293.43	293.10	292.61	0.492	0.822
K008	KDWCD	4.5	0	250.73	249.85	248.82	1.032	1.915
K009	KDWCD	4.9	0	238.06	236.86	235.75	1.103	2.307
K010	KDWCD	6.2	0	208.84	207.75	206.85	0.907	1.994
K014	KDWCD	3.1	0	294.07	293.72	293.00	0.721	1.071
P566[3]		9.0	0	-	-	-	0.050	0.115
TID1		9.0	0	-	-	-	-	-
TUL99		9.0	0	-	-	-	-	-

[1]Negative subsidence value indicates a rise in surface elevation
[2]Cumulative subsidence calculated as difference in elevation between 2020 and most recent year
[3]Displacement data obtained from continuous GPS stations available from California's Groundwater Live

5.6 Interconnected Surface Water

5.6.1 Kaweah Subbasin-Wide Undesirable Result

The Interconnected Surface Water sustainability indicator is a data gap for the Kaweah Subbasin, primarily with the East Kaweah and Greater Kaweah GSAs. During the GSP revisions in 2022, both the East Kaweah and Greater Kaweah GSAs developed a work plan to fill data gaps, develop better analytical methods, and ultimately better understand if there are interconnected surface waters within the Kaweah Subbasin and if groundwater pumping is causing depletions in those areas. In the interim, while the work plan is being further developed, the sustainable management criteria for Interconnected Surface Water and corresponding Undesirable Result may be considered significant and unreasonable if there is significant increase in channel losses that then limit the ability to better move and deliver water throughout the Kaweah Subbasin. Explanations of the methodology for determining criteria can be found in **EKGSA GSP Section 3.4.2** and **Section 5.3.7** for East Kaweah and **GKGSA GSP Section 5.7** and **Section 7.3.12** for the Greater Kaweah. The Mid-Kaweah GSA is not located in an area with interconnected surface water. However, the Mid-Kaweah GSA is willing to assist the East Kaweah and Greater Kaweah GSAs where logically in order to assist in Subbasin-wide sustainability.

5.6.2 Progress of Interconnect Surface Water Work Plan

Filling data gaps and adding new monitoring wells in eastern portions of the Subbasin were started in late 2022, in the start of WY 2023. As groundwater levels are better understood in areas where there has been little to no data, further development of the appropriate tool and analysis can begin.

At this time, it is unknown if Interconnected Surface Waters are present and their location. No known undesirable results are occurring in the Kaweah Subbasin, however more work is to be done.

6 References

California Department of Water Resources (CDWR), *California's Groundwater Bulletin 118, Update 2016*

California Department of Water Resources. *Groundwater Sustainability Plan (GSP) Emergency Regulations Guide.* May 2016.

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Page, R.W., *Geology of the Fresh Ground-Water Basin of the Central Valley, California, with Texture Maps and Sections, Regional Aquifer-System Analysis*, USGS Professional Paper 1401-C, 1986.

Appendix A:

WY 2021-2022 Monitoring Network Level Data

Unique Well ID	Local Well ID	GSA	Spring 2021	Fall 2021	Spring 2022	Fall 2022
16S25E36M002M		East Kaweah	-	-	321.6	-
16S26E30Q001M		East Kaweah	-	-	375.7	369.7
17S25E25A001M		East Kaweah	246.3	-	-	-
17S25E35E001M	KSB-2107	East Kaweah	202.2	189.1	194.4	180.9
17S26E04F002M	KSB-2369	East Kaweah	386.6	347.6	377.6	308.6
17S26E07C001M		East Kaweah	-	261.9	271.9	324.9
17S26E21E001M	KSB-2354	East Kaweah	352.9	341.1	341.2	344.2
17S26E29R001M		East Kaweah	336.1	322.4	328.4	318.9
18S26E02D002M		East Kaweah	356.4	354.9	354.9	354.8
18S26E06D001M		East Kaweah	235.7	220.7	236.3	201.0
18S26E24J003M		East Kaweah	373.1	355.0	367.7	348.9
18S27E17H002M		East Kaweah	419.9	402.1	412.8	399.1
18S27E29E001M		East Kaweah	398.9	378.5	386.7	372.1
18S27E30H001M		East Kaweah	394.3	358.3	381.7	355.7
19S26E03A001M		East Kaweah	-	-	-	-
19S26E11R001M		East Kaweah	248.3	214.4	235.0	213.8
19S26E13R001M		East Kaweah	223.6	177.3	208.7	178.7
19S26E23E001M	Lindsay Well 15	East Kaweah	218.6	194.6	207.7	189.8
19S26E25R001M		East Kaweah	-	-	-	-
19S26E34R006M	Lindsay Well 14	East Kaweah	168.0	-	-	152.0
19S26E35C001M		East Kaweah	-	-	-	-
19S27E29D001M		East Kaweah	-	-	-	-
20S26E08H001M	KSB-2333	East Kaweah	329.2	329.2	145.2	126.2
20S26E11R001M		East Kaweah	-	-	-	-
20S26E12H001M	Lindsay Well 11	East Kaweah	304.0	-	-	-
20S26E16R001M		East Kaweah	144.2	132.2	126.2	121.2
20S26E20J001M		East Kaweah	129.4	103.4	109.4	110.4
20S26E23R001M		East Kaweah	225.3	189.3	213.3	177.3
20S26E32A001M	KSB-2344	East Kaweah	149.2	121.2	136.2	101.2
20S26E35H001M		East Kaweah	236.2	209.7	224.7	193.7
20S27E08A001M		East Kaweah	330.7	-	-	280.7
20S27E15R001M		East Kaweah	463.7	461.2	-	459.7
20S27E18R001M		East Kaweah	281.7	251.7	265.7	232.7
20S27E25N001M		East Kaweah	417.7	-	-	402.2
21S26E11H001M		East Kaweah	266.2	252.7	247.7	238.7
21S27E03B001M		East Kaweah	-	-	-	-
21S27E06F001M		East Kaweah	-	-	-	-
21S27E08F001M		East Kaweah	311.2	281.2	297.2	268.2
21S27E12F001M		East Kaweah	389.7	367.7	380.7	355.7
Private LSID Well	Private LSID Well	East Kaweah	-	-	-	-
SCID Office	SCID Office	East Kaweah	307.9	287.9	290.9	278.9
17S23E34J001M	KSB-1161	Greater Kaweah	172.0	161.4	162.7	152.6
17S24E34B001M	KSB-1580	Greater Kaweah	-	-	-	-
17S24E36H003M	KSB-1775	Greater Kaweah	195.6	174.2	158.9	166.4
17S26E36R001M	KSB-2690	Greater Kaweah	392.1	313.9	392.4	-
18S22E24D001M	KSB-0818	Greater Kaweah	-	-	106.9	105.5
18S23E14A001M	KSB-1222	Greater Kaweah	-	-	-	-
18S23E30D001M	KSB-0905	Greater Kaweah	184.5	-12.6	-	-22.5
18S23E30D901M	KSB-0903	Greater Kaweah	-	-	-	-
18S25E05Q001M	KSB-1936	Greater Kaweah	205.5	189.6	-	182.3

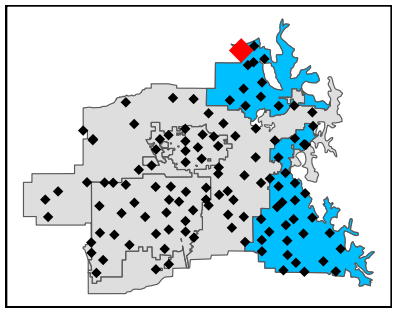
Unique Well ID	Local Well ID	GSA	Spring 2021	Fall 2021	Spring 2022	Fall 2022
18S25E15C001M	KSB-2058	Greater Kaweah	-	270.4	242.2	268.6
18S25E23J001M	KSB-2147	Greater Kaweah	-	-	-	-
18S26E17L001M	KSB-2297	Greater Kaweah	-	-	-	346.5
18S26E27B001M	KSB-2466	Greater Kaweah	365.1	364.5	364.7	364.8
18S27E05J001M	KSB-2822	Greater Kaweah	417.2	418.0	419.6	419.8
19S22E24B001M	KSB-0856	Greater Kaweah	117.5	-	-	-
19S22E28D001M	KSB-0616	Greater Kaweah	100.6	98.6	100.3	90.2
19S22E31B002M	KSB-0531	Greater Kaweah	-	-	-	-
19S23E12L001M	KSB-1259	Greater Kaweah	-	-	-	-
19S23E21C001M	KSB-1055	Greater Kaweah	-	-	-	-
19S25E09H001M	KSB-2017	Greater Kaweah	220.7	203.8	206.4	191.1
19S25E13A002M	KSB-2200	Greater Kaweah	253.1	203.0	233.3	221.4
19S25E16A002M	KSB-2015	Greater Kaweah	216.0	198.1	201.9	184.4
19S25E27A001M	KSB-2089	Greater Kaweah	210.1	187.4	190.8	175.3
19S25E28H001M	KSB-2021	Greater Kaweah	193.0	167.2	172.6	155.1
19S25E32J001M	KSB-1937	Greater Kaweah	-	-	-	-
19S25E35B002M	KSB-2139	Greater Kaweah	-	-	-	-
19S26E05C001M	KSB-2291	Greater Kaweah	306.5	283.8	283.4	276.4
19S26E16J002M	KSB-2411	Greater Kaweah	238.6	216.6	225.0	206.5
19S26E20A001M	KSB-2322	Greater Kaweah	235.2	213.5	217.9	203.2
20S22E07A003M	KSB-0550	Greater Kaweah	-	-	-	-
20S22E24R001M	KSB-0889	Greater Kaweah	-86.7	-102.1	-	-
20S22E36A001M	KSB-0890	Greater Kaweah	93.8	80.7	75.1	36.7
20S24E24H001M	KSB-1783	Greater Kaweah	-	-	-	-
20S25E03R001M	KSB-2095	Greater Kaweah	171.7	153.9	155.1	132.5
20S25E12A001M	KSB-2197	Greater Kaweah	-	161.7	171.3	154.4
20S25E14F004M	KSB-2114	Greater Kaweah	-	108.4	152.4	128.4
20S25E24R001M	KSB-2203	Greater Kaweah	165.4	133.9	147.5	138.8
21S24E03L001M	KSB-1535	Greater Kaweah	0.7	-23.4	-	-11.9
21S24E08A001M	KSB-1425	Greater Kaweah	147.0	139.5	-	136.0
025-01	KSB-1696	Mid-Kaweah	185.0	155.0	-	-
036-01	KSB-1884	Mid-Kaweah	208.0	193.0	-	-
047-01	KSB-1699	Mid-Kaweah	178.0	164.0	-	-
053-01	KSB-1977	Mid-Kaweah	218.0	210.0	-	-
075-01	KSB-1447	Mid-Kaweah	-	-	-	-
077-01	KSB-1427	Mid-Kaweah	144.0	118.0	-	-
18S24E13N001M	KSB-1689	Mid-Kaweah	-	-	-	-
18S24E22E001M	KSB-1526	Mid-Kaweah	161.1	146.1	147.9	135.6
18S24E25D001M	KSB-1690	Mid-Kaweah	-	-	-	-
18S25E28R001M	KSB-2014	Mid-Kaweah	-	244.5	-	245.1
18S25E30Q001M	KSB-1819	Mid-Kaweah	-	-	-	-
19S23E20C001M	KSB-0994	Mid-Kaweah	-	119.6	119.8	117.6
19S23E22H001M	KSB-1168	Mid-Kaweah	-	-	-	-
19S23E31R001M	KSB-0946	Mid-Kaweah	-	99.4	-	82.4
19S23E35H001M	KSB-1226	Mid-Kaweah	101.1	79.1	73.1	76.1
19S24E08D002M	KSB-1384	Mid-Kaweah	-	-	-	-
19S24E20F001M	KSB-1408	Mid-Kaweah	-	135.7	-	-
19S24E22E001M	KSB-1545	Mid-Kaweah	-	107.4	106.4	-
19S24E25D001M	KSB-1709	Mid-Kaweah	-	-	-	-
19S24E34D001M	KSB-1536	Mid-Kaweah	-	80.1	86.1	-

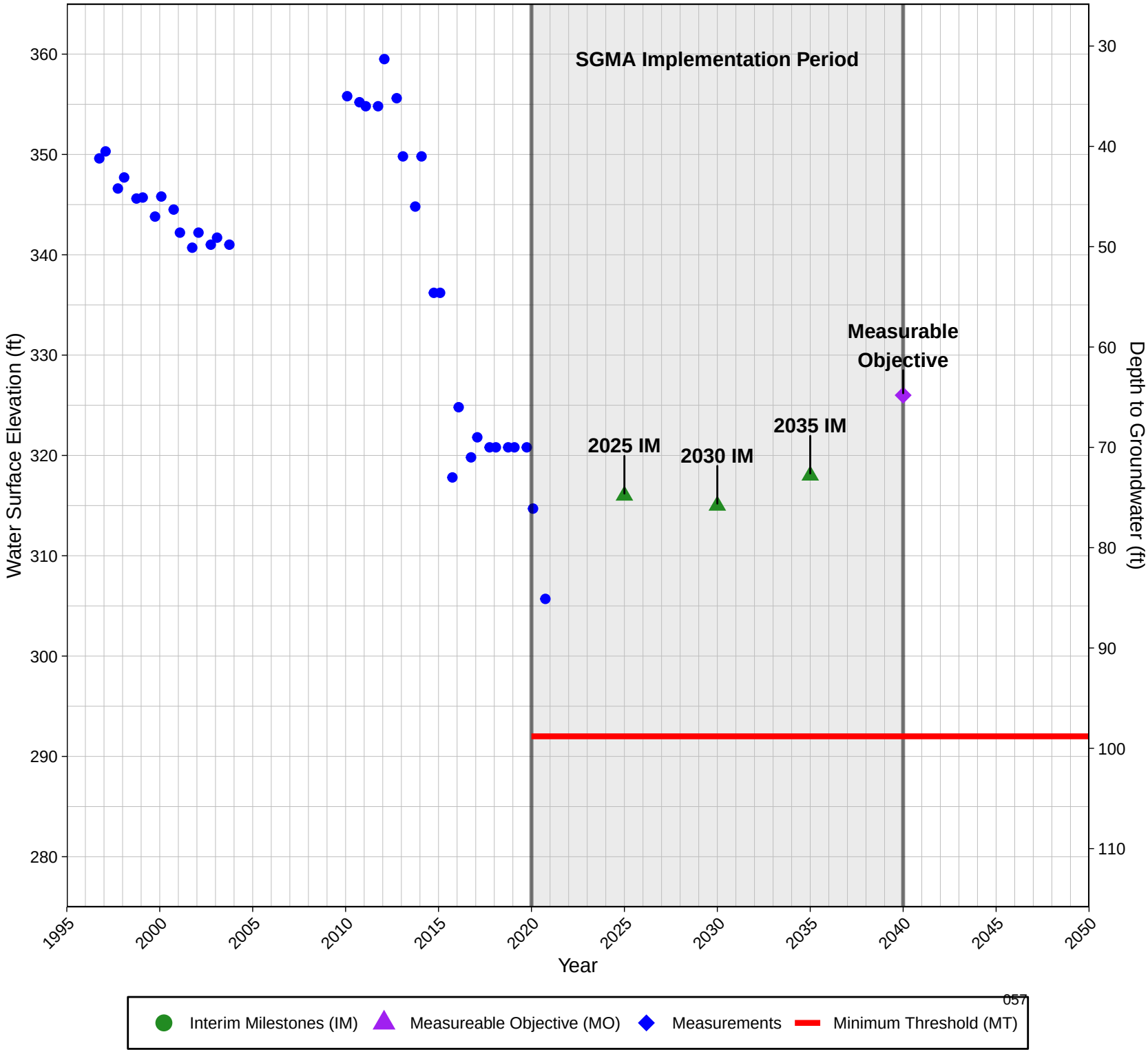
Unique Well ID	Local Well ID	GSA	Spring 2021	Fall 2021	Spring 2022	Fall 2022
19S24E35E001M	KSB-1628	Mid-Kaweah	106.0	73.0	84.0	60.0
19S24E36C002M	KSB-1903	Mid-Kaweah	-	-	-	-
19S25E06A001M	KSB-1862	Mid-Kaweah	-	-	-	-
19S25E20P001M	KSB-1905	Mid-Kaweah	-	-	-	-
20S23E03L001M	KSB-1129	Mid-Kaweah	-	-	-	-
20S23E18R001M	KSB-0948	Mid-Kaweah	46.3	46.3	-	-
20S23E21B001M	KSB-1071	Mid-Kaweah	52.3	32.3	37.3	29.3
20S23E26C001M	KSB-1206	Mid-Kaweah	57.1	20.1	50.1	25.1
20S24E01H002M	KSB-1770	Mid-Kaweah	-75.5	-90.5	97.0	78.0
20S24E04K001M	KSB-1506	Mid-Kaweah	85.0	64.0	67.0	48.0
20S24E07C001M	KSB-1320	Mid-Kaweah	-	73.1	71.1	-
20S24E11J002M	KSB-1695	Mid-Kaweah	74.1	58.1	74.0	54.0
20S24E16H001M	KSB-1538	Mid-Kaweah	123.1	123.1	120.1	113.1
20S24E17P001M	KSB-1431	Mid-Kaweah	-	111.5	121.5	113.5
20S24E28L001M	KSB-1477	Mid-Kaweah	-	144.3	137.3	133.3
21S23E05A002M	KSB-0976	Mid-Kaweah	-	40.9	51.0	-
21S23E07J001M	KSB-0922	Mid-Kaweah	-	42.0	-	39.0
361856N1193313W001	KSB-1706	Mid-Kaweah	-	-	-	-

Appendix B

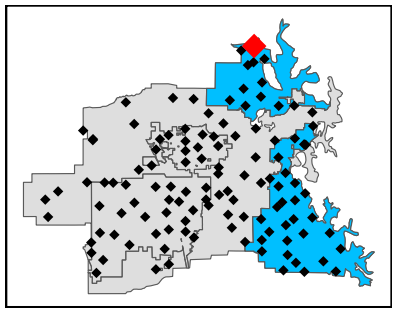
Monitoring Network Hydrographs

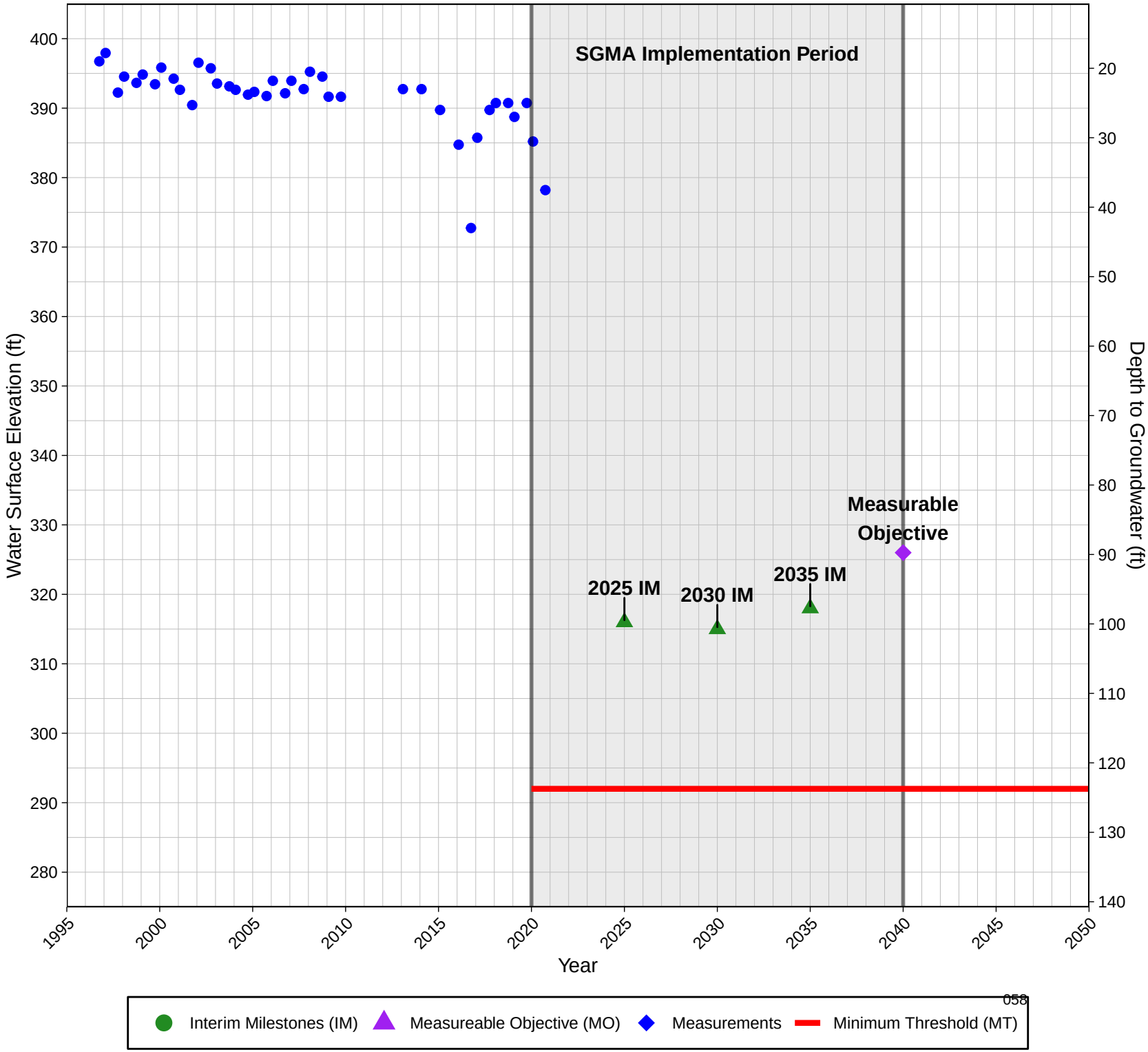
16S25E36M002M | East Kaweah
Single Aquifer System





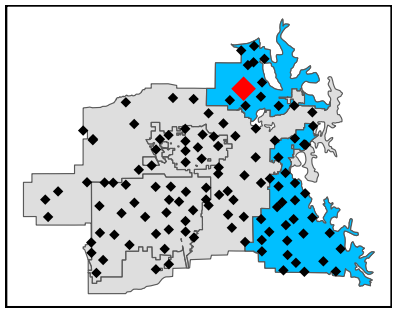
16S26E30Q001M | East Kaweah
Single Aquifer System

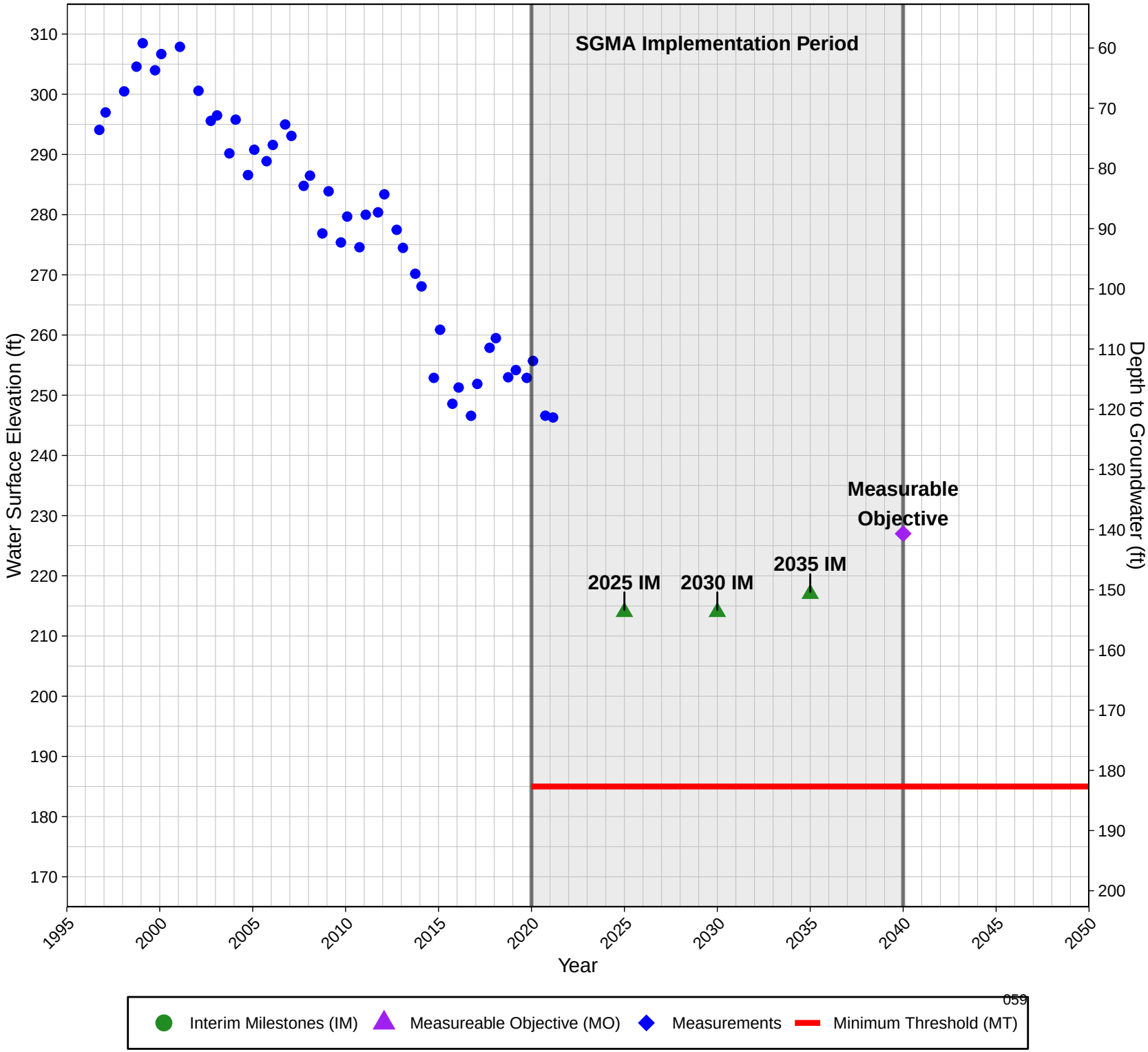


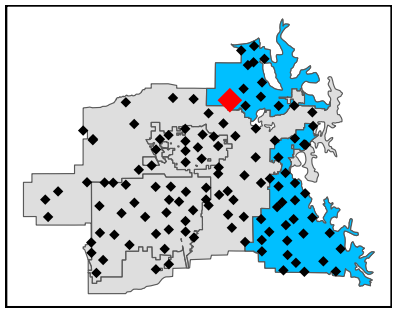


Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

17S25E25A001M | East Kaweah
Single Aquifer System







17S25E35E001M | East Kaweah
Single Aquifer System

SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

2035 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

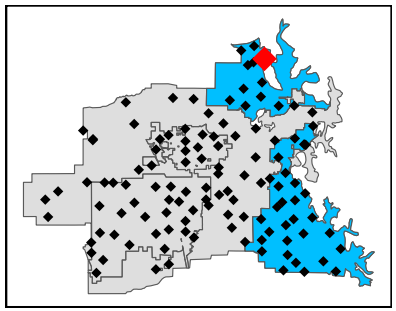
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

060



17S26E04F002M | East Kaweah
Single Aquifer System

SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

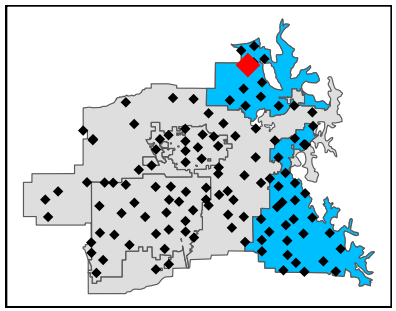
2035 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



17S26E07C001M | East Kaweah
Single Aquifer System

SGMA Implementation Period
Measurable Objective
2025 IM
2030 IM
2035 IM

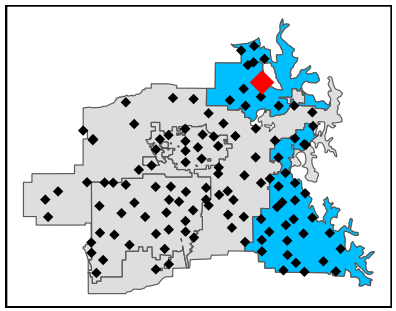
Water Surface Elevation (ft)
Depth to Groundwater (ft)
Year

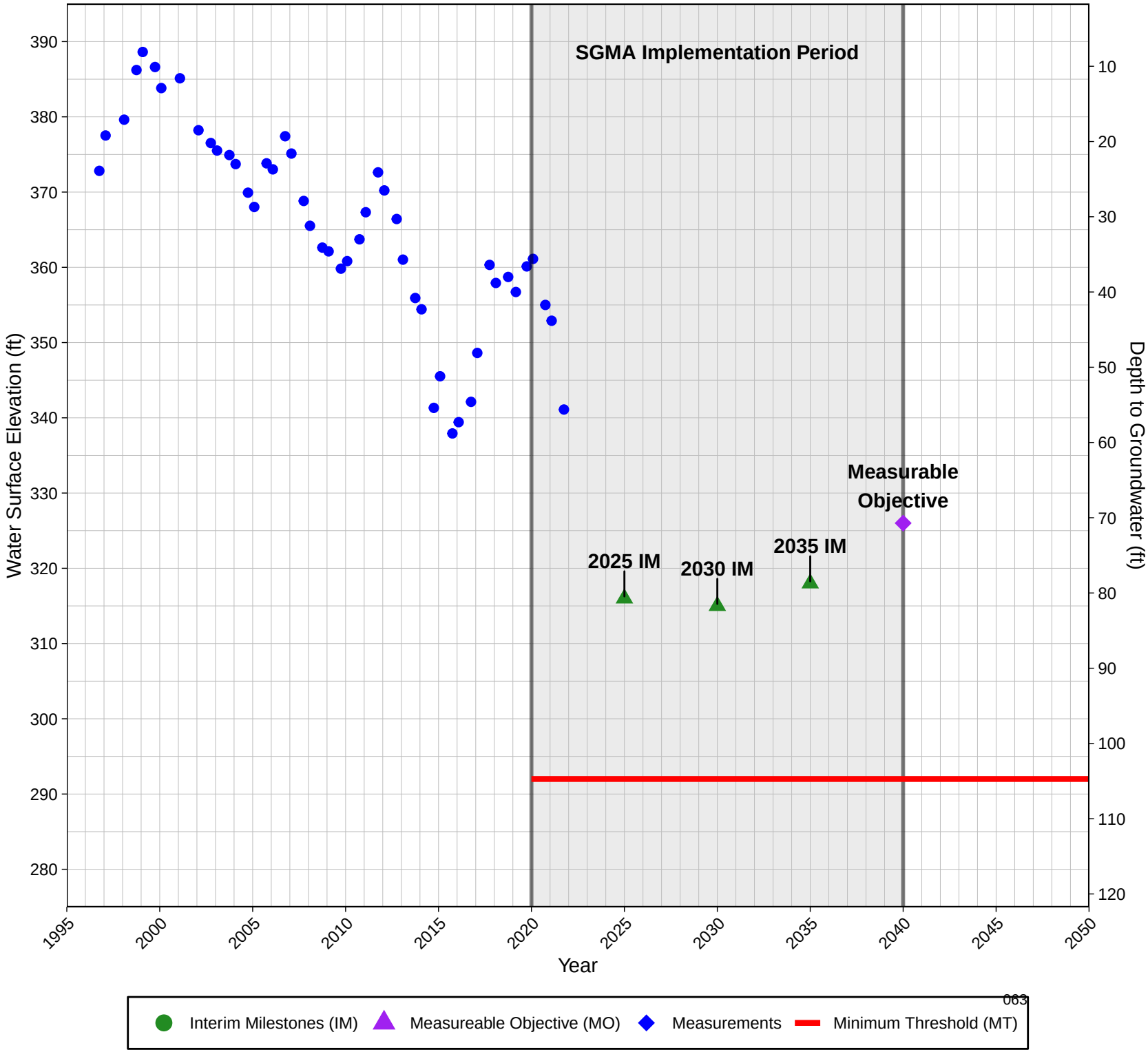
340
330
320
310
300
290
280
270
260
30
40
50
60
70
80
90
100
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050

Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)

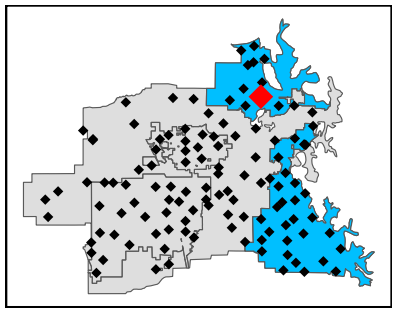
062

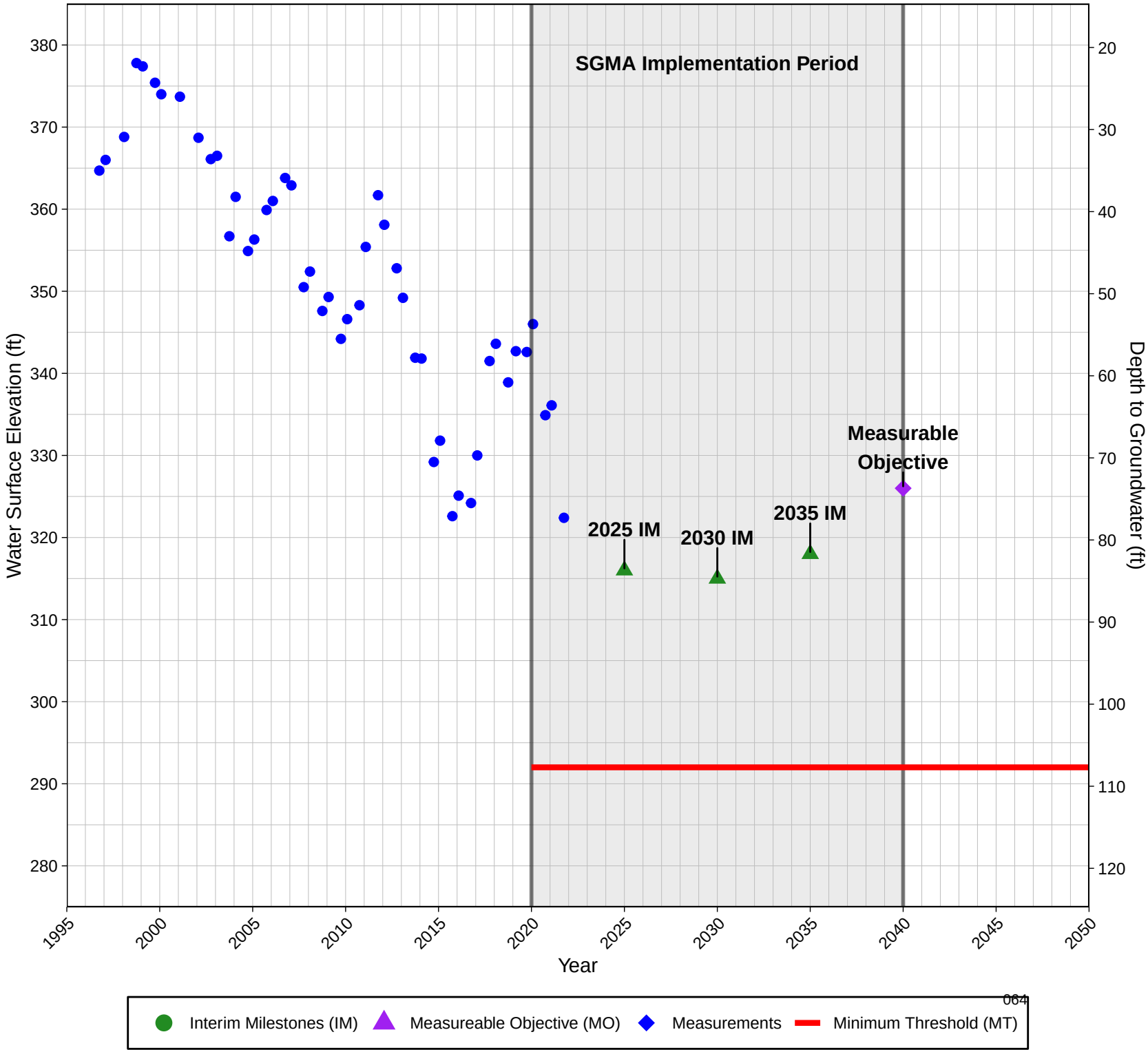
17S26E21E001M | East Kaweah
Single Aquifer System



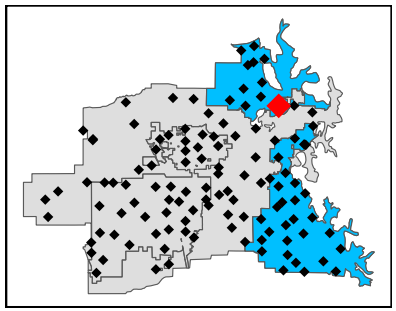


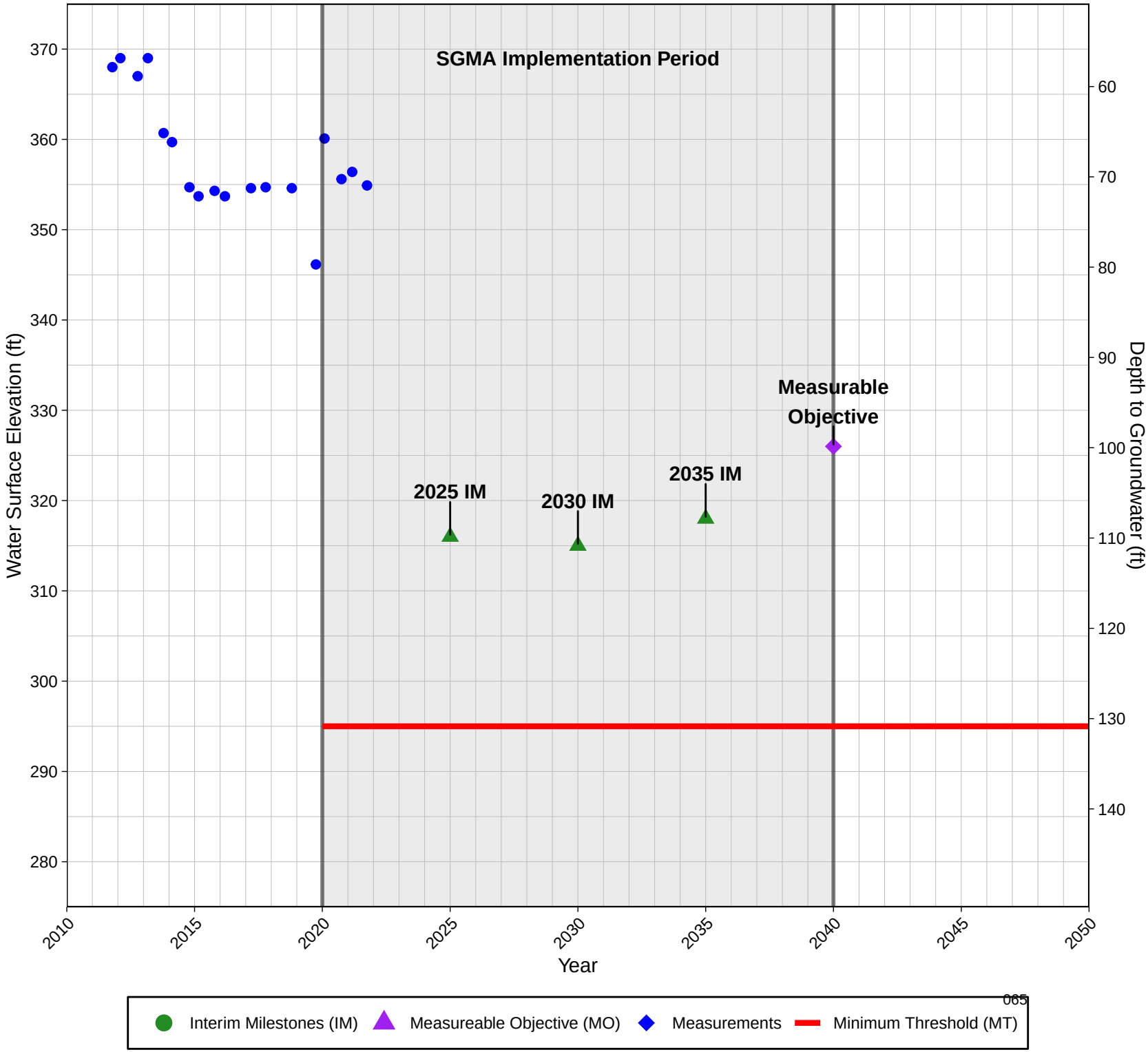
17S26E29R001M | East Kaweah
Single Aquifer System



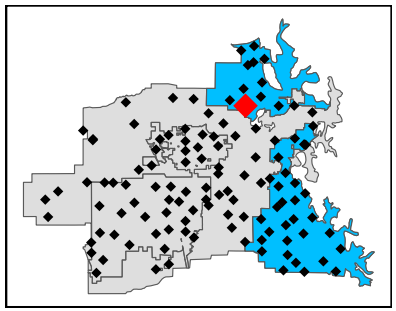


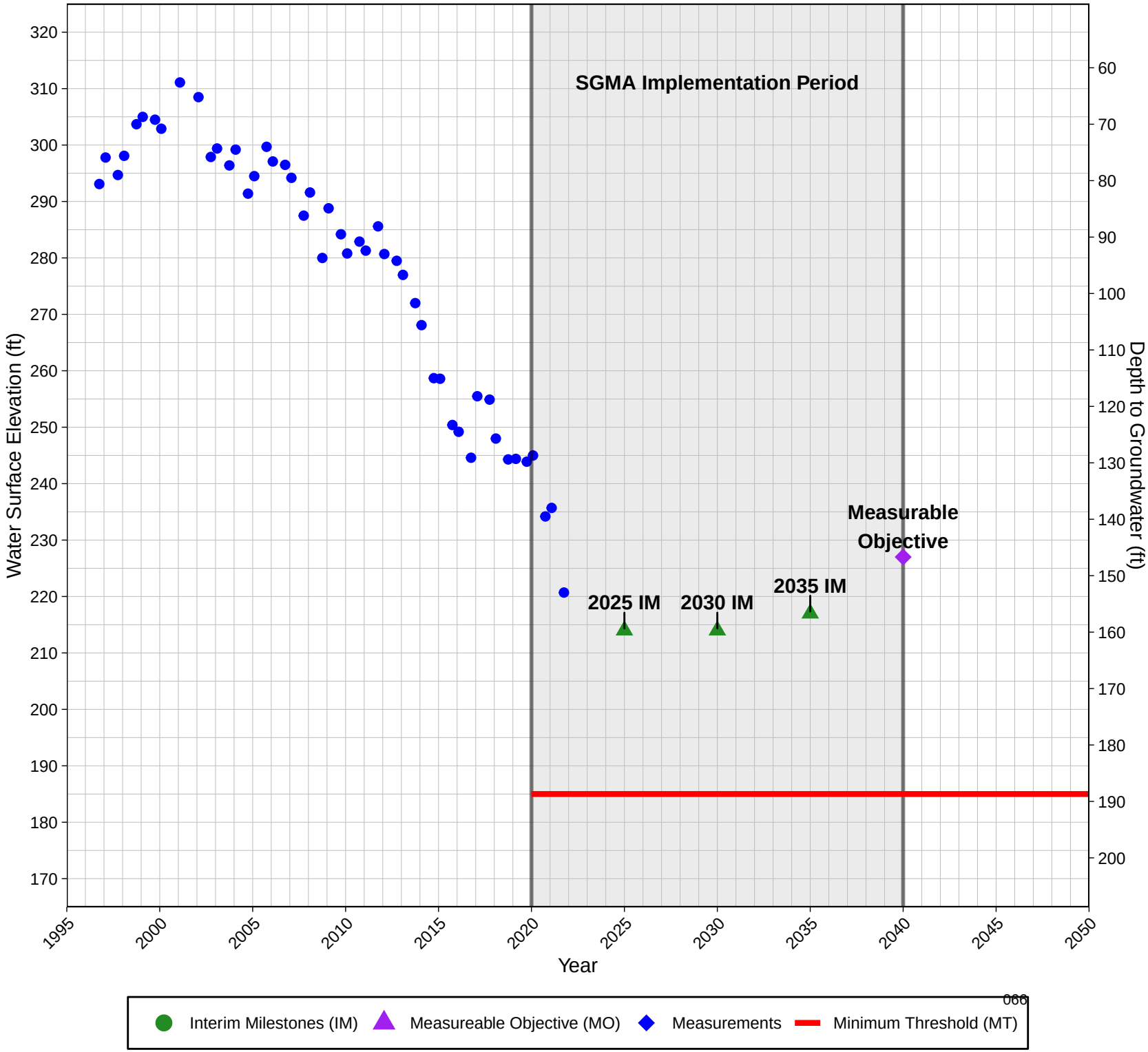
18S26E02D002M | East Kaweah
Single Aquifer System





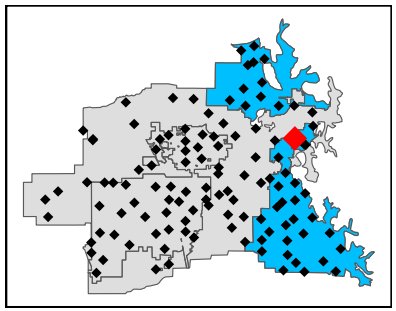
18S26E06D001M | East Kaweah
Single Aquifer System

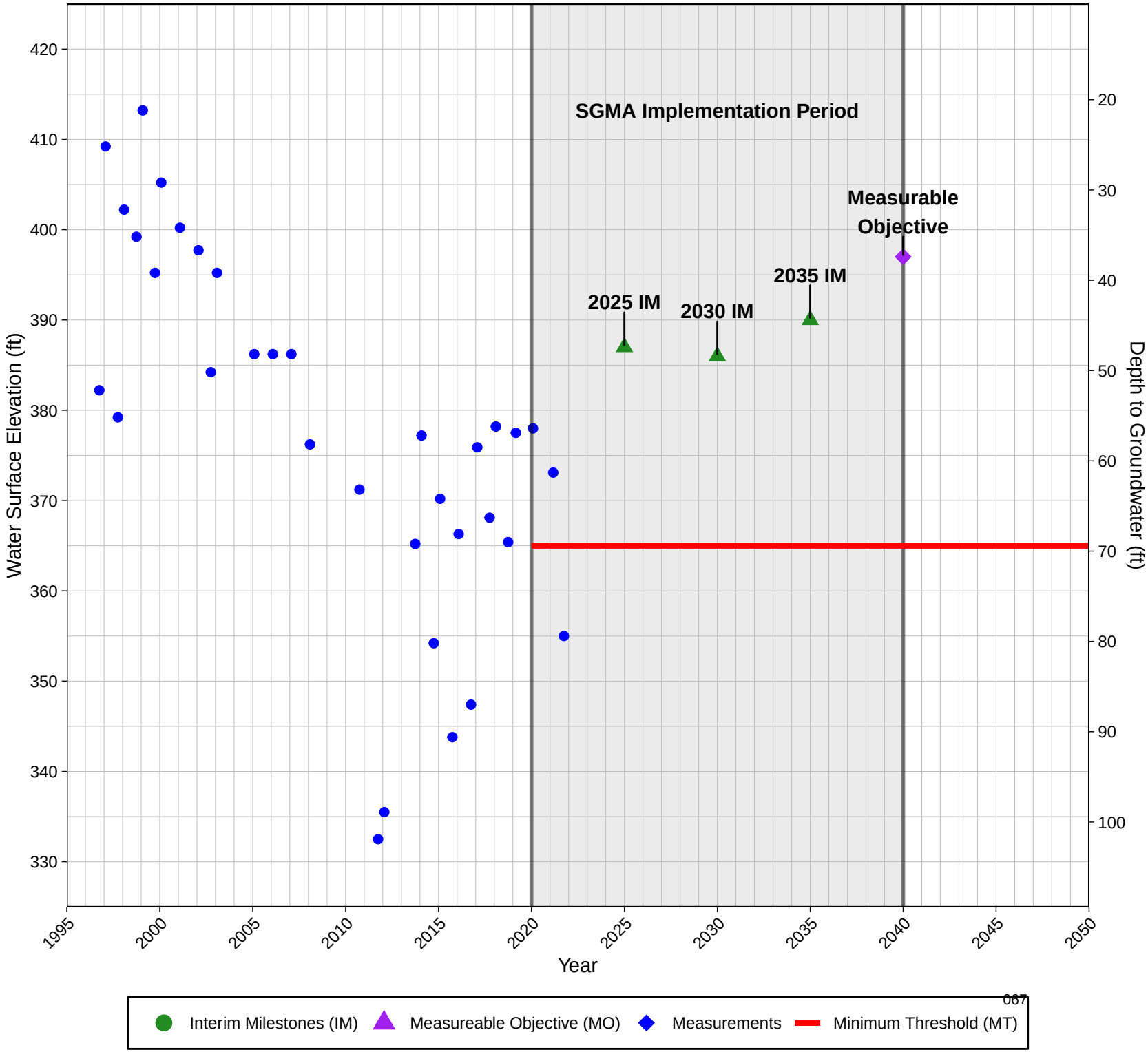


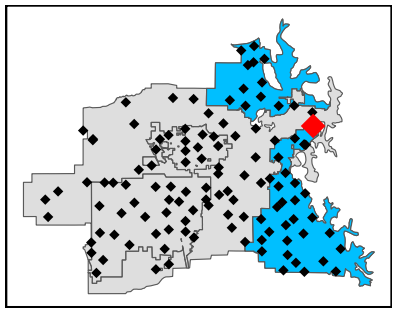


Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

18S26E24J003M | East Kaweah
Single Aquifer System







18S27E17H002M | East Kaweah
Single Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2025 IM

2030 IM

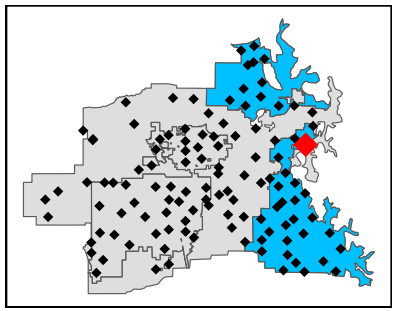
Water Surface Elevation (ft)

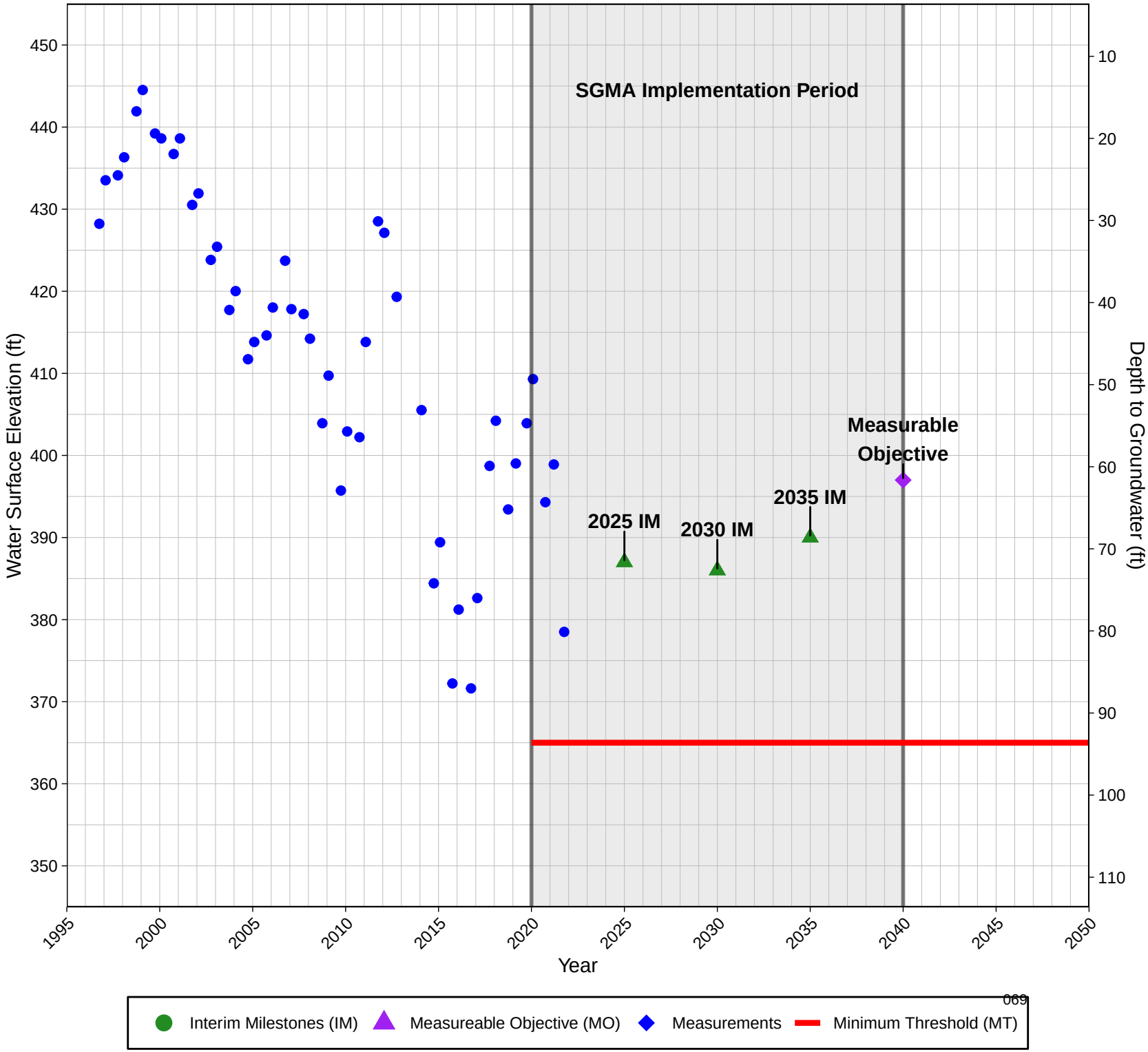
Depth to Groundwater (ft)

Year

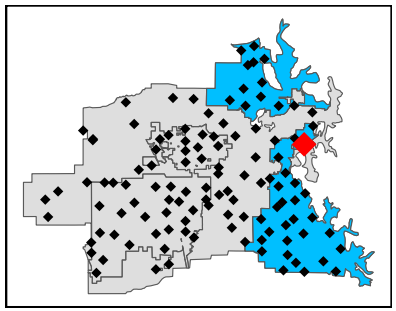
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

18S27E29E001M | East Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



18S27E30H001M | East Kaweah
Single Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

2025 IM

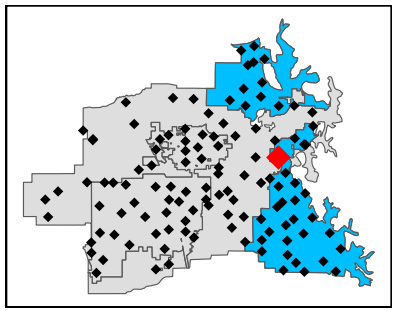
Water Surface Elevation (ft)

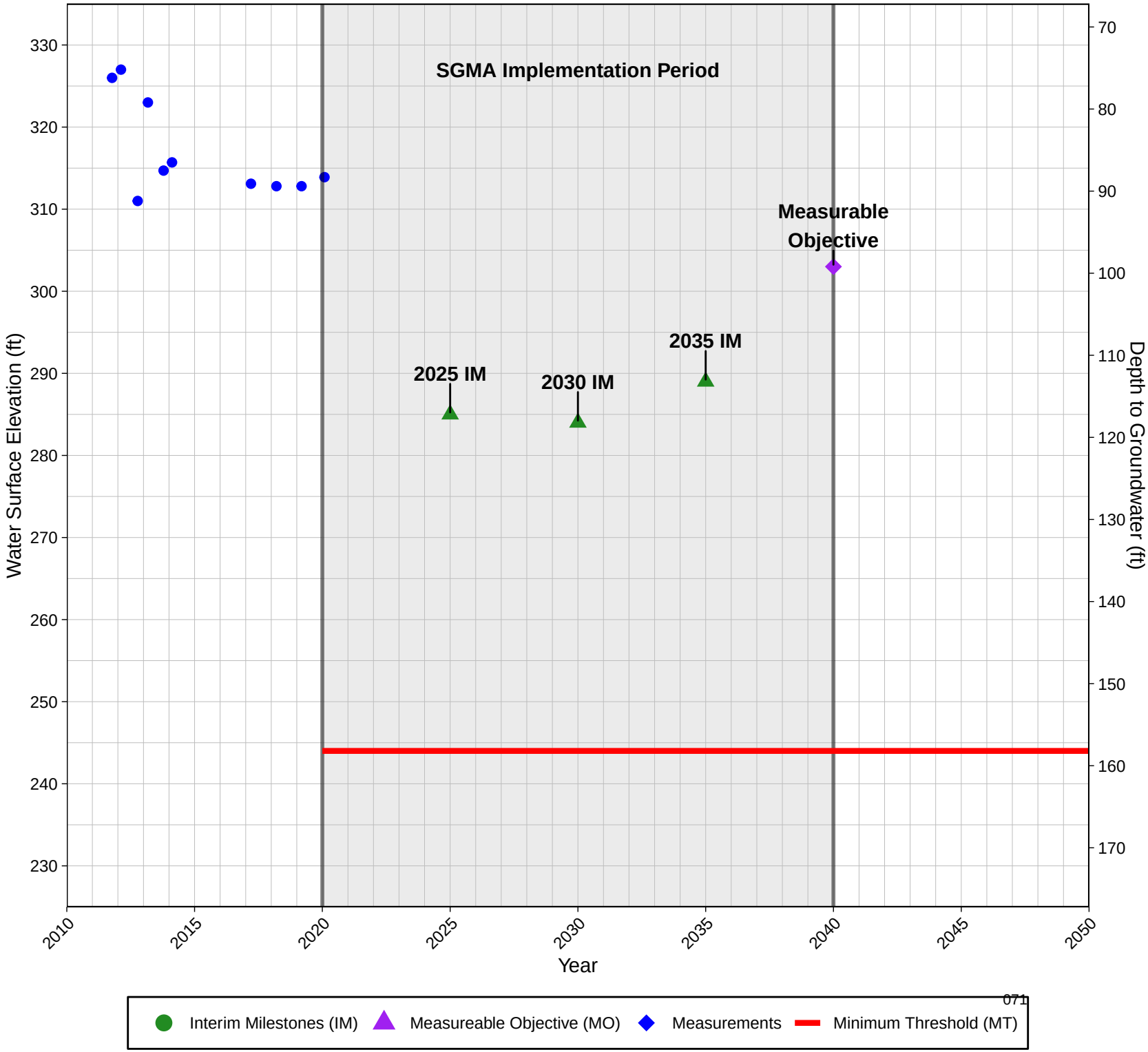
Depth to Groundwater (ft)

Year

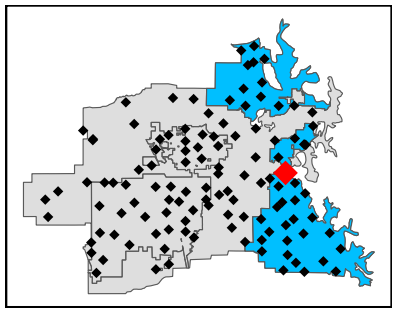
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

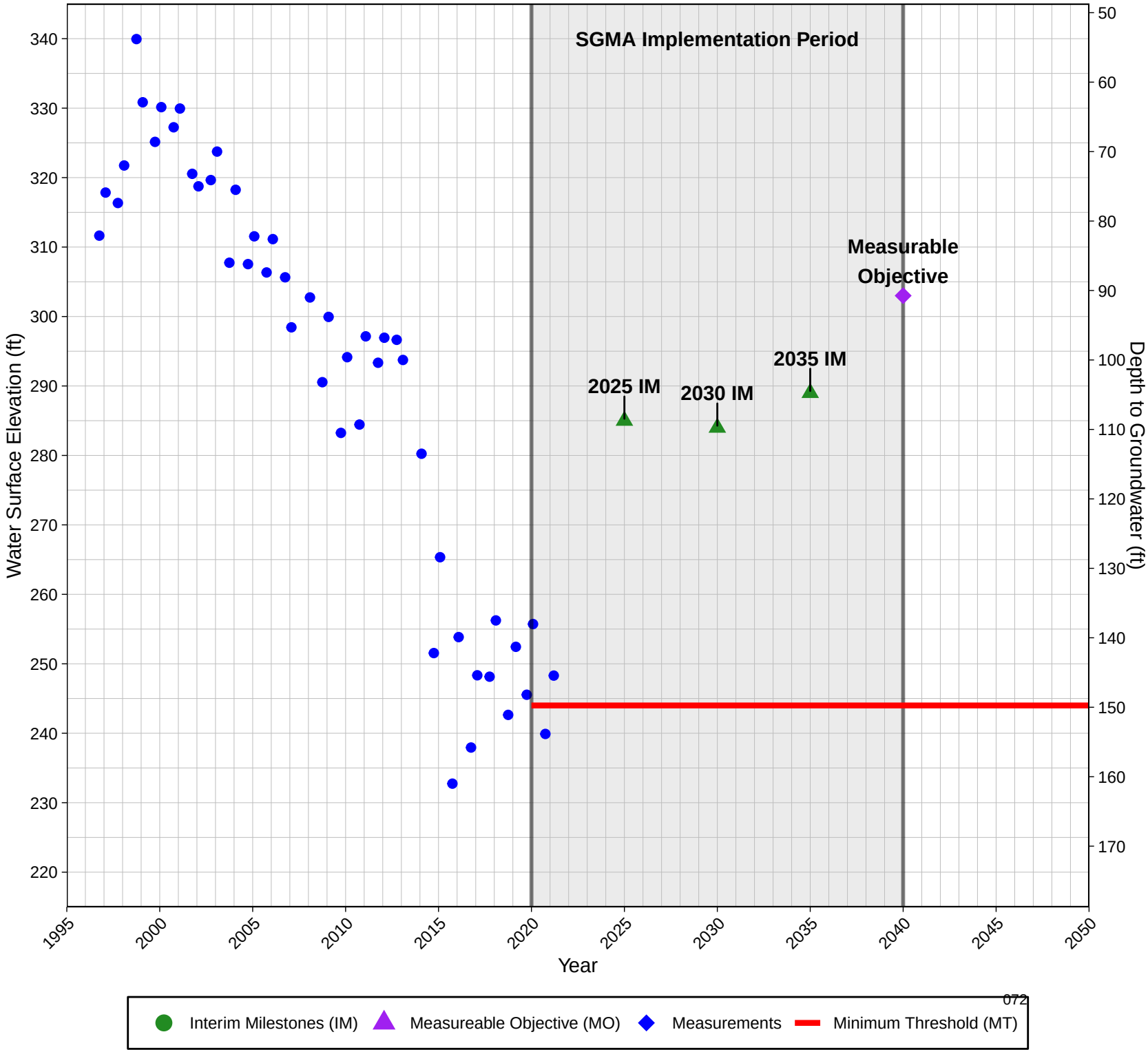
19S26E03A001M | East Kaweah
Single Aquifer System



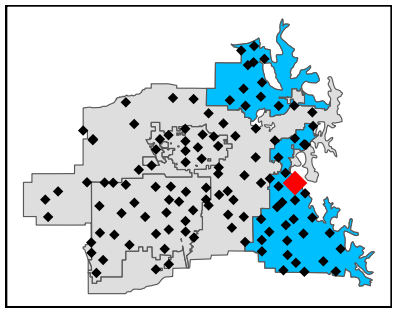


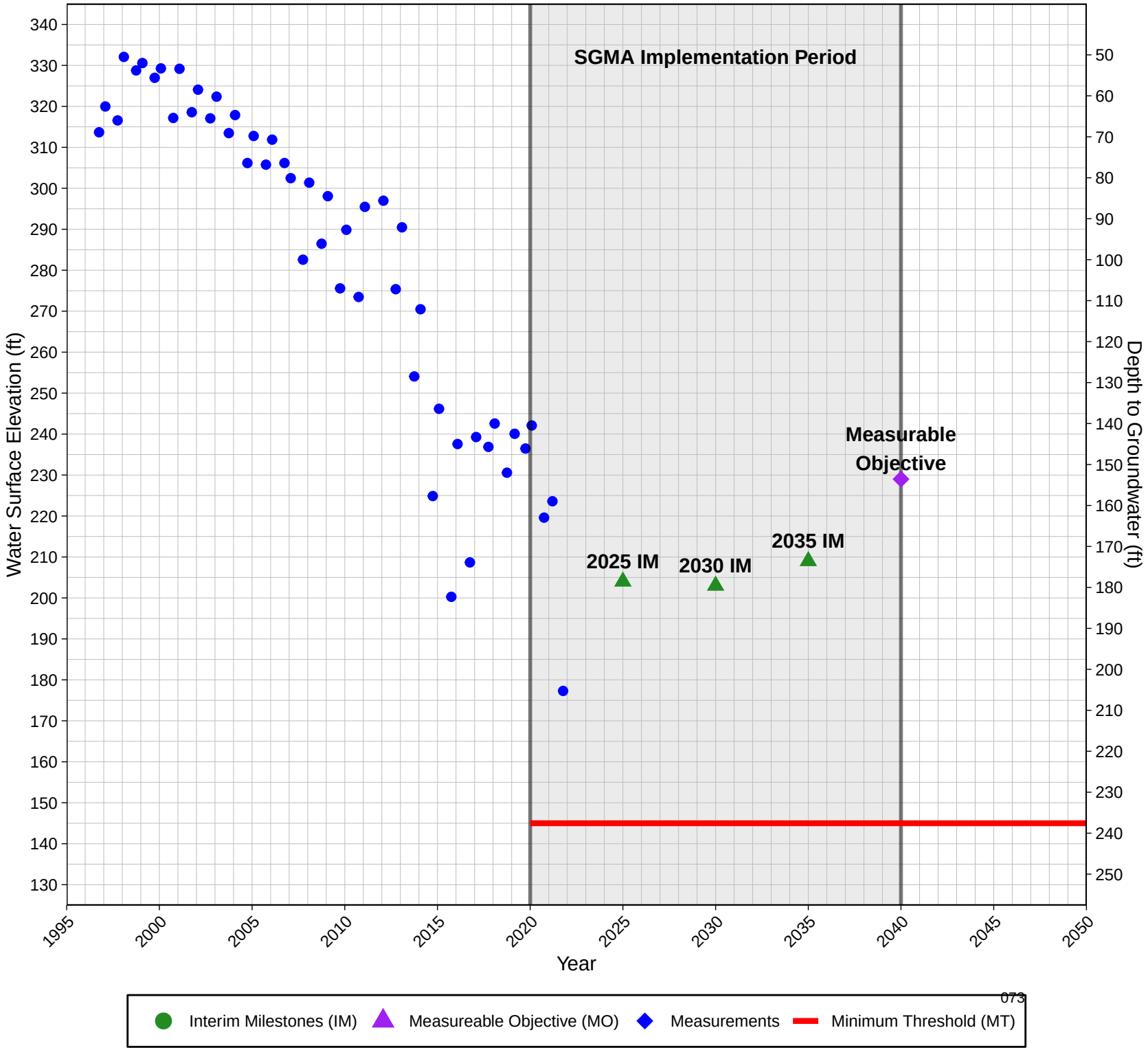
19S26E11R001M | East Kaweah
Single Aquifer System





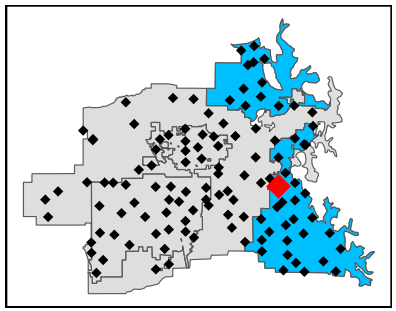
19S26E13R001M | East Kaweah
Single Aquifer System

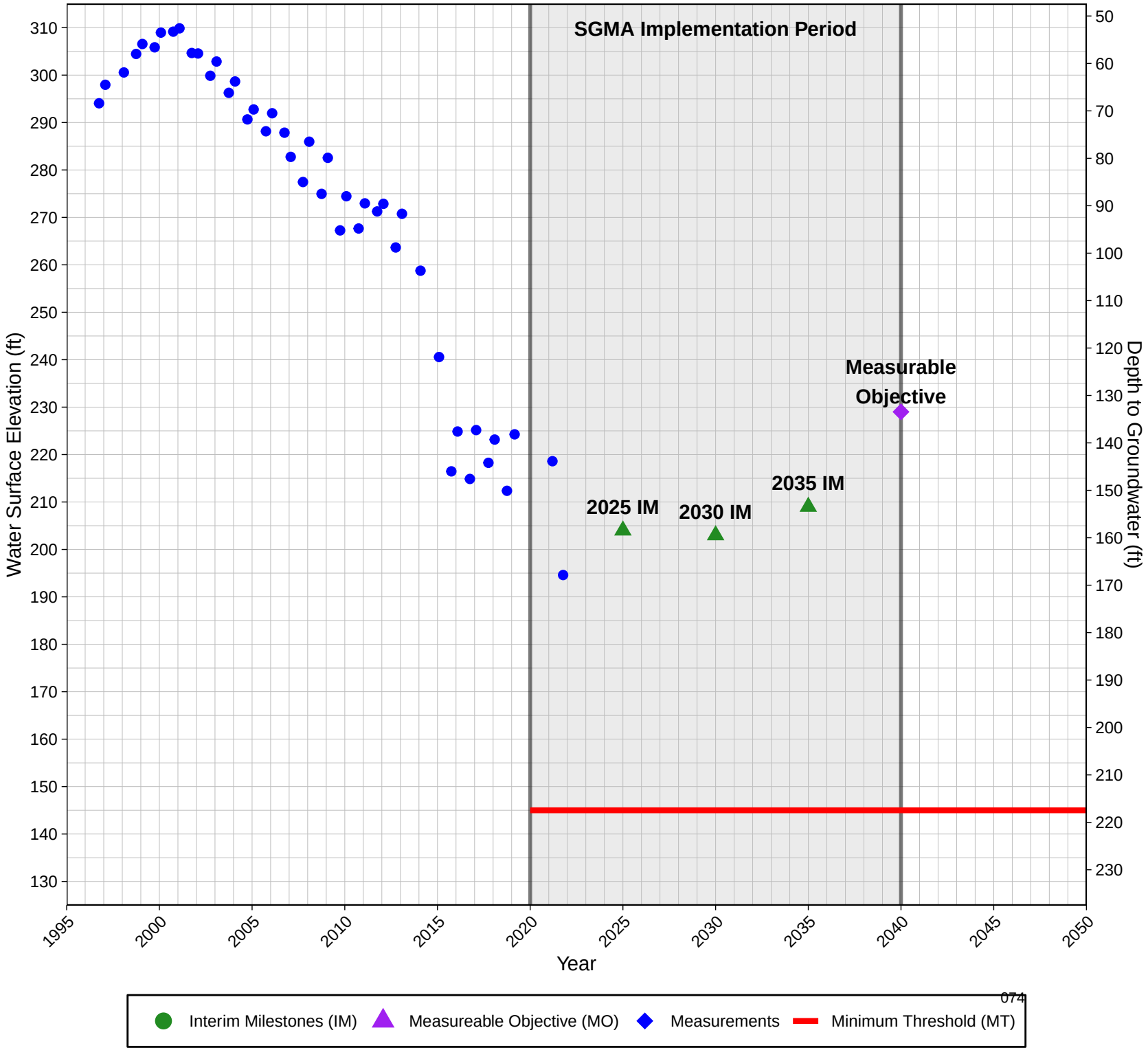




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

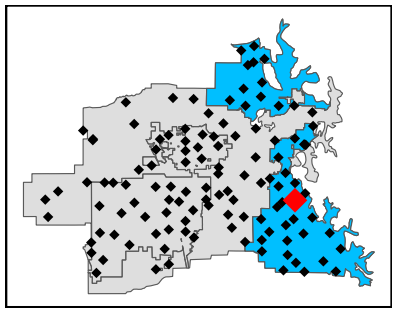
19S26E23E001M | East Kaweah
Single Aquifer System

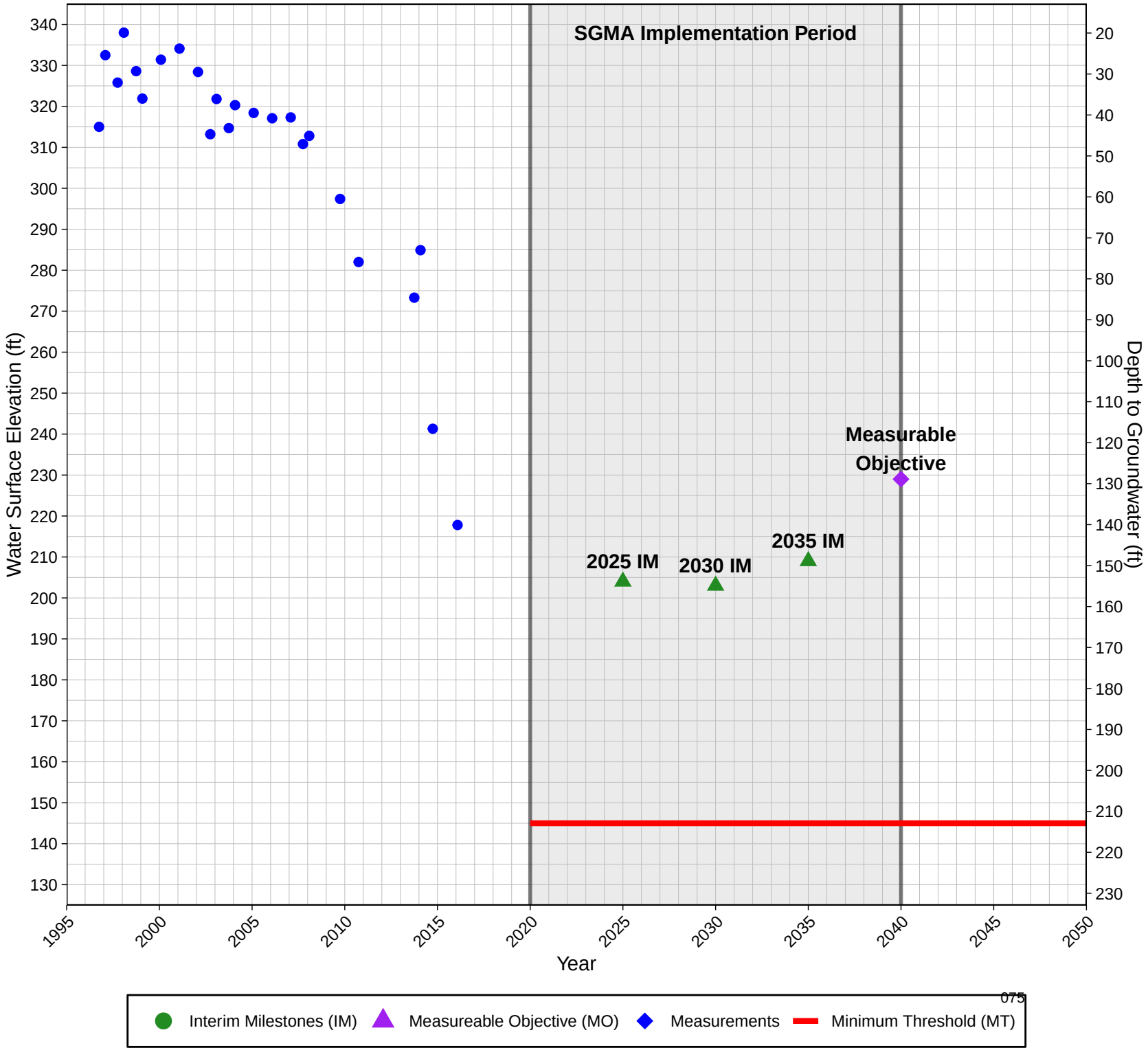




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

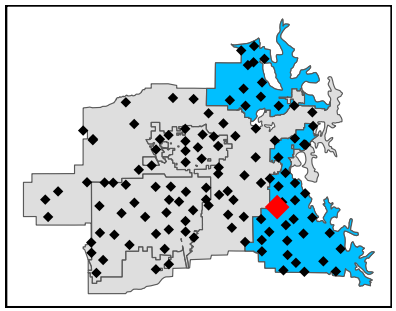
19S26E25R001M | East Kaweah
Single Aquifer System

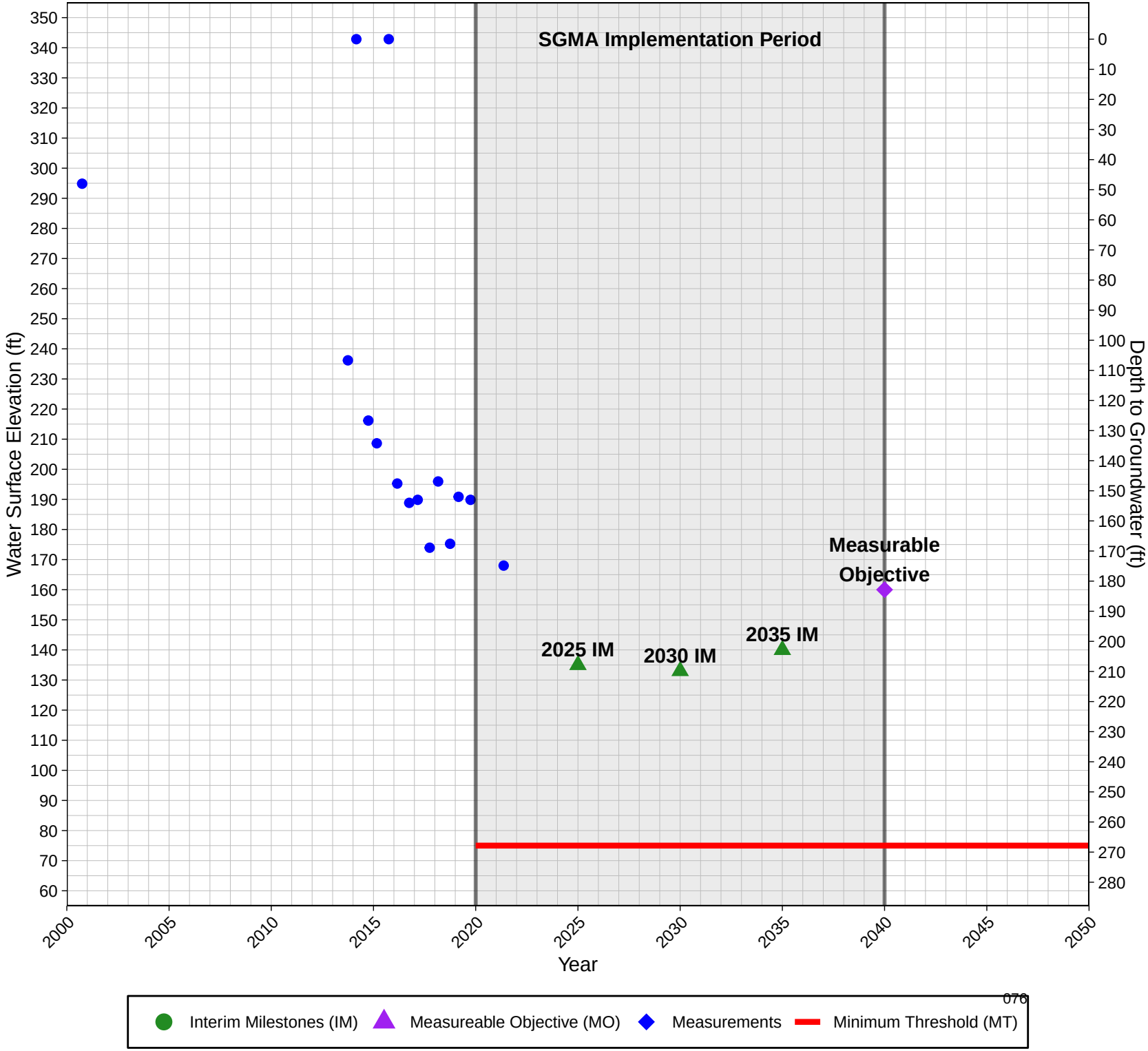




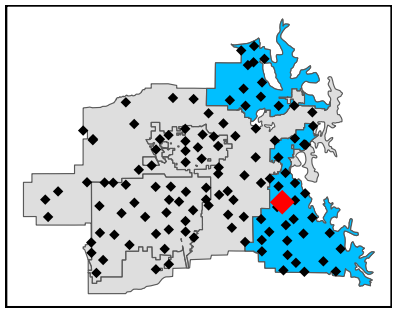
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

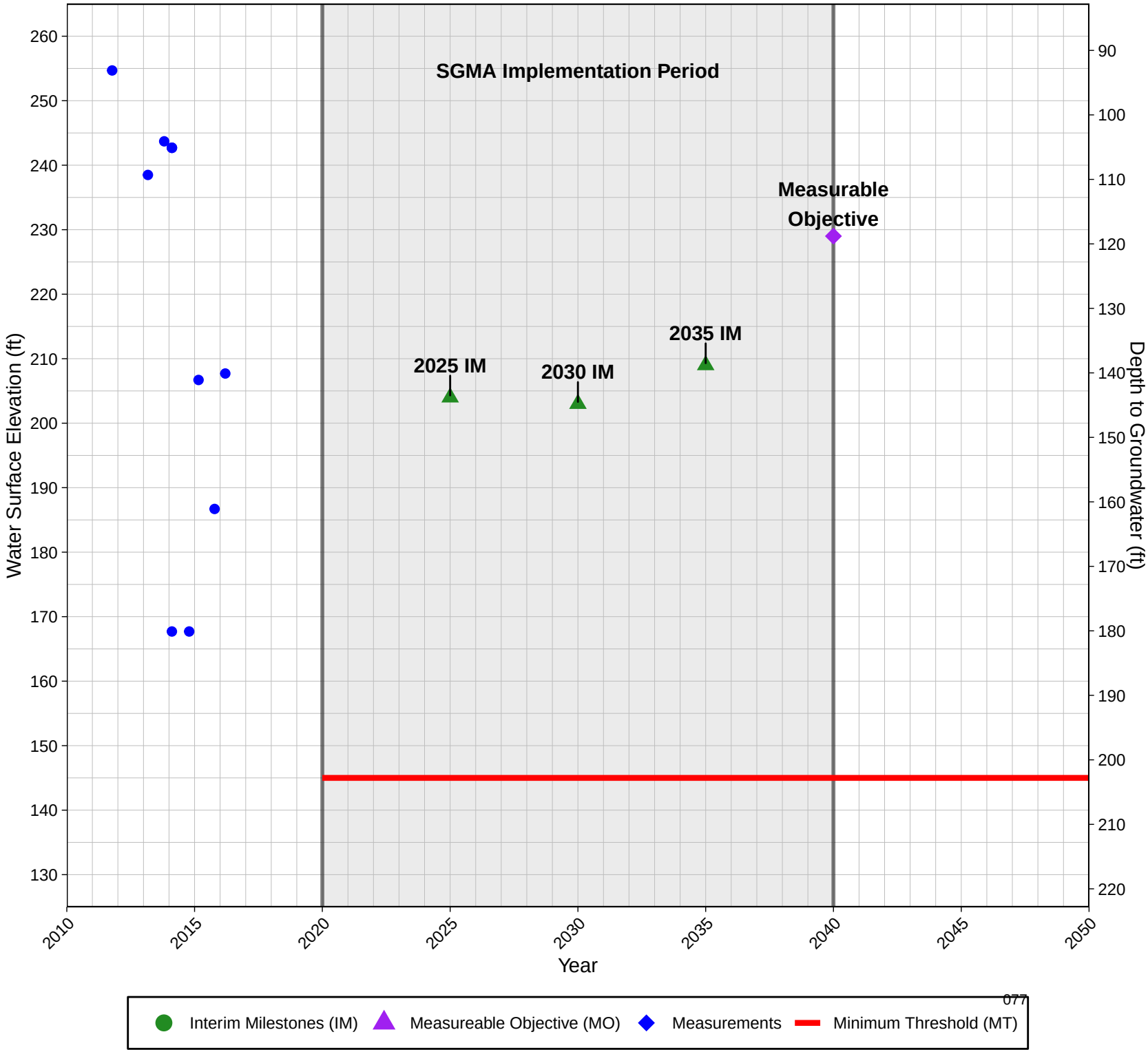
19S26E34R006M | East Kaweah
Single Aquifer System

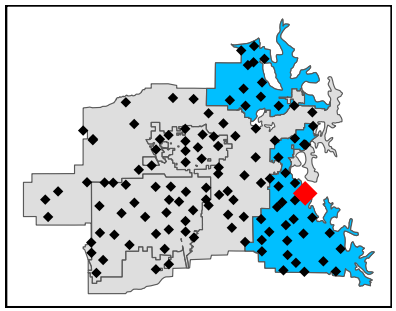




19S26E35C001M | East Kaweah
Single Aquifer System







19S27E29D001M | East Kaweah
Single Aquifer System

SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

2035 IM

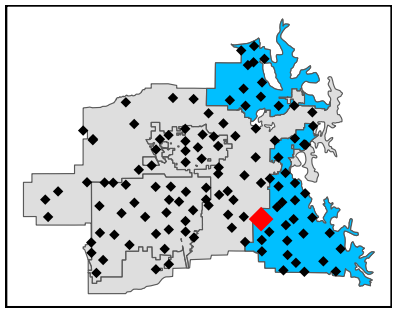
Water Surface Elevation (ft)

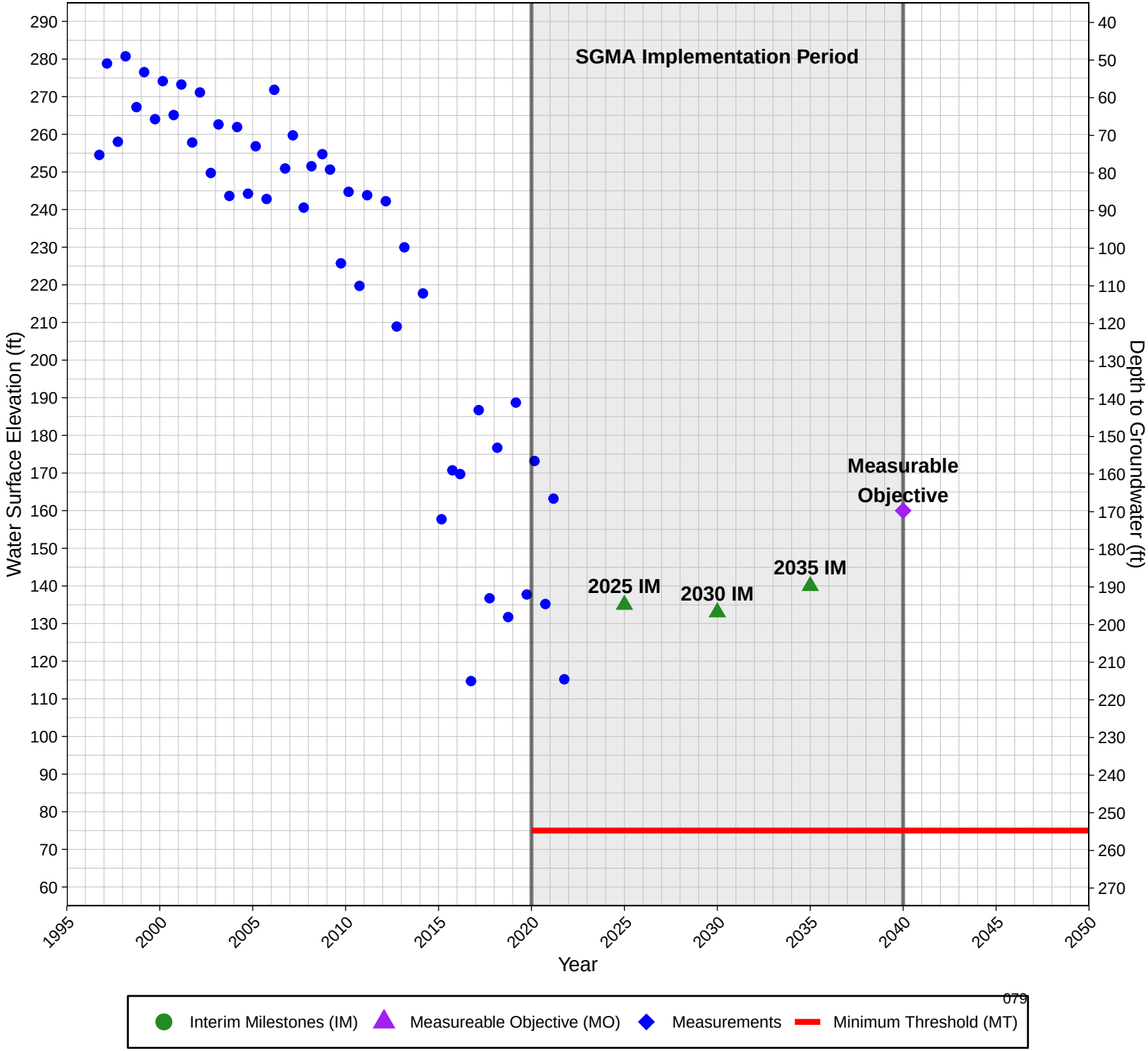
Depth to Groundwater (ft)

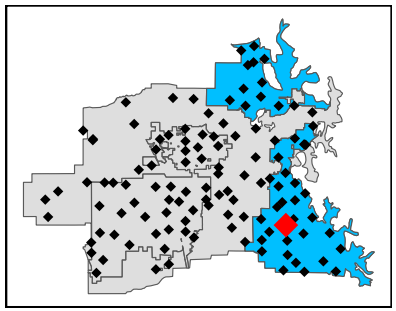
Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

20S26E08H001M | East Kaweah
Single Aquifer System



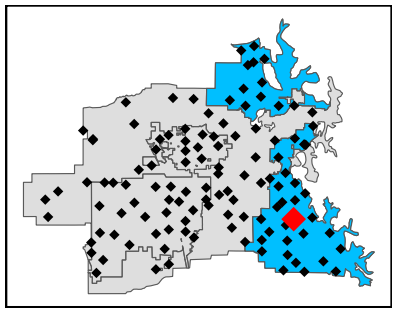


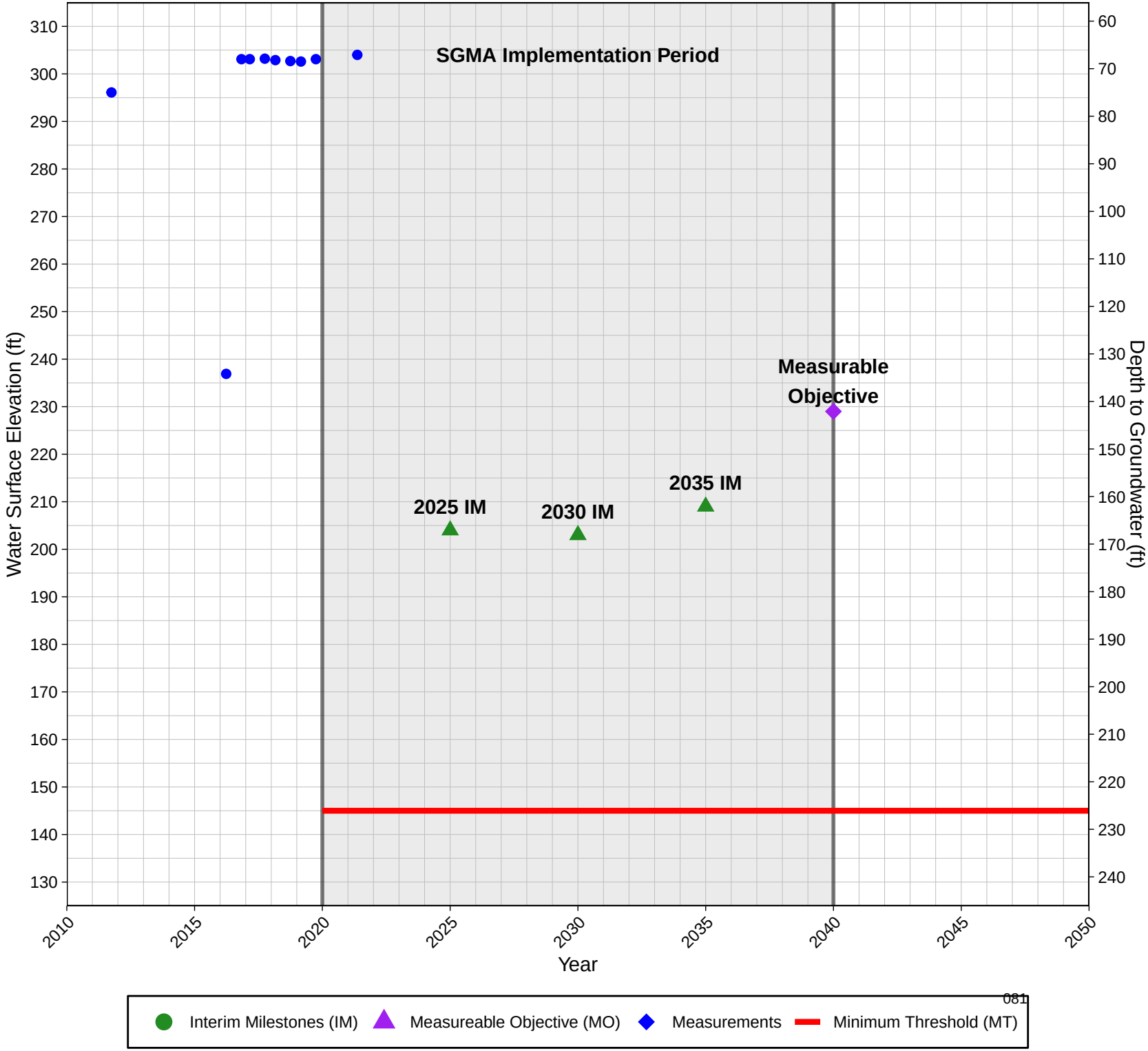


20S26E11R001M | East Kaweah
Single Aquifer System

SGMA Implementation Period
Measurable Objective
2025 IM
2030 IM
2035 IM
Water Surface Elevation (ft)
Depth to Groundwater (ft)
Year
250
240
230
220
210
200
190
180
170
160
150
140
130
110
120
130
140
150
160
170
180
190
200
210
220
230
2010
2015
2020
2025
2030
2035
2040
2045
2050
Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)
080

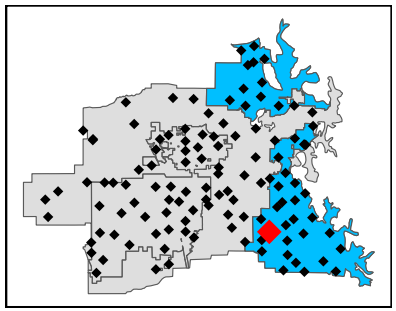
20S26E12H001M | East Kaweah
Single Aquifer System

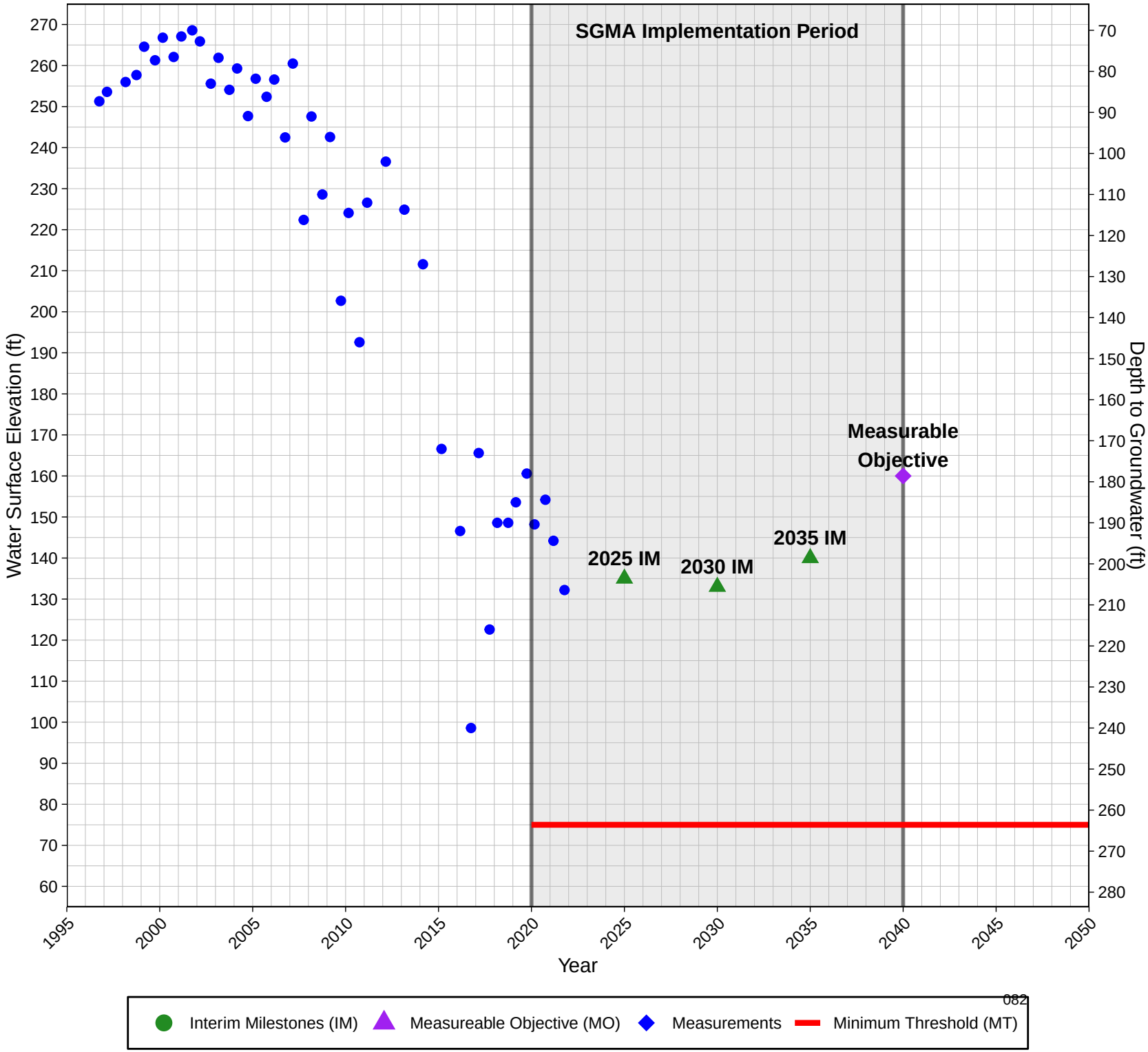




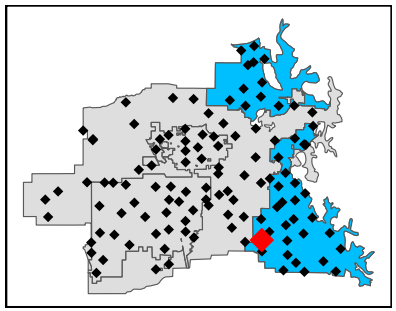
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

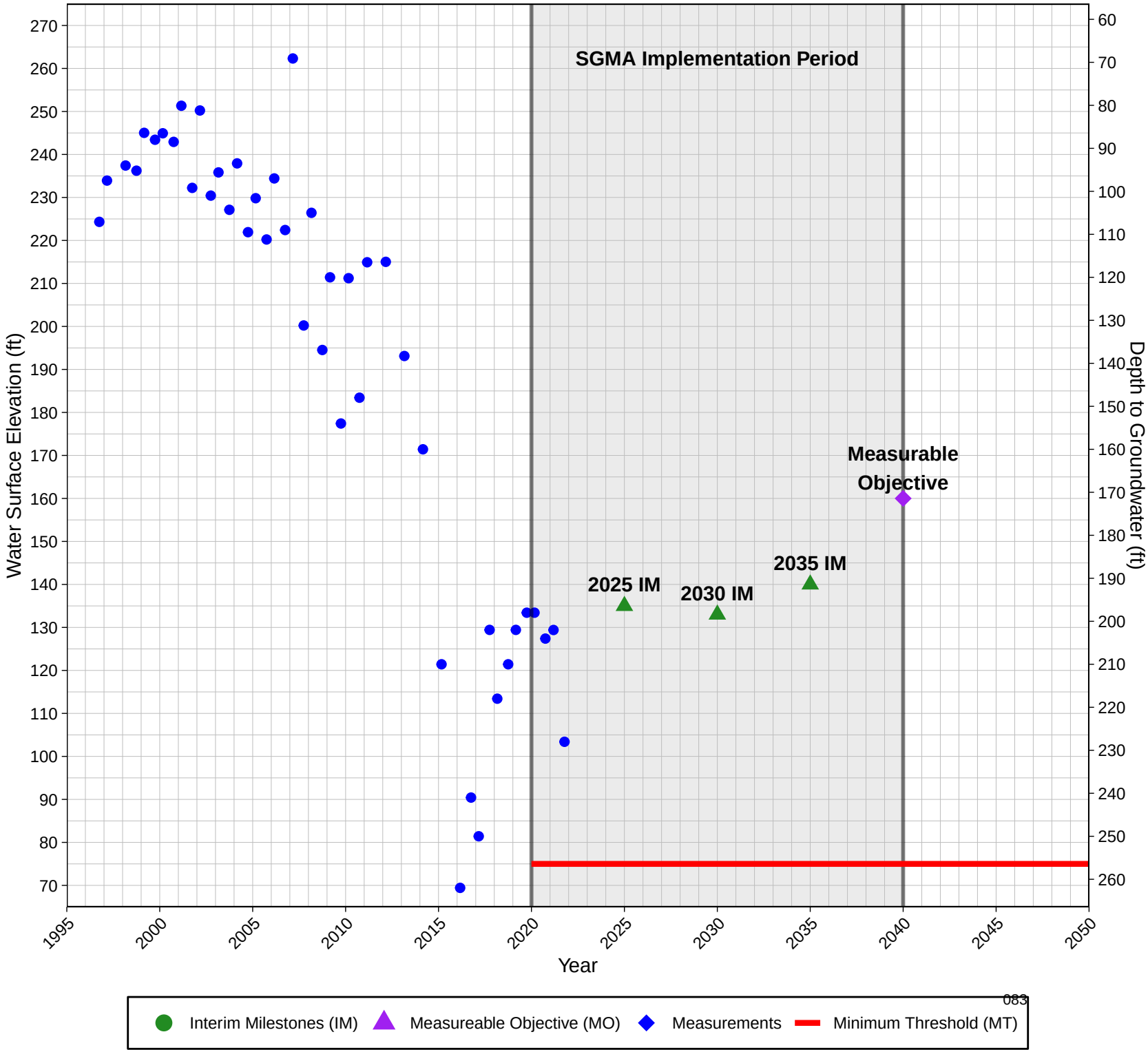
20S26E16R001M | East Kaweah
Single Aquifer System



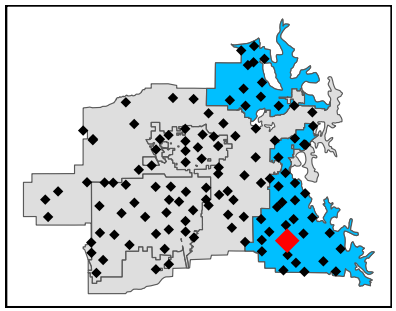


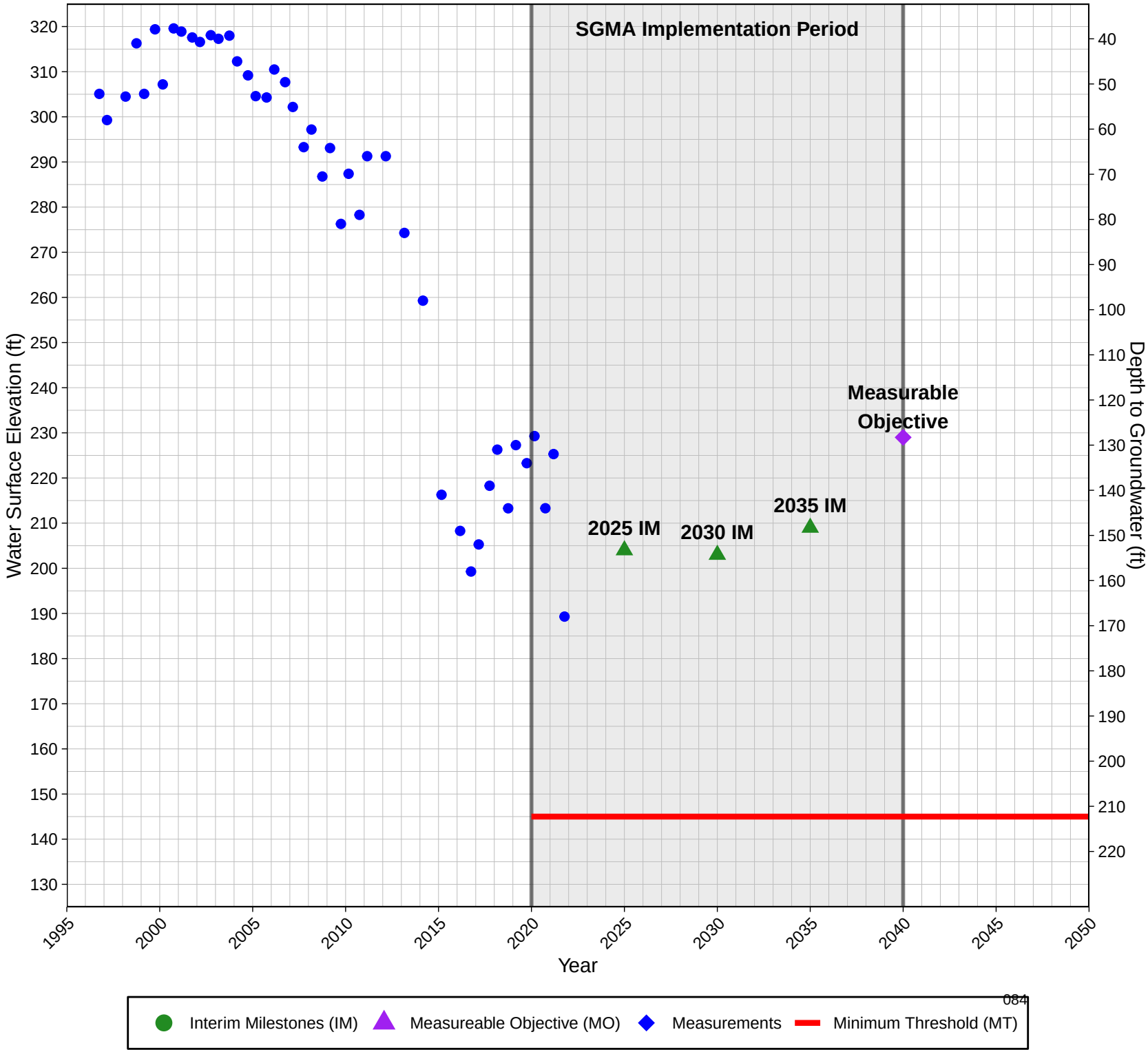
20S26E20J001M | East Kaweah
Single Aquifer System





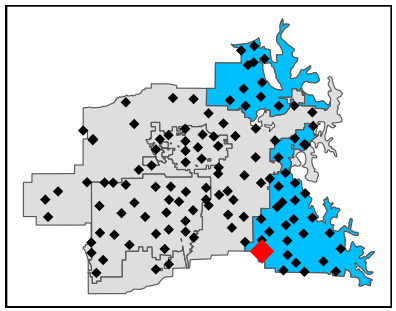
20S26E23R001M | East Kaweah
Single Aquifer System

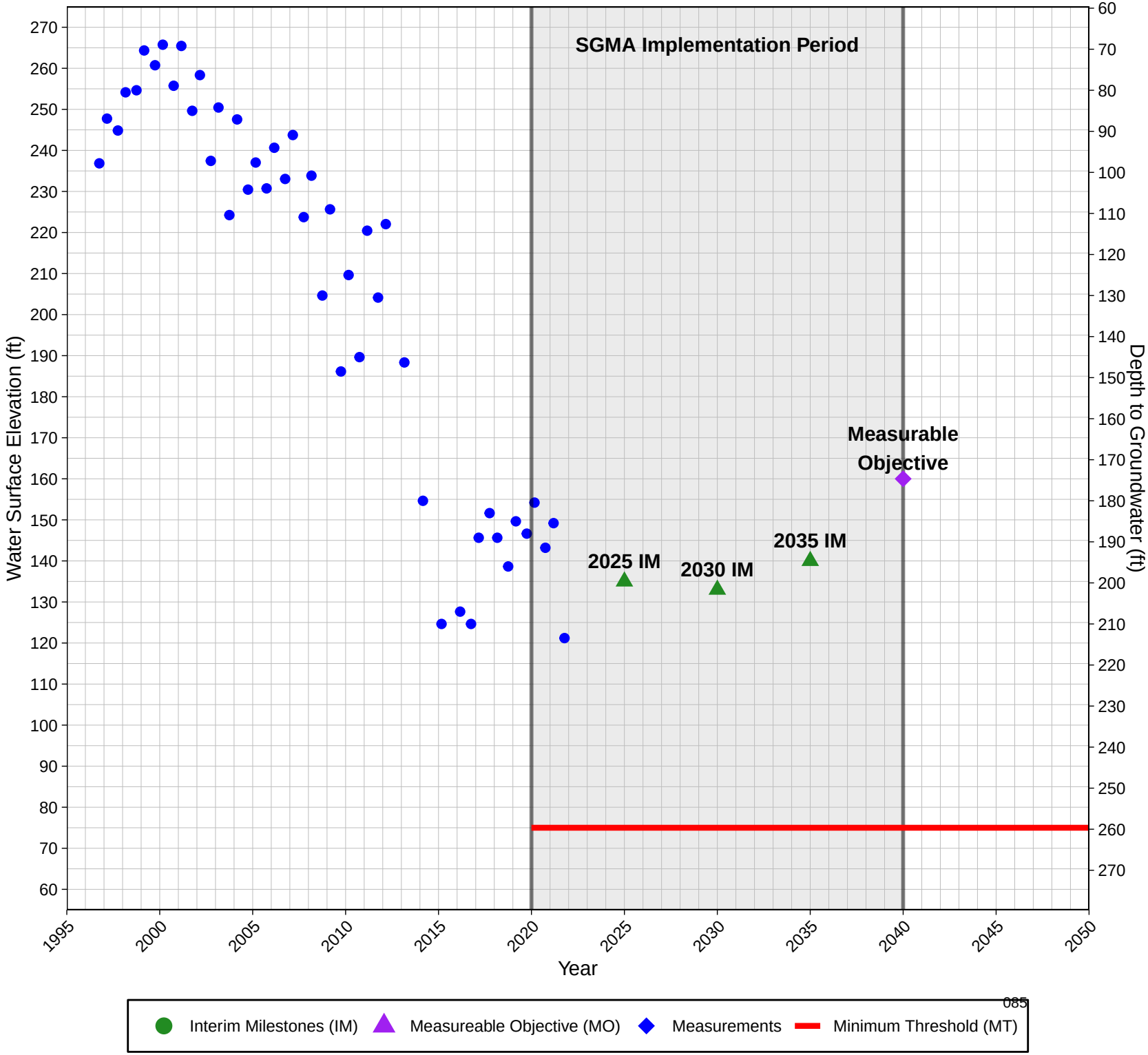




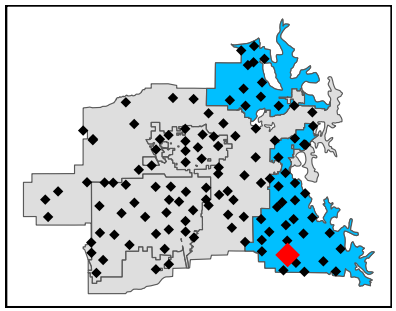
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

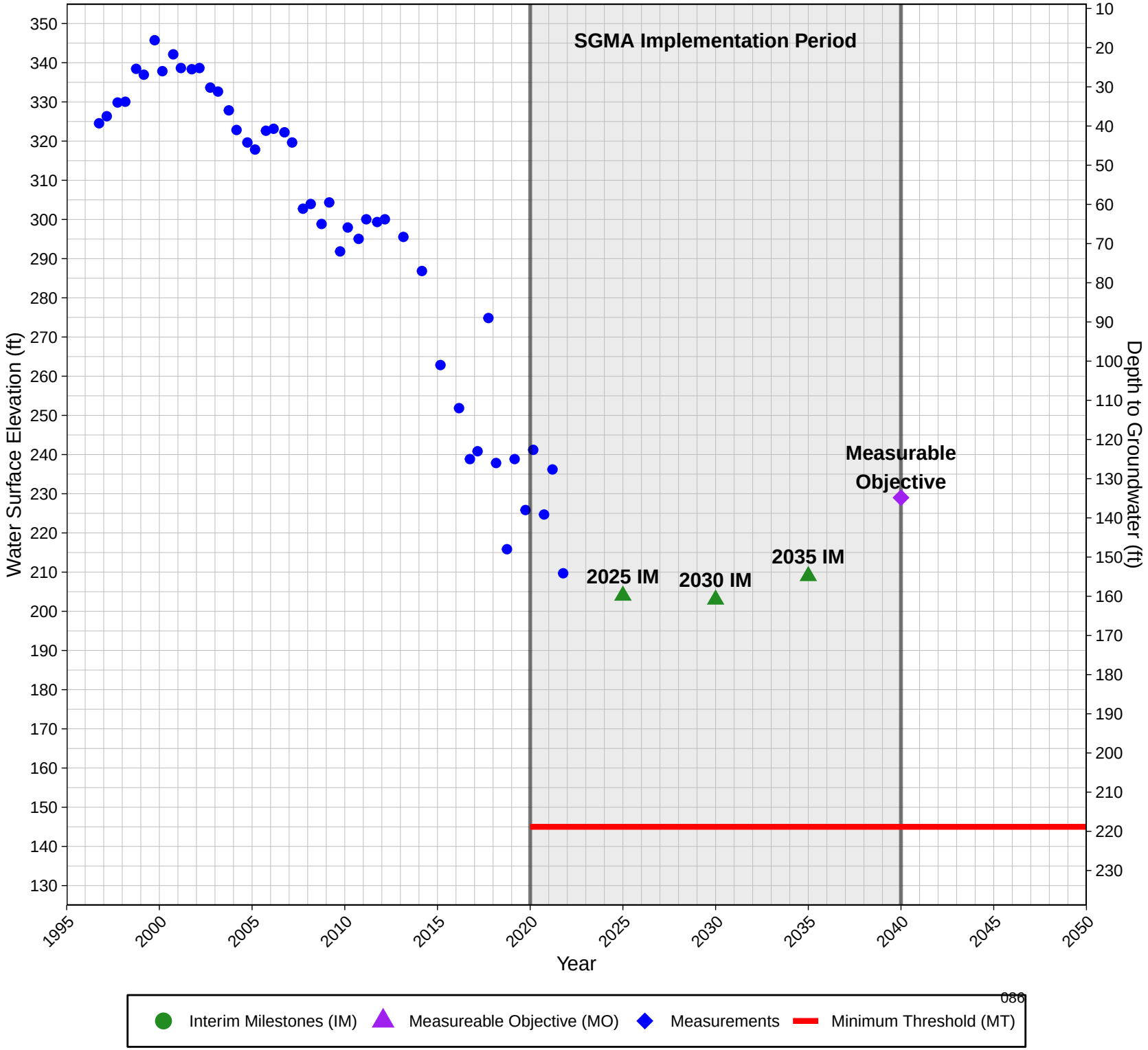
20S26E32A001M | East Kaweah
Single Aquifer System





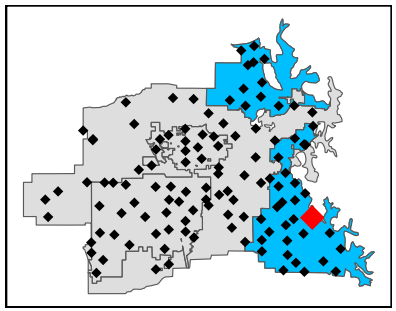
20S26E35H001M | East Kaweah
Single Aquifer System

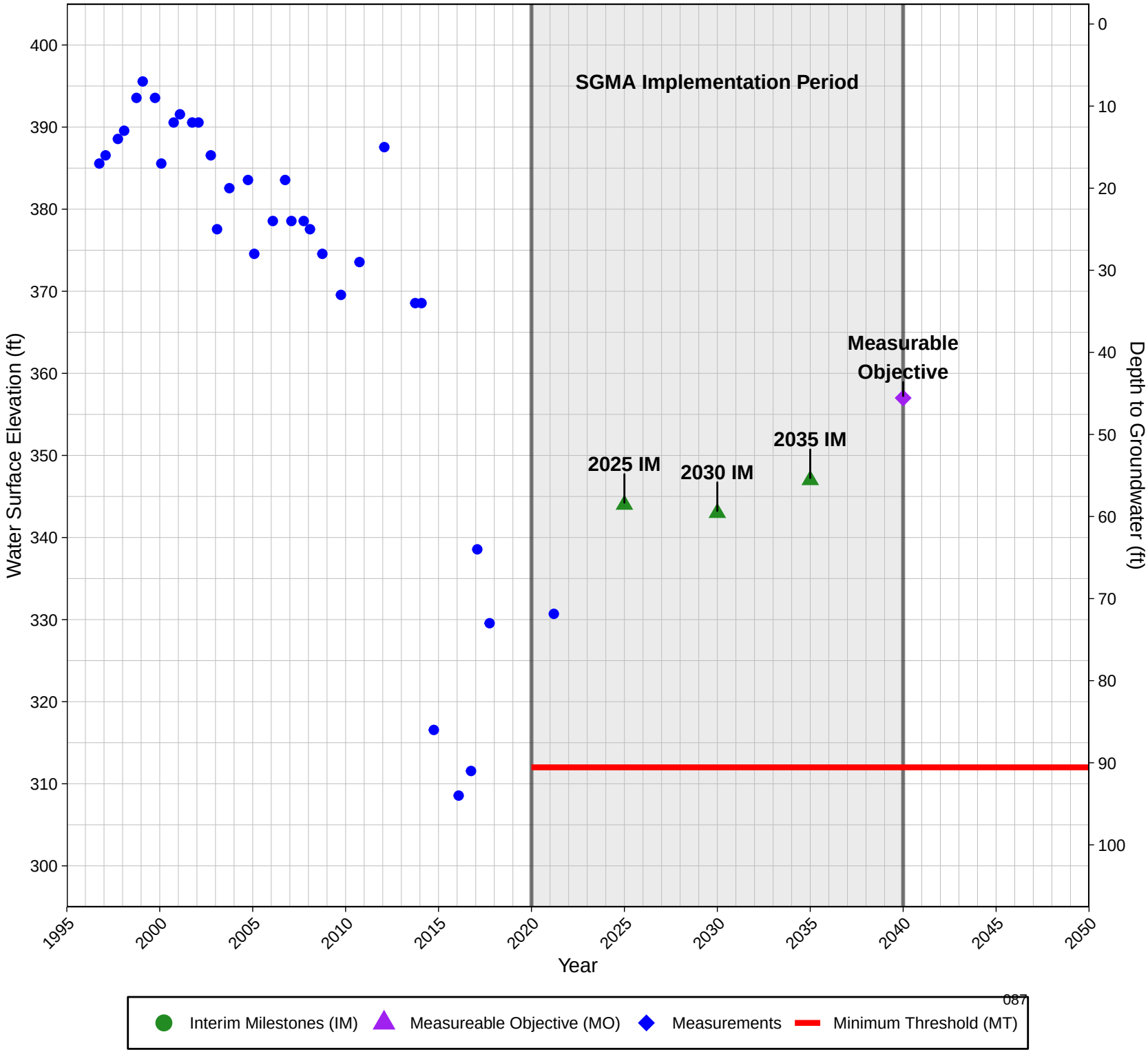




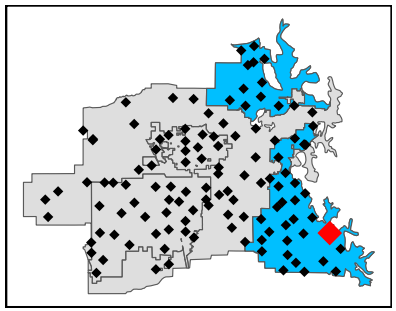
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

20S27E08A001M | East Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



20S27E15R001M | East Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

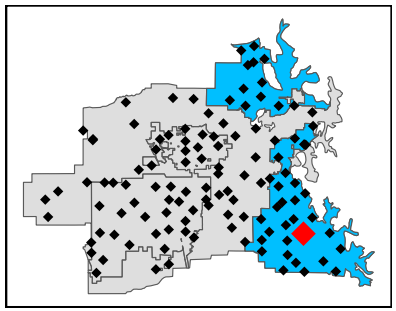
Measureable Objective (MO)

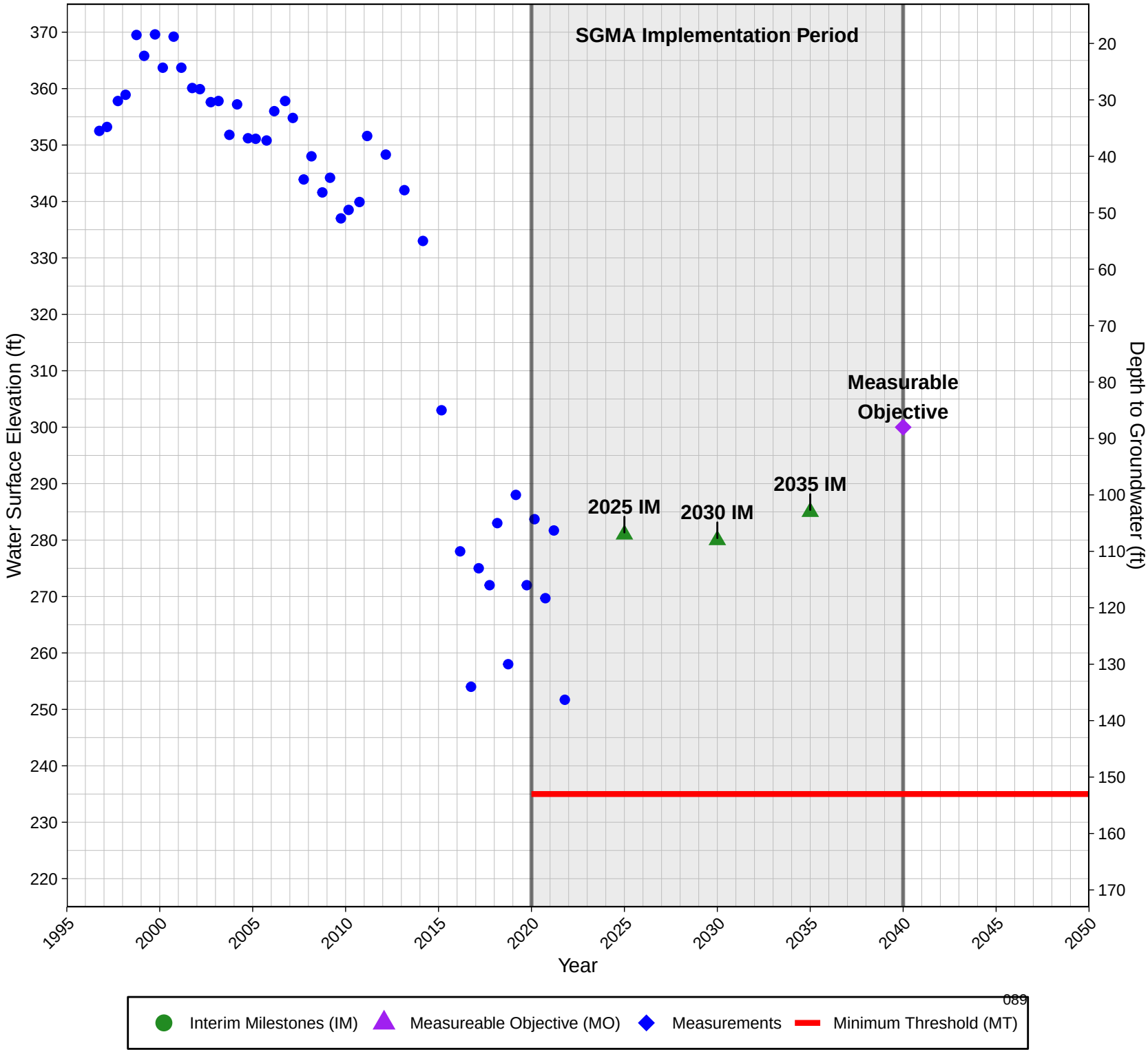
Measurements

Minimum Threshold (MT)

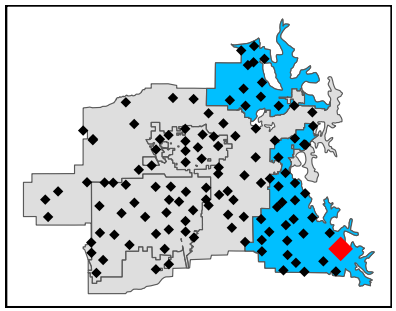
088

20S27E18R001M | East Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



20S27E25N001M | East Kaweah
Single Aquifer System

Water Surface Elevation (ft)

460
450
440
430
420

Depth to Groundwater (ft)

20
30
40
50
60

SGMA Implementation Period

Measurable Objective

2025 IM
2030 IM
2035 IM

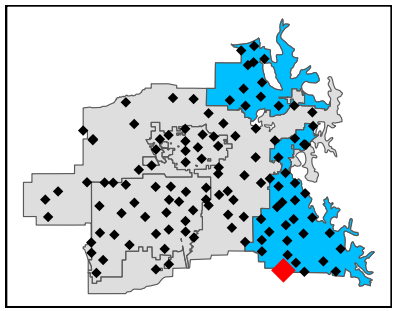
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050

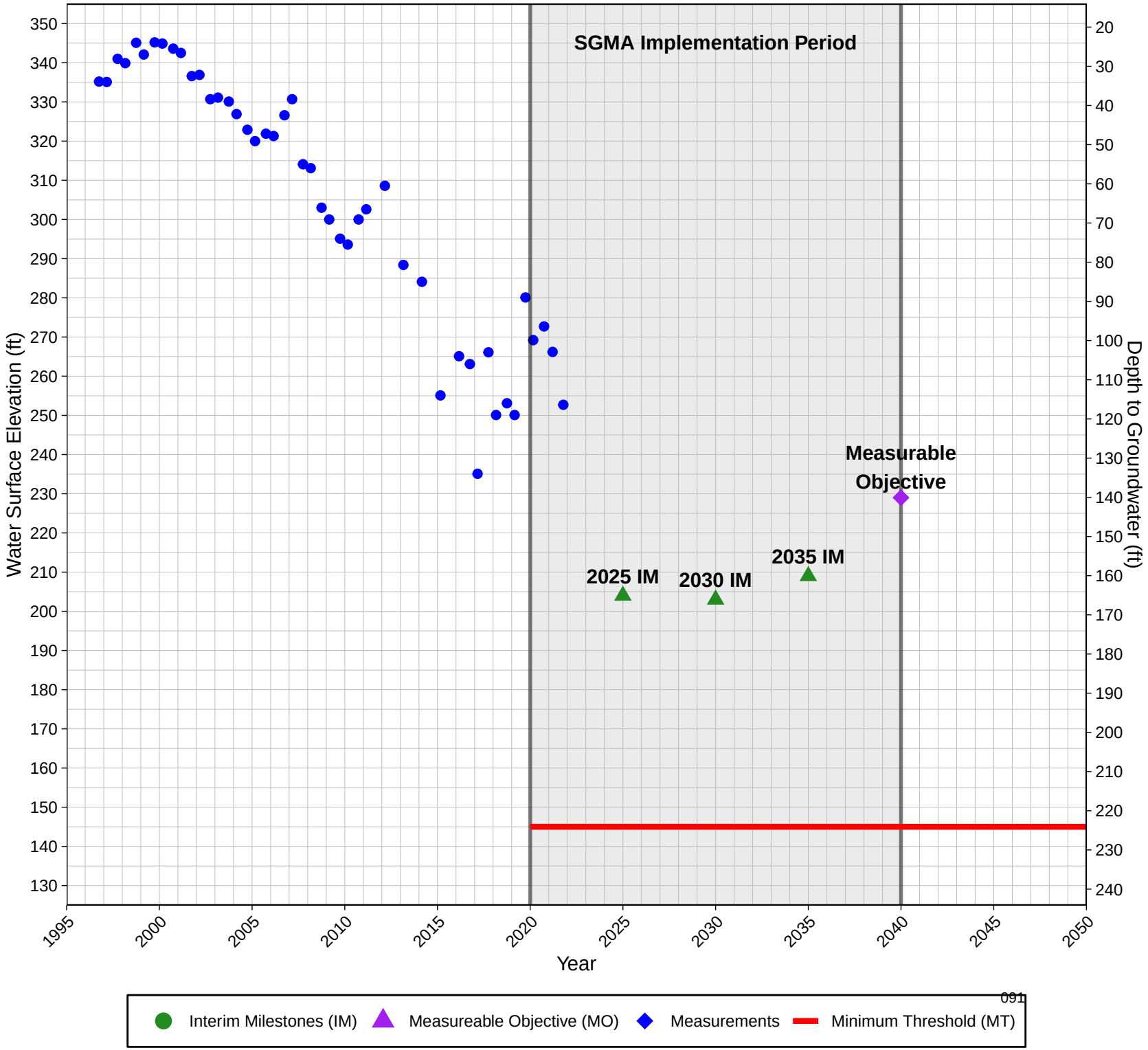
Year

Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)

090

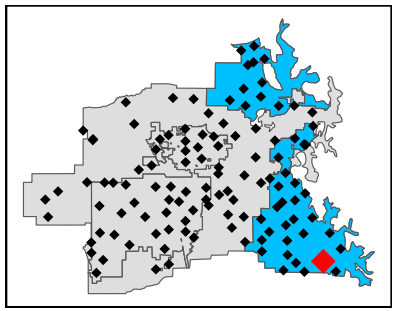
21S26E11H001M | East Kaweah
Single Aquifer System

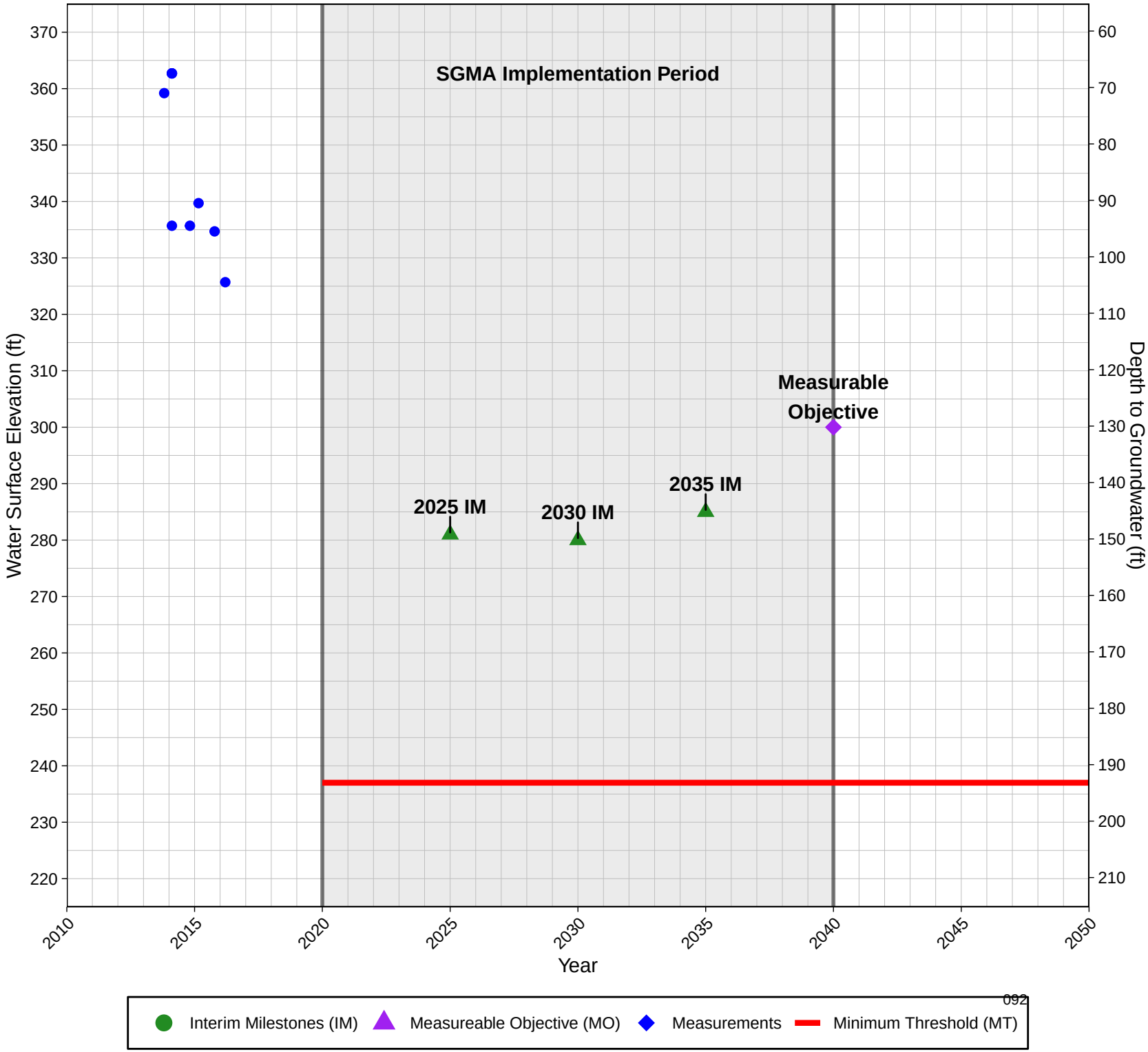




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

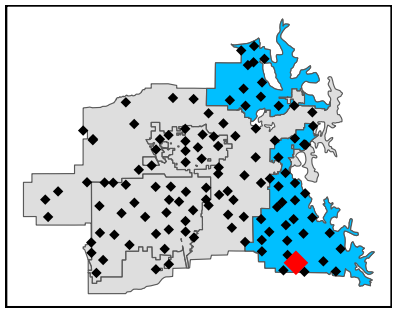
21S27E03B001M | East Kaweah
Single Aquifer System

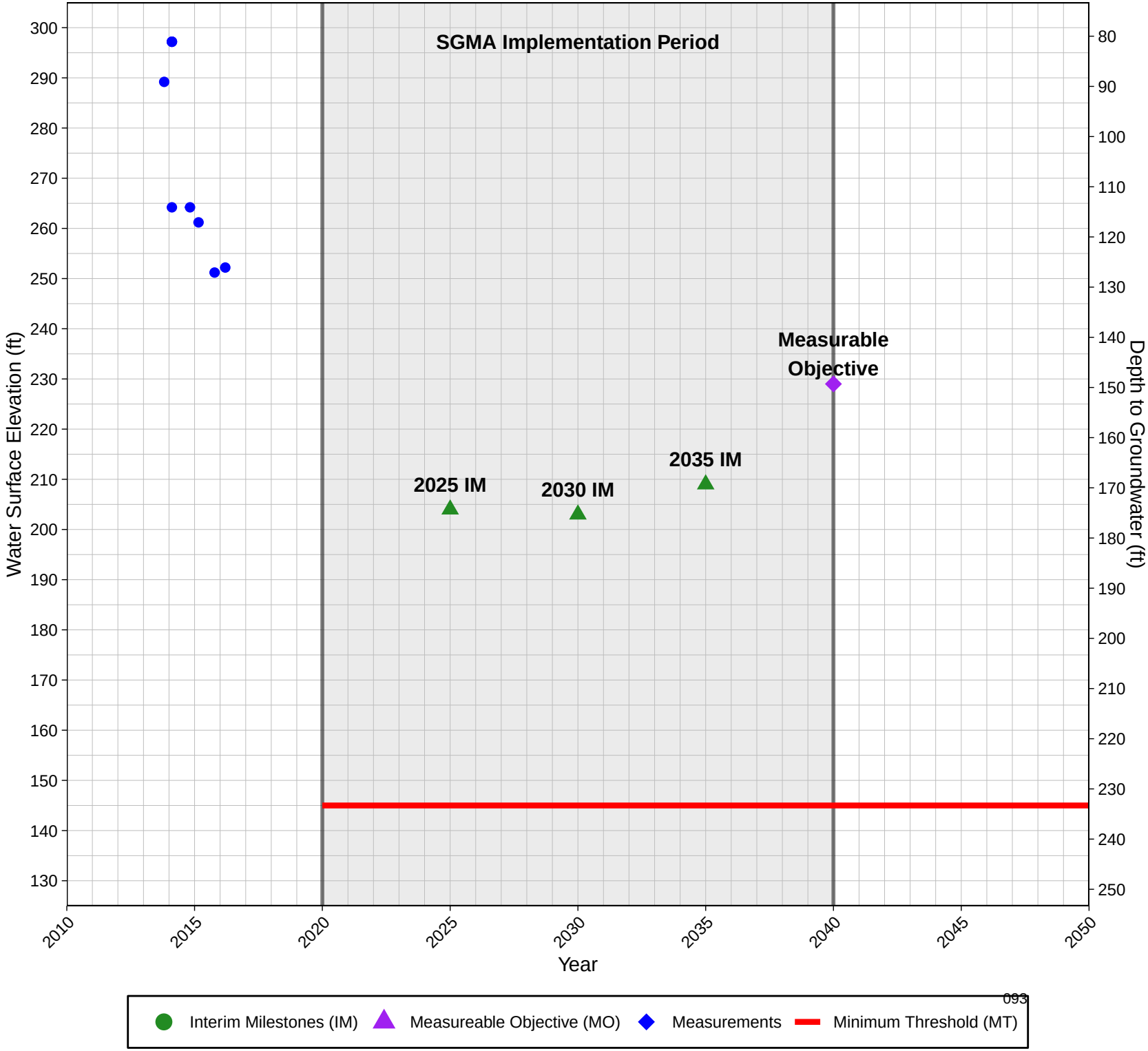




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

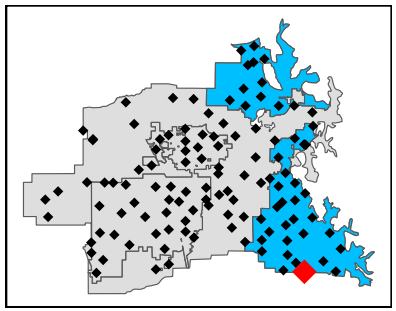
21S27E06F001M | East Kaweah
Single Aquifer System

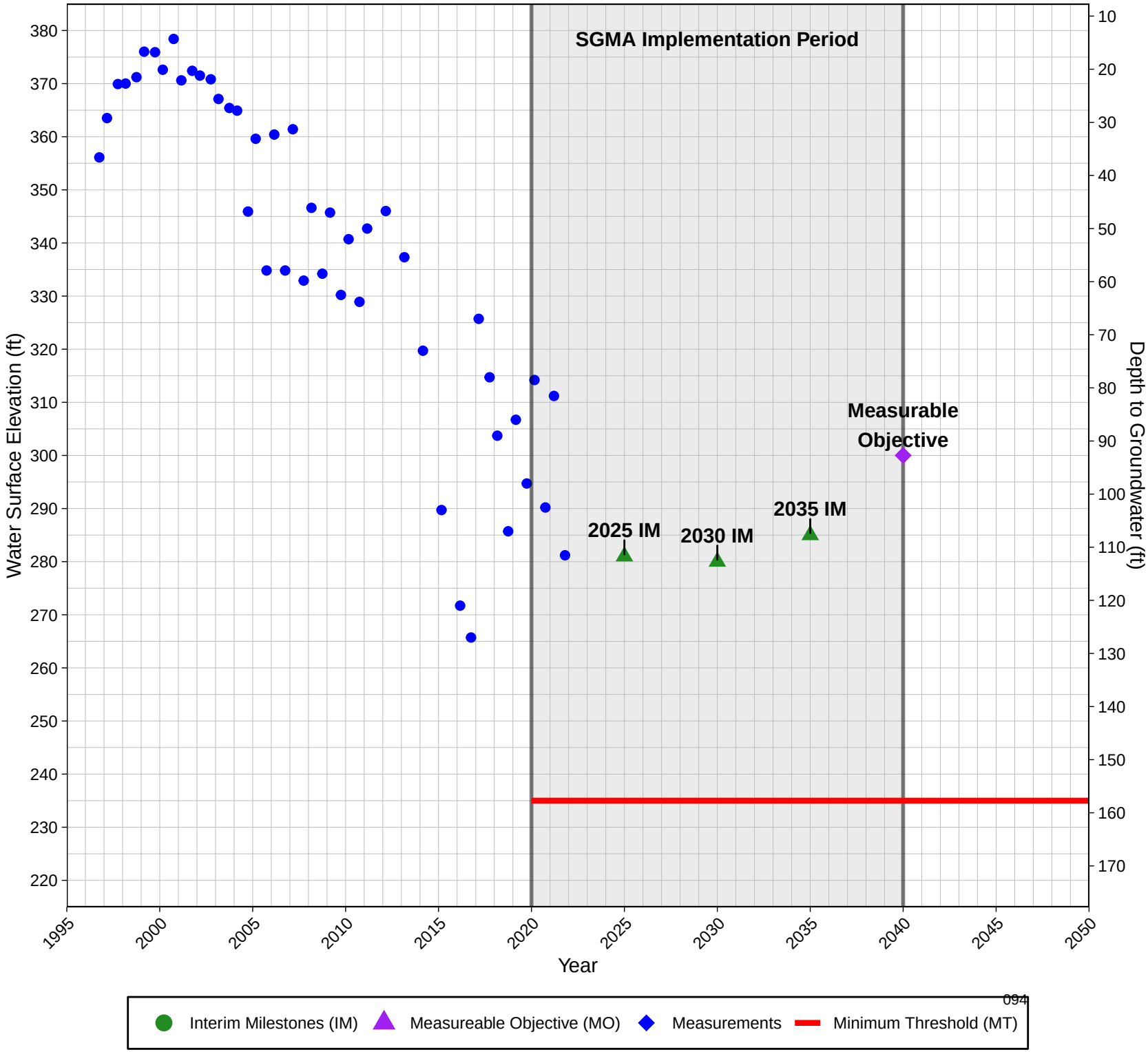




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

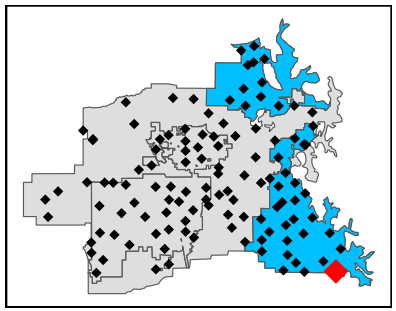
21S27E08F001M | East Kaweah
Single Aquifer System

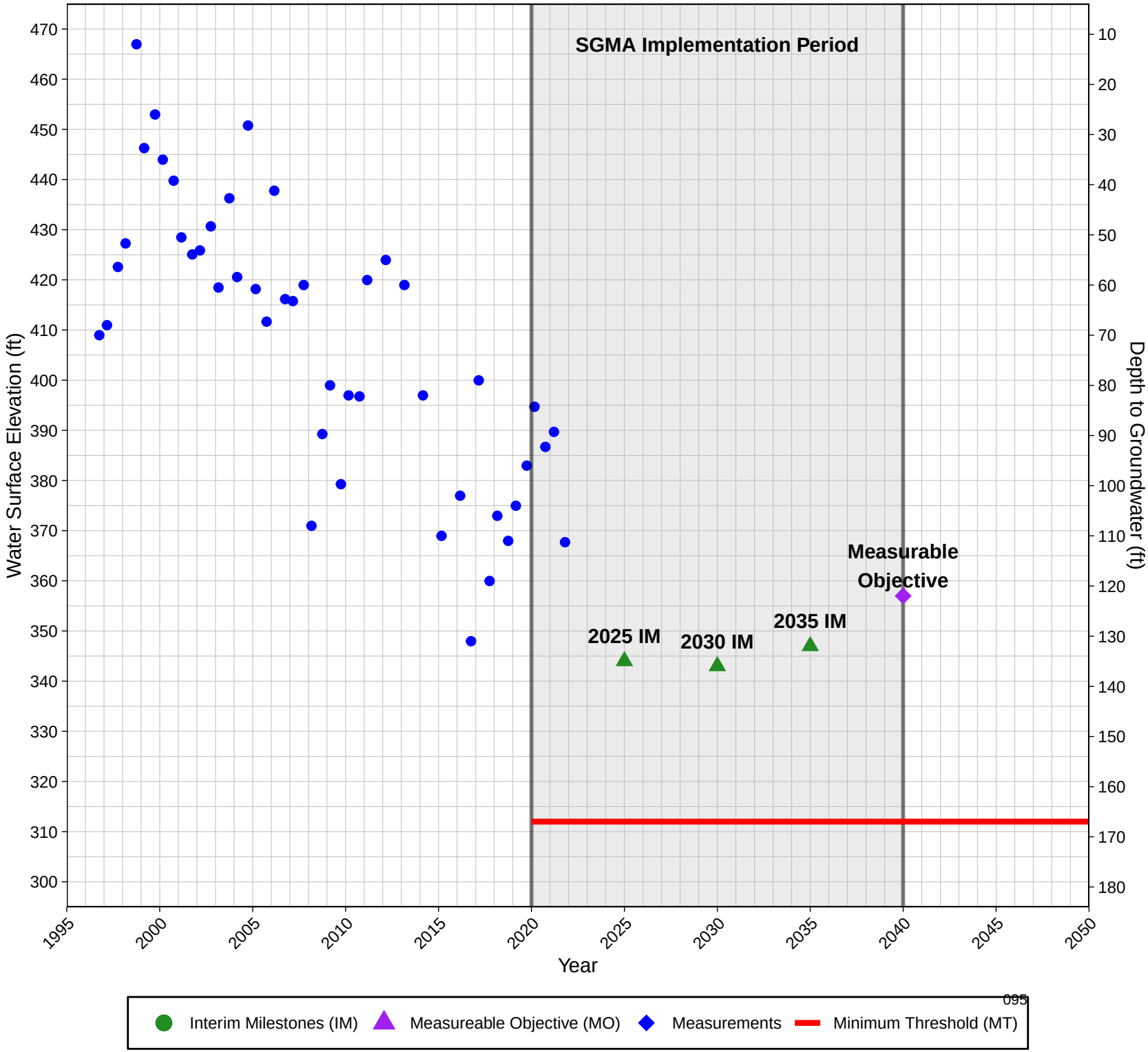




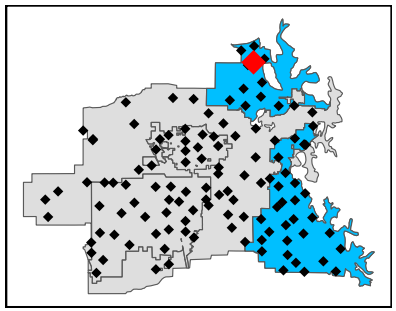
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

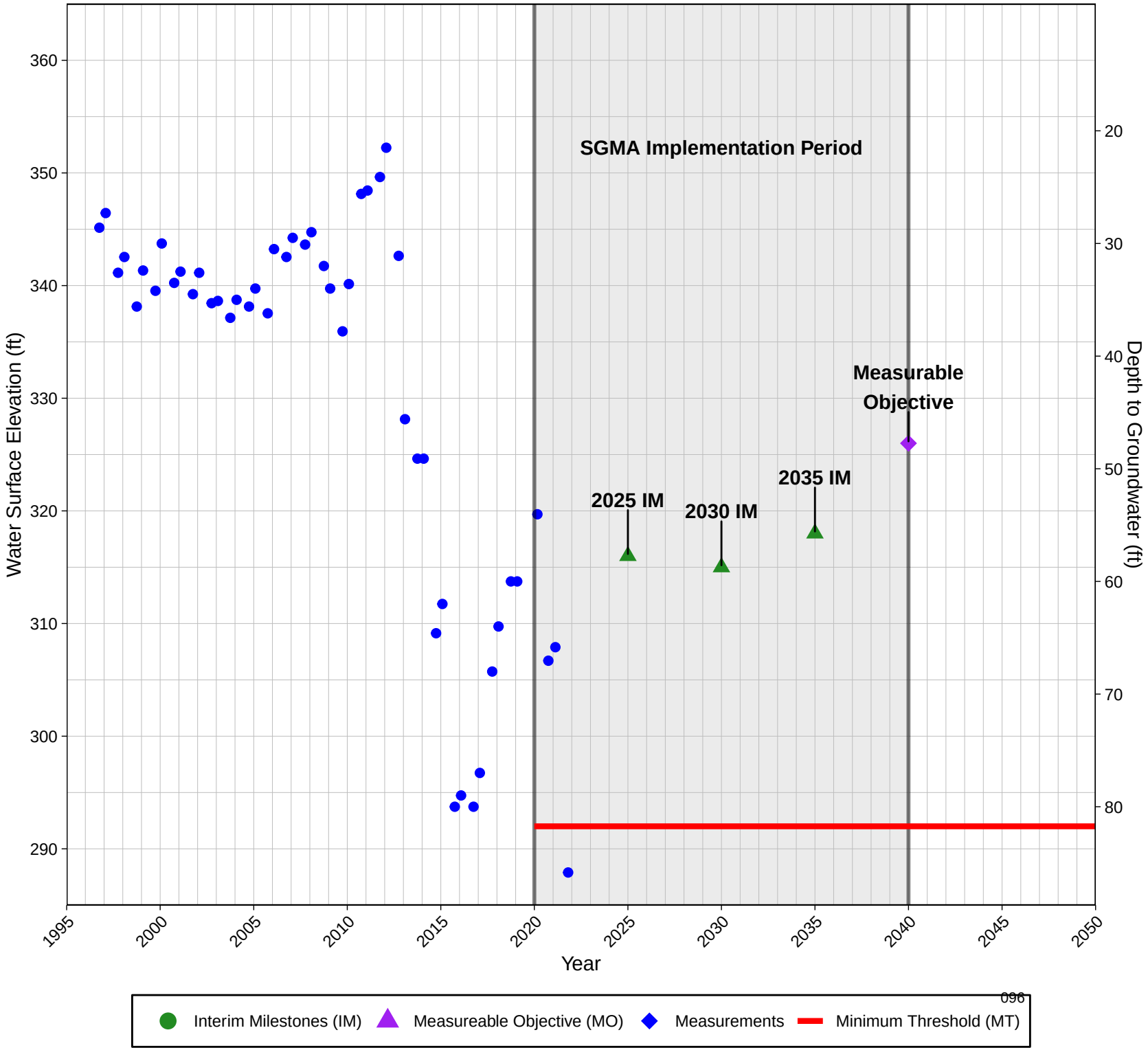
21S27E12F001M | East Kaweah
Single Aquifer System

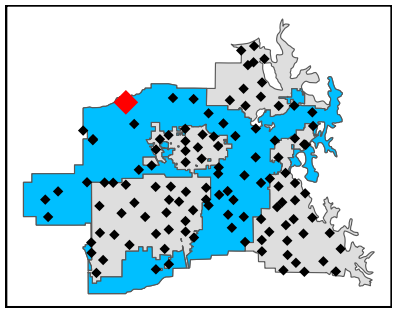




SCID Office | East Kaweah
Single Aquifer System







17S23E34J001M | Greater Kaweah
Upper Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

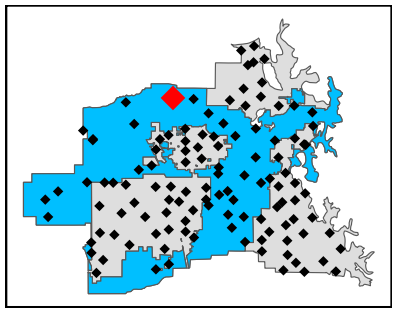
Measureable Objective (MO)

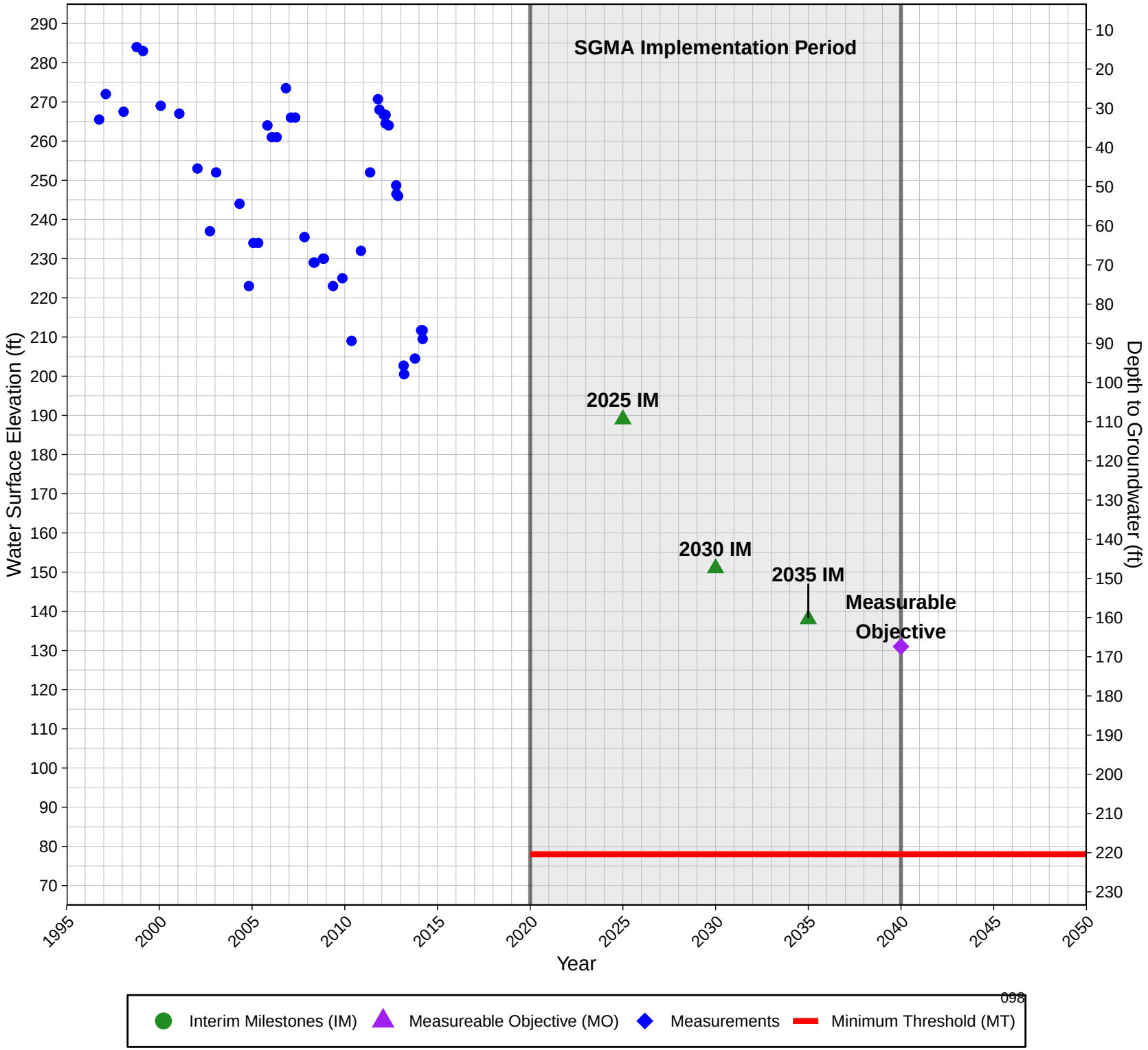
Measurements

Minimum Threshold (MT)

Corcoran Clay

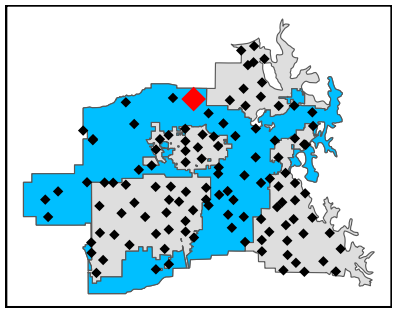
17S24E34B001M | Greater Kaweah
Single Aquifer System

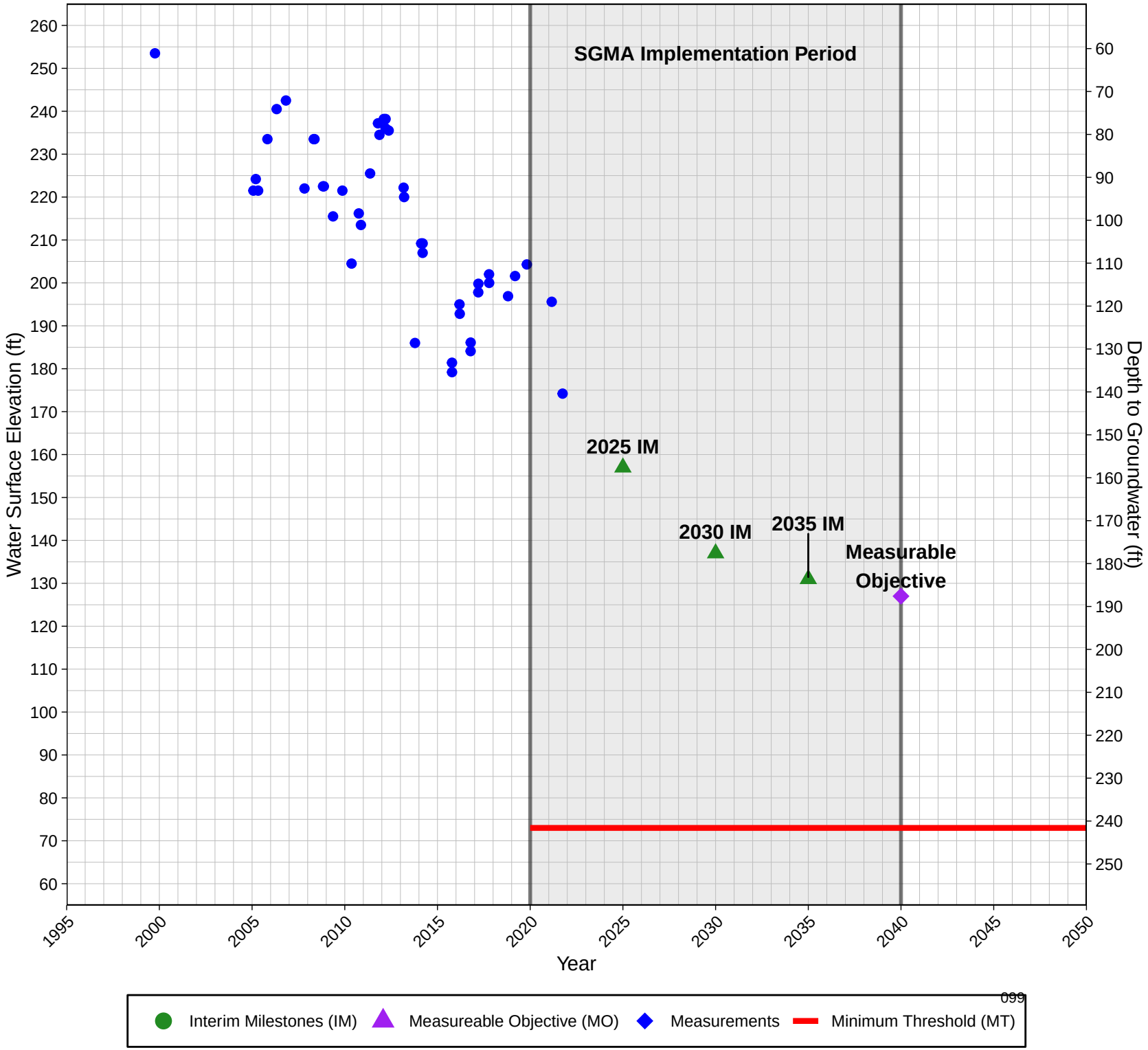




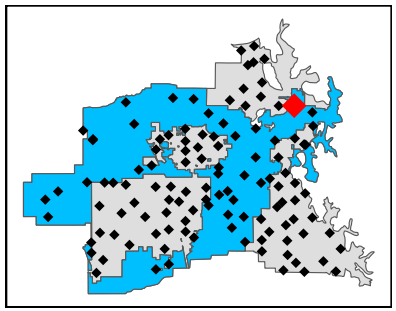
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

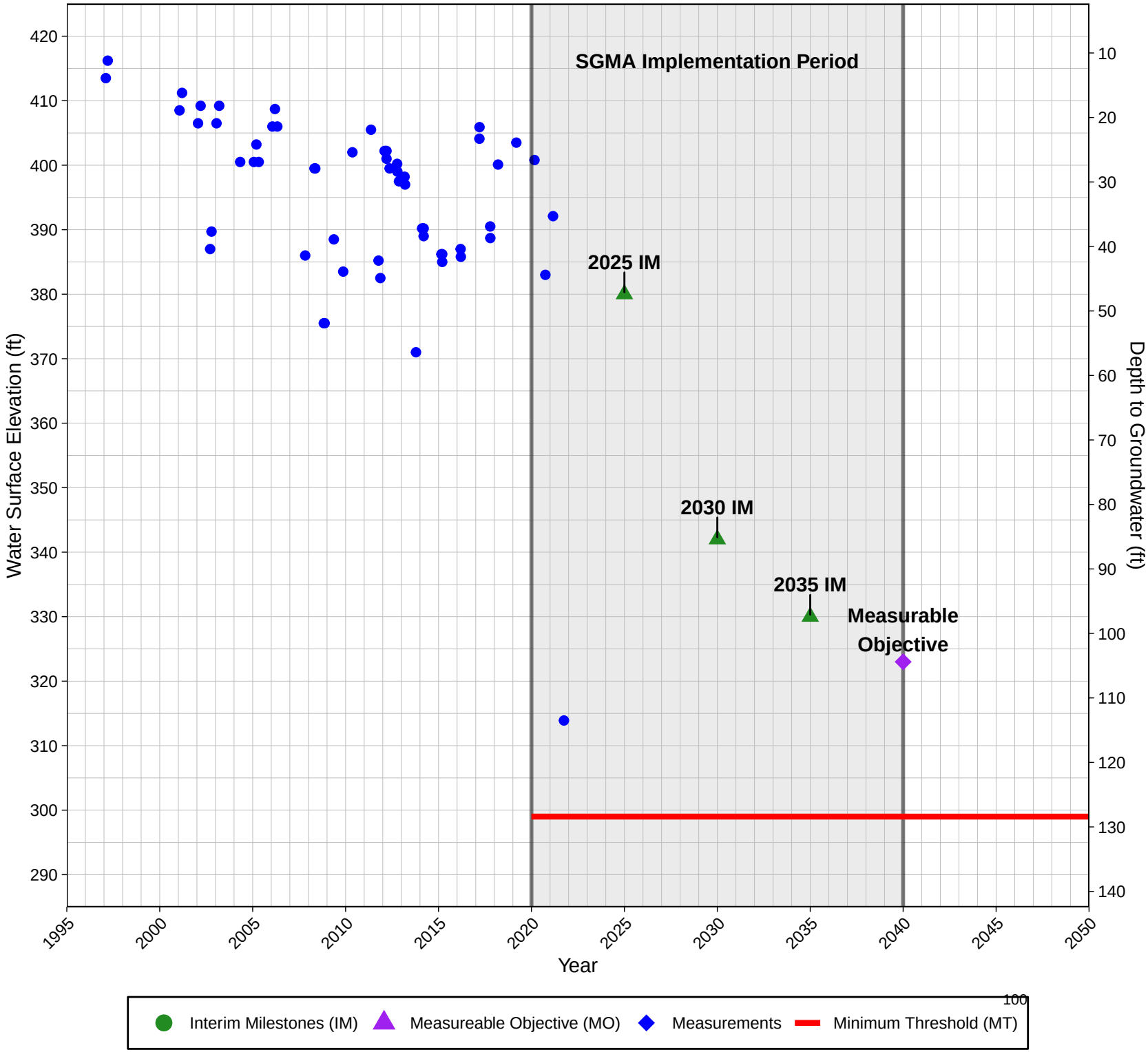
17S24E36H003M | Greater Kaweah
Single Aquifer System



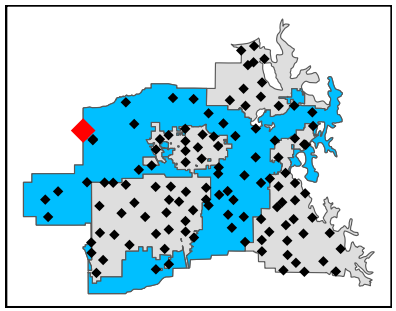


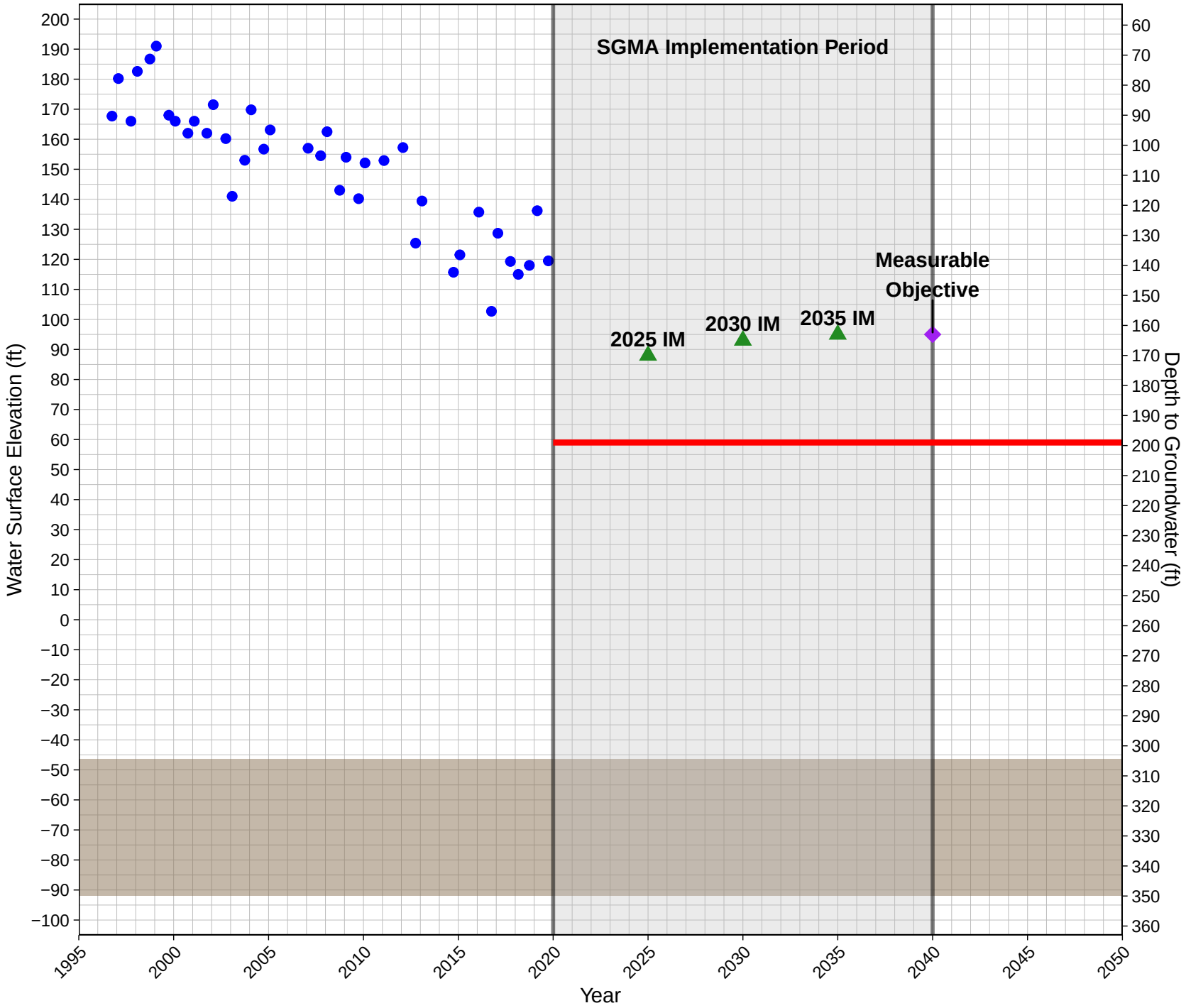
17S26E36R001M | Greater Kaweah
Single Aquifer System



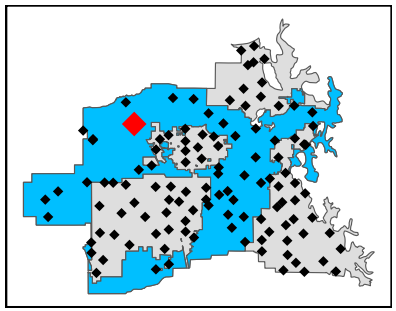


18S22E24D001M | Greater Kaweah
Upper Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



18S23E14A001M | Greater Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

2025 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

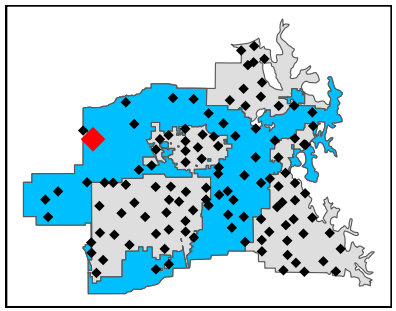
Measureable Objective (MO)

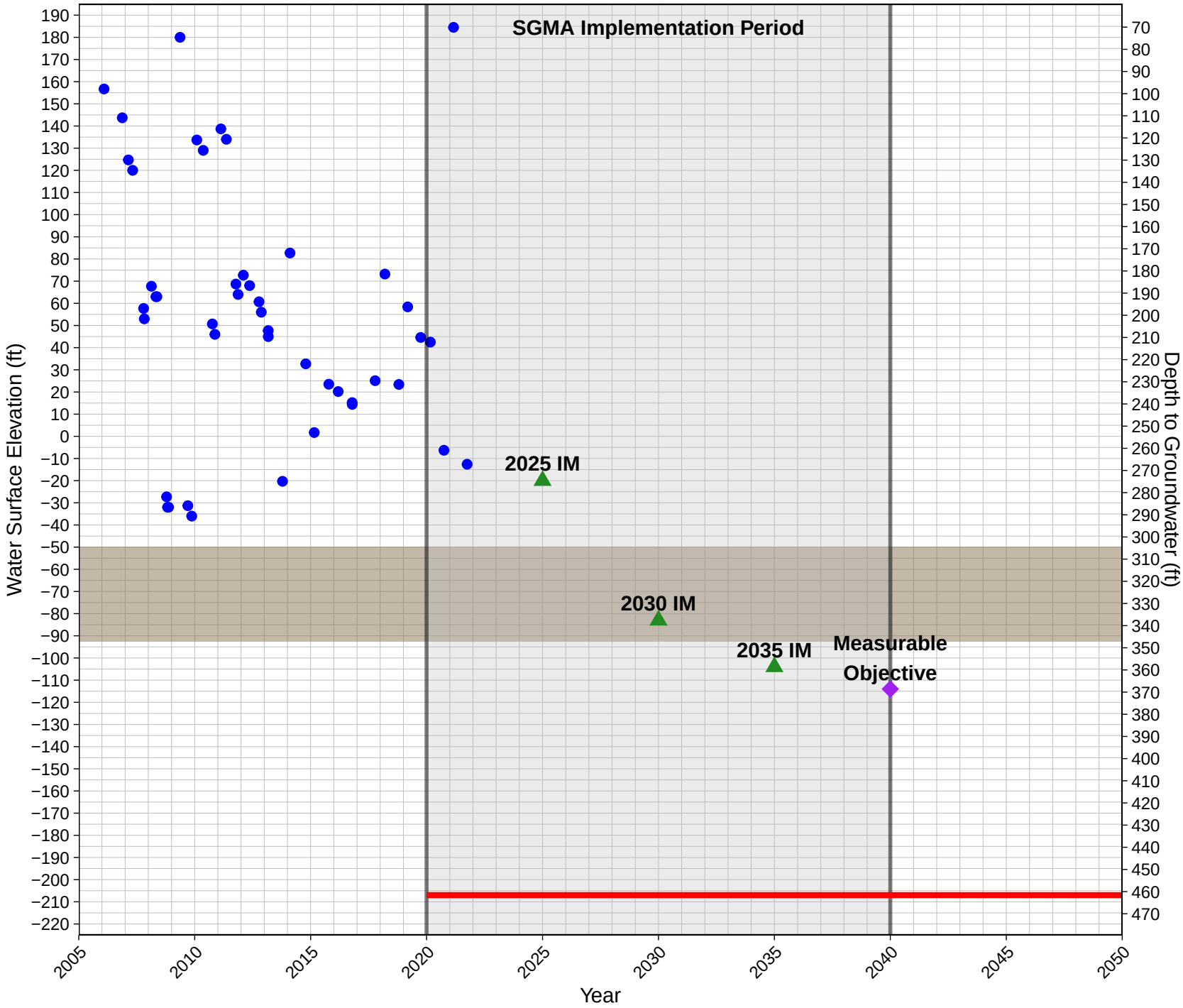
Measurements

Minimum Threshold (MT)

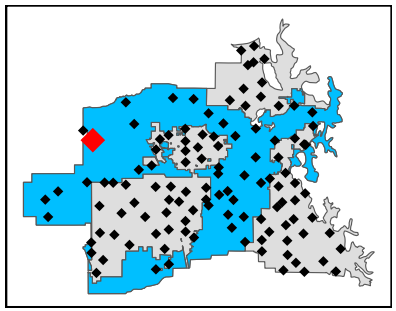
Corcoran Clay

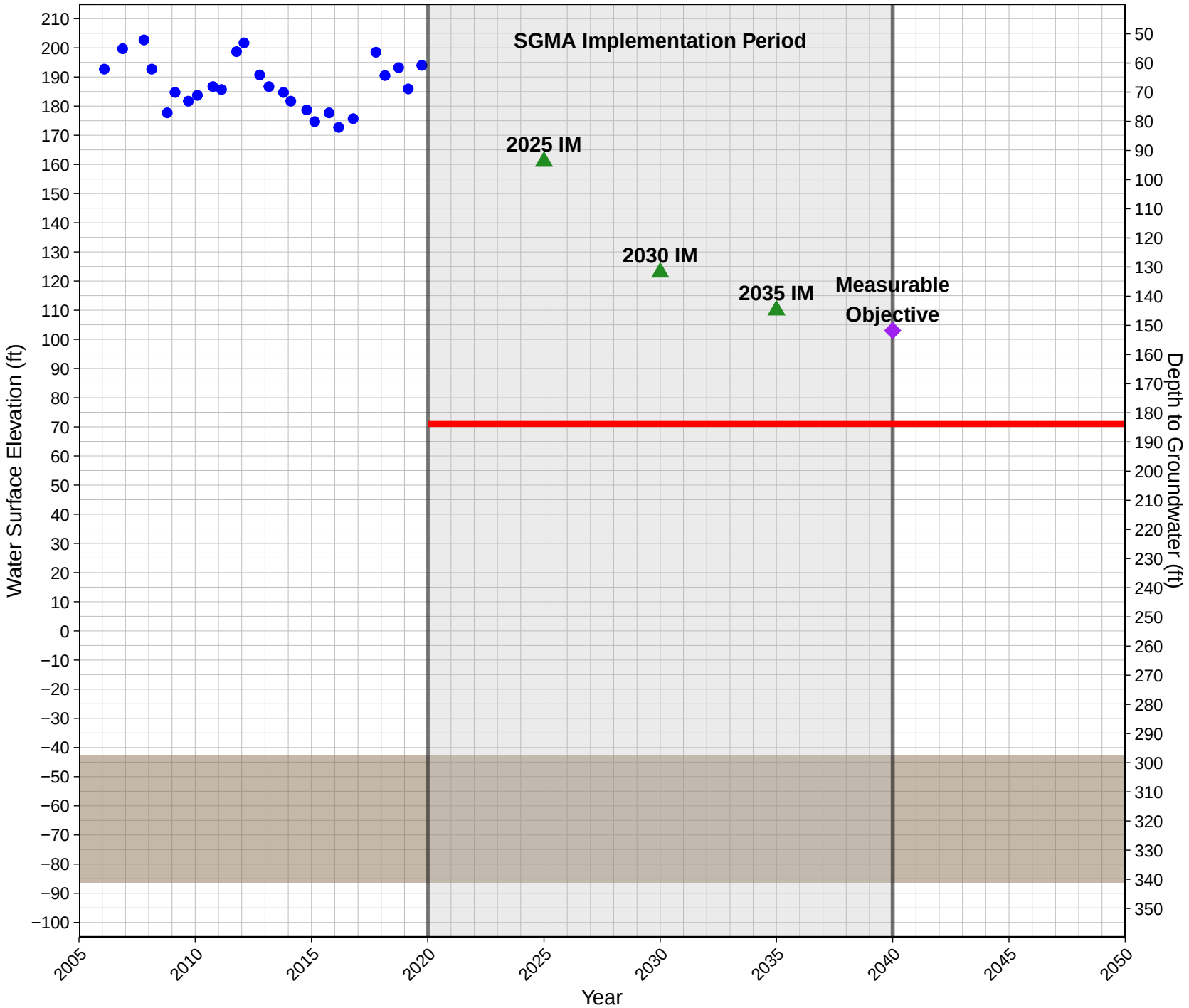
18S23E30D001M | Greater Kaweah
Lower Aquifer System



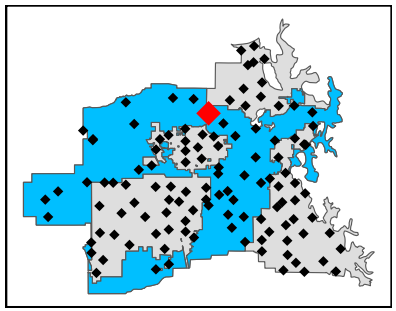


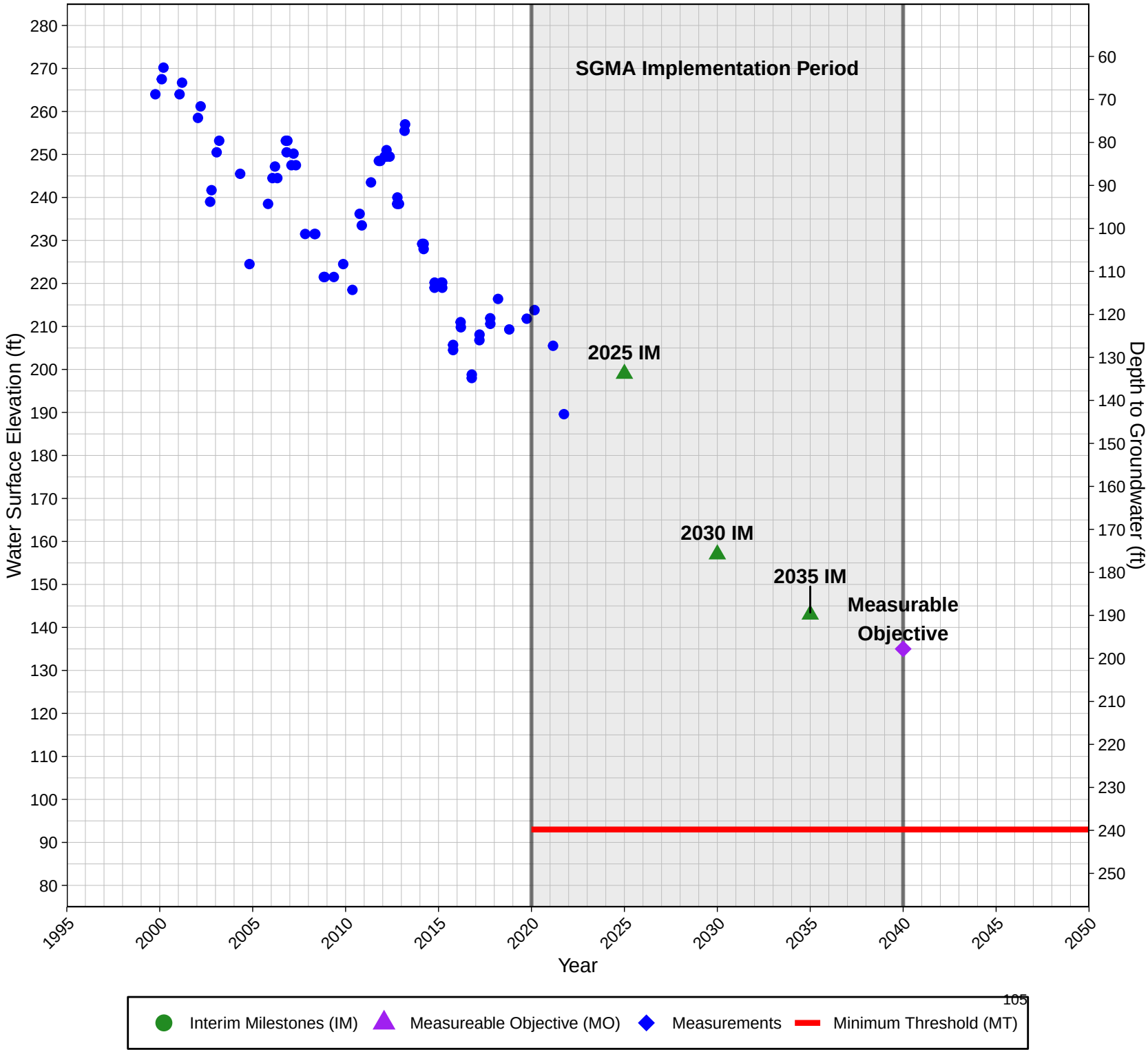
18S23E30D901M | Greater Kaweah
Upper Aquifer System



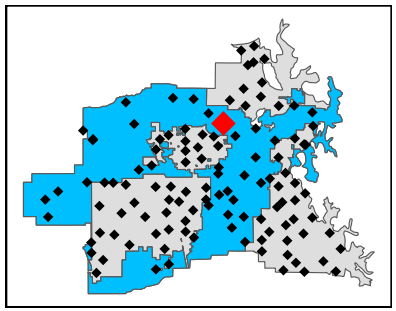


18S25E05Q001M | Greater Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



18S25E15C001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

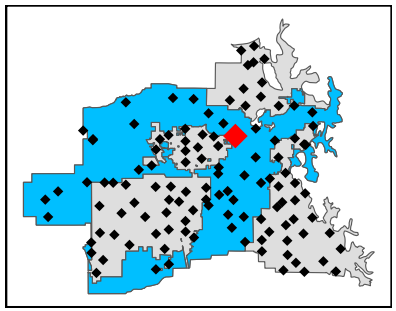
Water Surface Elevation (ft)

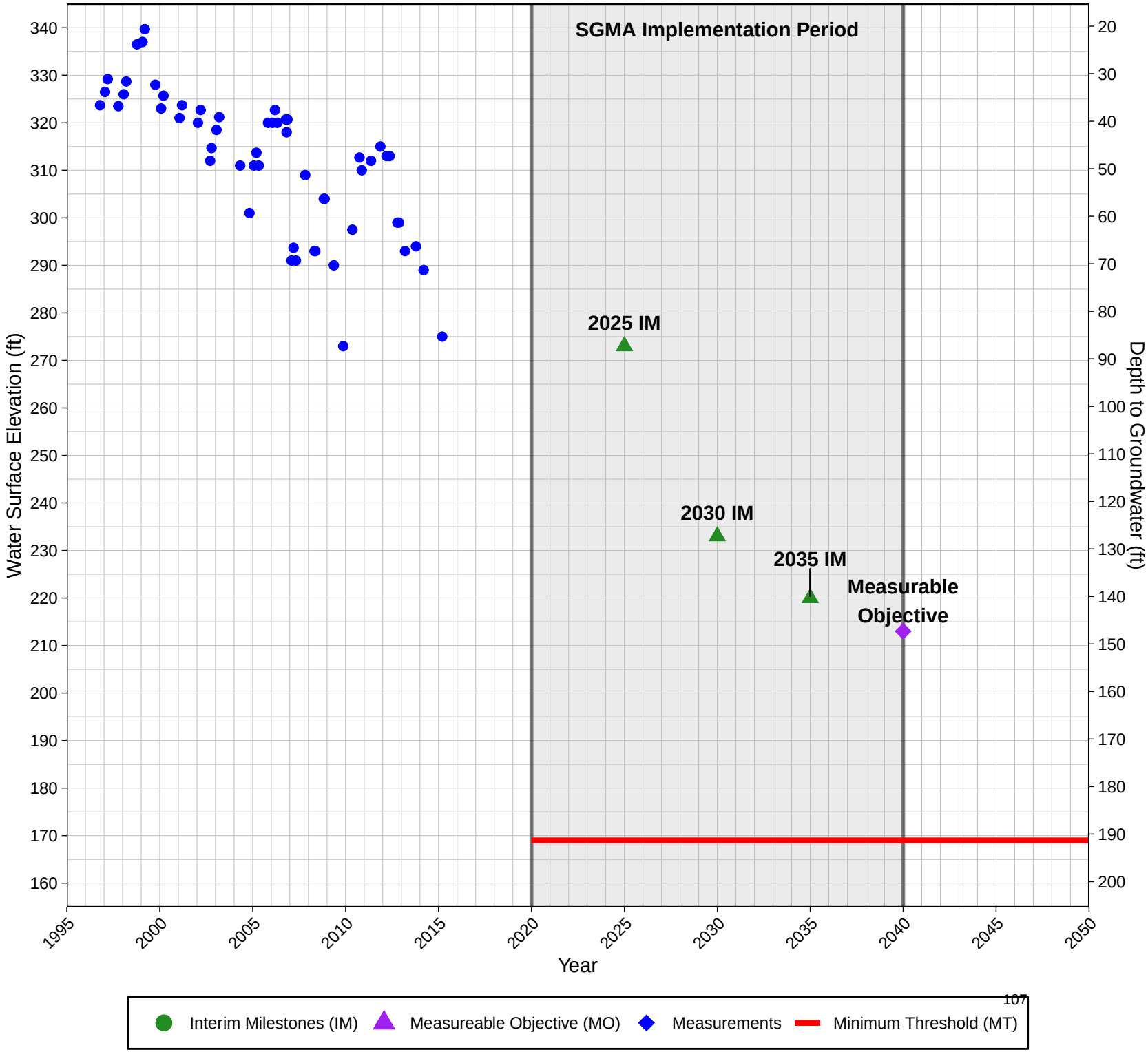
Depth to Groundwater (ft)

Year

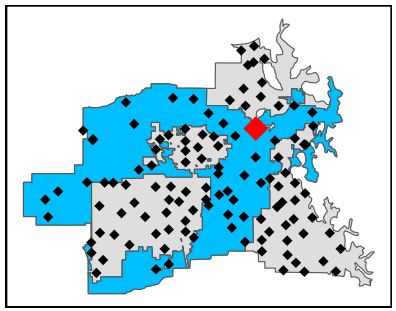
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

18S25E23J001M | Greater Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



18S26E17L001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

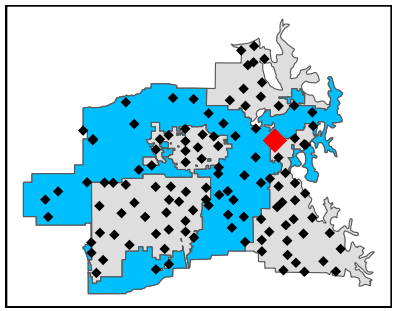
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



18S26E27B001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

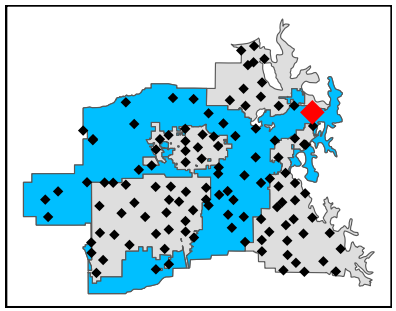
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



18S27E05J001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

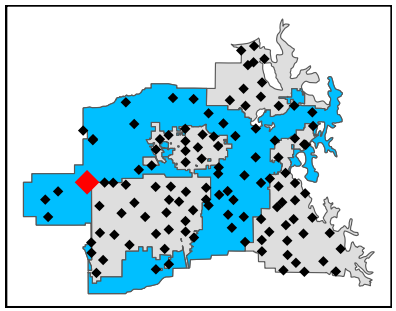
Water Surface Elevation (ft)

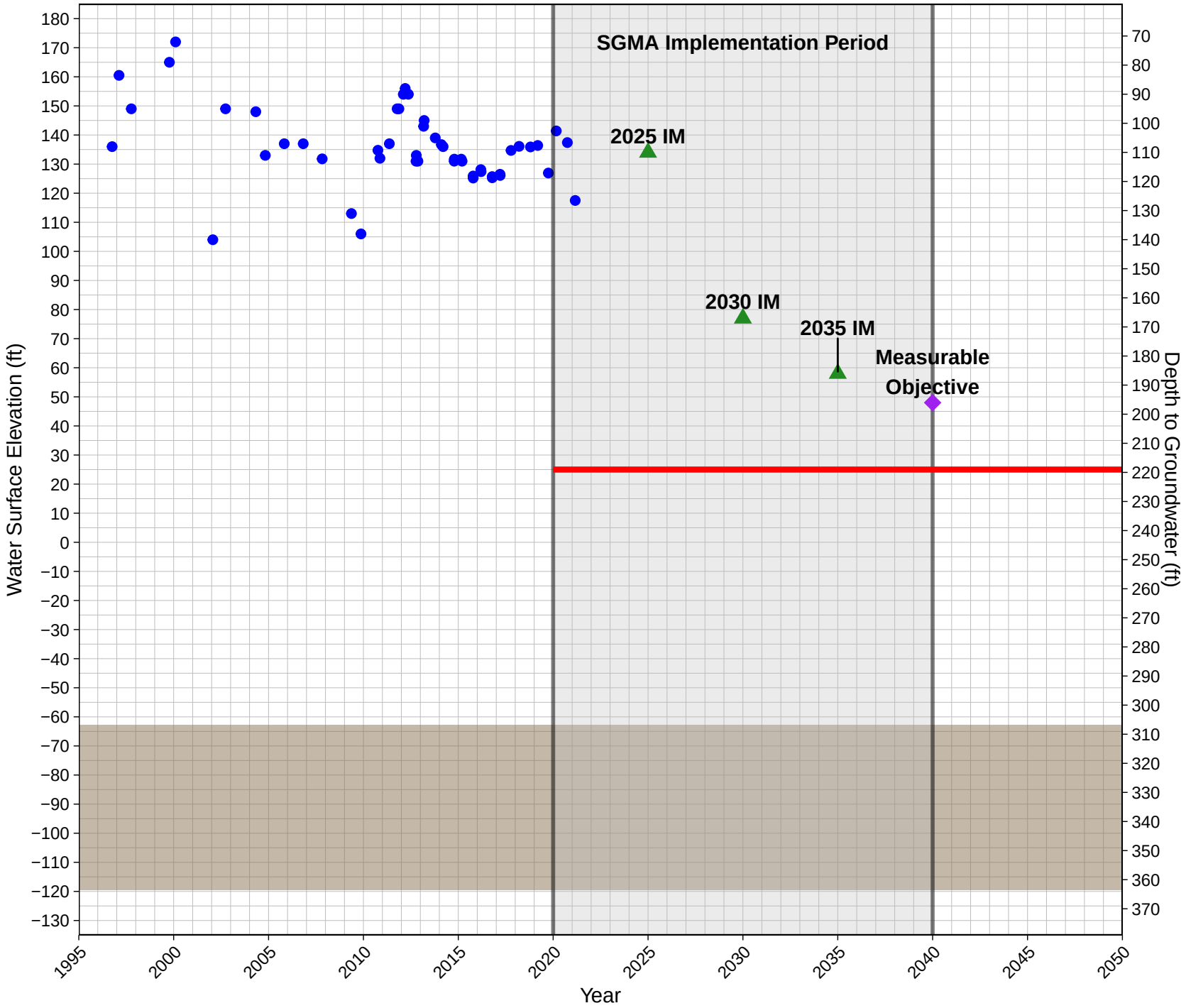
Depth to Groundwater (ft)

Year

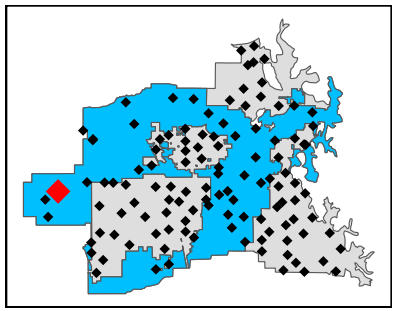
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

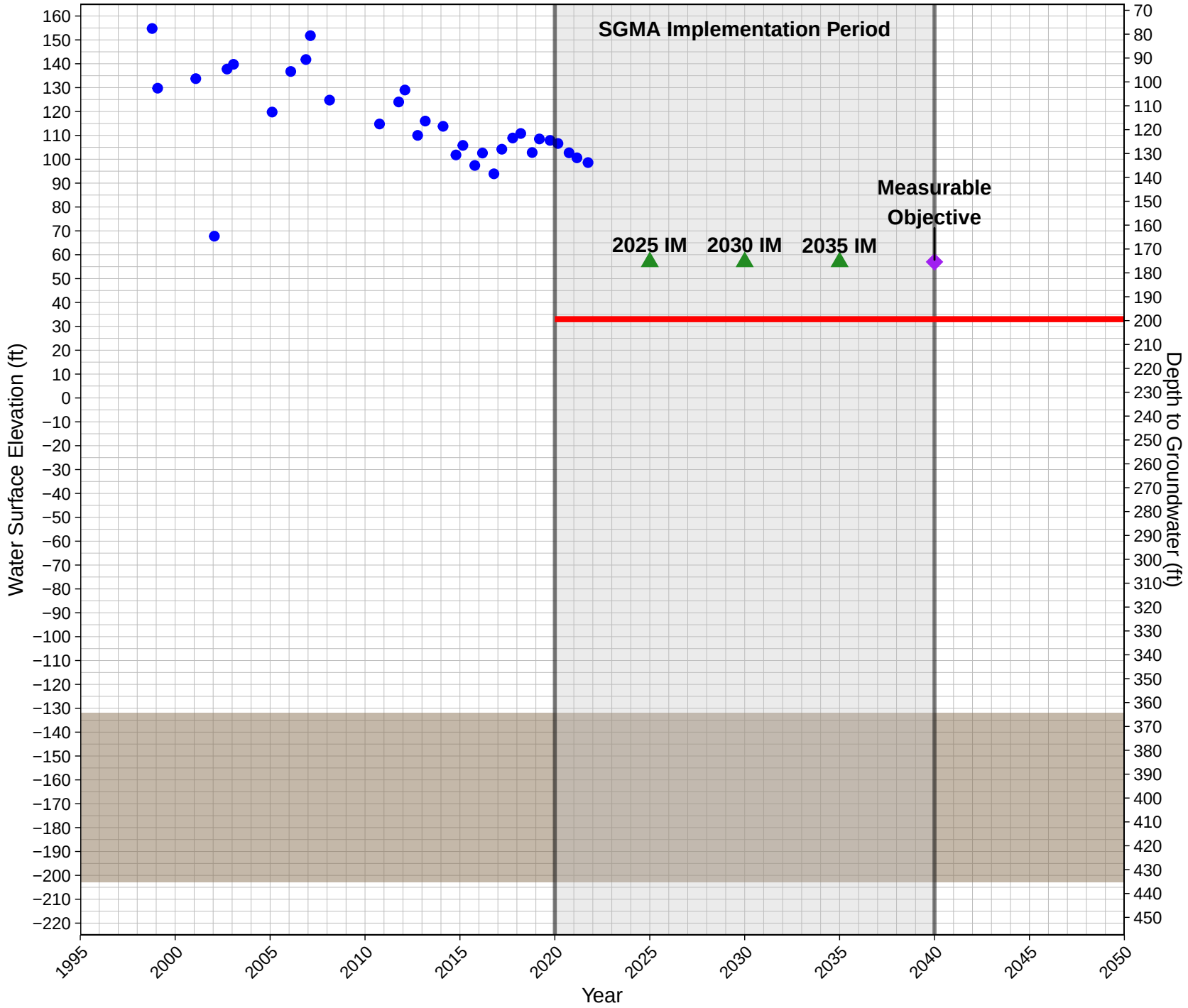
19S22E24B001M | Greater Kaweah
Upper Aquifer System



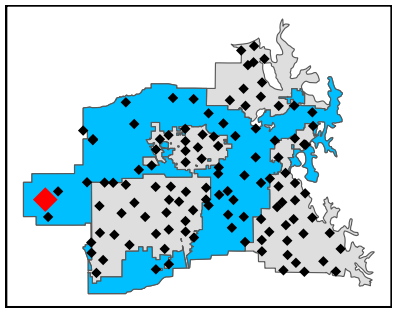


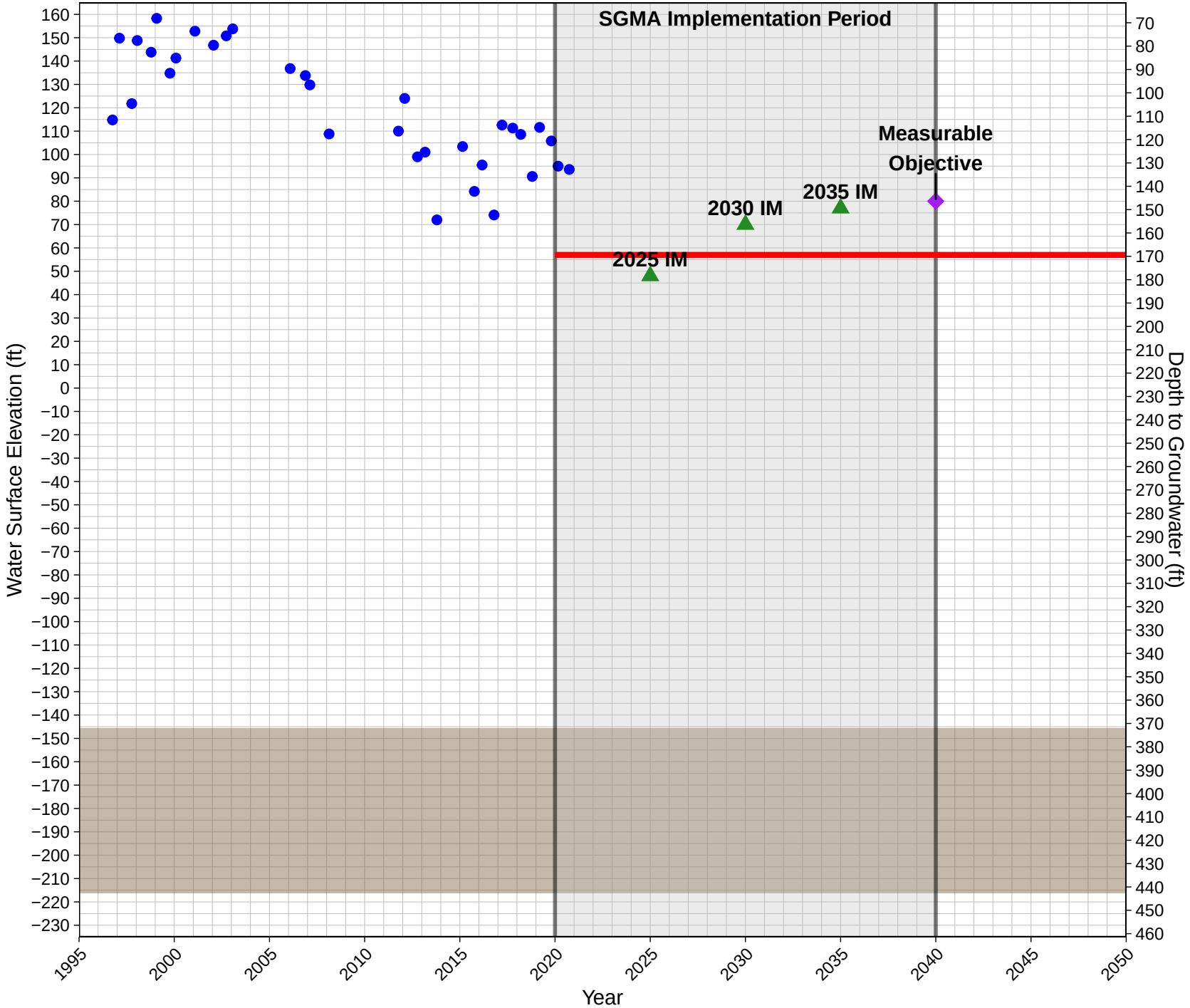
19S22E28D001M | Greater Kaweah
Upper Aquifer System



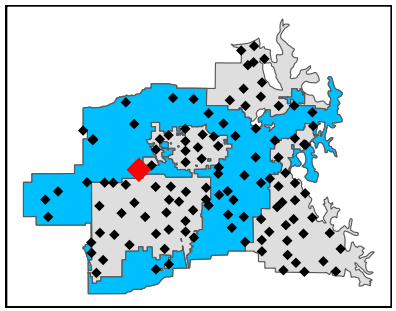


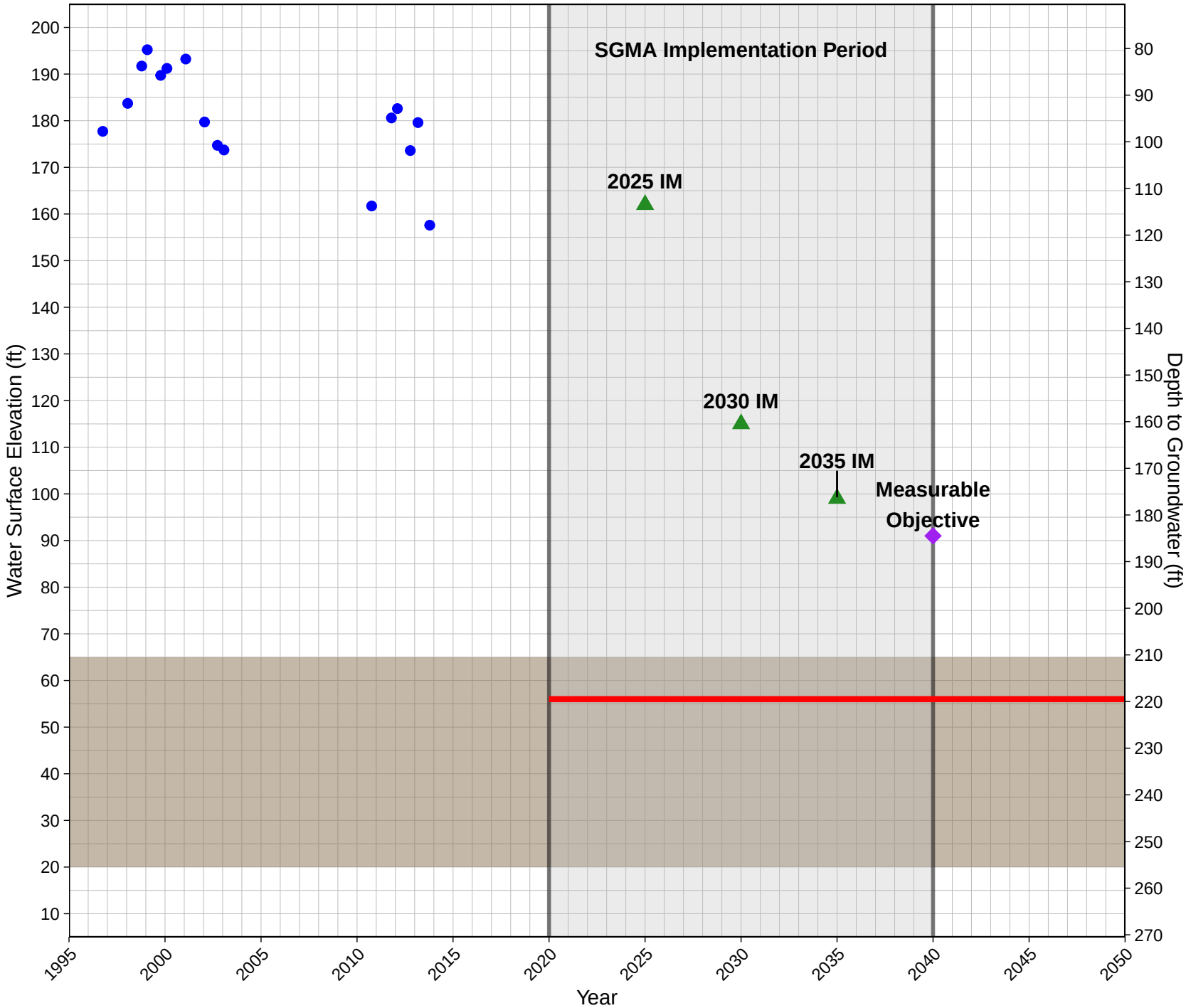
19S22E31B002M | Greater Kaweah
Upper Aquifer System



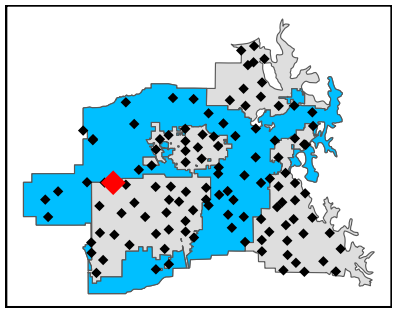


19S23E12L001M | Greater Kaweah
Lower Aquifer System





19S23E21C001M | Greater Kaweah
Upper Aquifer System



SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

2035 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

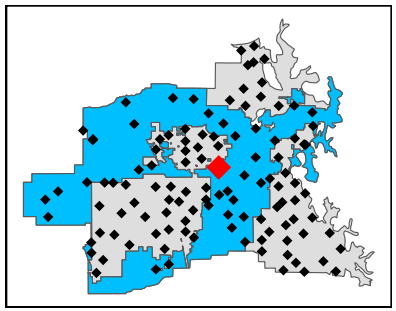
Measureable Objective (MO)

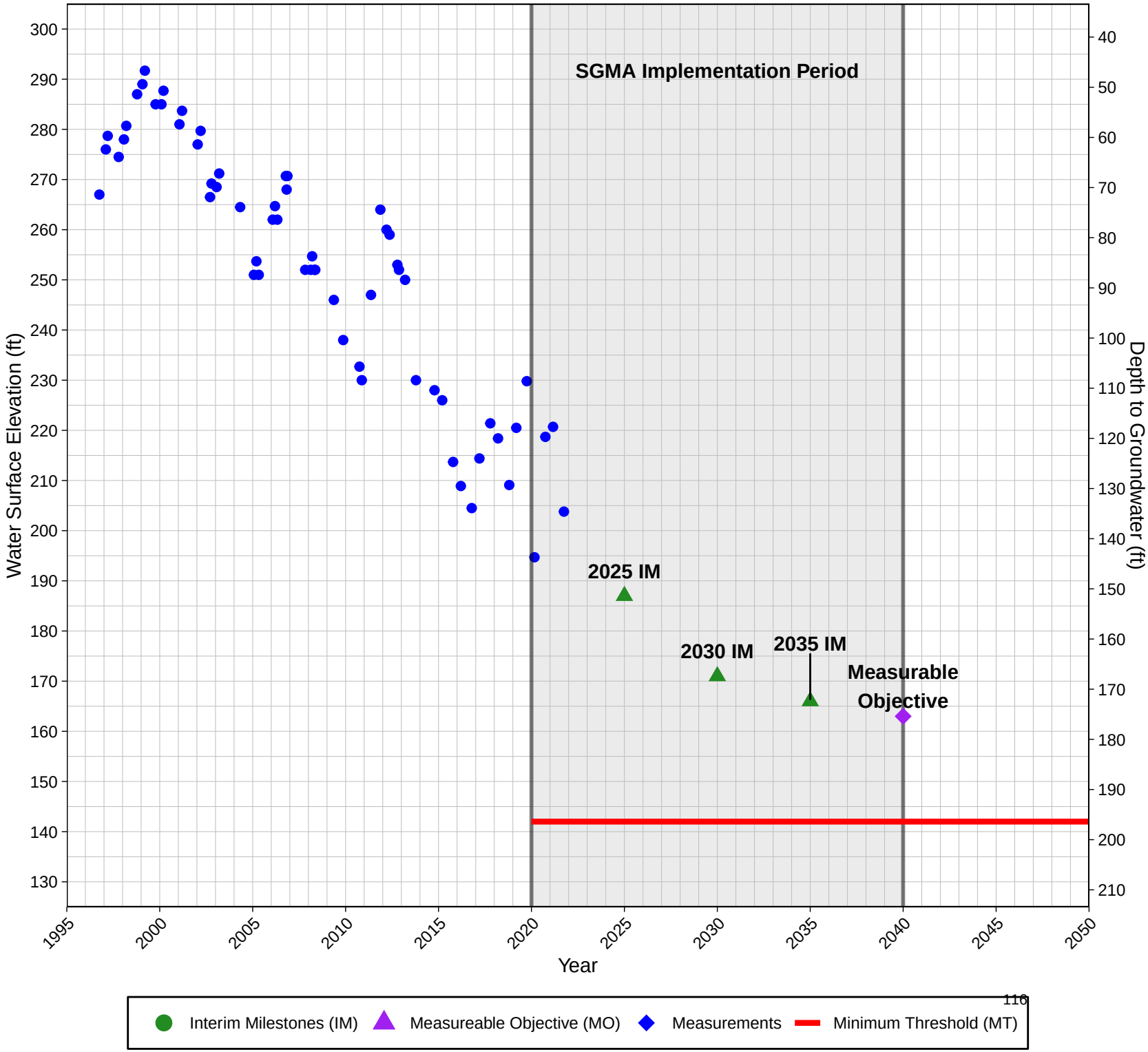
Measurements

Minimum Threshold (MT)

Corcoran Clay

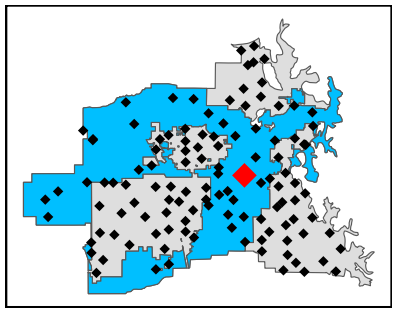
19S25E09H001M | Greater Kaweah
Single Aquifer System

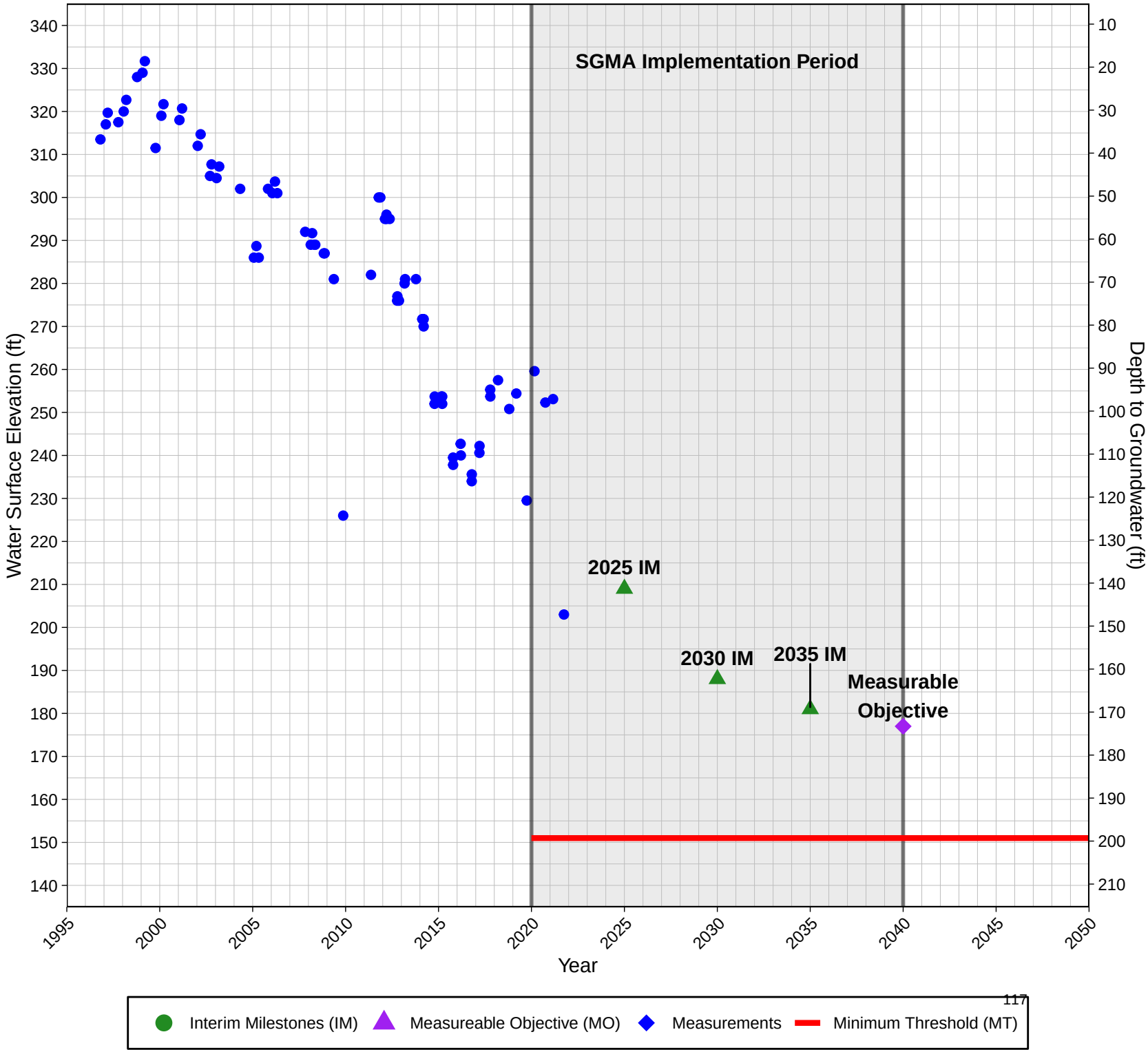




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

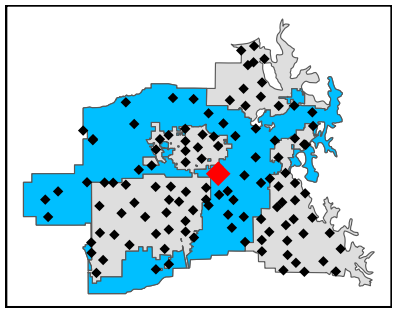
19S25E13A002M | Greater Kaweah
Single Aquifer System

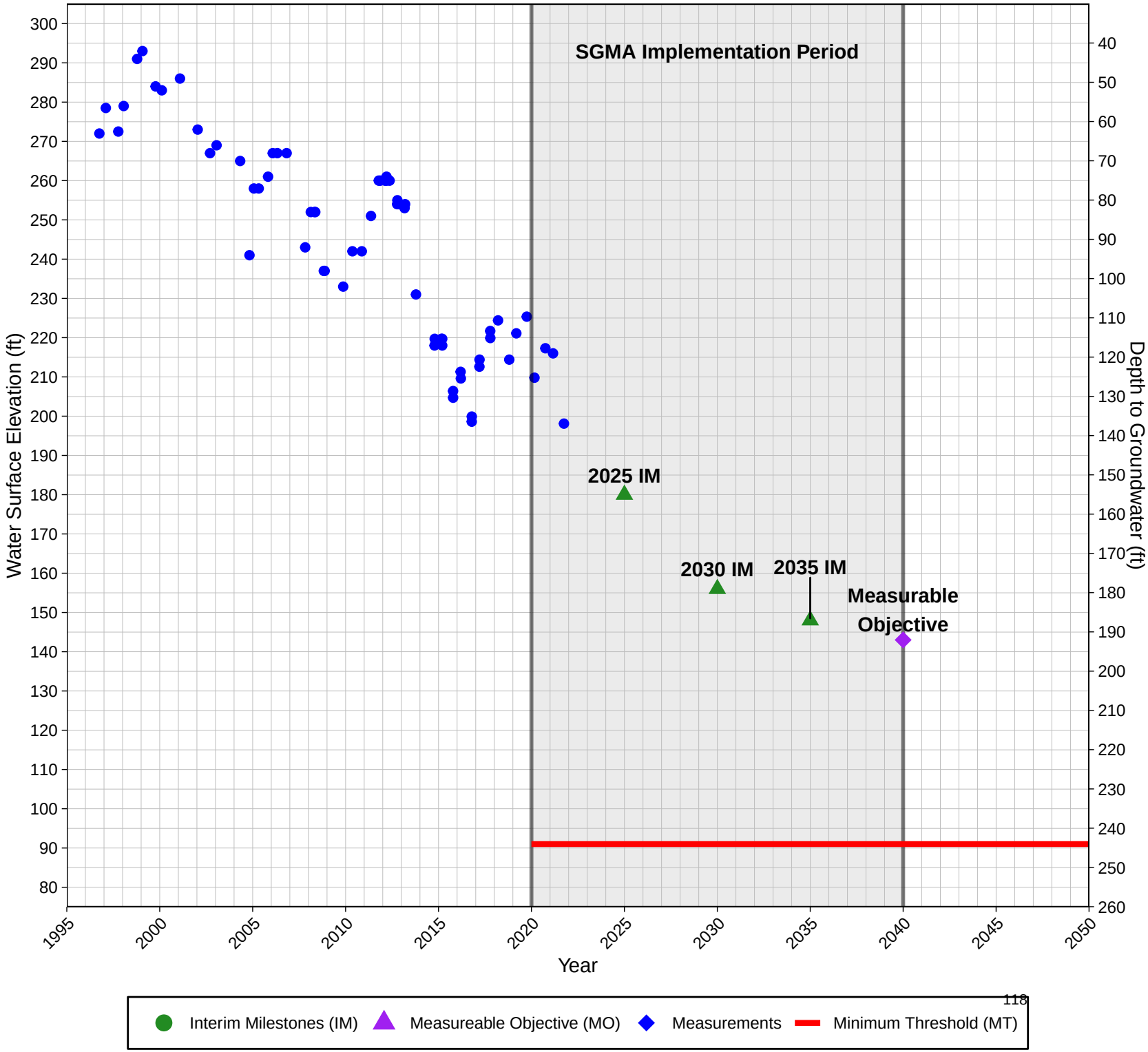




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

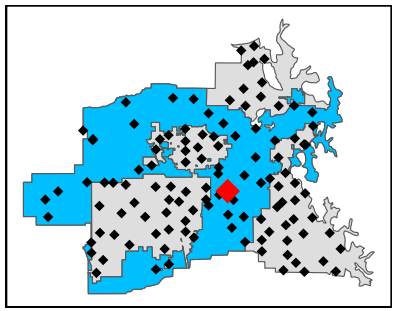
19S25E16A002M | Greater Kaweah
Single Aquifer System

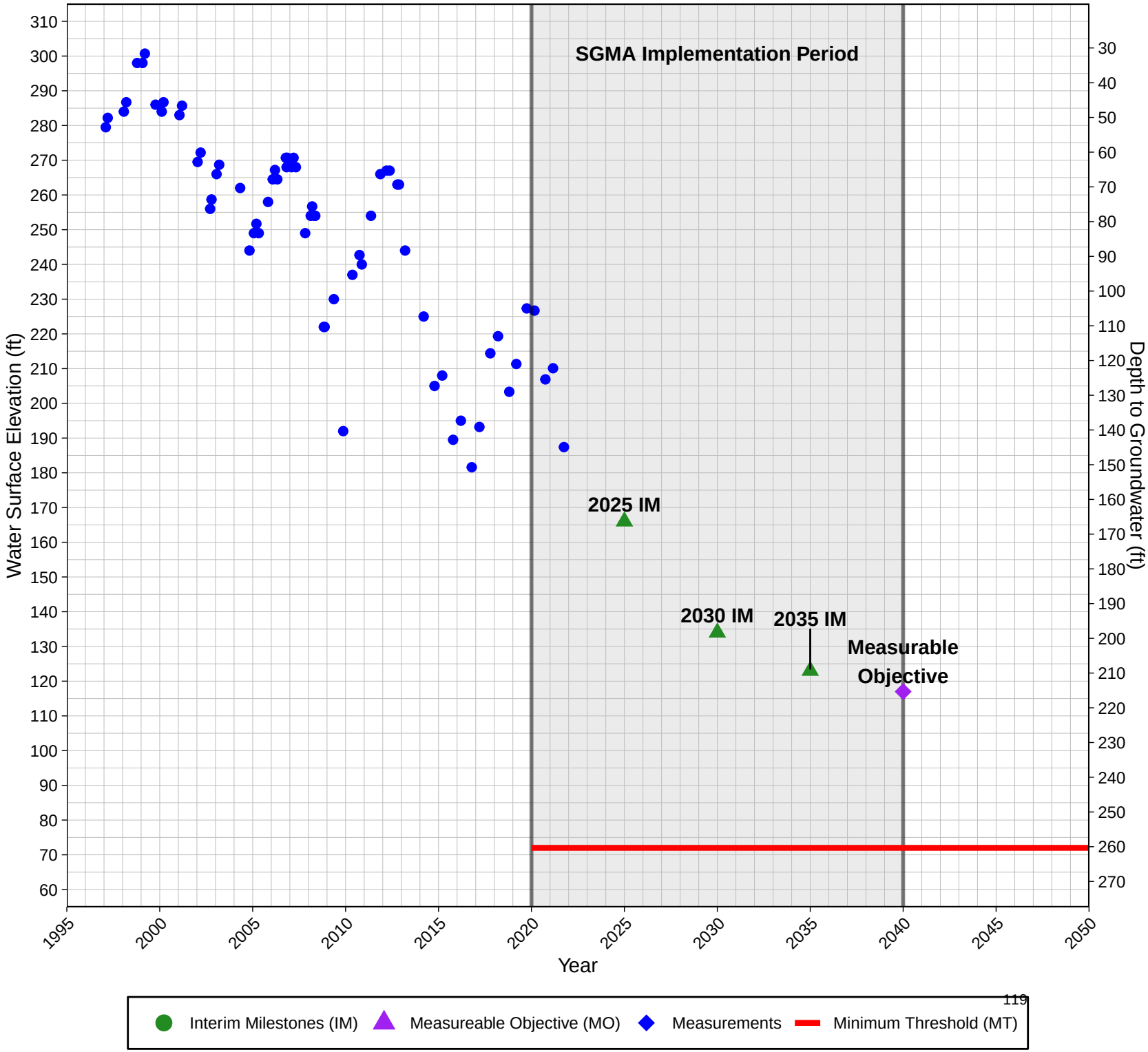




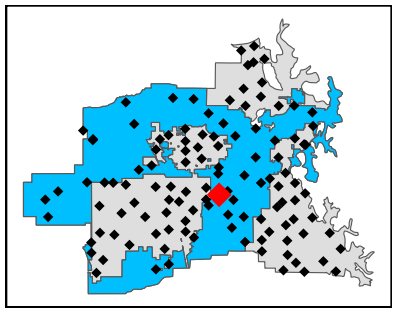
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

19S25E27A001M | Greater Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



19S25E28H001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

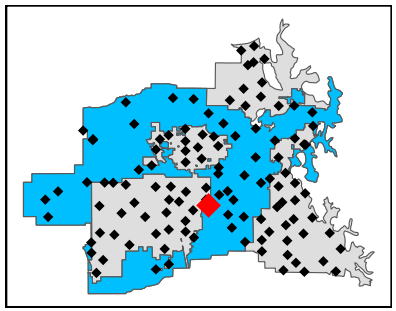
Water Surface Elevation (ft)

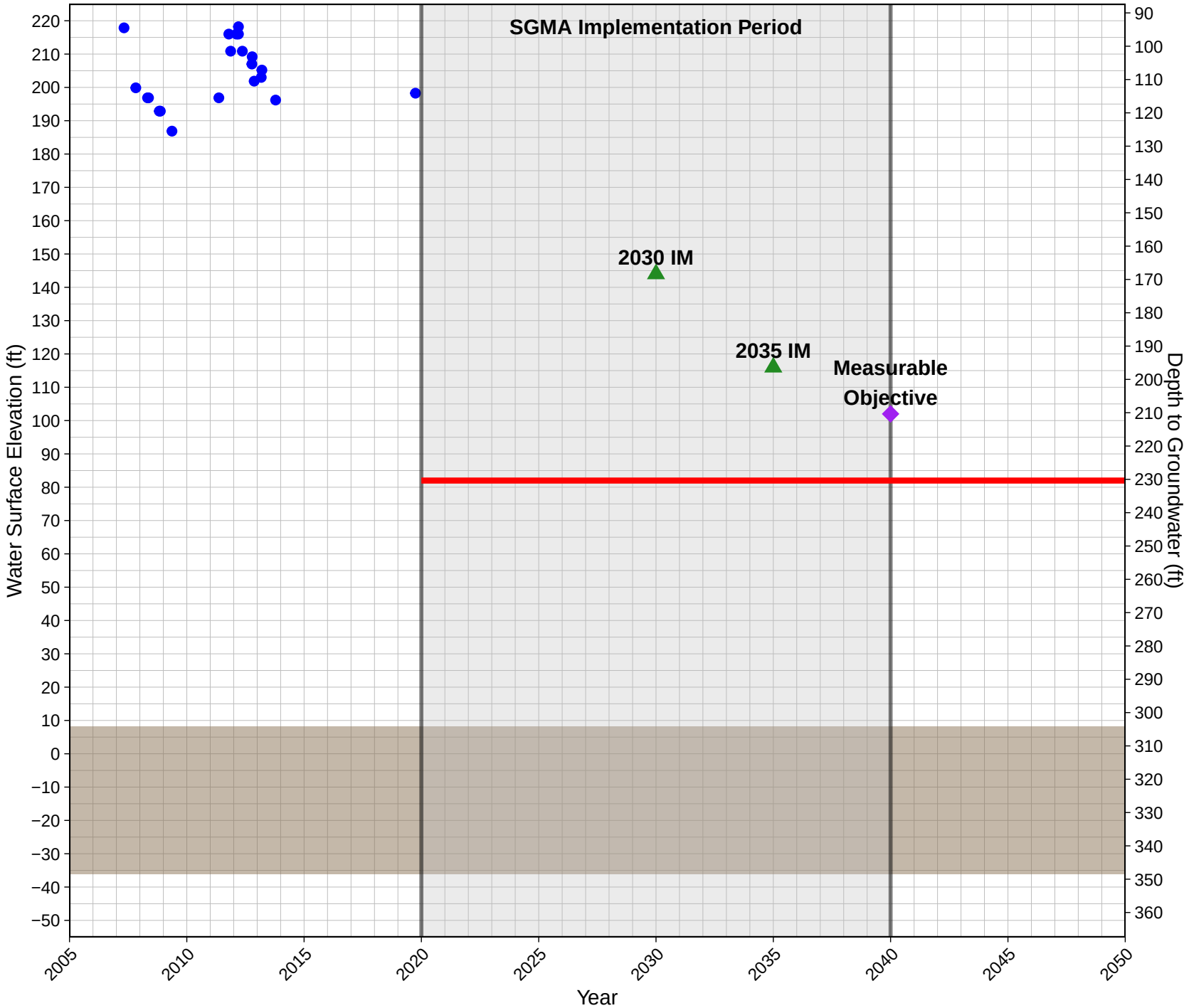
Depth to Groundwater (ft)

Year

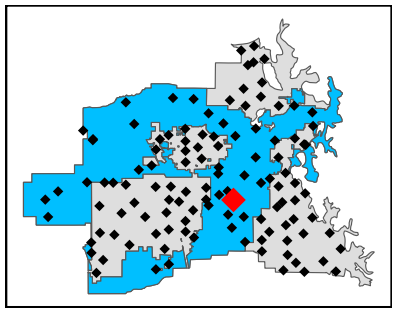
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

19S25E32J001M | Greater Kaweah
Upper Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



19S25E35B002M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

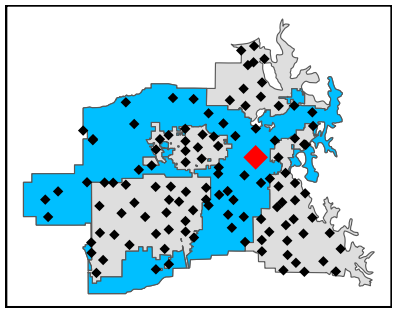
Water Surface Elevation (ft)

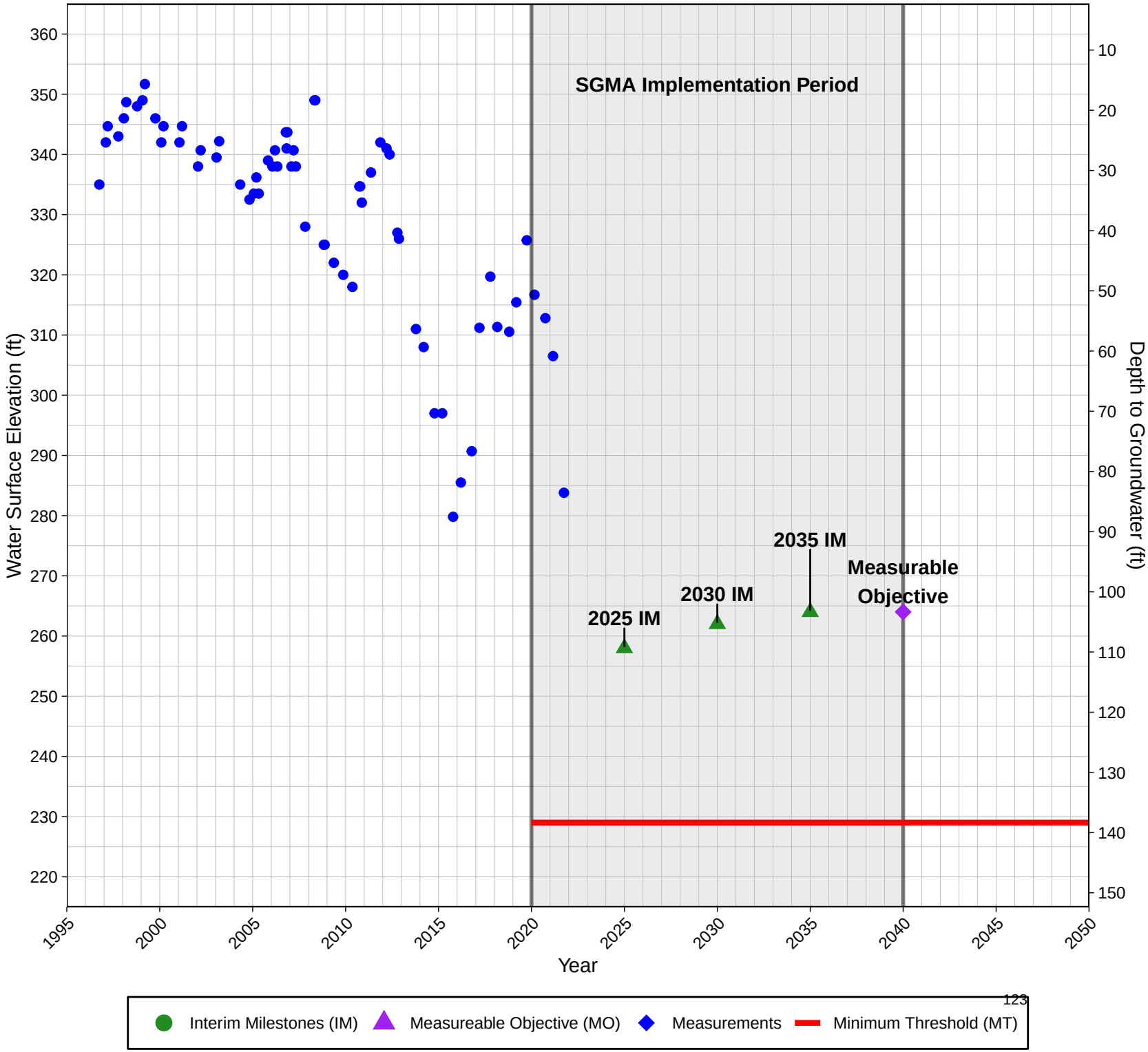
Depth to Groundwater (ft)

Year

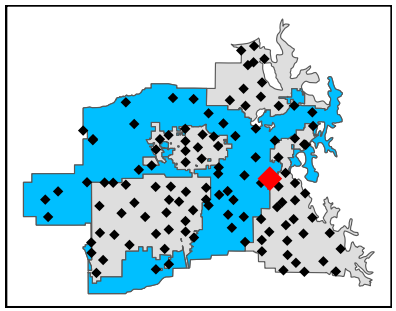
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

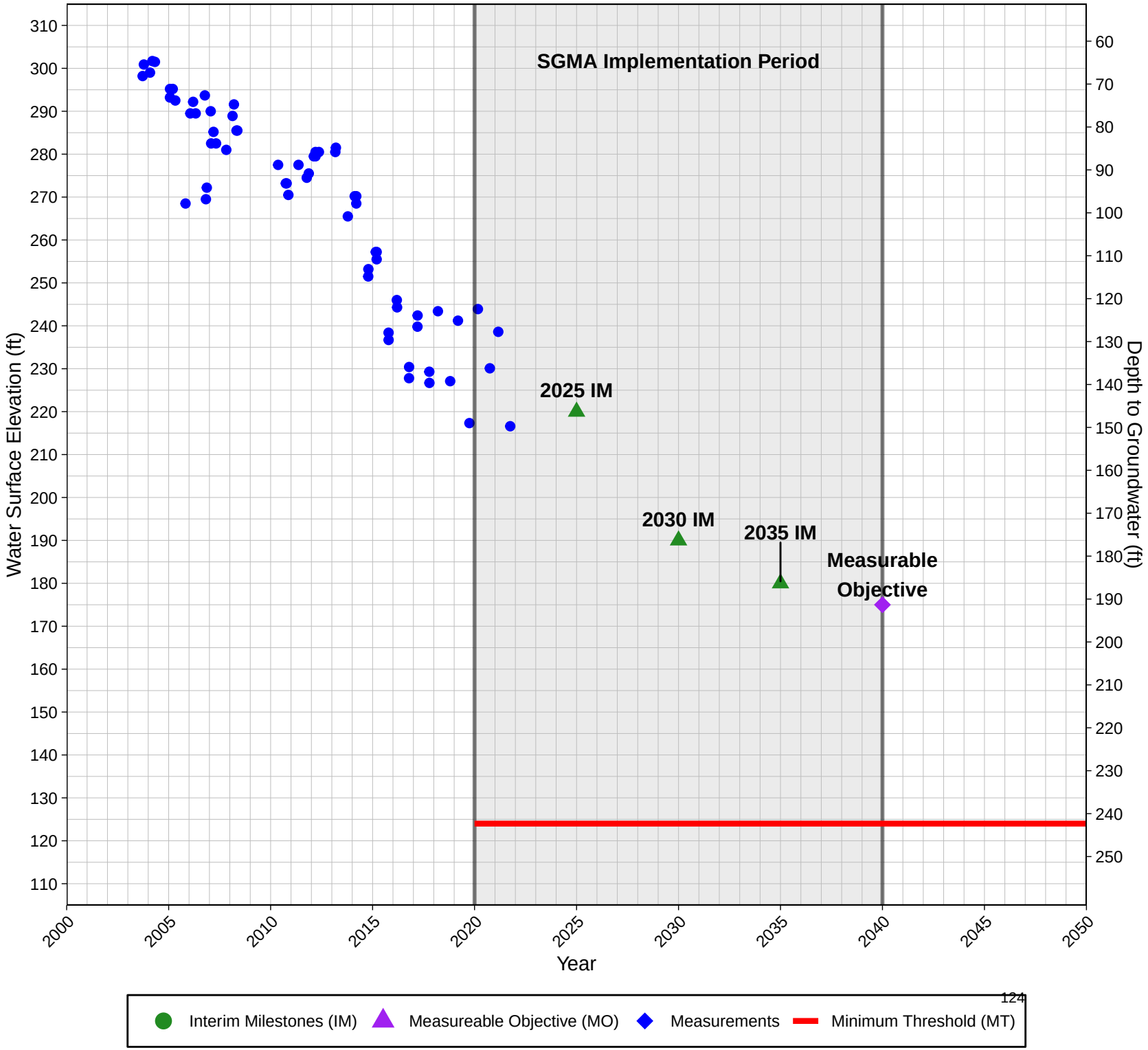
19S26E05C001M | Greater Kaweah
Single Aquifer System





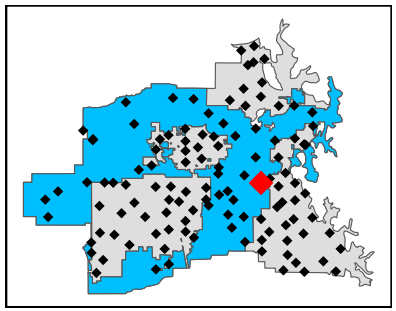
19S26E16J002M | Greater Kaweah
Single Aquifer System

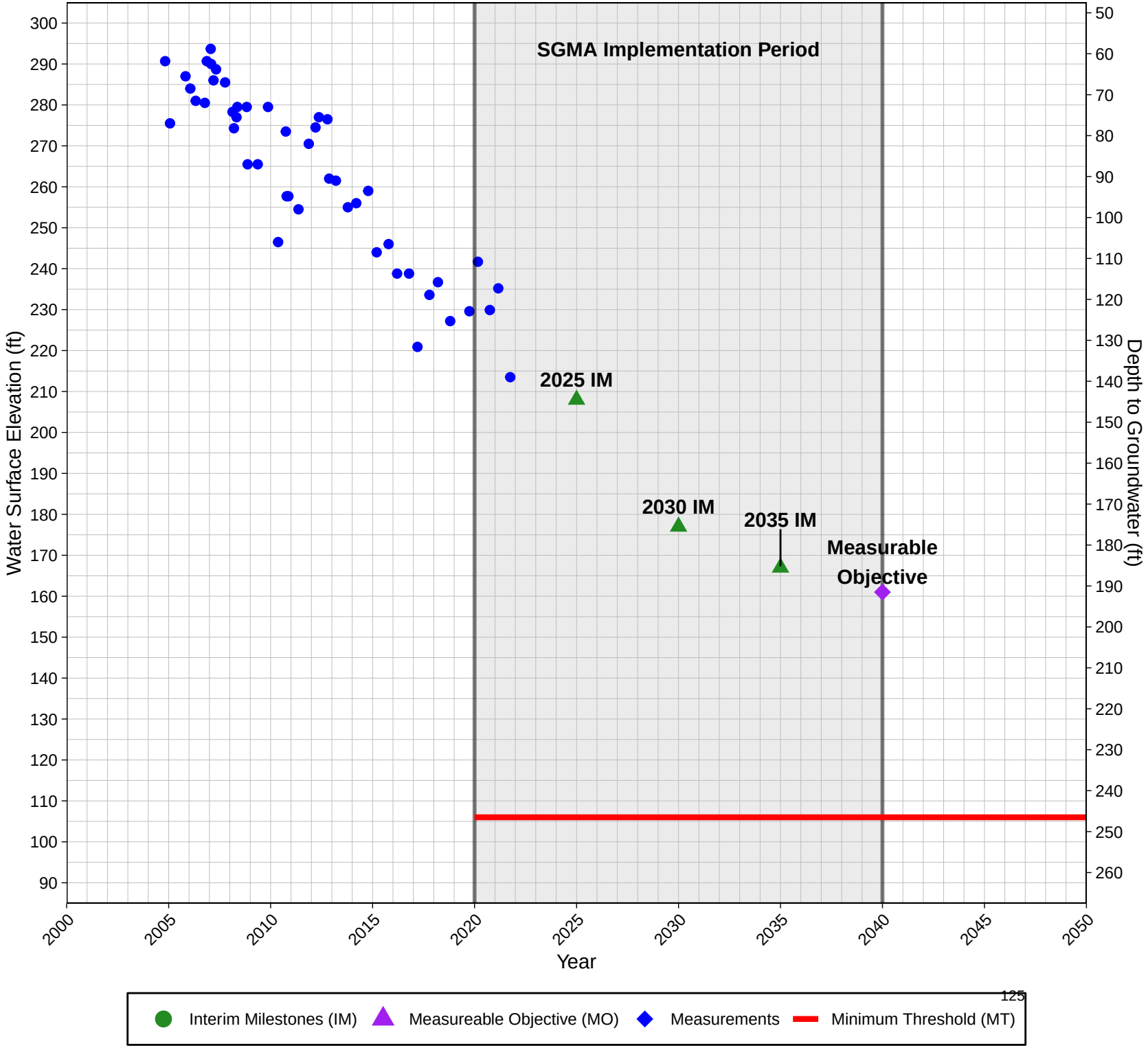




Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

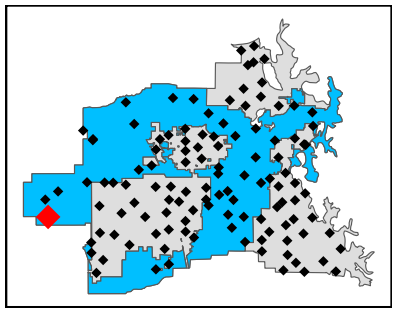
19S26E20A001M | Greater Kaweah
Single Aquifer System

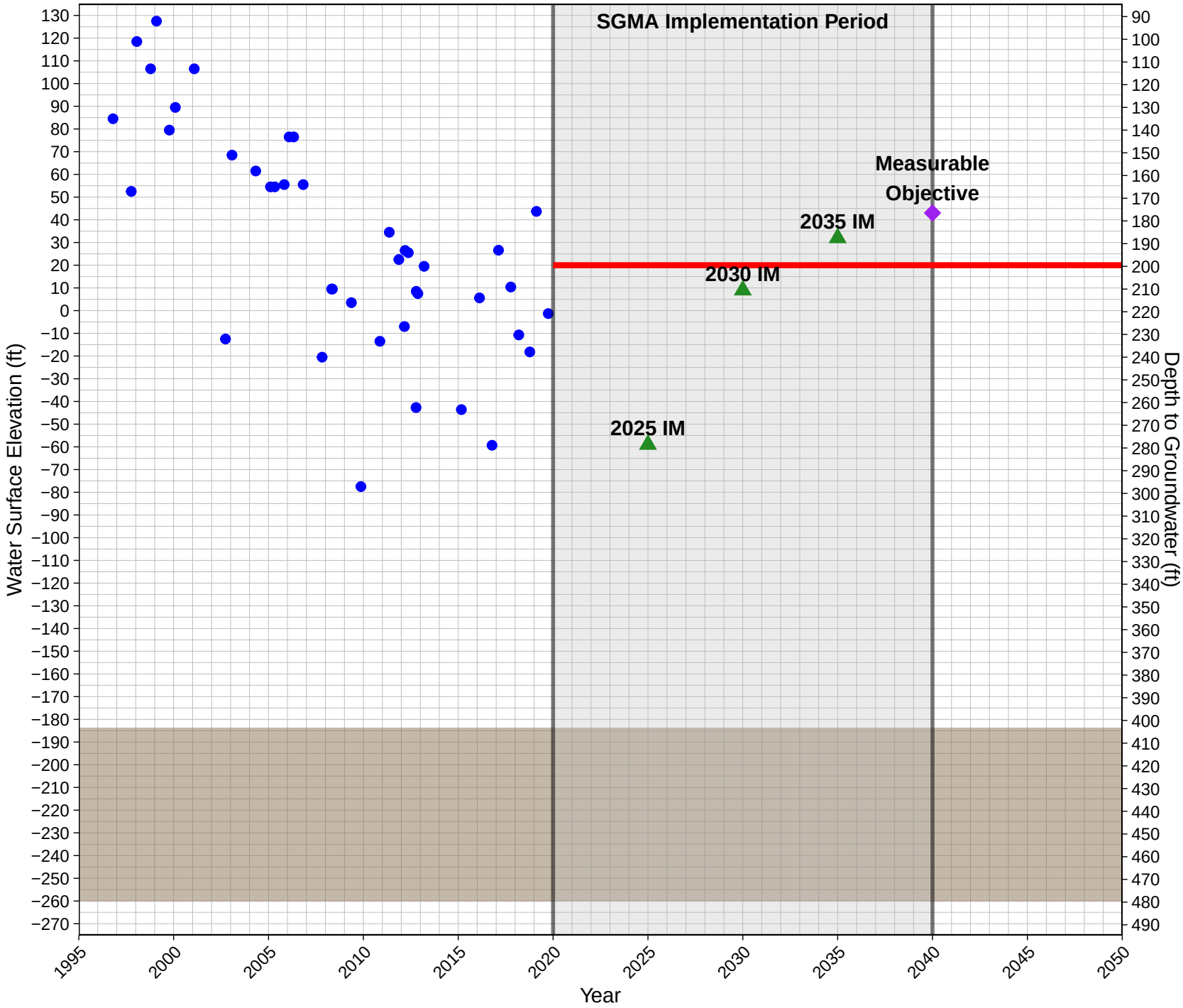




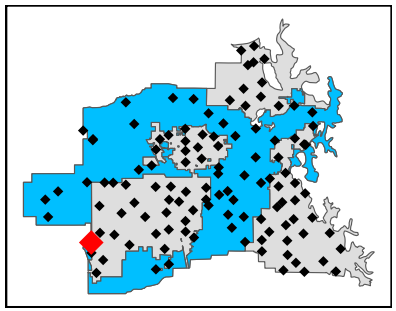
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

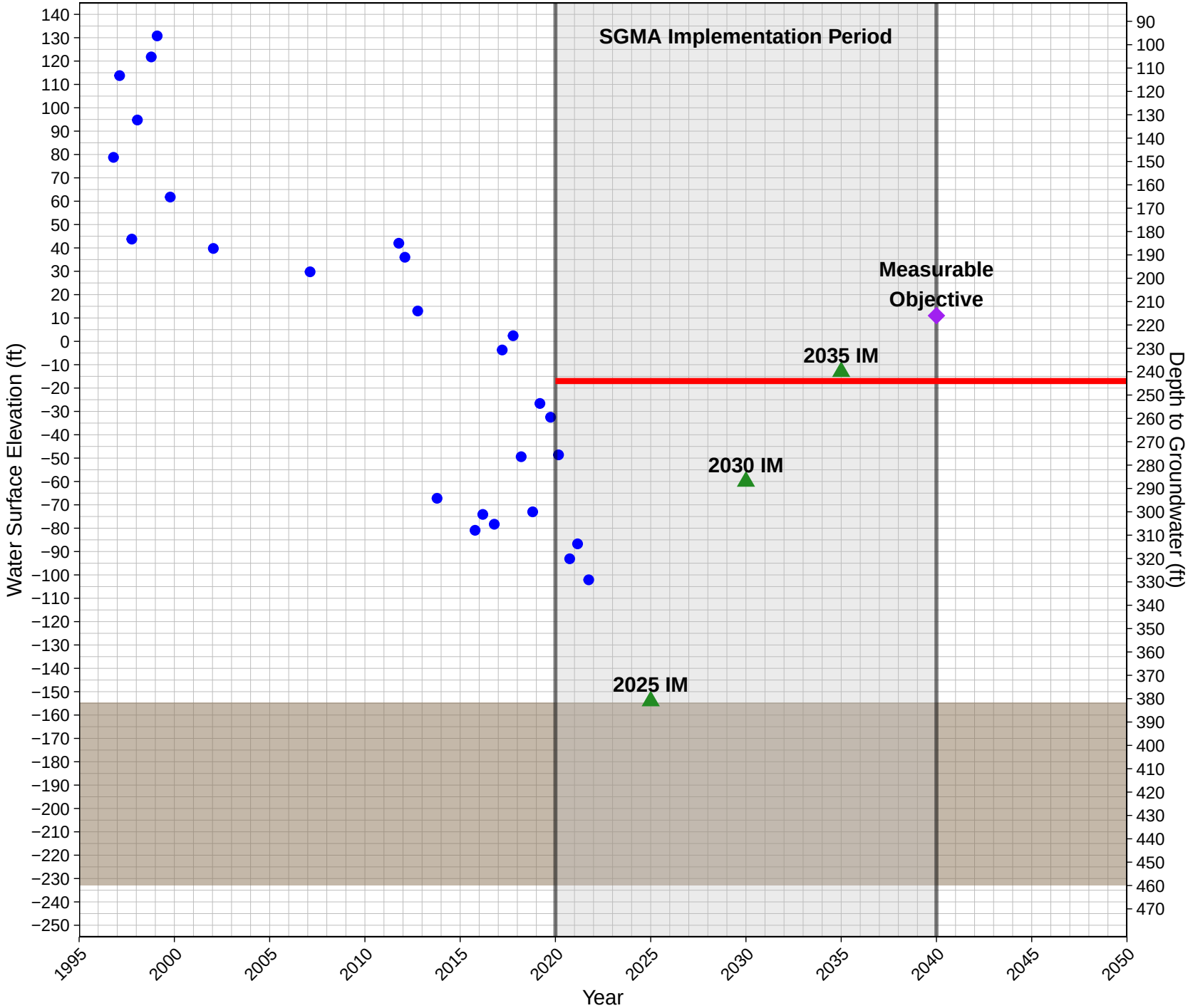
20S22E07A003M | Greater Kaweah
Upper Aquifer System



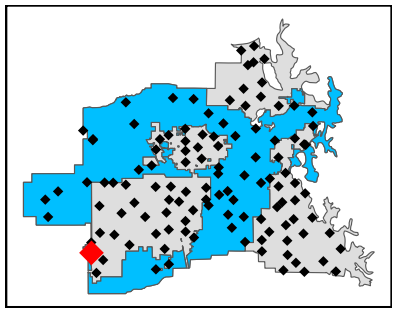


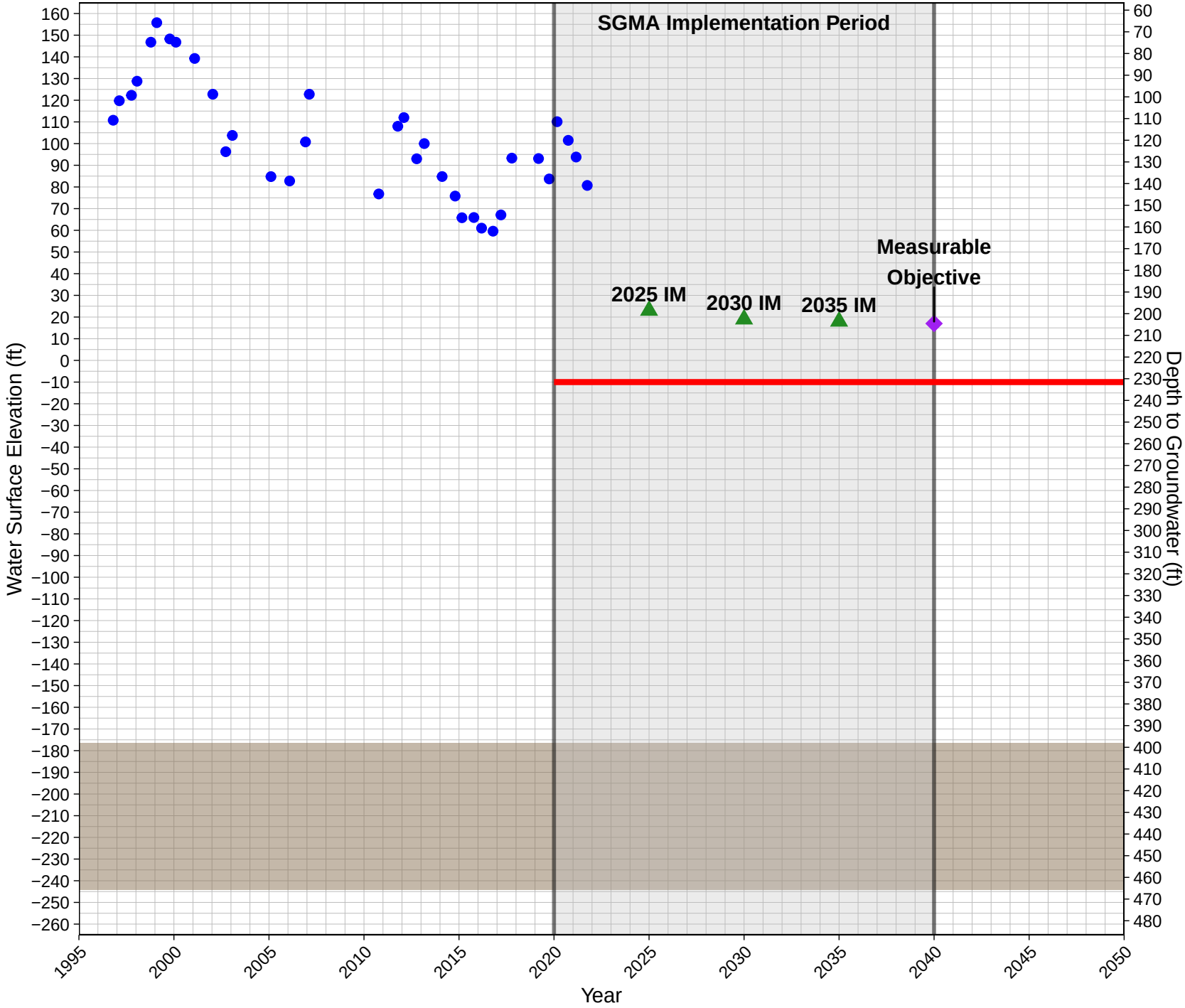
20S22E24R001M | Greater Kaweah
Upper Aquifer System



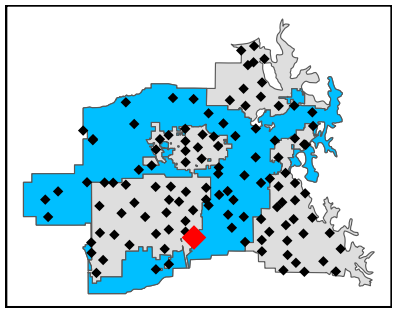


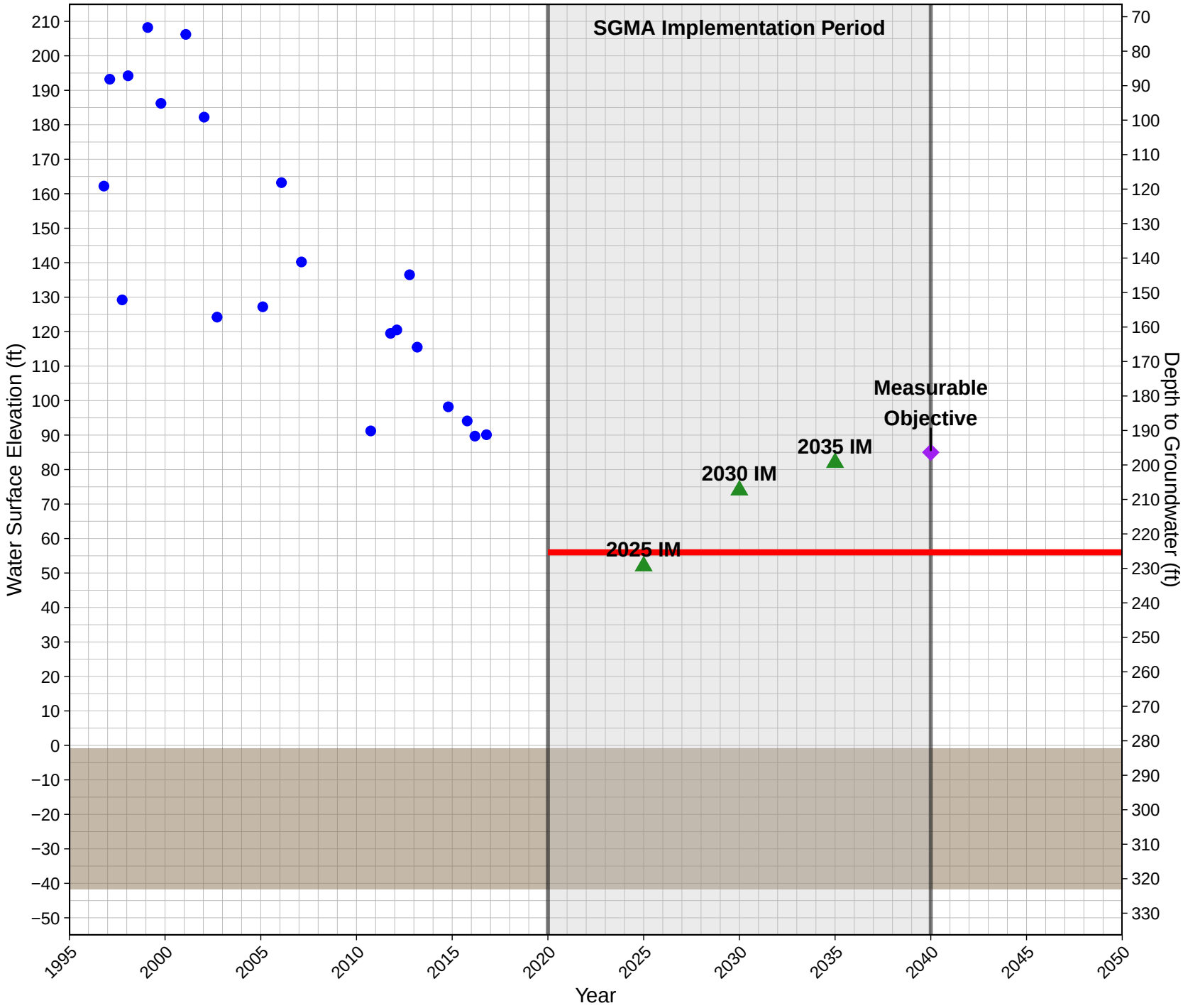
20S22E36A001M | Greater Kaweah
Upper Aquifer System

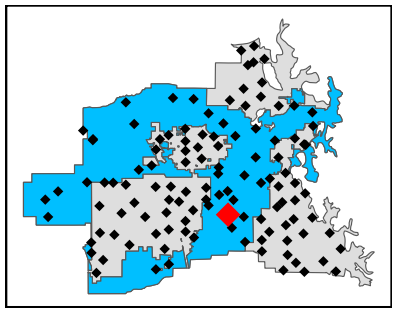




20S24E24H001M | Greater Kaweah
Upper Aquifer System







20S25E03R001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

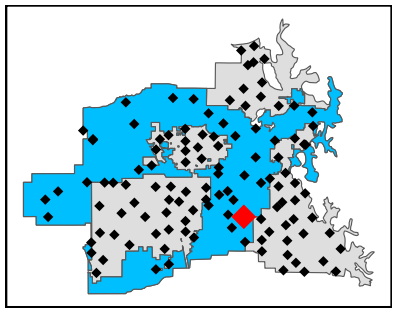
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



20S25E12A001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

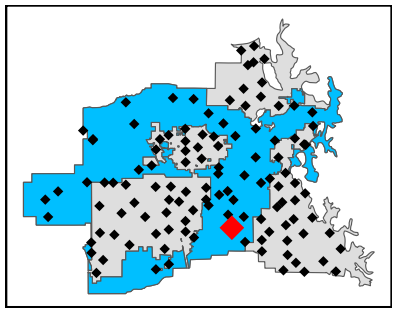
Water Surface Elevation (ft)

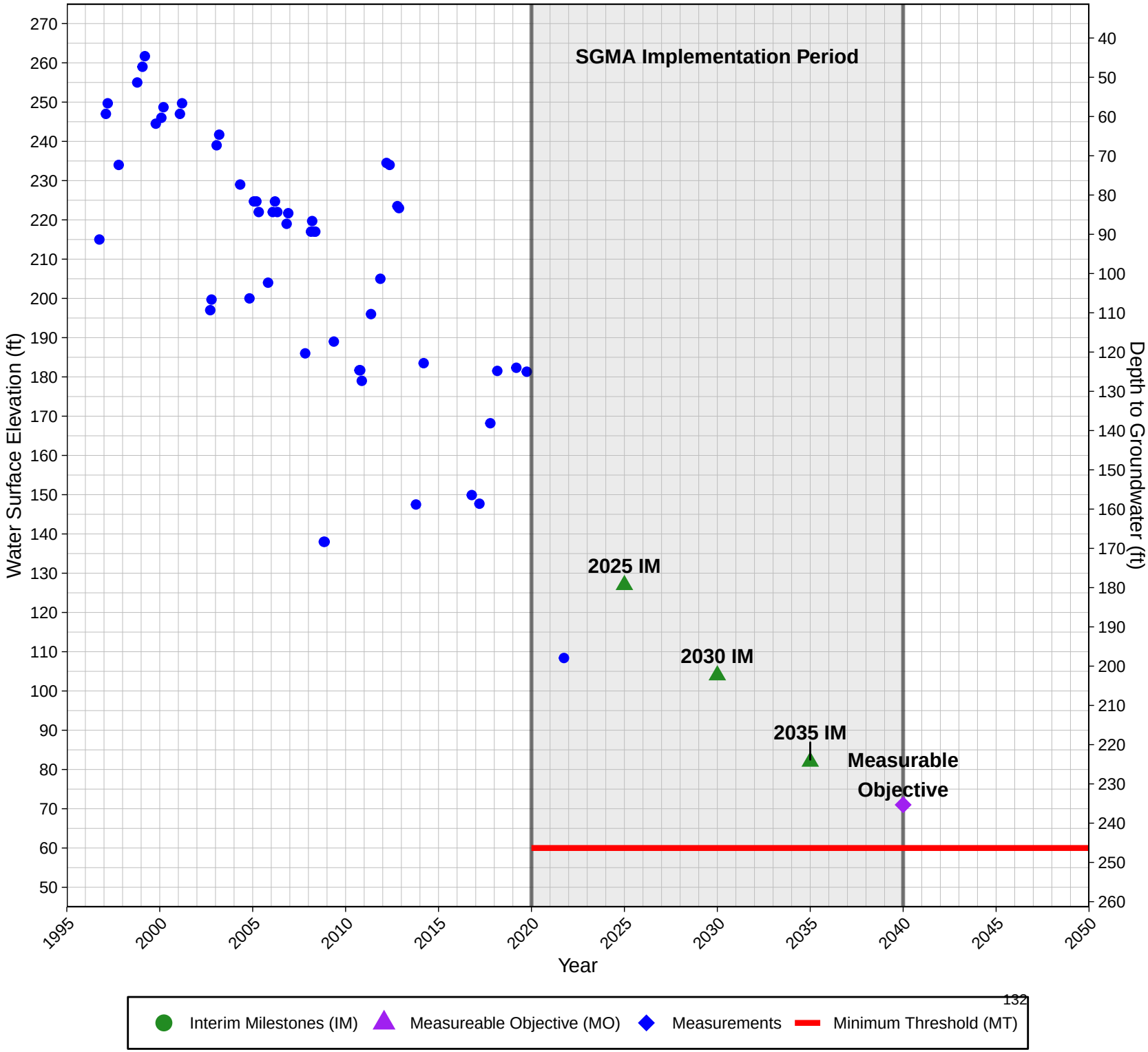
Depth to Groundwater (ft)

Year

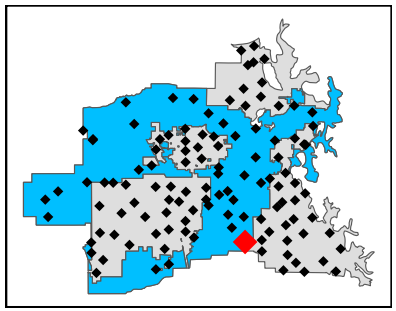
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

20S25E14F004M | Greater Kaweah
Single Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)



20S25E24R001M | Greater Kaweah
Single Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

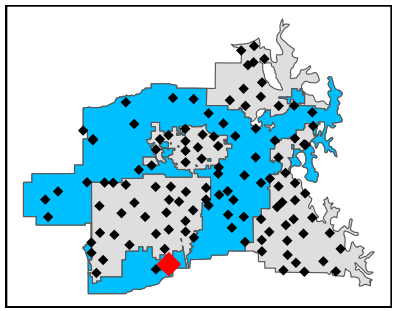
Water Surface Elevation (ft)

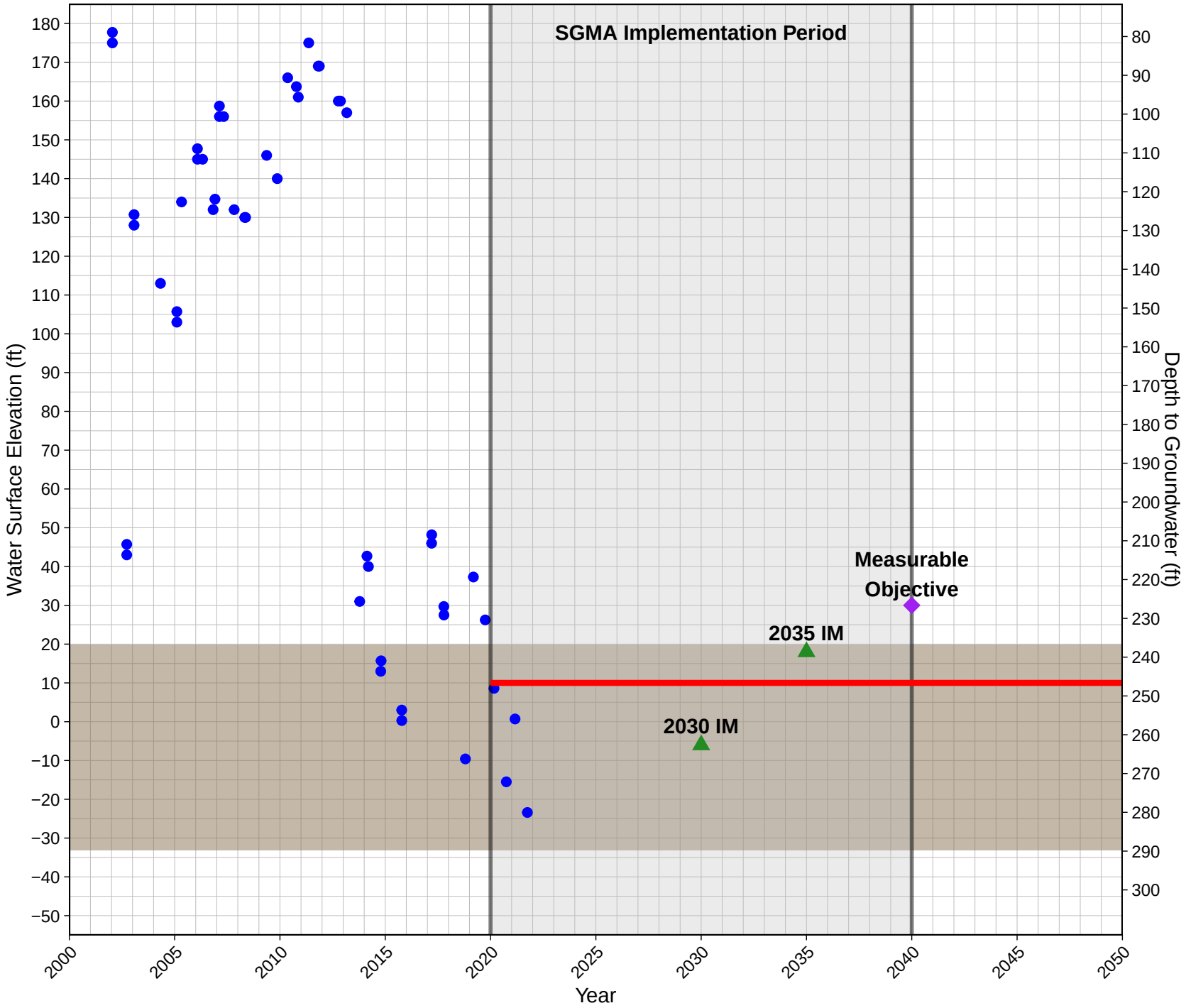
Depth to Groundwater (ft)

Year

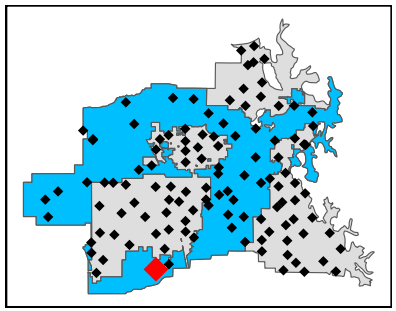
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

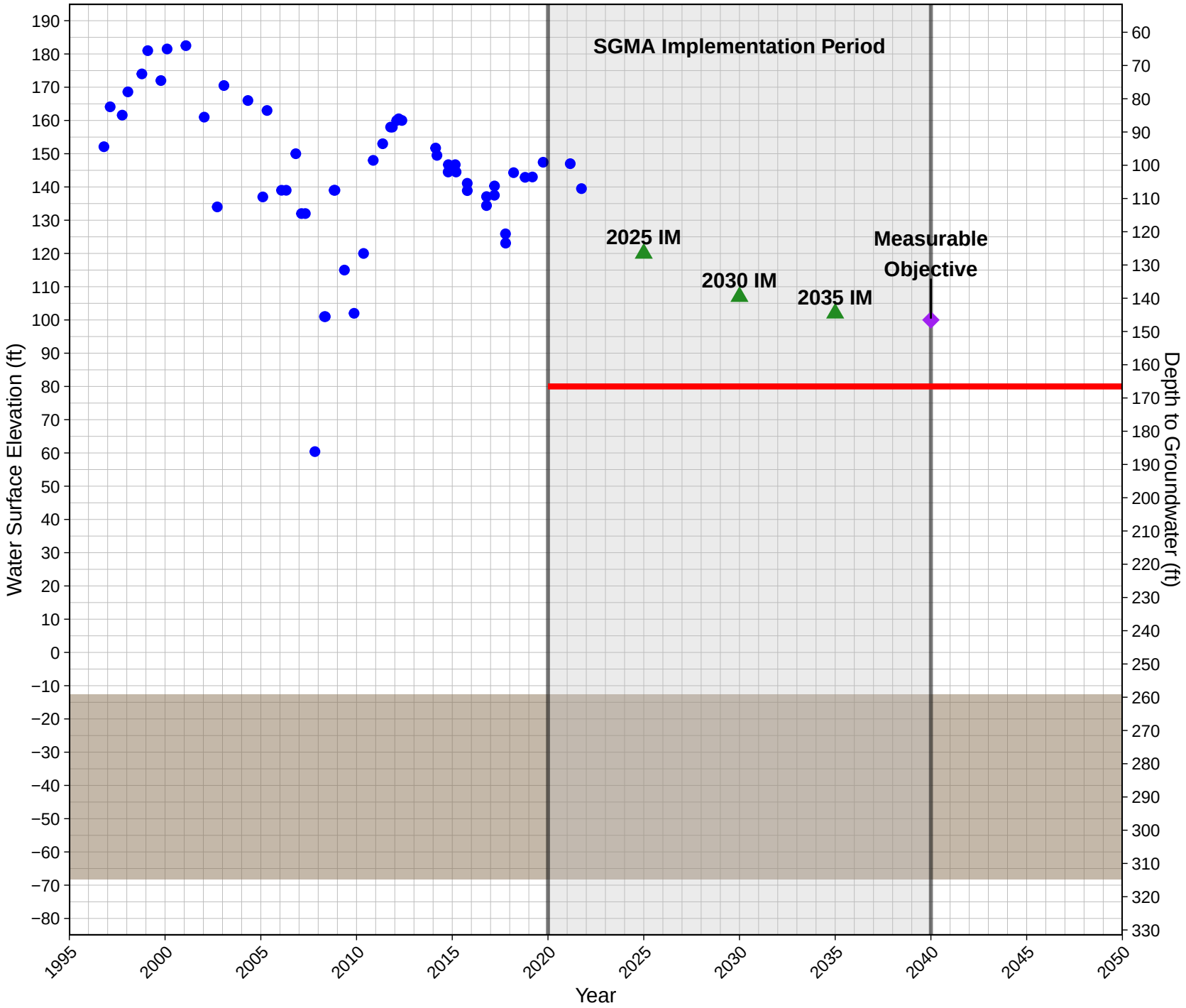
21S24E03L001M | Greater Kaweah
Lower Aquifer System

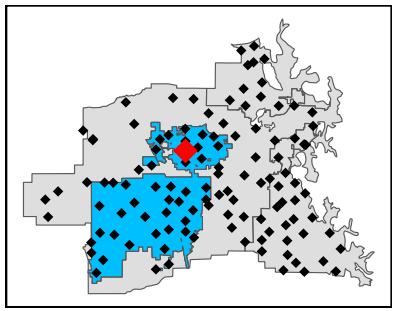




21S24E08A001M | Greater Kaweah
Upper Aquifer System







025−01 | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

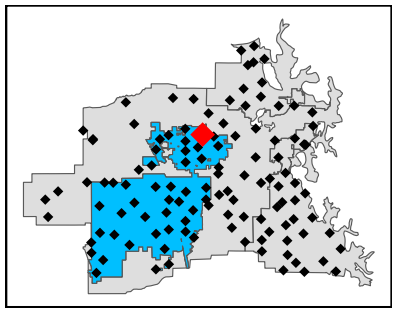
2025 IM

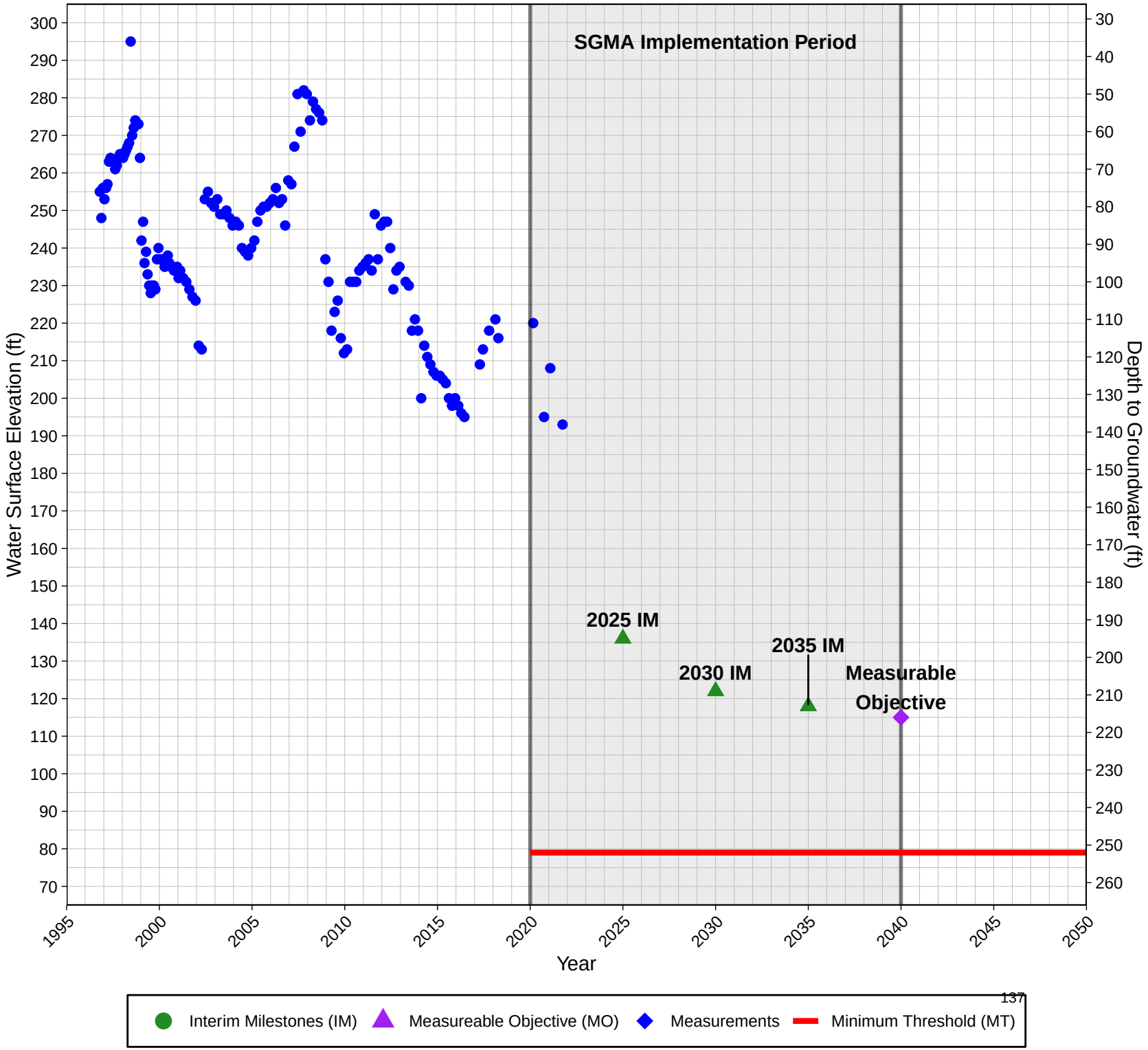
Water Surface Elevation (ft)

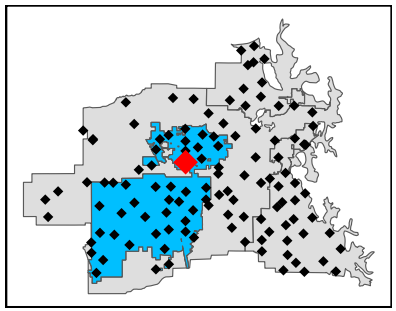
Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay




036−01 | Mid−Kaweah
Single Aquifer System
SGMA Implementation Period
2025 IM
2030 IM
2035 IM
Measurable
Objective
Water Surface Elevation (ft)
Depth to Groundwater (ft)
Year
Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)

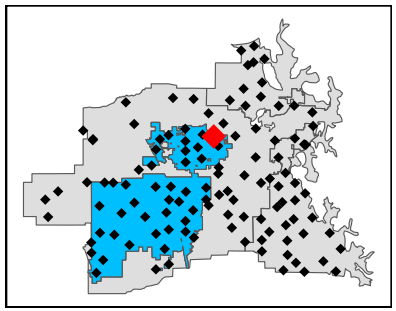


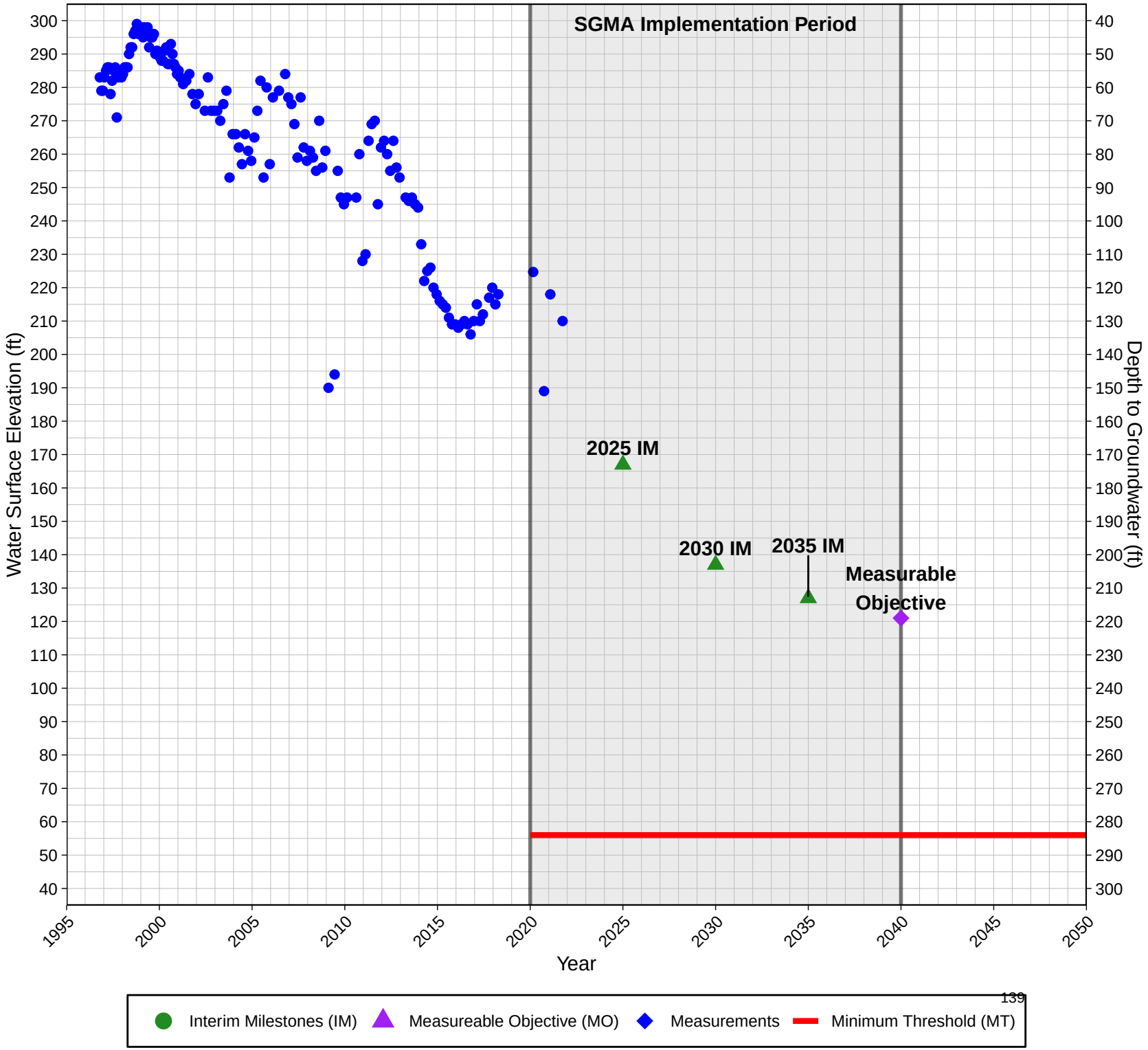
047−01 | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period
2025 IM
2030 IM
2035 IM
Measurable Objective

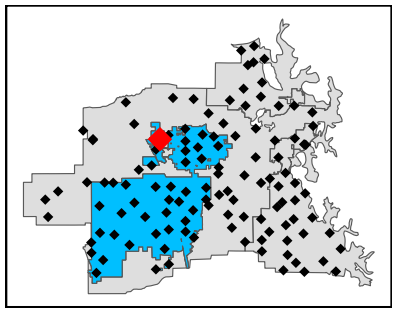
Water Surface Elevation (ft)
Depth to Groundwater (ft)
Year

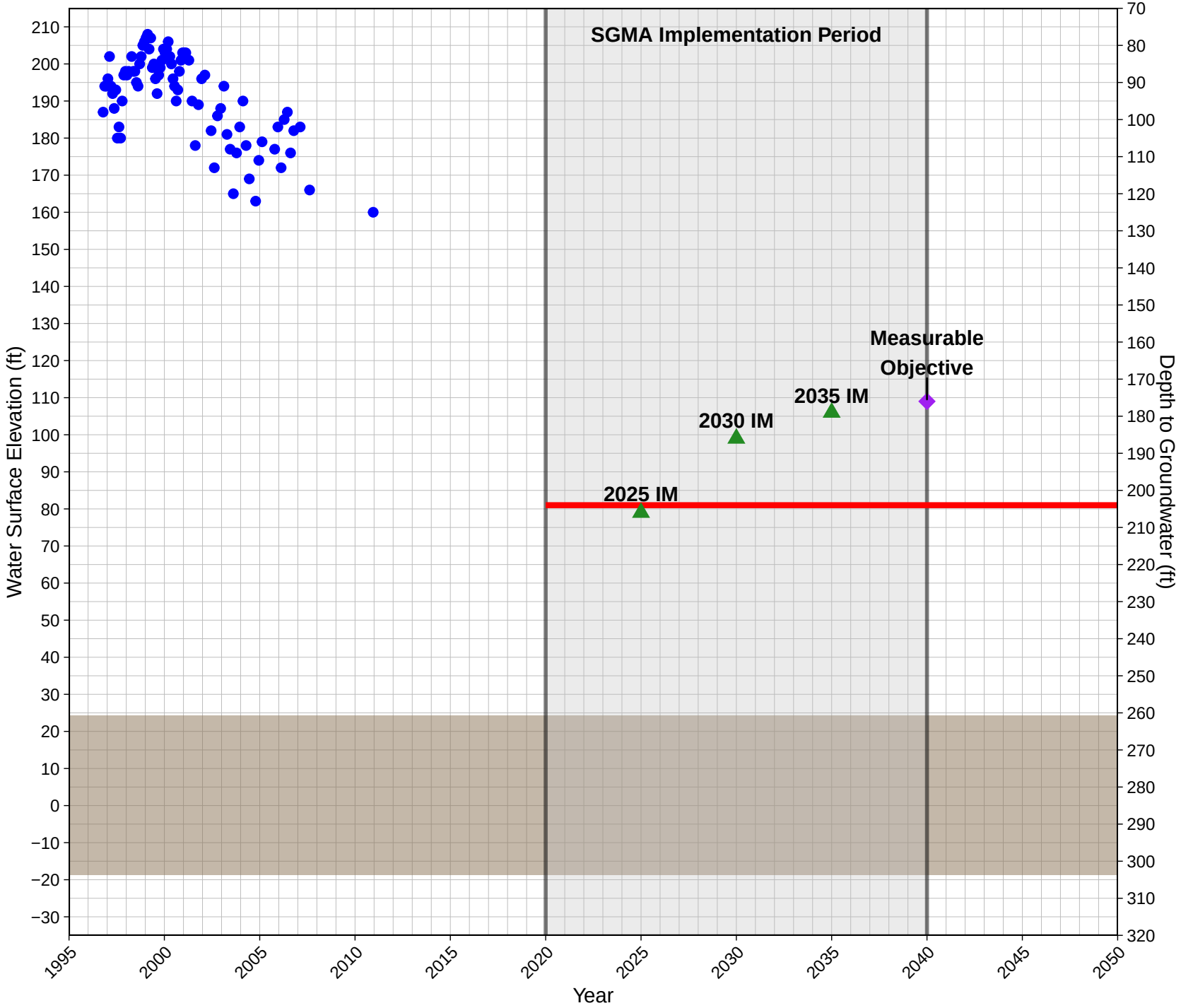
Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)
Corcoran Clay



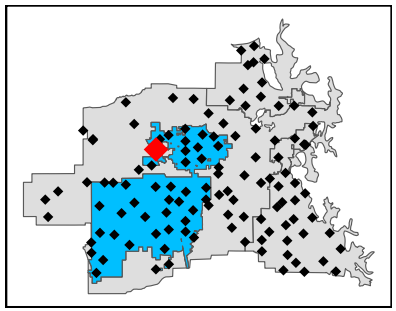

053−01 | Mid−Kaweah
Single Aquifer System
SGMA Implementation Period
2025 IM
2030 IM
2035 IM
Measurable
Objective
Water Surface Elevation (ft)
Depth to Groundwater (ft)
Year
Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)

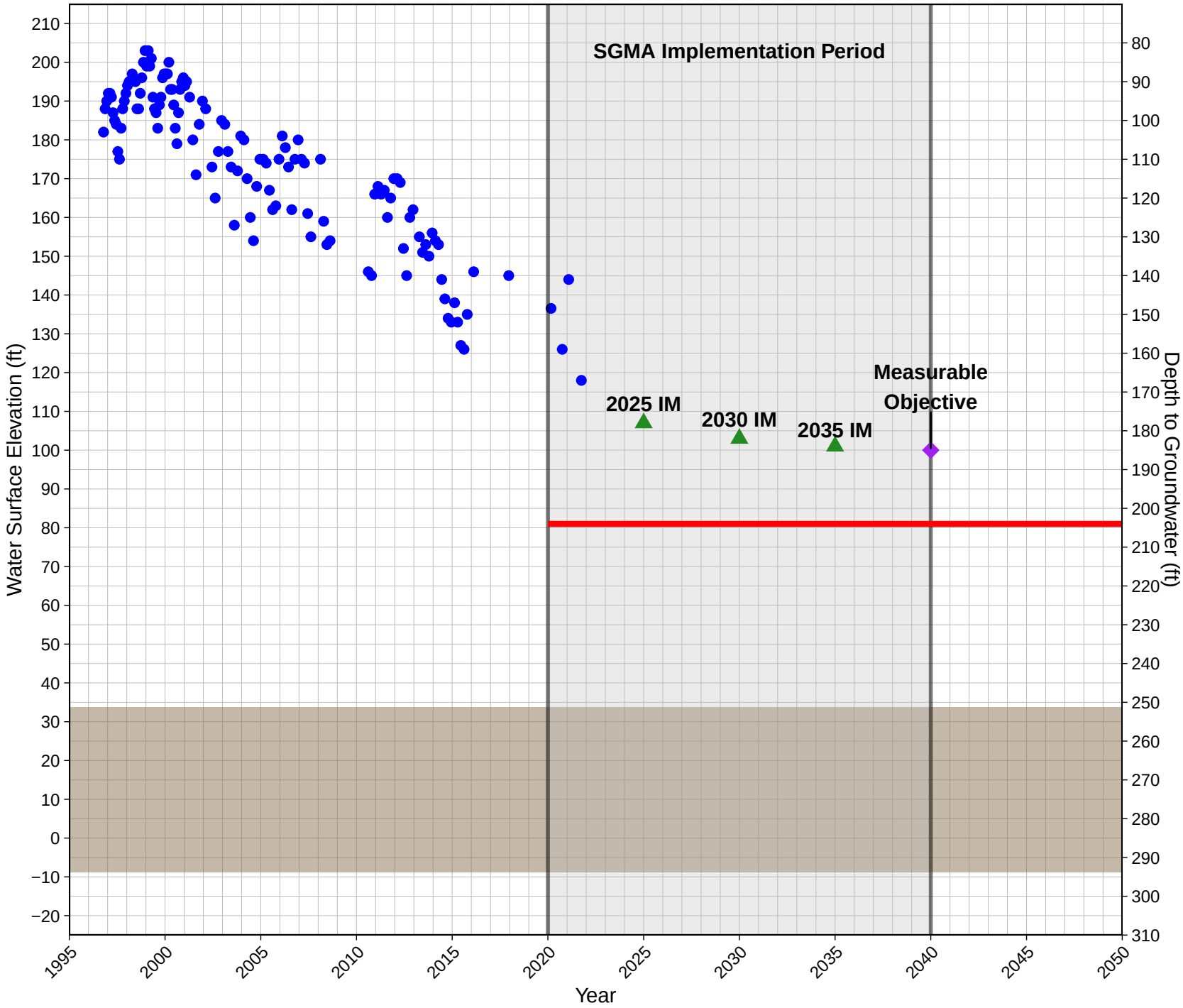
075−01 | Mid−Kaweah
Upper Aquifer System



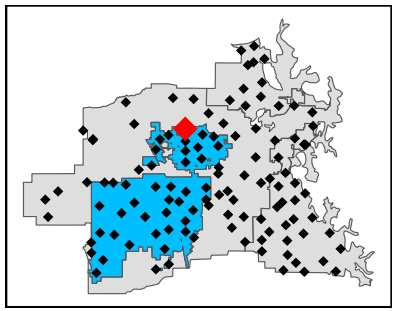


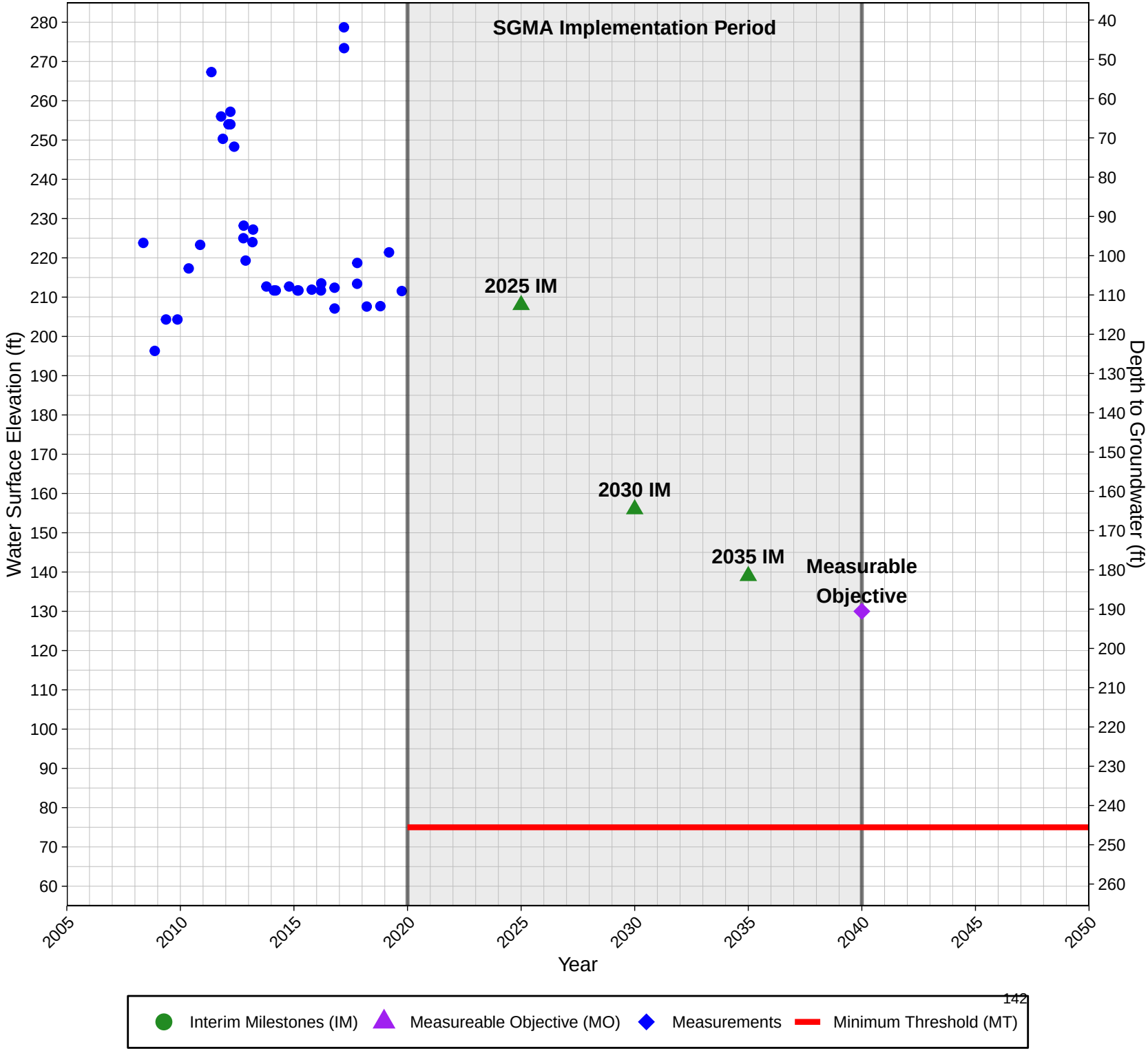
077−01 | Mid−Kaweah
Upper Aquifer System

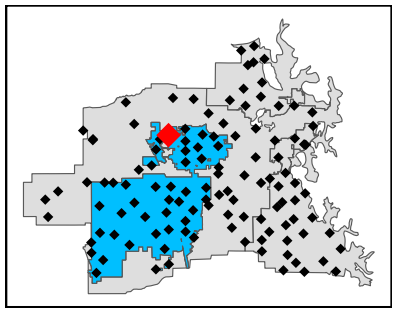




18S24E13N001M | Mid−Kaweah
Single Aquifer System







18S24E22E001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

2025 IM

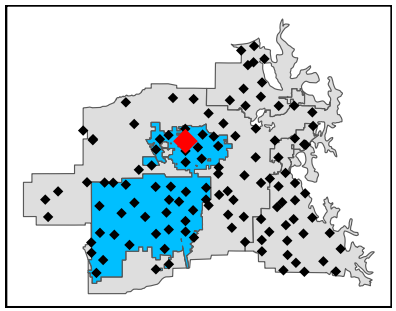
Water Surface Elevation (ft)

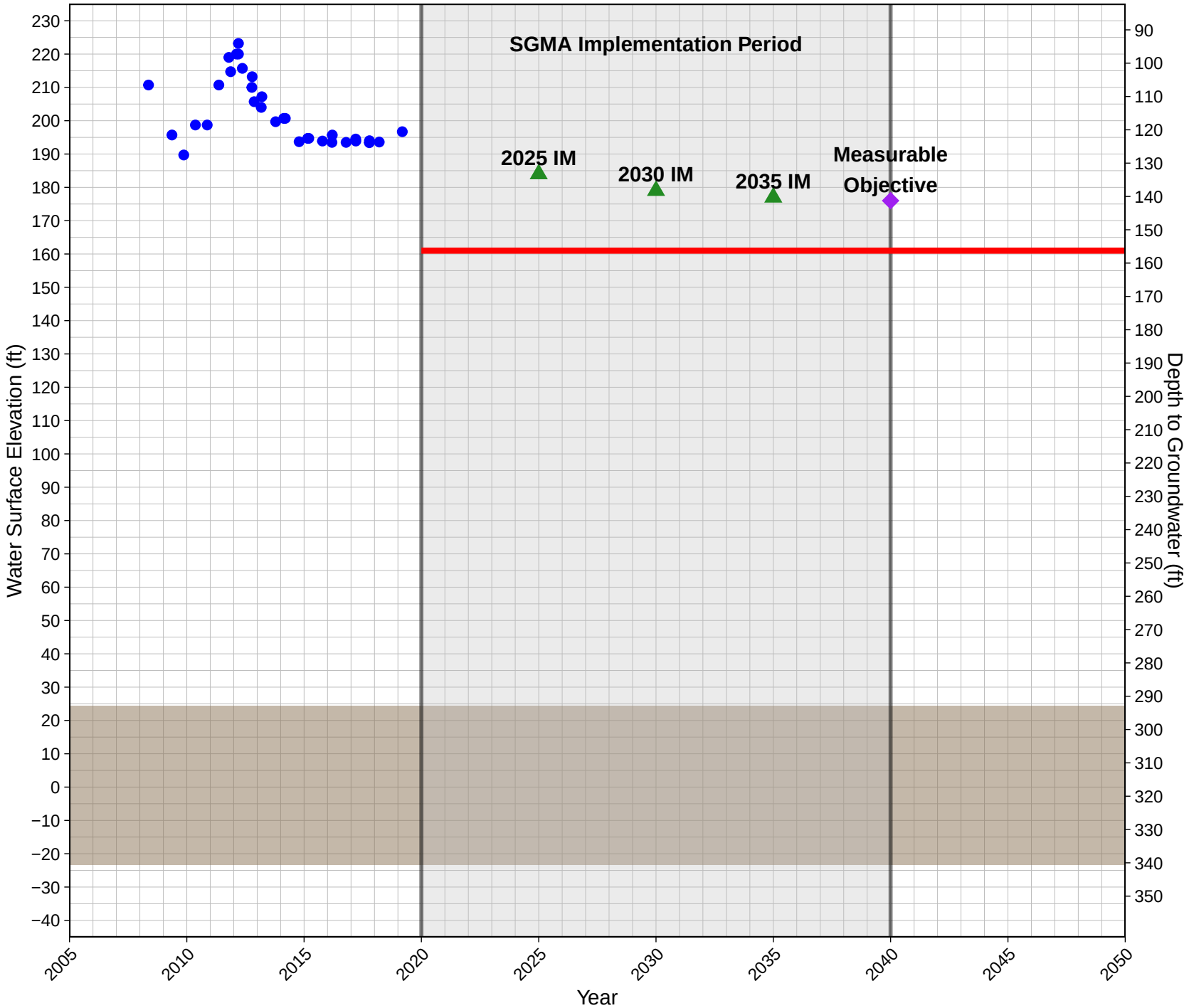
Depth to Groundwater (ft)

Year

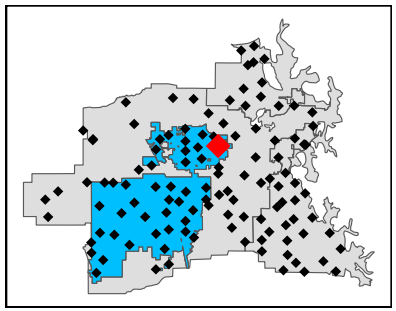
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay

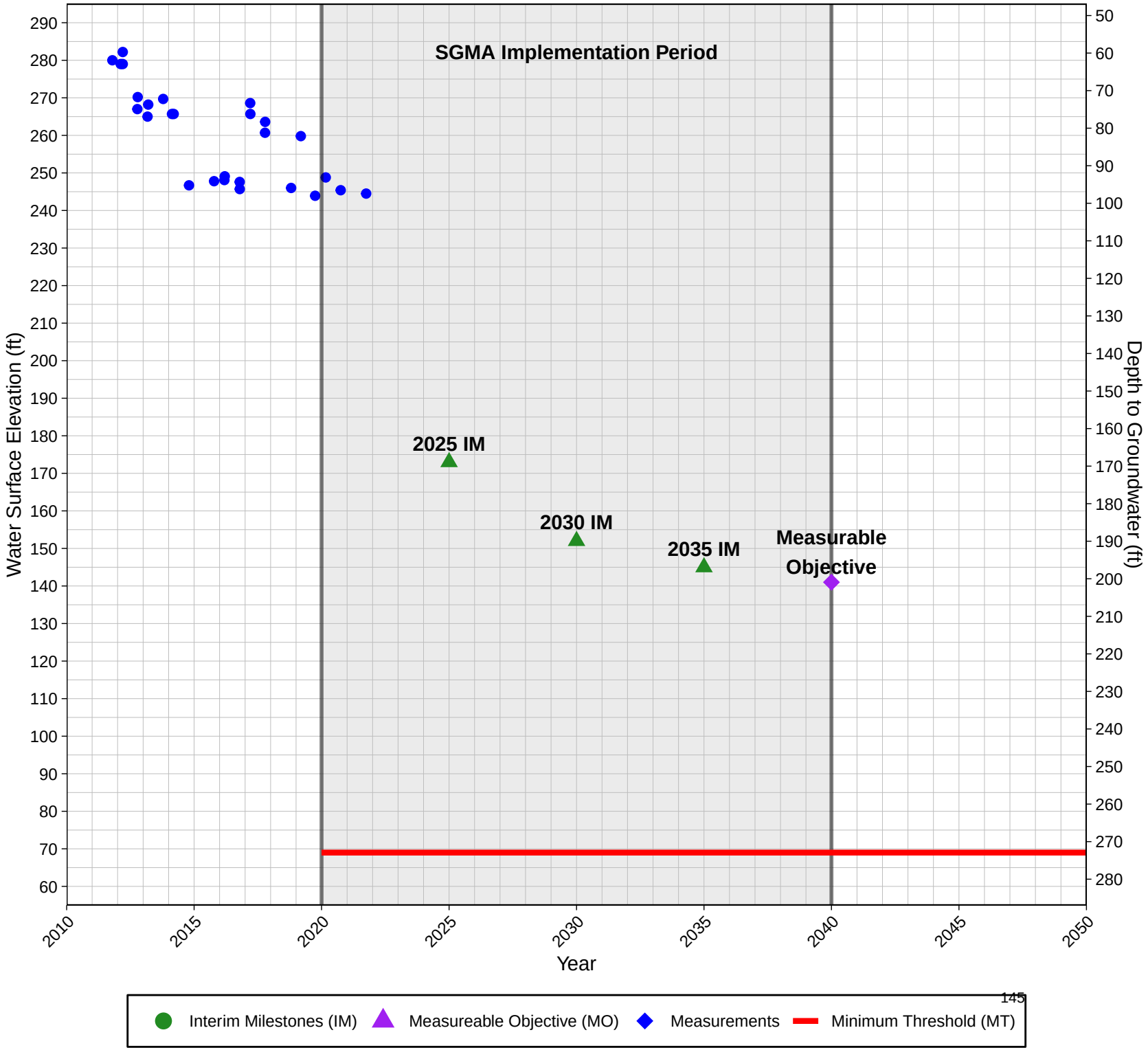
18S24E25D001M | Mid−Kaweah
Upper Aquifer System





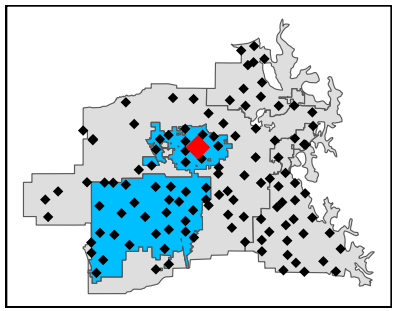
18S25E28R001M | Mid−Kaweah
Single Aquifer System

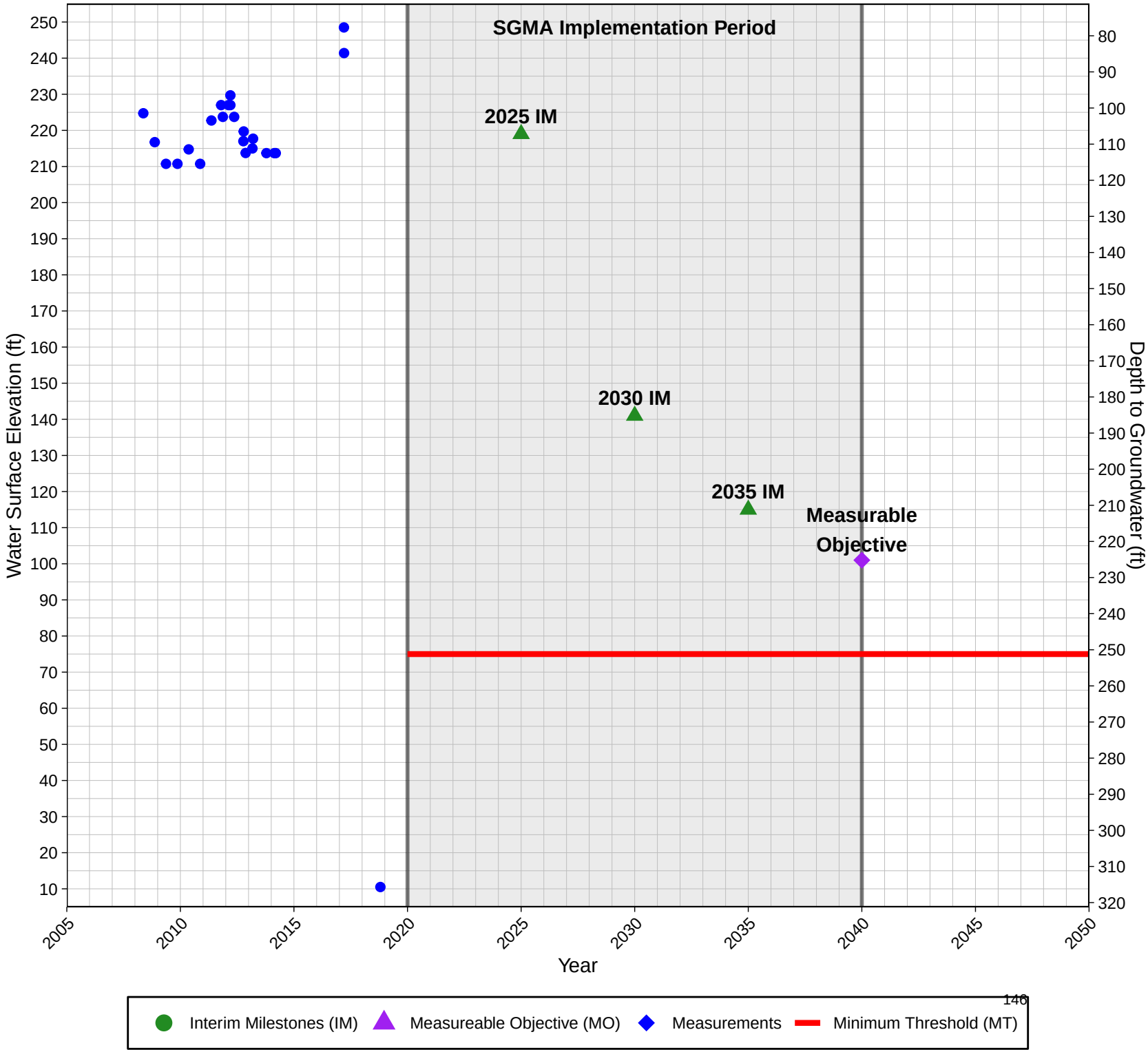




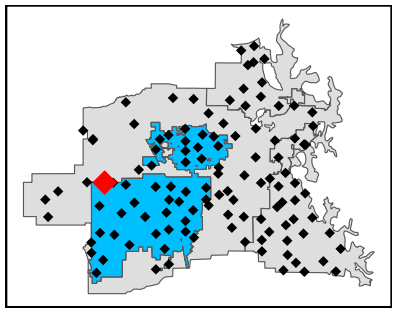
Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT)

18S25E30Q001M | Mid−Kaweah
Single Aquifer System





19S23E20C001M | Mid−Kaweah
Upper Aquifer System



SGMA Implementation Period

2025 IM

2030 IM

2035 IM

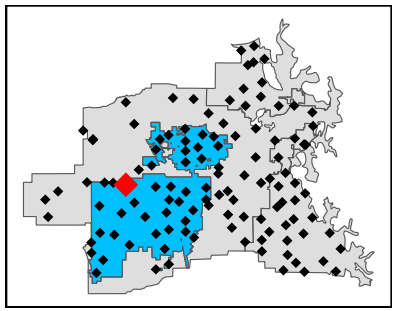
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



19S23E22H001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

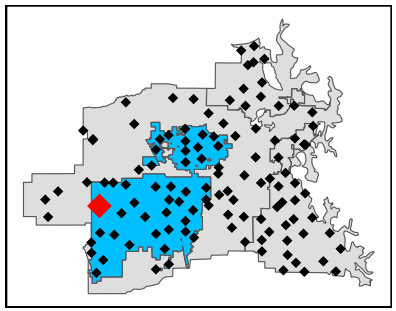
Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay

19S23E31R001M | Mid−Kaweah
Upper Aquifer System



SGMA Implementation Period

2025 IM

2030 IM

2035 IM

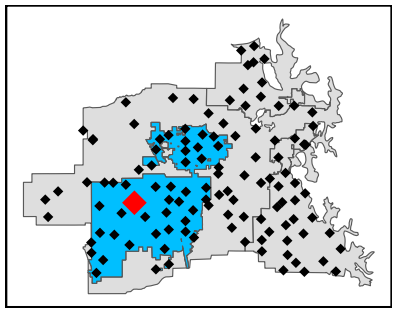
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



19S23E35H001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

2025 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

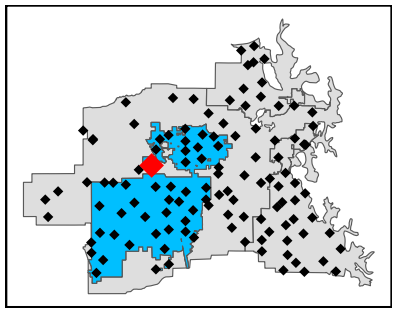
Measureable Objective (MO)

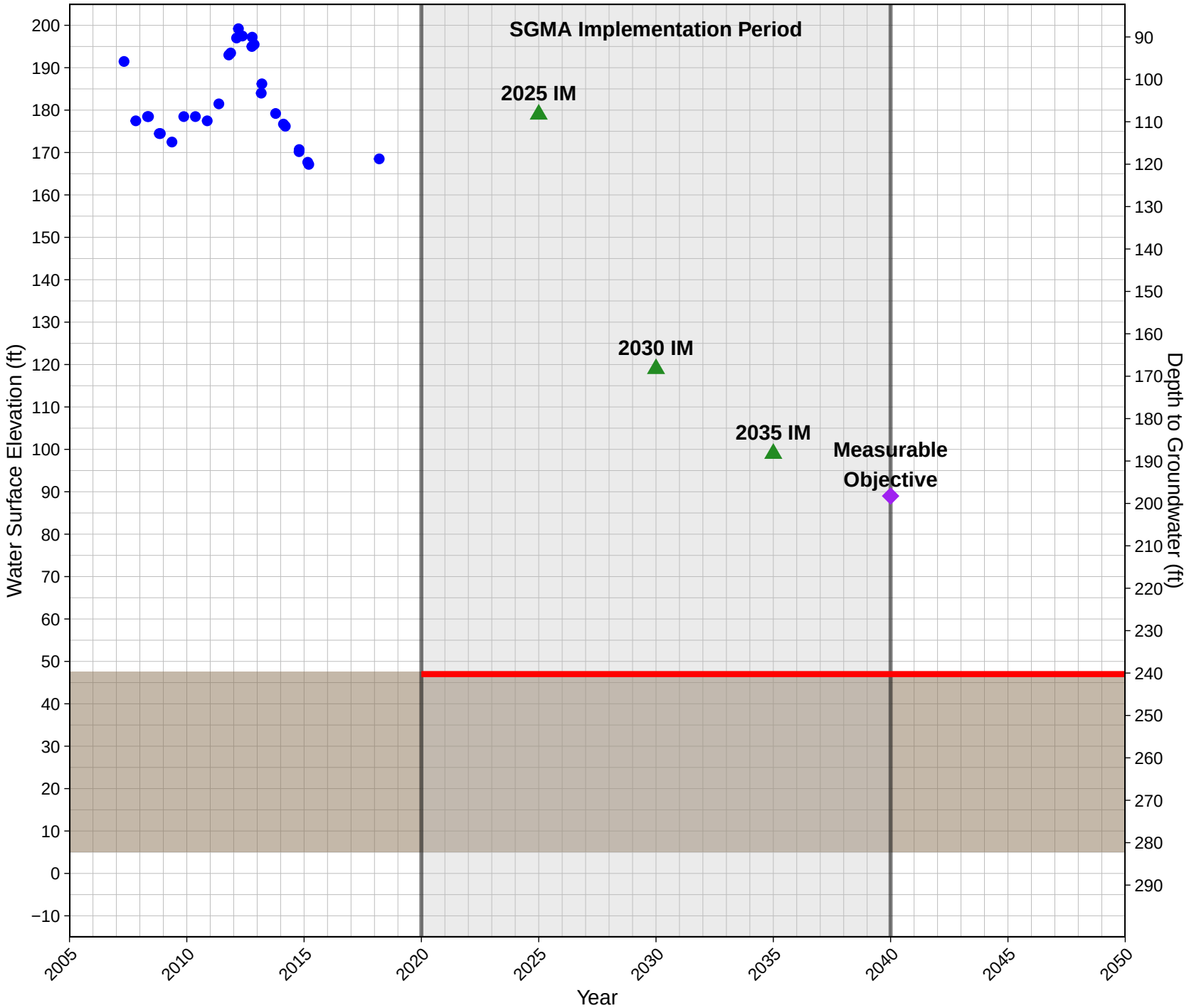
Measurements

Minimum Threshold (MT)

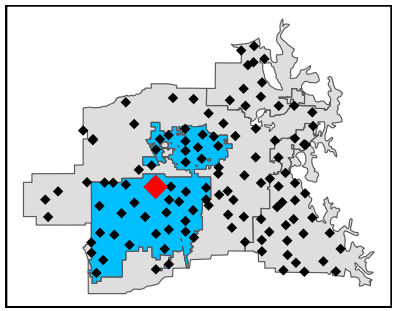
Corcoran Clay

19S24E08D002M | Mid−Kaweah
Upper Aquifer System





Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



19S24E20F001M | Mid−Kaweah
Upper Aquifer System

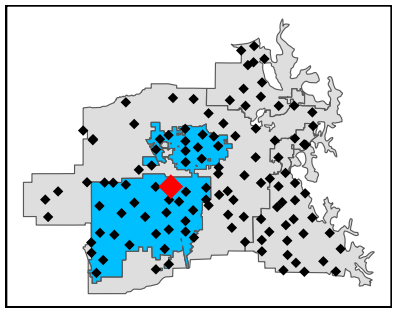
SGMA Implementation Period

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)
Corcoran Clay



19S24E22E001M | Mid−Kaweah
Upper Aquifer System

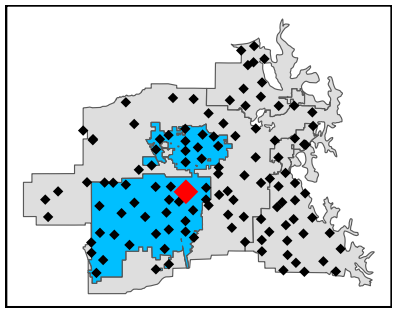
SGMA Implementation Period

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)
Corcoran Clay



19S24E25D001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

2025 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

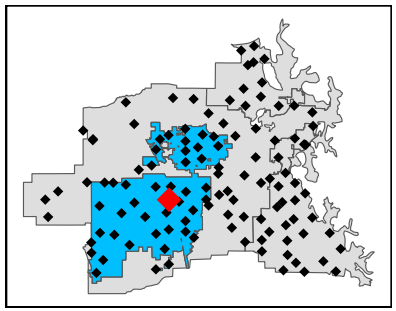
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



19S24E34D001M | Mid−Kaweah
Upper Aquifer System

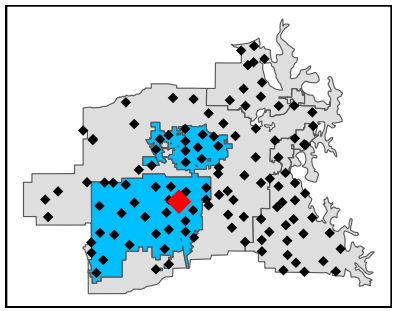
SGMA Implementation Period

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)
Corcoran Clay



19S24E35E001M | Mid−Kaweah
Lower Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

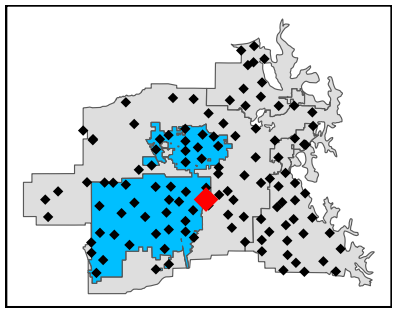
Measureable Objective (MO)

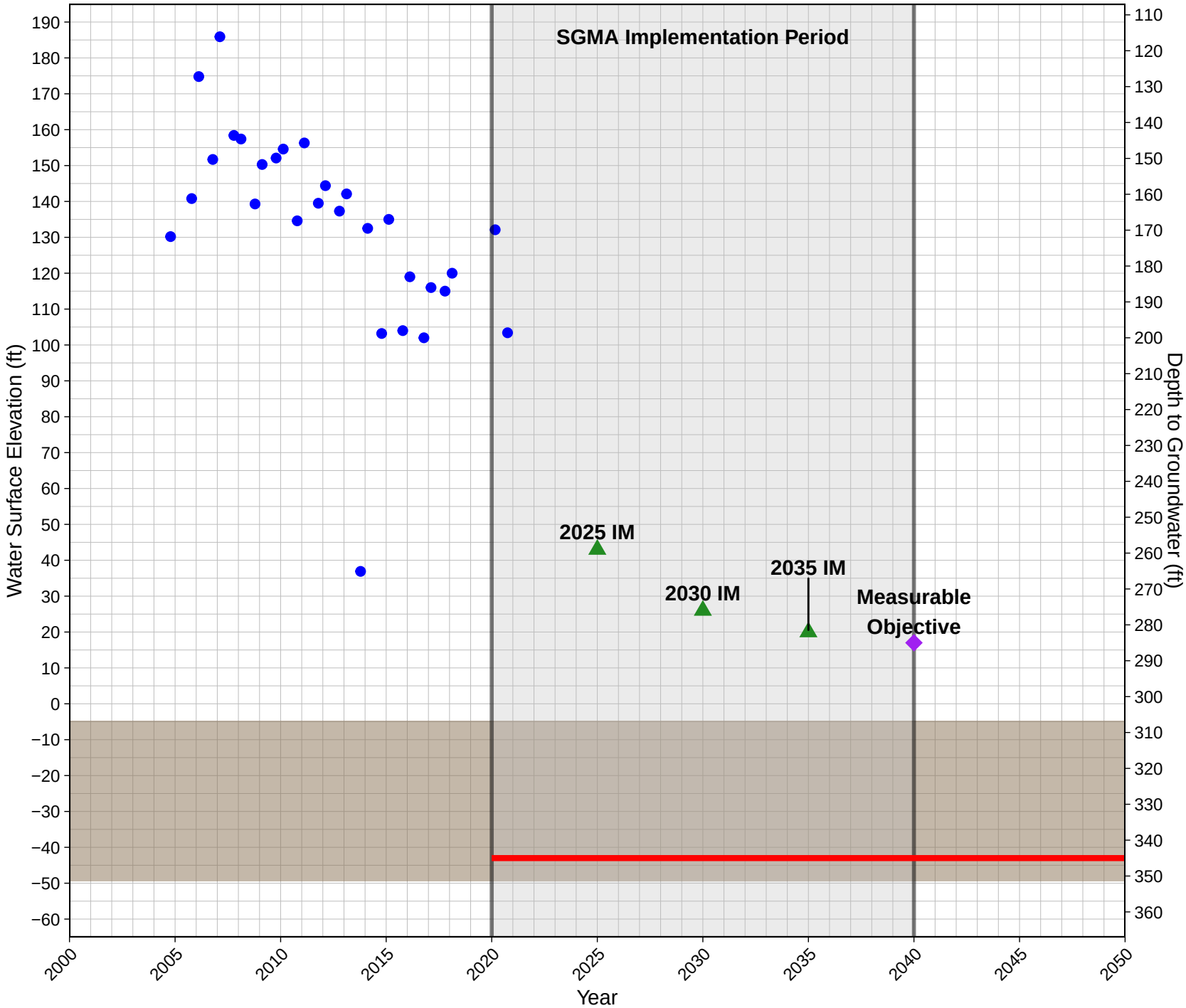
Measurements

Minimum Threshold (MT)

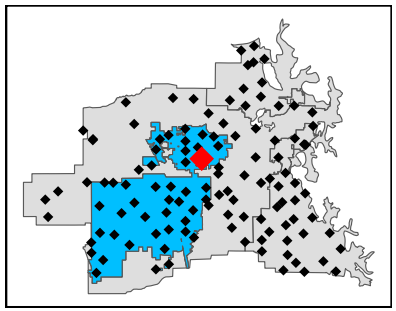
Corcoran Clay

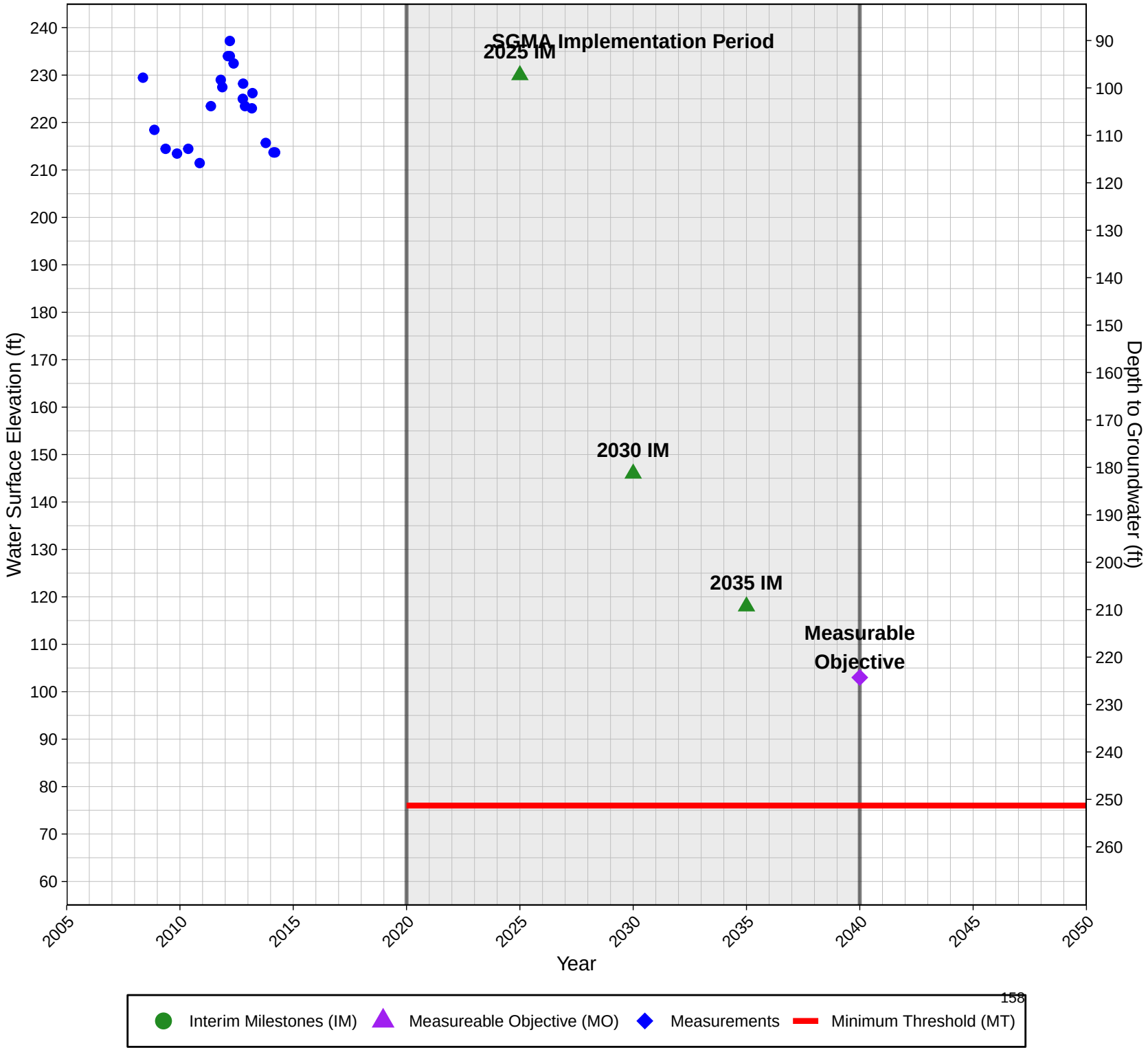
19S24E36C002M | Mid−Kaweah
Lower Aquifer System



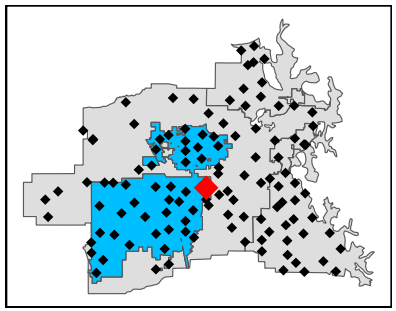


19S25E06A001M | Mid−Kaweah
Single Aquifer System





19S25E20P001M | Mid−Kaweah
Upper Aquifer System



SGMA Implementation Period

2025 IM

2030 IM

2035 IM

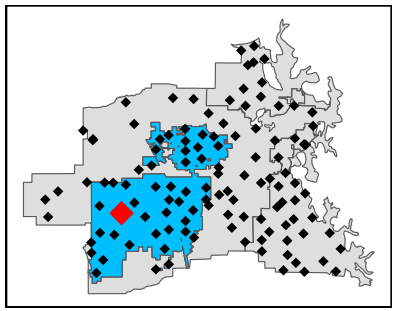
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



20S23E03L001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

2025 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

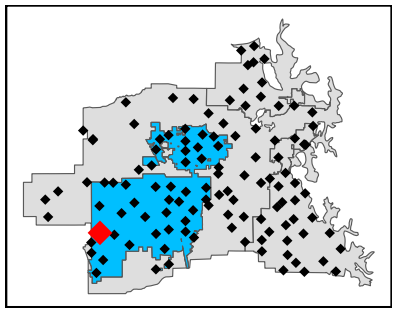
Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay

20S23E18R001M | Mid−Kaweah
Upper Aquifer System



SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

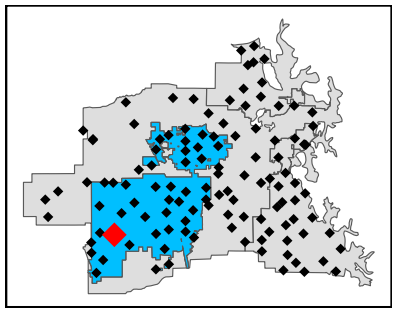
2035 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



20S23E21B001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

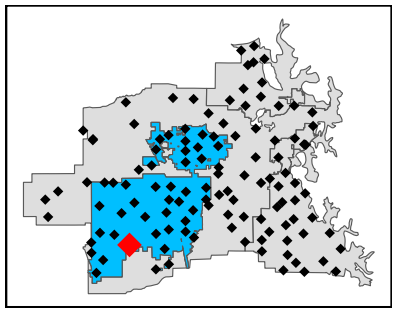
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



20S23E26C001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

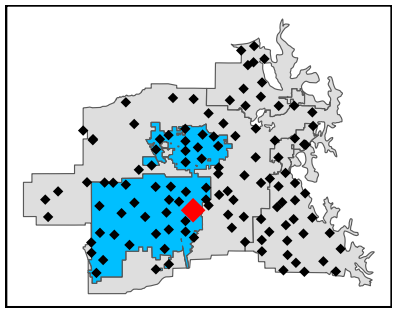
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



20S24E01H002M | Mid−Kaweah
Lower Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

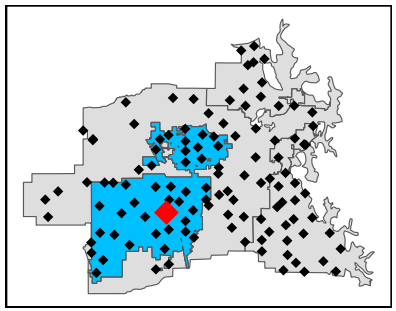
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



20S24E04K001M | Mid−Kaweah
Lower Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

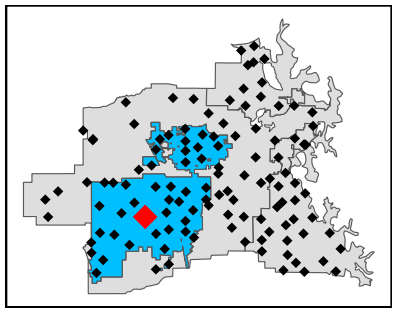
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



20S24E07C001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

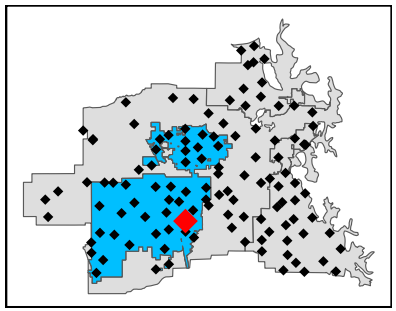
Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)
Measureable Objective (MO)
Measurements
Minimum Threshold (MT)
Corcoran Clay

20S24E11J002M | Mid−Kaweah
Lower Aquifer System



SGMA Implementation Period

2025 IM

2030 IM

2035 IM

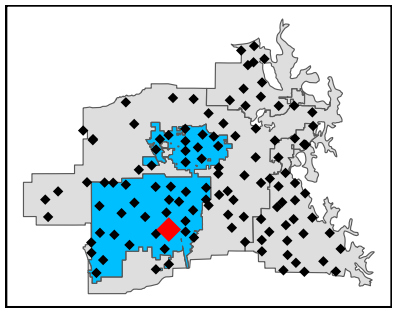
Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



20S24E16H001M | Mid−Kaweah
Lower Aquifer System

SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

2035 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

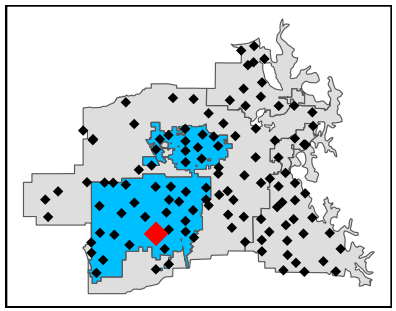
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



20S24E17P001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

Measurable Objective

2025 IM

2030 IM

2035 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

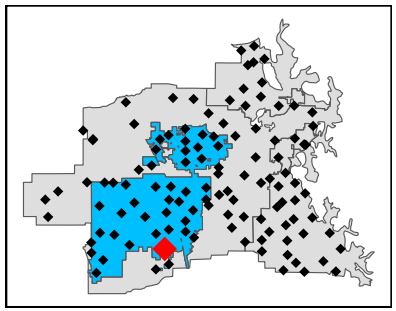
Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay



20S24E28L001M | Mid−Kaweah
Upper Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

Measureable Objective (MO)

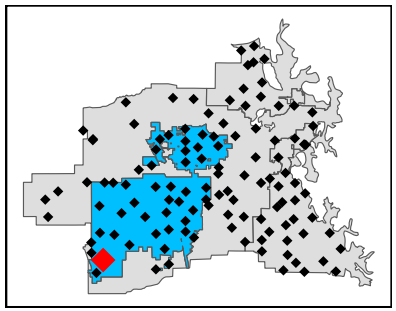
Measurements

Minimum Threshold (MT)

170

Corcoran Clay

21S23E05A002M | Mid−Kaweah
Upper Aquifer System



SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

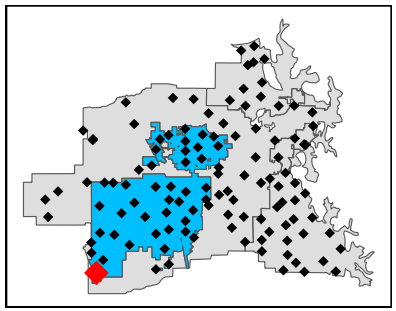
Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay

21S23E07J001M | Mid−Kaweah
Upper Aquifer System



SGMA Implementation Period

Measurable Objective

2035 IM

2030 IM

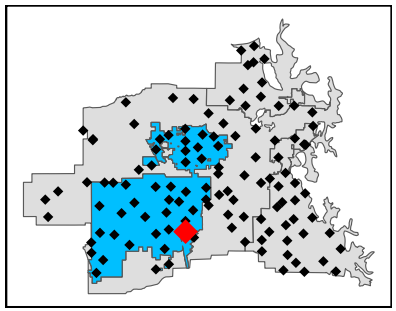
2025 IM

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM) | Measureable Objective (MO) | Measurements | Minimum Threshold (MT) | Corcoran Clay



361856N1193313W001 | Mid−Kaweah
Lower Aquifer System

SGMA Implementation Period

2025 IM

2030 IM

2035 IM

Measurable Objective

Water Surface Elevation (ft)

Depth to Groundwater (ft)

Year

Interim Milestones (IM)

Measureable Objective (MO)

Measurements

Minimum Threshold (MT)

Corcoran Clay

Appendix C

Unconfined Aquifer Contours

Fall 2021
Unconfined Aquifer
Water Surface Elevation

Kaweah Subbasin Monitoring Report

- Well Used for Contours
- Water Surface Contour (10 ft interval)
- Eastern Edge of Corcoran Clay
- Eastern Edge of A-Clay
- Highway
- Lake / Reservoir / Basin
- River
- Canal
- Creek
- Ditch
- Community
- GSA Boundary
- Kaweah Subbasin

Water Surface (ft ASL)

451 - 500	101 - 150
401 - 450	51 - 100
351 - 400	1 - 50
301 - 350	-49 - 0
251 - 300	-99 - -50
201 - 250	-150 - -100
151 - 200	

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Spring 2022
Unconfined Aquifer
Water Surface Elevation

Kaweah Subbasin Monitoring Report

Selma
Dinuba
Sultana
Orosi
Cutler
Kingsburg
Monson
Yettem
Seville
London
Traver
Laton
Kings River
Cottonwood Creek
Elderwood
Antelope Creek
Dry Creek
Greasy Creek
North Fork Kaweah River
Saint Johns River
Friant-Kern Canal
Woodlake
Kaweah River
Lake Kaweah
Lemon Cove
Lone Slough
Ivanhoe
Lindcove
Goshen
Visalia
Yokohl
Hanford
Armona
Mosquito Creek
Farmersville
Exeter
Badger Hill
Tooleville
Yokohl Creek
Foothill Ditch
Tonyville
Okieville
Tulare
Outside Creek
El Rancho
Lindsay
Lewis Creek
Waukena
Plainview
Strathmore
Frazier Creek
Elk Bayou
North Branch Tule River
Corcoran
Tule River
South Branch Tule River
Woodville
Porterville
Lake Success
Mitchell Slough
Tipton
Poplar

- Well Used for Contours
- Water Surface Contour (10 ft interval)
- Eastern Edge of Corcoran Clay
- Eastern Edge of A-Clay
- Highway
- Lake / Reservoir / Basin
- River
- Canal
- Creek
- Ditch
- Community
- GSA Boundary
- Kaweah Subbasin

Water Surface (ft AMSL)

451 - 500	151 - 200
401 - 450	101 - 150
351 - 400	51 - 100
301 - 350	1 - 50
251 - 300	-49 - 0
201 - 250	-99 - -50

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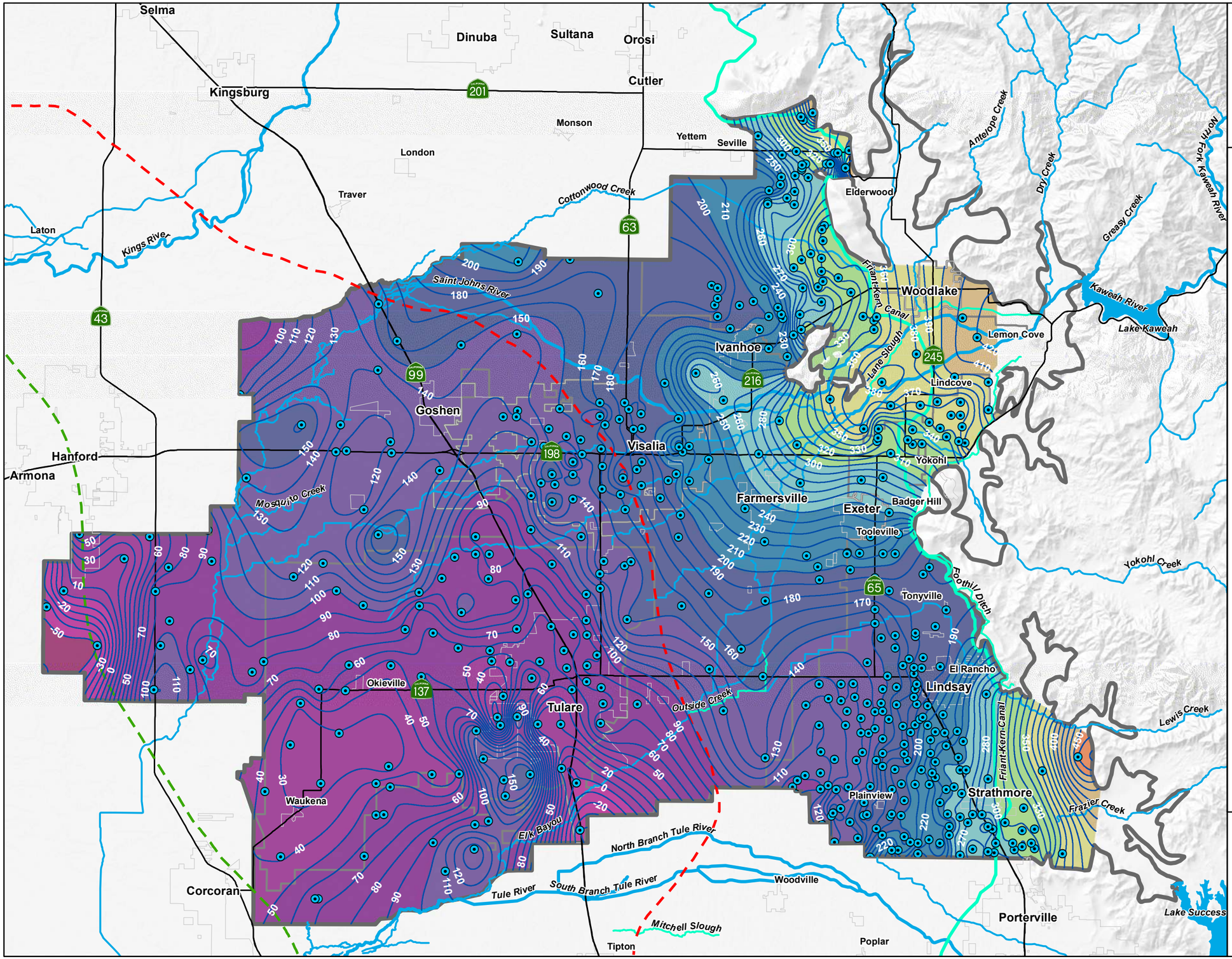
0 2 4
Miles



Fall 2022
Unconfined Aquifer
Water Surface Elevation

Kaweah Subbasin Monitoring Report

- Well Used for Contours
- Water Surface Contour (10 ft interval)
- Eastern Edge of Corcoran Clay
- Eastern Edge of A-
- Highway
- Lake / Reservoir / Basin
- River
- Canal
- Creek
- Ditch
- Community
- GSA Boundary
- Kaweah Subbasin

Water Surface (ft AMSL)

451 - 500	151 - 200
401 - 450	101 - 150
351 - 400	51 - 100
301 - 350	1 - 50
251 - 300	-49 - 0
201 - 250	-99 - -50

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0 2 4
Miles

Appendix D

DWR Water Tables

Kaweah Subbasin Annual Report
WY 2021-2022

Basin Number	Water Year	Water Source Type Central Valley Project (AF)				Water Source Type State Water Project (AF)				Water Source Type Colorado River Project (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	33,200	0	0	**33,200**	0	0	0	**0**	0	0	0	**0**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	39,200	1,300	14,400	**54,900**	0	0	0	**0**	0	0	0	**0**

Kaweah Subbasin Annual Report
WY 2021-2022

Basin Number	Water Year	Water Source Type Local Supplies (AF)				Water Source Type Local Imported Supplies (AF)				Water Source Type Recycled Water (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	21,500	26,100	600	**48,200**	0	0	0	**0**	0	3,300	9,000	**12,300**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	30,900	81,100	11,900	**123,900**	0	0	0	**0**	0	3,200	9,000	**12,200**

Basin Number	Water Year	Water Source Type Desalination (AF)				Water Source Type Other (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	0	0	0	**0**	0	0	0	**0**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	0	0	0	**0**	0	0	0	**0**

Kaweah Subbasin Annual Report
WY 2021 - 2022

Basin Number	Water Year	Total Groundwater Extractions (AF)				Water Use Sector Urban (AF)				Water Use Sector Industrial (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	200,900	560,400	276,900	**1,038,200**	3,100	9,300	52,200	**64,600**	300	15,800	5,700	**21,800**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	183,300	495,700	246,400	**925,400**	2,700	8,400	49,300	**60,400**	300	15,800	5,700	**21,800**

Kaweah Subbasin Annual Report
WY 2021 - 2022

Basin Number	Water Year	Water Use Sector Agricultural (AF)				Water Use Sector Managed Wetlands (AF)				Water Use Sector Managed Recharge (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	197,400	535,000	218,900	**951,300**	0	0	0	**0**	0	600	5,200	**5,800**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	180,200	471,200	191,300	**842,700**	0	0	0	**0**	0	700	11,200	**11,900**

Kaweah Subbasin Annual Report
WY 2021 - 2022

Basin Number	Water Year	Water Use Sector Native Vegetation (AF)				Water Use Sector Other (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	80	270	50	**400**	0	0	0	**0**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	80	270	50	**400**	0	0	0	**0**

Kaweah Subbasin Annual Report
WY 2021 - 2022

Basin Number	Water Year	Total Water Use (AF)				Water Source Type Groundwater (AF)				Water Source Type Surface Water (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	250,800	584,300	285,800	**1,120,900**	200,900	560,400	276,900	**1,038,200**	54,700	26,100	600	**81,400**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	248,700	558,500	271,600	**1,078,800**	183,300	495,700	246,400	**925,400**	70,100	82,400	26,300	**178,800**

Basin Number	Water Year	Water Source Type Recycled Water (AF)				Water Source Type Reused Water (AF)				Water Source Type Other (AF)				Water Use Sector Urban (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	0	3,300	9,000	**12,300**	0	0	0	**0**	0	0	0	**0**	3,100	9,300	52,200	**64,600**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	0	3,200	9,000	**12,200**	0	0	0	**0**	0	0	0	**0**	2,700	8,400	49,300	**60,400**

Basin Number	Water Year	Water Use Sector Industrial (AF)				Water Use Sector Agricultural (AF)				Water Use Sector Managed Wetlands (AF)				Water Use Sector Managed Recharge (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	300	15,800	5,700	**21,800**	197,400	535,000	218,900	**951,300**	0	0	0	**0**	0	600	5,200	**5,800**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	300	15,800	5,700	**21,800**	180,200	471,200	191,300	**842,700**	0	0	0	**0**	0	700	11,200	**11,900**

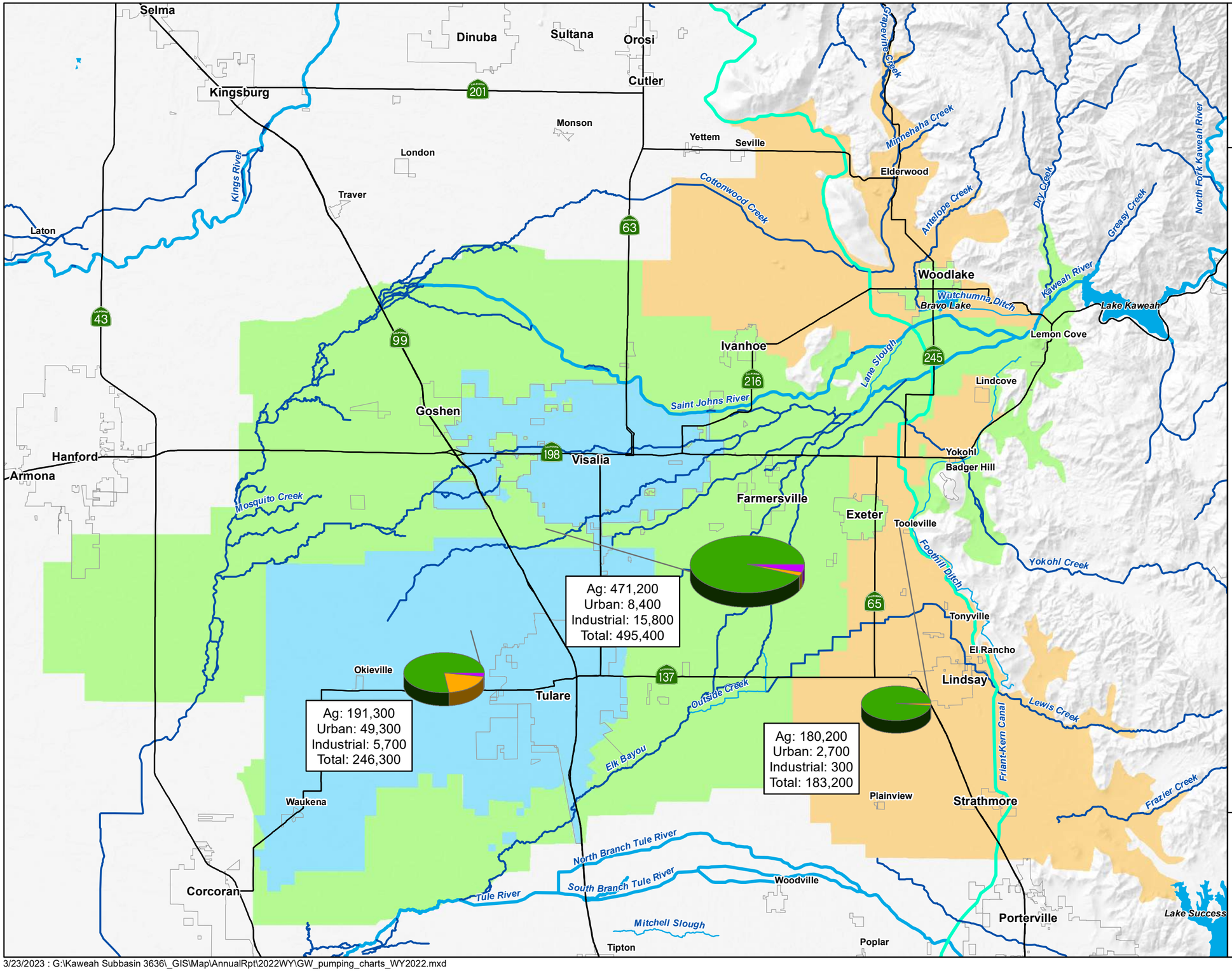
Basin Number	Water Year	Water Use Sector Native Vegetation (AF)				Water Use Sector Other (AF)			
		East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total	East Kaweah	Greater Kaweah	Mid-Kaweah	KSB Total
5-022.11	2021 (Oct. 2020 - Sep. 2021)	80	270	50	**400**	0	0	0	**0**
5-022.11	2022 (Oct. 2021 - Sep. 2022)	80	270	50	**400**	0	0	0	**0**

Appendix E

WY 2022 Groundwater Pumping Map

Geographic Distribution of Groundwater Pumping for Water Year 2022

Kaweah Subbasin Monitoring Report



- Highway
- Lake / Reservoir
- River
- Canal
- Creek
- Kaweah Subbasin
- Community
- East Kaweah GSA
- Greater Kaweah GSA
- Mid-Kaweah GSJPA

Pumping By Water Use Sector (AF)

- Agriculture
- Urban
- Industrial

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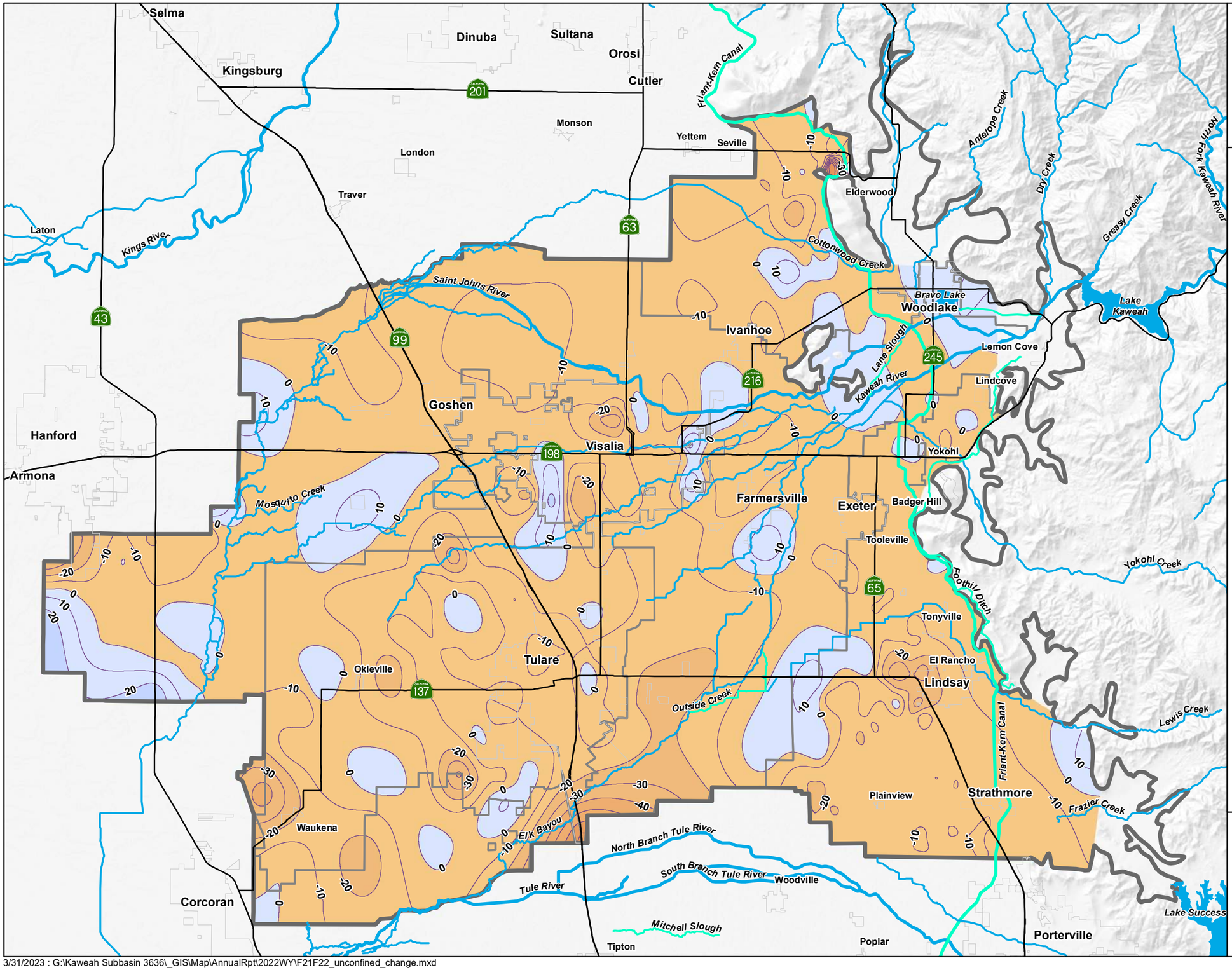
Appendix F

WY 2022 Groundwater Change Map

Unconfined Aquifer
Fall 2021 to Fall 2022

Change in Water Surface Elevation

Kaweah Subbasin Monitoring Report



Change in Elevation Contour (10 ft interval)

Highway

Lake / Reservoir / Basin

River

Canal

Creek

Ditch

Community

GSA Boundary

Kaweah Subbasin

Change in Elevation (ft)

-99 to -80	-19 to 0
-79 to -60	0 to 20
-59 to -40	21 to 40
-39 to -20	

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Miles

3/31/2023 : G:\Kaweah Subbasin 3636_GIS\Map\AnnualRpt\2022WY\F21F22_unconfined_change.mxd