3.6.5.1 Groundwater Elevation RMPs

Groundwater elevations are directly related to groundwater in storage. Therefore, the use of groundwater elevation data to characterize changes in groundwater storage is adequate to assess groundwater conditions in the Plan Area. Figure 3-C1 in Appendix 3-C shows the RMPs in relation to the disadvantaged and severely disadvantaged communities identified in the Plan Area (see Section 1.8.8). The distribution of the RMPs relative to the disadvantaged communities is appropriate to characterize groundwater conditions for South Mesa and YVWD, the two water purveyors that supply water to these disadvantaged communities. YVWD-25, the RMP located in the upper reaches of the North Bench management area, provides characterization of groundwater conditions where some private well users have been identified. Figure 3-C2 in Appendix 3-C shows the RMPs in relation to GDEs identified in the Plan Area. YVWD-25 and YVWD-28 provide characterization of groundwater conditions at the confirmed GDEs located in the upper reaches of the Oak Glen subarea and Wildwood Canyon. The monitoring wells, GWMW-1 to GWMW-5C, provide characterization of groundwater conditions for the confirmed GDEs along the reach of San Timoteo Creek in the Plan Area. No groundwater level information is available at this time to characterize conditions for the potential GDEs identified along Yucaipa Creek (just upstream of its confluence with San Timoteo Creek in the San Timoteo management area) and in the Singleton subarea. These areas are identified as a data gap in characterizing groundwater conditions and the interconnection of surface water.

Groundwater elevation data is also used as a surrogate for direct measurements of land subsidence as groundwater levels that fall below historical lows for a long period of time may induce subsidence. Land subsidence in the Plan Area has the potential to occur both as a result of tectonic forcing and as a result of groundwater level declines (see Section 2.7.7). Therefore, measuring groundwater elevations is a better proxy for evaluating land subsidence induced by groundwater withdrawals than measuring total land subsidence, because the tectonic and groundwater elevation components of the total subsidence measurement cannot be separated from each other.

Groundwater elevations measured at each of the RMPs will be reported to DWR in the annual reports that will follow the submittal of this GSP. Each of these wells may be instrumented with a pressure transducer capable of recording groundwater levels at a higher frequency (e.g., daily) if there is access to securely install the transducer. Groundwater elevations measured at the RMPs will be compared to their respective measurable objective and minimum threshold levels for each management area to evaluate whether groundwater conditions are approaching or experiencing undesirable results associated with the chronic lowering of groundwater levels, reduction in groundwater storage, and the depletion of interconnected surface water that may adversely impact GDEs. The criteria characterizing conditions below the measurable objective or minimum threshold in a management area are for groundwater elevations measured at 50% or more of the RMPs below their respective measurable objective or minimum threshold levels for two consecutive years.

The Yucaipa GSA will evaluate the ongoing representativeness of the current RMPs during the 5-year GSP evaluation and update process. RMPs may be added to the monitoring network to enhance characterization of the Subbasin and evaluation of groundwater conditions relative to the sustainability criteria established in this GSP. Current RMPs may be removed in the event that groundwater elevations at that RMP are found to no longer represent groundwater conditions in the principal aquifer, or if changes are made to access agreements or well construction. In the event that an RMP must be removed from the monitoring program, Yucaipa GSA will evaluate existing wells as a replacement RMP or potential sites to install a new replacement well. Any existing well that is added to the current groundwater elevation RMPs must have a record of sufficient length to establish that groundwater conditions at that well are representative of groundwater conditions measured at other nearby wells.

3.6.6 Monitoring Network Improvements

The GSP Regulations call for each GSA to review and evaluate the monitoring network established for the Plan Area in the GSP and every 5-year assessment. Specifically, "each agency shall identify data gaps wherever the basin does not contain a sufficient number of monitoring sites, does not monitor sites at a sufficient frequency, or utilizes monitoring sites that are unreliable, including those that do not satisfy minimum standards of the monitoring network adopted by the Agency" (23 CCR, Section 354.38). While the existing monitoring network satisfies the requirements to "demonstrate short-term, seasonal, and long-term trends in groundwater and related surface conditions" (23 CCR, Section 354.34), there are improvements that can be made to improve local spatial coverage. Section 2.6.3 identified data gaps in characterizing the hydrogeology of the Subbasin, a few of which related to monitoring activities.

3.6.6.1 Stream Flow Gauging

The existing stream flow gauging stations maintained by SBCFCD were designed to measure peak flows in Wilson Creek, Oak Glen Creek and Yucaipa Creek; they were not designed to measure low to normal flows. The lack of flow data under these conditions limits the Yucaipa GSA understanding of recharge to the groundwater basin as a result of leakage from stream beds. The Yucaipa GSA has initiated discussions with DWR in installing additional stream flow gauging stations in Yucaipa Creek. The Yucaipa GSA may also reach out to SBCFCD to potentially modify the existing gauging stations or install new ones; and may contact the USGS about installing new gauges in the Plan Area.

3.6.6.2 Interconnected Surface Water

The YIHM suggests that surface water in the upper reaches of Wilson Creek, Oak Glen Creek, and Yucaipa Creek in the North Bench Management Area may be interconnected with shallow groundwater. However, there are no existing shallow groundwater wells to confirm this relationship. The Yucaipa GSA will investigate the feasibility of installing shallow groundwater observation wells to characterize the relationship between surface water and groundwater, in conjunction with additional stream flow gauging stations to enhance the characterization of interconnected surface water in the upper reaches of the North Bench Management Area. The Yucaipa GSA will also document when and where ephemeral and intermittent flowing streams cease to flow.

3.6.6.3 Information for Private Wells

The status of private wells in the Yucaipa Subbasin, including information on well construction, pumping operations, and the ability to measure groundwater levels, are mostly unknown. The Yucaipa GSA recognizes this lack of information as a data gap in evaluating conditions in the Subbasin. The Yucaipa GSA will make efforts to contact the known and potential private well users to obtain the pertinent information needed to evaluate and preserve their beneficial use of groundwater in the Plan Area.

3.6.6.4 Spatial Data Gaps in Groundwater Level Measurements

No known wells exist in the eastern half of the Calimesa Management Area, with the exception of the USGS nested well, Equestrian Park, to provide groundwater elevation data. The Yucaipa GSA will evaluate the feasibility of installing an additional monitoring well in the eastern portion of the Calimesa Management Area to address the data gap in groundwater elevations in that part of the Plan Area.

A lack of knowledge of existing private wells serving domestic and/or irrigation purposes in the Subbasin is a data gap for groundwater elevations and groundwater production. The Yucaipa-SGAM is making efforts to contact the private well owners to obtain information about their wells, including depths-to-waters and groundwater production.

3.6.6.5 Temporal Data Gaps in Groundwater Level Measurements

The DWR Monitoring Protocol BMP (DWR 2016a) states the following:

> Groundwater elevation data … should approximate conditions at a discrete period in time. Therefore, all groundwater levels in a basin should be collected within as short a time as possible, preferably within a 1- to 2-week period.

The DWR Monitoring Networks BMP (DWR 2016b) states the following:

> Groundwater levels will be collected during the middle of October and March for comparative reporting purposes.

Groundwater elevation data collection, at a minimum, every April/May and October/November for the MBMP, or every month on either the beginning of the month or near the end. The protocol for measuring groundwater elevations throughout the Plan Area will establish a schedule of collecting this data within a 1- to 2-week window centered on the middle of the month.

Installation of pressure transducers capable of recording hourly or daily groundwater conditions in key monitoring wells would reduce the need for staff to take manual measurements from wells in the monitoring network within a 2-week window. Pressure transducers could be downloaded after the 2-week window has passed and recorded data from within the 2-week window would be incorporated into groundwater elevation maps and calculations of groundwater in storage. The recommended 2-week window during which groundwater elevations should be collected is March 9 to 22 for the spring and October 9 to 22 for the fall.

3.6.7 Monitoring Network Modifications

The GSP Regulations (23 CCR, Section 354.38 [e]) require that each GSA "adjust the monitoring frequency and density of monitoring sites to provide an adequate level of detail about site-specific surface water and groundwater conditions and to assess the effectiveness of management actions under circumstances," including the following:

1. **Minimum threshold exceedances**. The status of RMPs and the frequency of data collection will be evaluated following an exceedance of a minimum threshold established at an RMP. This evaluation will include an assessment of the methodology and integrity of the data collected, and determination of its representativeness of conditions in the management area to which it is monitoring. Any errors or deficiencies in the data will be identified and corrected, if possible, and other potential sites will be assessed that may replace the RMP. Section 4.2.1, Management Action No. 1, also details the steps in implementing management actions when minimum thresholds are exceeded and undesirable results are experienced in a management area. This section also calls for a reevaluation of the YIHM to assess its accuracy in predicting conditions representative of undesirable results.
2. **Highly variable spatial and temporal conditions**. Substantial variations in spatial and temporal conditions will be assessed to determine if they are the results of real conditions, or if the specific monitoring point or station is experiencing issues that affect its ability to accurately collect representative data. If a monitoring

point or station is found unreliable, a replacement monitoring point or station will be identified, or a new one designed, to provide accurate data to effectively characterize conditions in the Subbasin and appropriate management area.

3. **Adverse impacts to beneficial uses and users of groundwater**. The monitoring network suffices in providing information to characterize conditions in the Subbasin and for each management area. However, should adverse conditions impact the beneficial uses and/or users of groundwater while the monitoring network fails to characterize these conditions, then the Yucaipa GSA will reevaluate the monitoring network and, within a 1-year period, conduct a feasibility study of modifying and/or expand the monitoring network to improve its ability to characterize conditions so that the appropriate management actions may be implemented to protect and sustainably manage the groundwater resources.
4. **The potential to adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of sustainability goals in an adjacent basin**. This circumstance is not applicable because the adjacent basins are either exempt from the SGMA or are a low-priority basin with no established sustainability criteria.

3.7 References

DWR (California Department of Water Resources). 2010. *Department of Water Resources Groundwater Elevation Monitoring Guidelines.* December 2010.

DWR. 2014. *Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California*.

DWR. 2016a. *Best Management Practices for the Sustainable Management of Groundwater: Monitoring Networks and Identification of Data Gaps.* December 2016.

DWR. 2016b. *Best Management Practices for the Sustainable Management of Groundwater: Monitoring Protocols, Standards, and Sites.* December 2016.

RWQCB (Regional Water Quality Control Board). 2019. *Water Quality Control Plan, Santa Ana River Basin* (8). January 24, 1995. Updated June 2019 to include approved amendments. https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/.

Wildermuth (Wildermuth Environmental Inc.). 2014. *Maximum Benefit Monitoring Report 2015 Work Plan*. Prepared for City of Beaumont, Yucaipa Valley Water District, San Gorgonio Pass Water Agency, Beaumont Cherry Valley Water District, and City of Banning. September 30, 2014. Updated December 22, 2014.

Figure 3-1. 31-Day Running Average of Vertical Displacement Measured at the Crafton Hills College

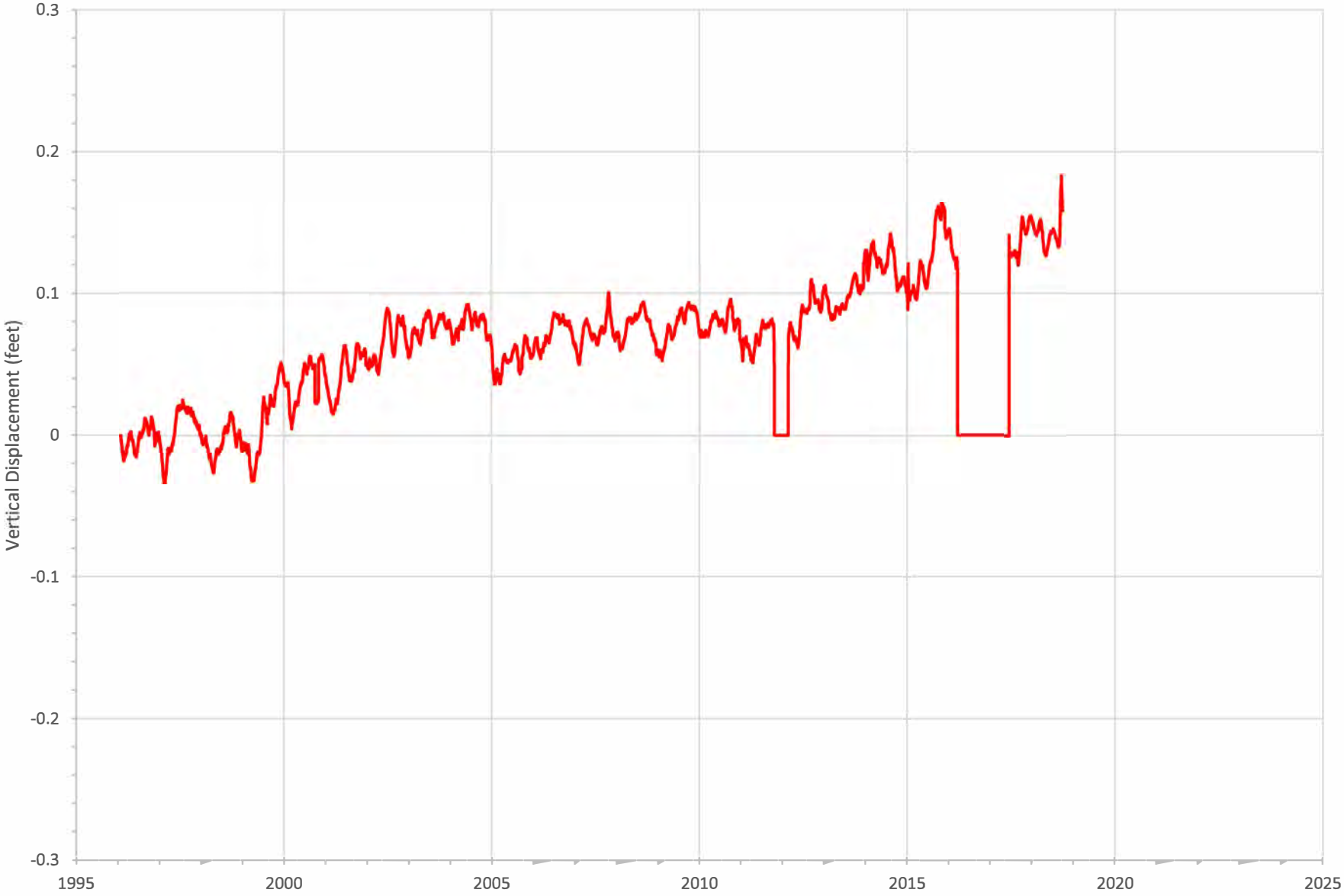

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Figure 3-2. Drought Buffer in the North Bench Management Area

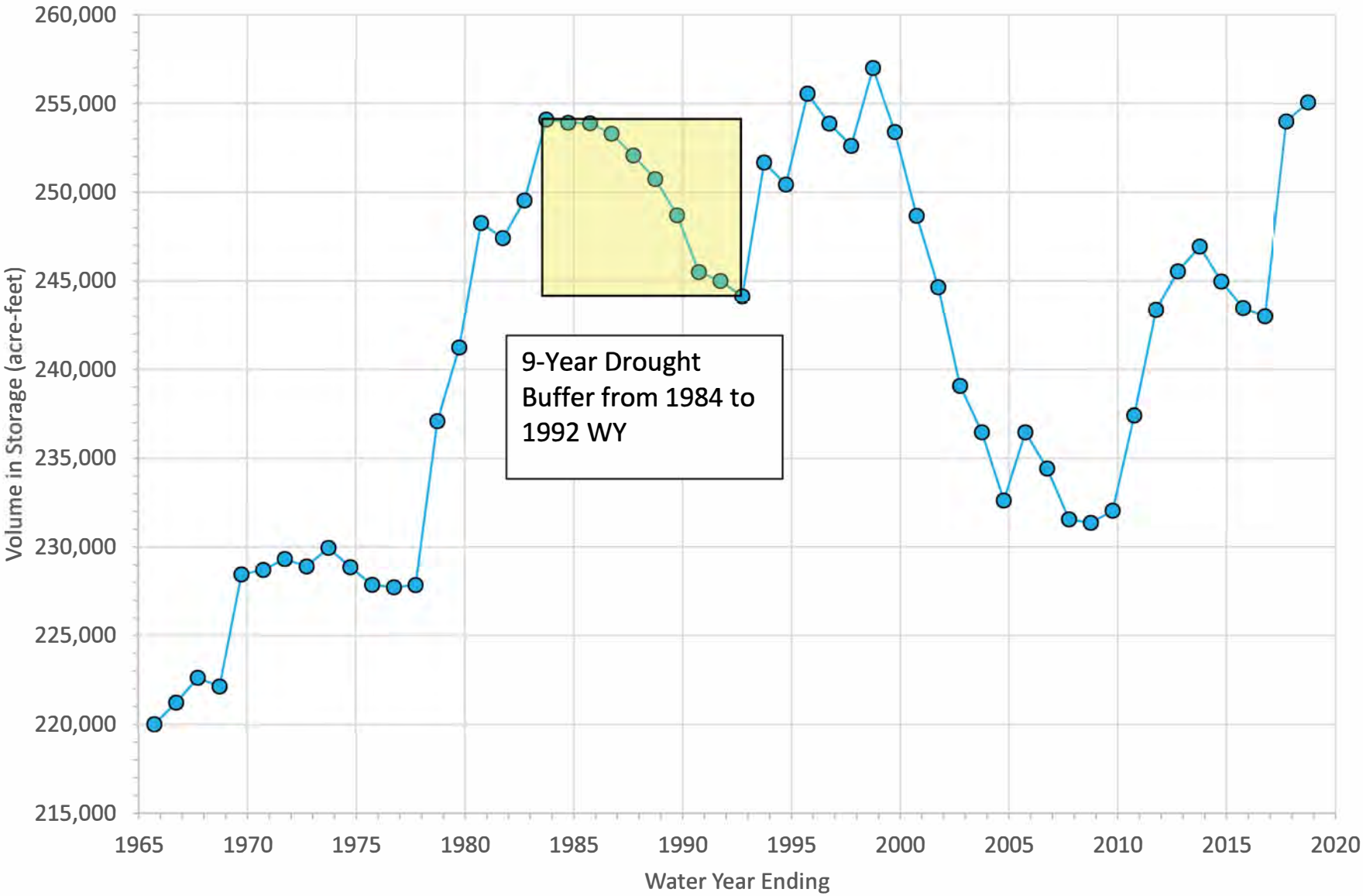

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Figure 3-3. Historical and Current Volume of Groundwater in Storage in the North Bench Management Area

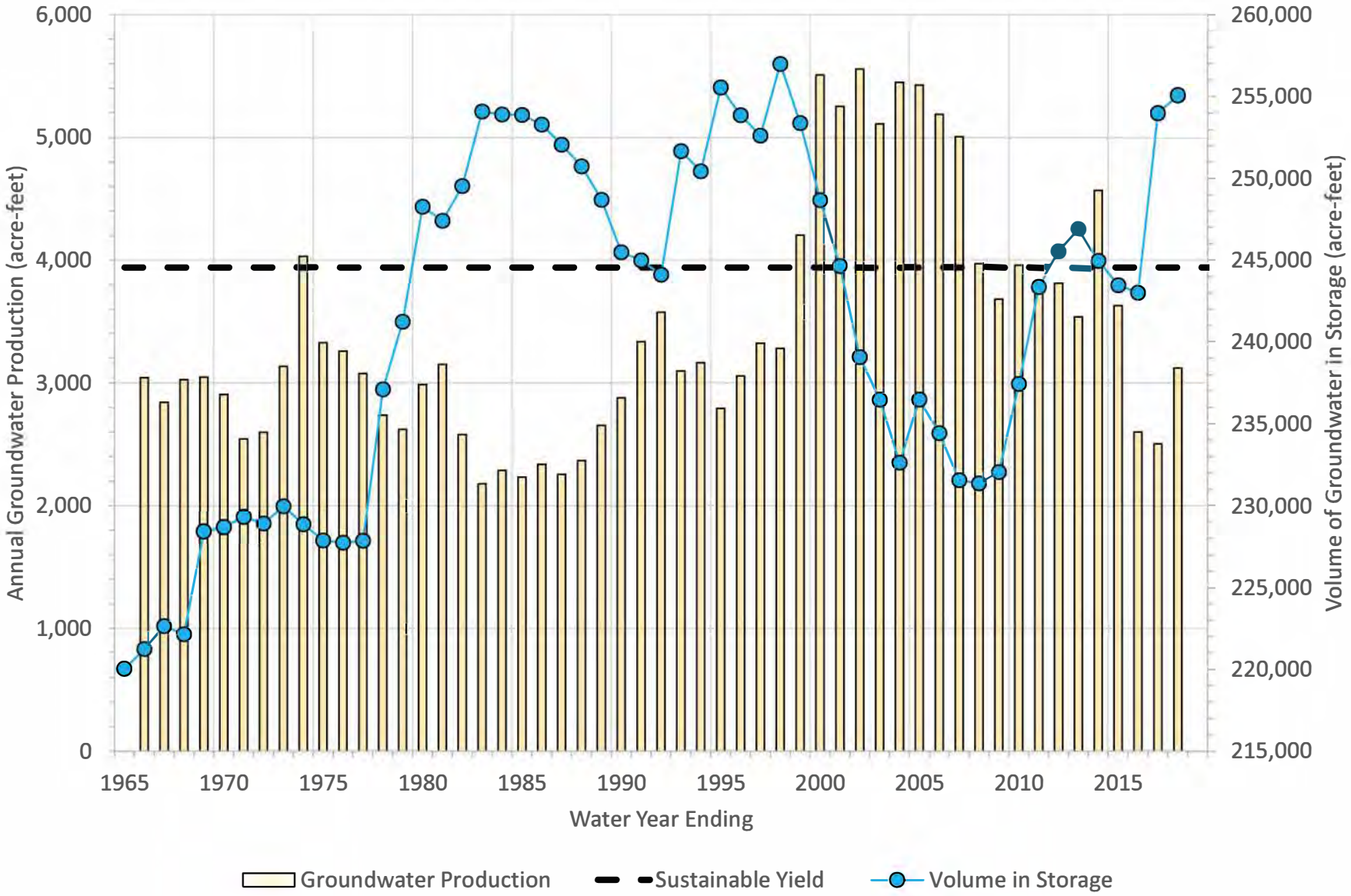

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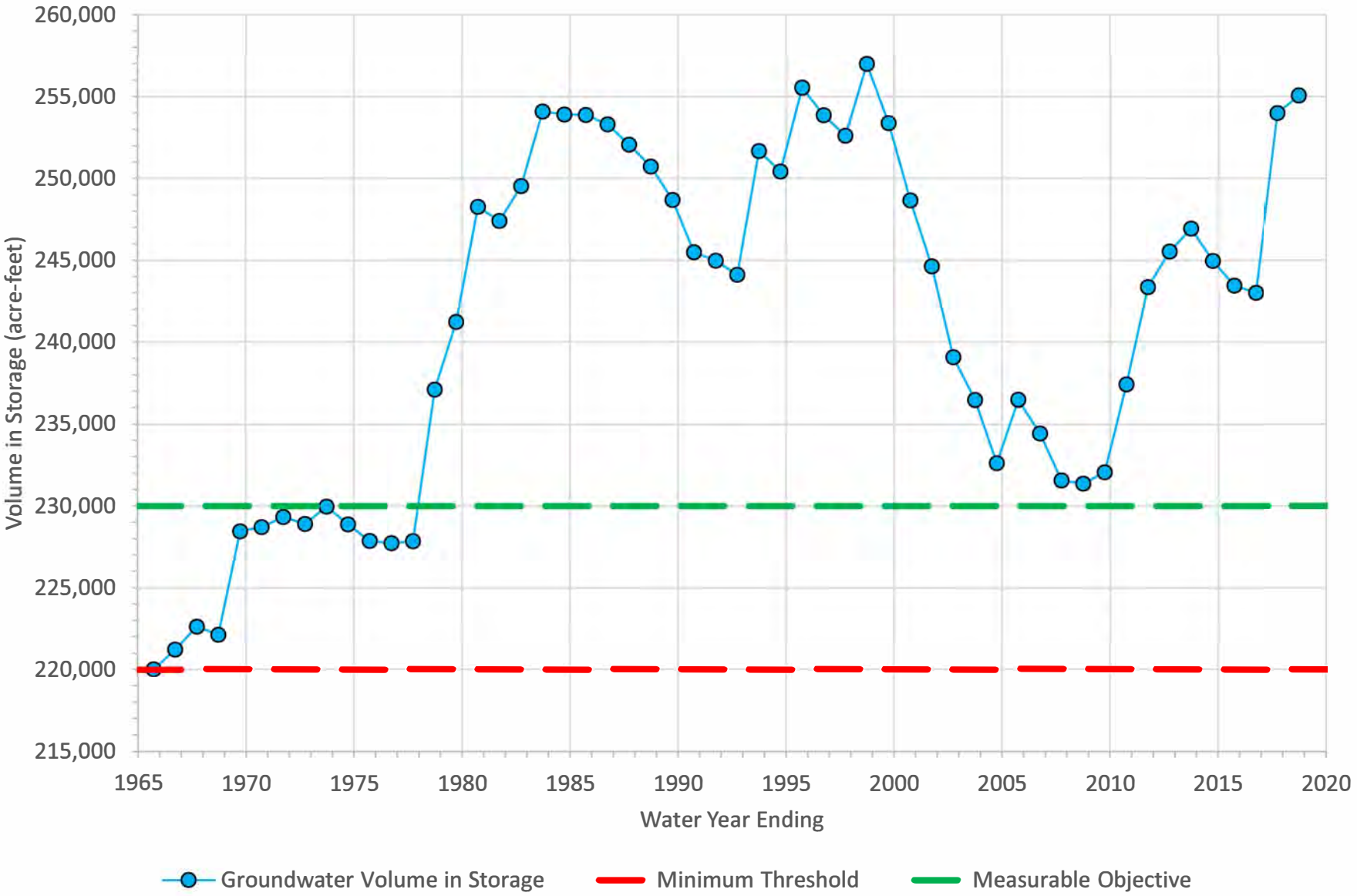
Figure 3-4. Minimum Threshold and Measurable Objective
in the North Bench Management Area



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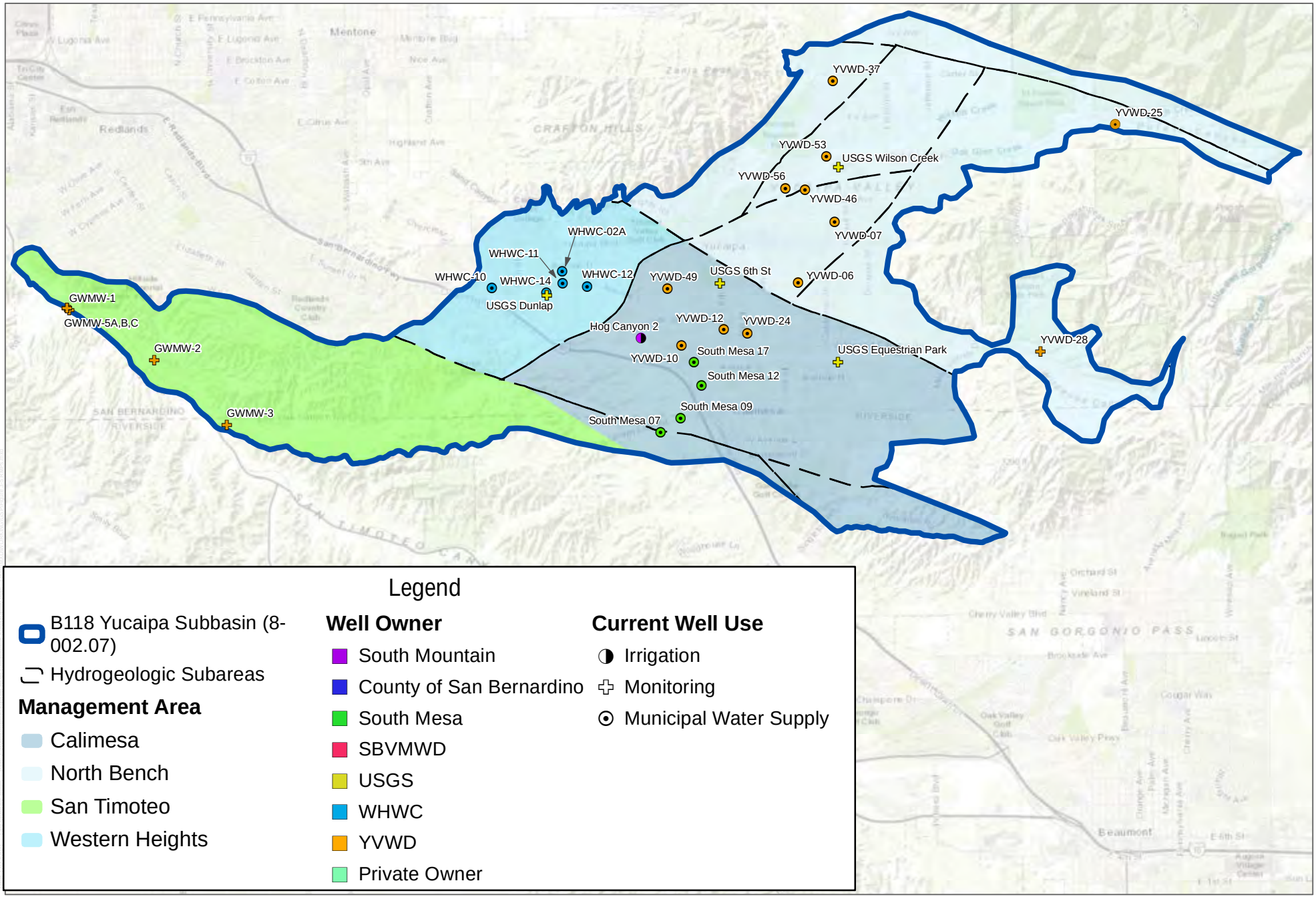

SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

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FIGURE 3-5

Representative Monitoring Points

Yucaipa Subbasin Groundwater Sustainability Plan

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Figure 3-6. Historical Groundwater Elevations and Pumping in the North Bench Management Area

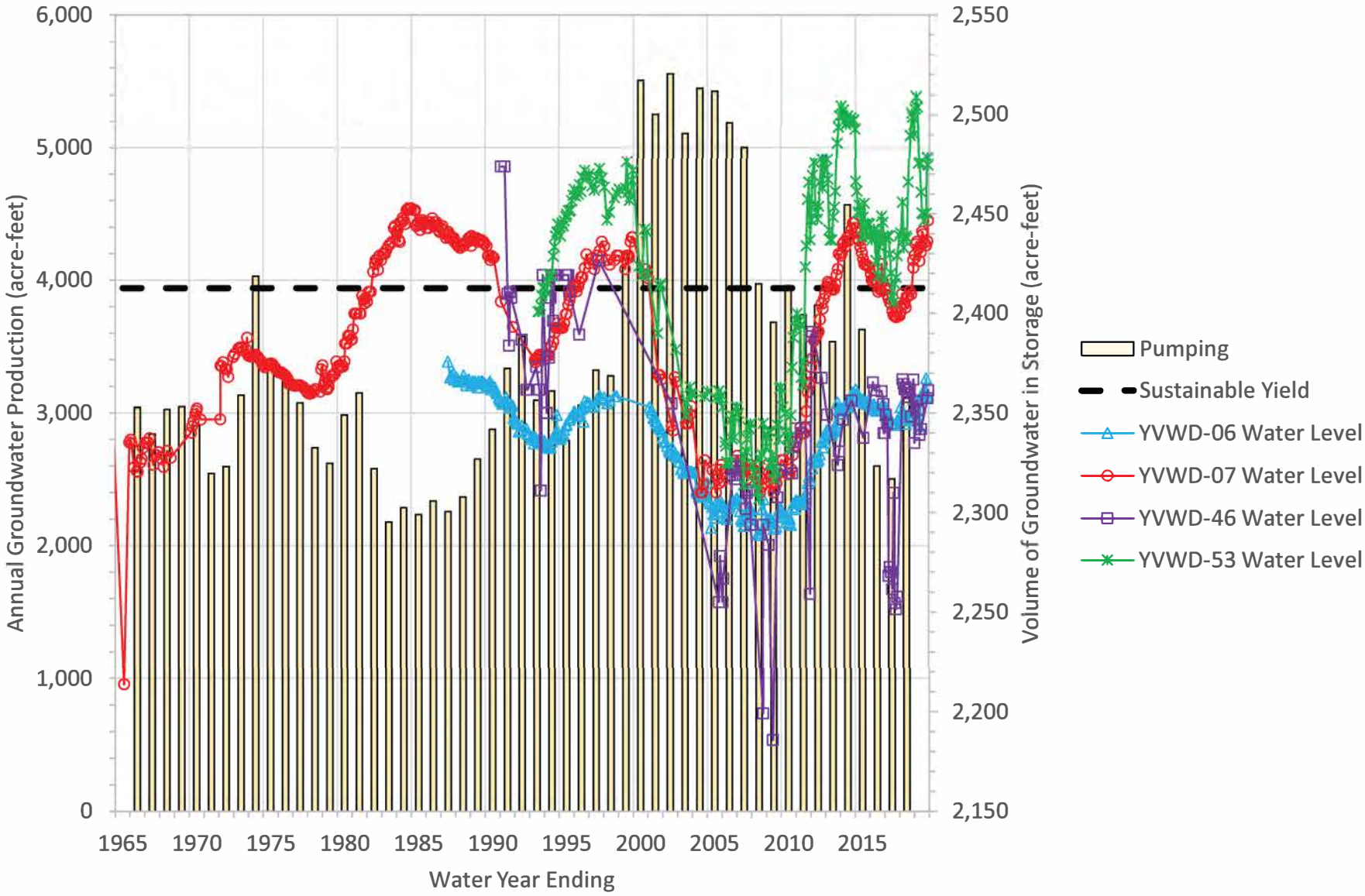

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Figure 3-7. Predicted Hydraulic Heads at YVWD-06 in the North Bench Management Area

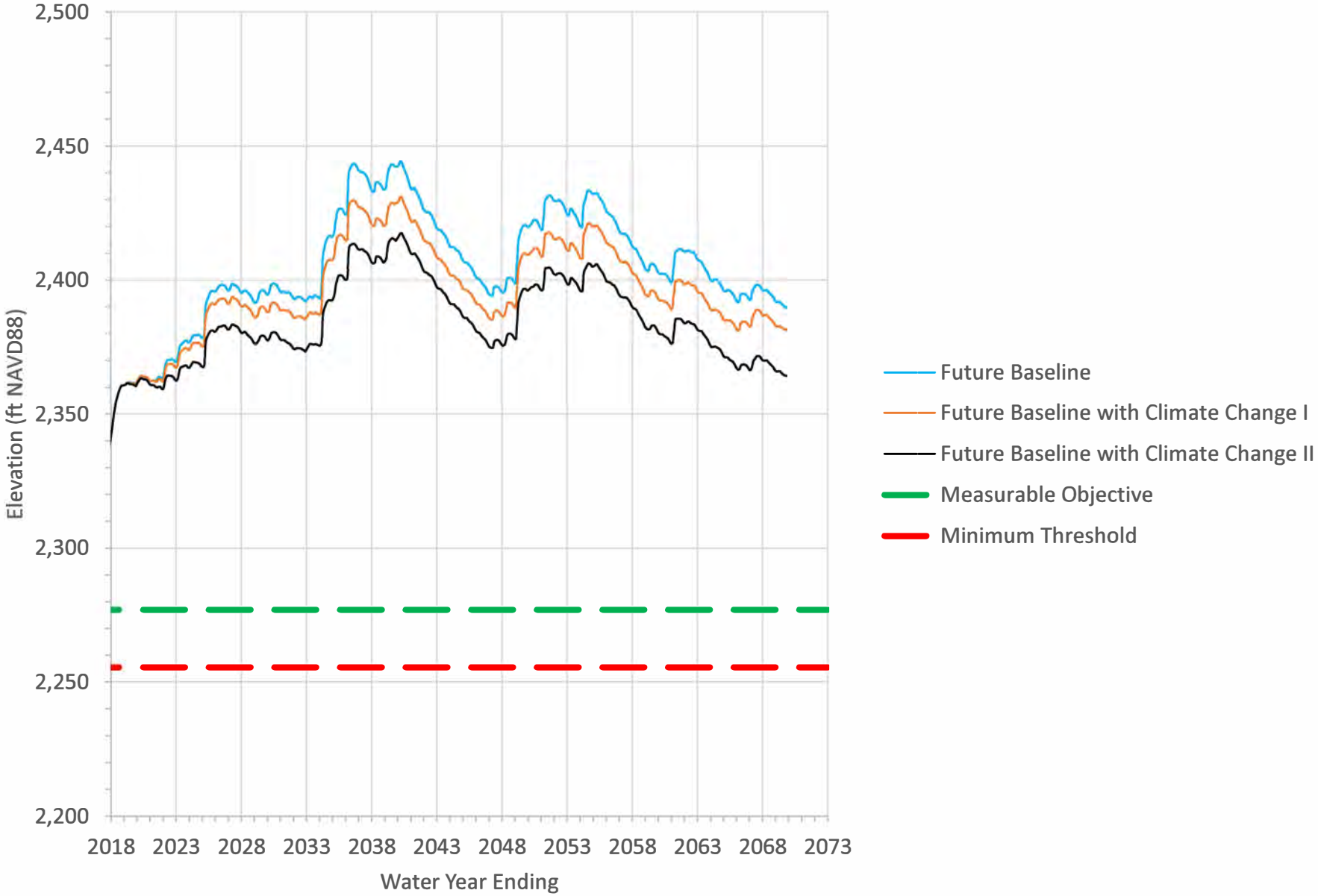

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Figure 3-8. Predicted Hydraulic Heads at YVWD-07 in the North Bench Management Area

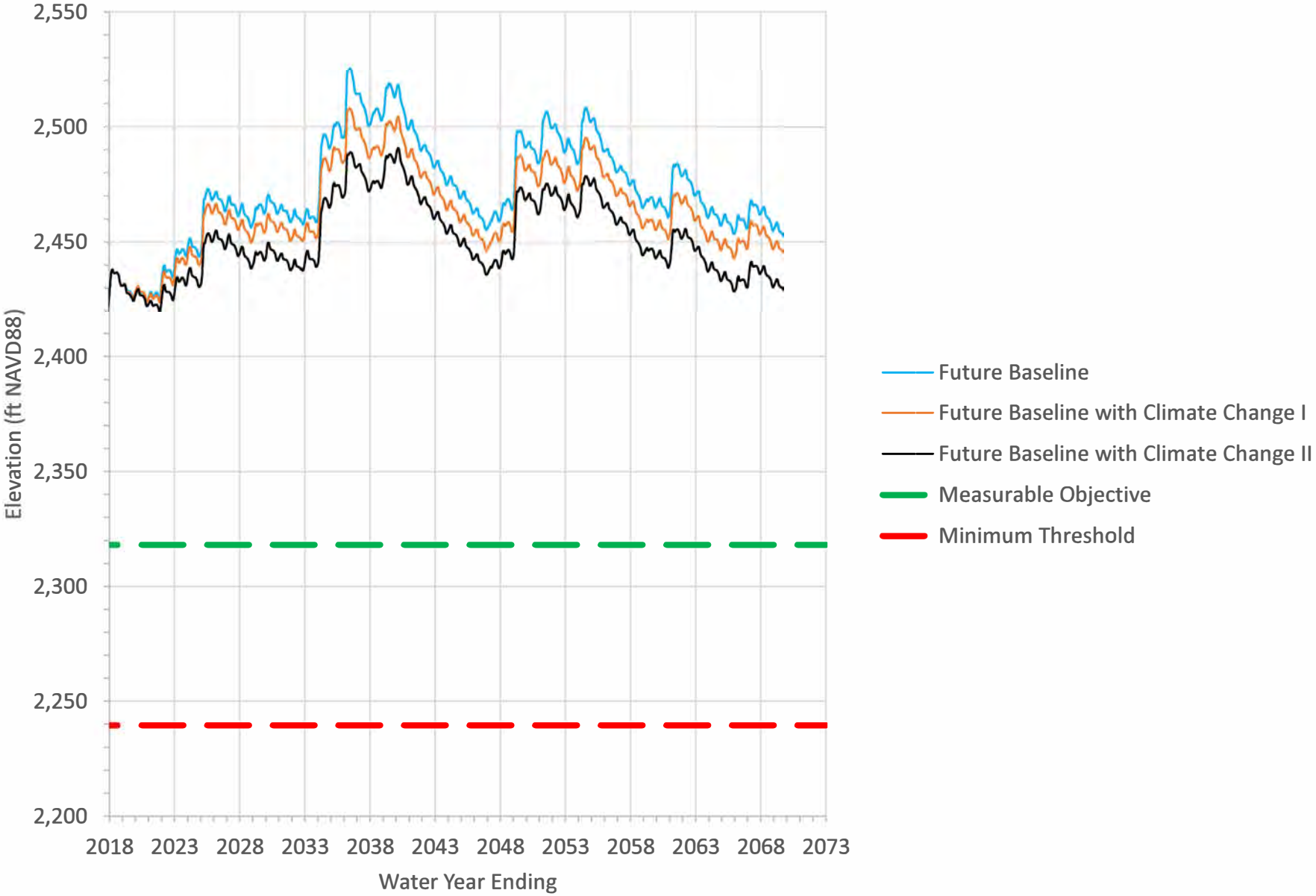

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Figure 3-9. Predicted Hydraulic Heads at YVWD-37 in the North Bench Management Area

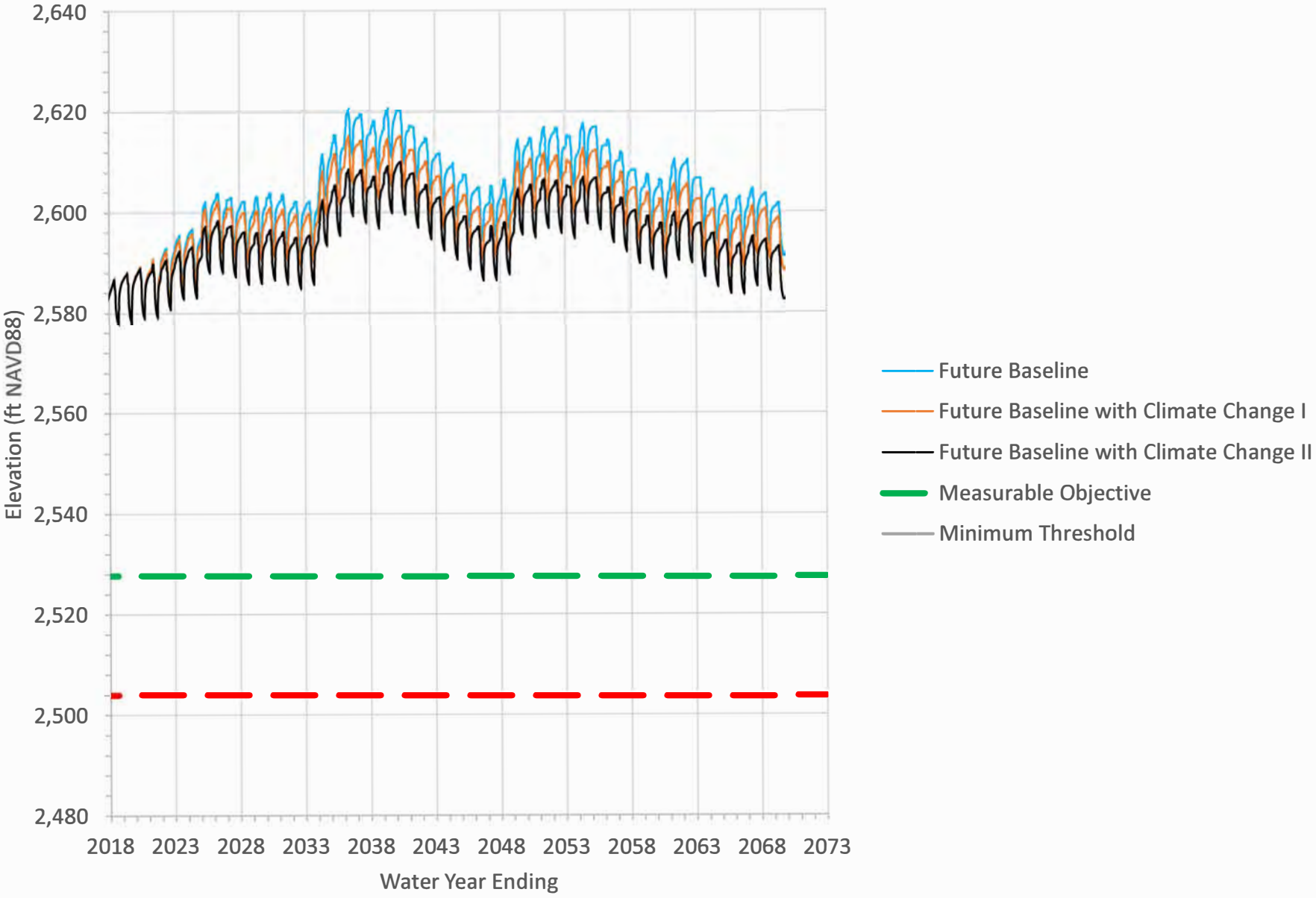

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Figure 3-10. Predicted Hydraulic Heads at YVWD-46 in the North Bench Management Area

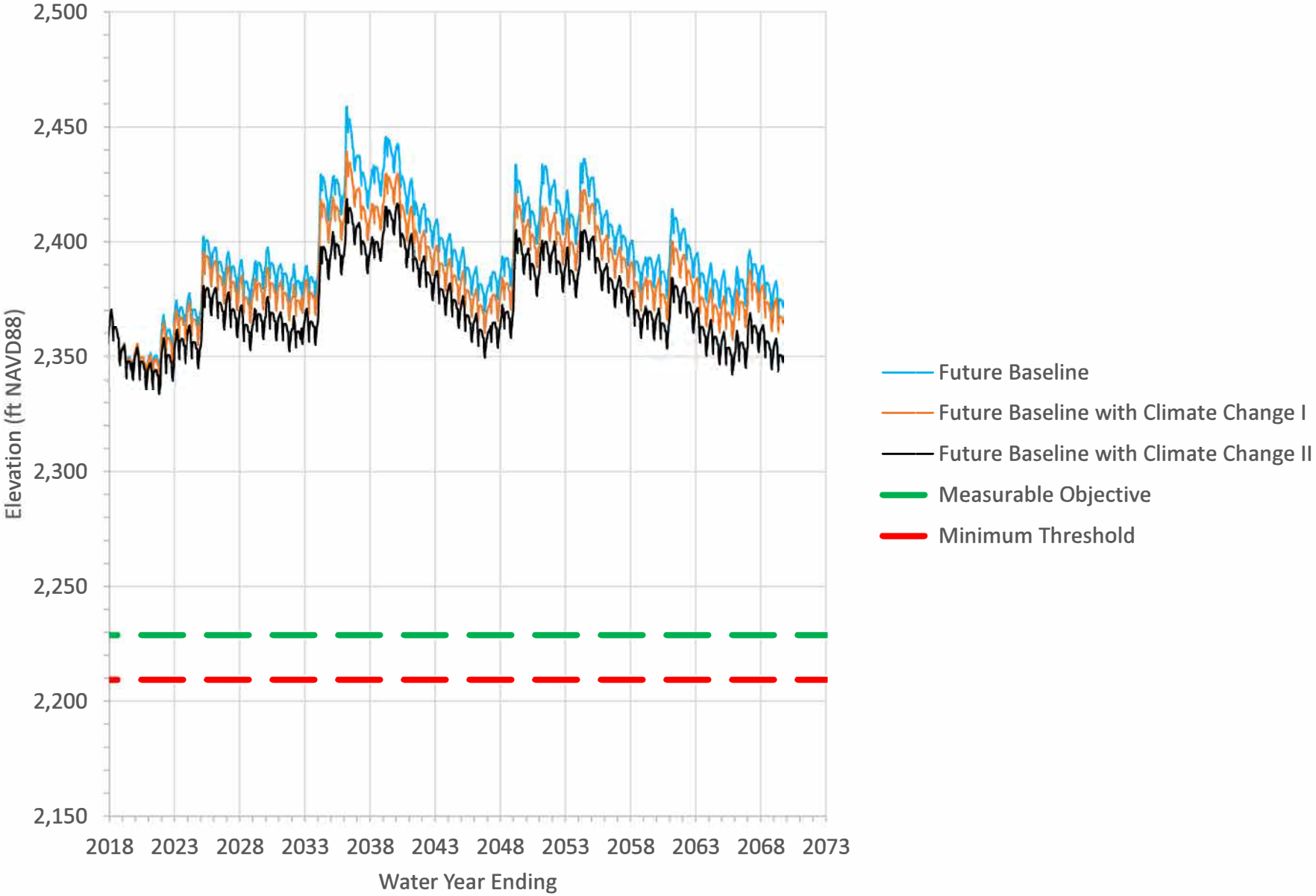

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Figure 3-11. Predicted Hydraulic Heads at YVWD-53 in the North Bench Management Area

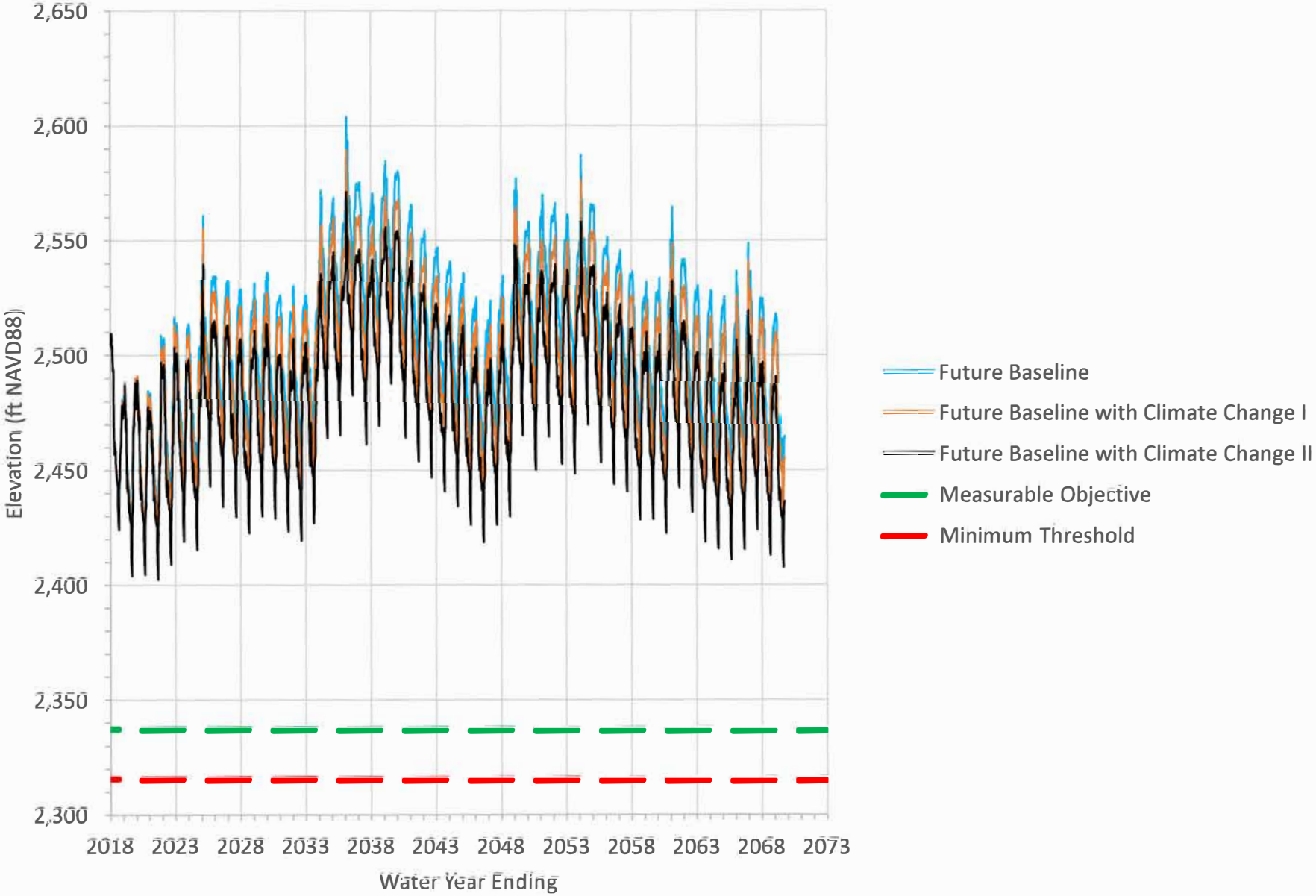

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Figure 3-12. Predicted Hydraulic Heads at YVWD-56 in the North Bench Management Area

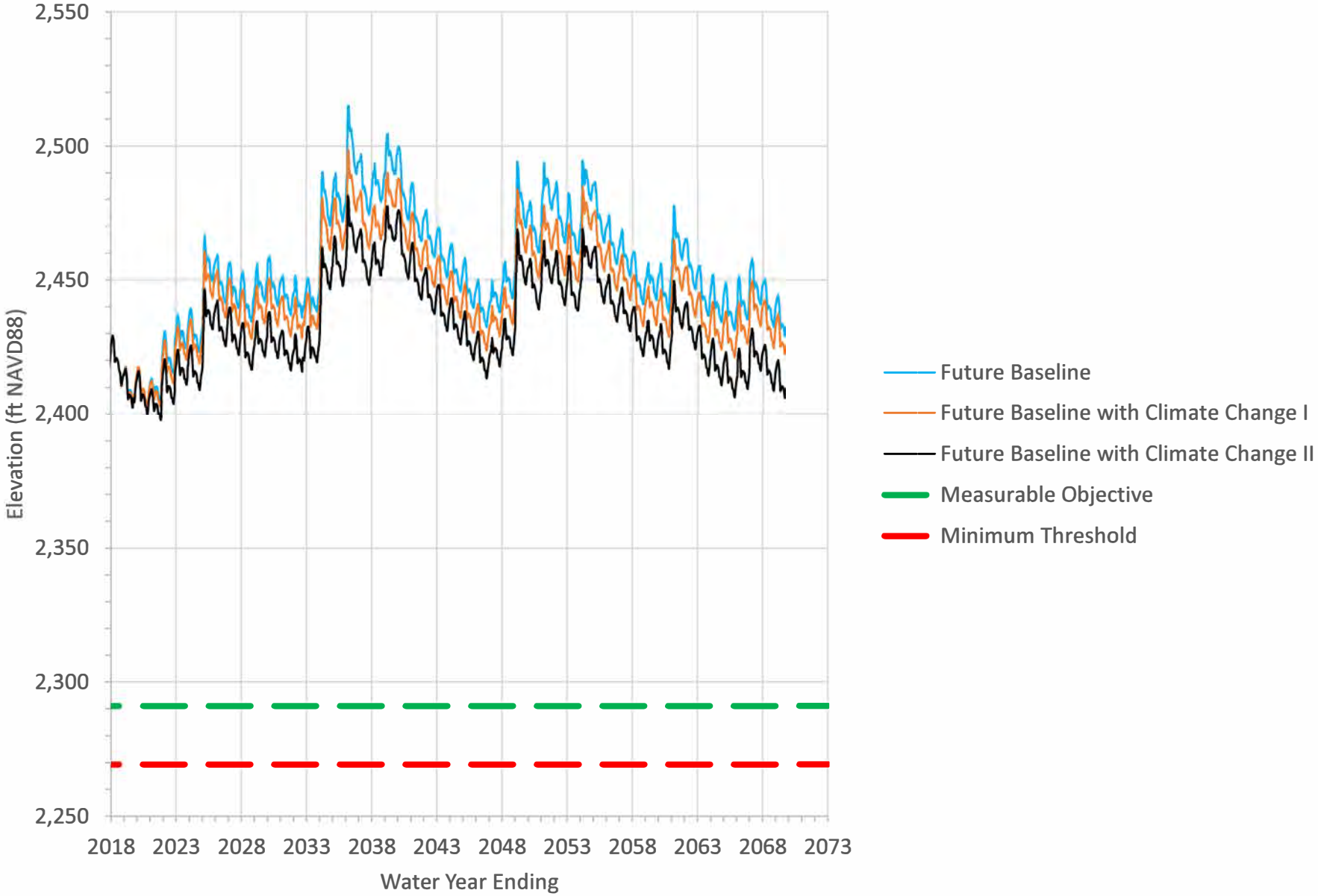

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Figure 3-13. Predicted Hydraulic Heads at USGS Wilson Creek #1 in the North Bench Management Area

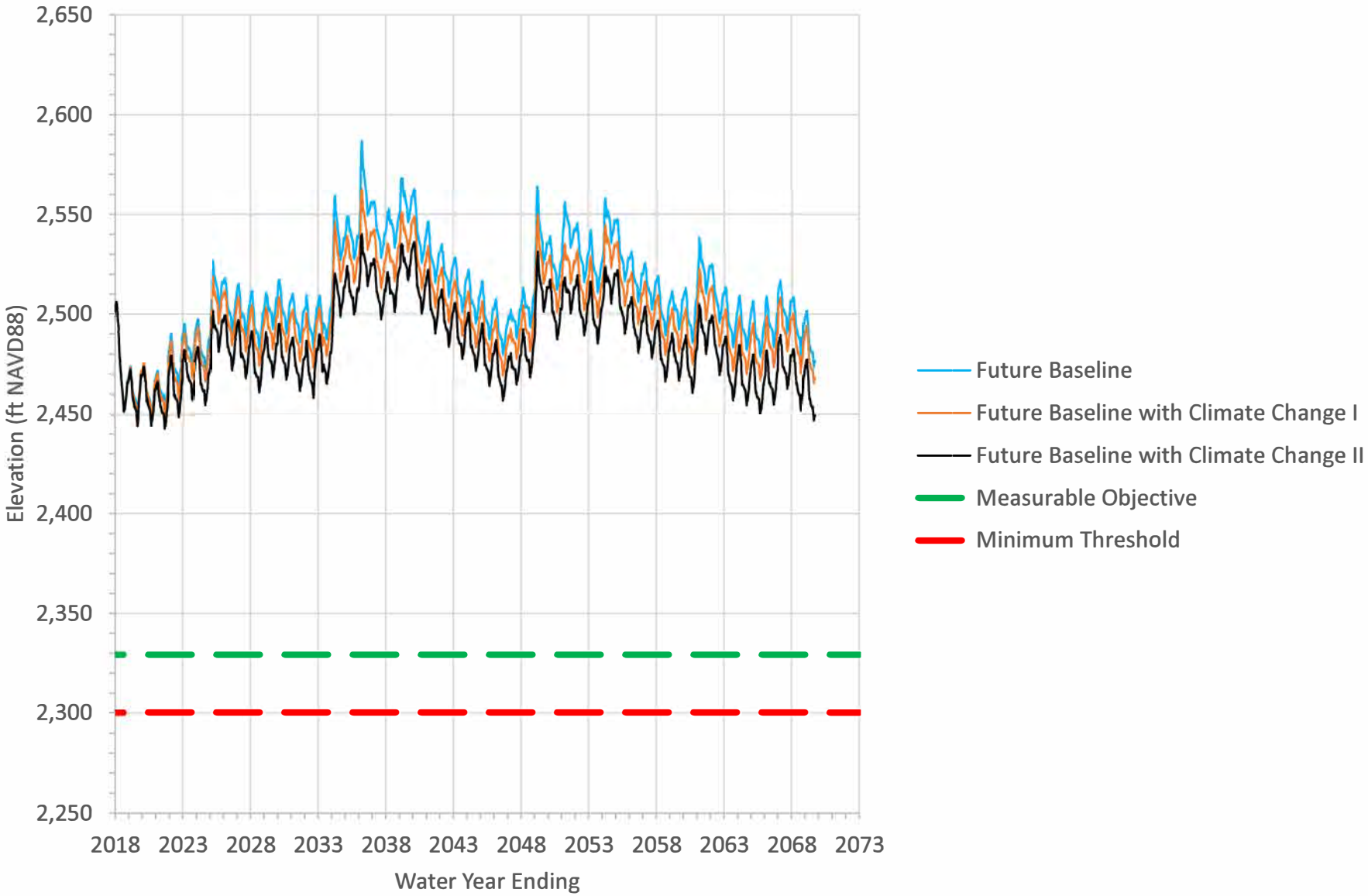

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Figure 3-14. Predicted Hydraulic Heads at USGS Wilson Creek #4 in the North Bench Management Area

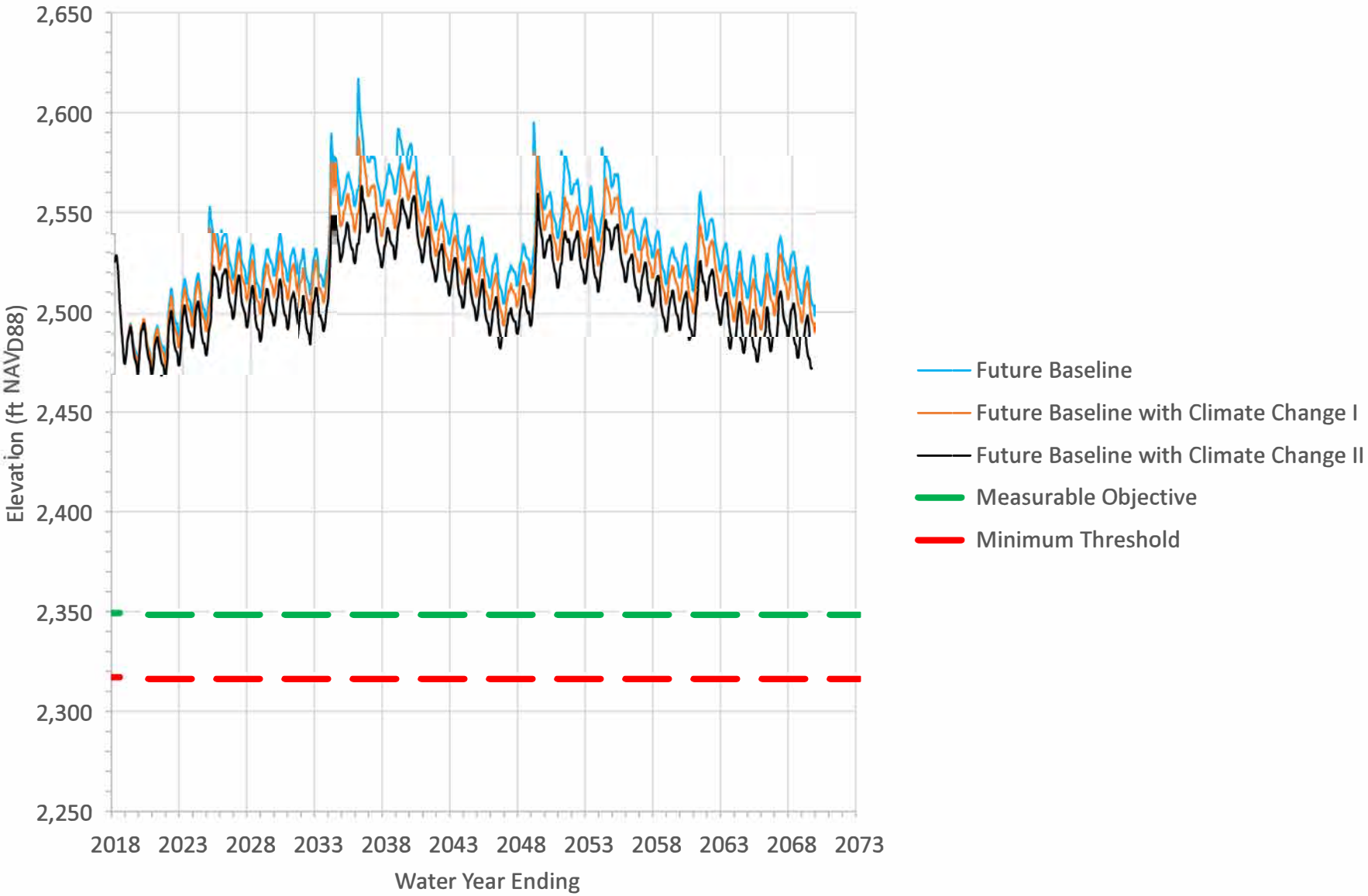

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Figure 3-15. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the North Bench Management Area

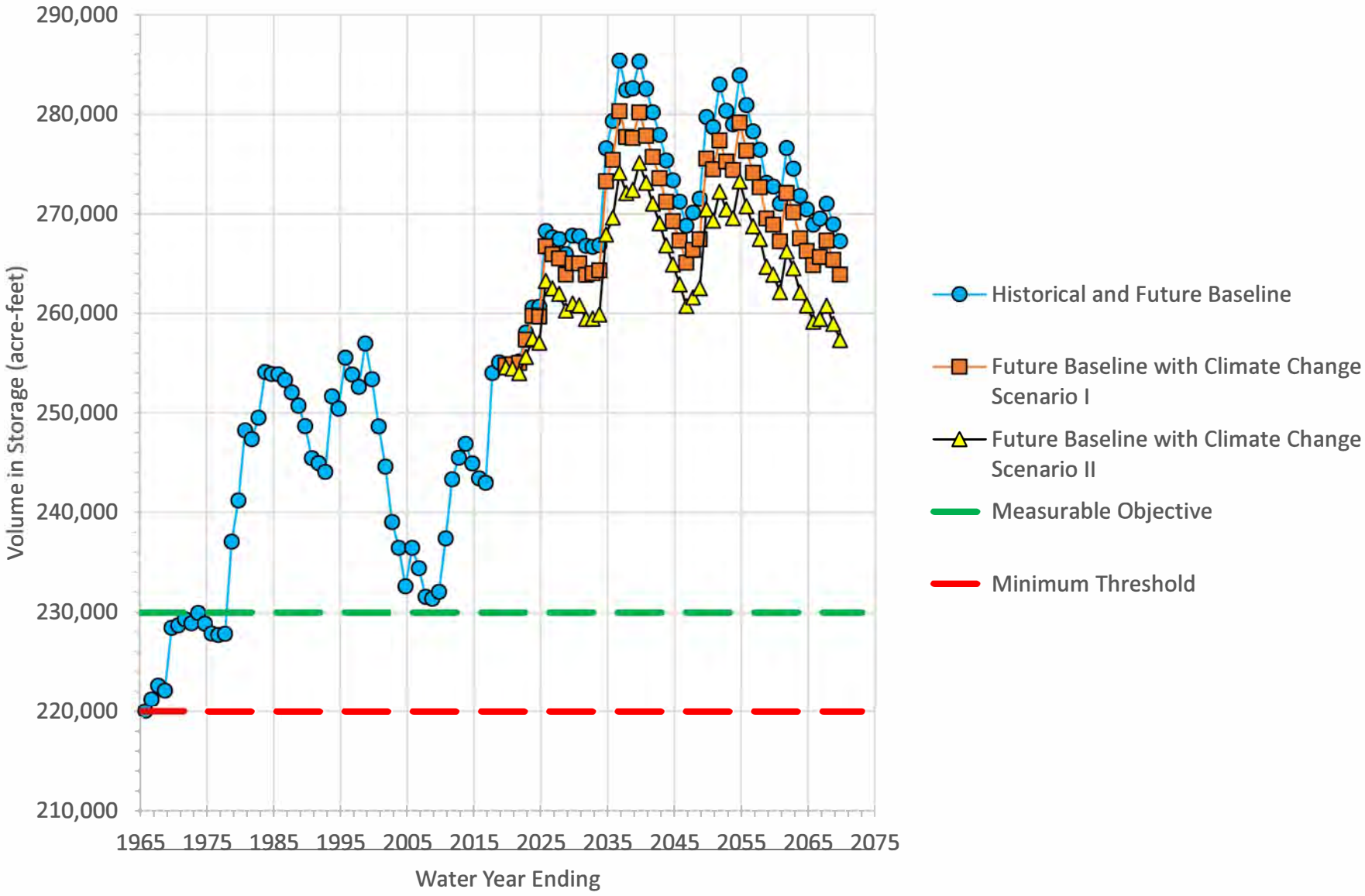

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Figure 3-16. Depths-to-Groundwater at the Chlorinator Well and YVWD-25 in the North Bench Management Area

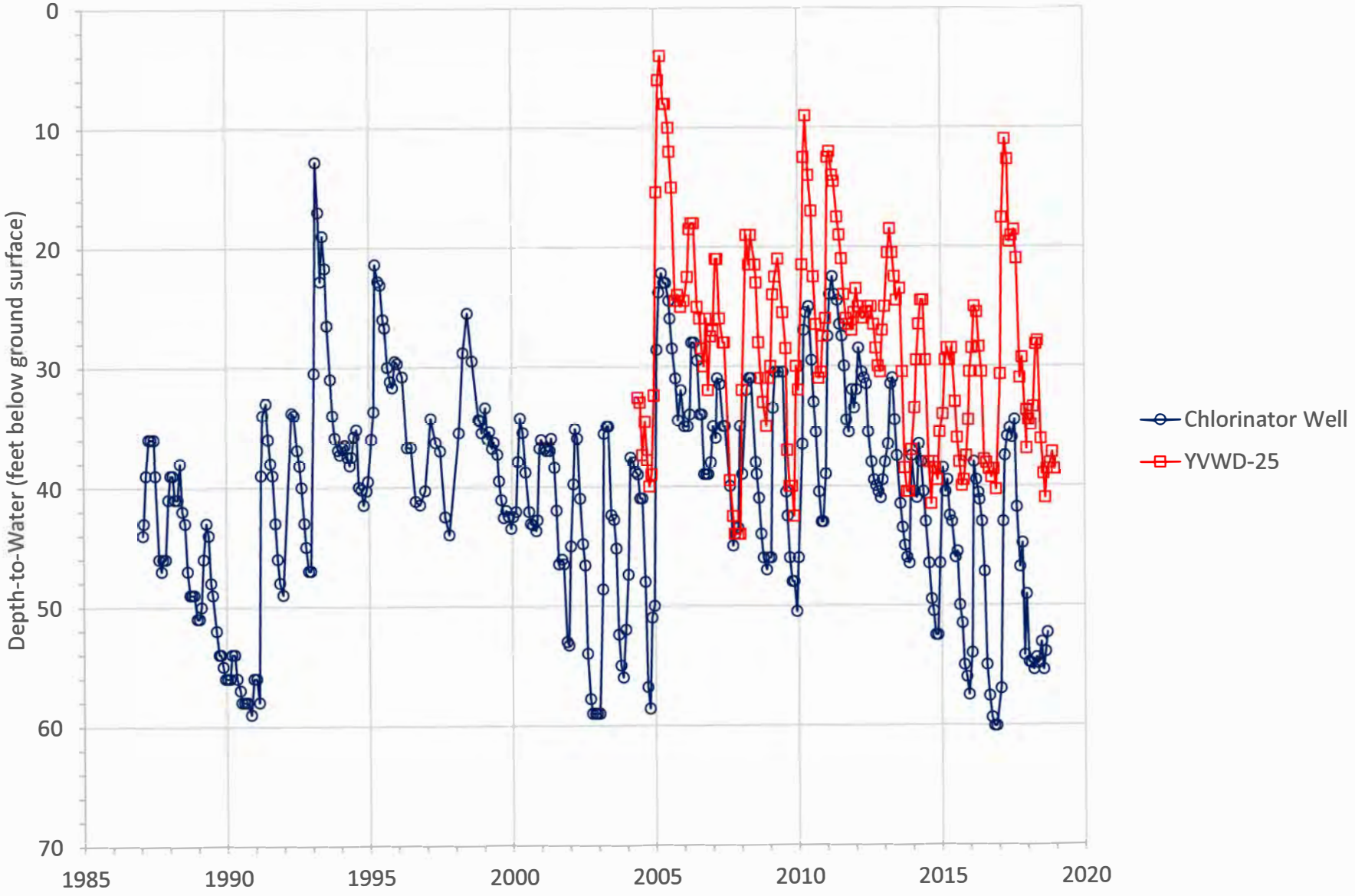

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Figure 3-17. Static Depths-to-Groundwater at YVWD-28
in the North Bench Management Area

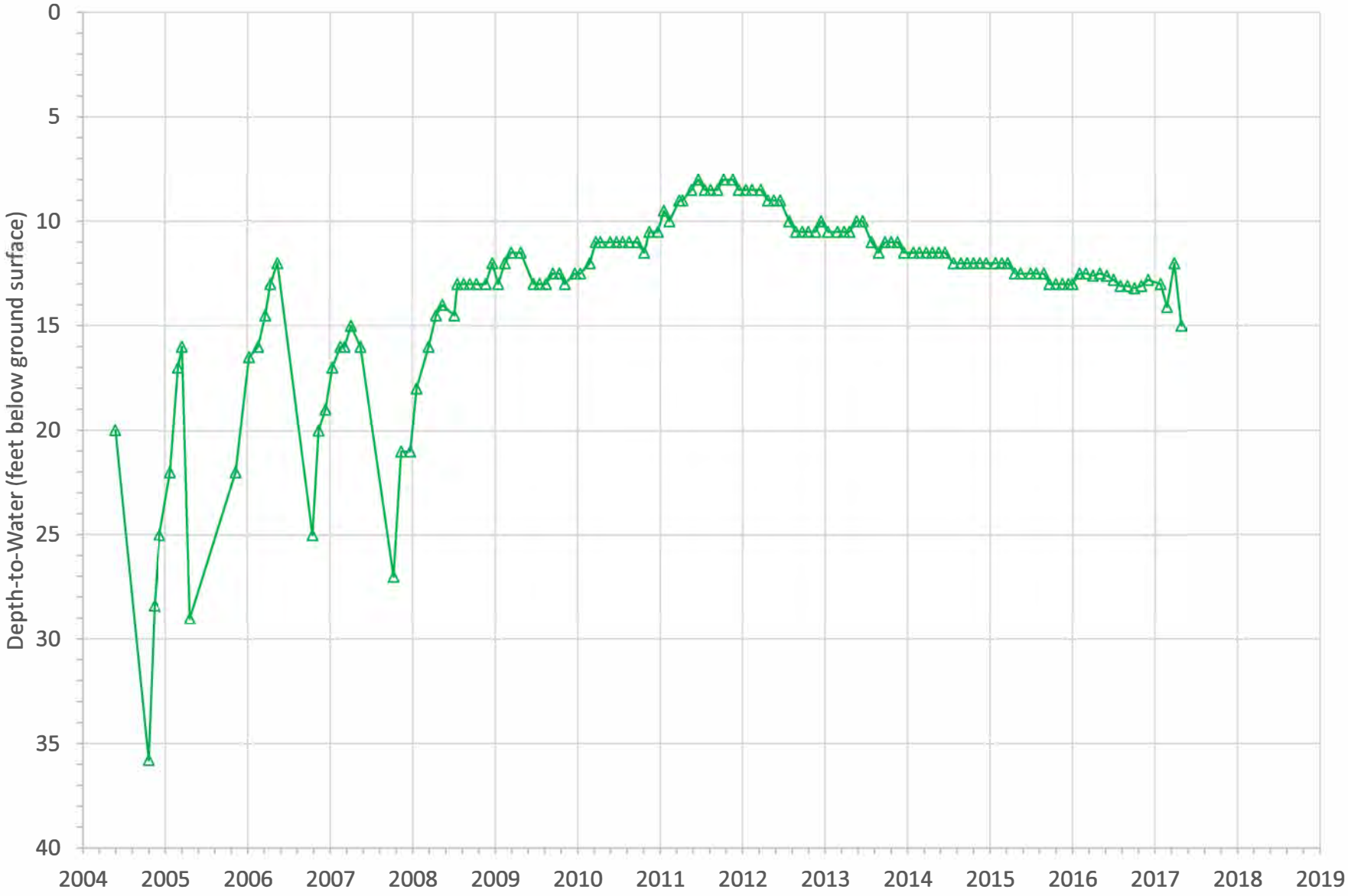

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Figure 3-18. Drought Buffer in the Calimesa Management Area

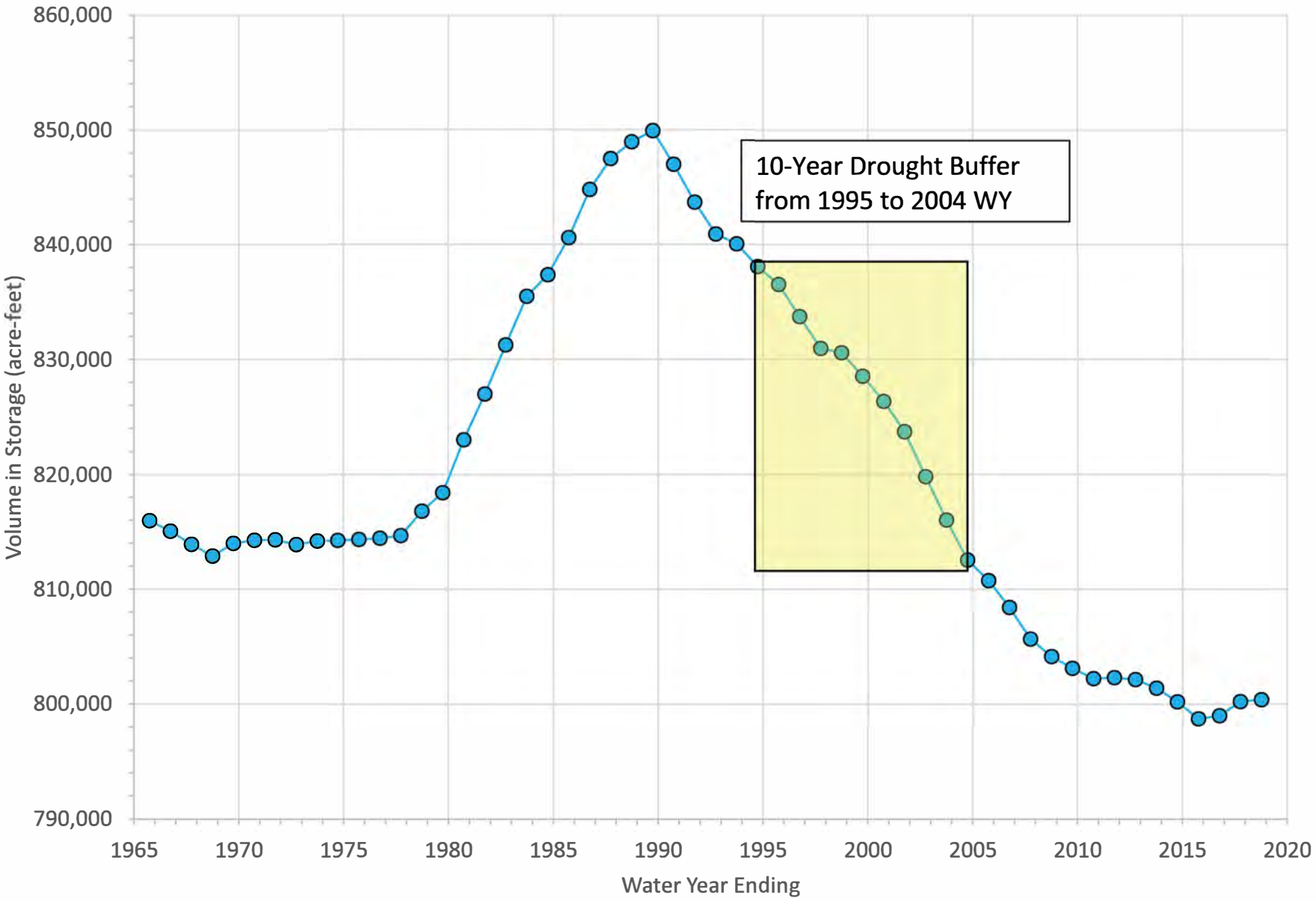

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Figure 3-19. Historical and Current Volume of Groundwater in Storage in the Calimesa Management Area

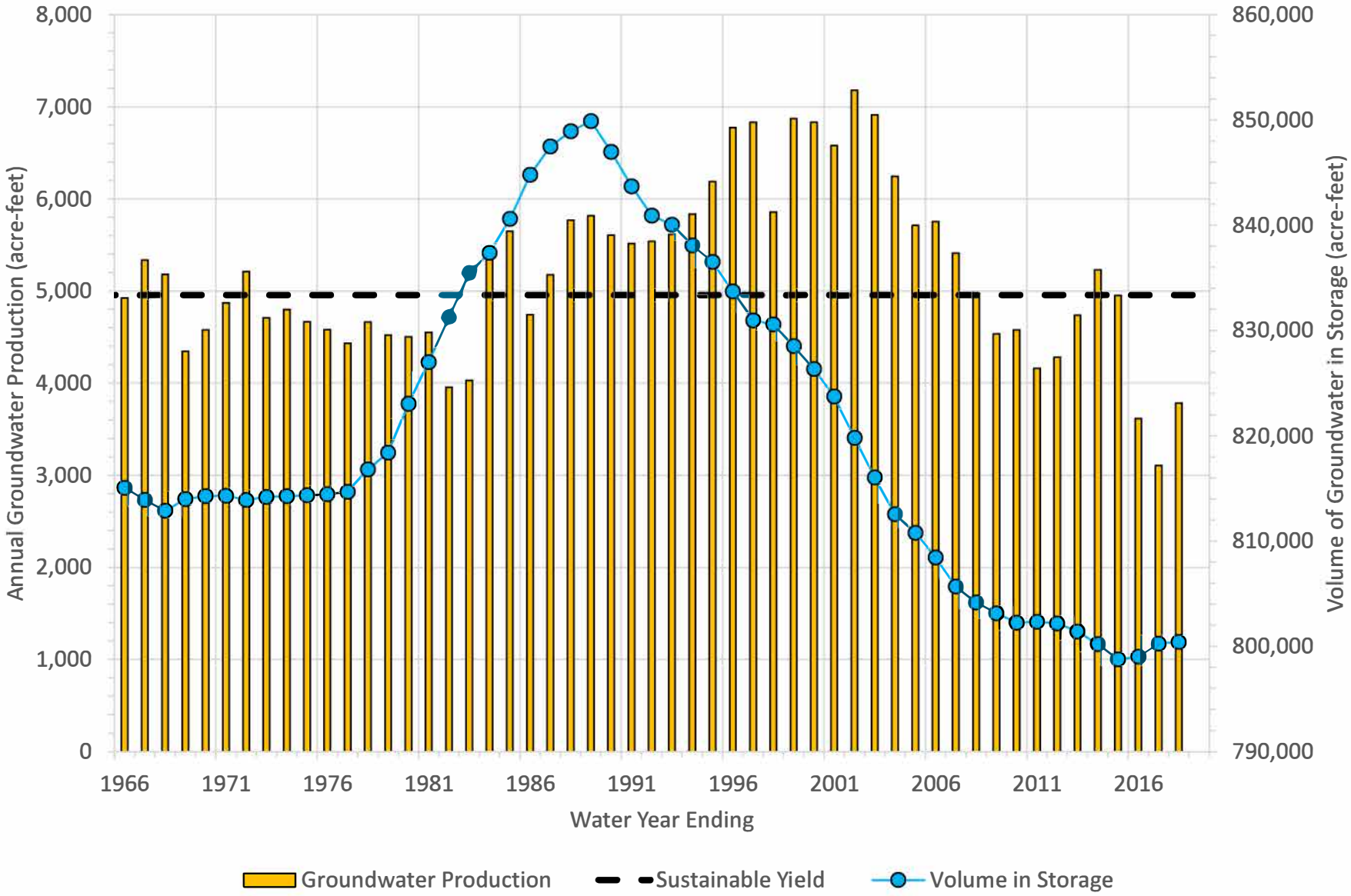

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Figure 3-20. Minimum Threshold and Measurable Objective in the Calimesa Management Area

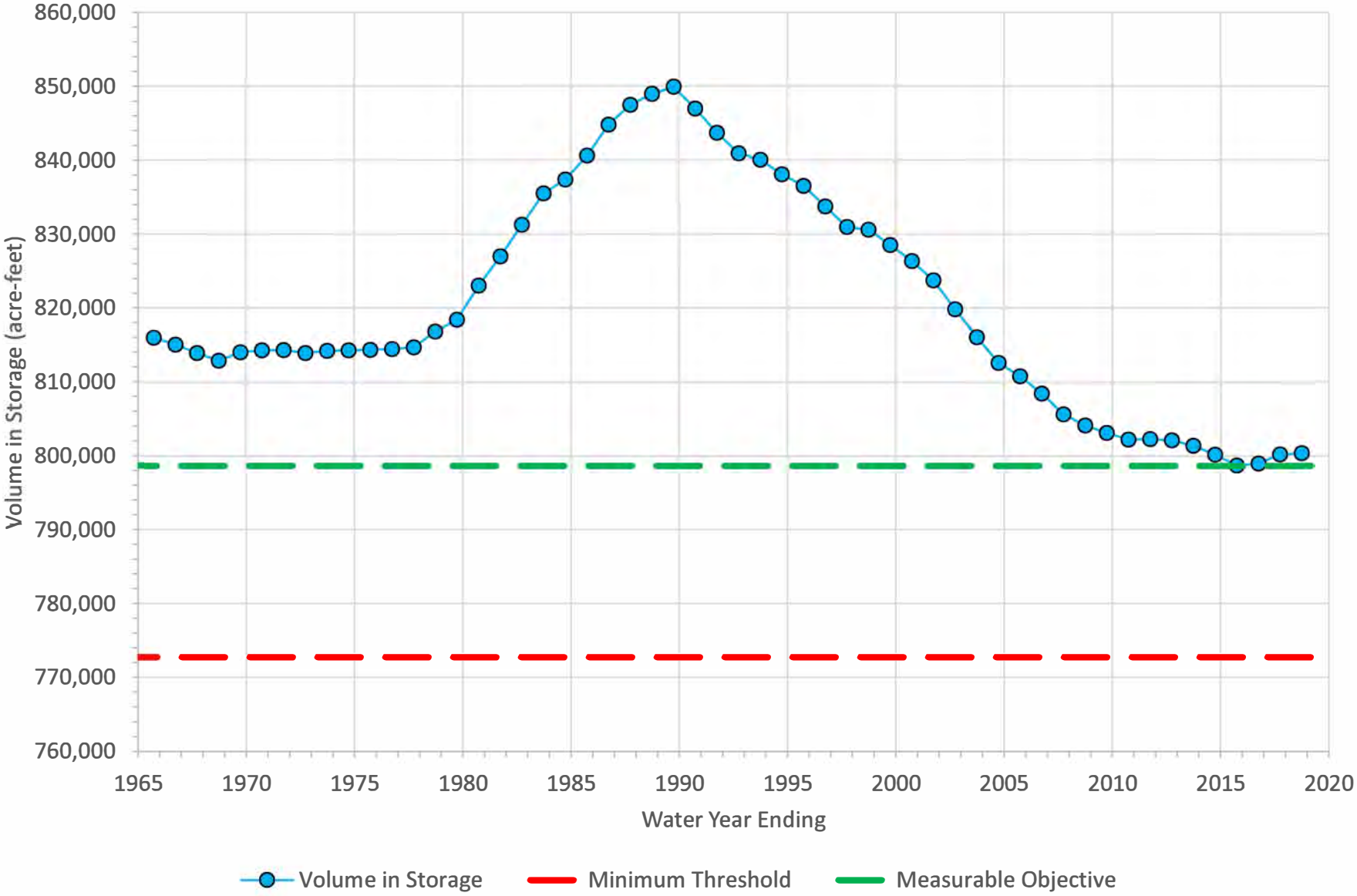

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Figure 3-21. Annual Groundwater Production and Historical Groundwater Elevations in the Calimesa Management Area

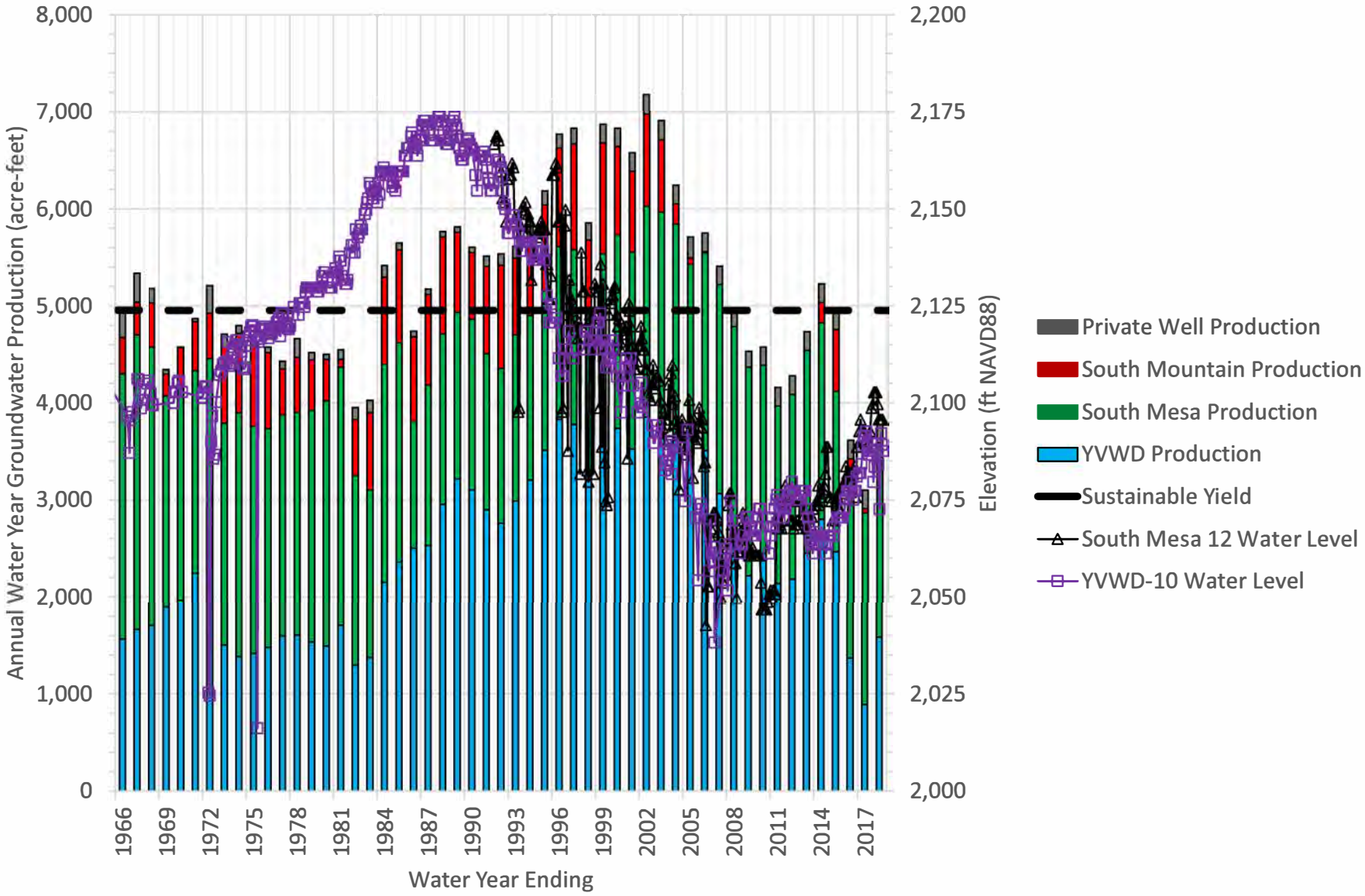

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Figure 3-22. Predicted Hydraulic Heads at South Mesa 7 in the Calimesa Management Area

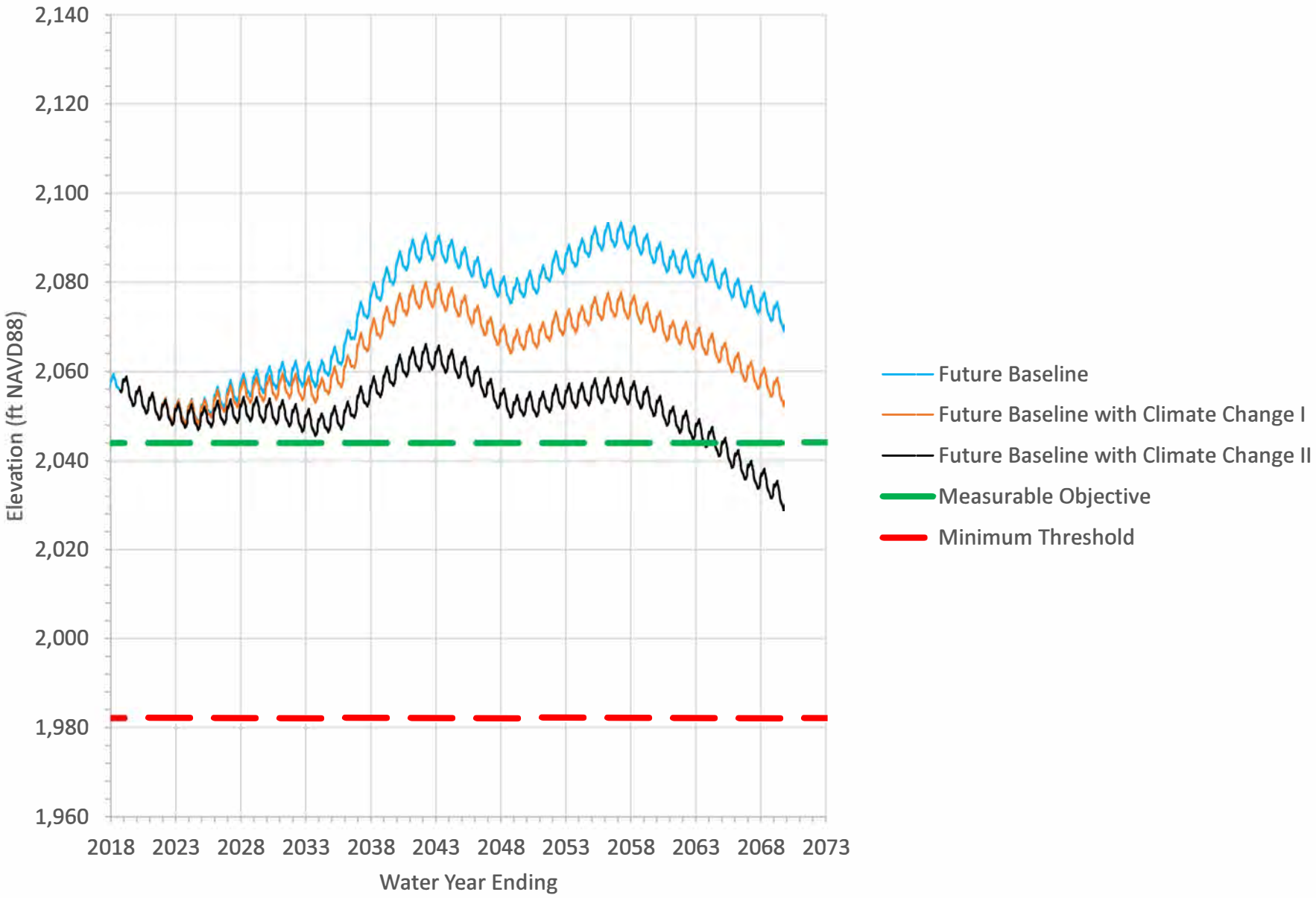

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Figure 3-23. Predicted Hydraulic Heads at South Mesa 9 in the Calimesa Management Area

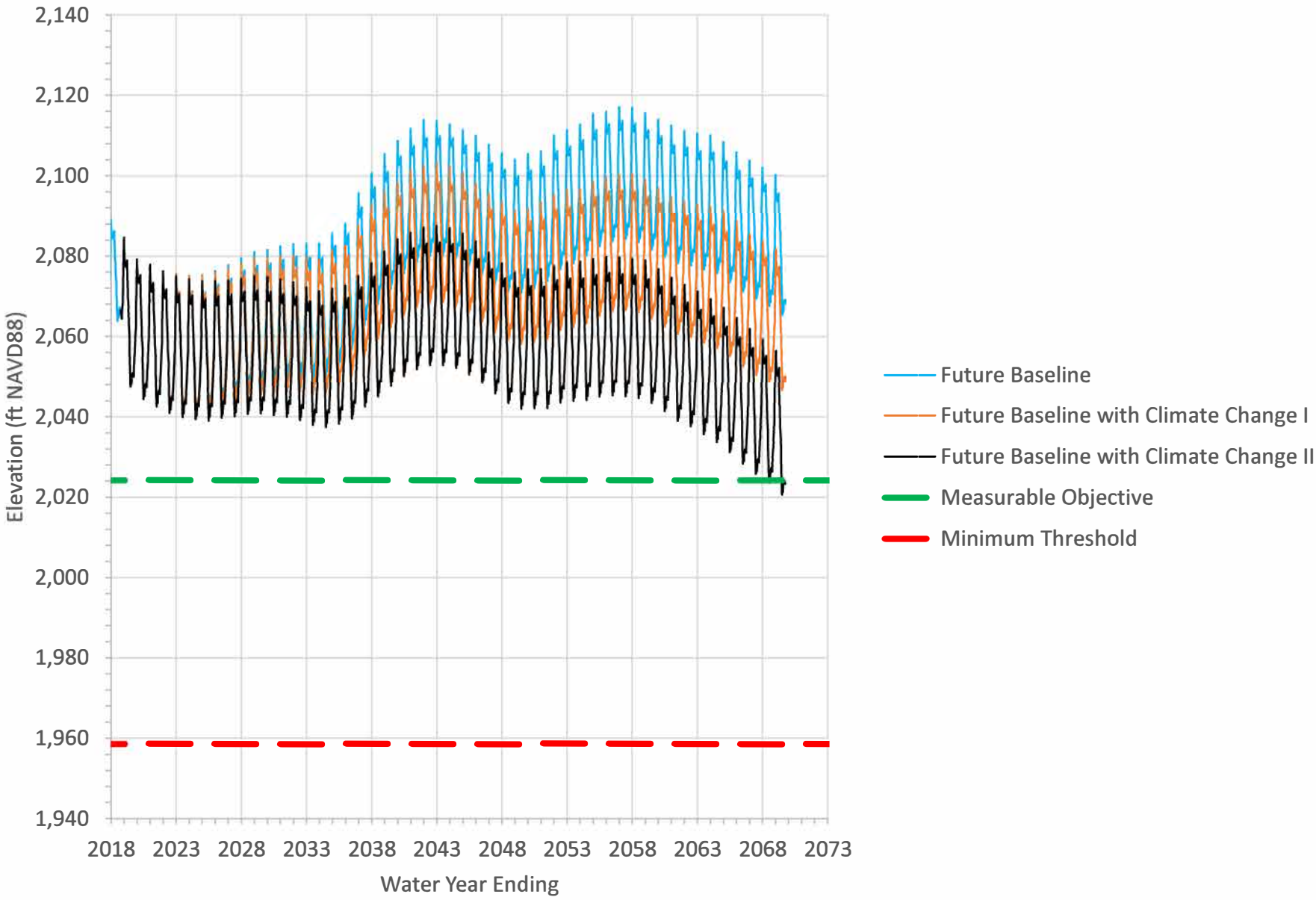

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Figure 3-24. Predicted Hydraulic Heads at South Mesa 12 in the Calimesa Management Area

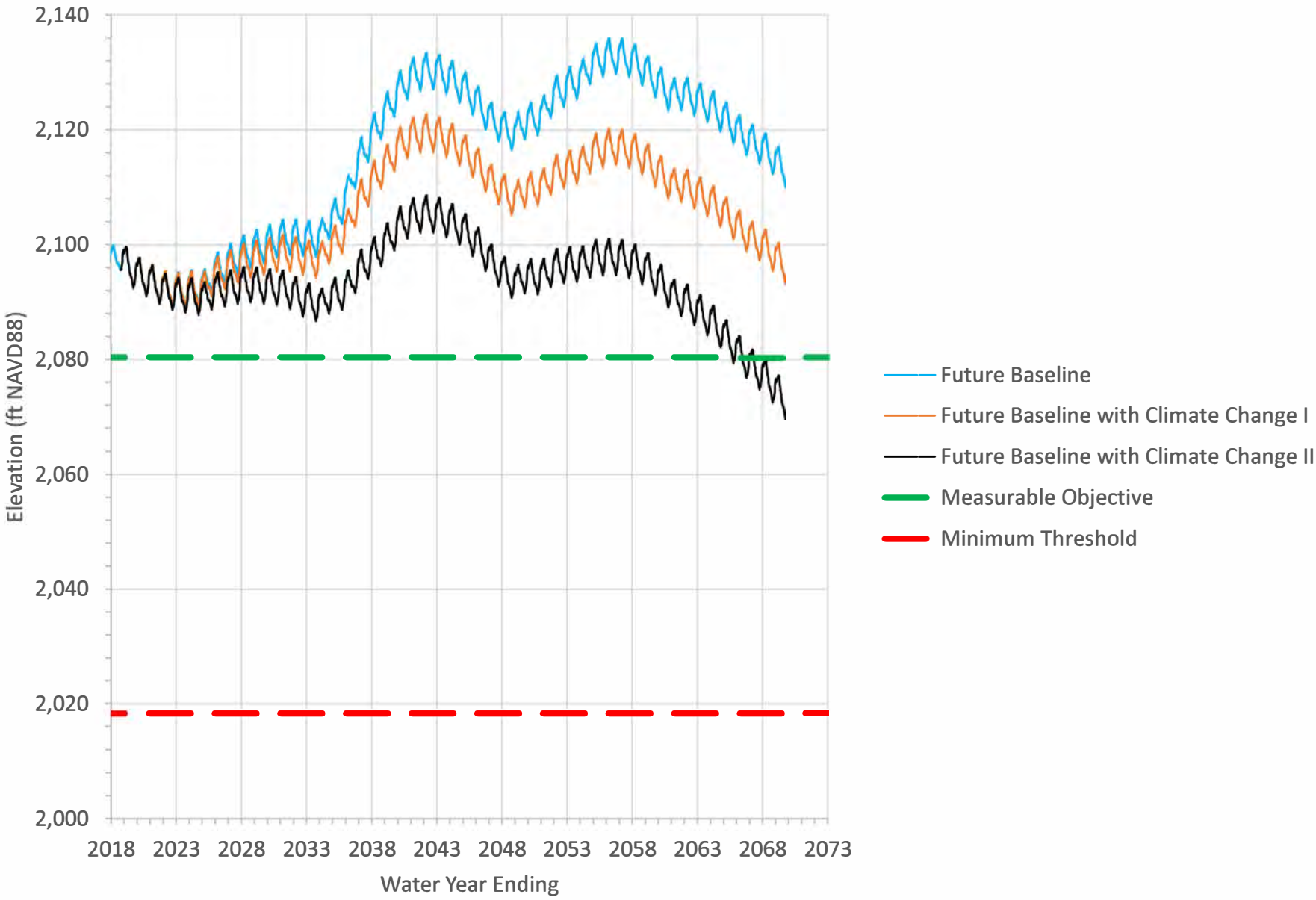

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Figure 3-25. Predicted Hydraulic Heads at South Mesa 17 in the Calimesa Management Area

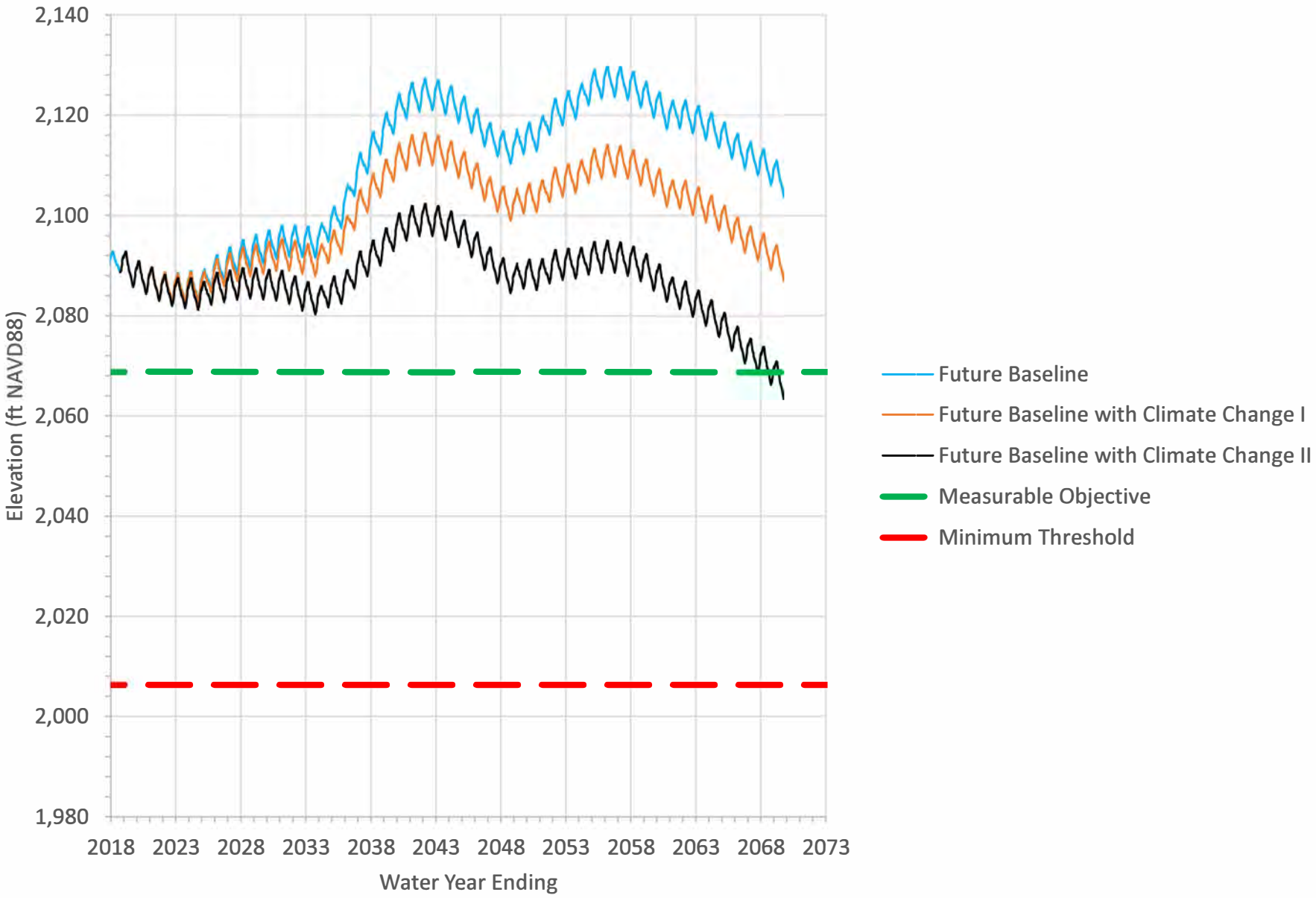

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Figure 3-26. Predicted Hydraulic Heads at YVWD-10 in the Calimesa Management Area

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Figure 3-27. Predicted Hydraulic Heads at YVWD-12 in the Calimesa Management Area

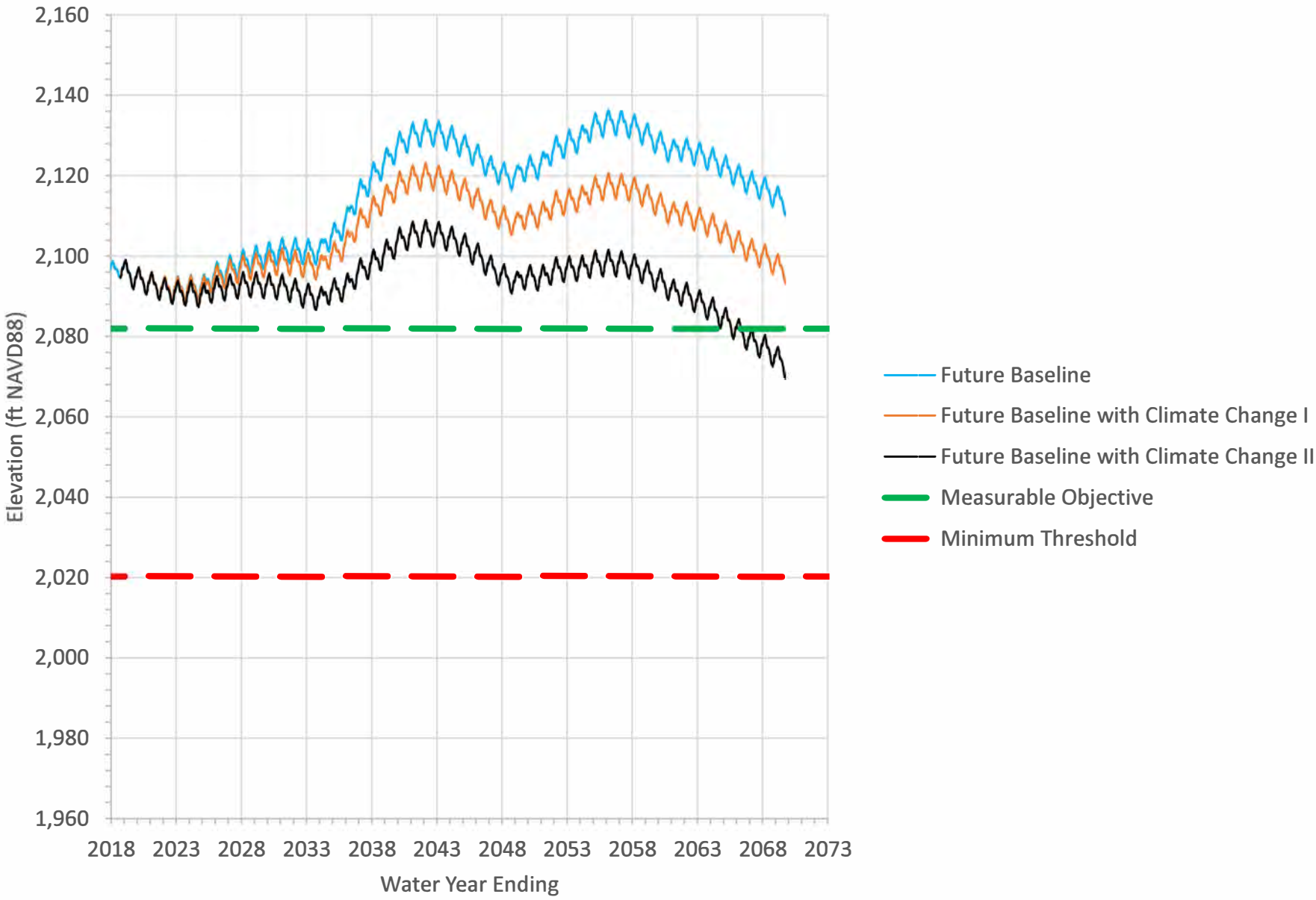

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Figure 3-28. Predicted Hydraulic Heads at YVWD-24 in the Calimesa Management Area

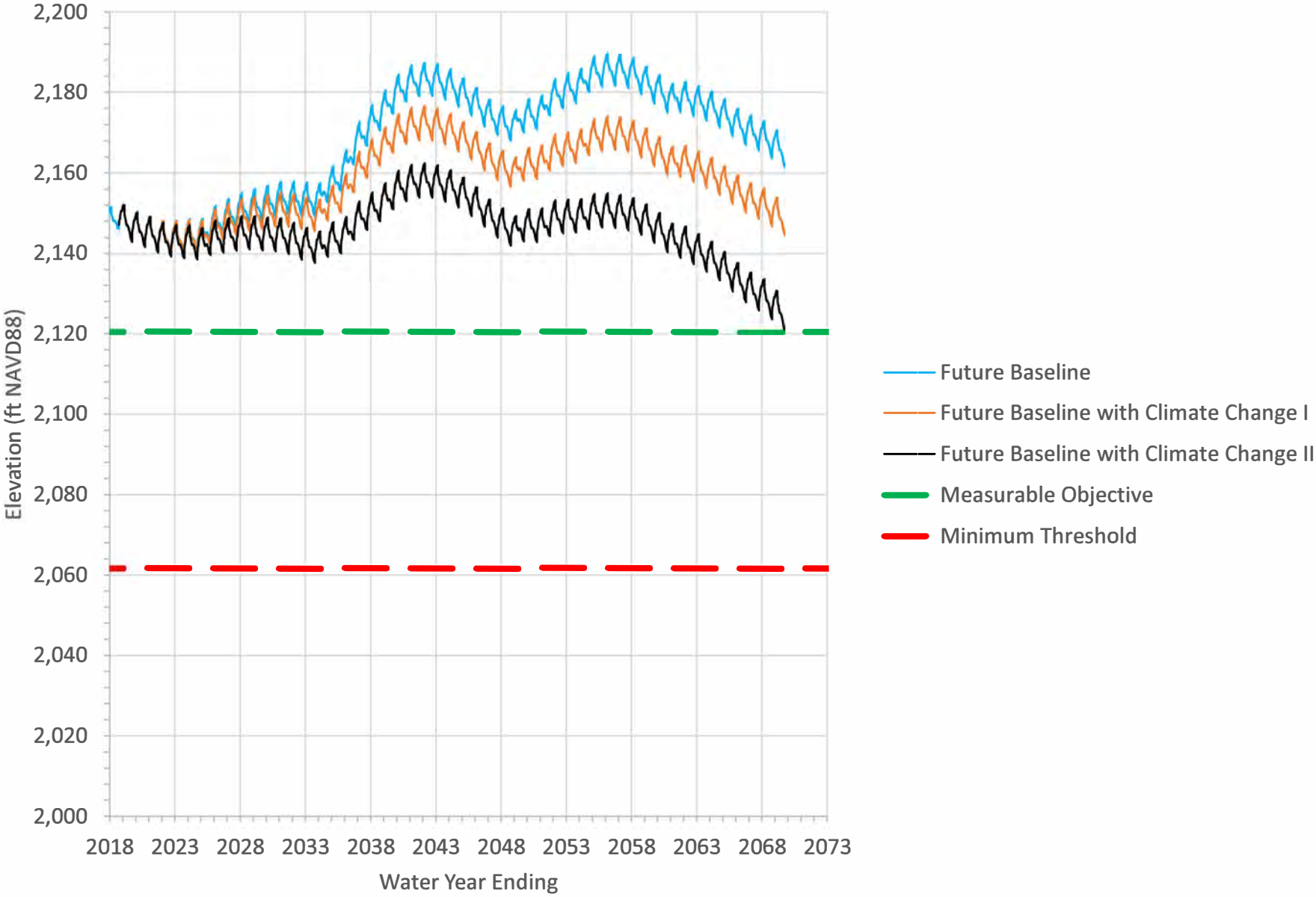

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Figure 3-29. Predicted Hydraulic Heads at YVWD-49 in the Calimesa Management Area

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Figure 3-30. Predicted Hydraulic Heads at Hog Canyon 2 in the Calimesa Management Area

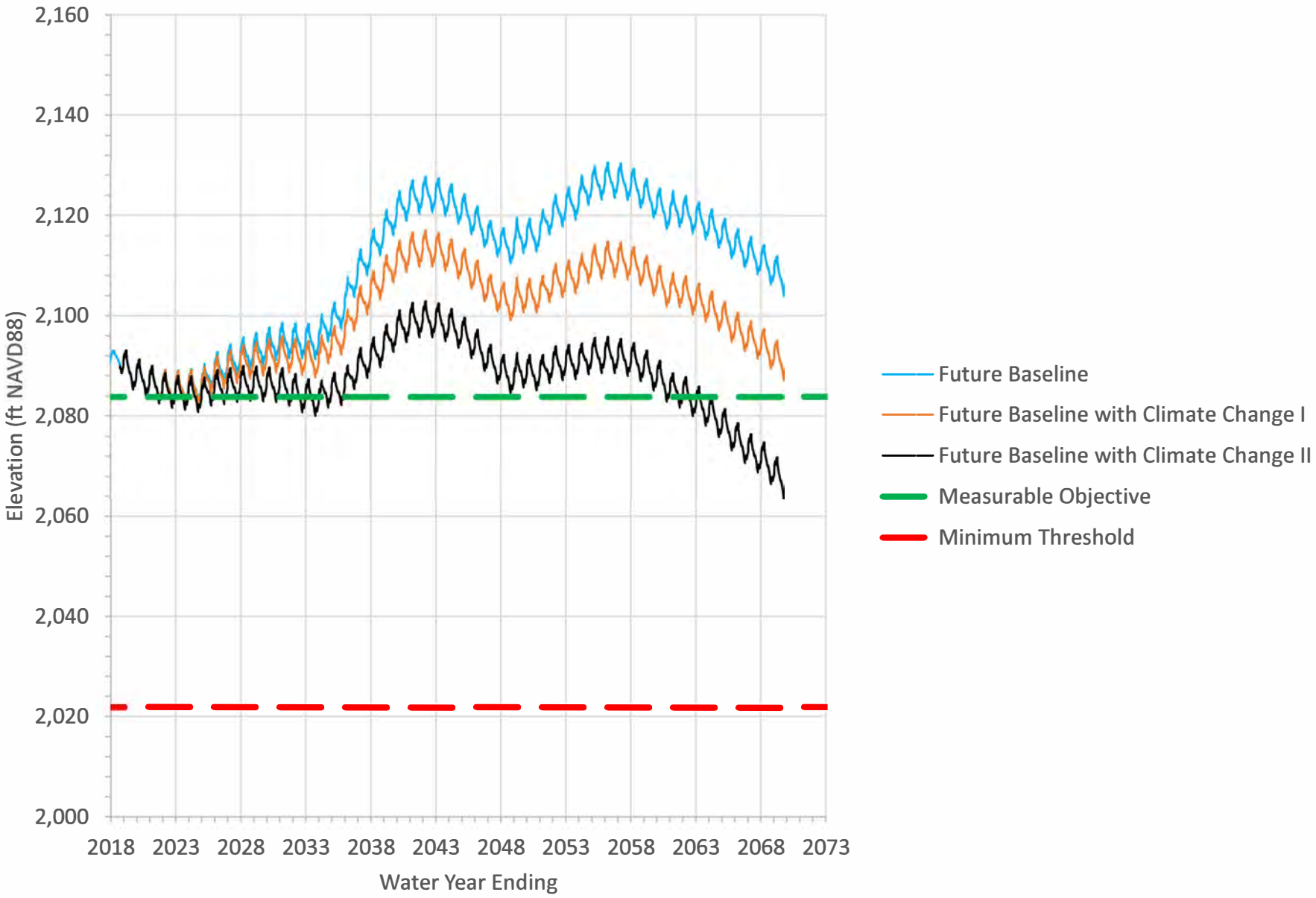

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Figure 3-31. Predicted Hydraulic Heads at USGS Equestrian Park #1 Well in the Calimesa Management Area

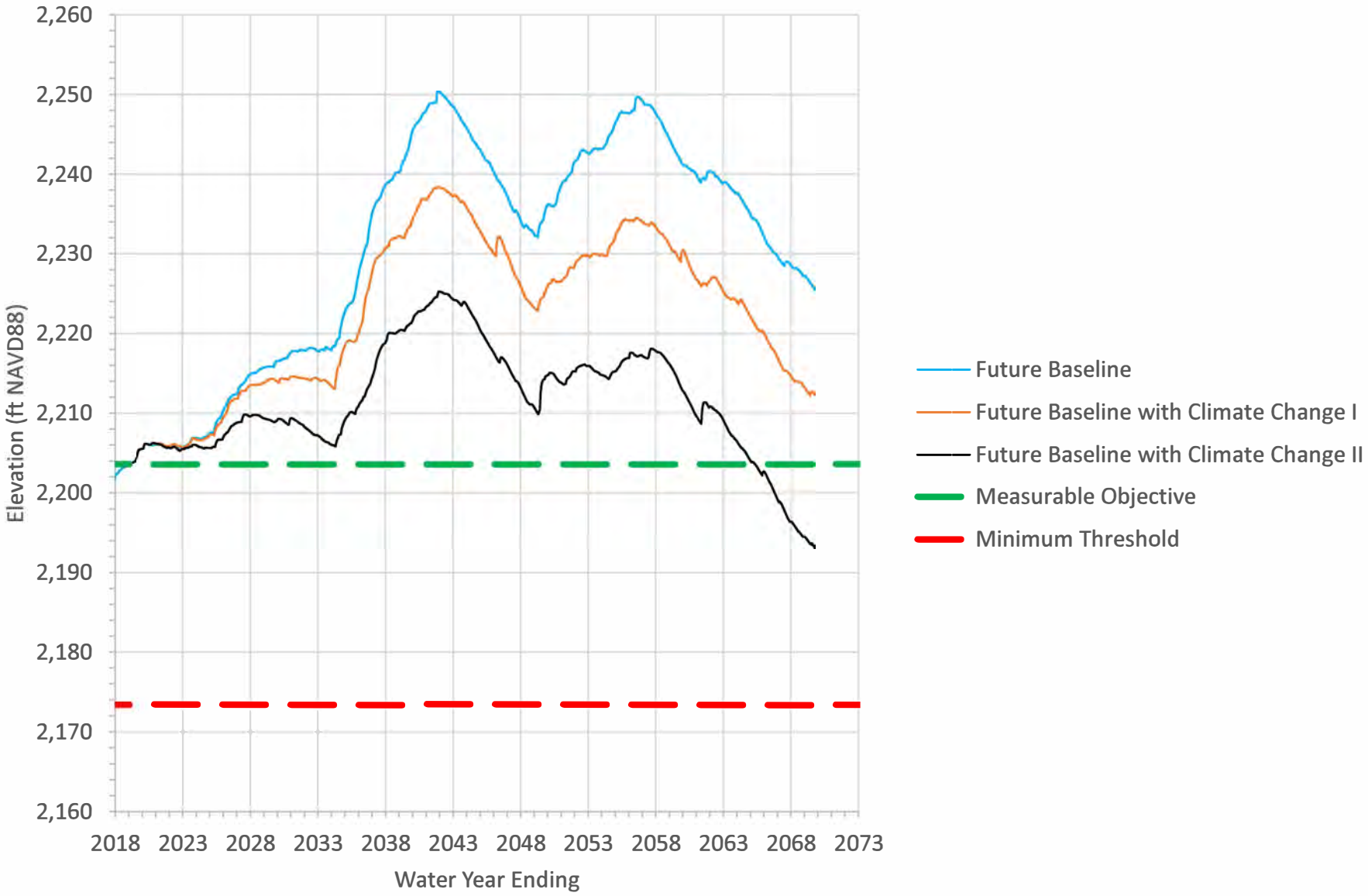

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Figure 3-32. Predicted Hydraulic Heads at USGS Equestrian Park #4 Well in the Calimesa Management Area

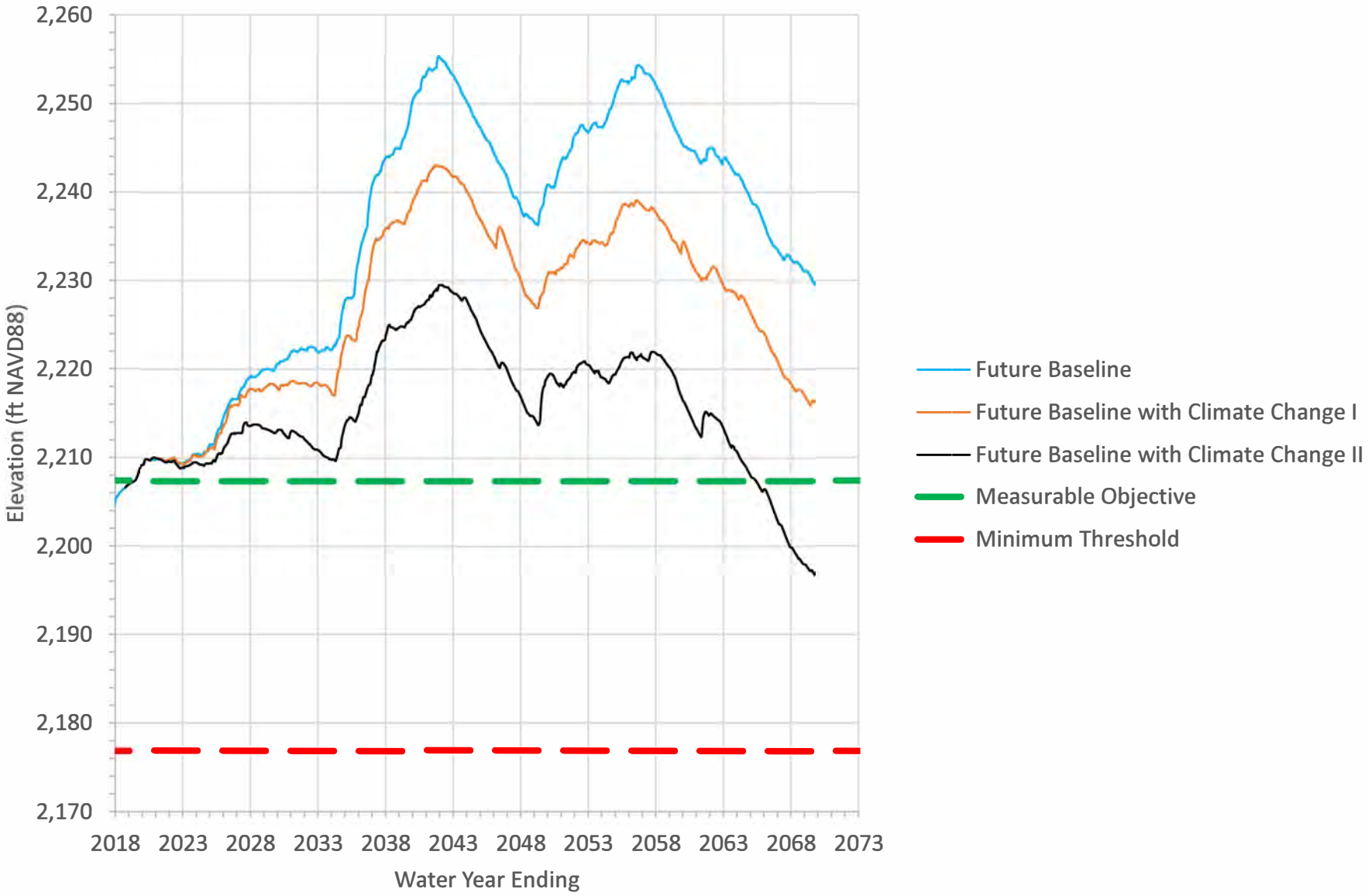

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Figure 3-33. Predicted Hydraulic Heads at USGS 6th Street #1 Well in the Calimesa Management Area

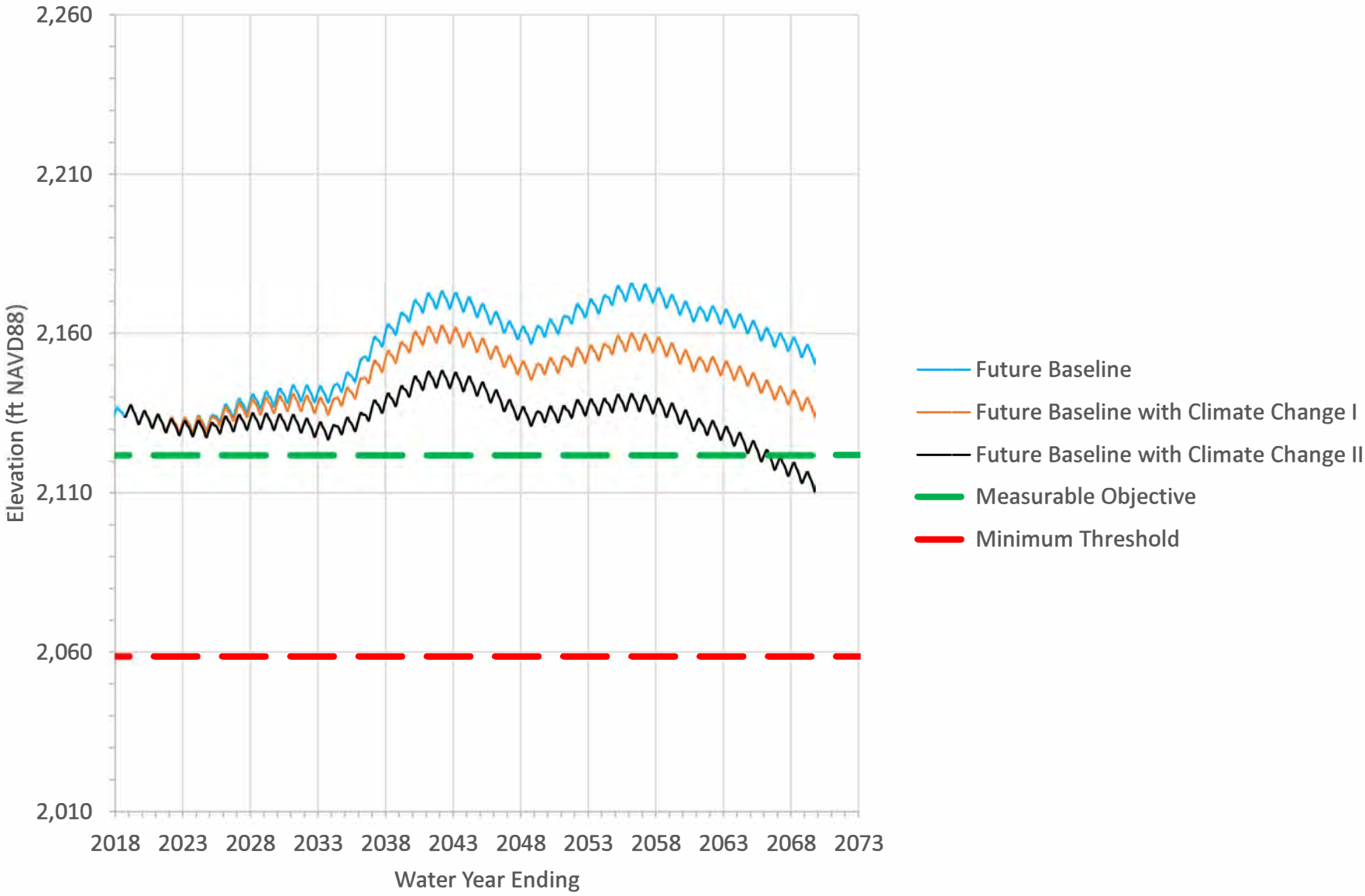

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Figure 3-34. Predicted Hydraulic Heads at USGS 6th Street #4 Well in the Calimesa Management Area

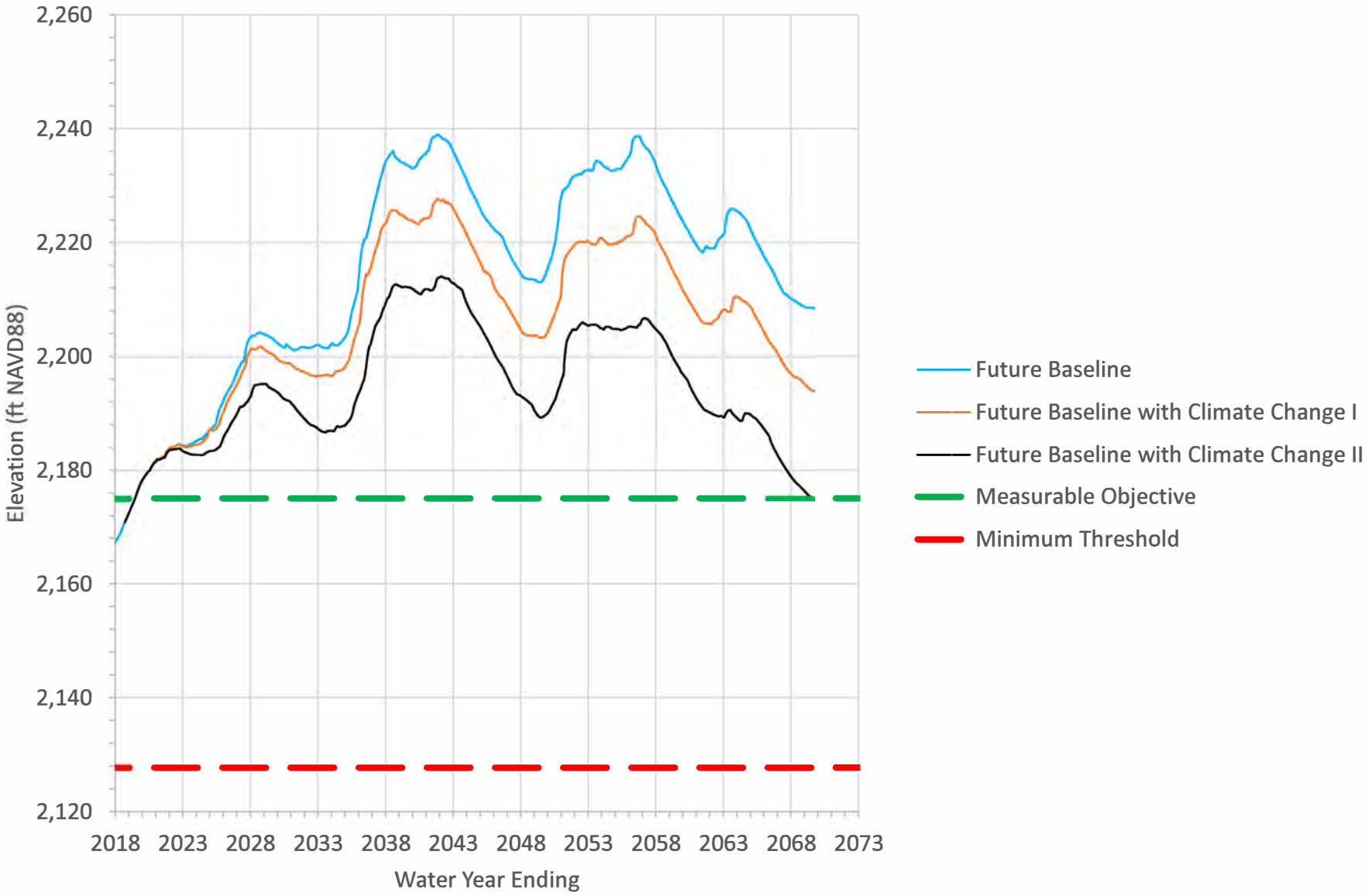

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Figure 3-35. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the Calimesa Management Area

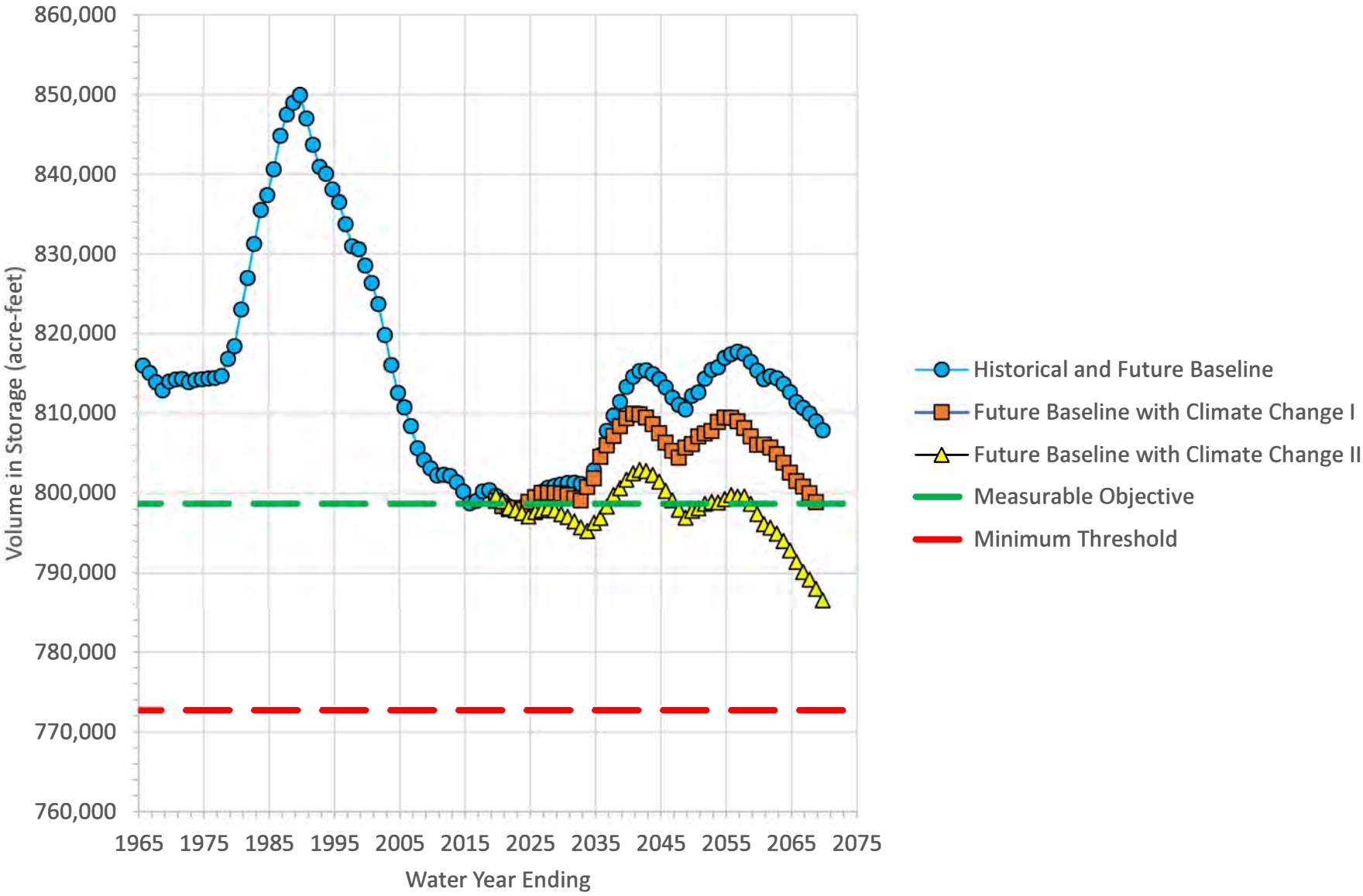

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Figure 3-36. Drought Buffer in the Western Heights Management Area

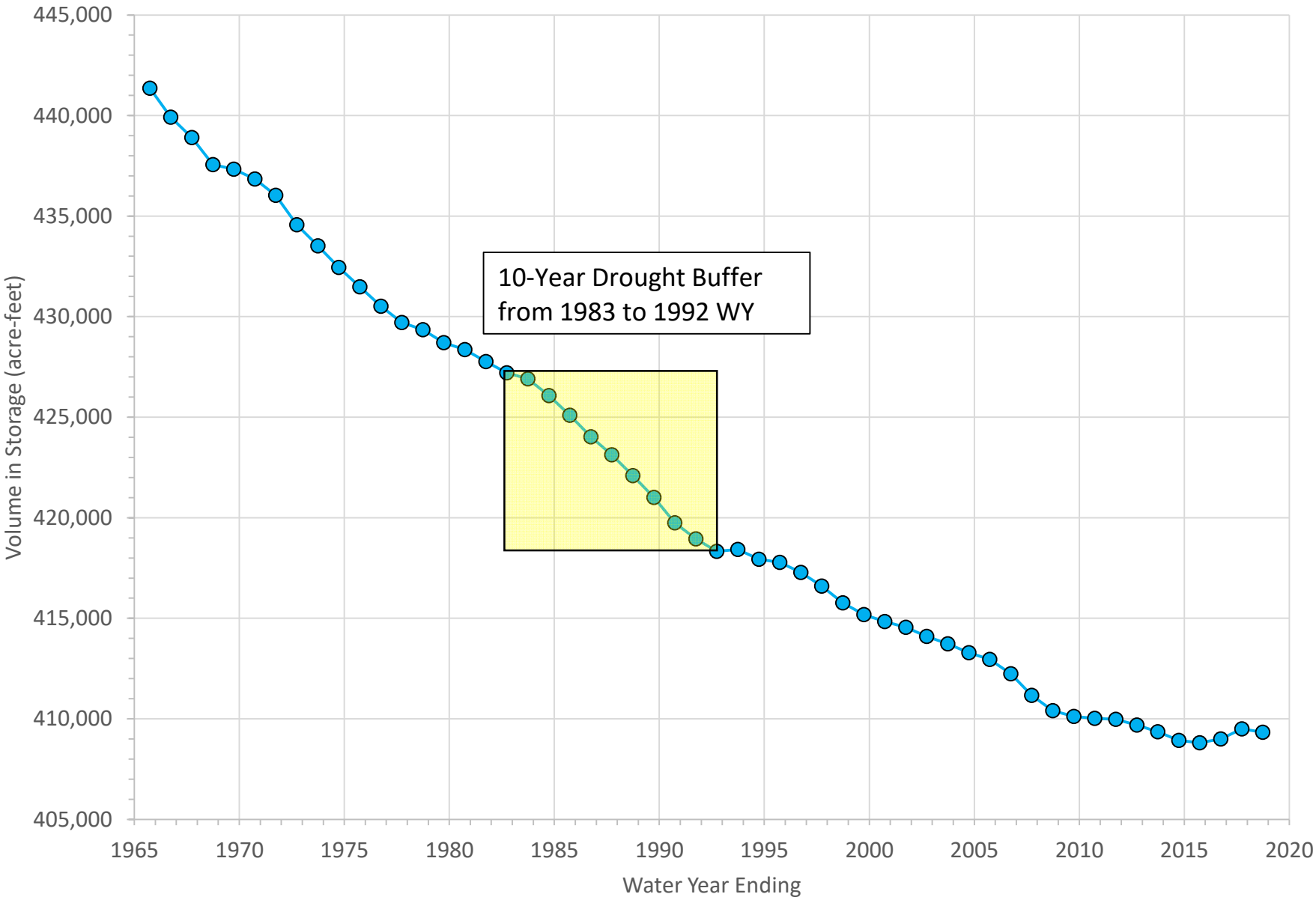

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Figure 3-37. Annual Groundwater Production and Historical Groundwater Elevations in the Western Heights Management Area

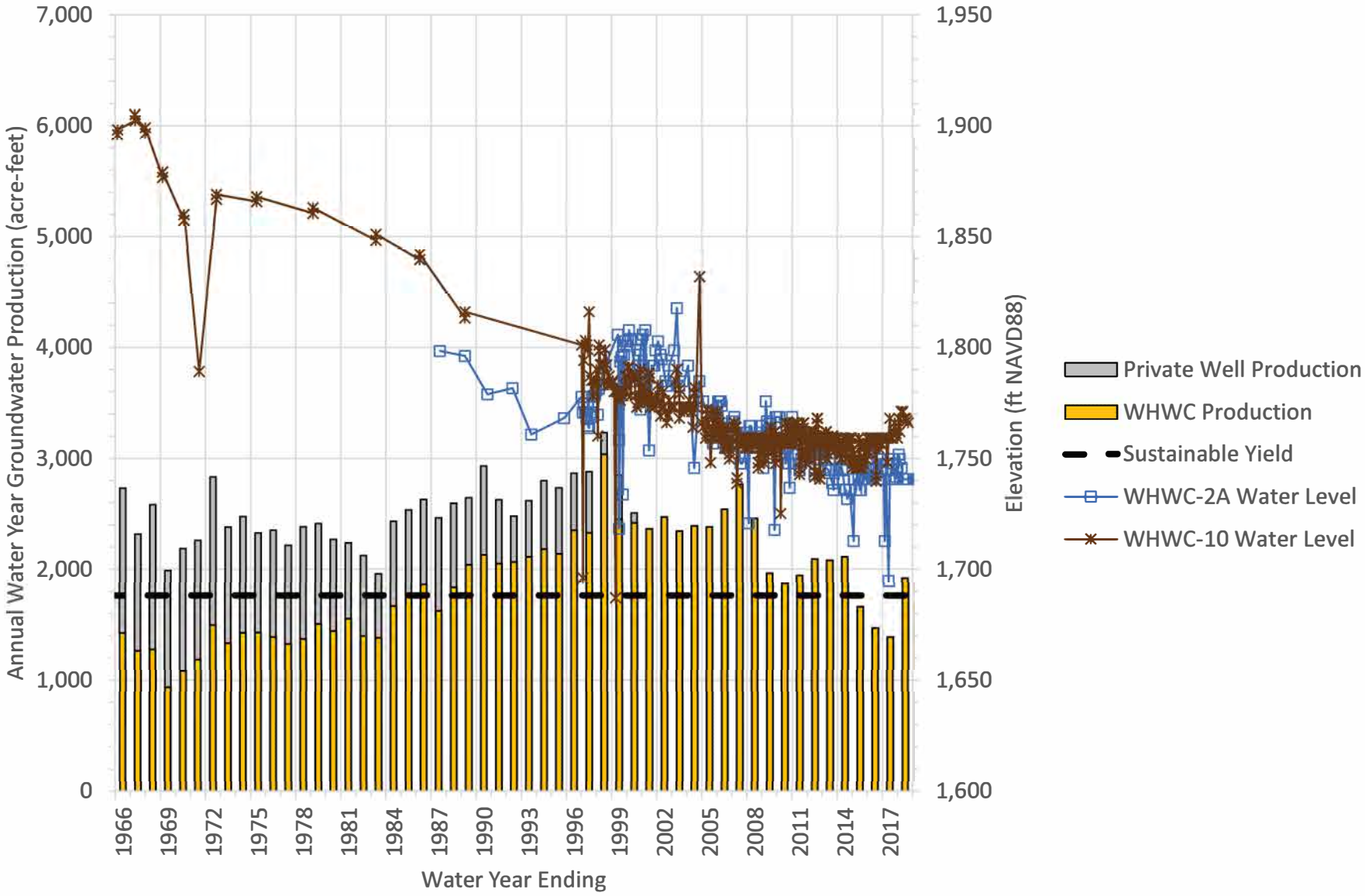

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Figure 3-38. Minimum Threshold and Measurable Objective
in the Western Heights Management Area

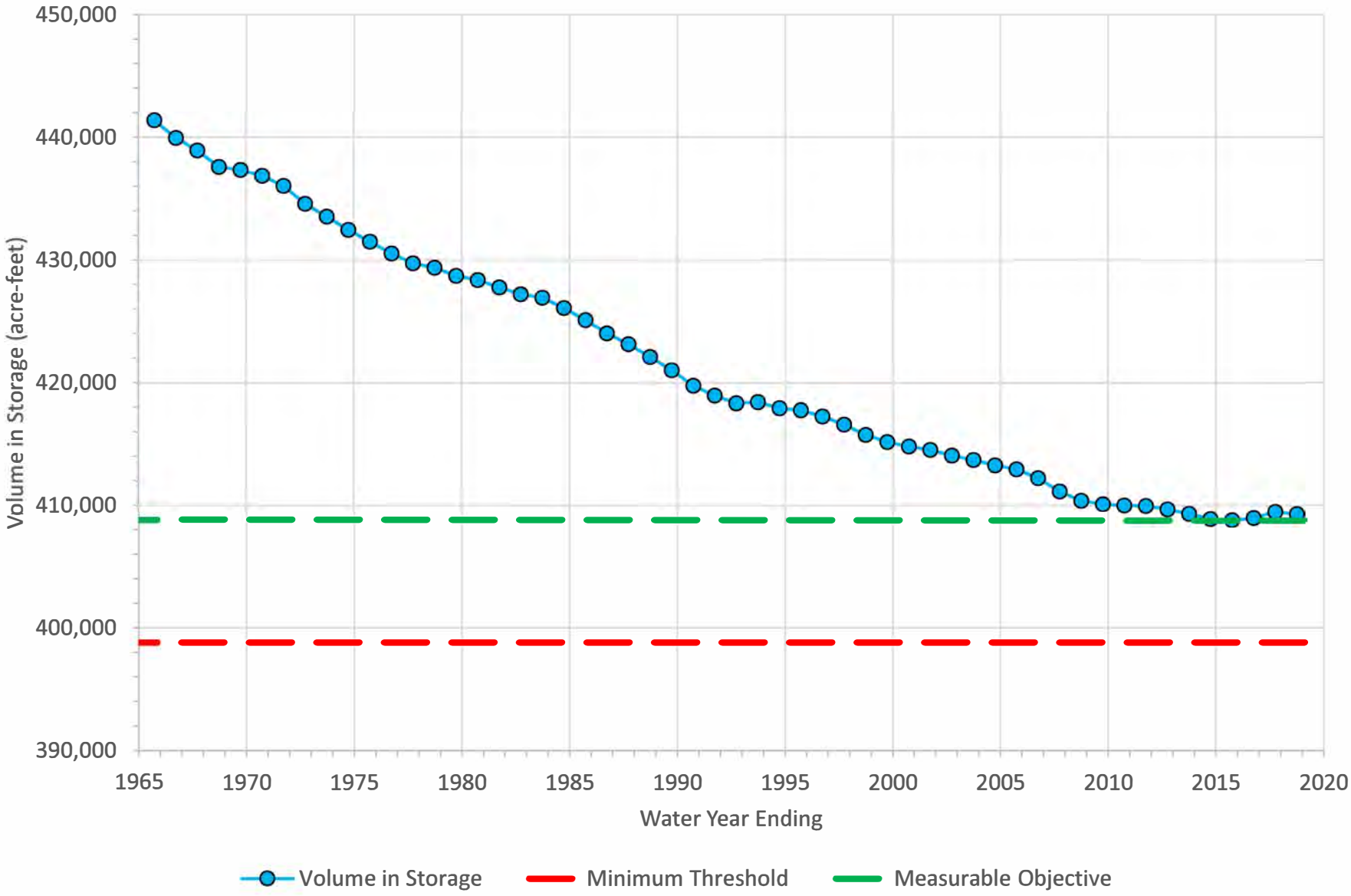

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Figure 3-39. Groundwater Production and Supplemental Water Purchased in the Western Heights Management Area

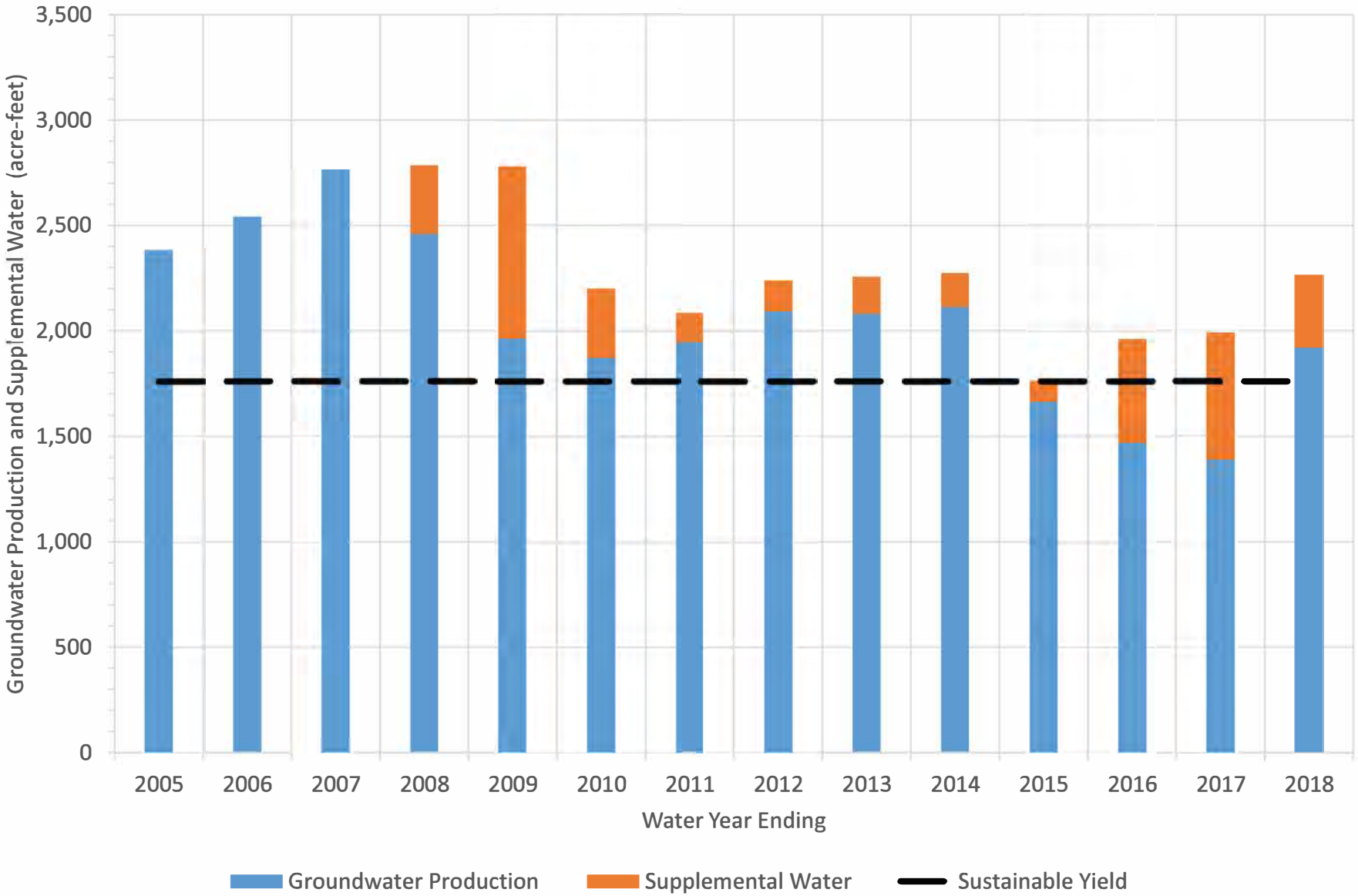

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Figure 3-40. Predicted Simulated Hydraulic Heads at WHWC-02A in the Western Heights Management Area

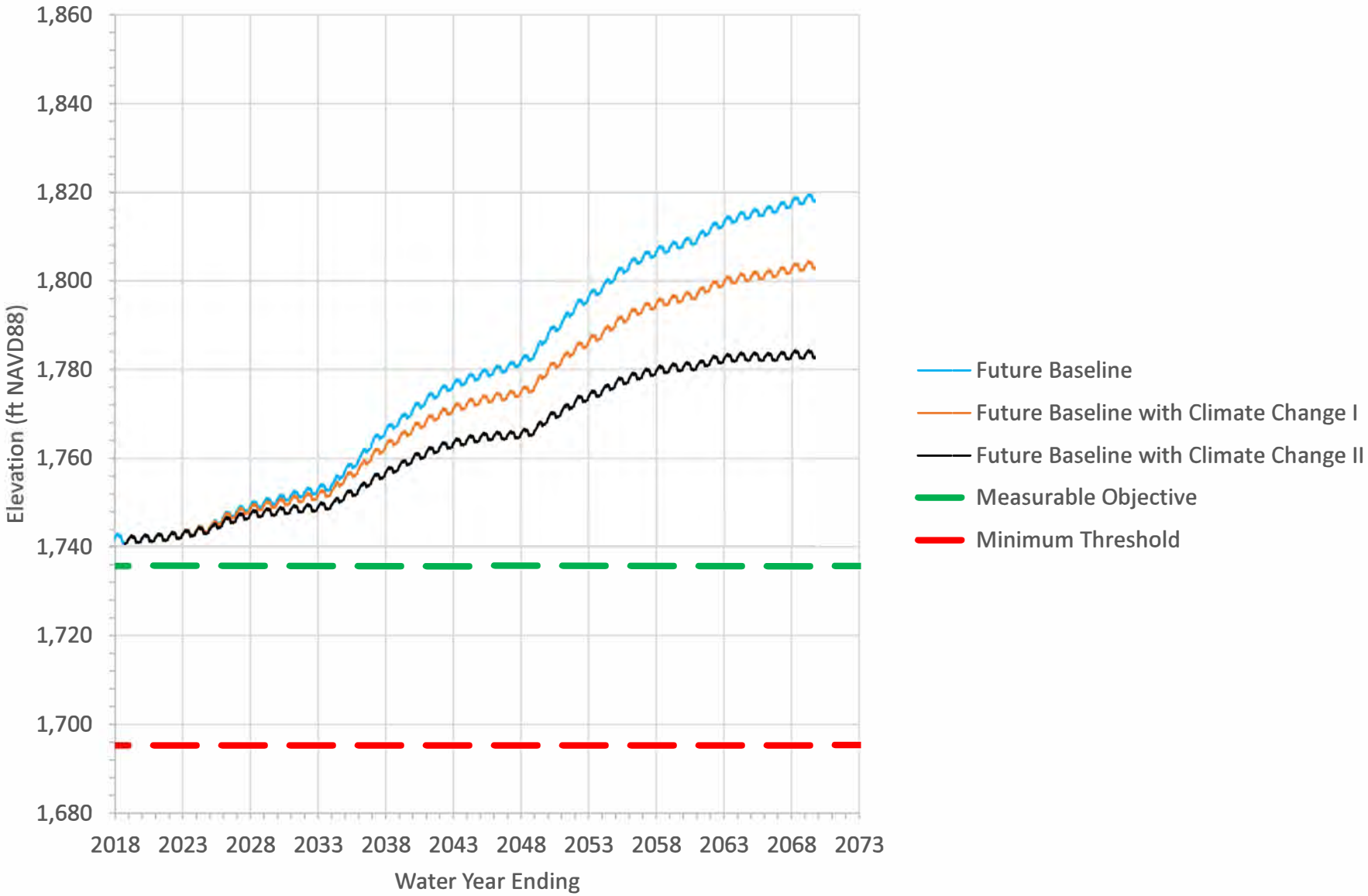

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Figure 3-41. Predicted Simulated Hydraulic Heads at WHWC-10
in the Western Heights Management Area

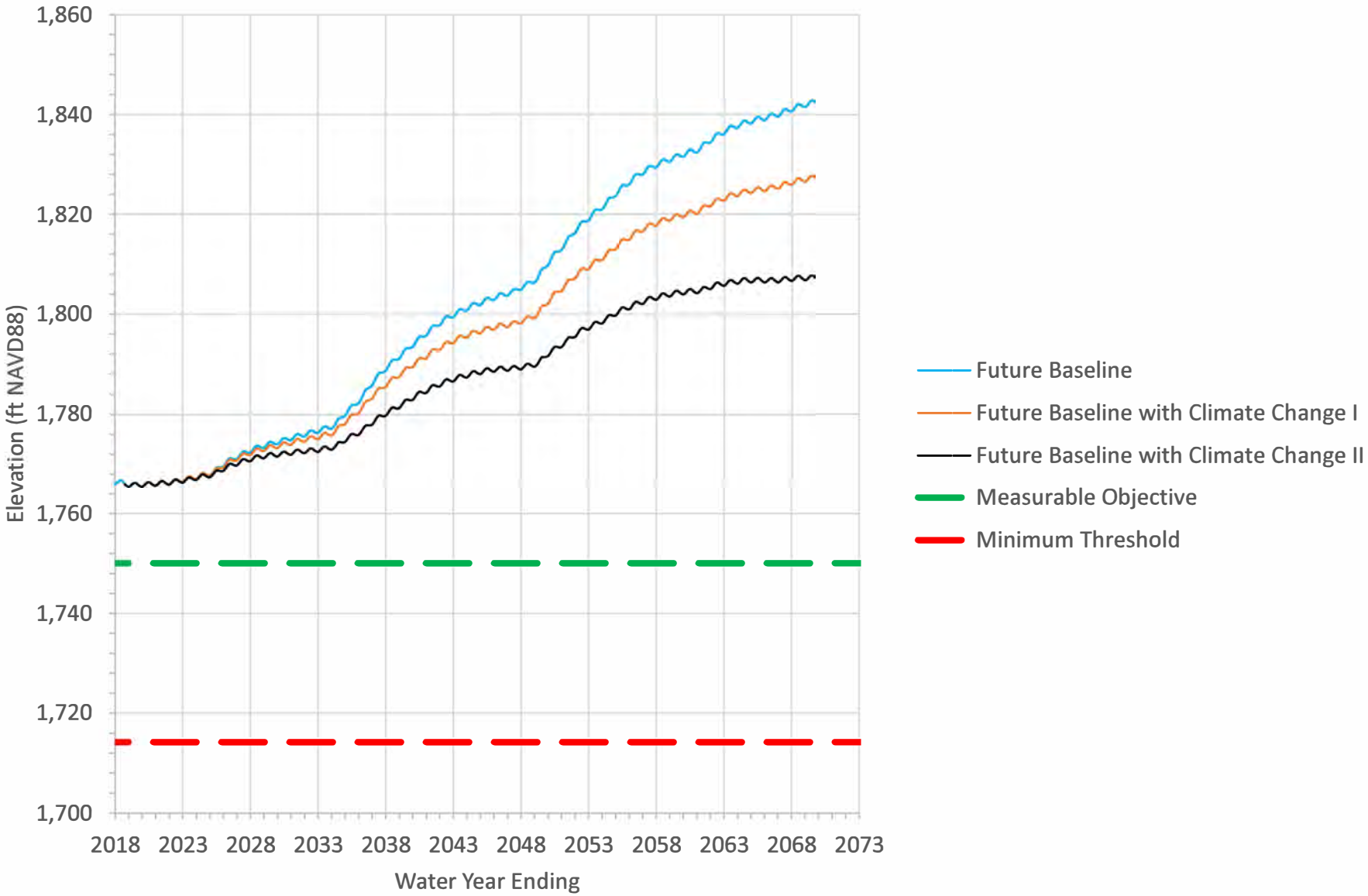

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Figure 3-42. Predicted Simulated Hydraulic Heads at WHWC-11
in the Western Heights Management Area

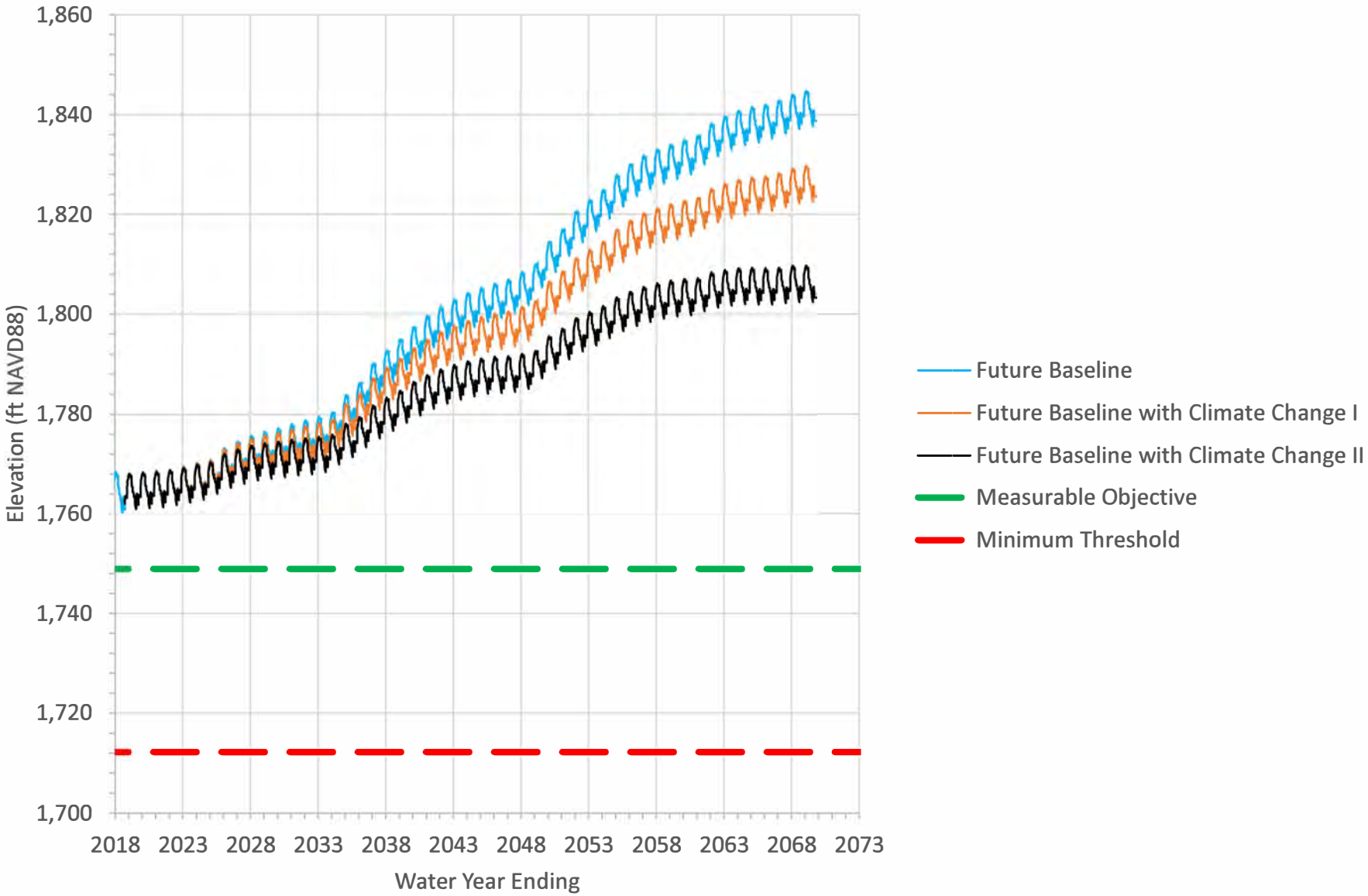

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Figure 3-43. Predicted Simulated Hydraulic Heads at WHWC-12
in the Western Heights Management Area

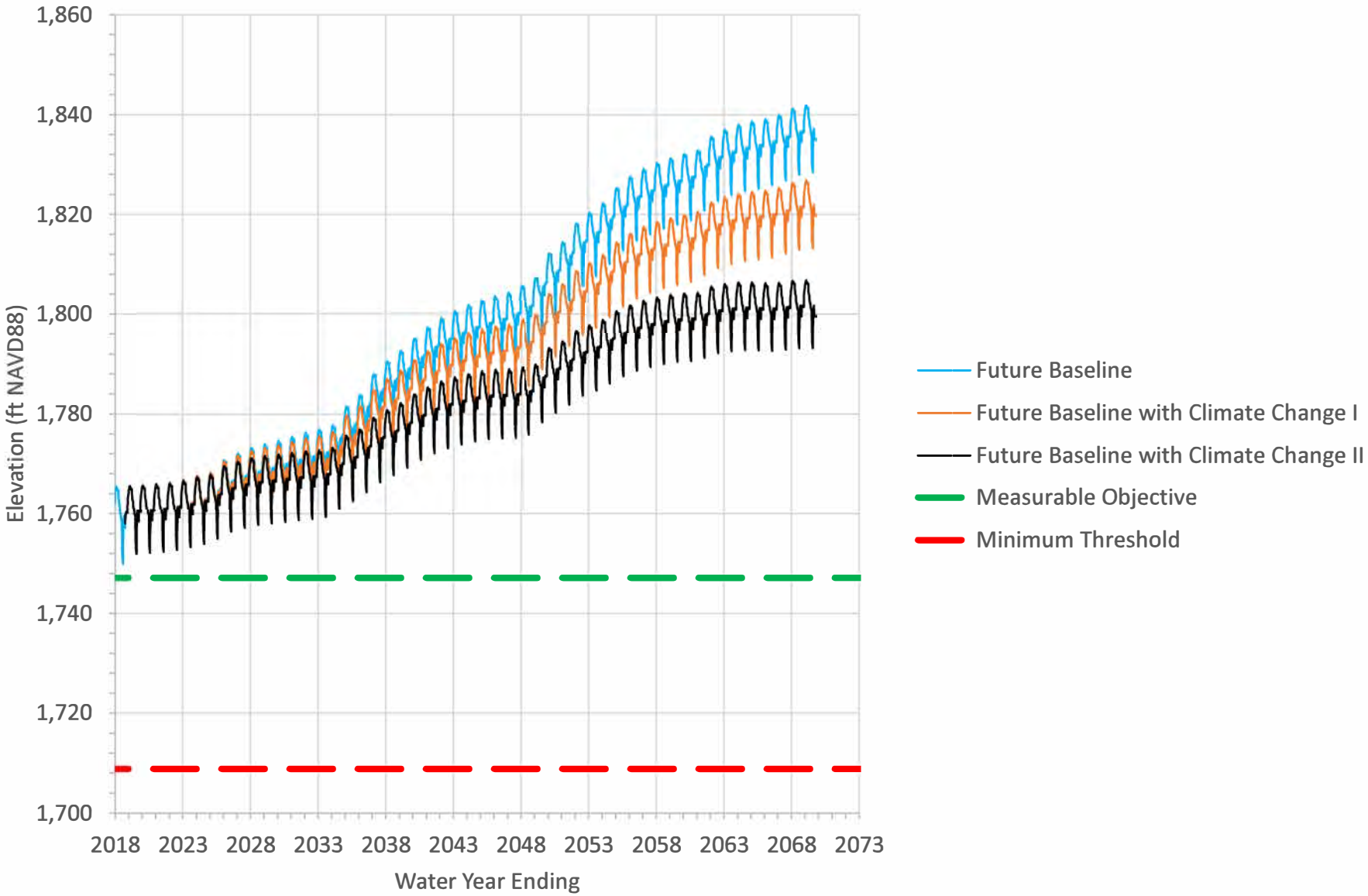

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Figure 3-44. Predicted Simulated Hydraulic Heads at WHWC-14
in the Western Heights Management Area

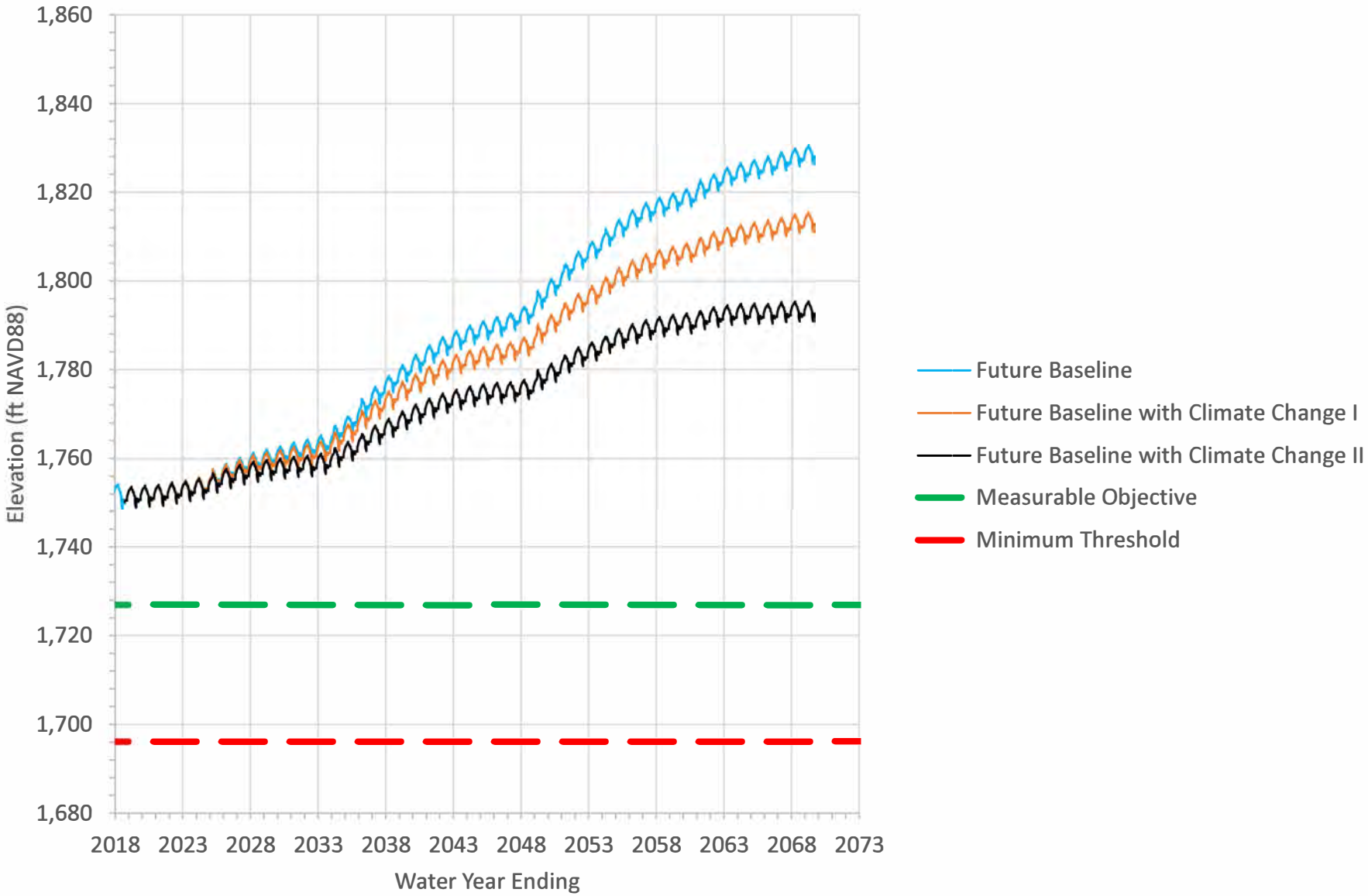

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Figure 3-45. Predicted Simulated Hydraulic Heads at USGS Dunlap #2 Well in the Western Heights Management Area

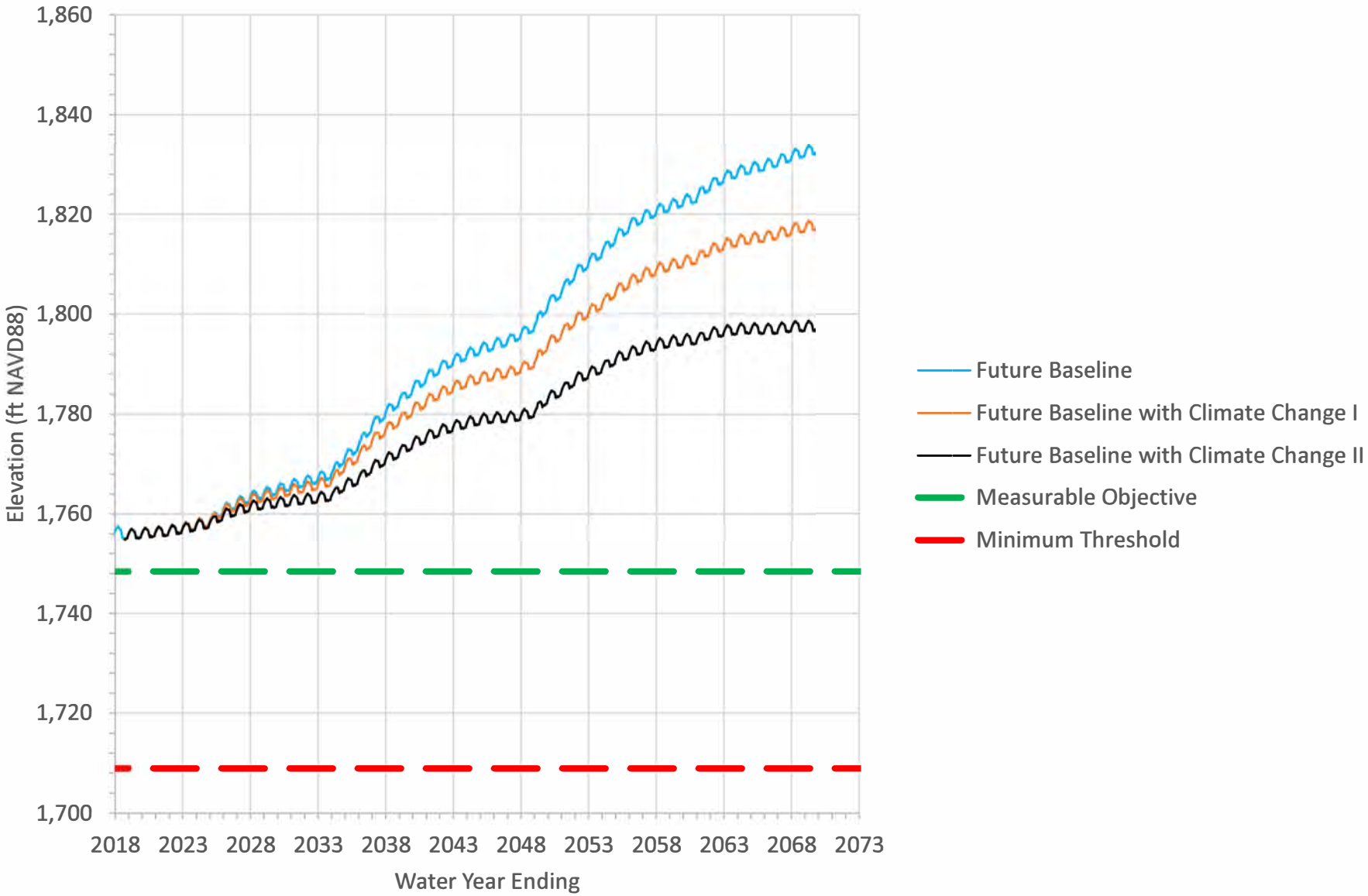

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Figure 3-46. Predicted Simulated Hydraulic Heads at USGS Dunlap #4 Well in the Western Heights Management Area

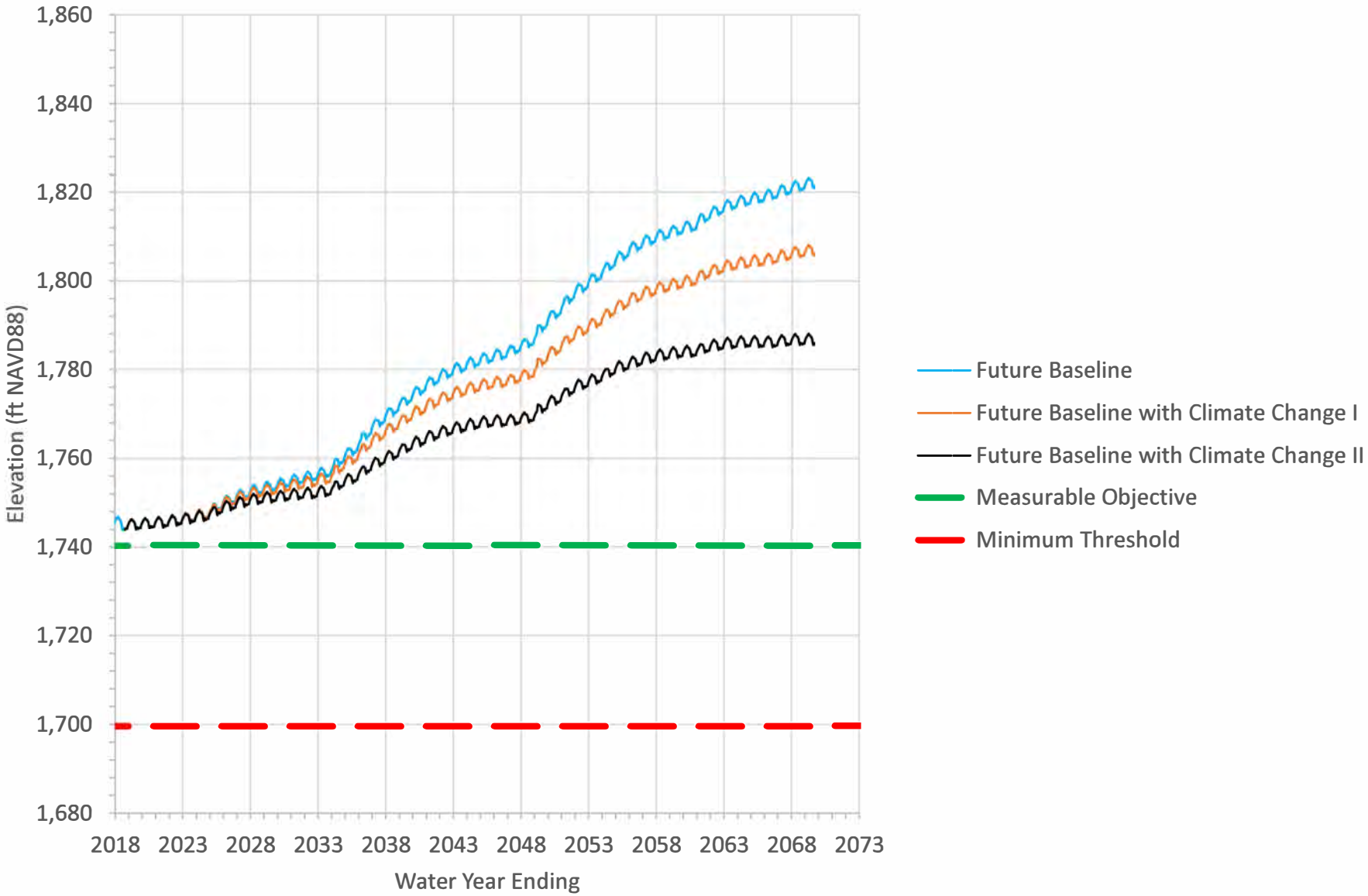

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Figure 3-47. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the Western Heights Management Area

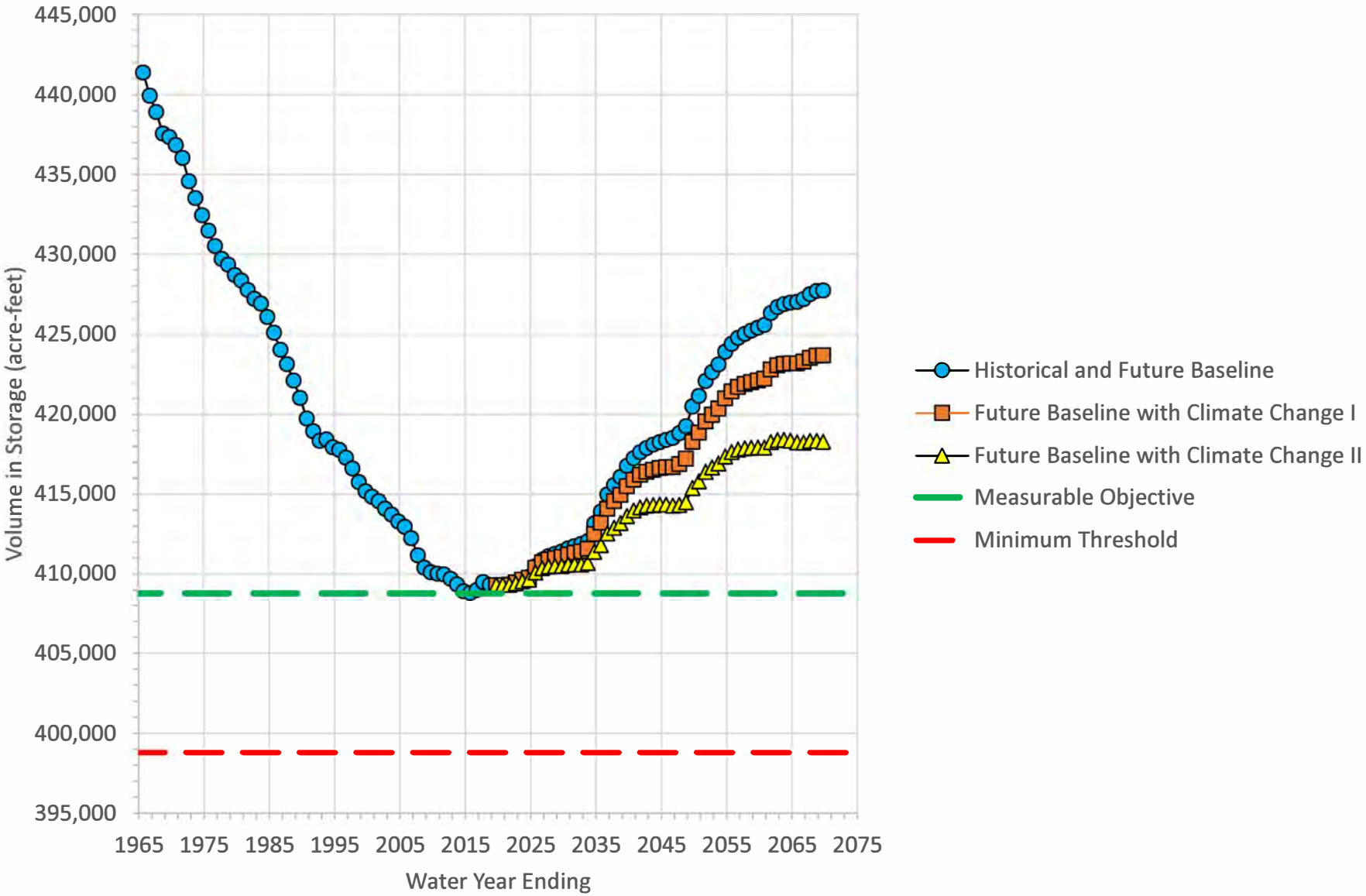

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Figure 3-48. Groundwater Elevations and Sustainability Criteria for the San Timoteo Management Area

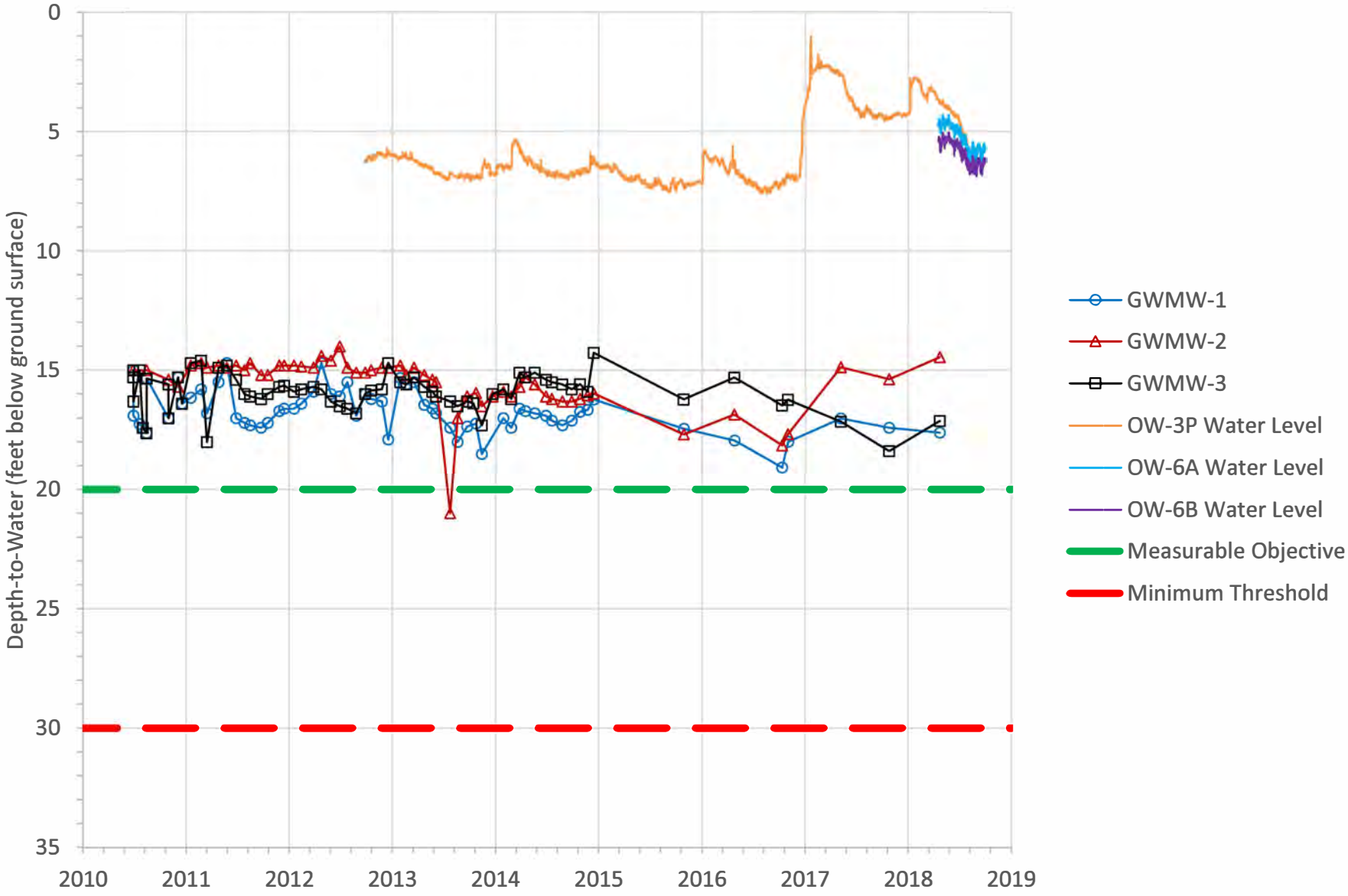

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Figure 3-49. Historical Groundwater Elevations Measured in the San Timoteo Management Area

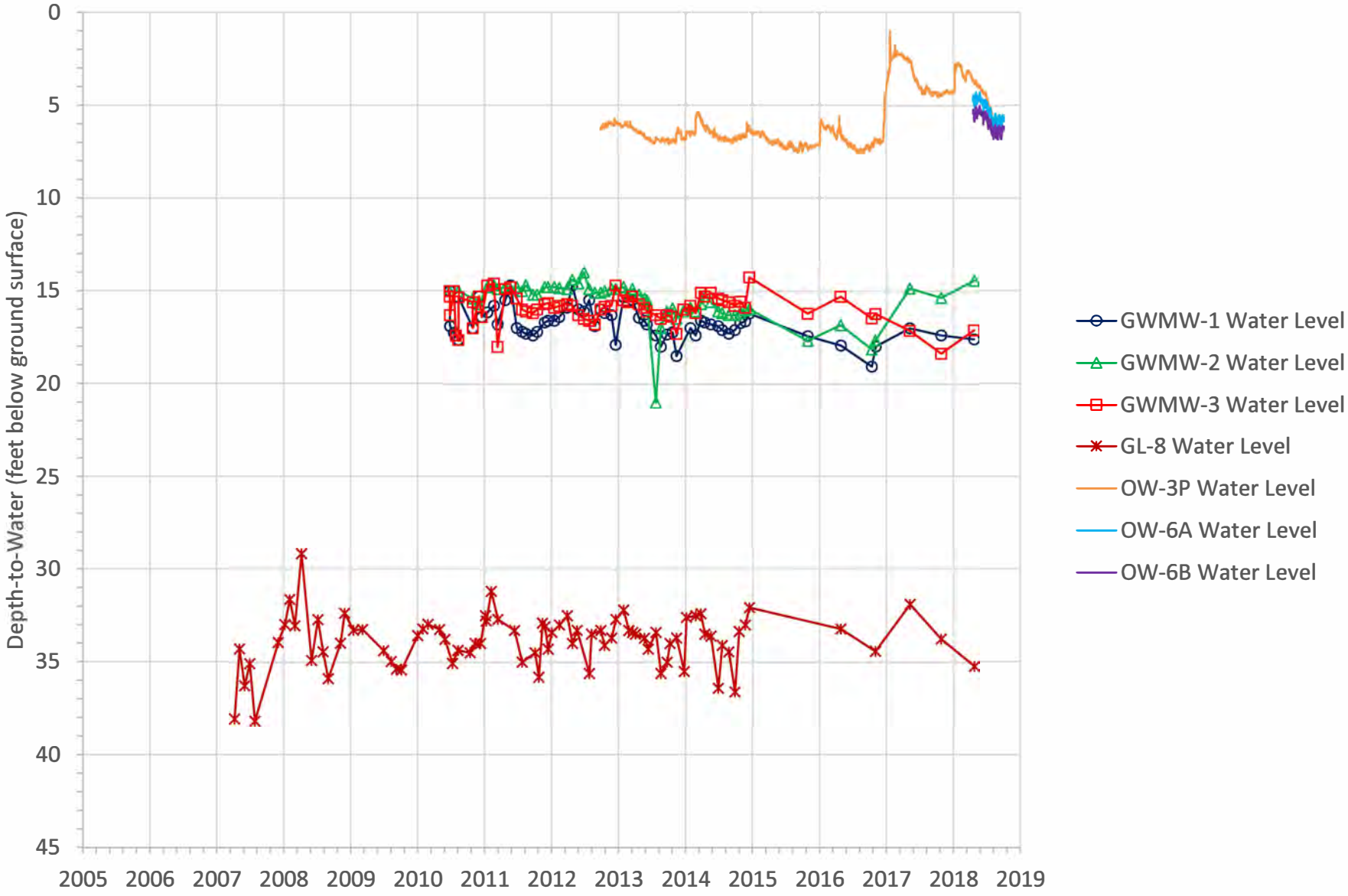

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Figure 3-50. Groundwater Elevations at Nested Well GWMW-5
in the San Timoteo Management Area

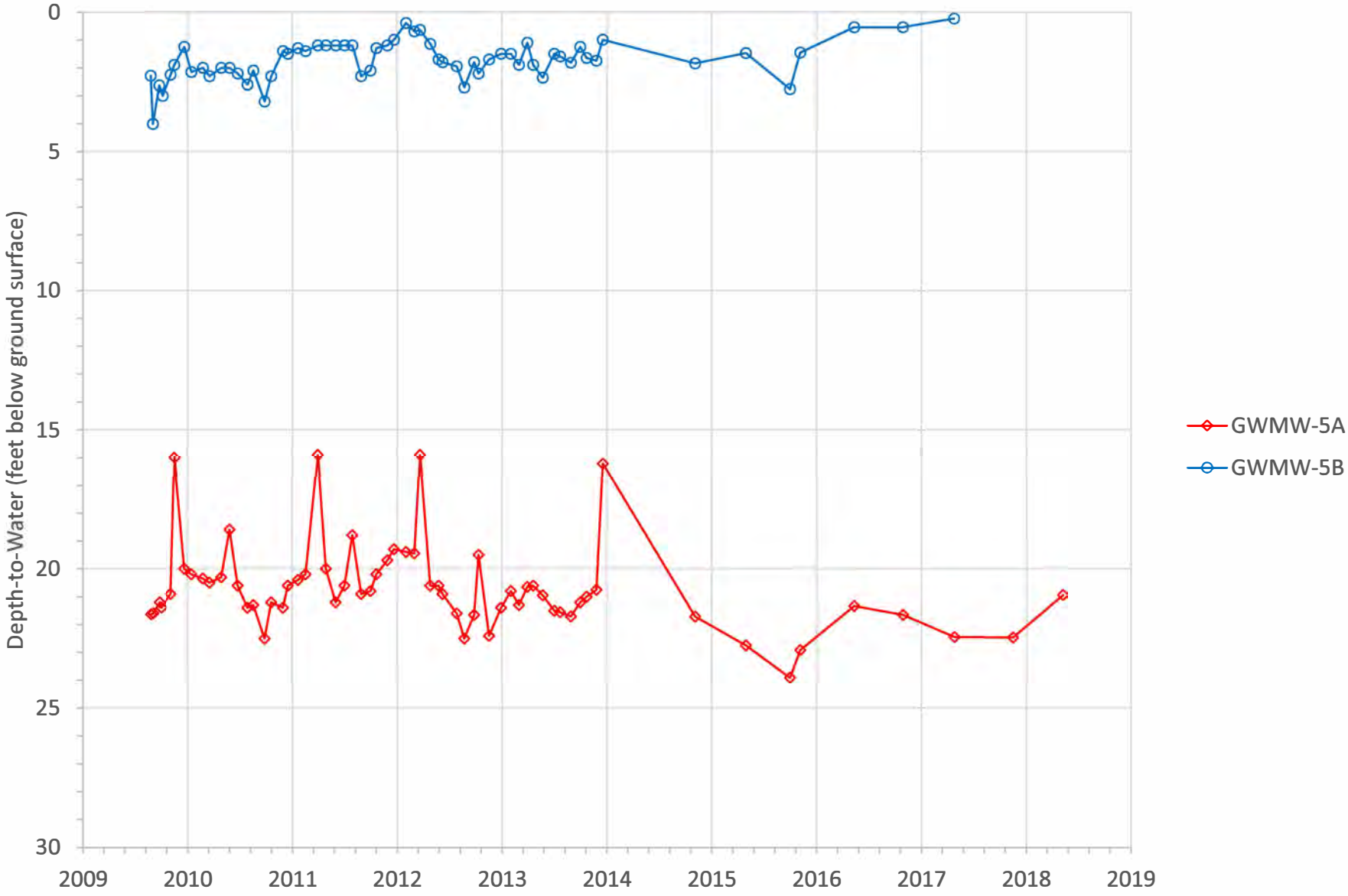

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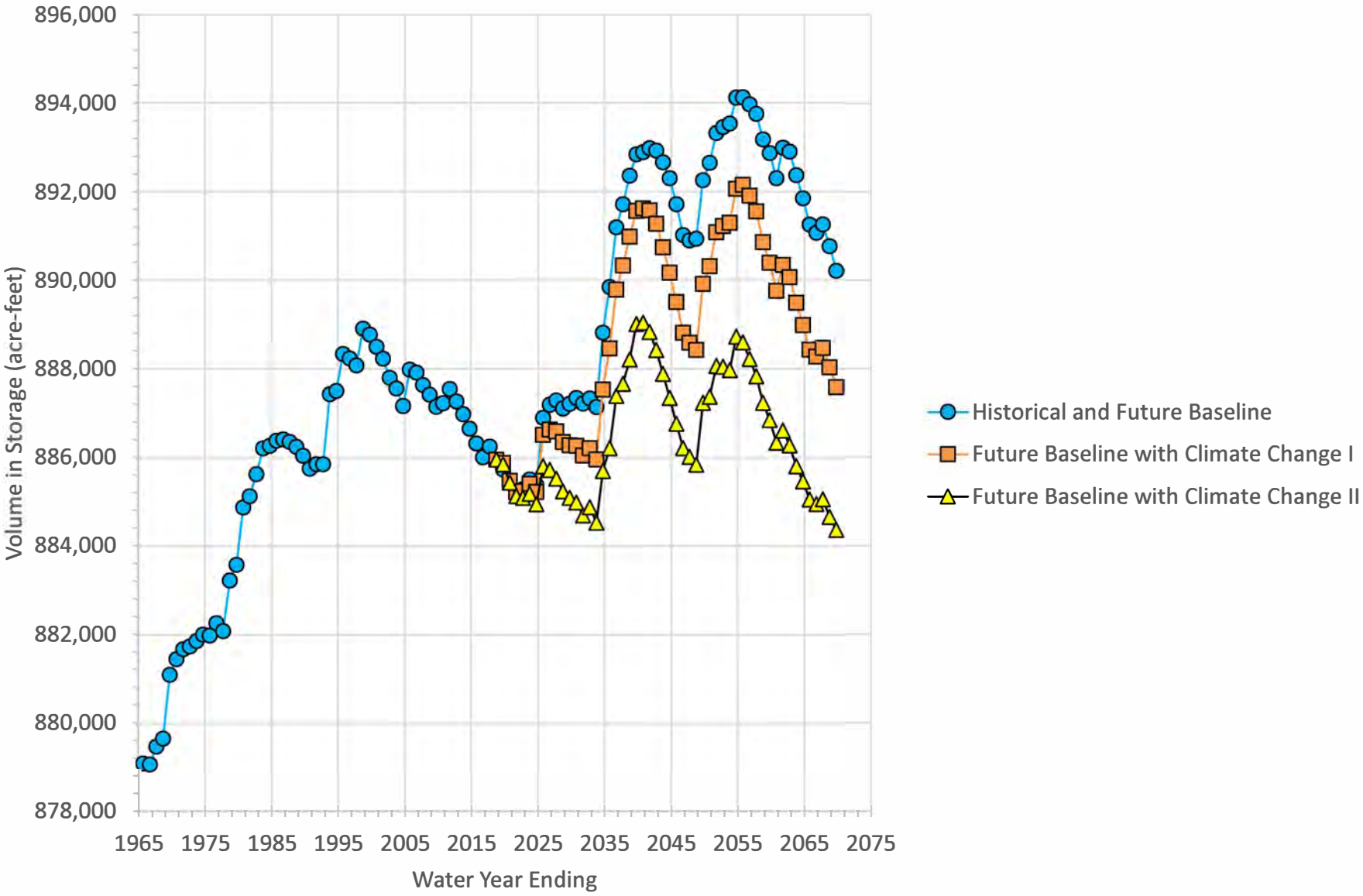
Figure 3-51. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the San Timoteo Management Area



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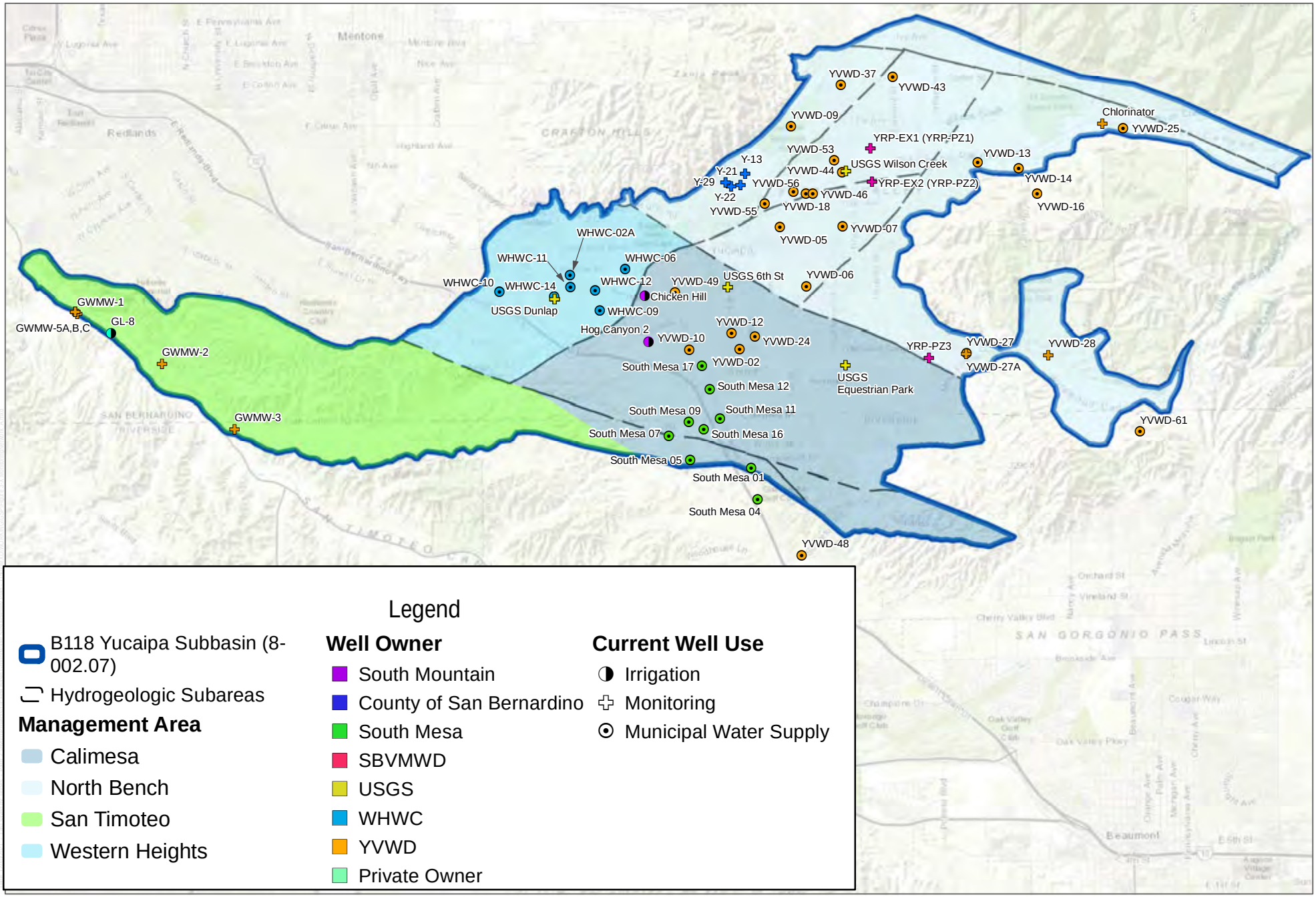

SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

DUDEK

0 0.5 1 Miles

FIGURE 3-52

Yucaipa Subbasin Groundwater Monitoring Network

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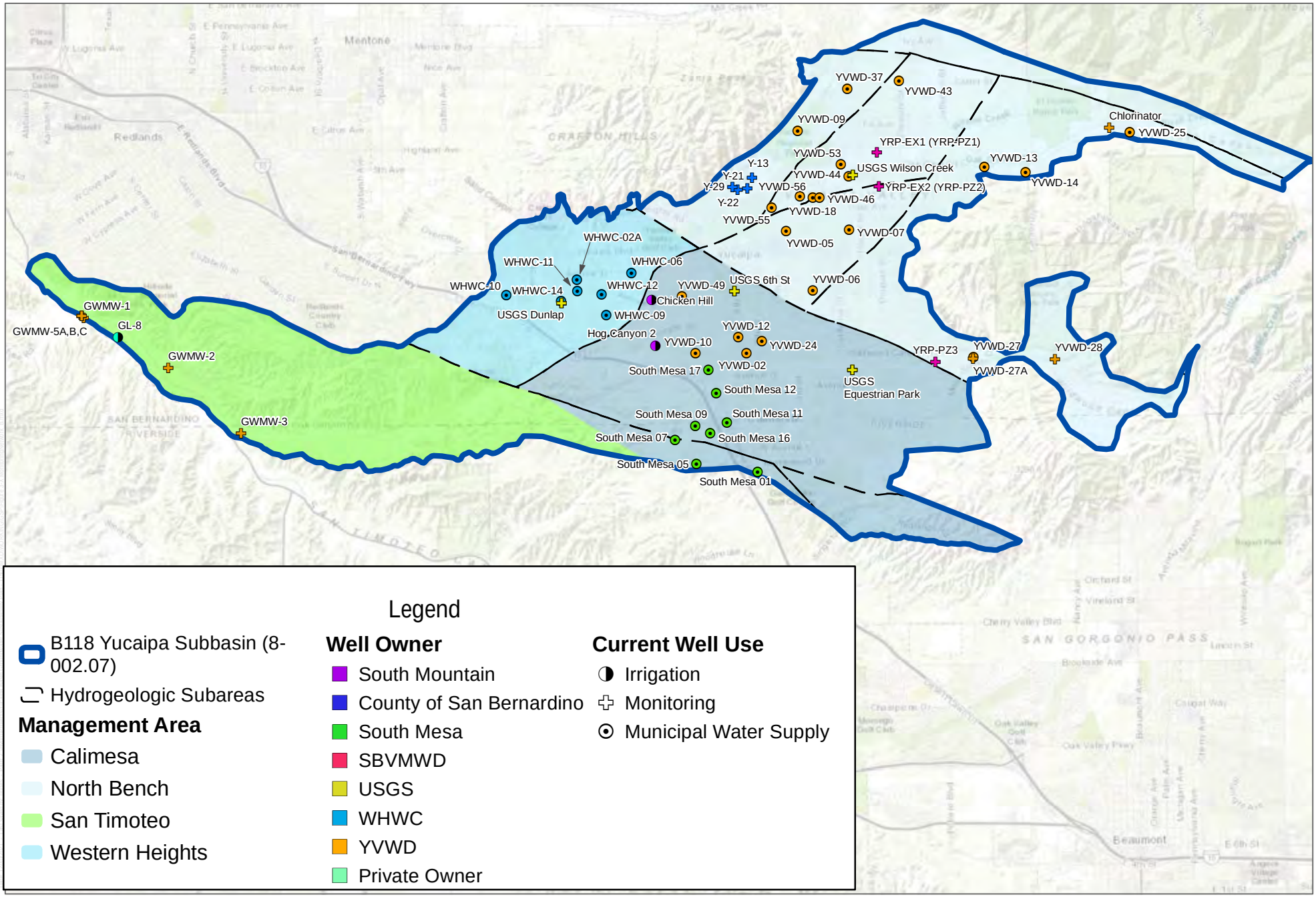

SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

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0 0.5 1 Miles

FIGURE 3-53

Monitoring Network Wells Designated to Measure Groundwater Elevations

Yucaipa Subbasin Groundwater Sustainability Plan

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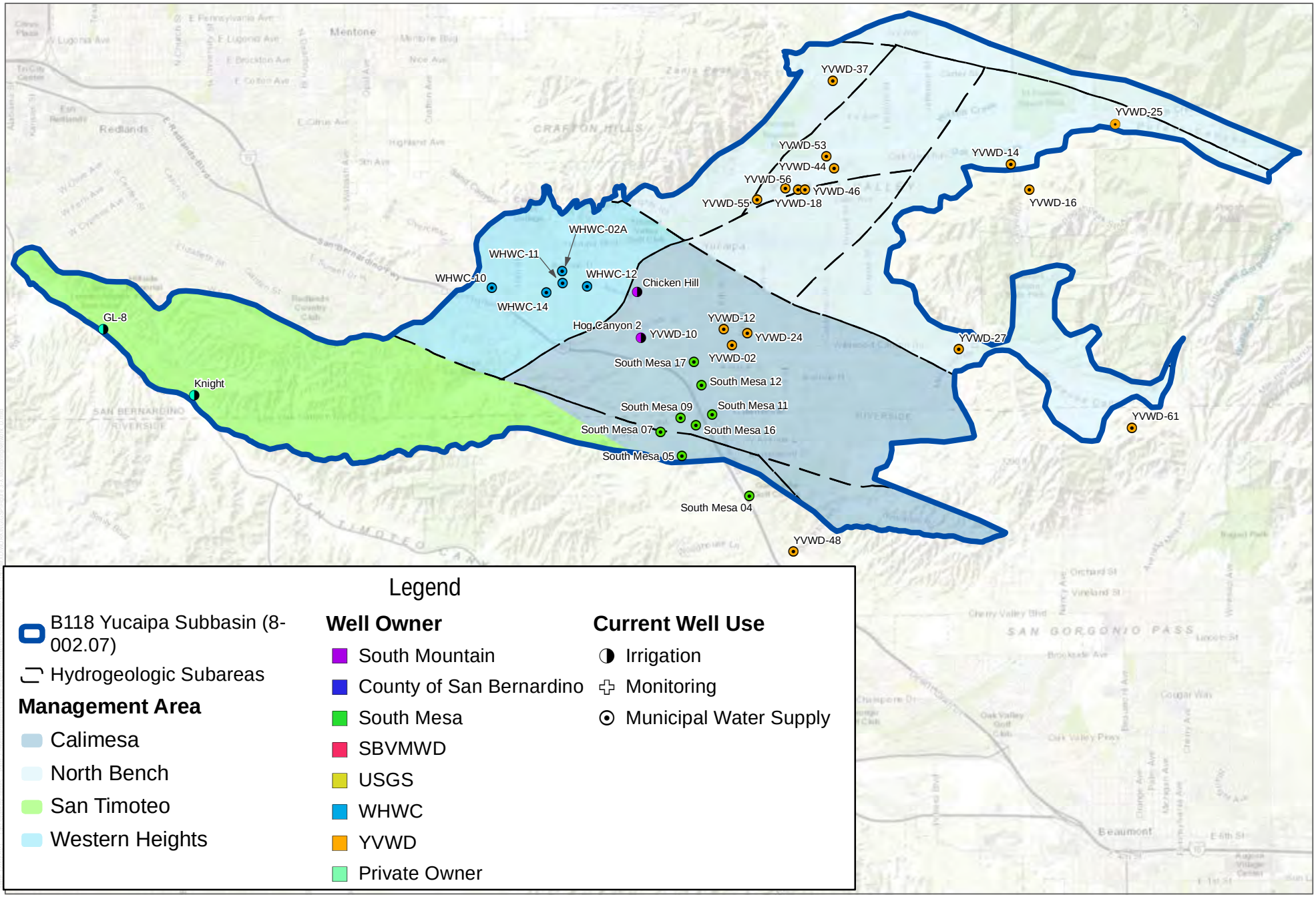

SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

FIGURE 3-54

Monitoring Network Wells Designated to Measure Groundwater Production

Yucaipa Subbasin Groundwater Sustainability Plan

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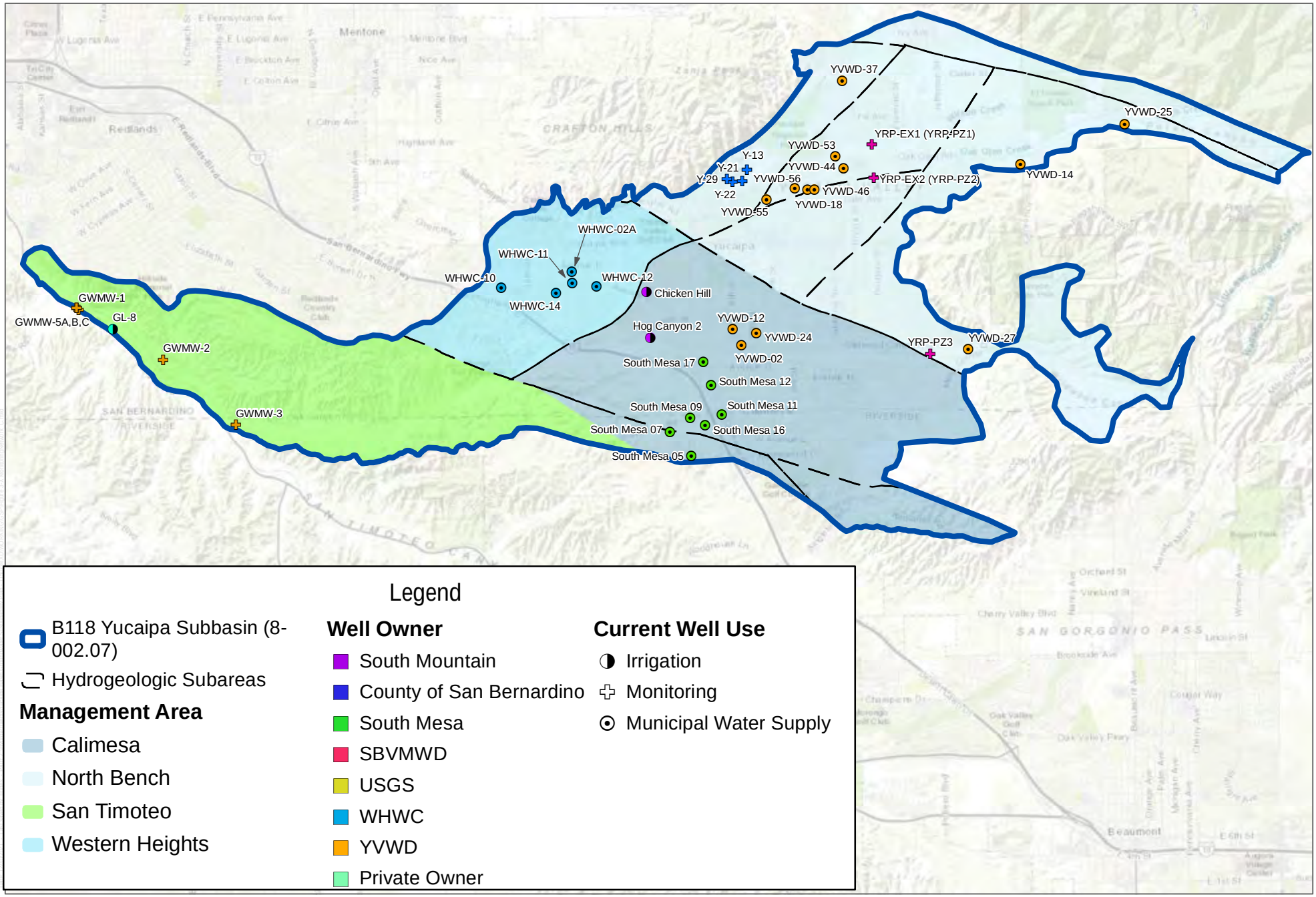

SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

FIGURE 3-55

Monitoring Network Wells Designated to Measure Groundwater Quality

Yucaipa Subbasin Groundwater Sustainability Plan

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4 Projects and Management Actions

4.1 Introduction to Projects and Management Actions

Sub-article 5 of Article 5 of the California Code of Regulations (CCR) Division 2 Chapter 1.5 (23 CCR, Section 354.42–354.44) describes the criteria for projects and management actions to be included in a Groundwater Sustainability Plan (GSP) that will help achieve the sustainability goal established for the Plan Area over the planning and implementation horizon. Currently, the Yucaipa Subbasin is being managed sustainably. The importation of State Water Project (SWP) water as a supplemental source of water has allowed the water purveyors to reduce groundwater production in the Subbasin to below the estimated sustainable yield. Consequently, groundwater levels have recovered 50 to 200 feet in the past 10 years with groundwater storage increasing by approximately 18,000 acre-feet (AF) (Section 2.8, Water Budget Analysis).

Future projections with groundwater production constrained to the estimated sustainable yield of 10,980 acre-feet per year (AFY), which is higher than the average annual extraction of 9,100 AFY observed from the 2014 water year (WY) to the-2018 WY period, indicate that the Yucaipa Subbasin will not experience undesirable results over the 50-year planning and implementation period. The simulated Future Baseline with Climate Change II scenario using the U.S. Geological Survey (USGS) Yucaipa Integrated Hydrologic Model (YIHM) indicated that conditions in the Calimesa Management Area may decline below the measurable objective and trend toward the minimum threshold (Figure 3-35). Under such conditions that may be experienced in the Calimesa Management Area and throughout the Subbasin, the Yucaipa Groundwater Sustainability Agency (GSA) has defined management actions that will be implemented to prevent undesirable results.

The management actions included in this chapter document the actions that the Yucaipa GSA will implement in the event that groundwater elevations in one or more management areas decline below their respective measurable objectives and minimum thresholds. The management actions are not currently necessary to achieve sustainability in the Plan Area, which has experienced rising groundwater levels and increased groundwater in storage since 2008 (Section 2.7, Current and Historical Groundwater Conditions). However, the following management actions will be implemented, as necessary, to respond to declining conditions that deviate from the future predictions by the YIHM.

Currently, no new projects have been identified as necessary to achieve groundwater sustainability in the Plan Area during the 50-year planning and implementation period. Member agencies of the Yucaipa GSA have constructed spreading basins and stormwater capture basins and are in the process of designing and constructing new ones to enhance recharge to the Subbasin, thereby reducing dependence on imported water. The Wilson Creek and Oak Glen Creek spreading basins were designed to receive SWP water from the East Branch Extension and to capture major stormwater flows. Storage of imported water during wet years helps to achieve the objective of importing all of Valley District's SWP entitlement water into the basin.

4.2 Management Actions

Minimum thresholds and measurable objectives were defined for the four management areas in the Plan Area. For the North Bench, Calimesa, and Western Heights Management Areas, minimum thresholds were defined at either the historical low in groundwater elevations in the North Bench Management Area, or below historical lows in the Calimesa and Western Heights Management Areas. The minimum threshold and measurable objective for the San

Timoteo Management Area were defined to prevent significant and unreasonable effects on groundwater-dependent ecosystems (GDEs) identified along San Timoteo Creek. A drought buffer was defined for the North Bench, Calimesa, and Western Heights Management Areas to provide operational flexibility between their respective measurable objectives and minimum thresholds.

4.2.1 Management Action No. 1 – Reduce Net Use of Groundwater When Groundwater Levels Decline below Measurable Objectives

The drought buffers established for the North Bench, Calimesa, and Western Heights Management Areas provide operational flexibility to implement management actions when groundwater conditions decline below their respective measurable objectives (Section 3.4, Minimum Thresholds). The drought buffers were developed based on observed historical conditions and the uncertainty in model predictions (see Section 2.8.8, Characterization of Model Sensitivity and Predictive Uncertainty). The following management actions for these three management areas will prevent undesirable results related to the chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence. The management action implemented when groundwater levels decline below the measurable objective for the San Timoteo Management Area will prevent significant and unreasonable effects resulting in a loss in surface water interconnected with shallow groundwater that sustain GDEs.

4.2.1.1 North Bench Management Area

The North Bench Management Area includes eight representative monitoring points (RMPs), each associated with a groundwater elevation representing the measurable objective at 230,000 AF in storage and the minimum threshold at 220,000 AF in storage (Table 3-3). Currently, groundwater levels are 50 feet to 130 feet above the measurable objective levels designated at the RMPs (Table 4-1).

Table 4-1. Groundwater Elevations Pertaining to Management Actions for the North Bench Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Minimum Threshold (feet NAVD88)	Groundwater Elevations at the Measurable Objective (feet NAVD88)
YVWD-06	2,359.99	2,255.47	2,276.91
YVWD-07	2,435.42	2,239.38	2,318.07
YVWD-37	2,585.64	2,503.91	2,527.68
YVWD-46	2,357.42	2,209.32	2,228.73
YVWD-53	2,446.53	2,315.55	2,337.17
YVWD-56	2,426.23	2,269.24	2,291.03
USGS Wilson Creek #1 (820′–840′)	2,455.55	2,300.24	2,329.25
USGS Wilson Creek #4 (350′–370′)	2,482.04	2,317.09	2,349.27
Average	**2,443.60**	**2,301.27**	**2,332.26**

The YIHM predicts that future groundwater elevations with groundwater production constrained to the estimated sustainable yield of 3,940 AFY will remain above the measurable objective levels associated with each RMP (Figures 3-7 to 3-14). However, the following conditions will trigger management actions to be implemented by the Yucaipa GSA:

1) If groundwater elevations decline below the measurable objective levels at 50% or more of the RMPs (Table 4-1) for 2 consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the North Bench Management Area will decrease by 25% of the estimated sustainable yield of 3,940 AFY, or by 990 AFY. The Yucaipa GSA will implement this management action by either reducing groundwater production by 990 AFY, artificially recharging the aquifer with an additional 990 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 990 AFY, or any combination of these actions that result in a net reduction of groundwater use by 990 AFY. Because the management area is not experiencing or is expected to experience conditions below the measurable objective through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do develop and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.
   b) The 25% net reduction in groundwater use, which may be achieved with a reduction in groundwater production from 3,940 AFY to 2,950 AFY, was selected because historical data indicated that, when groundwater production was at 3,000 AFY or less, groundwater levels and the volume in storage were stable or increased during periods of "below normal" to "wet" water year types (Figures 2-3, 3-3, and 3-6). The Yucaipa GSA, at its discretion, may modify the 25% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area and avoid undesirable results.
   c) Implementing this management action will also require the Yucaipa GSA to reevaluate and, possibly, recalibrate the YIHM to improve the accuracy of the model in predicting future conditions. This action will be implemented if the occurrence is outside the scheduled 5-year evaluation, which already includes a reevaluation of the YIHM.
2) If conditions continue to decline and groundwater elevations at 50% or more of the RMPs fall below their respective minimum threshold levels (Table 4-1) for 2 consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the North Bench Management Area will decrease by 35% of the estimated sustainable yield of 3,940 AFY, or by 1,380 AFY. The Yucaipa GSA will achieve this management action by either reducing groundwater production by 1,380 AFY, artificially recharge the aquifer with an additional 1,390 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater withdrawal by 1,380 AFY, or any combination of these actions that result in a net reduction of groundwater withdrawal by 1,380 AFY. Because the management area is not experiencing or is expected to experience conditions below the minimum threshold through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do fall below the minimum threshold and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in improving conditions to achieve groundwater sustainability.
   b) The 35% net reduction in groundwater use, which may represent a reduction in groundwater production to 2,560 AFY, was selected because historical data indicated that, when groundwater production was at 2,600 AFY or less, groundwater levels and the volume in storage were stable or increased during periods

of "dry" to "wet" water year types (Figures 2-3, 3-3, and 3-6). The Yucaipa GSA, at its discretion, may modify the 35% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area.

4.2.1.1.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action. The goal of the management action is to reduce the net use of groundwater from the management area by 25% to 35% of the estimated sustainable yield until conditions improve to the measurable objective where the management area is managed sustainably.

4.2.1.1.2 Expected Benefits and Evaluation

The sustainability criteria established for the North Bench Management Area were designed to protect the long-term groundwater supply and maintain production for the existing wells operated by YVWD and private users. The establishment of a drought buffer, represented by a range in the volume in storage from 220,000 to 230,000 AF, provides operational flexibility for the Yucaipa GSA to implement these management actions to avoid or improve conditions from undesirable results. These actions allow the management area to recover during "dry" to "wet" water year types when recharge, either naturally or artificially, or both, will exceed the net withdrawal of groundwater.

Groundwater in storage will increase and chronic declines in groundwater elevation will cease or reverse with a net reduction in groundwater withdrawal from the management area. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and prevented the chronic decline in groundwater levels. Conditions at the measurable objective or higher are at or above the historical low, which will negate the undesirable result of land subsidence potentially occurring due to a long-term groundwater level decline below the historical low.

4.2.1.1.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. When groundwater levels measured at 50% or more of the RMPs fall below their respective measurable objective levels for 2 consecutive years, or
2. When groundwater levels measured at 50% or more of the RMPs fall below their respective minimum threshold levels for 2 consecutive years.

4.2.1.1.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the Plan Area, including the North Bench Management Area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action if it requires a reduction in their respective groundwater production.

4.2.1.1.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per the California Water Code, Section 10726.4.

4.2.1.1.6 Implementation Schedule

There is no specific implementation schedule for this management action as projected groundwater levels indicate this management action will not be required. The Yucaipa GSA will implement this management action within 6 months of determining that one of the criteria for implementation described in Section 4.2.1.1.3, Circumstances for Implementation has been met.

4.2.1.1.7 Legal Authority

The Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.1.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. However, if this management action is implemented and groundwater production is decreased, then additional costs may be incurred by YVWD (the only water purveyor operating in the North Bench Management Area), or its respective customers, to supply additional supplemental water, enact water conservation programs, or other actions to meet water demands.

4.2.1.2 Calimesa Management Area

The Calimesa Management Area includes 13 RMPs; each is associated with groundwater elevations representing the measurable objective at 798,700 AF and the minimum threshold at 772,700 AF in storage (Table 3-4; Table 4-2). The measurable objective is represented by the historical low condition and indicates that no undesirable results are occurring in the management area.

Table 4-2. Groundwater Elevations Pertaining to Management Actions for the Calimesa Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Measurable Objective (Tier 1 in the Drought Buffer) (feet NAVD88)	Groundwater Elevations at Tier 2 in the Drought Buffer (feet NAVD88)	Groundwater Elevations at Tier 3 in the Drought Buffer (feet NAVD88)	Estimated Measured Groundwater Elevations at the Minimum Threshold (feet NAVD88)
Hog Canyon 2	2,090.13	2,083.77	2,063.66	2,040.10	2,021.82
South Mesa 07	2,062.73	2,044.08	2,022.66	2,000.74	1,982.14
South Mesa 09	2,068.70	2,024.19	1,993.77	1,972.09	1,958.58

Table 4-2. Groundwater Elevations Pertaining to Management Actions for the Calimesa Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Measurable Objective (Tier 1 in the Drought Buffer) (feet NAVD88)	Groundwater Elevations at Tier 2 in the Drought Buffer (feet NAVD88)	Groundwater Elevations at Tier 3 in the Drought Buffer (feet NAVD88)	Estimated Measured Groundwater Elevations at the Minimum Threshold (feet NAVD88)
South Mesa 12	2,095.74	2,080.33	2,059.58	2,036.88	2,018.27
South Mesa 17	2,092.77	2,068.72	2,048.20	2,024.96	2,006.30
USGS 6th St #1 (870′–930′)	2,133.89	2,121.89	2,101.45	2,078.07	2,058.61
USGS 6th Street #4 (380′–400′)	2,170.93	2,175.05	2,165.66	2,146.93	2,127.70
USGS Equestrian Park #1 (830′–850′)	2,203.28	2,203.61	2,197.82	2,186.96	2,173.37
USGS Equestrian Park #4 (380′–400′)	2,206.59	2,207.39	2,201.74	2,190.86	2,176.87
YVWD-10	2,087.74	2,076.79	2,056.62	2,033.14	2,014.16
YVWD-12	2,094.66	2,081.92	2,062.26	2,037.96	2,020.26
YVWD-24	2,184.66	2,120.42	2,100.29	2,075.90	2,061.63
YVWD-49	2,082.24	2,076.94	2,056.68	2,033.31	2,014.03
Average	**2,121.08**	**2,105.01**	**2,086.95**	**2,065.99**	**2,048.75**

The YIHM predicts that future groundwater elevations with groundwater production constrained to the estimated sustainable yield of 4,955 AFY will remain above the minimum threshold levels associated with each RMP, but will fall below the measurable objective levels under the Future Baseline with Climate Change II scenario (Figures 3-22 to 3-34). The following conditions will trigger management actions to be implemented by the Yucaipa GSA:

1) If groundwater elevations decline at 50% or more of the RMPs below their respective measurable objective levels for two consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the Calimesa Management Area will be reduced under a three-tier structure depending on the volume of groundwater in storage below the historical low of 798,700 AF. Actions to be implemented under the three-tier structure are as follows:
      i) The first tier extends from 798,700 to 790,700 AF, or the top 8,000 AF in the drought buffer (Figure 4-1). Groundwater elevations at the RMPs that represent the historical low (i.e., the top of tier 1) range from 2,024 to 2,204 feet NAVD88 (Table 4-2). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 1 levels for two consecutive years, then a net reduction in groundwater use by 5% of the estimated sustainable yield of 4,955 AFY, or by 250 AFY, is required. The Yucaipa GSA

will implement this management action by either reducing groundwater production by 250 AFY, artificially recharging the aquifer with an additional 250 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 250 AFY, or any combination of these actions that result in a net reduction of groundwater use by 250 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at or above the measurable objective. However, if conditions decline to this first tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

ii) The second tier extends from 790,700 to 781,700 AF, or for 9,000 AF below the first tier in the drought buffer (Figure 4-1). Groundwater elevations at the RMPs that represent the top of tier 2 range from 1,994 to 2,202 feet NAVD88 (Table 4-2). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 2 levels for two consecutive years, then a net reduction in groundwater use by 10% of the estimated sustainable yield of 4,955 AFY, or by 500 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 500 AFY, artificially recharge the aquifer with an additional 500 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater use by 500 AFY, or any combination of these actions that result in a net reduction of groundwater use by 500 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at or above the measurable objective. However, if conditions decline to this second tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

iii) The third tier extends from 781,700 to 772,700 AF, or the bottom 9,000 AF in the drought buffer (Figure 4-1). Groundwater elevations at the RMPs that represent the top of tier 3 range from 1,972 to 2,191 feet NAVD88 (Table 4-2). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 3 levels for two consecutive years, then a net reduction in groundwater use by 15% of the estimated sustainable yield of 4,955 AFY, or by 750 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 750 AFY, artificially recharge the aquifer with an additional 750 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater use by 750 AFY, or any combination of these actions that result in a net reduction of groundwater use by 750 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at or above the measurable objective. However, if conditions decline to this third tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

b) The 5% to 15% net reduction in groundwater use was selected because historical data indicated that, when groundwater production was at these rates or less, groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-3, 3-19 and 3-21). The Yucaipa GSA, at its discretion, may modify the 5% to 15% reduction (e.g., implement a higher percentage of reduction) if these rates are not sufficient to improve conditions in the management area and avoid undesirable results.

c) Implementing this management action will also require the Yucaipa GSA to reevaluate and, possibly, recalibrate the YIHM to improve the accuracy of the model in predicting future conditions. This action will be implemented if the occurrence is outside the scheduled 5-year evaluation, which already includes a reevaluation of the YIHM.

2) If conditions continue to decline and groundwater elevations at 50% or more of the RMPs fall below their respective minimum threshold levels for two consecutive years, then the following management action will be implemented:
    a) Groundwater elevations at the RMPs that represent the minimum threshold range from 1,959 to 2,177 feet NAVD88 (Table 4-2). The net use of groundwater from the Calimesa Management Area will be reduced by 20% of the estimated sustainable yield of 4,955 AFY, or by 990 AFY. The Yucaipa GSA will achieve this management action by either reducing groundwater production by 990 AFY, artificially recharging the aquifer with an additional 990 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 990 AFY, or any combination of these actions that result in a net reduction of groundwater use by 990 AFY. Because the management area is not experiencing or is expected to experience conditions below the minimum threshold through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do fall below the minimum threshold and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in improving conditions to achieve groundwater sustainability.
    b) The 20% net reduction in groundwater use, which may be achieved with a reduction in groundwater production by 990 AFY to 3,955 AFY, was selected because historical data indicated that, when groundwater production was at 4,000 AFY or less, groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-3, 3-19 and 3-21). The Yucaipa GSA, at its discretion, may modify the 20% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area.

4.2.1.2.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action. The goal of the management action is to reduce the net use of groundwater from the management area by 5% to 20% of the estimated sustainable yield until conditions improve to the measurable objective where the management area is managed sustainably and no undesirable results are experienced. Currently, groundwater conditions in the Calimesa Management Area are managed sustainably.

4.2.1.2.2 Expected Benefits and Evaluation

The sustainability criteria established for the Calimesa Management Area were designed to protect the long-term groundwater supply and maintain production for the existing wells operated by South Mountain, South Mesa, YVWD, and private users. The establishment of a drought buffer, represented by a range in the volume in storage from 798,700 to 772,700 AF, provides operational flexibility for the Yucaipa GSA to implement these management actions to avoid or improve conditions from undesirable results. These actions allow the management area to recover during "dry" to "wet" water year types when recharge will exceed the net withdrawal of groundwater.

Groundwater in storage will increase and chronic declines in groundwater elevations will cease or reverse with a net reduction in groundwater use from the management area. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and prevented the chronic decline in groundwater levels. Conditions at the measurable objective or higher are at or above the historical

low, which will negate the undesirable result of land subsidence potentially occurring due to a long-term groundwater level decline below the historical low.

4.2.1.2.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. When groundwater levels measured at 50% or more of the RMPs fall below their respective measurable objective levels and drought buffer tiers for 2 consecutive years, or
2. When groundwater levels measured at 50% or more of the RMPs fall below their respective minimum threshold levels for 2 consecutive years.

4.2.1.2.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the Calimesa Management Area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action if it requires a reduction in their respective groundwater production.

4.2.1.2.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per the California Water Code, Section 10726.4.

4.2.1.2.6 Implementation Schedule

The YIHM predicts long-term fluctuations of groundwater elevations at the RMPs above the measurable objective until approximately 2058 when drier conditions prevail and groundwater levels experience a declining trend to the end of the 50-year planning and implementation horizon (Figures 4-2 to 4-14). The circumstance for implementing this management action when groundwater elevations at 50% or more of the RMPs decline below their respective tier 1 levels is predicted in 2066. This is based on predicted groundwater elevations at Hog Canyon 2, South Mesa 7, YVWD-10, YVWD-12, YVWD-49, USGS Equestrian Park #1, and USGS 6th Street #1 falling below their respective tier 1 levels by 2065 and remaining below those levels into 2067 (Figures 4-2, 4-6, 4-7, 4-9, 4-10, 4-11, and 4-13). The Yucaipa GSA will implement this management action within 6 months from confirming the predicted declines in groundwater levels by reducing the net use of groundwater from the management area by 5%.

4.2.1.2.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.2.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. However, if this management action is implemented, then additional costs may be incurred by South Mountain, South Mesa,

YVWD, or their respective customers, and private users to supply additional supplemental water, enact water conservation programs, or other actions to meet water demands. The responsibilities for covering costs between the water purveyors and private users, if applicable, will be determined at the time of implementation and will depend on their respective action and/or program implemented to achieve the overall goal of reducing the net use of groundwater from the management area.

4.2.1.3 Western Heights Management Area

The Western Heights Management Area includes seven RMPs, each associated with groundwater elevations representing the measurable objective at 408,800 AF and the minimum threshold at 398,800 AF in storage (Table 3-5; Table 4-3). The measurable objective is represented by the historical low condition and indicates that no undesirable results are occurring in the management area.

Table 4-3. Groundwater Elevations Pertaining to Management Actions for the Western Heights Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Measurable Objective (Tier 1 of Drought Buffer) (feet NAVD88)	Groundwater Elevations at Tier 2 of Drought Buffer (feet NAVD88)	Groundwater Elevations at the Minimum Threshold (feet NAVD88)
WHWC-2A	1,740.68	1,735.68	1,716.00	1,695.24
WHWC-10	1,766.04	1,750.04	1,734.04	1,714.26
WHWC-11	1,723.93	1,748.93	1,735.76	1,712.24
WHWC-12	1,757.11	1,747.11	1,732.52	1,708.84
WHWC-14	1,749.90	1,726.90	1,717.20	1,696.12
USGS Dunlap #2 (830′–850′)	1,754.85	1,748.40	1,729.36	1,708.97
USGS Dunlap #4 (440′–460′)	1,743.89	1,740.32	1,720.05	1,699.54
Average	**1,748.06**	**1,742.48**	**1,726.42**	**1,705.03**

The YIHM predicts that future groundwater elevations with groundwater production constrained to the estimated sustainable yield of 1,760 AFY will remain above the measurable objective levels associated with each RMP (Figures 3-40 to 3-46). However, the following conditions will trigger management actions to be implemented by the Yucaipa GSA should conditions decline below the measurable objective:

1) If groundwater elevations decline at 50% or more of the RMPs below their respective measurable objective levels for two consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the Western Heights Management Area will be reduced under a two-tier structure depending on the volume of groundwater in storage below the historical low of 408,800 AF. Actions to be implemented under the two-tier structure are as follows:
      i) The first tier, which begins at the historical low, extends from 408,800 to 403,800 AF, or the top 5,000 AF in the drought buffer (Figure 4-15). Groundwater elevations at the RMPs that represent the historical

low (i.e., the top of tier 1) range from 1,727 to 1,750 feet NAVD88 (Table 4-3). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 1 levels for two consecutive years, then a net reduction in groundwater use by 5% of the estimated sustainable yield of 1,760 AFY, or 90 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 90 AFY, artificially recharging the aquifer with an additional 90 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 90 AFY, or any combination of these actions that result in a net reduction of groundwater use by 90 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at the measurable objective. However, if conditions decline to this first tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

ii) The second tier extends from 403,800 to 398,800 AF, or the bottom 5,000 AF in the drought buffer (Figure 4-15). Groundwater elevations at the RMPs that represent the top of tier 2 range from 1,716 to 1,736 feet NAVD88 (Table 4-3). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 2 levels for two consecutive years, then a net reduction in groundwater use by 10% of the estimated sustainable yield of 1,760 AFY, or by 180 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 180 AFY, artificially recharging the aquifer with an additional 180 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 180 AFY, or any combination of these actions that result in a net reduction of groundwater use by 180 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at the measurable objective. However, if conditions decline to this second tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

b) The 5% to 10% net reduction in groundwater use, which may be achieved with a reduction in groundwater production from 1,760 AFY to 1,670 AFY (5% less) or 1,580 AFY (10% less), was selected because historical data indicated that when groundwater production was at these rates or less groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-35, 3-37, and 3-38). The Yucaipa GSA, at its discretion, may modify the 5% to 10% reduction (e.g., implement a higher percentage of reduction) if these rates are not sufficient to improve conditions in the management area and avoid undesirable results.

c) Implementing this management action will also require the Yucaipa GSA to reevaluate and, possibly, recalibrate the YIHM to improve the accuracy of the model in predicting future conditions. This action will be implemented if the occurrence is outside the scheduled 5-year evaluation, which already includes a reevaluation of the YIHM.

2) If conditions continue to decline and groundwater elevations at 50% or more of the RMPs fall below their respective minimum threshold levels for two consecutive years, then the following management action will be implemented:

a) The net use of groundwater from the Western Heights Management Area will be reduced by 15% of the estimated sustainable yield of 1,760 AFY, or by 260 AFY. Groundwater elevations at the RMPs that represent the minimum threshold range from 1,695 to 1,714 feet NAVD88 (Table 4-3). The Yucaipa GSA will achieve this management action by either reducing groundwater production by 260 AFY, artificially recharge the aquifer with an additional 260 AFY of supplemental water, enact water conservation

programs or other programs that result in a net reduction of groundwater use by 260 AFY, or any combination of these actions that result in a net reduction of groundwater use by 260 AFY. Because the management area is not experiencing or is expected to experience conditions below the minimum threshold through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do fall below the minimum threshold and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in improving conditions to achieve groundwater sustainability.

b) The 15% net reduction in groundwater use, which may be achieved with a reduction in groundwater production by 260 AFY from 1,760 AFY to 1,500 AFY, was selected because historical data indicated that, when groundwater production was at 1,500 AFY or less, groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-35, 3-37, and 3-38). The Yucaipa GSA, at its discretion, may modify the 15% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area.

4.2.1.3.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action. The goal of the management action is to reduce the net use of groundwater from the management area by 5% to 15% of the estimated sustainable yield until conditions improve to the measurable objective where the management area is managed sustainably and no undesirable results are experienced. Currently, groundwater conditions in the Western Heights Management Area are managed sustainably.

4.2.1.3.2 Expected Benefits and Evaluation

The sustainability criteria established for the Western Heights Management Area were designed to protect the long-term groundwater supply and maintain production for the existing wells operated by WHWC and private users. The establishment of a drought buffer, represented by a range in the volume in storage from 408,800 to 398,800 AF, provides operational flexibility for the Yucaipa GSA to implement these management actions to avoid or improve conditions from undesirable results. These actions allow the management area to recover during "dry" to "wet" water year types when recharge will exceed the net withdrawal of groundwater.

Groundwater in storage will increase and chronic declines in groundwater elevation will cease or reverse with a net reduction in groundwater use from the management area. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and prevented a chronic decline in groundwater levels. Conditions at the measurable objective or higher are at or above the historical low, which will negate the undesirable result of land subsidence potentially occurring due to a long-term groundwater level decline below the historical low.

4.2.1.3.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. when groundwater levels measured at 50% or more of the RMPs fall below their respective measurable objective levels and drought buffer tiers for two consecutive years, or
2. when groundwater levels measured at 50% or more of the RMPs fall below their respective minimum threshold levels for two consecutive years.

4.2.1.3.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the Western Heights Management Area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action if it requires a reduction in their respective groundwater production.

4.2.1.3.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per the California Water Code, Section 10726.4.

4.2.1.3.6 Implementation Schedule

The YIHM predicts that groundwater elevations at the RMPs will not decline to tier 1 of the drought buffer through the 50-year planning and implementation horizon (Figures 4-16 to 4-22). Predicted groundwater elevations will not decline to tier 1 levels at more than 50% of the RMPs; therefore, there is no specific implementation schedule for this management action. However, the Yucaipa GSA will implement this management action within 6 months of determining that one of the criteria for implementation described in Section 4.2.1.3.3, Circumstances for Implementation, has been met.

4.2.1.3.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.3.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. However, if this management action is implemented, then additional costs may be incurred by WHWC, or its respective customers, to supply additional supplemental water, enact water conservation programs, or other actions to meet water demands while reducing the net use of groundwater from the management area.

4.2.1.4 San Timoteo Management Area

The San Timoteo Management Area includes six RMPs to characterize shallow groundwater elevations and evaluate whether groundwater production from the principal aquifer will cause significant and unreasonable effects on the interconnection between surface water and groundwater. GDEs have been identified along the reach of San Timoteo Creek in the Plan Area and the following management actions are intended to protect the habitat sustained by surface water in the creek and the underlying shallow groundwater. No management actions were developed for the chronic lowering of groundwater elevations, reduction in groundwater storage, and land subsidence because no sustainability criteria were developed for these indicators (Sections 3.4.4 and 3.5.4).

A measurable objective was established for shallow groundwater levels at 20 feet below ground surface (bgs) (Figure 3-48). The following management action will be implemented to prevent the significant and unreasonable effects to the interconnection of surface water and groundwater and to protect the GDEs sustained in the management area:

1) If groundwater levels decline at 50% or more of the RMPs below 20 feet bgs for two consecutive years, then the following management action will be implemented:
    a) Confirm that the decline in the water table is a result of groundwater production from the principal aquifer. This may include observing groundwater levels at the RMPs and measuring stream flow when the principal aquifer well(s) is operating, or designing and implementing an aquifer test to confirm the influence of groundwater production from the principal aquifer on stream flow and the groundwater table. Currently, only private users are extracting groundwater from this management area. The Yucaipa GSA will contact the private well owners to obtain information to assess whether pumping at a private well is the cause for the observed surface water flow and/or groundwater level declines. The Yucaipa GSA will request historical and projected pumping demands to better characterize conditions in this subarea and determine the extent of influence of pumping at the private well(s) on stream flow and shallow groundwater.
    b) If an aquifer test is conducted and confirms the influence of production from the principal aquifer on the surface water/groundwater interconnection and a subsequent drawdown of the water table, then production from the principal aquifer will be reduced to the extent that it no longer causes a significant and unreasonable effect.

4.2.1.4.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicator of surface water/groundwater interconnection would benefit from the implementation of this management action. The goal of the management action is to prevent significant and unreasonable effects on GDEs sustained by the interaction of surface water and the underlying shallow groundwater. Currently, groundwater conditions in the San Timoteo Management Area are not experiencing undesirable results.

4.2.1.4.2 Expected Benefits and Evaluation

The sustainability criteria established for the San Timoteo Management Area were designed to protect the GDEs along San Timoteo Creek. This includes reducing groundwater production from the principal aquifer that directly influences stream flow in the creek and the underlying shallow groundwater that sustains the GDEs. YVWD monitors stream flow and shallow groundwater conditions along this reach of San Timoteo Creek as part of the HMP

implemented in 2011 (Section 1.5.1). Monitoring includes collecting groundwater elevation data at shallow wells and evaluating habitat conditions via NDVI analysis along this reach of the creek. To date, HMP monitoring has indicated that significant fluctuations in groundwater levels and habitat conditions result from climatic conditions (i.e., prolong drought, large storm events) rather than by other potential factors like local groundwater production.

4.2.1.4.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. when groundwater levels measured at 50% of the RMPs fall below the measurable objective for two consecutive years.

4.2.1.4.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the principal aquifer in the San Timoteo Management Area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action.

4.2.1.4.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per the California Water Code, Section 10726.4.

4.2.1.4.6 Implementation Schedule

There is no specific implementation schedule for this management action. There is no indication of declining groundwater levels and stress on GDEs from the extraction of groundwater from the principal aquifer. The Yucaipa GSA will reach out to known and potential private well owners to obtain information on pumping schedules and volumes to better characterize conditions in this management area. This information will help inform the management action taken should groundwater elevations at three or more of the RMPs decline below the measurable objective.

4.2.1.4.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.4.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. Costs may be incurred by the Yucaipa GSA to reach out to the private well owners to collect the necessary information to better characterize conditions in this management area. If aquifer tests are required, then additional costs will be incurred by the Yucaipa GSA to conduct the tests, collect and analyze the test data, and develop an appropriate action or response based on the test data to ensure that no undesirable results occur in the management area. These costs will be assessed at the time such action is identified.

4.2.2 Management Action No. 2 –Sustainable Yield Pumping Allocations and Groundwater Replenishment

Groundwater sustainable yield pumping allocations will be assigned to YVWD and private water users in the North Bench Management Area, to South Mountain, South Mesa, YVWD and private water users in the Calimesa Management Area, and to WHWC in the Western Heights Management Area per the subsections below when this GSP is adopted. No sustainable yield pumping allocations were assigned in the San Timoteo management area at this time because the Yucaipa GSA needs to confirm the location and volume of private pumping from the principal aquifer and determine whether sustainable yield pumping allocations are appropriate to manage groundwater production in this management area. The pumping allocations are designed to regulate the annual volume of groundwater produced by each groundwater user and maintain the total groundwater produced at or below the estimated sustainable yields for these management areas. The sustainable yield pumping allocations will be reevaluated within three months (i.e., every December) of the end of a water year.

As an incentive to manage groundwater production at or below the sustainable yield pumping allocation, a groundwater user may earn pumping credits in the amount of the sustainable yield pumping allocation less the groundwater pumped. For example, if water purveyor A pumped 1,000 AF in a water year and the sustainable yield pumping allocation is 1,200 AFY, then water purveyor A earned a 200 AF pumping credit. The Yucaipa GSA will apply a 5-year rolling pumping credit system to keep account of the pumping credits earned by each water purveyor, meaning pumping credits that are earned and not used after 5 years will be lost. Pumping credits, if available, may be used to offset the volume of groundwater produced in excess of the sustainable yield pumping allocation to the extent that the credits equal the pumping exceedance. Any remaining deficit will be charged a replenishment fee. Any pumping credits remaining will carry over into the next water year under the 5-year rolling pumping credit system.

The assessment for pumping credits will begin with the 2022 WY. The volume of water pumped per user will be accounted for on a monthly basis beginning October 1, 2021. Pumping credits will be earned by users that pump less than their respective sustainable yield pumping allocations for the 2022 WY. The Yucaipa GSA is continuing discussions on implementing a policy that will allow the transferability of pumping credits between groundwater users within a given management area or within the Subbasin.

As an alternative to using pumping credits to offset a pumping exceedance, a water purveyor may use surplus supplemental water that directly recharged the Subbasin (see Management Action No. 3, Section 4.2.3). If such water is available and accessible to the water purveyor, then this water may be used instead of pumping credits to offset the pumping exceedance.

The following provides a description of how the pumping allocations were assigned to each purveyor, and the management actions that will be implemented when a groundwater user exceeds their respective sustainable yield pumping allocation.

4.2.2.1 North Bench Management Area

YVWD and private users are the two groundwater users in the North Bench Management Area. From the 1966 WY to the 2018 WY, the average annual production rates for YVWD and private users were 2,647 AFY and 778 AFY, respectively (Figure 4-23, Table 4-4). Groundwater production by YVWD accounted for 77.3% of the total production,

private users accounted for 22.7%. Applying these allocations to the estimated sustainable yield of 3,940 AFY for the North Bench Management Area, the sustainable yield pumping allocations for YVWD and private users are 3,045 AFY and 895 AFY, respectively (Table 4-4).

Table 4-4. Sustainable Yield Pumping Allocations in the North Bench Management Area

Groundwater User	Average Historical Pumping (AFY)	Historical Pumping Allocation (%)	Sustainable Yield Pumping Allocation (AFY)
YVWD	2,647	77.3%	3,045
Private	778	22.7%	895
Total	**3,425**	**100.0%**	**3,940**

Notes: AFY = acre-feet per year; YVWD = Yucaipa Valley Water District.

The volume of groundwater produced will be quantified per water year (October 1 to September 30) with the total volumes reported to the Yucaipa GSA by the end of the calendar year. If a groundwater user exceeds their respective sustainable yield pumping allocation, then the groundwater user will be charged a replenishment fee equivalent to the volume of groundwater that exceeds the sustainable yield pumping allocation multiplied by the rate per AF to purchase supplemental water at San Bernardino Valley Municipal Water District (SBVMWD) rates for imported SWP water. If the groundwater user has accrued pumping credits or has surplus supplemental water available in the aquifer, then the pumping credits or surplus supplemental water may be applied up to the pumping exceedance. If there continues to be a deficit, then a replenishment fee will be charged to the groundwater user. The supplemental water required under this management action will be purchased in the subsequent water year, if available, and used to artificially recharge and replenish the Subbasin at the Wilson Creek spreading basins.

The historical production by private users was based on data from the USGS that was incorporated into the YIHM. Figure 4-23 indicates that groundwater production by private users has been steadily declining since the early 1980s to where the average rate over the last 10 years has been approximately 160 AFY. The Yucaipa GSA will make efforts to contact private well users in this management area to confirm the estimated rate of groundwater production per private user. This will provide the Yucaipa GSA with information to characterize the influence of each individual private user on conditions in the management area, and to apply the appropriate pumping allocation. The sustainable yield pumping allocations between YVWD and private users will be reassessed when data on the current and projected usage by private users is collected and analyzed.

4.2.2.1.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.2.1.2 Expected Benefits and Evaluation

The goal of this management action is to replenish the management area when groundwater withdrawals exceed the sustainable yield pumping allocation assigned to a groundwater user. This action will prevent long-term declines in groundwater elevations and storage due to groundwater production above the sustainable yield, and help prevent conditions from falling below the historical low in groundwater levels that potentially cause significant and

unreasonable effects due to land subsidence. Currently, groundwater extractions from the North Bench Management Area are below the estimated sustainable yield of 3,940 AFY (Figure 3-3).

The benefit of this management action will be evaluated after the purchase of replenishment water and subsequent discharge to the Wilson Creek and Oak Glen Creek spreading basins to replenish the Subbasin.

4.2.2.1.3 Circumstances for Implementation

This management action would be implemented when the volume of groundwater produced by a water purveyor and/or private user per water year exceeds their respective sustainable yield pumping allocation, and the use of pumping credits and/or surplus supplemental water (Section 4.2.3) was insufficient to offset the pumping exceedance. The groundwater user will be required to purchase supplemental water in the subsequent water year for replenishment purposes via the Wilson Creek and Oak Glen Creek spreading basins. If no supplemental water is available, then the volume to replenish will be held in account for up to 5 years until water is available or the groundwater user has earned pumping credits to offset this exceedance. If after 5 years there is no supplemental water available to replenish the management area and the groundwater user has not earned pumping credits to offset the exceedance, then a reassessment of the sustainable yield and pumping allocations will be conducted for the management area.

4.2.2.1.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater production from the North Bench Management Area and acquire surface water to direct to spreading basins and/or other purposes per the California Water Code Sections 10726.2 and 10726.4.

4.2.2.1.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per the California Water Code Sections 10726.2 and 10726.4.

4.2.2.1.6 Implementation Schedule

This management action requires the purchase of supplemental water for replenishment purposes in the subsequent water year after the management action is implemented and the application of pumping credits and/or surplus supplemental water, if any, do not offset the pumping exceedance. If no supplemental water is available to replenish the Subbasin in the subsequent water year, then the replenishment water volume will be held in account for up to 5 years until there is supplemental water available or pumping credits are earned to offset the pumping exceedance.

4.2.2.1.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.2.1.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of groundwater in excess of the sustainable yield pumping allocation and the rate of SWP water by SBVMWD per acre-foot. Additional costs may be incurred for the distribution and delivery to the Wilson Creek and Oak Glen Creek spreading basins. The estimated costs may vary annually depending on the rate charged by SBVMWD for supplemental water to replenish the Subbasin.

4.2.2.2 Calimesa Management Area

The four groundwater users in the Calimesa Management Area are South Mountain, South Mesa, YVWD and private users. From the 1966 WY to the 2018 WY, the average annual production rates for South Mountain, South Mesa, YVWD and private users were 544 AFY, 2,056 AFY, 2,457 AFY and 143 AFY, respectively (Figure 4-24; Table 4-5). Historically, groundwater production by South Mountain, South Mesa, YVWD and private users accounted for 10.5%, 39.5%, 47.2%, and 2.8%, respectively, of the average annual production of 5,200 AFY. Applying these allocations to the estimated sustainable yield of 4,955 AFY for the Calimesa Management Area, the sustainable yield pumping allocations for South Mountain, South Mesa, YVWD and private users are 518 AFY, 1,959 AFY, 2,341 AFY, and 137 AFY, respectively[1] (Table 4-5).

Table 4-5. Sustainable Yield Pumping Allocations in the Calimesa Management Area

Groundwater User	Average Historical Pumping (AFY)	Historical Pumping Allocation (%)	Sustainable Yield Pumping Allocation (AFY)
YVWD	2,457	47.2%	2,341
South Mesa	2,056	39.5%	1,959
South Mountain	544	10.5%	518
Private	143	2.8%	137
Total	**5,200**	**100.0%**	**4,955**

Notes: AFY = acre-feet per year; YVWD = Yucaipa Valley Water District.

The volume of groundwater produced will be quantified per water year (October 1 to September 30) with the total volumes reported to the Yucaipa GSA by the end of the calendar year. If a groundwater user exceeds their respective sustainable yield pumping allocation, then the groundwater user will be charged a fee equivalent to the volume of groundwater that exceeds their respective sustainable yield pumping allocation multiplied by the rate per AF of supplemental water supplied by SBVMWD and/or San Gorgonio Pass Water Agency (SGPWA) depending on the availability of supplemental water for purchase. The Calimesa Management Area straddles the boundary between San Bernardino County and Riverside County, which includes the service areas of SBVMWD and SGPWA. SWP water supplied by these two regionals may be available as a supplemental water source under this management action. If a groundwater user has accrued pumping credits and/or surplus supplemental water that directly recharged the Calimesa Management Area, then the pumping credits and/or surplus supplemental water may be applied to offset the pumping exceedance. If there continues to be a deficit, then a fee will be charged to the groundwater user to purchase supplemental water. The supplemental water will be purchased in the subsequent water year, if available, and used to artificially replenish the Calimesa Management Area, if applicable, or as in lieu use to offset the

[1] In accordance with Water Code Section 10720.5, the sustainable yield allocations set forth in Management Action No. 2 are neither intended to nor actually comprise any determination of water rights.

pumping exceedance. If no supplemental water is available, then the groundwater user may reduce pumping, implement programs (e.g., water conservation programs) and/or projects that will reduce the net use of groundwater from the Calimesa Management Area to offset the pumping exceedance above their respective sustainable yield pumping allocation.

Currently, there are no spreading basins in the Calimesa Management Area, but the Yucaipa GSA member agencies are evaluating two potential sites to develop surface water spreading basins for the purposes of artificially recharging the Subbasin. The Yucaipa GSA will utilize the YIHM as a tool to evaluate the feasibility of operating spreading basis at the two proposed sites. The feasibility studies will evaluate the beneficial impact of recharging the aquifer at these two potential locations.

The historical production by private users was based on data from the USGS that was incorporated into the YIHM. Figure 4-24 indicates that groundwater production by private users has been steady at approximately 200 AFY since 2000. The Yucaipa GSA will make efforts to contact private well users in this management area to confirm the locations and estimated rates of groundwater extraction for the active private groundwater users. The sustainable yield pumping allocations between the water purveyors and individual private users will be reassessed when data on the current and projected usage by private users is collected and analyzed.

4.2.2.2.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.2.2.2 Expected Benefits and Evaluation

The goal of this management action is to replenish the management area or reduce groundwater withdrawals when groundwater production exceeds the sustainable yield pumping allocation assigned to a groundwater user. This action will prevent long-term declines in groundwater elevations and storage due to groundwater production above the sustainable yield, and help prevent conditions from falling below the historical low in groundwater levels that potentially cause significant and unreasonable effects due to land subsidence. Currently, groundwater extractions from the Calimesa Management Area are below the sustainable yield of 4,955 AFY (Figure 3-19). Because there are no spreading basins in the Calimesa Management Area, the supplemental water may be used as in lieu use to offset the pumping exceedance. If no supplemental water is available, then the groundwater user may reduce pumping, implement programs (e.g., water conservation programs) and/or projects that will reduce the net use of groundwater from the Calimesa Management Area to offset the pumping exceedance above their respective sustainable yield pumping allocation.

4.2.2.2.3 Circumstances for Implementation

This management action would be implemented when the volume of groundwater produced by a water purveyor and/or private user per water year exceeds their respective sustainable yield pumping allocation. The groundwater user will be assessed a fee to purchase supplemental water if the application of pumping credits and/or surplus supplemental water, if available, do not offset the production exceedance. If no supplemental water is available to replenish the aquifer, then the volume to replenish will be held in account for up to 5 years until water is available or the groundwater user has earned pumping credits to offset this exceedance. If after 5 years there is no

supplemental water available and the groundwater user has not earned pumping credits to offset the exceedance, then a reassessment of the sustainable yield and pumping allocations will be conducted for the management area.

4.2.2.2.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater production from the Calimesa Management Area and acquire surface water to import into the Plan Area per California Water Code Sections 10726.2 and 10726.4.

4.2.2.2.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per California Water Code Sections 10726.2 and 10726.4.

4.2.2.2.6 Implementation Schedule

This management action requires the purchase of supplemental water in the subsequent water year after the management action is implemented and the application of pumping credits and/or surplus supplemental water, if any, do not offset the pumping exceedance. If no supplemental water is available in the subsequent water year to replenish the aquifer, then the supplemental water volume will be held in account for up to 5 years until there is supplemental water available or pumping credits are earned to offset the pumping exceedance.

4.2.2.2.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.2.2.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of supplemental water required to offset the pumping exceedance after pumping credits and/or surplus supplemental water, if any, have been applied. The cost for supplying supplemental water for replenishment purposes or as in lieu water will be based on the rate of SWP water per AF by SBVMWD and/or SGPWA. Additional costs may be incurred for the distribution and delivery of supplemental water to the management area. The estimated costs may vary annually depending on the rate charged by the Regionals for supplemental water.

4.2.2.3 Western Heights Management Area

WHWC is the only groundwater user in the Western Heights Management Area. The sustainable yield pumping allocation to WHWC is the sustainable yield of 1,760 AFY. The volume of groundwater produced will be quantified per water year (October 1 to September 30) with the total volume reported to the Yucaipa GSA by the end of the calendar year. If WHWC exceeds the sustainable yield, then WHWC will be charged a fee equivalent to the volume of groundwater that exceeds the sustainable yield multiplied by the rate per AF to purchase supplemental water at SBVMWD rates for imported SWP water. The supplemental water will be purchased in the subsequent water year, if available, and used as in lieu water to offset the pumping exceedance in the subsequent water year. There are no spreading basins in the Western Heights Management Area to receive SWP water.

4.2.2.3.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.2.3.2 Expected Benefits and Evaluation

The goal of this management action is to replenish the management area or reduce groundwater withdrawals when groundwater production exceeds the sustainable yield. This action will prevent long-term declines in groundwater elevations and storage due to groundwater production above the sustainable yield, and help prevent conditions from falling below the historical low in groundwater levels that potentially cause significant and unreasonable effects due to land subsidence. Currently, groundwater extractions from WHWC in the Western Heights Management Area are below the sustainable yield of 1,760 AFY (Figure 3-37).

4.2.2.3.3 Circumstances for Implementation

This management action would be implemented when the volume of groundwater produced by WHWC per water year exceeds the sustainable yield. WHWC will be assessed a fee to purchase supplemental water if WHWC cannot apply pumping credits to offset the production exceedance. If no supplemental water is available, then the volume of supplemental water will be held in account for up to 5 years until water is available or the groundwater user has earned pumping credits to offset this exceedance. If after 5 years there is no supplemental water available and the groundwater user has not earned pumping credits to offset the exceedance, then a reassessment of the sustainable yield and pumping allocations will be conducted for the management area.

4.2.2.3.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater production and acquire surface water to import into the Plan Area per California Water Code Sections 10726.2 and 10726.4.

4.2.2.3.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per California Water Code Sections 10726.2 and 10726.4.

4.2.2.3.6 Implementation Schedule

This management action requires the purchase of supplemental water as in lieu water in the subsequent water year after the management action is implemented. If no supplemental water is available, then the volume of supplemental water will be held in account for up to 5 years until there is supplemental water available or a reevaluation of the sustainable yield is conducted at the end of the 5-year limit.

4.2.2.3.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per the California Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.2.3.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of groundwater produced in excess of the sustainable yield and the rate of SWP water by SBVMWD per acre-foot. Additional costs may be incurred for the distribution and delivery to the Western Heights Management Area. The estimated costs may vary annually depending on the rate charged by SBVMWD for supplemental water to replenish the Subbasin.

4.2.2.4 San Timoteo Management Area

This management action does not apply to the San Timoteo Management Area.

4.2.3 Management Action No. 3 – Surplus Supplemental Water Spreading

YVWD has purchased SWP water, when available, to artificially recharge the Subbasin via the Wilson Creek and Oak Glen Creek spreading basins (Section 2.5.4; Figure 2-21). This water has helped contribute to the recovery of the North Bench Management Area since it was first used to artificially recharge the Subbasin in 2009. The Yucaipa GSA will continue to obtain, when available, surplus supplemental water to artificially recharge the Subbasin to help maintain groundwater in storage above historical lows.

Surplus supplemental water discharged directly to a spreading basin to facilitate the artificial recharge of the Subbasin will have a separate accounting by the Yucaipa GSA. The surplus supplemental water will be accessible to the water purveyor that purchased the water and percolated it at a spreading basin. This water will be available to help offset production exceedances above the sustainable yield pumping allocations instead of pumping credits earned via Management Action No. 2.

The Yucaipa GSA will conduct a study within the first year of adopting the GSP to estimate the amount of water lost from the point of discharge at a spreading basin to the water table. This study will estimate monthly losses due to evaporation of water from a spreading basin to water retained in the soil column between the bottom of a spreading basin and the underlying water table. The estimate of water loss will be applied to the volume of surplus supplemental water discharged on a monthly basis to a spreading basin. Monthly estimates of water loss are appropriate because evaporative losses in the summer are higher than in the winter. The remaining water will directly recharge the aquifer and be available to the water purveyor that purchased the water. The study will include the existing spreading basins and stormwater capture basins, and proposed basins that may be constructed in the Subbasin. Potential basins in the Calimesa Management Area would be evaluated to assess the effect of artificial recharge on the projected declines in groundwater in storage under the Future Baseline with Climate Change II scenario.

The YIHM was used to simulate the flow of water from the Wilson Creek and Oak Glen Creek spreading basins over the 50-year implementation and planning horizon. The YIHM indicated that water originating from these two spreading basins will remain in the North Bench Management Area over the 50-year period. The YIHM also indicated that water originating at the locations of two potential basins in the Calimesa Management Area would remain in the management area. Consequently, the accounting of surplus supplemental water that directly recharges the aquifer does not include additional losses when the water is in the aquifer.

4.2.3.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.3.2 Expected Benefits and Evaluation

This management action provides the Yucaipa GSA with an accounting methodology to purchase surplus supplemental water and directly recharge the Subbasin. This water will be accessible to the water purveyor that purchased the water and directed it to a spreading basin. The water may be used to help offset pumping exceedances over the sustainable yield pumping allocation.

4.2.3.3 Circumstances for Implementation

This management action will be implemented when a water purveyor purchases surplus supplemental water and directly recharges the Subbasin. This management action already applies to YVWD in that YVWD has discharged surplus SWP to the Wilson Creek and/or Oak Glen Creek spreading basins in the North Bench Management Area since 2009 (Figure 2-21). The amount of surplus water available to YVWD will be calculated following the study estimating water losses from the point of discharge to the water table and retroactively applied to the initial discharge of 48 AF to the Oak Glen Creek spreading basin in 2009.

4.2.3.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to acquire surface water to import into the Plan Area per the California Water Code Section 10726.2.

4.2.3.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action at existing spreading basins, which would be undertaken under the Yucaipa GSA's authority per the California Water Code Section 10726.2. New spreading basins or direct injection wells would require permitting and regulatory process services before installation and use. The Yucaipa GSA will complete the appropriate permitting and regulatory requirements to facilitate the design, installation, and operation of new facilities to enhance the recharge of surplus supplemental water in the Subbasin.

4.2.3.6 Implementation Schedule

This management action will be implemented when surplus supplemental water is available and purchased to directly recharge the Subbasin.

4.2.3.7 Legal Authority

Yucaipa GSA has the legal authority to import surface water (e.g., SWP water) or other supplemental water per the California Water Code, Section 10726.2. No additional legal authority is required.

4.2.3.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of surplus supplemental water purchased from the regionals and the costs for directing the water to spreading basins to artificially recharge the Subbasin. The estimated costs may vary annually depending on the rate charged by SBVMWD and/or SGPWA for surplus supplemental water to replenish the Subbasin.

4.3 Projects

Currently, the Plan Area is not experiencing undesirable results with regard to the chronic lowering of groundwater elevations, reduction of groundwater in storage, land subsidence, and depletion of surface water as a result of groundwater production from the principal aquifer that threatens GDEs. The importation of SWP water as a supplemental source of water, both as direct use and through artificial recharge in the various spreading basins, has allowed the Yucaipa GSA member agencies to reduce groundwater production in the North Bench, Calimesa, and Western Heights Management Areas to levels below their respective estimated sustainable yields. Groundwater production by private well owners in the San Timoteo Management Area has not caused significant and unreasonable effects related to the sustainability indicators per the Sustainable Groundwater Management Act. The Subbasin is currently managed sustainably.

Measurable objectives defined for the North Bench, Calimesa, and Western Heights Management Areas were based on volumes of groundwater in storage that represent historical low conditions in the Calimesa and Western Heights Management Areas or conditions that are above historical lows in the North Bench Management Area. The measurable objective defined for the San Timoteo Management Area was based on the presence of GDEs and maintaining a water table elevation within 20 feet bgs to sustain the GDEs.

Management actions (Section 4.2) were defined to achieve sustainable management of the groundwater resources in the Plan Area should groundwater elevations decline below measurable objectives. These actions will be implemented if groundwater levels decline to the drought buffers established for the North Bench, Calimesa, and Western Heights Management Areas. The drought buffers provide operational flexibility for the Yucaipa GSA to implement these management actions and/or other programs to prevent undesirable results.

Some of the member agencies of the Yucaipa GSA have constructed stormwater capture basins to enhance recharge to the Subbasin (Table 4-6). The Wilson Creek and Oak Glen Creek spreading basins are designed to capture stormwater and are used to artificially recharge the Subbasin using surplus SWP water delivered by the SWP East Branch Extension. These basins are included in the YIHM to simulate their contributions to recharge to the Subbasin. The Wilson Creek and Oak Glen Creek basins have contributed an average 1,900 AFY and 170 AFY, respectively, of SWP water since 2011 (Table 2C-5). The other existing stormwater capture basins are estimated to capture approximately 1,800 AFY. Recharge at these basins was not included in the future water budget analyses for the North Bench and Western Heights Management Areas using the YIHM, because these management areas are sustainably managed and are projected to not experience undesirable results over the 50-year planning and implementation horizon. However, these planned projects will provide additional opportunities to capture and recharge stormwater flows, thereby reducing the reliance on imported water to meet the basin measurable objectives.

The Yucaipa GSA identified proposed projects that have been designed, permitted, and are undergoing development or will in the near future. These include the Wilson Creek III Basins, the Pendleton Avenue Low Water Crossing, and the Upper Wildwood Creek Basin (Table 4-7). These basins are designed to capture stormwater flows and enhance recharge to the Subbasin. The estimated average annual recharge contribution is approximately 1,500 AF. These basins will be located in the North Bench Management Area. As with the existing basins, these planned basins were not included in the future water budget analyses for the North Bench Management Area using the YIHM, because the North Bench Management Area is not projected to experience undesirable results over the 50-year planning and implementation horizon.

The Yucaipa GSA is evaluating potential sites to construct and operate spreading basins to enhance recharge in the Calimesa Management Area. The YIHM predicts that groundwater elevations will decline below the measurable objective under the Future Baseline with Climate Change II scenario within the 50-year planning and implementation horizon. Therefore, in addition to the management actions described in Section 4.2.1.2, Calimesa Management Area, the potential construction of one or two spreading basins will benefit users in this management area. The Yucaipa GSA will evaluate the proposed basin(s) after more details of their construction and operation are developed. The basins will be included in the YIHM and evaluated during the 5-year evaluation study after this GSP is adopted.

Table 4-6. Existing Surface Water Spreading Basins in the Yucaipa Subbasin

Existing Projects	Lead Agency/ Designer	Latitude	Longitude	Management Area	Hydrogeologic Subarea	Source Water	Estimated Annual Increase in Groundwater Recharge (AFY)
Tennessee St. Basins	City of Yucaipa	34.034215°	−117.105489°	Western Heights	Western Heights	Stormwater	300
Fremont Avenue Low Water Crossing	City of Yucaipa	34.051403°	−117.026008°	North Bench	Gateway	Stormwater	300
Dunlap Channel Basins	City of Yucaipa	34.030576°	−117.096333°	Western Heights	Western Heights	Stormwater	600
Oak Glen Creek Basins	City of Yucaipa	34.044545°	−117.031828°	North Bench	Wilson Creek/ Gateway	Stormwater	170
Wildwood Creek Basins	City of Yucaipa	34.014461°	−117.018201°	North Bench	Oak Glen	Stormwater	600
Wildwood Channel	City of Yucaipa	34.01292°	−117.04551°	Calimesa	Calimesa	Stormwater	
Wilson Creek Spreading Basins	City of Yucaipa	34.05°	−117.03°	North Bench	Gateway	Stormwater/ SWP Water	1,900

Notes: AFY = acre-feet per year; SWP = State Water Project.

Table 4-7. Planned Surface Water Spreading Basins in the Yucaipa Subbasin

Existing/ Proposed Projects	Lead Agency/ Designer	Latitude	Longitude	Management Area	Hydrogeological Subarea	Source Water	Estimated Annual Increase in Groundwater Recharge (AFY)	Estimated Decrease in Annual Groundwater Production (AF)
Wilson Creek III Basins	City of Yucaipa	34.044446°	−117.042468°	North Bench	Gateway	SWP Water / Stormwater	750	—
Pendleton Avenue Low Water Crossing	City of Yucaipa	34.046855°	−117.018298°	North Bench	Oak Glen	Stormwater	500	—
Upper Wildwood Creek Basin	City of Yucaipa	34.014126°	−116.999070°	North Bench	Oak Glen	Stormwater	250	—
Salinity and Groundwater Enhancement	YVWD	34.006887°	−117.095094°	—	—	Recycled Water	—	5,000

Notes: AFY = acre-feet per year; AF = acre-feet; SWP = State Water Project; YVWD = Yucaipa Valley Water District.

Figure 4-1. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios and Drought Buffer in the Calimesa Management Area

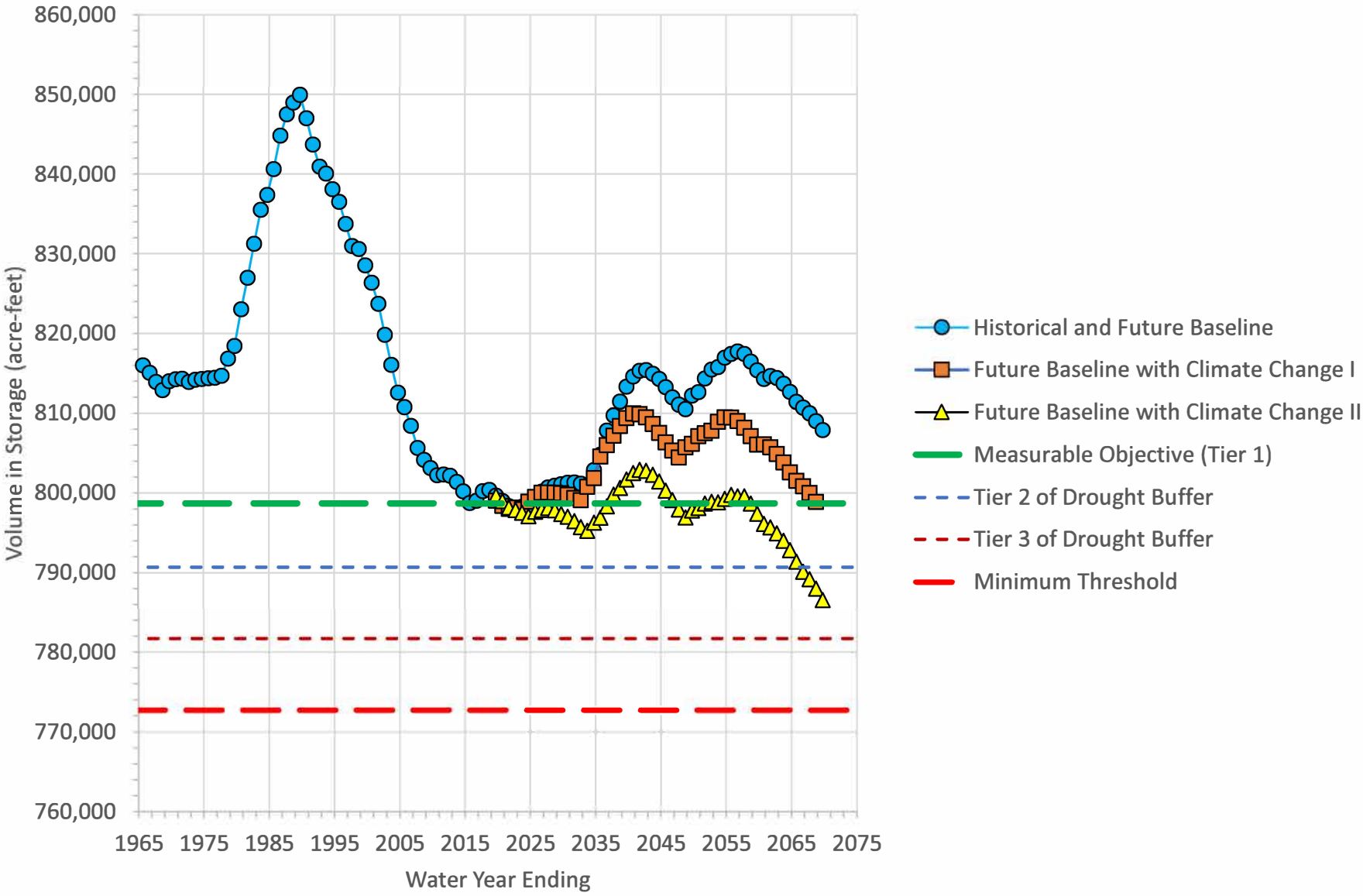

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Figure 4-2. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 7 in the Calimesa Management Area

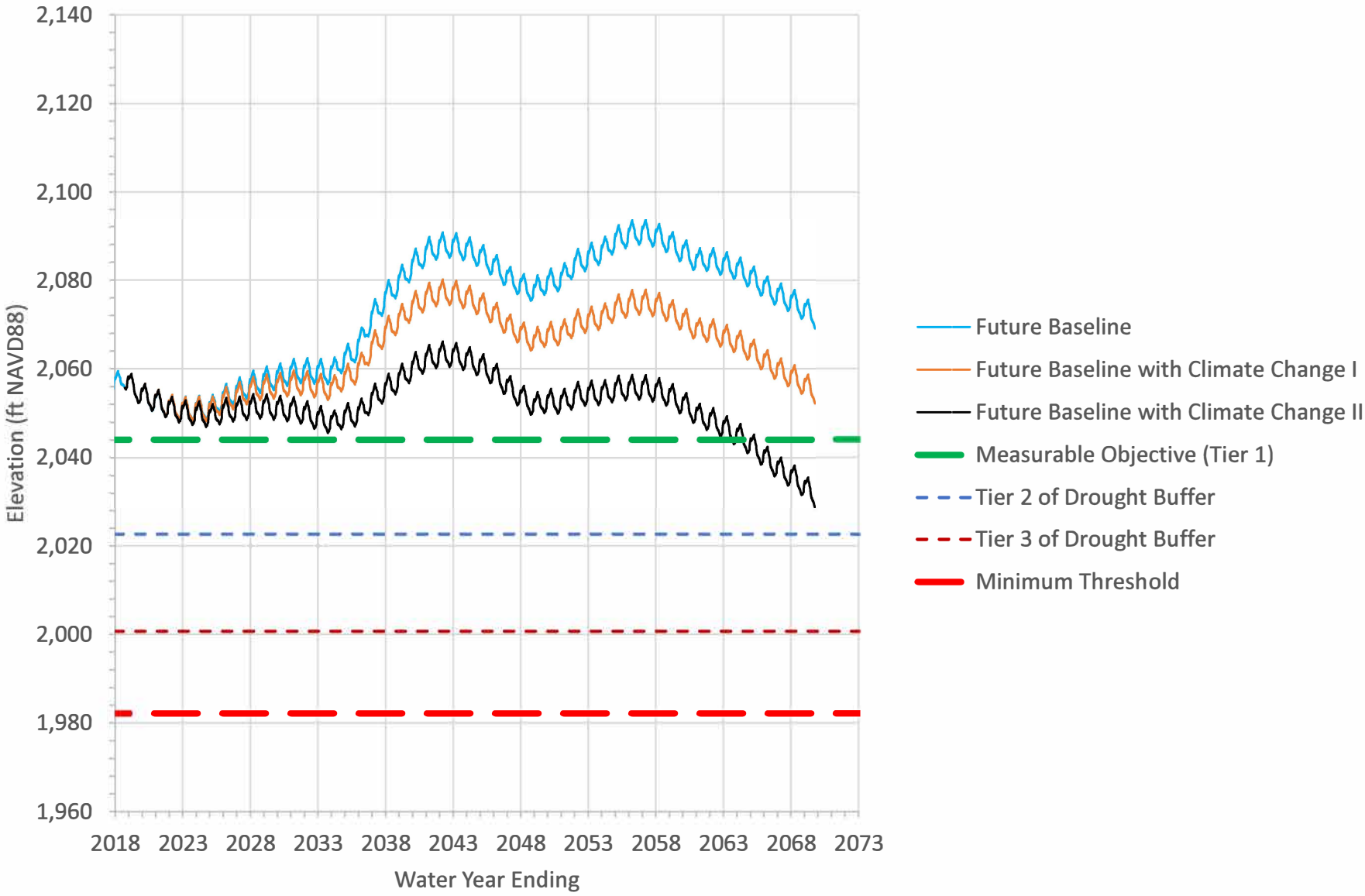

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Figure 4-3. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 9 in the Calimesa Management Area

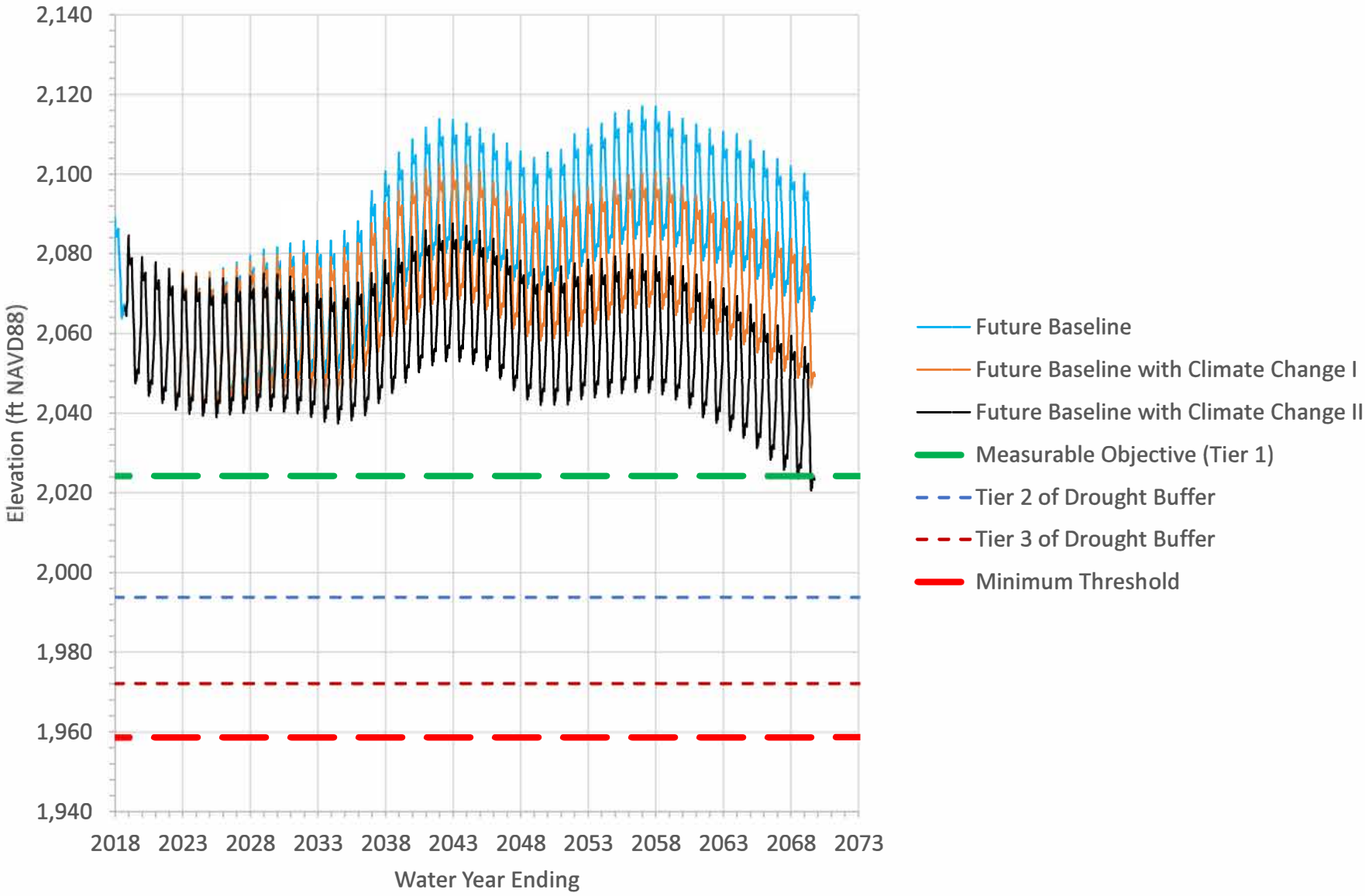

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Figure 4-4. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 12 in the Calimesa Management Area

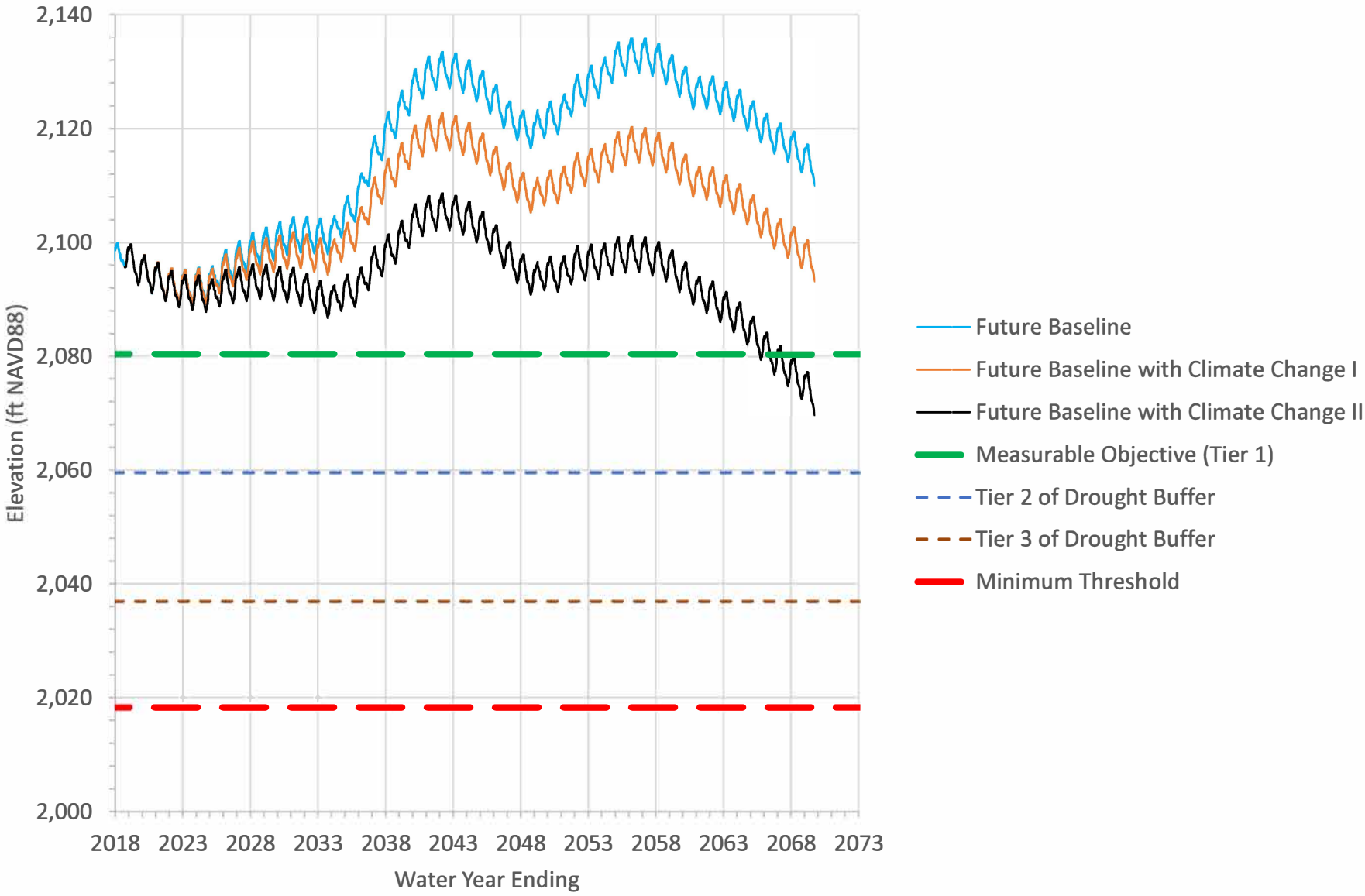

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Figure 4-5. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 17 in the Calimesa Management Area

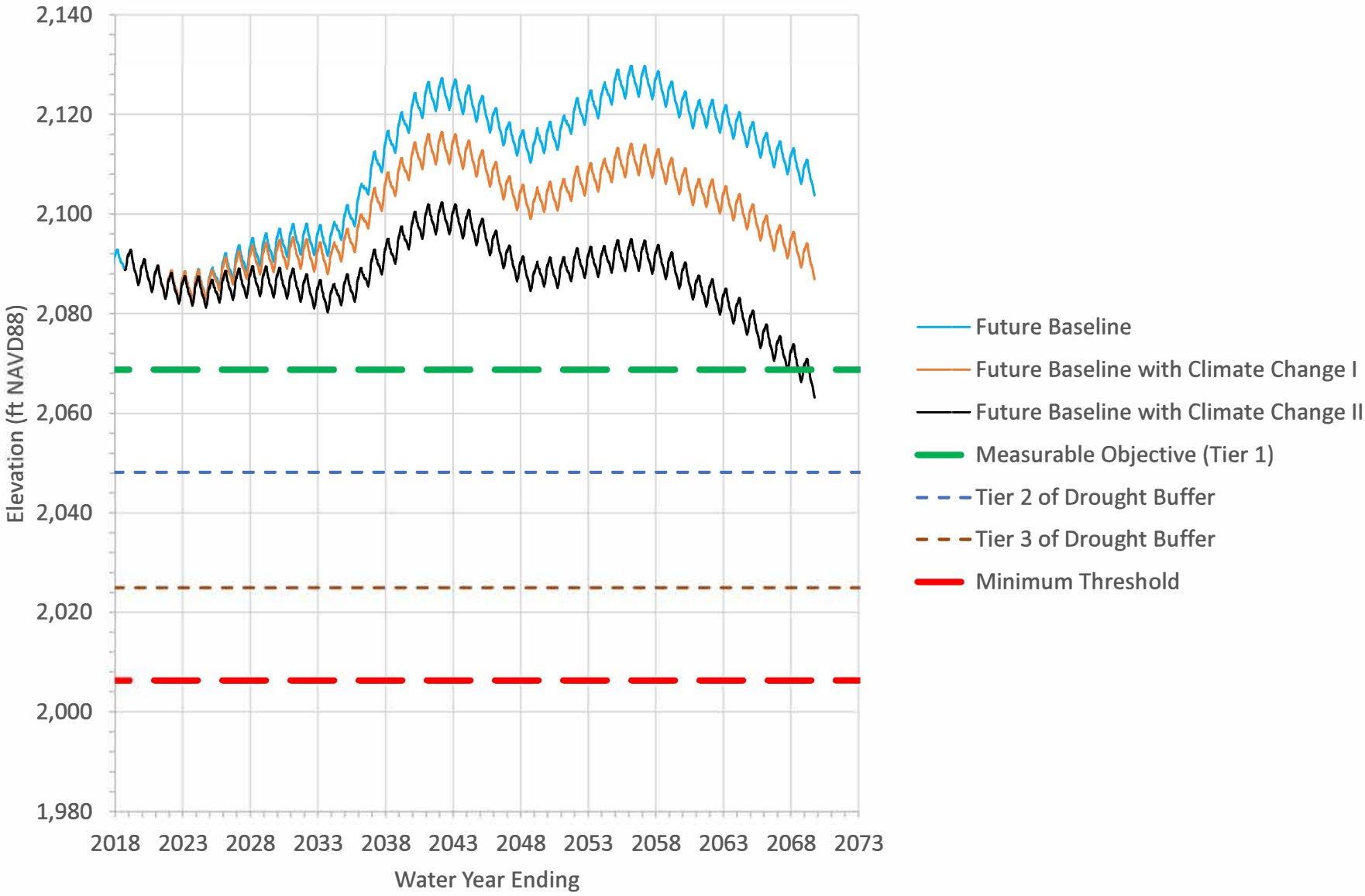

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Figure 4-6. Predicted Hydraulic Heads and Management Action Tiers at YVWD-10 in the Calimesa Management Area

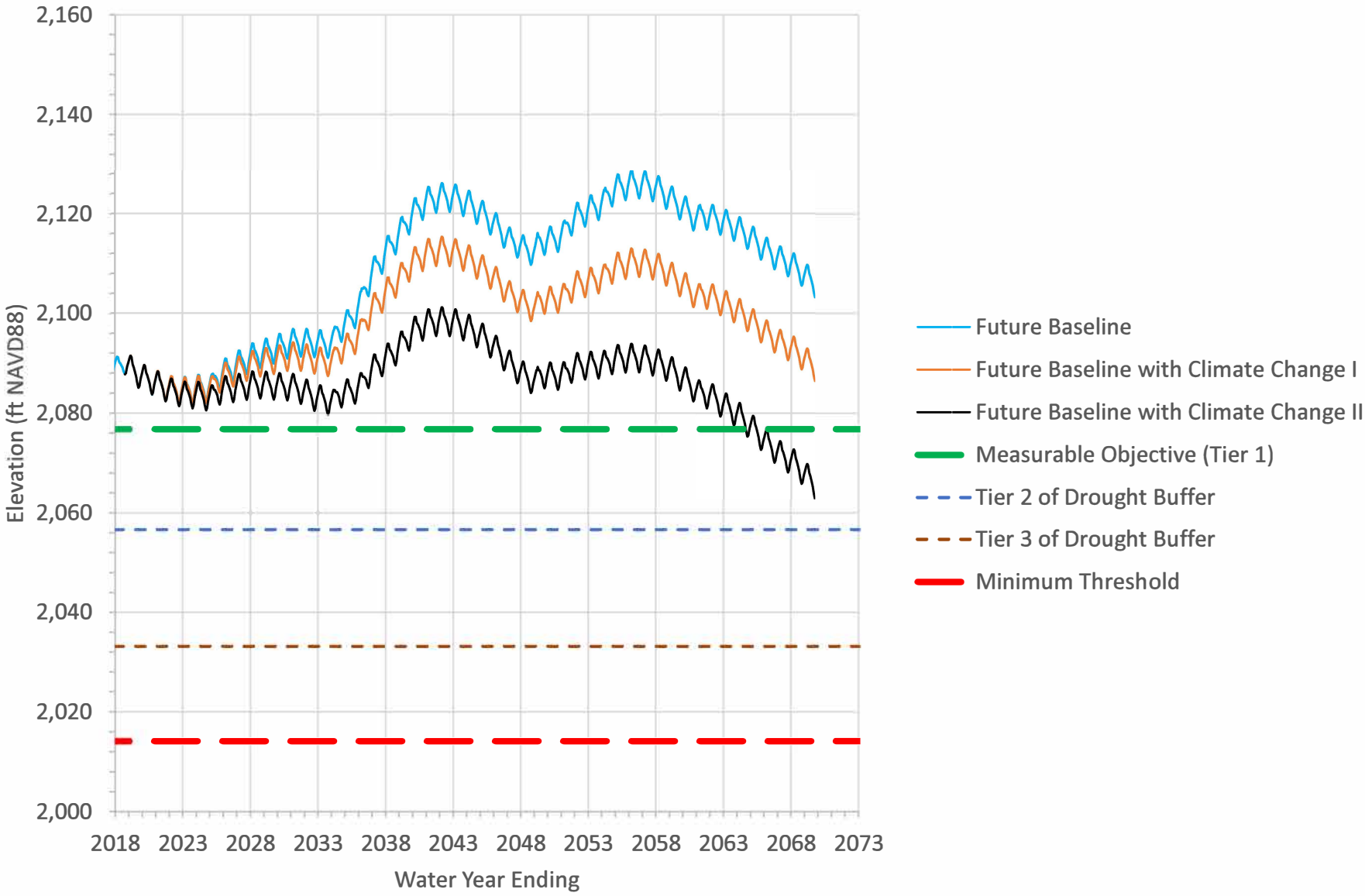

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Figure 4-7. Predicted Hydraulic Heads and Management Action Tiers at YVWD-12 in the Calimesa Management Area

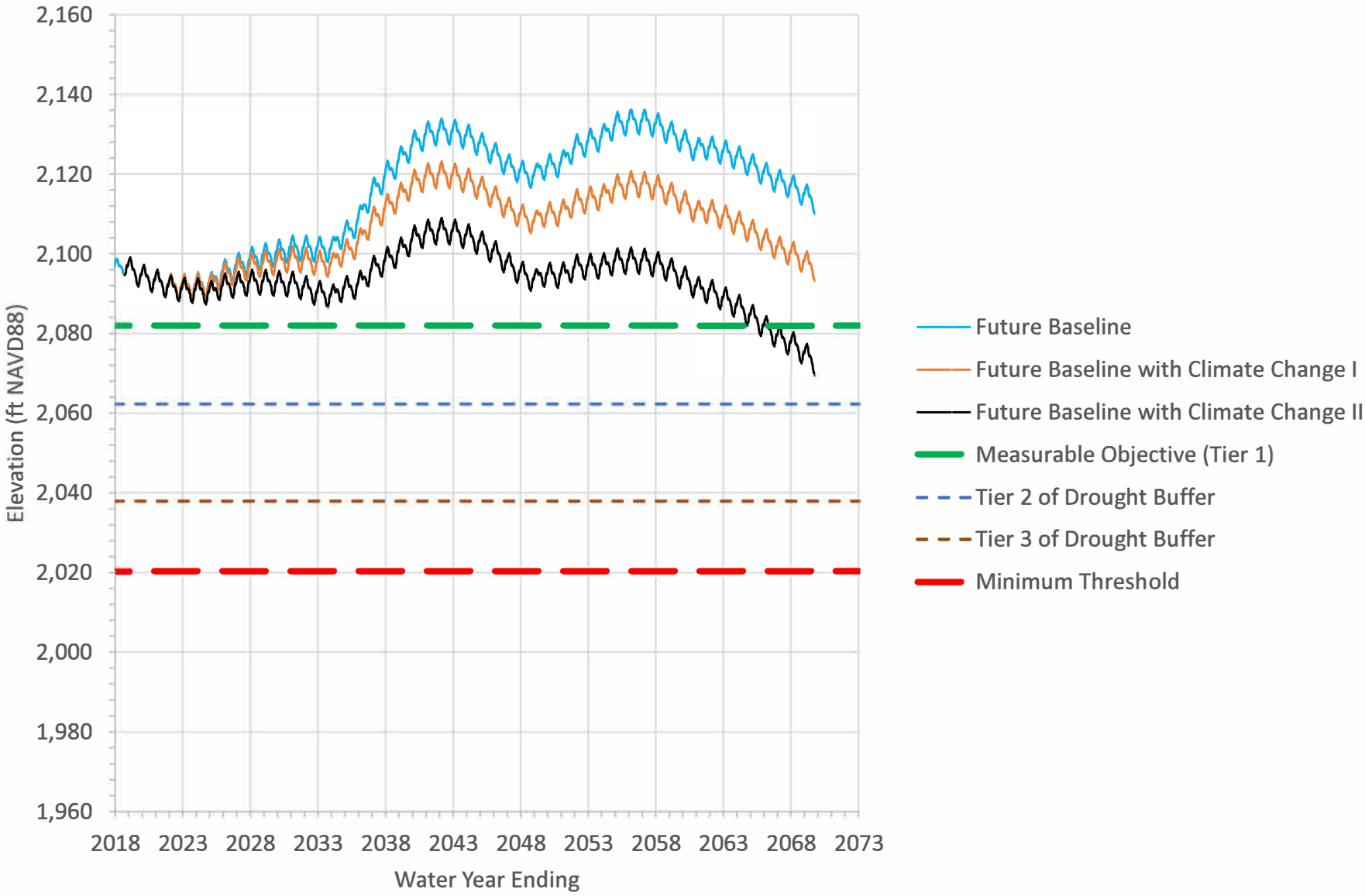

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Figure 4-8. Predicted Hydraulic Heads and Management Action Tiers at YVWD-24 in the Calimesa Management Area

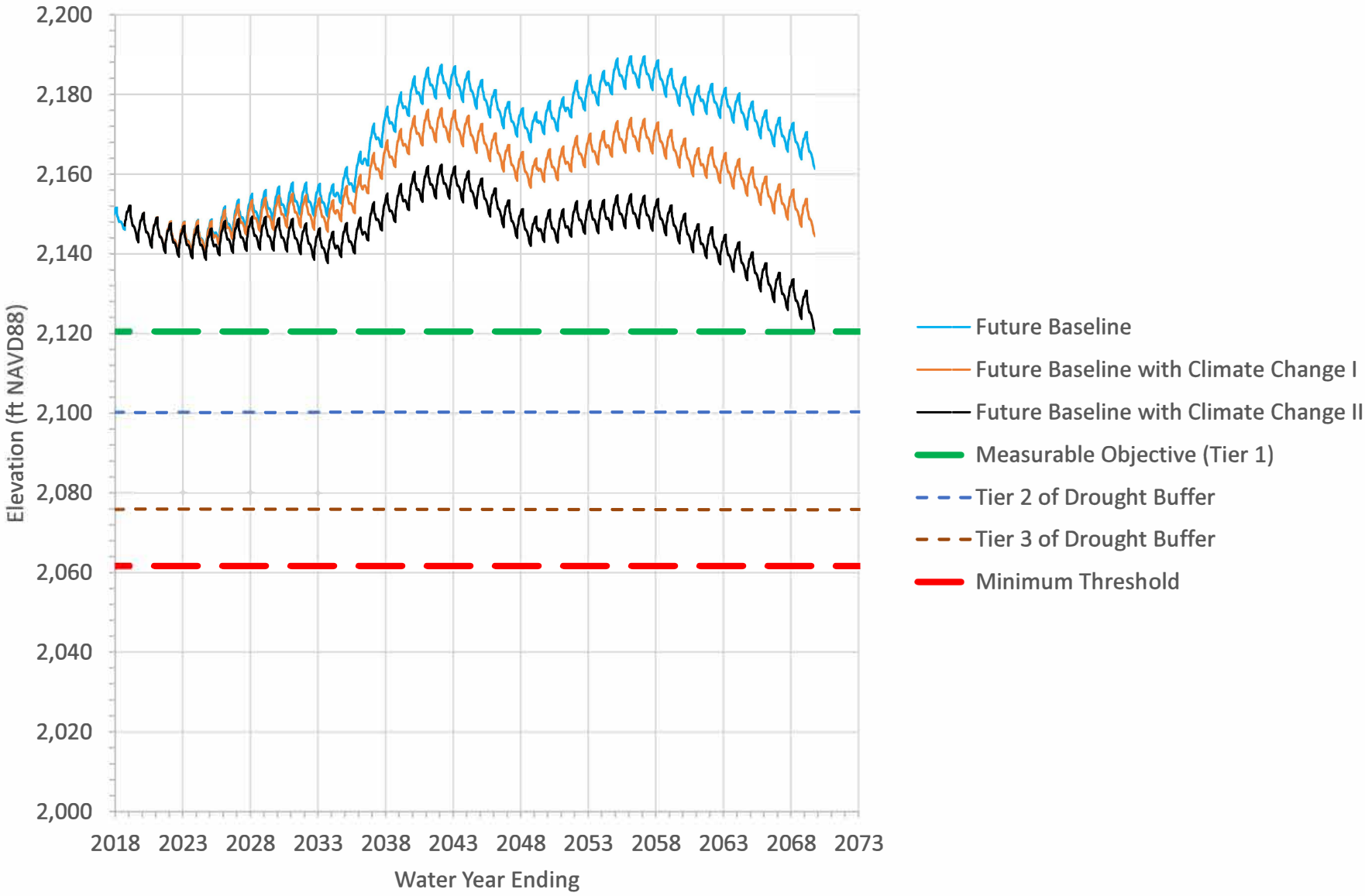

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Figure 4-9. Predicted Hydraulic Heads and Management Action Tiers at YVWD-49 in the Calimesa Management Area

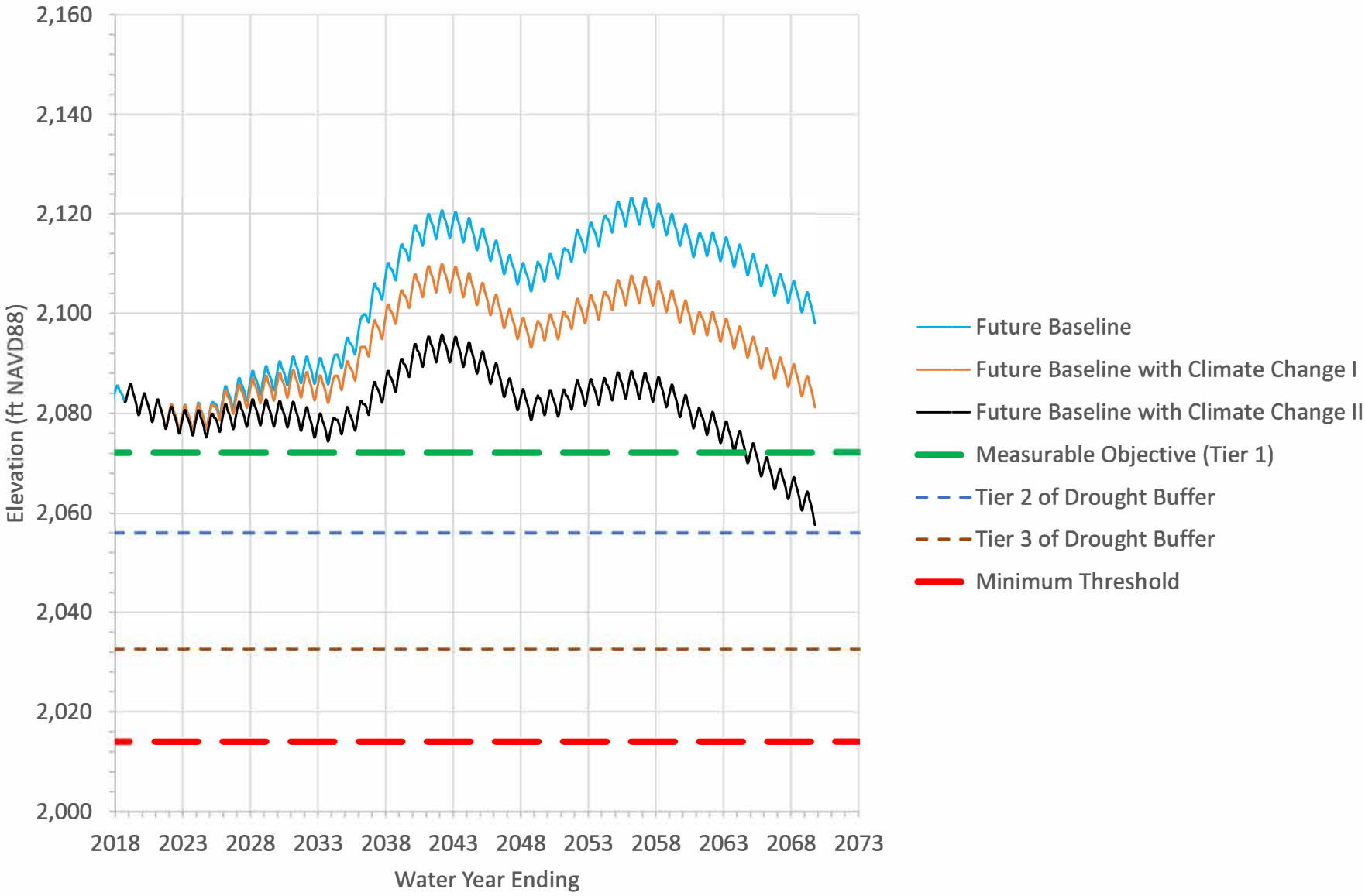

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Figure 4-10. Predicted Hydraulic Heads and Management Action Tiers at Hog Canyon 2 in the Calimesa Management Area

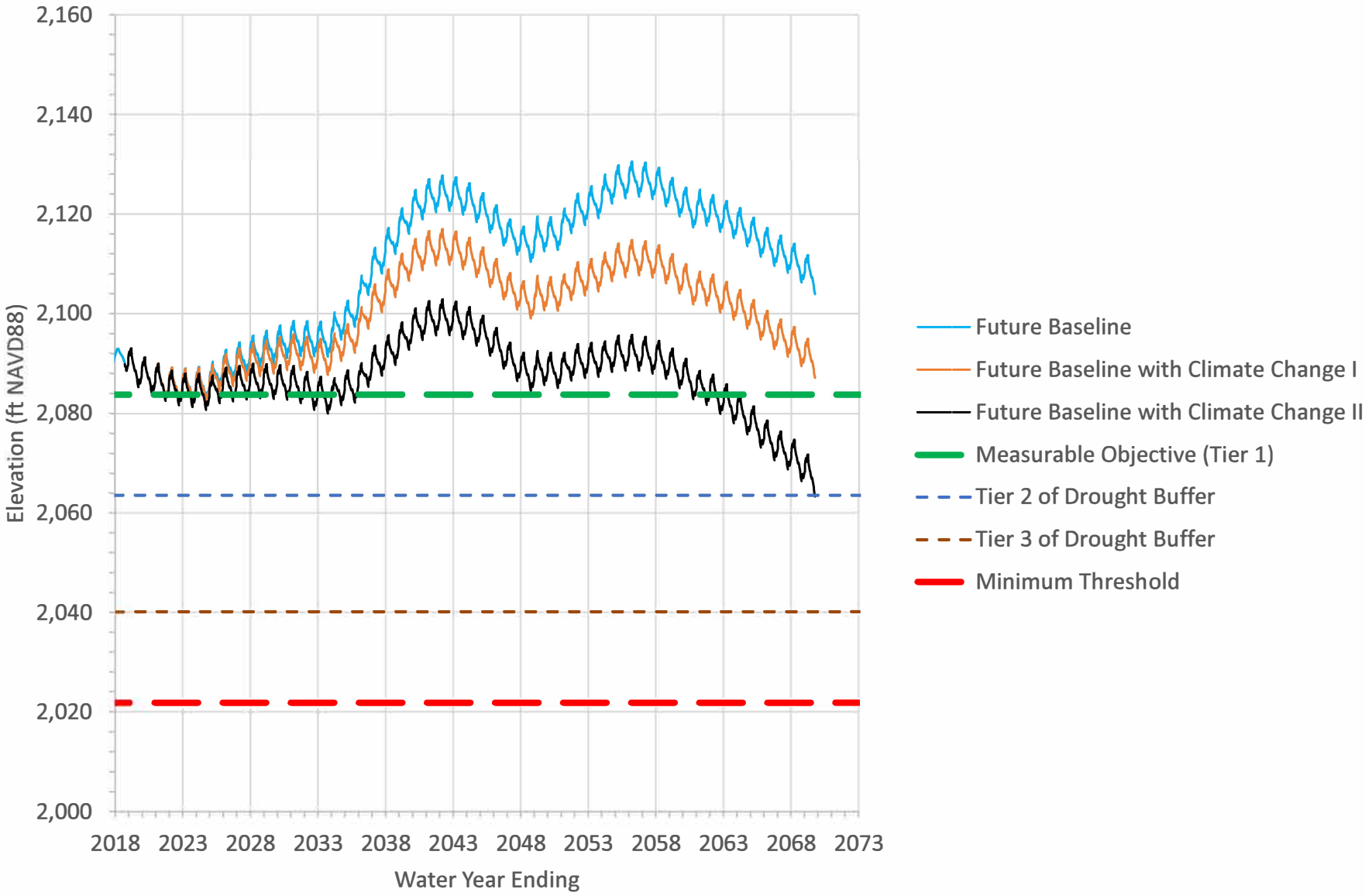

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Figure 4-11. Predicted Hydraulic Heads and Management Action Tiers at USGS Equestrian Park #1 Well in the Calimesa Management Area

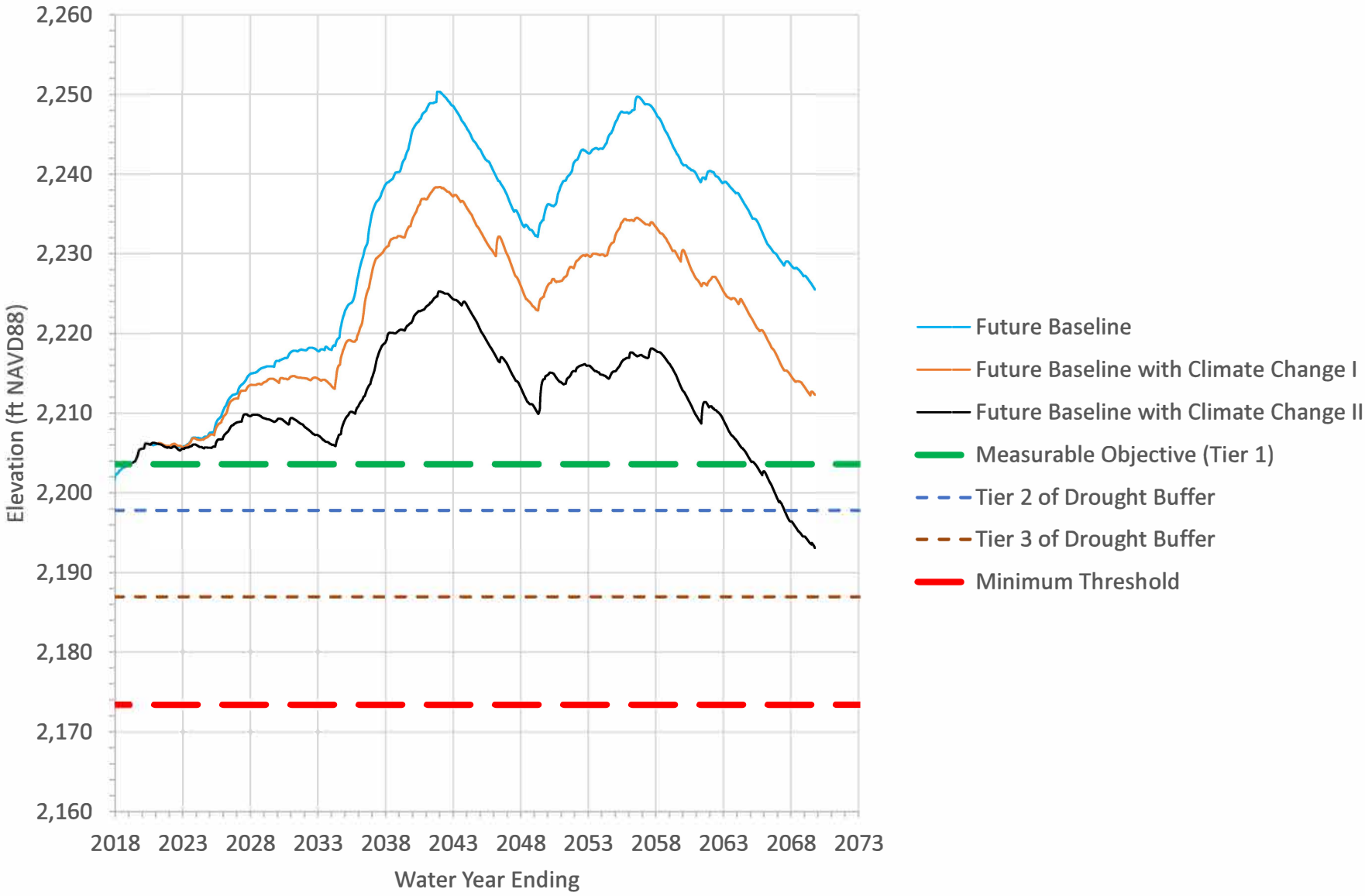

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Figure 4-12. Predicted Hydraulic Heads and Management Action Tiers at USGS Equestrian Park #4 Well in the Calimesa Management Area

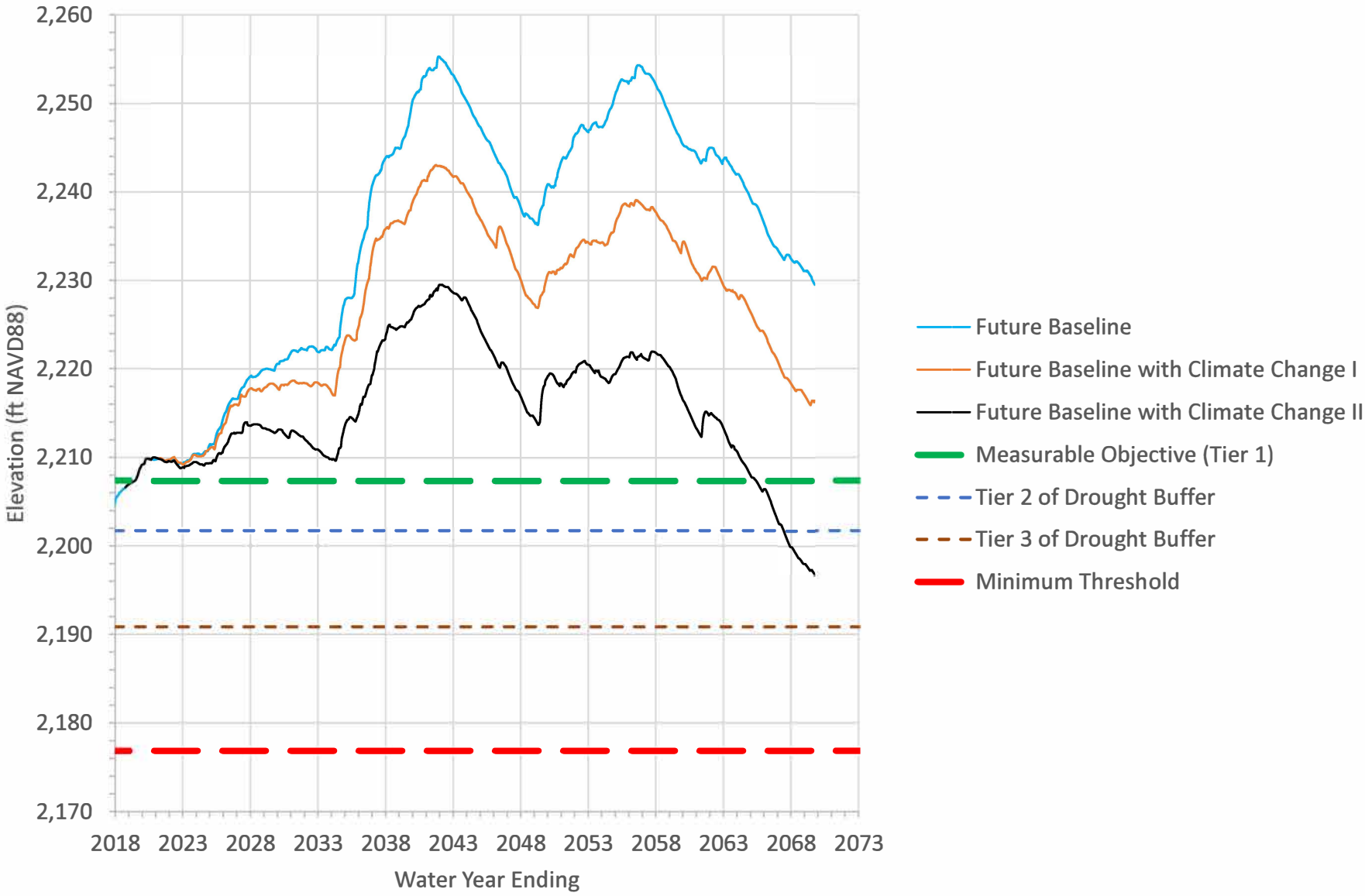

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Figure 4-13. Predicted Hydraulic Heads and Management Action Tiers at USGS 6th Street #1 Well in the Calimesa Management Area

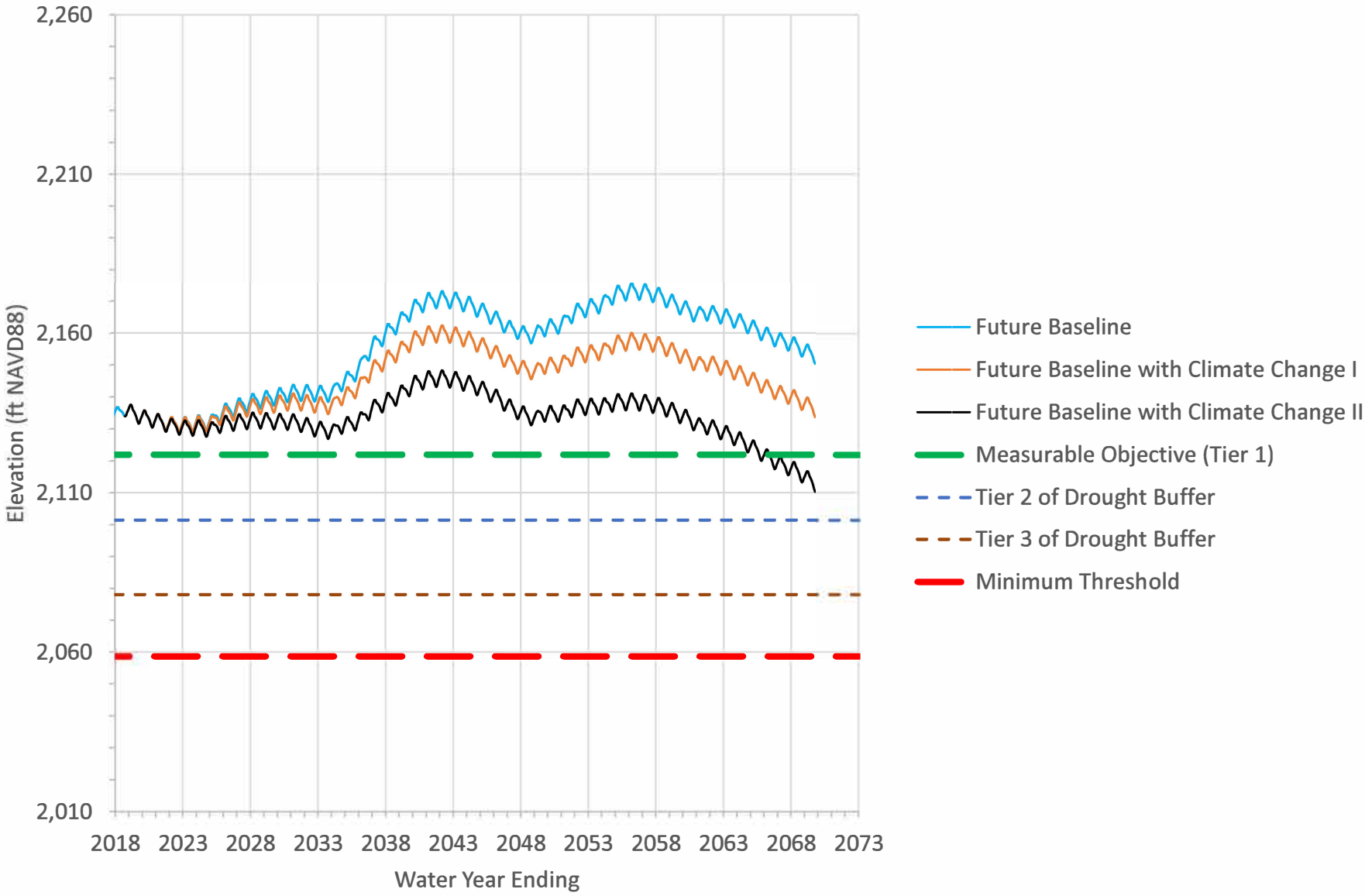

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Figure 4-14. Predicted Hydraulic Heads and Management Action Tiers at USGS 6th Street #4 Well in the Calimesa Management Area

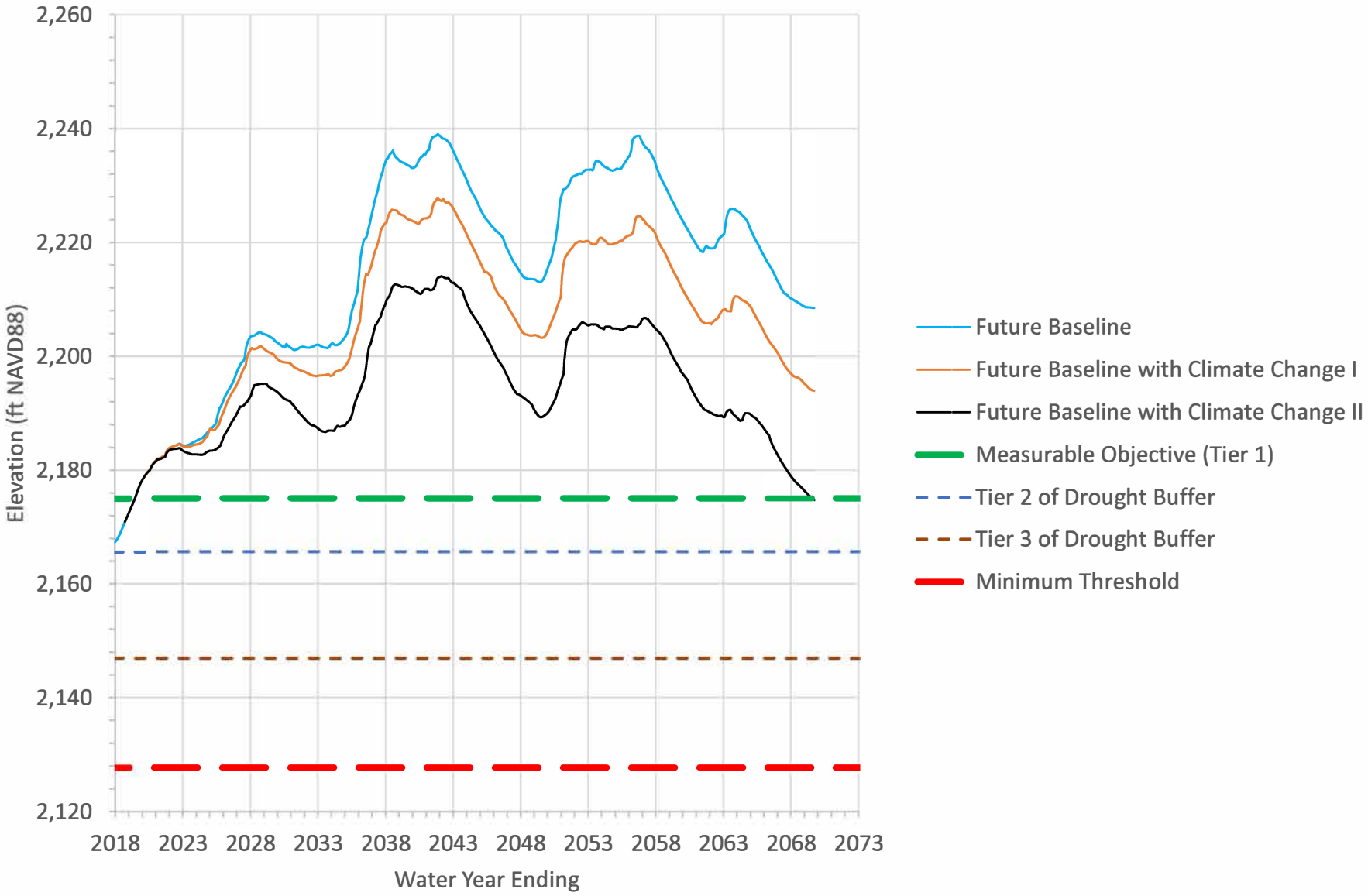

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Figure 4-15. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios and Management Action Tiers in the Western Heights Management Area

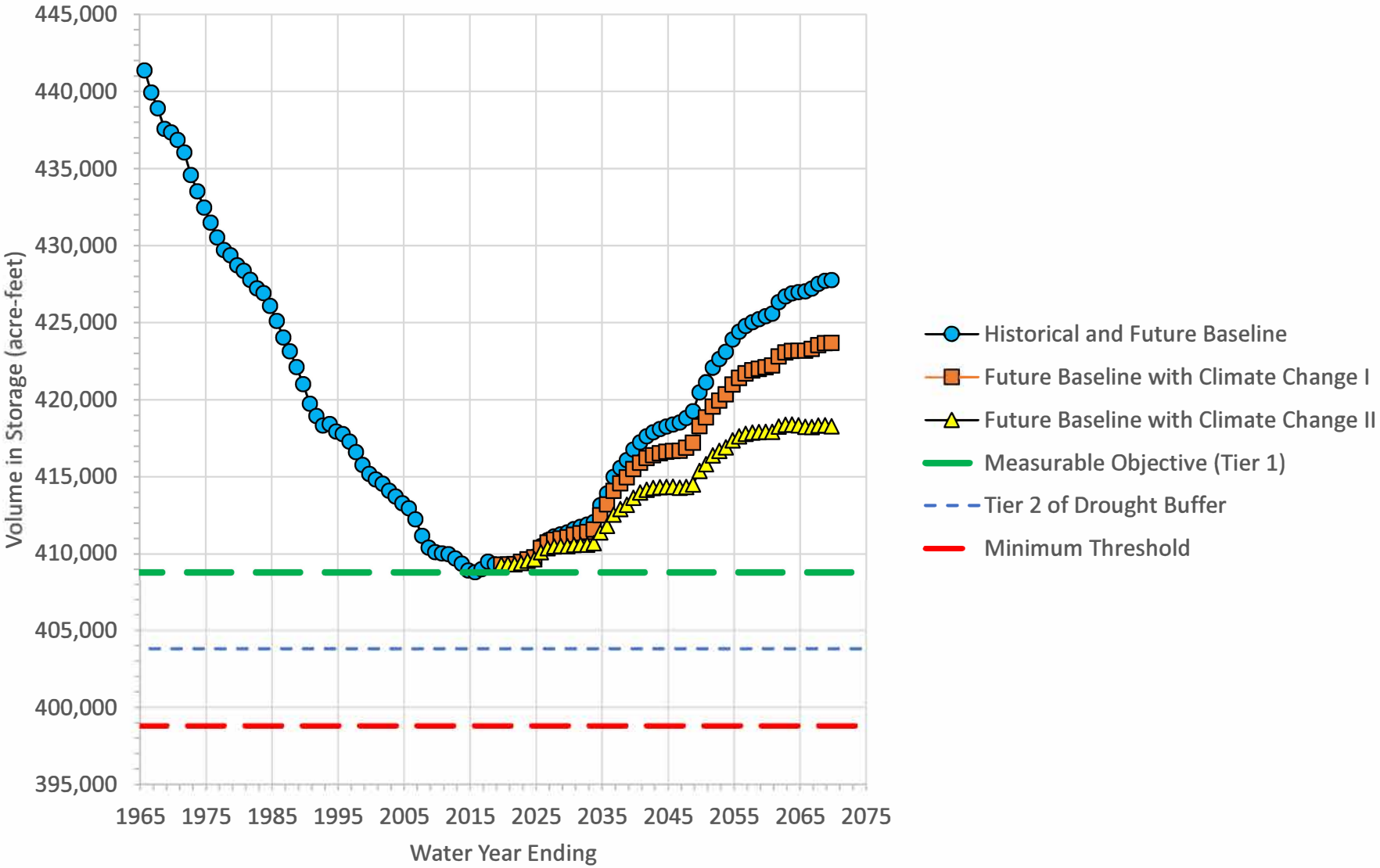

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Figure 4-16. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-02A in the Western Heights Management Area

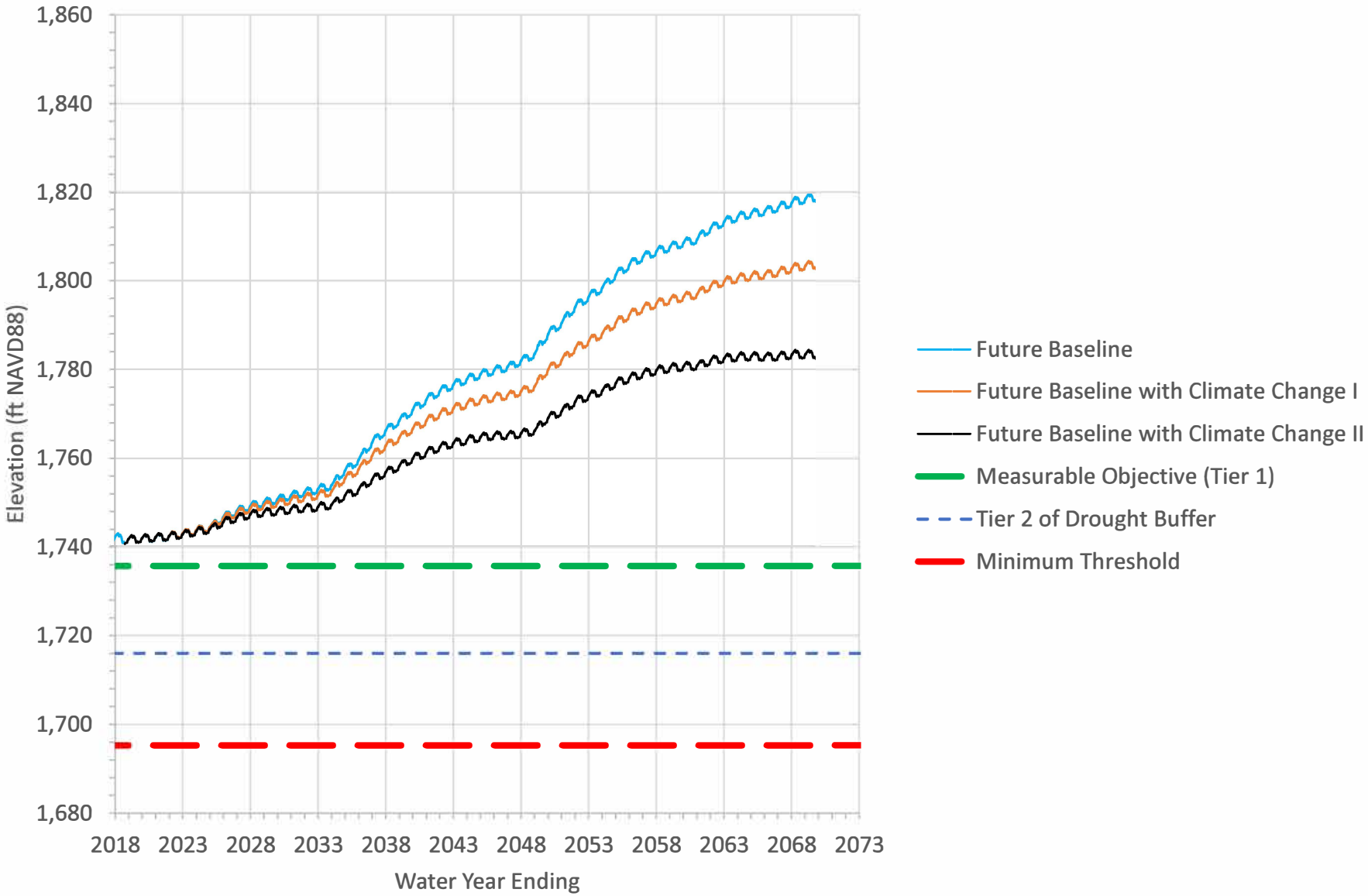

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Figure 4-17. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-10 in the Western Heights Management Area

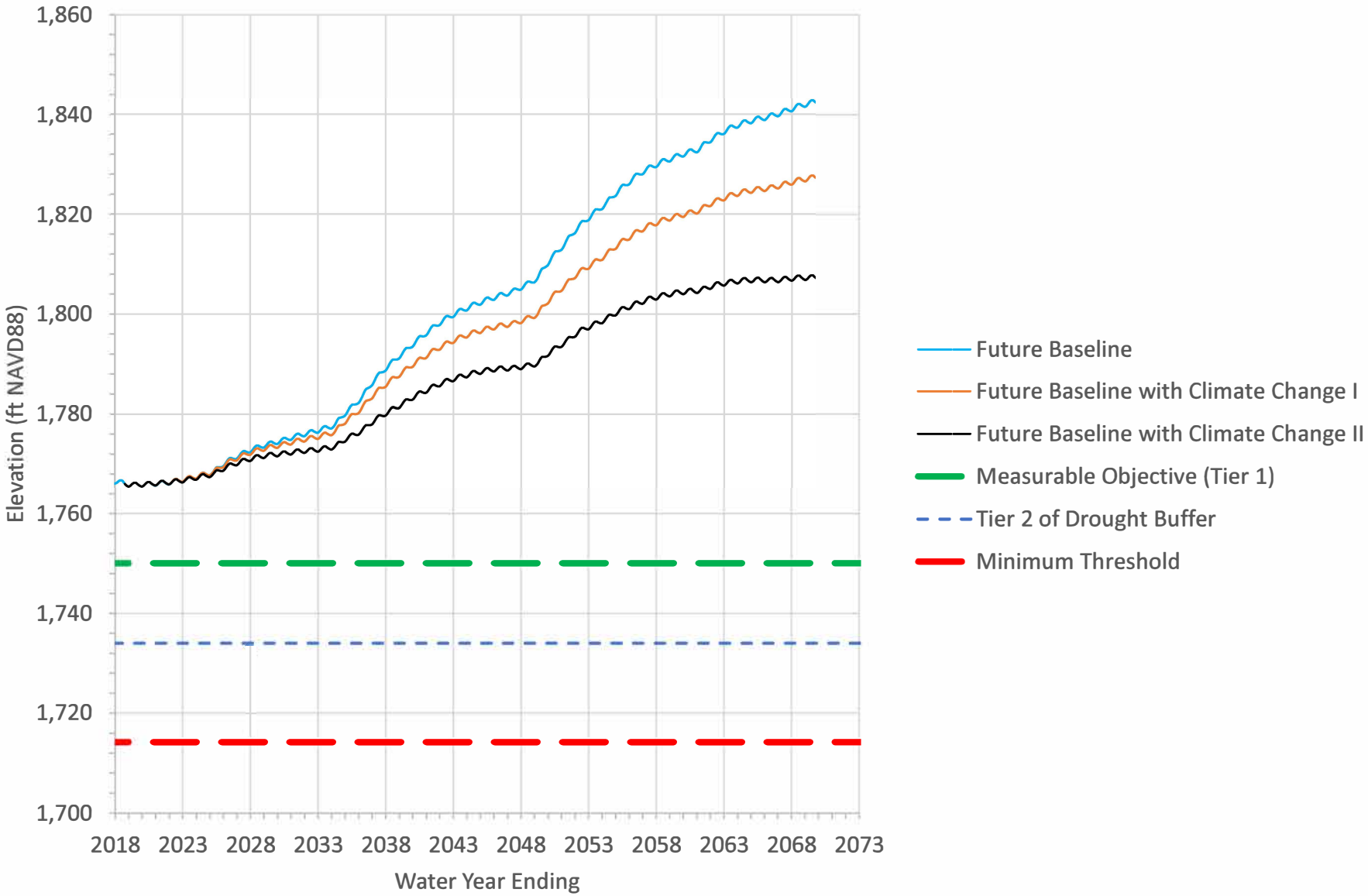

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Figure 4-18. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-11 in the Western Heights Management Area

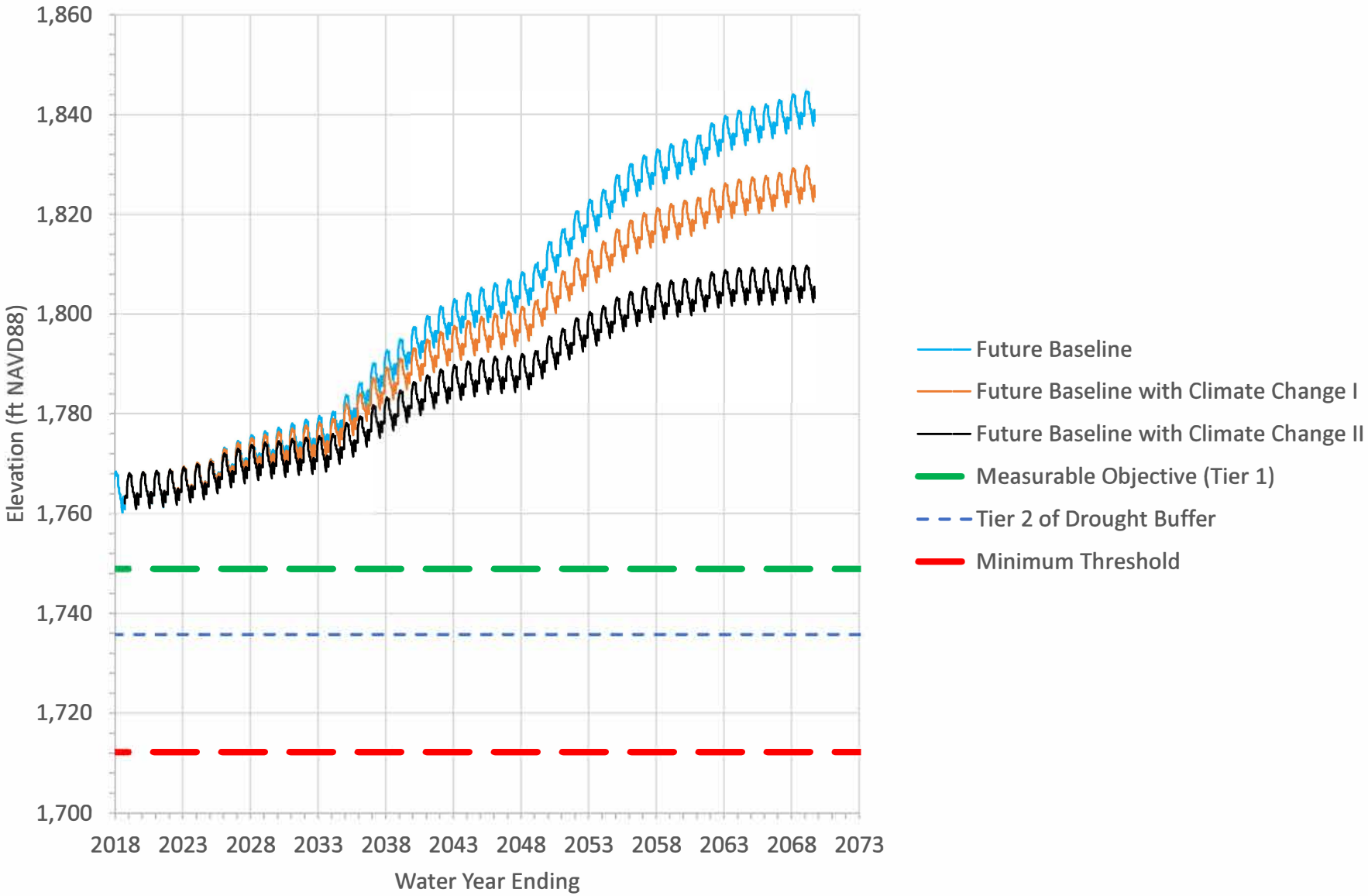

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Figure 4-19. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-12 in the Western Heights Management Area

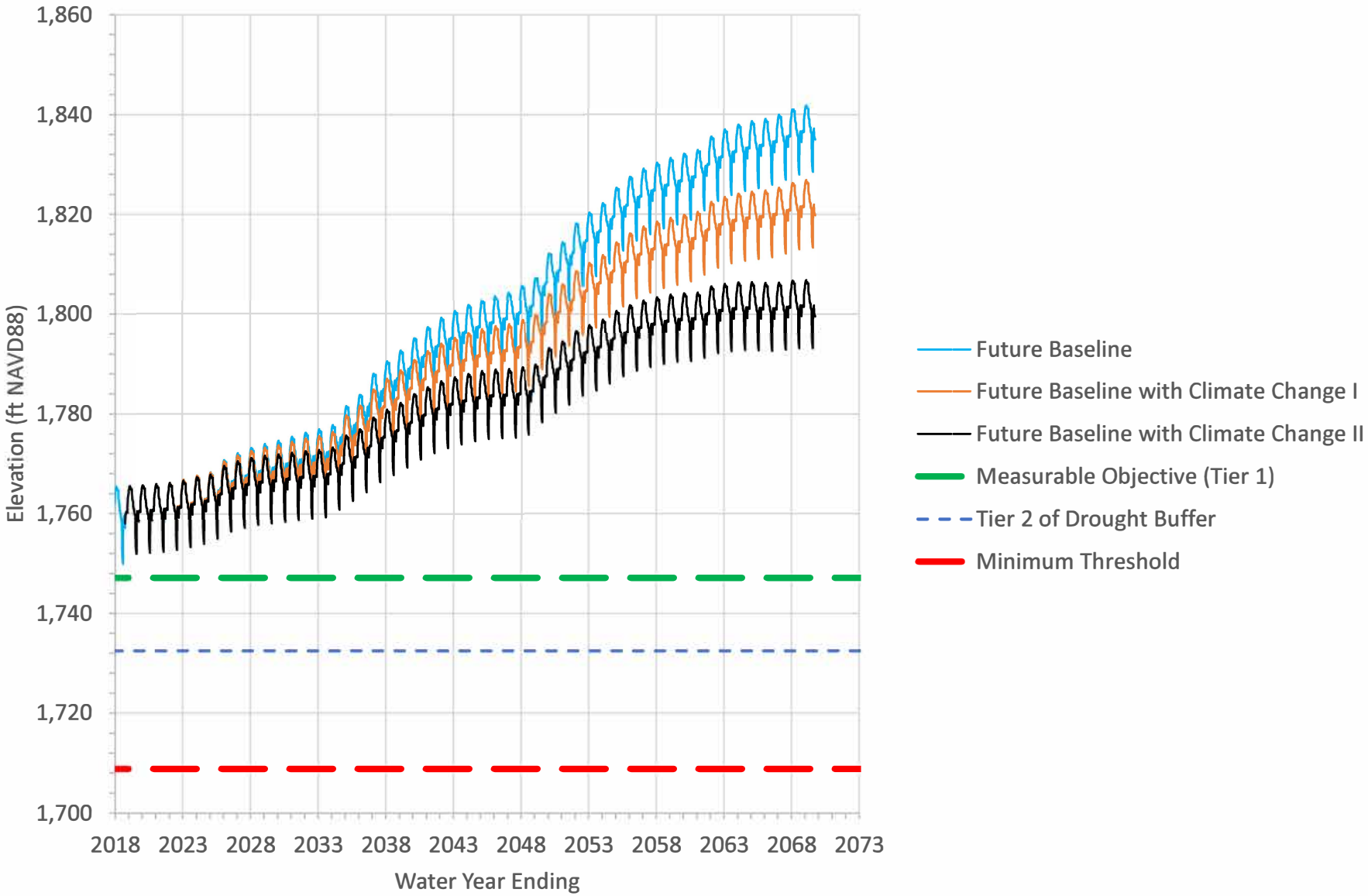

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Figure 4-20. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-14 in the Western Heights Management Area

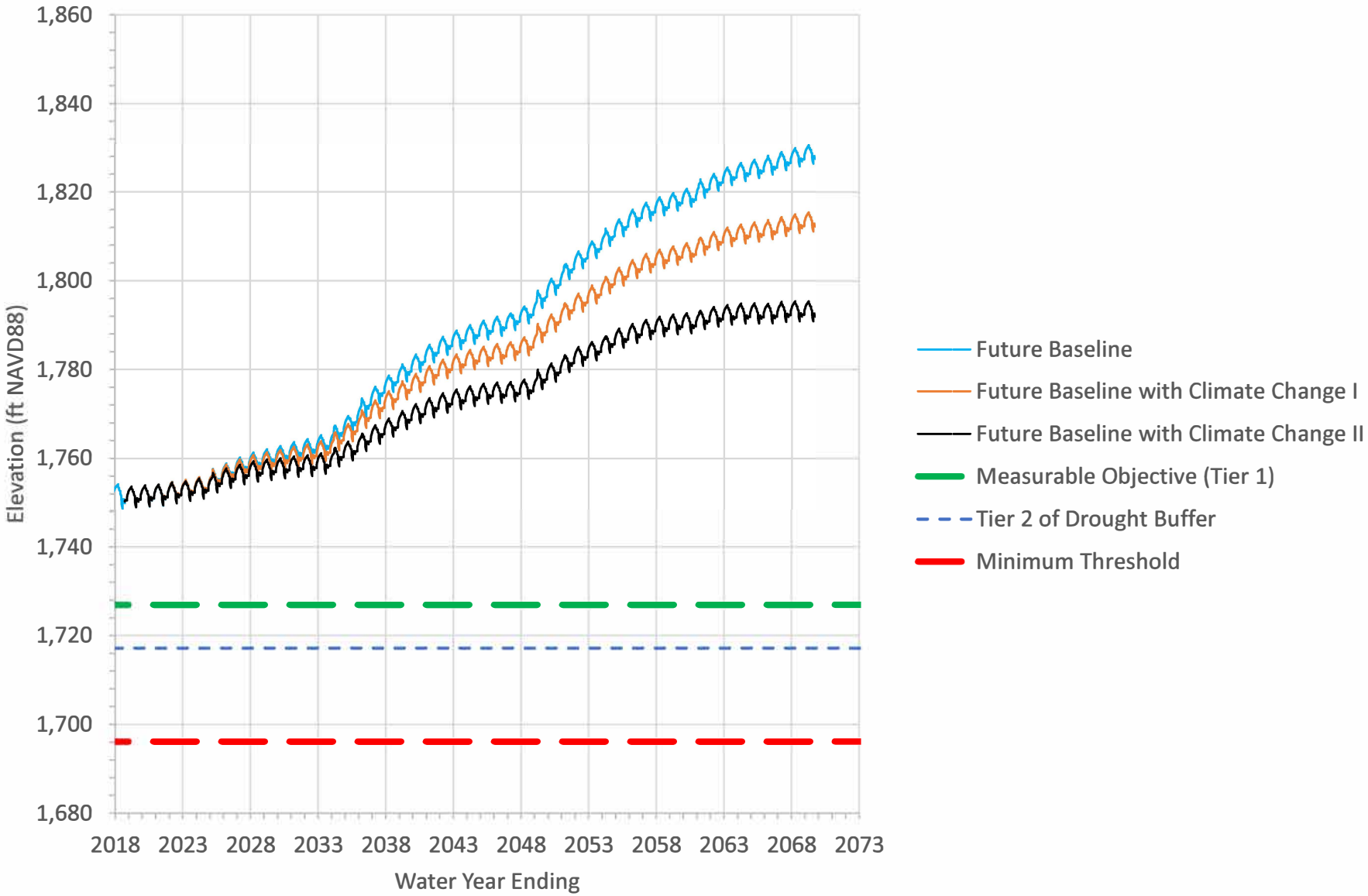

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Figure 4-21. Predicted Simulated Hydraulic Heads and Management Action Tiers at USGS Dunlap #2 Well in the Western Heights Management Area

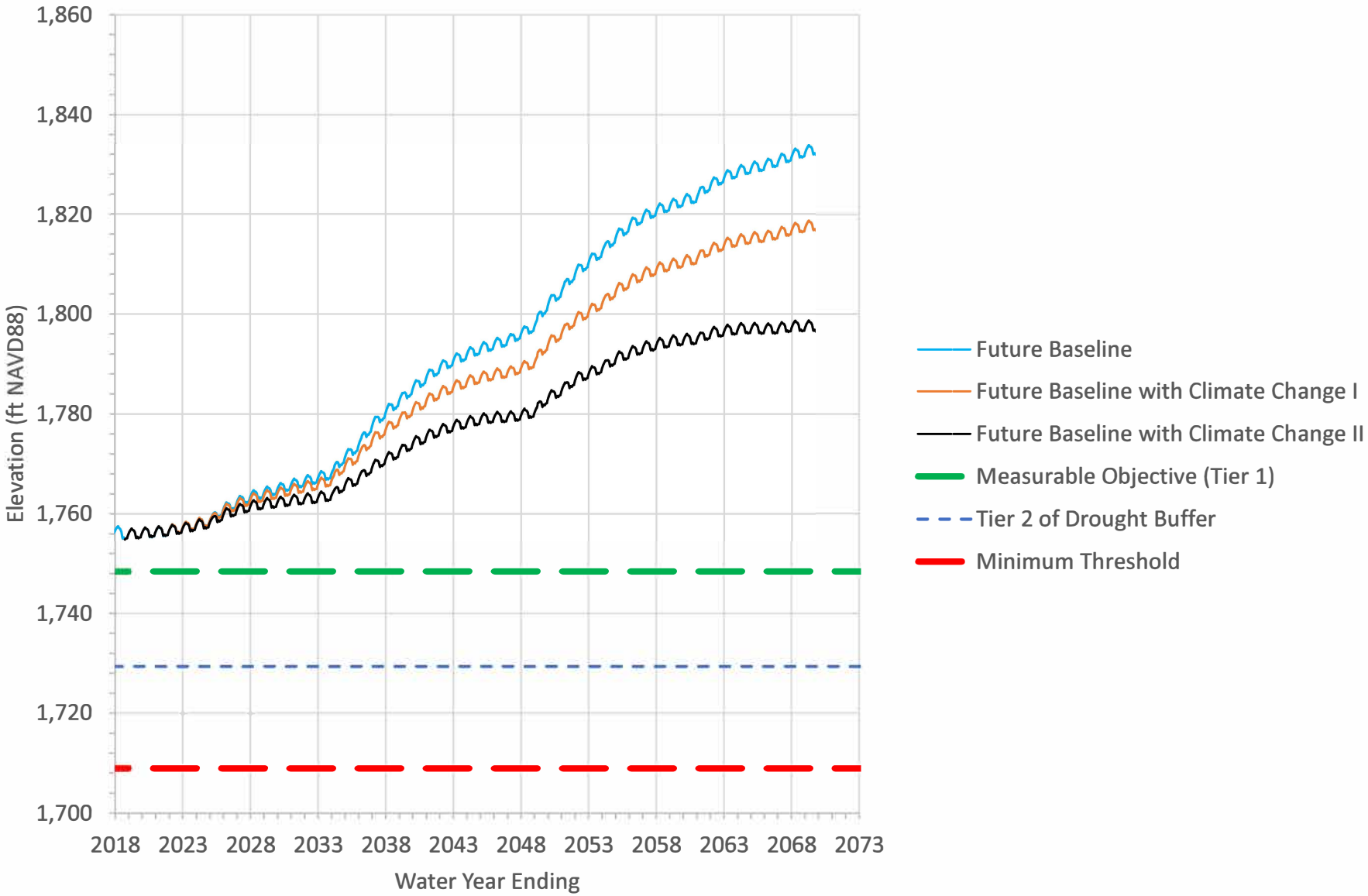

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Figure 4-22. Predicted Simulated Hydraulic Heads and Management Action Tiers at USGS Dunlap #4 Well in the Western Heights Management Area

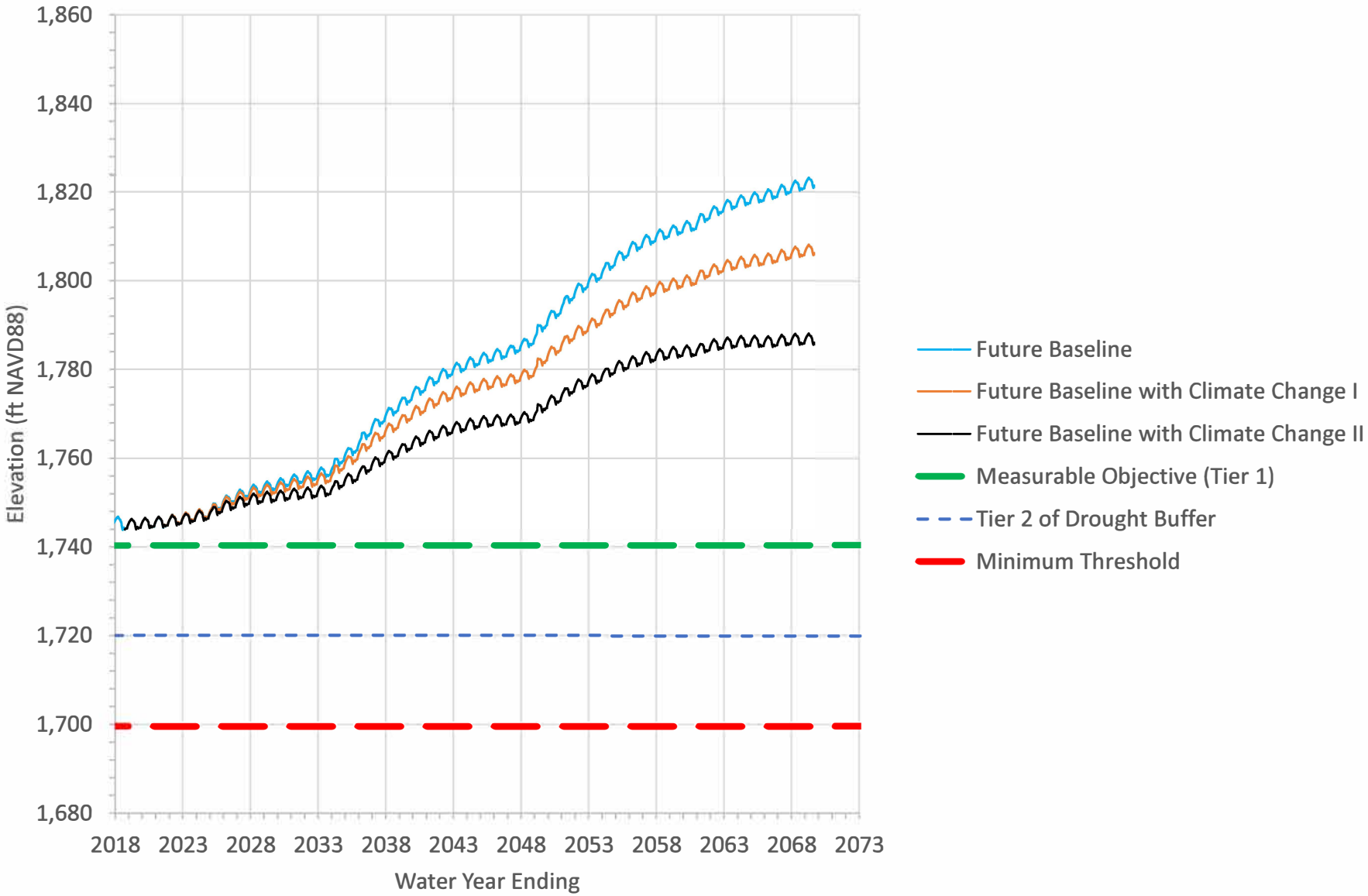

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Figure 4-23. Historical Groundwater Production by Agency in the North Bench Management Area

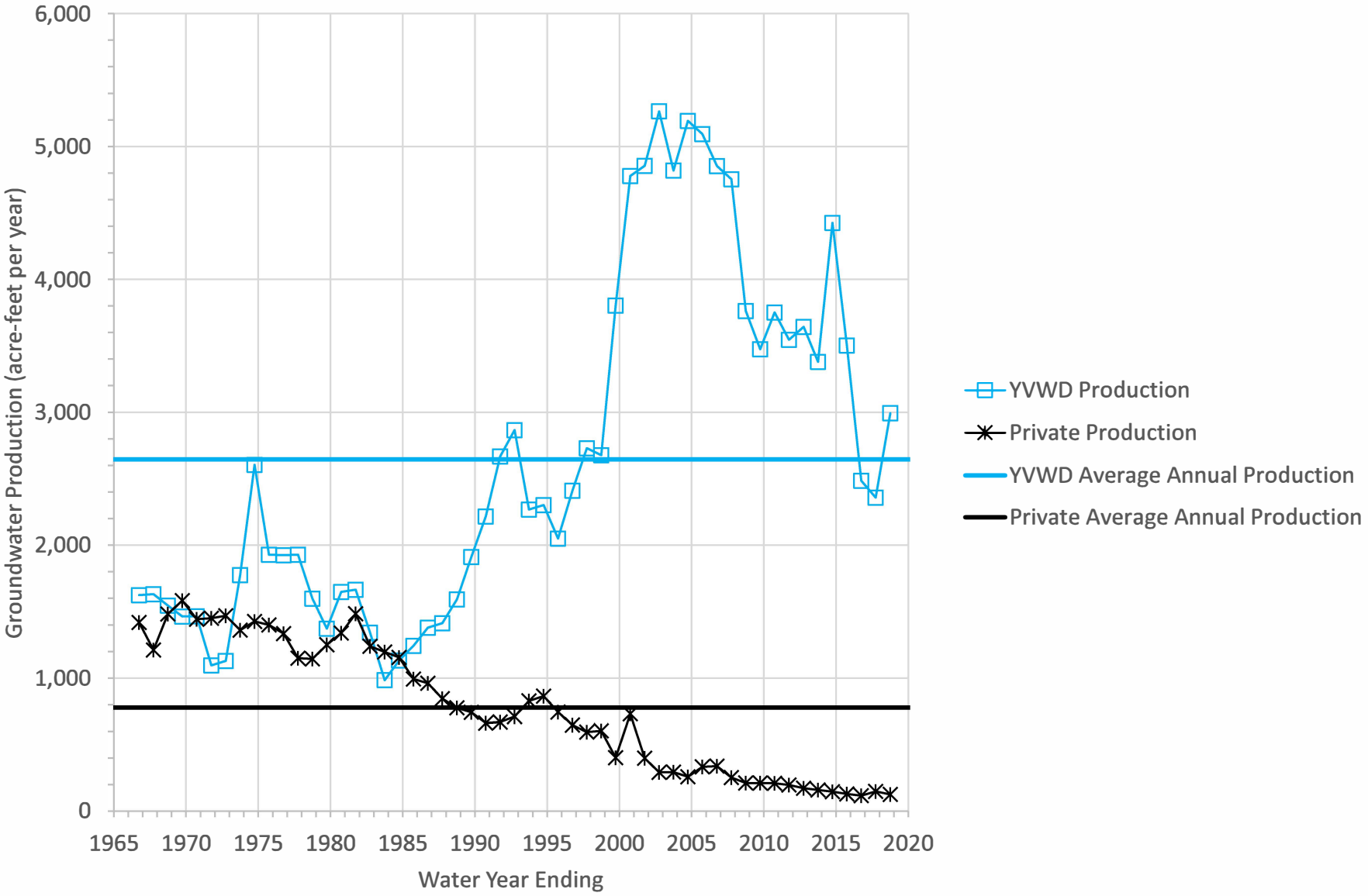

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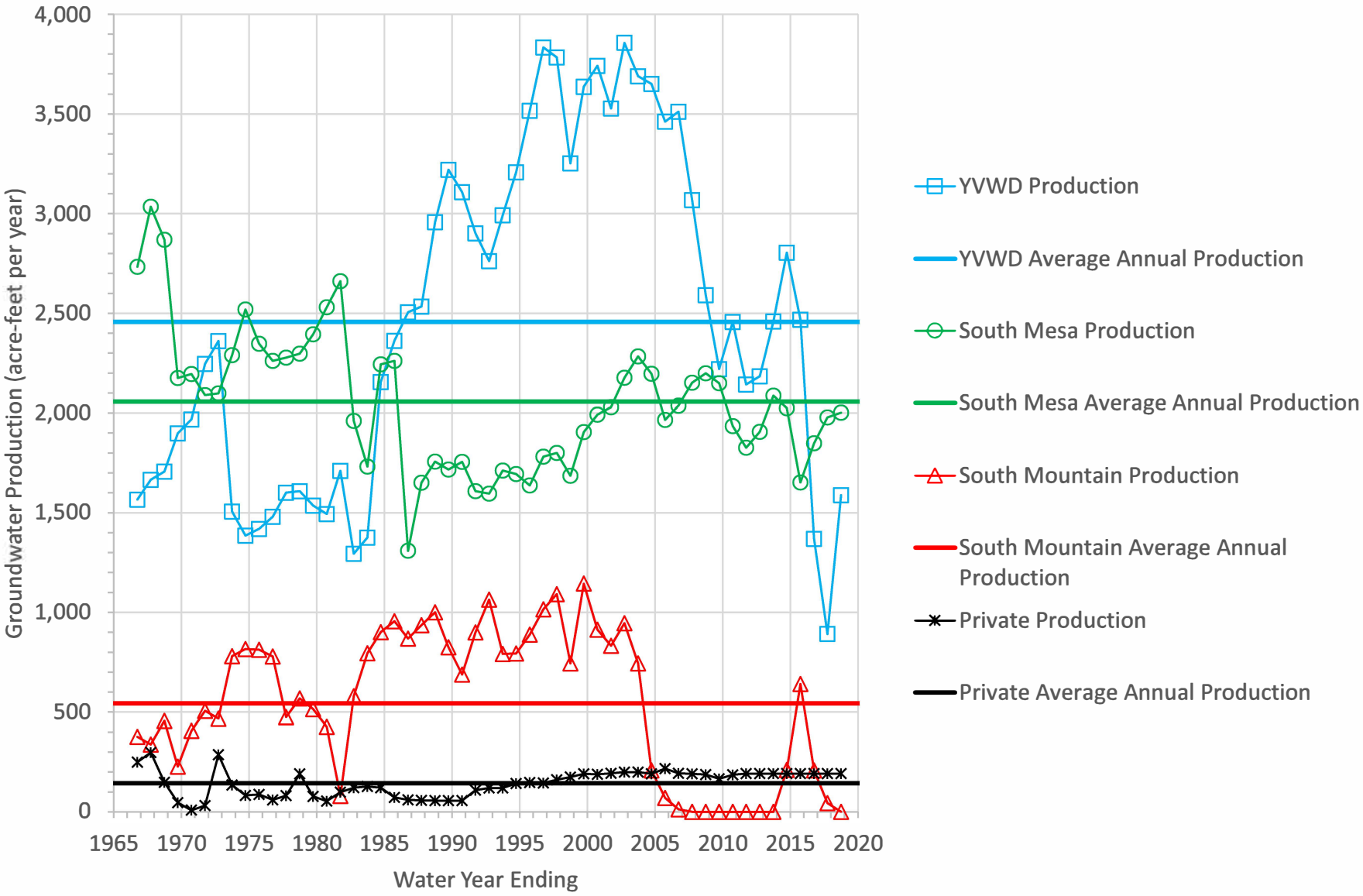
Figure 4-24. Historical Groundwater Production by Agency in the Calimesa Management Area



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5 Plan Implementation

5.1 Introduction to Plan Implementation

Upon adoption of this Groundwater Sustainability Plan (GSP) by the Yucaipa Groundwater Sustainability Agency (GSA), the primary activities associated with implementing the GSP include administrative duties by the member agencies of the Yucaipa GSA, the management of data collection, data validation, and analysis to evaluate conditions in the Subbasin, the preparation and submittal of annual reports and periodic evaluations, with associated data, to the California Department of Water Resources (DWR), and an assessment of conditions in the Subbasin and determination if management actions need to be implemented. During the initial 5-year period after the GSP is adopted, the Yucaipa GSA will evaluate options to address data gaps identified in Section 2.6.3, and conduct feasibility studies to evaluate the effectiveness of potential spreading basins and other programs that would maintain or achieve sustainability in the Subbasin.

Resolutions by the Board of Directors for the Yucaipa GSA member agencies approving the GSP and instructing the Yucaipa GSA to adopt and submit the GSP to DWR are included in Appendix 5-A.

5.2 GSP Administration

The Yucaipa GSA is responsible for implementing the GSP after it is adopted. The administrative duties of the Yucaipa GSA include, at a minimum, the following:

- Adhering to the implementation schedule (Figure 5-1) to ensure that the Yucaipa GSA conducts the required minimum data collection periods in the spring and fall every year, the annual reports are prepared and submitted to DWR by April 1, and the periodic evaluation reports are submitted at least every 5 years or when the GSP is amended.
- Facilitate access to all wells and stream flow gauging stations in the monitoring network, including the representative monitoring points in each management area, to ensure the collection of representative data by following the monitoring protocols presented in Section 3.6.4.
- Validate and upload data to the data management system (DMS) for the purposes of evaluating conditions in the Plan Area.
- Facilitate the submission of annual reports and periodic evaluation reports per Sub-Article 7 of Article 5 of the California Code of Regulations (CCR) Division 2, Chapter 1.5 (23 CCR, Section 356). This section describes the procedures and requirements for preparing and submitting the annual reports and periodic evaluations to DWR.
- Facilitate public engagement.

The costs associated with administering the GSP will be shared per the Memorandum of Agreement (Appendix 1-B). The Memorandum of Agreement established a cost share structure with the water purveyors responsible for 75% and the San Bernardino Valley Municipal Water District and San Gorgonio Pass Water Agency (Regionals) and the Municipalities responsible for 25% of the costs associated with the administration of the Yucaipa GSA and the development and implementation of the GSP. In general, Yucaipa GSA plans to fund operating costs by using general operating funds, charging its customers through water rates, and/or fees assessed to new developments to connect to existing water services (public water supply, sanitary sewer). The estimated annual costs for

implementing the GSP, including the estimated share in costs for each water purveyor and each Municipality and Regional, are summarized in Table 5-1.

Table 5-1. Estimated Annual Costs for Implementing the GSP

GSP Implementation Task	Estimated Annual Cost	Each Water Purveyor	Each Municipality and Regional
GSA Administrative Costs	$20,000.00	$3,750.00	$1,250.00
Public Engagement	$5,000.00	$937.50	$312.50
GSP Annual Reports	$30,000.00	$5,625.00	$1,875.00
GSP Periodic Evaluations[a]	$40,000.00	$7,500.00	$2,500.00
DMS Management	$5,000.00	$937.50	$312.50
Subtotal for Administrative Tasks	*$100,000.00*	*$18,750.00*	*$6,250.00*
Groundwater Level Monitoring[b]	$15,000.00	$2,812.50	$937.50
Groundwater Production Monitoring[c]	$10,000.00	$1,875.00	$625.00
Groundwater Quality Monitoring[d]	$15,000.00	$2,812.50	$937.50
Installation and Maintenance of Wells in the Monitoring Network	$15,000.00	$2,812.50	$937.50
Installation and Maintenance of Surface Water Gauging Stations	$15,000.00	$2,812.50	$937.50
Subtotal for Monitoring and Data Collection Tasks	*$70,000.00*	*$13,125.00*	*$4,375.00*
Total	**$170,000.00**	**$31,875.00**	**$10,625.00**

Notes: GSP = Groundwater Sustainability Plan; GSA = Groundwater Sustainability Agency; DMS = data management system.
[a] Includes updating, refining, and recalibrating numerical model.
[b] Includes installation/maintenance to obtain data, QA/QC, measuring devices.
[c] Includes installation/maintenance to obtain data, QA/QC, meter calibration.
[d] Includes installation/maintenance to obtain data, QA/QC, field meters.

The first five GSP Implementation tasks listed in Table 5-1 are categorized as administrative tasks, in which each member agency of the Yucaipa GSA will provide funds at the beginning of each calendar year to cover their estimated annual costs. The last five GSP Implementation tasks listed in Table 5-1 are categorized as monitoring and data collection tasks, in which each member agency of the Yucaipa GSA will provide funds as costs are incurred when implementing these tasks. The annual costs listed in Table 5-1 are estimated based on an understanding of current conditions and anticipation of the level of effort in implementing the GSP. These estimated costs will be reevaluated every year and may be modified based on actual costs incurred after the GSP is adopted and implemented.

Table 5-2 provides a summary of the estimated annual costs for each water purveyor and each Municipality and Regional of the Yucaipa GSA.

Table 5-2. Estimated Annual Costs for Each Water Purveyor and Each Municipality and Regional

Yucaipa GSA Member Agency		Estimated Annual Upfront Costs	Estimated Annual Incurred Costs	Estimated Total Annual Cost
Water Purveyors	South Mesa	$18,750.00	$13,125.00	$31,875.00
	South Mountain	$18,750.00	$13,125.00	$31,875.00
	WHWC	$18,750.00	$13,125.00	$31,875.00

Table 5-2. Estimated Annual Costs for Each Water Purveyor and Each Municipality and Regional

Yucaipa GSA Member Agency		Estimated Annual Upfront Costs	Estimated Annual Incurred Costs	Estimated Total Annual Cost
	YVWD	$18,750.00	$13,125.00	$31,875.00
Municipality and Regional	City of Redlands	$6,250.00	$4,375.00	$10,625.00
	City of Yucaipa	$6,250.00	$4,375.00	$10,625.00
	SBVMWD	$6,250.00	$4,375.00	$10,625.00
	SGPWA	$6,250.00	$4,375.00	$10,625.00
Estimated Total Annual Cost		**$100,000.00**	**$70,000.00**	**$170,000.00**

Notes: GSA = Groundwater Sustainability Agency; WHWC = Western Heights Water Company; YVWD = Yucaipa Valley Water District; SBVMWD = San Bernardino Valley Municipal Water District; SGPWA = San Gorgonio Pass Water Agency.

5.3 Data Collection, Validation, and DMS

Member agencies of the Yucaipa GSA will continue participating in monitoring programs already implemented (Section 1.5.1) to collect groundwater elevation, groundwater quality, and production data to characterize conditions in the Subbasin. The member agencies will follow the monitoring protocols presented in Section 3.6.4 to collect data that is accurate and representative of conditions in the Subbasin, and will upload the data to the DMS. As discussed in Section 3.6 (Monitoring Network), the monitoring schedule to collect static groundwater elevation data, at a minimum, is March 9 to 22 for the spring and October 9 to 22 for the fall. The recommended frequency to collect static groundwater elevation data is monthly. Water quality data is collected per the monitoring requirements under Title 22 for municipal water supply wells and the Maximum Benefits Monitoring Program, and water quality sampling will follow the monitoring protocols presented in Section 3.6.4.3, Groundwater Quality Monitoring.

The water purveyors use calibrated flow meters and totalizers to track the volume of groundwater extracted at their respective municipal and irrigation water supply wells. Production data is collected on a monthly basis. Precipitation gauges have been maintained and monitored by the San Bernardino County Flood Control District and the U.S. Geological Survey, both of which are public agencies that provide their respective data in the public domain. The Yucaipa GSA will access this data and upload it to the DMS.

During the initial 5-year period after the GSP is adopted, the Yucaipa GSA will evaluate options for filling data gaps identified in this GSP. The primary data gaps identified were a lack of knowledge of existing private well users operating in the Subbasin, spatial gaps in groundwater elevation data in the eastern section of the Calimesa management area, and stream flow gauging stations to measure low to normal flows. As discussed in Section 3.6.6 (Monitoring Network Improvements), the Yucaipa GSA will make efforts to obtain information on private well users, improve existing or install new stream flow gauging stations to enhance the characterization of stream flow in the Plan Area, and improve the spatial and temporal monitoring coverage of the Subbasin. For instance, pressure transducers may be installed at some wells in the monitoring network to reduce the time window during which groundwater elevations are manually collected. The costs of obtaining information from private well users, improving the monitoring of surface water flows, and addressing data gaps in the monitoring network are associated with GSP implementation.

5.4 Annual Reports

Sub-article 7 of Article 5 of the California Code of Regulations Division 2 Chapter 1.5 (23 CCR, Section 356.2) describes the general requirements for the annual reports to be submitted to DWR after the GSP is adopted by the Yucaipa GSA. Annual reports are due to DWR by April 1 of each year following the adoption of the GSP. Each annual report shall include the following components:

- General information, including an executive summary and a location map depicting the basin, jurisdictional boundaries, and Plan Area covered by the report
- A detailed description and graphical representation of the following:
  - Groundwater elevation data from wells identified in the monitoring network
  - Groundwater elevation contour maps depicting, at a minimum, the seasonal high and seasonal low groundwater elevations observed in the preceding year
  - Groundwater elevation hydrographs depicting historical trends updated with data collected in the preceding year
  - Groundwater extractions for the preceding water year
  - An accounting of surface water supply, including imported SWP water, imported groundwater from outside the Plan Area, and surface water diversions
  - An accounting of total water use and identity of the water use sector
  - Change in groundwater in storage
- A description of progress toward implementing the GSP, including implementation of projects or management actions since the previous annual report

The description and graphical representation of the change in groundwater storage will include a graph depicting water year type, based on the annual precipitation in the Plan Area compared to the mean annual rainfall (Section 2.2.1.4, Water Year Type), groundwater production, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the Plan Area based on the simulated annual change in storage by the YIHM. The annual reports will conclude with an overview of the implementation of the GSP, including an evaluation of groundwater conditions against the sustainability criteria established in Chapter 3. The annual report will include a descriptive summary of any management actions that were implemented in the Plan Area.

5.5 Periodic Evaluations

Every fifth year of GSP implementation and whenever the GSP is amended, the Yucaipa GSA is required to prepare and submit an Agency Evaluation and Assessment Report to DWR together with the annual report for that year (23 CCR, Section 356.4). The tasks associated with preparing this report include evaluating any new information that has been made available since the GSP adoption and assessing whether changes to assumptions or descriptions in the GSP are required. The following components are required in the periodic evaluation reports:

- A description of current groundwater conditions for each applicable sustainability indicator relative to measurable objectives and minimum thresholds.
- A description of the implementation of any projects or management actions, and the effect on groundwater conditions resulting from those projects or management actions.

- A review and evaluation of the Plan Area setting, management areas, sustainability criteria and management actions described in the GSP, and proposed revisions to the GSP based on information obtained since the adoption of the Plan.
- A description and evaluation of the monitoring network within the Plan Area. The evaluation will determine if data gaps identified in the GSP have been addressed, and if new data gaps are identified. The periodic evaluation will include proposed actions by the Yucaipa GSA to address data gaps, which may include modifications to or expansion of the existing monitoring network.
- A description of significant new information that has been made available since the adoption of the GSP, an amendment to the GSP, or the last 5-year assessment.
- A description of relevant actions taken by the Yucaipa GSA, including a summary of regulations or ordinances related to management of the Plan Area or the GSP.
- Information describing any enforcement or legal actions taken by the Yucaipa GSA in furtherance of the sustainability goal for the Plan Area.
- A description of completed or proposed GSP amendments.
- A reevaluation of the estimated sustainable yield of the Subbasin and the management areas by updating the YIHM with data collected since the last periodic evaluation.

5.6 GSP Implementation Schedule

The Yucaipa GSA has developed a schedule that outlines the approximate times at which the various monitoring and reporting components of the GSP will be implemented over the next 5 years (Figure 5-1). The actual start dates may vary from those shown in the schedule.

Management Actions Nos. 1, 2, and 3, described in Section 4.2, will go into effect at the adoption of the GSP. Implementation of Management Action No. 1 will be evaluated, at a minimum, every spring and fall when groundwater elevation data is collected and compared to the measurable objective and minimum thresholds established for the representative monitoring points described in Chapter 3. Implementation of Management Action No. 2 will be evaluated at the end of every water year when comparing water year pumping totals to sustainable yield pumping allocations. Implementation of Management Action No. 3 will occur when a groundwater user applies supplemental water stored in a management area to offset pumping exceedances identified when evaluating Management Action No. 2. Each management action will be reassessed every water year.

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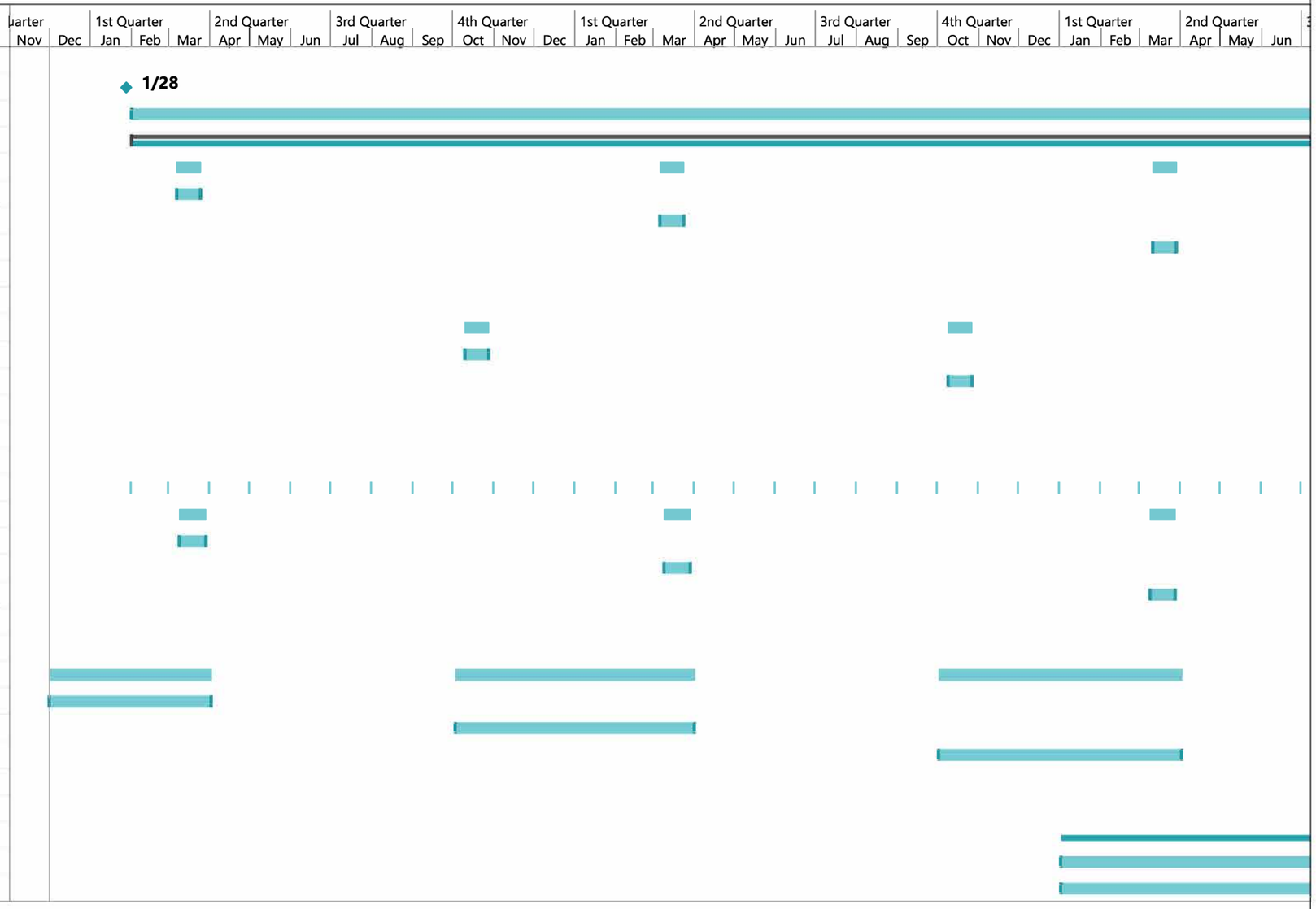
Figure 5-1. 5-Year Plan Implementation Schedule

ID	Task Name	Start	Finish
1			
2	GSP Submitted to DWR	Fri 1/28/22	Fri 1/28/22
3	GSP Administration	Tue 2/1/22	Thu 12/31/26
4	**Monitoring Program**	**Tue 2/1/22**	**Thu 12/31/26**
5	**Spring Groundwater Elevations**	**Mon 3/7/22**	**Thu 3/26/26**
6	Spring Groundwater Elevations 2022	Mon 3/7/22	Thu 3/24/22
7	Spring Groundwater Elevations 2023	Mon 3/6/23	Thu 3/23/23
8	Spring Groundwater Elevations 2024	Mon 3/11/24	Thu 3/28/24
9	Spring Groundwater Elevations 2025	Mon 3/10/25	Thu 3/27/25
10	Spring Groundwater Elevations 2026	Mon 3/9/26	Thu 3/26/26
11	**Fall Groundwater Elevations**	**Mon 10/10/22**	**Thu 10/29/26**
12	Fall Groundwater Elevations 2022	Mon 10/10/22	Thu 10/27/22
13	Fall Groundwater Elevations 2023	Mon 10/9/23	Thu 10/26/23
14	Fall Groundwater Elevations 2024	Mon 10/7/24	Thu 10/24/24
15	Fall Groundwater Elevations 2025	Mon 10/6/25	Thu 10/23/25
16	Fall Groundwater Elevations 2026	Mon 10/12/26	Thu 10/29/26
17	**Groundwater Production**	**Mon 1/31/22**	**Thu 12/31/26**
78	**Groundwater Quality**	**Wed 3/9/22**	**Thu 3/26/26**
79	Groundwater Quality 2022	Wed 3/9/22	Mon 3/28/22
80	Groundwater Quality 2023	Thu 3/9/23	Tue 3/28/23
81	Groundwater Quality 2024	Sat 3/9/24	Wed 3/27/24
82	Groundwater Quality 2025	Sun 3/9/25	Wed 3/26/25
83	Groundwater Quality 2026	Mon 3/9/26	Thu 3/26/26
84	**GSP Annual Report**	**Wed 12/1/21**	**Wed 4/1/26**
85	GSP Annual Report 2022	Wed 12/1/21	Fri 4/1/22
86	GSP Annual Report 2023	Mon 10/3/22	Fri 3/31/23
87	GSP Annual Report 2024	Mon 10/2/23	Mon 4/1/24
88	GSP Annual Report 2025	Tue 10/1/24	Tue 4/1/25
89	GSP Annual Report 2026	Wed 10/1/25	Wed 4/1/26
90	**Periodic Evaluation Report 2026**	**Sun 6/1/25**	**Wed 4/1/26**
91	Refine, Update and Calibrate YIHM	Tue 1/2/24	Tue 9/30/25
92	Evaluation Report Preparation	Tue 1/2/24	Wed 4/1/26



Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

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Figure 5-1. 5-Year Plan Implementation Schedule

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7	Spring Groundwater Elevations 2023	Mon 3/6/23	Thu 3/23/23
8	Spring Groundwater Elevations 2024	Mon 3/11/24	Thu 3/28/24
9	Spring Groundwater Elevations 2025	Mon 3/10/25	Thu 3/27/25
10	Spring Groundwater Elevations 2026	Mon 3/9/26	Thu 3/26/26
11	**Fall Groundwater Elevations**	**Mon 10/10/22**	**Thu 10/29/26**
12	Fall Groundwater Elevations 2022	Mon 10/10/22	Thu 10/27/22
13	Fall Groundwater Elevations 2023	Mon 10/9/23	Thu 10/26/23
14	Fall Groundwater Elevations 2024	Mon 10/7/24	Thu 10/24/24
15	Fall Groundwater Elevations 2025	Mon 10/6/25	Thu 10/23/25
16	Fall Groundwater Elevations 2026	Mon 10/12/26	Thu 10/29/26
17	**Groundwater Production**	**Mon 1/31/22**	**Thu 12/31/26**
78	**Groundwater Quality**	**Wed 3/9/22**	**Thu 3/26/26**
79	Groundwater Quality 2022	Wed 3/9/22	Mon 3/28/22
80	Groundwater Quality 2023	Thu 3/9/23	Tue 3/28/23
81	Groundwater Quality 2024	Sat 3/9/24	Wed 3/27/24
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83	Groundwater Quality 2026	Mon 3/9/26	Thu 3/26/26
84	**GSP Annual Report**	**Wed 12/1/21**	**Wed 4/1/26**
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86	GSP Annual Report 2023	Mon 10/3/22	Fri 3/31/23
87	GSP Annual Report 2024	Mon 10/2/23	Mon 4/1/24
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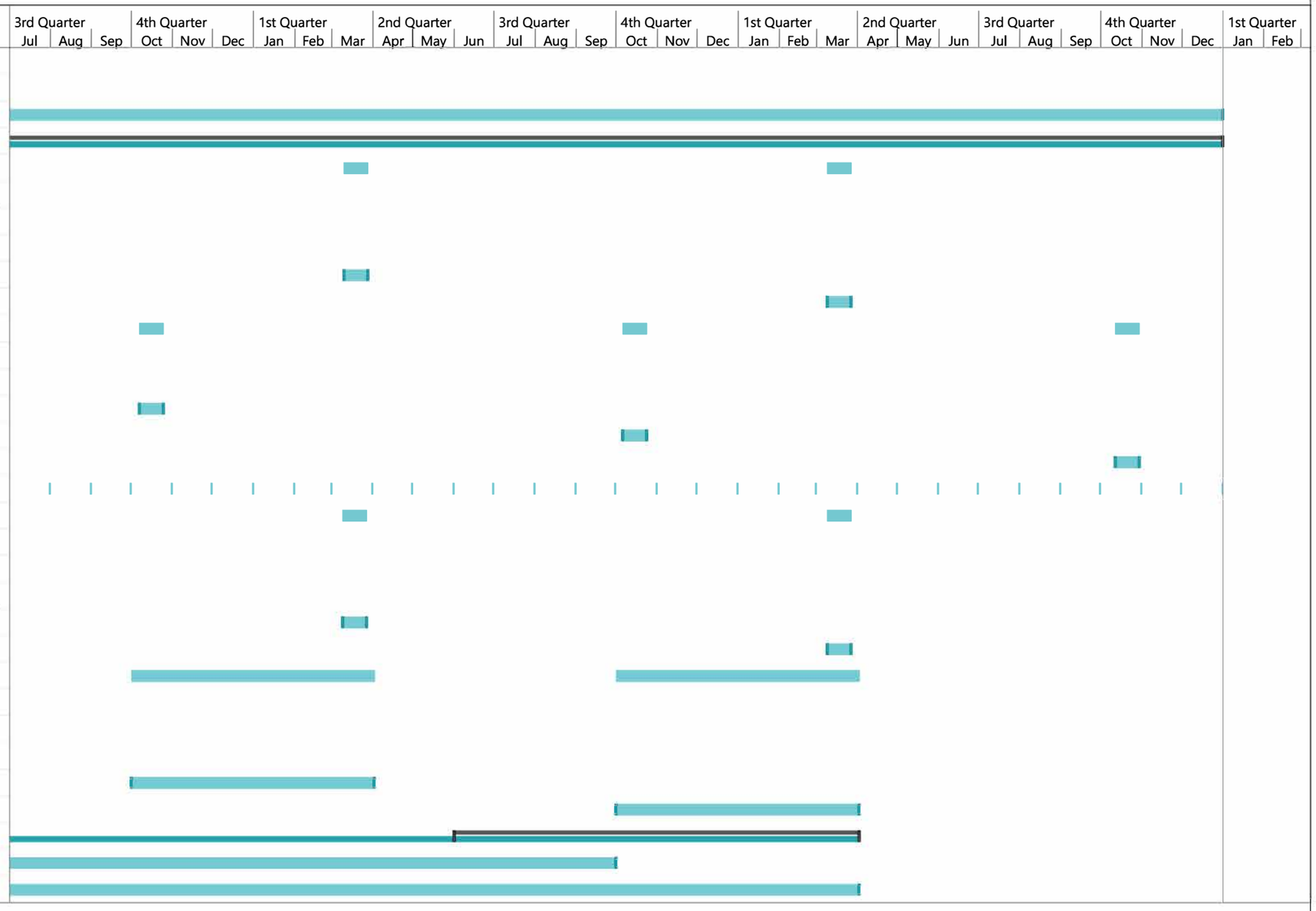

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

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