2023-2024

Engineer's Report on Water Supply and Replenishment Assesment

Coachella Valley Water District

FINAL

2023-2024 ENGINEER'S REPORT ON WATER SUPPLY AND REPLENISHMENT ASSESSMENT

COACHELLA VALLEY WATER DISTRICT

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LIST OF ACRONYMS AND ABBREVIATIONS

˚F	degrees Fahrenheit
AB	Assembly Bill
AF	acre-feet
AFY	acre-feet per year
AOB	Area of Benefit
AV	assessed valuation
Basin	Coachella Valley Groundwater Basin
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CVRWMG	Coachella Valley Regional Water Management Group
CVSC	Coachella Valley Stormwater Channel
CVWD	Coachella Valley Water District
CWA	Coachella Water Authority
CWSRF	Clean Water State Revolving Fund
CY	Calendar Year
DCP	Drought Contingency Plan
DWA	Desert Water Agency
DWR	California Department of Water Resources
EIR	Environmental Impact Report
ft	feet
FY	Fiscal Year
GLC	Glorious Lands Company
GRF	Groundwater Replenishment Facility
GRP	Groundwater Replenishment Program
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
IID	Imperial Irrigation District
IWA	Indio Water Authority
MA	Management Area
mgd	million gallons per day
MSWD	Mission Springs Water District
MWD	Metropolitan Water District of Southern California
MVP	Mid-Valley Pipeline
NPDES	National Pollutant Discharge Elimination System

QSA	Quantification Settlement Agreement
RAC	Replenishment Assessment Charge
Rosedale	Rosedale Rio Bravo Water Storage District
SB	Senate Bill
SDCWA	San Diego County Water Authority
SGM	Sustainable Groundwater Management
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
SWP	State Water Project
TEL-GRF	Thomas E. Levy Groundwater Replenishment Facility
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USGS	United States Geological Survey
WIIN	Water Infrastructure Improvements for the Nation
WRF	Water Reclamation Facility
WRP	Water Reclamation Plant
WRSC	Whitewater River Stormwater Channel
WWR-GRF	Whitewater River Groundwater Replenishment Facility
WY	Water Year

EXECUTIVE SUMMARY

This *2023-2024 Engineer's Report on Water Supply and Replenishment Assessment* (Engineer's Report) was prepared by the Coachella Valley Water District (CVWD) to comply with State Water Code Sections 31630-31639 (Water Code). The Water Code allows CVWD to conduct groundwater replenishment programs (GRPs) and to levy and collect water replenishment assessments from non-exempt groundwater producers that benefit from the GRPs. Groundwater pumpers that produce 25 acre-feet per year (AFY) or less are considered Minimal pumpers and are exempt from assessments.

Pursuant to the Water Code, the Engineer's Report must provide a summary of the groundwater supply conditions and the need for continued replenishment, a description of current GRPs, and recommendations for Replenishment Assessment Charges (RACs) to be levied upon groundwater production from the three defined areas that benefit from the GRPs: the Mission Creek Subbasin Area of Benefit (AOB), the West Whitewater River Subbasin AOB, and the East Whitewater River Subbasin AOB.

The GRPs are essential to the water management plans—most recently the 2022 Indio Subbasin Water Management Plan Update (CVWD et al., 2021a) and the 2022 Mission Creek Subbasin Alternative Plan Update (CVWD et al., 2021b)—that have been developed respectively for the Indio (Whitewater River) and Mission Creek Subbasins to avoid overdraft conditions and associated undesirable results. Groundwater replenishment is accomplished through two mechanisms: direct replenishment, by which imported surface water is percolated directly into the aquifer, and in-lieu replenishment, by which imported water or recycled water is provided to groundwater pumpers for irrigation purposes, thus reducing or eliminating their use of pumped groundwater.

MISSION CREEK SUBBASIN AREA OF BENEFIT

Historical declines in groundwater levels in the Mission Creek Subbasin led to a joint management agreement in 2003 between CVWD and Desert Water Agency (DWA) to cooperatively conduct the Mission Creek Subbasin Management Area (MA) GRP. The Mission Creek Subbasin Management Area contains two AOBs: the CVWD Mission Creek Subbasin AOB and the DWA Mission Creek Subbasin AOB.

In calendar year (CY) 2022, total assessable production in the management area was 13,751 acre-feet (AF), a decrease of 3 percent from 2021. The assessable production in CVWD's Mission Creek Subbasin AOB was 4,390 AF, which was approximately 32 percent of total production within the management area.

Replenishment of the Mission Creek Subbasin Management Area is currently accomplished via the artificial recharge of State Water Project (SWP) water exchanged for Colorado River water with Metropolitan Water District of Southern California (MWD) and delivered to the Mission Creek Groundwater Replenishment Facility (GRF). Due to critically dry year conditions in the Sierra Nevada, in CY 2022, there was no water delivered to the Mission Creek GRF for direct replenishment.

Since 2003, groundwater levels have risen and stabilized throughout the Mission Creek Subbasin, which is evidence that implementation of the GRP has effectively abated historical overdraft. Continued artificial replenishment is necessary to sustain these levels and prevent a return to overdraft in the future.

To fund the costs associated with the GRP in the Mission Creek Subbasin AOB, CVWD staff recommend no change to the $135.52/AF RAC that became effective on July 1, 2017.

WEST WHITEWATER RIVER SUBBASIN AREA OF BENEFIT

Historical declines in groundwater levels in the western portion of the Whitewater River Subbasin led to a joint management agreement in 1976 between CVWD and DWA to cooperatively conduct the West Whitewater River Subbasin Management Area GRP. The West Whitewater River Subbasin Management Area contains two AOBs: the CVWD West Whitewater River Subbasin AOB and the DWA West Whitewater River Subbasin AOB.

In CY 2022, total assessable production and surface water diversions in the management area totaled 157,637 AF, which represents a 1 percent decrease from CY 2021. Assessable production in CVWD's West Whitewater River Subbasin AOB was 122,060 AF, which was approximately 77 percent of the total assessable production and diversions within the management area.

Direct replenishment of the West Whitewater River Subbasin Management Area is currently accomplished via artificial recharge of SWP exchange water and Quantification Settlement Agreement (QSA) water at the Whitewater River GRF and artificial recharge of Colorado River water conveyed through the Mid-Valley Pipeline (MVP) to the Palm Desert GRF. In CY 2022, a total of 15,011 AF was delivered to the Whitewater River GRF, and a total of 10,949 AF was delivered to the Palm Desert GRF for direct replenishment. CVWD also provides imported Colorado River water directly from the MVP or a blend of Colorado River water and recycled water to 24 golf courses in the AOB to offset groundwater production as a form of in-lieu replenishment.

Future planned replenishment projects include the completion of Phase II of the Palm Desert GRF and the connection of 14 additional golf courses and municipal users to the MVP and 29 additional golf courses to the WRP 10 non-potable water system by 2034.

Groundwater levels across most of the West Whitewater River Subbasin AOB have stabilized or are rising, which is evidence that implementation of the West Whitewater GRP has effectively abated historical overdraft. Groundwater levels have continued to gradually decline in a localized area of the northeastern AOB near Sun City/Palm Desert and north of Bermuda Dunes. Continued artificial replenishment is necessary to stabilize or increase groundwater levels in some areas and prevent a return to conditions of overdraft.

To fund the costs associated with the GRP in the West Whitewater River Subbasin AOB, CVWD staff recommends no change to the $165.37/AF RAC that became effective on July 1, 2021.

EAST WHITEWATER RIVER SUBBASIN AREA OF BENEFIT

Historical declines in groundwater levels in the eastern portion of the Whitewater River Subbasin led to CVWD's GRP for the East Whitewater River Subbasin AOB. Direct replenishment in the East Whitewater River Subbasin AOB began in 1997, at the Dike 4 Pilot Facility, and the GRP became effective in 2005.

In CY 2022, assessable production in the East Whitewater River Subbasin AOB was 118,609 AF, which represents a 1 percent decrease from 2021.

Direct replenishment of the East Whitewater River Subbasin AOB is currently accomplished via the artificial recharge of Colorado River water at the Thomas E. Levy (TEL) GRF. In CY 2022, 27,993 AF was delivered for direct replenishment at the TEL-GRF. CVWD also delivers imported Colorado River water from the Coachella Canal to meet the agricultural and golf course irrigation needs in the East Valley. CVWD

provides imported Colorado River water to 32 golf courses in the AOB to offset groundwater production as a form of in-lieu replenishment. Nine holes of one golf course in the AOB receive a blend of recycled water and Coachella Canal water from Wastewater Reclamation Plant (WRP) 7, and one golf course receives water from the Coachella Canal via the MVP.

Future planned replenishment projects include: 1) Phase 2 of the Oasis In Lieu Recharge Project, a source-substitution project that involves construction of a Coachella Canal water distribution system in the Oasis area to provide imported Colorado River water for agricultural irrigation in lieu of groundwater pumping; 2) development of a recycled water project at WRP 4 for additional source substitution; and 3) connection of five additional golf courses to receive Colorado River water or a blend of recycled water.

Since 2005, groundwater levels across most of the East Whitewater River Subbasin AOB have risen significantly, and historical artesian conditions have returned to a wide area of the AOB, which is evidence that implementation of the GRP has effectively abated historical overdraft. Continued artificial replenishment is necessary to maintain positive trends and prevent a return to overdraft.

To fund the costs associated with the GRP in the East Whitewater River Subbasin AOB, CVWD staff recommends no change to the $72.27/AF RAC that became effective on July 1, 2021.

1. INTRODUCTION

This report is the *2023-2024 Engineer's Report on Water Supply and Replenishment Assessment* (Engineer's Report) for the three Coachella Valley Water District (CVWD) Areas of Benefit (AOBs) within the Coachella Valley Groundwater Basin (Basin): the Mission Creek Subbasin AOB, the West Whitewater River Subbasin AOB, and the East Whitewater River Subbasin AOB.

This section describes the purpose of the Engineer's Report, the Basin setting, the use of Sustainable Groundwater Management Act (SGMA) Annual Reports for describing the conditions of groundwater supplies, and the report's organization.

1.1 PURPOSE OF THE ENGINEER'S REPORT

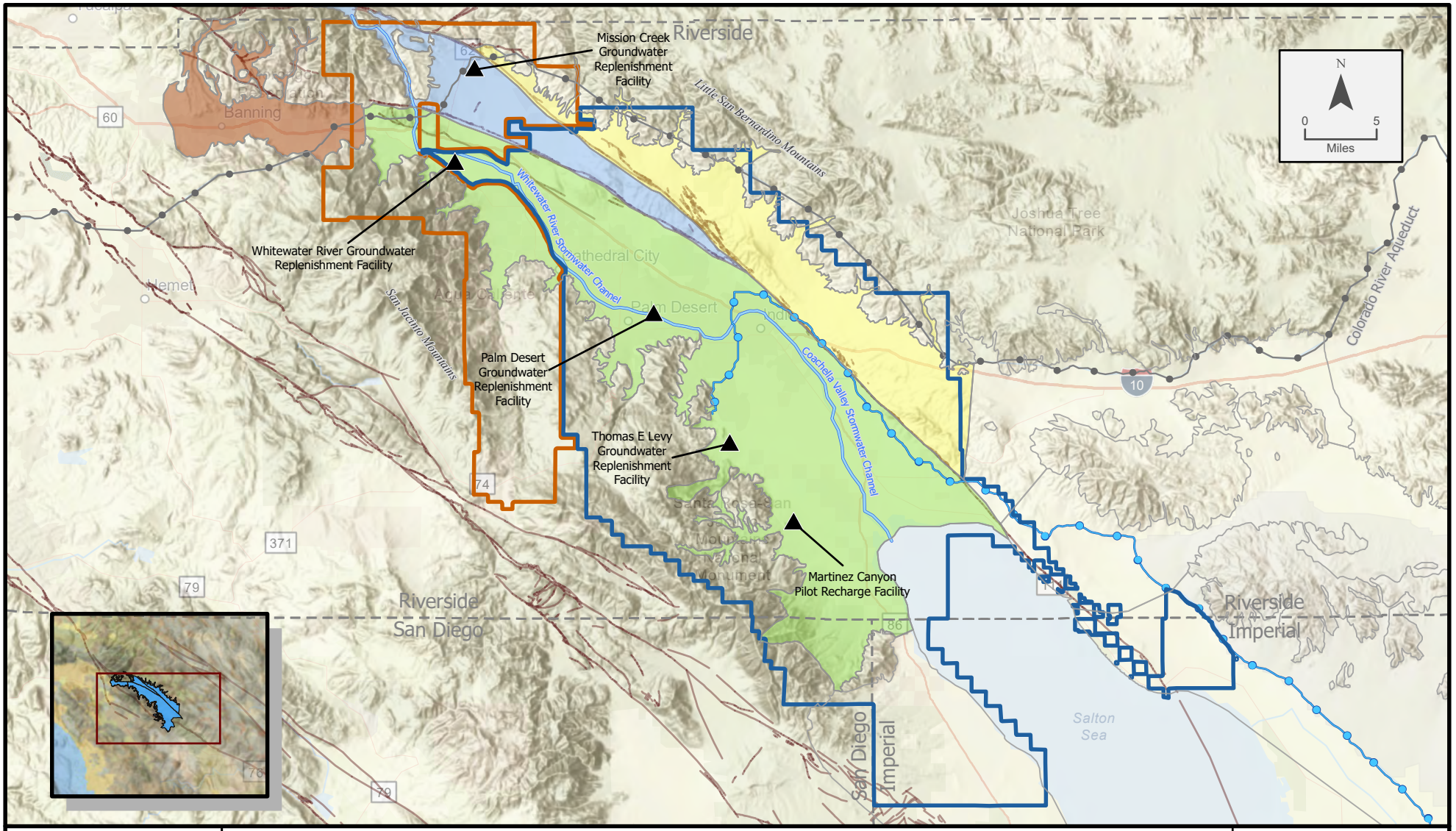
This report is prepared to comply with State Water Code Sections 31630-31639 (Water Code). The Water Code provides CVWD with the authority to levy and collect water replenishment assessments within its AOBs to implement groundwater replenishment programs (GRPs). Groundwater replenishment is necessary to avoid overdraft of the Basin and associated undesirable results. To levy and collect these assessments, CVWD is required to prepare and present to its Board of Directors an annual Engineer's Report on the conditions of the groundwater supplies and recommended Replenishment Assessment Charges (RACs) to be levied upon groundwater production within each AOB.

The Engineer's Report must include the following information:

- A summary of the groundwater supply conditions;
- An assessment of the need for replenishment;
- A description of the replenishment programs, including source and amount of replenishment waters, costs associated with the GRPs, areas directly and indirectly benefited by the GRPs, and amount of groundwater produced in each area during the prior year; and
- A recommendation for the RAC to be levied on each AOB.

1.2 BASIN DESCRIPTION AND SETTING

The Coachella Valley Groundwater Basin (Department of Water Resources [DWR] Groundwater Basin No. 7-021) resides in the northwestern corner of a structural depression, the Salton Trough, which extends from the San Gorgonio Pass to the Gulf of California. The Basin is about 65 miles long on a northwest-southeast orientation and covers approximately 440 square miles. **Figure 1-1** shows the Basin bounded on the southwest by the crystalline bedrock of the Peninsular Ranges (San Jacinto and Santa Rosa Mountains) and on the northwest by the crystalline bedrock of the Transverse Ranges (San Bernardino and Little San Bernardino Mountains). The Basin is located within the western portion of the Colorado Desert Hydrologic Area.



Coachella Valley Water District

- Desert Hot Springs Subbasin
- Indio Subbasin
- Mission Creek Subbasin
- San Gorgonio Pass Subbasin
- Coachella Valley Water District
- Desert Water Agency
- County Boundary
- Coachella Canal
- Colorado River Aqueduct
- Whitewater River Stormwater Channel/ Coachella Valley Stormwater Channel
- Fault Line
- Replenishment Facility

Figure 1-1

Coachella Valley Groundwater Basin

Precipitation on the Basin floor is typically less than five inches per year. Natural recharge to the Basin is primarily from the recharge of mountain-front runoff. The Whitewater River is the major drainage course in the Basin. Perennial flows exist in the portion of this drainage within the San Bernardino Mountains. Along the valley floor, these perennial flows become ephemeral in the northern reach of the drainage, referred to as the Whitewater River Stormwater Channel (WRSC). The constructed downstream extension of the channel, known as the Coachella Valley Stormwater Channel (CVSC), conveys storm water, shallow groundwater entering subsurface drains, and discharge from National Pollutant Discharge Elimination System (NPDES)-permitted wastewater facilities to the Salton Sea. Recharge to the Basin occurs in the Whitewater River and other tributaries to the Basin, in the WRSC, at constructed recharge facilities, through percolation of irrigation return flows, and as subsurface inflow from the surrounding mountains and groundwater basins.

The Basin is filled with up to 12,000 feet (ft) of sediments; the upper 2,000 ft constitutes the aquifer system that is the main source of groundwater supply in the region. The aquifer-system sediments were eroded from the surrounding mountains and deposited in the Basin on alluvial fans, alluvial plains, and lacustrine (lake) environments as interbedded, discontinuous layers of gravels, sands, silts, and clays. The sediments tend to be finer-grained in the southeastern portions of the Basin due to the greater distance from the mountainous source areas and the lower-energy depositional environments, such as historical Lake Cahuilla.

The Basin is divided by several geologic faults, which have displaced sediments and created low-permeability zones along the fault traces that act as barriers to groundwater flow. DWR has defined four subbasins within the Basin that are separated by structural features including geologic faults, bedrock constrictions, or changes in formation permeability that limit and control the movement of groundwater. These include the Indio Subbasin (DWR Subbasin 7-021.01), Mission Creek Subbasin (7-021.02), Desert Hot Springs Subbasin (7-021.03), and San Gorgonio Pass Subbasin (7-021.04) (DWR, 1964), as shown in **Figure 1-1**.

While groundwater generally flows from northwest to southeast in the Basin, the structural features result in groundwater conditions that vary significantly between subbasins. In the San Gorgonio Pass Subbasin, unconfined groundwater occurs throughout and flows generally west to east, where it flows over a bedrock constriction and into the Indio Subbasin.

In the Indio Subbasin (also termed Whitewater River Subbasin by the United States Geological Survey [USGS] [1]), groundwater typically flows from the forebay areas along the surrounding mountain-fronts toward the valley floor and then southeast toward the distal portions of the Basin near the Salton Sea. The aquifer system is unconfined in the forebay areas. In the southeast Indio Subbasin, the occurrence of fine-grained sediments has resulted in three distinct aquifer systems:

- A semi-perched aquifer up to 100 ft thick that is persistent across much of the area southeast of the City of Indio. The fine-grain units that cause the perched conditions are likely a barrier to deep percolation of surface water.

[1] This report identifies the Indio Subbasin as the Whitewater River Subbasin for consistency with the naming of the East and West Whitewater River AOBs.

- An upper aquifer up to 300 ft thick that is present across most of the area. The upper aquifer is unconfined except in the areas of the semi-perched aquifer where it is semi-confined.
- A lower aquifer that is 500-2,000 ft thick is the most productive portion of the Basin. In the southeast portion of the Basin, the lower aquifer is confined and is separated from the upper aquifer by a fine-grained unit that is 100-200 ft thick.

In the Mission Creek Subbasin, groundwater typically flows from northwest to southeast. The aquifer system is up to 2,000 ft thick and is predominantly unconfined. Portions of the aquifer along the Banning Fault northwest of the Seven Palms Ridge area are semi-confined as evidenced by historically flowing artesian wells in the area.

Overall, groundwater flow in the Desert Hot Springs Subbasin is to the southeast but is locally variable due to faulting. The aquifer system is poorly understood because of relatively poor water quality, which has limited local development of groundwater resources. Faulting in the northern portion of the subbasin has resulted in thermal mineral waters with temperatures up to 250 degrees Fahrenheit (˚F). These thermal waters are used by several spas in the area.

1.3 SUSTAINABLE GROUNDWATER MANAGEMENT ACT

In 2014, the California Legislature enacted the Sustainable Groundwater Management Act (SGMA) to provide a framework for sustainable groundwater management. SGMA requires development of groundwater sustainability plans (GSPs) for all basins designated medium- and high-priority by DWR, mandates the creation of local groundwater sustainability agencies (GSAs) to develop and implement the plans, and presents the requirements and schedule for complying with SGMA and achieving groundwater sustainability within 20 years of implementing the GSPs. SGMA recognized that many agencies had already developed and implemented groundwater management and allowed submittal of existing groundwater management plans as alternatives to preparing a GSP (Alternative Plan).

With respect to Coachella Valley, DWR designated the Indio (Whitewater River), Mission Creek, and San Gorgonio Pass subbasins as medium priority subbasins, subject to SGMA, while the Desert Hot Springs Subbasin was designated as a very low priority subbasin.

In 2015, CVWD elected to become a GSA for the portions of the Indio and Mission Creek subbasins within CVWD's service areas. As GSA for these areas, CVWD collaborated with Desert Water Agency (DWA), Indio Water Authority (IWA), and Coachella Water Authority (CWA) as the Indio Subbasin GSAs to submit the *2010 Coachella Valley Water Management Plan Update* (CVWD, 2012) as an Alternative Plan for the Indio Subbasin. The Alternative Plan was submitted to DWR in 2016 and approved in 2019. Consistent with SGMA, which requires five-year updates, the 2022 *Indio Subbasin Water Management Plan Update: SGMA Alternative Plan* (CVWD et al., 2021a) was submitted to DWR on December 29, 2021.

Similarly, CVWD, DWA, and Mission Springs Water District (MSWD) collaborated to submit the *2013 Mission Creek/Garnet Hill Water Management Plan* (CVWD et al., 2013) as an Alternative Plan for the Mission Creek Subbasin. The Alternative Plan was submitted to DWR in 2016 and approved in 2019. Consistent with SGMA, the *Mission Creek Subbasin Alternative Plan Update* (CVWD et al., 2021b) was submitted to DWR on December 30, 2021.

The respective Alternative Plan Updates provide comprehensive information on the hydrogeology, groundwater conditions, and water supply and demand of the two basins and represent the current groundwater management planning for the two basins in accordance with SGMA.

SGMA mandates that GSAs regularly collect, analyze, and report water management information and thereby demonstrate progress toward and achievement of sustainable groundwater management. To that end, SGMA Annual Reports (Annual Reports) have been prepared for the Indio Subbasin and for the Mission Creek Subbasin since 2018. The Annual Reports include information on groundwater elevations, groundwater extractions, total water use, and change in groundwater storage. The most recent Annual Reports for Water Year (WY) 2021-2022 are utilized herein to describe groundwater conditions. Annual Reports are available through CVWD's SGMA webpage http://www.cvwd.org/357/Sustainable-Groundwater-Management-Act.

1.4 ORGANIZATION OF REPORT

This Engineer's Report is organized into six sections:

- Executive Summary describes the main conclusions of the Engineer's Report.
- Section 1 – Introduction describes the purpose of the Engineer's Report, the Basin setting, the use of the Annual Reports for describing the conditions of the groundwater supplies, and the organization of the report.
- Section 2 – Overview and History of Groundwater Replenishment and Assessment summarizes the history and need for groundwater replenishment, the available sources of water for replenishment, and the groundwater replenishment and assessment programs in each of the AOBs.
- Section 3 – Mission Creek Subbasin AOB describes the replenishment and pumping activities for calendar year (CY) 2022, condition of groundwater supplies, and a recommended RAC rate for the Mission Creek Subbasin AOB.
- Section 4 – West Whitewater River Subbasin AOB describes the replenishment and pumping activities for CY 2022, condition of groundwater supplies, and a recommended RAC rate for the West Whitewater River Subbasin AOB.
- Section 5 – East Whitewater River Subbasin AOB describes the replenishment and pumping activities for CY 2022, condition of groundwater supplies, and a recommended RAC rate for the East Whitewater River Subbasin AOB.
- Section 6 – References lists the publications cited in this report.

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2. OVERVIEW AND HISTORY OF GROUNDWATER REPLENISHMENT AND ASSESSMENT

CVWD provides artificial replenishment of the Basin through multiple GRPs. Groundwater replenishment is accomplished through two mechanisms: direct replenishment, in which imported surface water is percolated directly into the aquifer, and in-lieu replenishment, in which imported surface water or recycled water is provided to groundwater pumpers for irrigation purposes, thus reducing or eliminating their use of pumped groundwater.

This section summarizes the history and need for groundwater replenishment, available sources of water for replenishment, and groundwater replenishment and assessment programs.

2.1 DEFINITION AND GENERAL HISTORY OF OVERDRAFT LEADING TO THE GROUNDWATER REPLENISHMENT PROGRAM

This section describes the definition and general history of overdraft leading to the GRPs in the Basin.

2.1.1 Definition of Overdraft

The principal goal of the GRPs is to arrest, reduce, and ultimately eliminate groundwater overdraft. According to DWR Bulletin 118-80 (DWR, 1980):

> "Overdraft is the condition of a groundwater basin in which the amount of water withdrawn by pumping over the long-term exceeds the amount of water that recharges the basin. Overdraft is characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. Overdraft can lead to increased extraction costs, land subsidence, water quality degradation, and environmental impacts."

DWR Bulletin 118-80 states that overdraft conditions in a basin become "critical" when:

> "[…] continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts." DWR Bulletin 160-93 (DWR, 1994) expands on Bulletin 118-80's "period of years" as follows: "Such a period of time must be long enough to produce a record that, when averaged, approximates the long-term average hydrologic conditions for the basin." DWR Bulletin 160-09 (DWR, 2009) synthesizes the definitions provided in Bulletins 118-80 and 160-93 as follows: "Overdraft is defined as the condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years, during which the water supply conditions approximate average conditions."

The above is the definition of overdraft used herein. As noted in Bulletin 118-80, however, groundwater overdraft is characterized not only by a prolonged decline in quantities of groundwater in storage over long-term average hydrologic conditions, but also by secondary adverse effects, including decreased well yields, increased groundwater extraction costs, water quality degradation, sea-water intrusion, land subsidence, and environmental impacts. SGMA similarly describes undesirable results in terms of chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, land subsidence,

degraded water quality, and depletions of interconnected surface water with adverse impacts on beneficial uses of the surface water (CVWD et al., 2021a and 2021b).

2.1.2 General History of Overdraft in the Basin

The historical occurrence of overdraft in the Basin was caused by the rapid development of agriculture in the area during the early 1900s, followed by increasing urban and recreational development in the later 1900s. This growth led to increased water demands that were met by groundwater pumping, which exceeded the natural recharge to the Basin and caused overdraft conditions.

Figure 2-1 is a map showing four hydrographs of measured water levels over time in wells located across the Basin. The charts document the historical overdraft conditions (characterized by the long-term groundwater level declines) that necessitated the development of the GRPs. The hydrographs also show the major milestones when replenishment occurred, followed by stabilization or recovery of groundwater levels. As **Figure 2-1** demonstrates, the GRPs have been effective at reducing or eliminating overdraft conditions in the Basin. Continuance of the GRPs is necessary to combat overdraft conditions and meet the sustainability goals of SGMA.

2.1.3 History of Water Management by CVWD

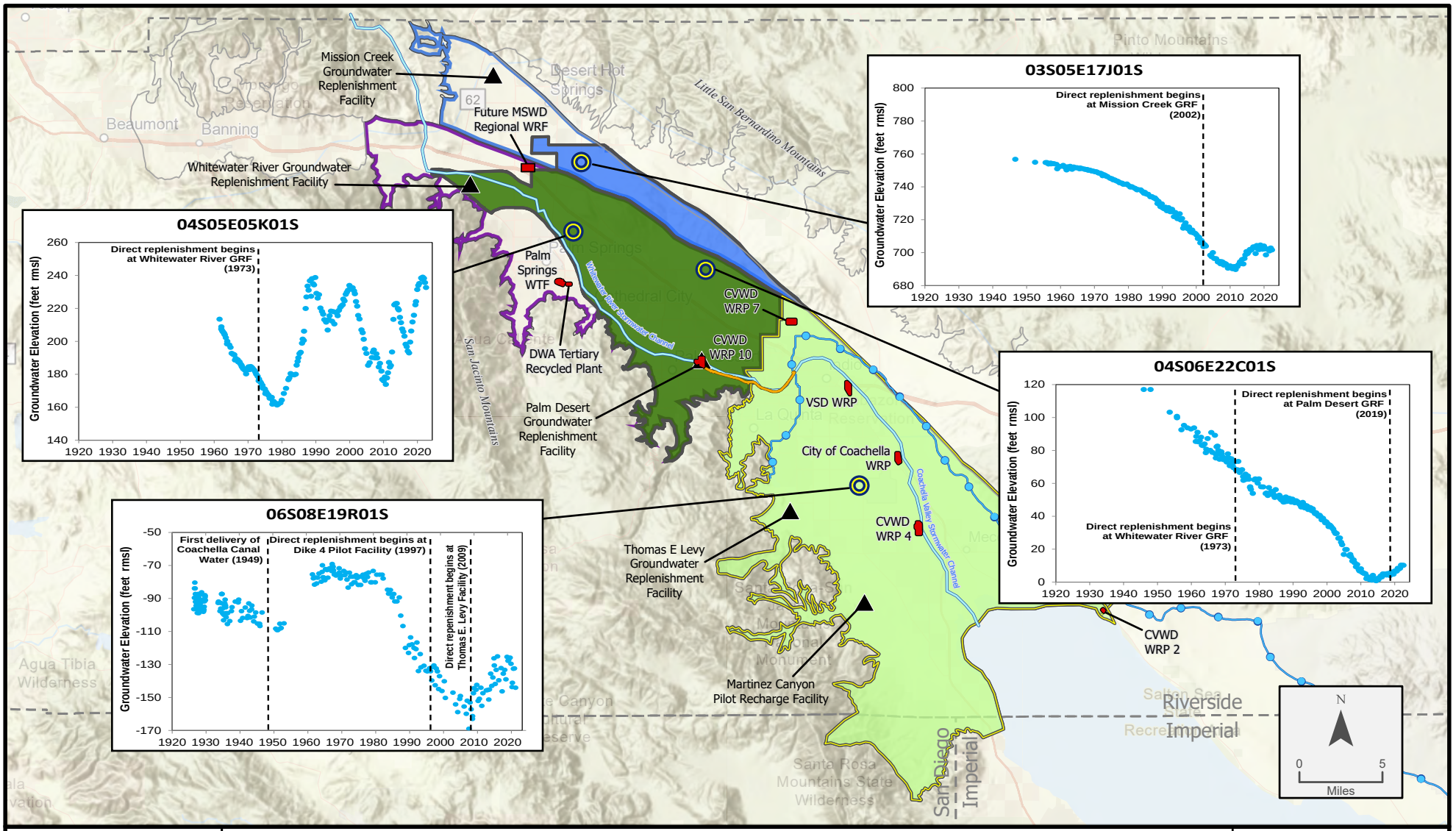
The Coachella Valley County Water District, predecessor to CVWD, was formed in 1918 as an independent special district with the primary responsibility of protecting local water resources. One of the first actions taken by the district was to claim the rights to the Whitewater River to ensure that natural inflows of water to the valley would stay in the valley and benefit the Basin.

Early settlers of the Coachella Valley also recognized that action was needed to address declining water levels resulting from groundwater extraction. Their concern led CVWD to enter into an agreement with the United States in 1934 for the construction of the Coachella Branch of the All-American Canal (Coachella Canal) to bring Colorado River water to the Coachella Valley. Since 1949, the Coachella Canal has been providing water for irrigation use in the eastern Coachella Valley as an alternate supply to groundwater pumping.

In 1962 and 1963, respectively, DWA and CVWD entered into separate contracts with the State of California to purchase water from the State Water Project (SWP). CVWD and DWA then entered into an agreement with the Metropolitan Water District of Southern California (MWD) to exchange water from MWD's Colorado River Aqueduct, which crosses the western portion of the Coachella Valley near Whitewater, for CVWD and DWA allocations of SWP water.

In 1967, as agriculture and urban development continued in the Basin, further increasing water demands, CVWD began a water reclamation program. The water reclamation program was created to provide a reliable source of local non-potable water for irrigation and to supplement the imported Colorado River water brought into the East Valley via the Coachella Canal.

In 1973, artificial recharge of imported water from the Colorado River Aqueduct began at the Whitewater River GRF in the western portion of the Whitewater River Subbasin. In fiscal years (FYs) 1978-1979 and 1980-1981, DWA and CVWD, respectively, began assessing non-exempt producers to cover the costs of replenishment, thereby creating the West Whitewater River Subbasin GRP.



Coachella Valley Water District

- Mission Creek Subbasin AOB
- West Whitewater River Subbasin AOB
- East Whitewater River Subbasin AOB
- Mission Creek Subbasin Management Area
- West Whitewater River Subbasin Management Area
- County Boundary
- Coachella Canal
- Whitewater River Stormwater Channel/Coachella Valley Stormwater Channel
- Mid-Valley Pipeline
- Replenishment Facility
- Hydrograph location
- Sanitation WRPs

Figure 2-1

Areas of Benefit, Groundwater Replenishment, and the Response of Groundwater Levels

The GRPs have since been expanded to include direct replenishment in the eastern portion of the Whitewater River Subbasin, beginning in 1997; direct replenishment in the Mission Creek Subbasin, beginning in 2002; and in-lieu replenishment, which is accomplished by providing supplemental waters to groundwater pumpers for non-potable uses (e.g., irrigation) to reduce or eliminate groundwater pumping.

2.2 MANAGEMENT AREAS AND AREAS OF BENEFIT

Both CVWD and DWA are permitted by the Water Code to replenish the Basin and to levy and collect groundwater replenishment assessments from any non-exempt groundwater producer or surface water diverter within their jurisdictions who benefits from groundwater replenishment. The two agencies are not required to implement assessment procedures jointly or identically.

The jurisdictional areas that benefit, directly or indirectly, from the GRPs and where CVWD or DWA levy replenishment assessments are termed Areas of Benefit (AOBs). There are three AOBs within CVWD's boundary: the Mission Creek Subbasin AOB, the West Whitewater River Subbasin AOB, and the East Whitewater River Subbasin AOB. CVWD and DWA have entered into water management agreements to implement the GRPs in areas of the Basin that include both of their respective jurisdictional boundaries. **Figure 2-1** shows the extent of CVWD's AOBs and the two management areas cooperatively managed by CVWD and DWA: the West Whitewater River Subbasin Management Area (MA) and the Mission Creek Subbasin Management Area.

2.2.1 Mission Creek Subbasin Management Area and Area of Benefit

The Mission Creek Subbasin Management Area covers the entirety of the Mission Creek Subbasin. It was initially formed on April 8, 2003, when CVWD and DWA entered into the Mission Creek Groundwater Replenishment Agreement for cooperative management of groundwater replenishment in the area using SWP water exchanged for Colorado River water for direct replenishment. On December 7, 2004, the agreement was amended by the Mission Creek Settlement Agreement which created the Mission Creek Subbasin Management Committee that includes CVWD, DWA, and MSWD. On July 15, 2014, CVWD and DWA executed a new Mission Creek Groundwater Replenishment Agreement to update and replace the 2003 agreement as amended.

Figure 2-1 shows CVWD's Mission Creek Subbasin AOB, the portion of the Mission Creek Subbasin Management Area residing within CVWD's boundary.

2.2.2 West Whitewater River Subbasin Management Area and Area of Benefit

The West Whitewater River Subbasin Management Area is in the western portion of the Whitewater River Subbasin. It was officially formed on July 1, 1976, when CVWD and DWA entered into an agreement to cooperatively manage and cost-share in the GRP for this area by using SWP water exchanged for Colorado River water for direct replenishment. The 1976 agreement was subsequently revised by the December 15, 1992, Water Management Agreement, which was later superseded by the July 15, 2014, Whitewater Water Management Agreement.

Figure 2-1 shows CVWD's West Whitewater River Subbasin AOB, the portion of the West Whitewater River Subbasin Management Area within CVWD's boundary.

2.2.3 East Whitewater River Subbasin Area of Benefit

Figure 2-1 shows the CVWD East Whitewater River Subbasin AOB, which covers the eastern portion of the Whitewater River Subbasin and extends from the eastern boundary of the West Whitewater River Subbasin AOB to the shoreline of the Salton Sea. Because this area is entirely within CVWD's service area, a management agreement was not necessary. While in-lieu replenishment in this area began in 1949 with the completion of the Coachella Canal and direct replenishment began in 1997 with the Dike 4 Pilot Facility, CVWD did not designate it as an AOB until 2004.

2.3 REPLENISHMENT WATER SOURCES

The water sources used for replenishment in the GRPs include:

- Colorado River water delivered via the Coachella Canal or the Colorado River Aqueduct;
- SWP water exchanged for Colorado River water with MWD;
- Recycled water from CVWD water reclamation plants (WRPs); and
- Other non-SWP supplemental water.

These sources of replenishment water are described in more detail below.

2.3.1 Colorado River Water

2.3.1.1 Coachella Canal

The 122-mile-long Coachella Canal was completed in 1948 and began operating in 1949. Water delivered to the Coachella Valley via the Coachella Canal is diverted into the All-American Canal from the Imperial Dam, located 18 miles upstream of Yuma, Arizona. It is then diverted into the Coachella Canal at "Drop 1" of the All-American Canal, approximately 20 miles west of Yuma. As illustrated on **Figure 2-1**, the Coachella Canal conveys water northward into the eastern Coachella Valley along the east side of the Salton Sea, continuing northerly past Mecca and Thermal to Indio, where it bends westerly, then continues southwesterly to La Quinta, where it flows into Lake Cahuilla (constructed by CVWD in 1968 to provide operational storage for Colorado River water). The Coachella Canal and Lake Cahuilla system distributes water for irrigation to approximately 65,000 acres of agricultural land in the eastern Coachella Valley through nearly 500 miles of buried delivery laterals (CVRWMG, 2010). The capacity of the Coachella Canal is approximately 1,500 cubic feet per second (cfs) (CVWD, 2002a).

2.3.1.2 Colorado River Water Allocations

CVWD is part of the 1931 Seven Party Agreement that allocates California's apportionment of Colorado River water. CVWD was included in Priority 3(a) of the agreement in a group of California agricultural agencies, collectively allocated 3.85 million acre-feet per year (AFY). In 2003, the QSA negotiated between CVWD, Imperial Irrigation District (IID), San Diego County Water Authority (SDCWA) and MWD was signed, which supplemented the 1931 agreement. Under the QSA, CVWD has a Colorado River water base allotment of 330,000 AFY. CVWD's effective allotment is equal to the base allotment of 330,000 AFY minus 29,000 AFY in reductions, as shown in **Table 2-1**.

In addition, CVWD has executed several transfer agreements for additional block amounts of Colorado River water. The transfer agreements included the following:

- 1988 MWD/IID Approval Agreement for 20,000 AFY;
- IID to CVWD-First Transfer for 50,000 AFY; and

- IID to CVWD-Second Transfer of 33,000 AFY.

Table 2-1 shows the 2022 breakdown of CVWD's total allocation of 404,000 AFY of Colorado River water. The second transfer from IID to CVWD will continue to increase from 28,000 AFY in 2020 to 53,000 AFY in 2026, for a total allocation of 424,000 AFY by 2026. In 2022, CVWD's total allocation of Colorado River water is 404,000 AF.

Table 2-1. CVWD Colorado River Water Supply under the QSA in 2022

Description	Total (AF)
Base Entitlement	330,000
Less Coachella Canal Lining (to SDCWA[(a)])	-26,000
Less Miscellaneous/Indian PPRs[(b)]	-3,000
1988 MWD/IID Approval Agreement[(c)]	20,000
First IID/CVWD Transfer	50,000
Second IID/CVWD Transfer	33,000
Total	**404,000**

(a) San Diego County Water Authority
(b) Indian Present Perfected Rights
(c) The 2019 Second Amendment to the Delivery and Exchange Agreement allows CVWD to receive 15,000 AF of the 20,000 AF 1988 MWD/IID Approval Agreement at the Whitewater River GRF through 2026; MWD retains 5,000 AF. In CY 2022, CVWD received delivery of 15,000 AF at the Whitewater River GRF.

2.3.1.3 QSA SWP Transfer

The QSA provides CVWD with a 35,000 AFY transfer of SWP water from MWD. This SWP water is exchanged for Colorado River water and can be diverted at Imperial Dam for delivery via the Coachella Canal to the eastern portion of the Whitewater River Subbasin or can be delivered via the Colorado River Aqueduct for delivery to the western portion of the Whitewater River Subbasin. Currently, CVWD receives deliveries of the QSA SWP Transfer at the Whitewater River GRF (see **Table 2-2** for CY 2022 deliveries).

2.3.1.4 Drought Responses

The Colorado River has been experiencing prolonged drought since 2000 and during that time the total system storage has declined significantly. Without additional actions, it is anticipated that Colorado River conditions will continue to deteriorate, threatening electrical power generation in Lake Powell and resulting in unprecedented shortage declarations in Lake Mead.

Below are some of the ongoing actions that have taken place to reduce the risk of Lake Powell and Lake Mead declining to critically low levels:

- The 2007 Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines) identified the conditions for shortage. determinations and details of coordinated reservoir operations and remain in effect through Dec. 31, 2025.

- On March 19, 2019, the seven Basin states submitted the Colorado River Drought Contingency Plan (Drought Plan) to Congress, which was signed into law on April 16, 2019.
- On May 20, 2019, the Lower Basin Drought Contingency Plan Agreement (Agreement) was executed by the Secretary of the Interior and the Lower Basin states to set guidelines, in addition to the 2007 Interim Guidelines, for the operation of the Lower Basin. In accordance with this Agreement, Basin-wide contributions would go into effect when Lake Mead's elevation drops below 1,090 ft, with a contribution from California at an elevation of 1,045 ft. California's contributions vary from 200,000 AF (1,045 ft) to 350,000 AF (1,030 ft), and the forgone water deliveries would remain in the lake. Under the Lower Basin Drought Contingency Plan, CVWD would provide 7 percent of the required water contribution from California, and MWD would provide most of the remaining contribution.
- In 2021 the Upper Basin states and the U.S Bureau of Reclamation's (USBR) Upper Colorado Region Office focused efforts on development of a Drought Response Operations Agreement (DROA) plan for CY 2022 pursuant to the Upper Basin Drought Plan.
- In June 2022, the USBR leadership made an appeal to all Colorado River water users to exercise all efforts necessary to achieve an additional 2 to 4 million acre-feet per year of water conservation required to stabilize the declining system reservoir levels.
- In early November 2022, USBR created the Lower Colorado Conservation and Efficiency Program (LC Conservation Program) to increase Colorado River system conservation. The LC Conservation Program offers short and long-term conservation opportunities.
- On November 18, 2022, USBR, under the Department of the Interior's direction, issued a Notice of Intent to Prepare a Supplemental Environmental Impact Statement for December 2007 Record of Decision Entitled Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead.

To address the worsening conditions on the Colorado River, in 2022 USBR asked all Colorado River water users to achieve an annual reduction of 2 to 4 million AF during CYs 2023, 2024, and 2025. Balancing the need of direct groundwater replenishment for CVWD's long-term groundwater sustainability against the benefits of contributing water to the Colorado River through a short-term suspension of groundwater replenishment delivery, the CVWD Board of Directors approved curtailing replenishment at the TEL Facility in November 2022 for the remainder of calendar year 2022. This compensated action allowed 9,083 AF to be immediately retained in the Colorado River and was memorialized in the 2022 Colorado River Water Conservation Agreement executed between CVWD and USBR on December 5, 2022 (USBR and CVWD, 2022).

CVWD is currently working with USBR to develop additional conservation programs to reduce the consumptive use of Colorado River water up to 35,000 AFY for a three-year term, 2023 through 2025, for a potential total savings of up to 105,000 AF. The programs would allow the flexibility for the conservation to occur at TEL or one of the other GRFs if needed. The programs are still under negotiation and agreements have not yet been finalized.

2.3.2 State Water Project

The SWP is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants operated by DWR. The SWP delivers water from the Sierra Nevada through the Sacramento-San Joaquin Delta to 29 SWP Contractors throughout California who serve over 27 million Californian homes, businesses, and farms. The SWP was designed to deliver about 4.2 million AFY. CVWD and DWA are two of the 29 SWP Contractors who entered into a Water Supply Contract with the DWR in 1963 providing a base (Table A) allocation of SWP water. Currently, no infrastructure exists to physically deliver SWP water to CVWD or DWA. To exercise SWP deliveries, CVWD and DWA exchange SWP water with MWD for an equal amount of Colorado River water, which can be delivered via the Colorado River Aqueduct.

2.3.2.1 Table A Allocations

CVWD and DWA's original contracted Table A allocations were 23,100 AFY and 38,100 AFY, respectively. CVWD and DWA have since executed agreements for additional block amounts of SWP water, increasing their total Table A allocations:

- In 2003, the agencies executed a Delivery and Exchange Agreement with MWD for 100,000 AFY as a permanent transfer—88,100 AFY for CVWD and 11,900 AFY for DWA.
- In 2004, CVWD purchased an additional 9,900 AFY of SWP Table A water from the Tulare Lake Basin Water Storage District.
- In 2007 (effective in 2010), the agencies executed two water transfer agreements for SWP Table A water with:
    - The Berrenda Mesa Water District for 16,000 AFY—12,000 AFY for CVWD and 4,000 AFY for DWA; and
    - The Tulare Lake Basin Water Storage District for 7,000 AFY—5,250 AFY for CVWD and 1,750 AFY for DWA.

Together, the original allocations and additional block amounts result in a total allocation of 194,100 AFY of SWP Table A water available to CVWD and DWA—138,350 AFY for CVWD and 55,750 AFY for DWA.

2.3.2.2 SWP Supplemental Water

CVWD and DWA also purchase supplemental water, as available, from the SWP on the spot market, including through the Dry Year Transfer Program and the Turn-Back Water Pool Program (Pool A and Pool B).

In 2008, CVWD and DWA executed agreements to augment their SWP water supplies with water made available from the Yuba River Accord. CVWD and DWA executed separate Dry Year Water Purchase Program participation agreements with DWR to acquire SWP supplemental water available through the DWR's Yuba Water Purchase Agreement under the Yuba River Accord. DWR initiated Yuba Dry Year Water Purchase Programs to augment water supplies in anticipation of decreased water availability to SWP Contractors resulting from dry hydrologic conditions and/or regulatory constraints. The amount of water available for purchase varies each year and is based on DWR's determination of the Water Year Classification. It is estimated that CVWD and DWA may be able to purchase up to 4 percent (5,600 AFY) and 1.3 percent (1,820 AFY) of Yuba Water Purchase Agreement water, respectively, under their participation agreements. These agreements provide for exchange of these supplies with MWD for Colorado River water in accordance with existing exchange agreements.

2.3.2.3 SWP Exchange to MWD

Table 2-2 lists CVWD and DWA allocations of SWP delivered to MWD in 2022. Due to persistent dry conditions, the final allocation of SWP Table A amounts in 2022 was 5 percent, an increase from an initial allocation of 0 percent (see Section 2.3.2.6 below).

Table 2-2. SWP Exchange Delivery to MWD in 2022[a]

Description	CVWD (AF)	DWA (AF)	Total (AF)
Table A[b]	6,918	2,788	9,706
Article 21	0	0	0
Turnback Pool A and B	0	0	0
Multi-Year Pool	0	0	0
Dry Year (Yuba)	1,089	439	1,528
Flex Storage Payback	0	0	0
Article 56 "Carryover"	0	0	0
Rosedale-Rio Bravo	0	0	0
MWD SWP Transfer[c]	11	0	11
Total Delivered to MWD	**8,018**	**3,227**	**11,245**

(a) The 2019 Second Amendment to the Delivery and Exchange Agreement allows CVWD to receive 15,000 AF of the 20,000 AF 1988 MWD/IID Approval Agreement at the Whitewater River GRF through 2026; MWD retains 5,000 AF. In CY 2022, CVWD received delivery of 15,000 AF at the Whitewater River GRF. This is included in **Table 2-1** and not included in this table.

(b) CVWD and DWA's Table A allocation includes the original Table A allocation quantity as well as additional block amounts of SWP that they have purchased or exchanged with other agencies, as described in Section 2.3.1, for a total of 194,100 AFY. The 2022 SWP Allocation was 5 percent, resulting in 6,918 AF for CVWD and 2,788 AF for DWA, for a total of 9,706 AF of Table A water.

(c) The 2019 Second Amendment to the Delivery and Exchange Agreement allows MWD to defer delivery in any year as long as a total of 280,000 AF is delivered between January 1, 2019 and December 31, 2026. Water years 2021 and 2022 were critically dry with low runoff conditions on the Colorado River system, resulting in MWD SWP Transfer deliveries of 6 AF in CY 2021 and 11 AF in CY 2022.

2.3.2.4 Advance Delivery Agreement

In 1984, CVWD and DWA entered into an Advance Delivery Agreement with MWD whereby MWD could store up to 600,000 AF of Colorado River water in the Basin as an advance delivery of SWP exchange water. This agreement was later amended to increase the maximum pre-delivery amount to 800,000 AF. MWD can deliver SWP exchange water to CVWD and DWA as wet water or as a deduction from its Advance Delivery storage account. The existing Exchange and Advance Delivery Agreements were updated and consolidated in 2019 into a single amended and restated agreement. At the end of 2022, MWD's balance in its Advance Delivery storage account was 281,347 AF.

2.3.2.5 Apportionment of State Water Project Exchange Water

In accordance with the 2004 Mission Creek Settlement Agreement and the 2014 Mission Creek Groundwater Replenishment Agreement, CVWD and DWA proportionally distribute SWP water available annually between the West Whitewater River Subbasin and Mission Creek Subbasin Management Areas based on the proportion of annual groundwater production and surface water diversions within each Management Area.

Since the execution of the 2004 Mission Creek Settlement Agreement between MSWD, DWA, and CVWD, the proportion of groundwater and surface water used has averaged 92.4 percent in the West Whitewater River Subbasin Management Area and 7.6 percent in the Mission Creek Subbasin Management Area. In 2022, that proportion was 92.0 percent in the West Whitewater River Subbasin Management Area and 8.0 percent in the Mission Creek Subbasin Management Area. The 2004 Settlement Agreement requires that cumulative replenishment water deliveries between the two Management Areas be balanced as determined by CVWD, DWA, and MSWD Management Committee, but no later than 20 years from December 7, 2004. The Management Committee meets quarterly to discuss groundwater management in the Mission Creek Subbasin Management Area and has discussed delaying the timing of balancing excess deliveries to the Mission Creek Subbasin Management Area past 2024 to sustain groundwater levels through recent critically dry years of low SWP deliveries.

2.3.2.6 SWP Reliability

Each year, DWR allocates a percentage of the total Table A amount that it will be capable of delivering to the SWP Contractors based on variable hydrologic conditions, environmental constraints in the Sacramento-San Joaquin Delta, and various operational constraints, among other factors. In 2022, California experienced a critically dry water year and as a result, the Table A allocation in CY 2022 was 5 percent plus Human Health and Safety needs to ensure that the SWP Contractors can meet their minimum water demands for domestic supply, fire protection, and sanitation.

Every two years, DWR publishes a SWP Delivery Capability Report that estimates the long-term average deliverability of SWP water and how changing climate, population growth, regulatory and operational considerations impact SWP delivery Capability. In September 2022, DWR issued the *State Water Project Final Delivery Capability Report 2021* (DWR 2022), which shows analysis for deliveries through calendar year 2020. For the modeling simulations, DWR used a 94-year historical flow record, which is believed to be sufficient to provide a reasonable range of potential hydrologic conditions from wet years to critically dry years.

The 2021 Report estimates the long-term average deliverability at 56 percent of maximum Table A amount under current conditions (2021) and 47 percent under future conditions (2040). Additionally, the 2021 Report shows that the likelihood of SWP Article 21 deliveries (supplemental deliveries to Table A water) being greater than 20,000 acre-feet per year has decreased by 21% relative to the likelihood presented in the 2019 Report.

2.3.2.7 Delta Conveyance Project

On April 29, 2019, under Executive Order N-10-19, Governor Gavin Newsom directed his administration to develop a climate-resilient water portfolio to meet California's water needs through the 21st century, including modernizing conveyance through the Sacramento-San Joaquin Delta (Delta). Under this direction, DWR launched an environmental review and planning process for the Delta Conveyance Project (DCP), a single tunnel to convey water from the Sacramento River to existing state and federal pumping facilities. The purpose of the proposed DCP is to modernize the aging SWP infrastructure in the Delta to restore and protect the reliability of SWP water deliveries, which will be consistent with Governor Newsom's Water Resilience Portfolio.

DWR is the owner and operator of the SWP and is responsible for all associated upgrades and maintenance, including the proposed DCP. Currently, the DCP is in a planning and design phase and DWR

is the lead agency in this effort. The Delta Conveyance Design and Construction Authority is an independent Joint Funding Authority whose members are made up of project stakeholders, including CVWD, and assists DWR with the design and development of the DCP by providing technical insight and public outreach.

On July 27, 2022, DWR released the Draft Environmental Impact Report (EIR) for the DCP, marking a major step in evaluating a key strategy to adapt to a changing climate and provide clean, reliable water for future generations. The Draft EIR public review and comment period closed on December 16, 2022. DWR is in the process of reviewing and responding to substantive comments received on the Draft EIR and plans to issue a Final EIR in late 2023.

In November 2020, CVWD's Board of Directors authorized participation in the DCP at a level of 3.78 percent and approved funding for planning and design costs for 2021 and 2022. In 2022, the Board of Directors approved funding for CVWD to continue participation in CY 2023 and 2024.

2.3.2.8 Sites Reservoir Project

The proposed Sites Reservoir Project will be an off-stream reservoir in the Sacramento Valley in Glenn and Colusa counties and is envisioned to capture storm-related winter runoff from uncontrolled streams in the Sacramento Valley, divert the water upstream of the Sacramento-San Joaquin River Delta, and pump it into the proposed 1.5 million AF reservoir. The purpose of the proposed project is to increase water supply flexibility, reliability, and resiliency in drier years. Currently, the proposed project is in a planning and design phase with the Sites Project Authority acting as the lead agency.

In 2016, the Board authorized CVWD's participation in Phase 1 of the Sites Reservoir at 26,500 AF of annual water supply. In 2019 and 2020, the Board authorized CVWD's participation in Phase 2 of the Sites Reservoir, decreased the annual volume subscription to 10,000 AF, and approved funding for pre-construction costs through 2021. In 2022, the Board authorized funding for Phase 2 for calendar years 2022, 2023, and 2024.

2.3.2.9 Lake Perris Dam Seepage Recovery Project

In 2017, MWD and DWR began preliminary planning for recovery of seepage below the Lake Perris Dam and delivery of the recovered water to MWD in addition to its current allocated Table A water. The project is composed of installing a series of five pumps placed down-gradient from the face of the Lake Perris Dam that will pump water that has seeped from the lake into the groundwater. The recovered water will be pumped into a collection pipeline that discharges directly into MWD's Colorado River Aqueduct south of Lake Perris.

In 2021, CVWD and DWA signed an agreement with MWD and DWR for funding of environmental analysis, planning, and preliminary design. An additional agreement (or amendment to the existing Exchange Agreement) will be needed to exchange the recovered seepage water with MWD for Colorado River water. The project is estimated to recover approximately 7,500 AFY, with 2,425 AFY for delivery to CVWD. In 2022, DWR performed geotechnical modeling for this project, which will continue in 2023.

2.3.3 Other Supplemental Water

In 2003, CVWD and MWD entered into a one-time agreement for MWD to return 32,000 AF of the Colorado River water received because of water conservation measures taken by CVWD in Palo Verde

prior to the execution of the QSA. From 2007-2009, MWD delivered this volume of Colorado River water to CVWD for direct replenishment at the Whitewater River GRF.

In 2008, CVWD executed an Agreement with the Rosedale Rio Bravo Water Storage District (Rosedale) for a one-time transfer of 10,000 AF of banked Kern River flood water. From 2008-2012, CVWD exchanged this water with MWD for the delivery of Colorado River water.

In 2008, DWA executed an Exchange Agreement with MWD for the delivery of non-SWP supplemental water to replenish water extracted by CPV-Sentinel Energy, Inc. From 2008-2011, about 8,350 AF of Colorado River water was directly replenished at the Mission Creek GRF in conjunction with this agreement.

In 2010, CVWD executed an agreement with DMB Pacific, Inc. for a one-time transfer of 8,393 AF of so-called Nickel water made available through the Kern County Water Agency's Kern River Restoration and Water Supply Program. In 2010, CVWD exchanged this water with MWD for delivery of Colorado River water.

In 2012, CVWD executed an Assignment Agreement with the Glorious Lands Company (GLC), which transferred the existing Amended Water Supply Agreement between GLC and Rosedale to CVWD. CVWD will receive up to 9,500 AFY from Rosedale through 2035, for a total of 252,500 AF. CVWD exchanges this water with MWD for delivery of Colorado River water.

Water years 2021 and 2022 were critically dry, which resulted in a decrease in the quantities of exportable water available to Rosedale. As a result, Kern County Water Agency and Rosedale conducted an audit of water available for sale to CVWD. Pursuant to the First Amendment to the Water Supply Agreement, Rosedale is required to provide by May 1 of each year, a Notice of Annual Firm Water Delivery in which Rosedale provides notice to CVWD of the amount of “Firm Water” that Rosedale can deliver to CVWD for purchase in that year. In 2022, Rosedale provided notice of zero (0) AF of “Firm Water” for delivery to CVWD. See **Table 2-2** above. The decrease in the quantity of exportable water relates primarily to deliveries of the Kern County Water Agency’s “lower river” supplies which should not have been included in the balance available water for sale to CVWD. The reduced deliveries of Rosedale water to CVWD constitute a rebalancing of the delivery account. As stated in the Amended Water Supply Agreement, Rosedale must use its best efforts to deliver the balance of the remaining water by September 30, 2025.

2.3.4 Recycled Water

Wastewater originating within the CVWD service area is conveyed to and treated at five CVWD WRPs. Currently, recycled water from two of the WRPs (WRPs 7 and 10) is used for golf course and green-belt irrigation. The water treated at the remaining three WRPs (WRPs 1, 2, and 4) is discharged to percolation/evaporation ponds or the CVSC. WRP 9, which produced recycled water, was decommissioned in 2016. Because recycled water is a local, reliable water supply, CVWD plans to expand its use in the Basin.

Desert Water Agency also operates a Water Recycling Facility that treats secondary effluent from the City of Palm Springs Wastewater Treatment Plant. **Figure 2-1** shows the location of the DWA Tertiary Recycled Water Plant. DWA currently distributes recycled water for landscape irrigation in the West Whitewater River Subbasin Management Area to three golf courses, Palm Springs High School, a street meridian, and landscaping at the Water Recycling Facility itself.

2.4 DIRECT AND IN-LIEU REPLENISHMENT

CVWD conducts replenishment through the following mechanisms:

- Direct replenishment through the delivery and infiltration of imported water at recharge basins overlying the Basin.
- In-lieu replenishment, which occurs when groundwater users in the Basin are provided alternative water sources (Colorado River water from the Coachella Canal or a blend of Colorado River water and recycled water from WRPs 7 and 10) to meet non-potable demands that would have otherwise been met from groundwater extractions.

Figure 2-1 shows the facilities used for replenishment. Additional GRP details are provided on the following page and in Sections 3 through 5.

2.4.1 Mission Creek Subbasin Management Area and Area of Benefit

Direct replenishment with imported water from the Colorado River Aqueduct began in 2002 at the Mission Creek GRF. **Figure 2-1** shows the location of the Mission Creek GRF at the base of the Little San Bernardino Mountains. From 2002-2022, a total of 167,044 AF of SWP Exchange water was delivered to the Mission Creek GRF for replenishment of the management area.

There are no existing facilities for in-lieu replenishment in the Mission Creek Subbasin AOB.

2.4.2 West Whitewater River Subbasin Management Area and Area of Benefit

Direct replenishment with imported water from the Colorado River Aqueduct began in 1973 at the Whitewater River GRF and from the MVP in 2019 at the Palm Desert GRF. **Figure 2-1** shows the locations of the two facilities in the northern and southern ends of the management area. From 1973-2022, a total of approximately 3.9 million AF of imported water has been delivered to the West Whitewater River Subbasin Management Area facilities for replenishment.

The West Whitewater River Subbasin Management Area is also replenished via in-lieu methods by delivering water to customers for non-potable uses to offset groundwater production. Non-potable water delivery to golf courses in the AOB began in 1967. In 2009, CVWD completed the first portion of the MVP, which conveys imported Colorado River water from the Coachella Canal to irrigation users along its reach. The MVP terminates at WRP 10 where it delivers Coachella Canal water to supplement the recycled water supply for customers in the AOB. **Figure 2-1** shows the locations of the Coachella Canal, the MVP, and WRP 10 in the southern portion of the CVWD's AOB. At full build-out, the MVP will have the potential to supply non-potable water to over 50 golf courses in the Palm Desert/Rancho Mirage/Indian Wells area.

While located in the East Whitewater River Subbasin AOB, WRP 7 has served a blend of Coachella Canal water and recycled water to two golf courses in the West Whitewater River Subbasin AOB since 1997. **Figure 2-1** shows the location of WRP 7.

2.4.3 East Whitewater River Subbasin Area of Benefit

Direct replenishment with imported water from the Coachella Canal began in 1997 at the Dike 4 Pilot Facility, predecessor to the Thomas E. Levy (TEL) GRF. Direct replenishment of imported water from the Coachella Canal also occurred at the Martinez Canyon GRF from 2005 to 2013 as a pilot replenishment program. **Figure 2-1** shows the locations of the TEL and Martinez Canyon GRFs at the base of the Santa

Rosa Mountains. From 1997-2022, a total of 516,389 AF of Colorado River water was delivered to the TEL and Martinez Canyon GRFs for replenishment of the AOB.

The East Whitewater River Subbasin AOB is also replenished via in-lieu methods by delivering imported water for non-potable uses to customers to offset groundwater production. CVWD delivers imported Colorado River water from the Coachella Canal for irrigation to farmers, golf courses, and other non-potable water users as a substitute for groundwater pumping. Since 1997, WRP 7 has served a blend of Coachella Canal water and recycled water to 9 holes of one golf course in the AOB. **Figure 2-1** shows the locations of the Coachella Canal and WRP 7 in the northern portion of the AOB.

2.5 GROUNDWATER REPLENISHMENT PROGRAM ASSESSMENT

This section describes CVWD's authority to levy and collect water replenishment assessments, the funding mechanisms for the GRPs, and the methods of determining production. It also describes cost of service studies used to develop fair and equitable rates and to provide recommendations for potential rate adjustments and discusses how conservation has impacted the RAC rates.

2.5.1 Authority to Assess

Water Code Sections 31630-31639 authorize CVWD to levy and collect water replenishment assessments for the purpose of replenishing groundwater supplies within CVWD boundaries. The Water Code defines production, producer, and Minimal pumper for replenishment and assessment purposes as follows:

> "Production" or "to produce" means the extraction of groundwater by pumping or any other method within the boundaries of the district or the diversion of surface supplies within the district that naturally replenish the groundwater supplies within the district and are used therein.
>
> "Producer" means any individual, partnership, association or group of individuals, lessee, firm, private corporation, or any public agency or public corporation, including, but not limited to, CVWD.
>
> "Minimal pumper" means any producer who produces 25 AF or less in any year. Production by Minimal pumpers is exempt from assessment.

The Water Code states that assessments may be levied upon all water production within an AOB (other than that produced by Minimal pumpers), provided that the assessment charge is uniform throughout said AOB.

2.5.2 Funding Mechanisms

2.5.2.1 Replenishment Assessment Charge

The RAC is a monetary assessment per AF of groundwater extracted authorized by the Water Code. The RAC is uniformly applied within each AOB to producers who extract more than 25 AFY of groundwater. The RAC for each AOB is determined based on the costs and revenues of the GRP for the AOB. RACs are limited to certain specified costs, as explained below.

In the initial 12 years of operation of the West Whitewater River Subbasin GRP, only the Variable Operation, Maintenance, Power, and Replacement component of the Transportation Charge, and the Delta Water Charge for the SWP could be included in the calculation. However, in 1991, the Legislature passed, and the Governor signed into law AB 1070. This bill continues to limit the charges assessable

against production but includes an additional component of the Transportation Charge; the Off-Aqueduct Power component. Under the Water Code, CVWD calculations have also been allowed to include surplus or excess water charges, payments to DWA for similar payments by DWA to the State, the cost of importing and recharging water from sources other than the SWP, and the cost of treating and distributing recycled water.

The RACs considered in this report are based on the most recent and reliable information available with respect to applicable costs. The costs included in the calculation of the RAC for each AOB are included in their respective sections of this report.

2.5.2.2 Coachella Valley Water District State Water Project Tax

In 1959, the voters of California approved and adopted the Burns-Porter Act (DWR Bond Act-Water Code Section 12930) and, in so doing, approved the use of local taxes when a local agency's board of directors determines such use to be necessary to fund that agency's water contract obligations. CVWD's Board of Directors determined that such a tax was necessary to carry out those obligations, which were incurred pursuant to CVWD's long-term plan to eliminate groundwater overdraft through replenishment that would benefit the entire Coachella Valley. This property tax has been levied on all property within the CVWD boundary since 1967.

Imported water supplies delivered through the SWP are an important component in helping CVWD to fulfill the dual needs of meeting customer supply demands and meeting the goal of groundwater sustainability. In addition to routine maintenance needs, additional funding is also necessary for unanticipated repairs (e.g., Oroville spillway). Other expenditures include projects to improve supply reliability, including the Delta Conveyance Project and other water augmentation projects that use the SWP system. In order to fulfill the financial commitments for these additional costs, CVWD's Board approved the total SWP tax to $0.11/$100 of assessed evaluation (AV) on April 13, 2021.

2.5.2.3 Methods for Determining Groundwater Production

In accordance with Water Code Section 31638.5, producers who produce greater than 25 AFY, including artesian flowing groundwater, are required to have water-measuring devices installed on all wells or other water producing facilities and report the total amount produced from all wells to CVWD on a monthly basis. Minimal pumpers are exempt from this provision.

Producers submit a water production statement on a CVWD-approved form with their RAC payment each month or enter into a Water Production Metering Agreement with CVWD to have CVWD staff measure and report groundwater production. If no statement of production is furnished, CVWD calculates production based on energy consumption records (in kilowatt-hours) and the results of well pump tests, indicating unit energy consumption per AF of production (in kilowatt-hours per AF).

If no energy consumption records are available, CVWD computes the groundwater production based on the consumptive use of water. Consumptive use is computed by multiplying the irrigated acreage for each crop type using CVWD's crop report (conducted semiannually) by a water consumption factor for each crop. The water consumption factor is based on published crop evapotranspiration requirements, an allowance for leaching, and an irrigation efficiency factor. Other water consumption factors are used to compute production for water not used for irrigation. Production is computed by subtracting any metered deliveries of Coachella Canal water or recycled water.

If the total metered, estimated, or computed annual amount of production for any producer is 25 AF or less, that entity is designated a Minimal pumper and is exempt from the RAC for that year. Minimal pumpers are reevaluated as necessary.

2.5.3 Cost of Service Study

CVWD completed comprehensive Cost of Service Studies for the Replenishment Funds in FY 2021. The studies allow for the development of a sustainable five-year financial plan and rate structure that can meet the overall fiscal needs of the replenishment programs, while maintaining affordability and an equitable distribution of costs. Maximum rates were established for the five-year period of FY 2022 through FY 2026, with the CVWD Board having discretion to adopt rates below the recommended maximum in any given year. Rates were increased in FY 2022 for the East and West Whitewater River Subbasin AOB's, with Mission Creek Subbasin AOB remaining at the previous level. In FY 2023, no increases were adopted by the Board. No increases are recommended for FY 2024.

2.5.3.1 Effects of Conservation

Water conservation may also become an important driver for future RAC rates. Reduced groundwater production associated with water conservation benefits the groundwater basin and is an important element of ongoing water management under the *2022 Alternative Plan Updates* for the Indio and Mission Creek subbasins, respectively. The cost of this benefit is reflected in increasing RAC rates that result from ongoing GRP costs that must be divided by lower groundwater production amounts.

Governor Brown's April 1, 2015 executive order responded to drought conditions in California and mandated a 25 percent reduction in water used by public water systems in California. To achieve this mandate, CVWD was initially tasked with reducing water use by 36 percent (later by 32 percent), as were several other local public water systems. In addition, the Governor recommended that golf courses using groundwater reduce their water use by 25 percent. Together, these changes would have equated to an approximately 20 percent reduction in groundwater production throughout the CVWD service area. These reductions were overridden by the May 18, 2016 State Water Resources Control Board (SWRCB) "stress test" approach. However, should such mandatory reductions be reinstated in the future, it would require increases in the RAC to continue funding ongoing GRP expenses, as described in the 2021 Cost of Service Study.

On May 31, 2018, Governor Brown signed Assembly Bill (AB) 1668 and Senate Bill (SB) 606, which are jointly designed to overhaul California's approach to conserving water. The measures impose several new or expanded requirements on state water agencies and local water suppliers and provide for significantly greater State oversight of local water suppliers' water use, even in non-drought years. These were adopted in response to Governor Brown's May 2016 executive order, which called for the State to make water conservation a "way of life" in California.

AB 1668 and SB 606 require the SWRCB, in coordination with DWR, to establish long-term urban water use efficiency standards by June 30, 2022. Those standards will include components for indoor residential use, outdoor residential use, water losses, and other uses.

On October 19, 2021, Governor Newsom issued a drought state of emergency in all California counties. On March 28, 2022, Governor Newsom issued Executive Order N-7-22 which called on all Californians to reduce water use and directed specific State agencies to take actions in support of water conservation.

On May 24, 2022, the State Water Resources Control Board (SWRCB) adopted Resolution 2022-0018 which adopted California Code of Regulations, title 23, section 996, as an emergency regulation that applies to urban water suppliers, including CVWD. The emergency regulation required urban water suppliers to submit preliminary annual supply and demand assessments to DWR prior to June 1, 2022; required urban water suppliers to implement the demand reduction actions identified in the supplier's water shortage contingency plan for a Level 2; defined "nonfunctional turf" and banned the irrigation of non-functional turf in commercial, industrial, and institutional sectors, including homeowners associations. On December 7, 2022, the State Water Board re-adopted the emergency regulation ensuring those provisions remain in effect for up to an additional year of continued drought conditions.

In response to the Governor's Executive Order N-7-22, the CVWD Board of Directors adopted Resolution 2022-28 effective June 10, 2022, declaring a Level 2 water shortage and adopting Level 2 demand reduction actions as outlined in Table 4 of the CVWD Water Shortage Contingency Plan (CVWD, 2021). In addition, Resolution 2022-28 also prohibited the use of potable water for irrigation of non-functional turf at commercial, industrial, and institutional sites.

On February 13, 2023, Governor Newsome issued Executive Order N-3-23 modifying the provision in Executive Order N-7-22 that requires all well permit applications for new or replacement wells in a groundwater basin subject to SGMA, and located in a medium or high-priority subbasin, to obtain written authorization from the local GSA determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure. Executive Order N-3-23 exempts this requirement for wells that: (i) will provide less than two AFY of groundwater for individual domestic users; (ii) will exclusively provide groundwater to public water supply systems as defined in section 116275 of the Health and Safety Code; or (iii) are replacing existing, currently permitted wells with new wells that will produce an equivalent quantity of water as the well being replaced when the existing well is being replaced because it has been acquired by eminent domain or acquired while under threat of condemnation. The GSAs of the Indio Subbasin and Mission Creek Subbasin are assisting Riverside County with implementation of this provision for wells drilled in their respective areas.

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3. MISSION CREEK SUBBASIN AREA OF BENEFIT

This section describes the replenishment and groundwater production activities for CY 2022, the condition of the groundwater supplies, the expenses and revenue of the Mission Creek Subbasin GRP, and the recommended RAC rate for FY 2023-2024 for the Mission Creek Subbasin AOB.

3.1 DEFINITION OF AREA OF BENEFIT

The Mission Creek Subbasin AOB is the portion of the Mission Creek Subbasin Management Area located within the boundary of CVWD. Its boundary description is as follows:

> "Beginning approximately 1/6 mile west of the center of Section 10, Township 3 South, Range 5 East, San Bernardino Meridian; then southeasterly, along the North Branch of the San Andreas Fault (Mission Creek Fault), to the intersection of the South Branch of the San Andreas Fault; then northwesterly, along the South Branch of the San Andreas Fault (Banning Fault), to the intersection of Avenue 20 and Palm Drive; then north, along Palm Drive, to Avenue 18; then west, along Avenue 18, to Little Morongo Road; then north, along Little Morongo Road, to Avenue 16; then east, along the north line of Section 12, Township 3 South, Range 4 East, to the northeast corner of said section; then south, along the east line of Section 12, Township 3 South, Range 4 East, to the east-west mid-section line, which is Dillon Road; then east, along Dillon Road, to the point of beginning."

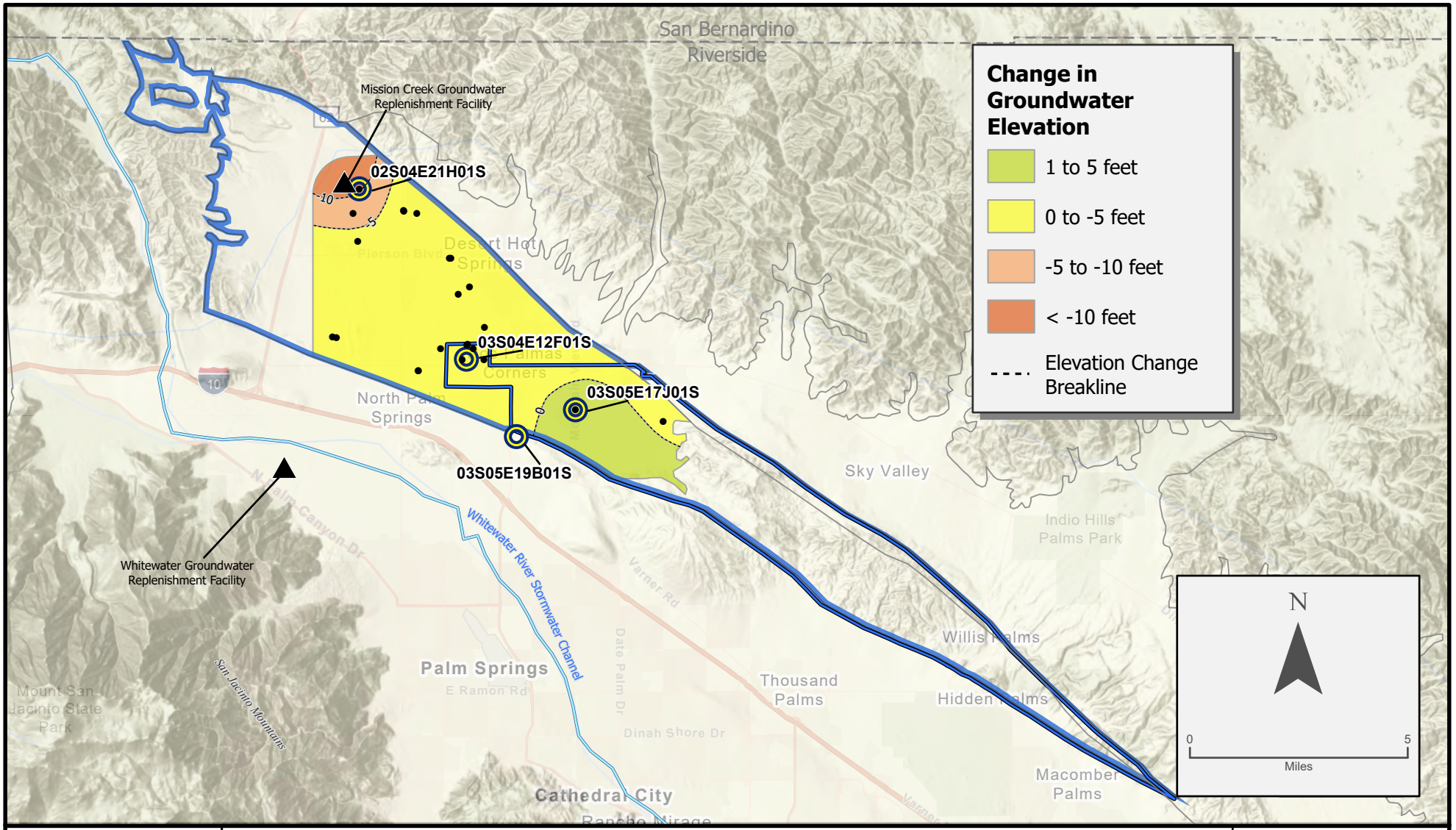
3.2 GROUNDWATER CONDITIONS

Current groundwater conditions in the Mission Creek Subbasin are described in detail in the *Mission Creek Subbasin Annual Report for WY 2021-2022* (CVWD et al., 2023a). This section utilizes the data and findings from that report to summarize the groundwater conditions in the Mission Creek Subbasin AOB.

Figure 3-1 shows changes in average groundwater levels over the last year, from WY 2021 to WY 2022. Average groundwater levels remained relatively stable or experienced moderate decreases of up to 5 feet across most of the AOB. Groundwater levels in the northwestern part of the management area near the Mission Creek GRF decreased by about 5 to 10 ft. This decrease is attributed to the reduction in replenishment at the Mission Creek GRF from 1,768 AF in 2020 to 0 AF in 2021 and 2022.

Figure 3-2 shows long term changes in average groundwater levels from WY 2009 to WY 2022. WY 2009 represents a period of historical lows in most areas of the basin and the difference shows the Subbasin recovery. As shown, groundwater levels across most of the management area have increased since 2009 by 10 to 15 ft (see Wells 03S05E17J01S, 03S05E19B01S, and 03S04E12F01S). These increases are most likely a result of the high volumes of past direct replenishment that occurred at the Mission Creek GRF during the period 2010-2012. In the northernmost portion of the management area, near the Mission Creek GRF, current groundwater levels have decreased by up to 20 to 30 ft (see Well 02S04E21H01S). This decline in groundwater levels at this well is likely due to the lower volumes of replenishment at the Mission Creek GRF that have occurred in recent years compared to the period preceding WY 2009. **Figure 3-3** shows well hydrographs that exhibit representative trends in groundwater levels across the management area over the same period, along with the annual replenishment volumes.

The observed groundwater levels at monitoring wells in the Mission Creek Subbasin AOB demonstrate the benefit and effectiveness of the GRP in sustaining groundwater supplies.



Coachella Valley Water District

Mission Creek Subbasin AOB

Mission Creek Subbasin Management Area

Hydrograph Shown on Figure 3-3

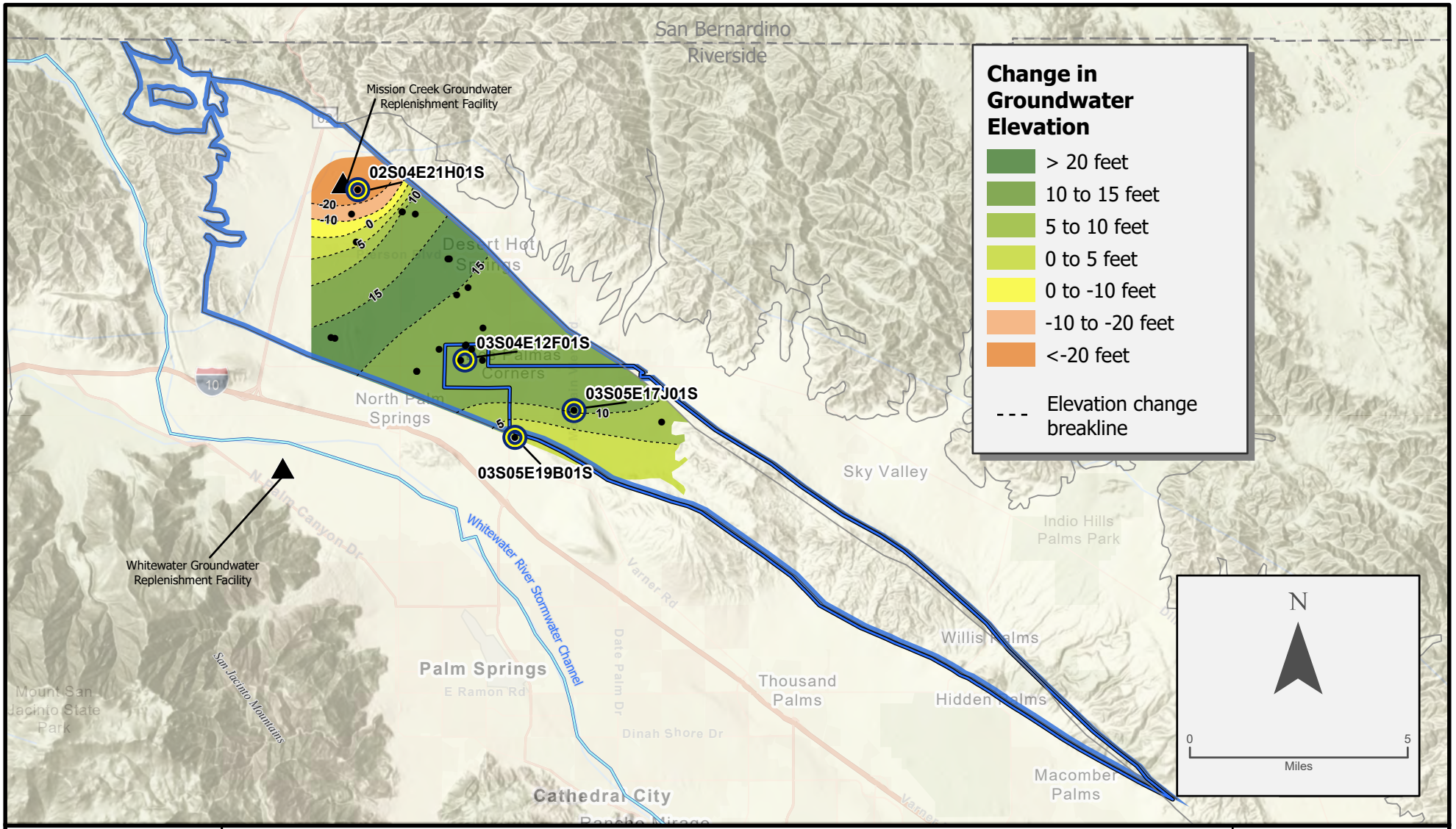
Replenishment Facility

Well Location

Source: CVWD et al. (2023a). Mission Creek Subbasin Annual Report for Water Year 2021-2022. February 2023.

Figure 3-1

WY 2021 to 2022 Change in Groundwater Elevation in the Mission Creek Subbasin Management Area



Coachella Valley Water District

Mission Creek Subbasin AOB

Mission Creek Subbasin Management Area

Hydrograph Shown on Figure 3-3

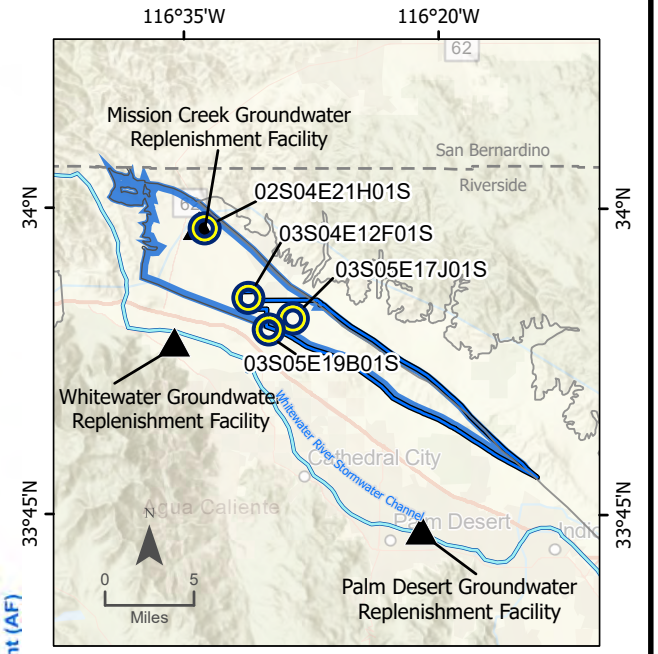
Replenishment Facility

Well Location

Source: CVWD et al. (2023a). Mission Creek Subbasin Annual Report for Water Year 2021-2022. February 2023.

Figure 3-2

WY 2009 to 2022 Change in Groundwater Elevation in the Mission Creek Subbasin Management Area



Coachella Valley Water District

Mission Creek Subbasin AOB

Mission Creek Subbasin Management Area

Well Location

Replenishment Facility

Figure 3-3

Hydrographs and Direct Replenishment for the Mission Creek Subbasin Management Area

3.3 GROUNDWATER PRODUCTION

Table 3-1 lists the annual groundwater production volumes from the Mission Creek Subbasin Management Area from CY 1978 to 2022. The table includes groundwater production for pumpers in both CVWD and DWA AOBs. Beginning in 2004, groundwater pumpers in CVWD's Mission Creek Subbasin AOB extracting greater than 25 AFY were required to meter and report their production. Reported production has been used since 2004 as accurately representing assessable production in the AOB.

In CY 2022, assessable production in CVWD's Mission Creek Subbasin AOB was 4,390 AF, approximately 32 percent of the total production within the management area. Total production in the management area was 13,751 AF, a decrease of 3 percent from 2021. Assessable production excludes groundwater production from Minimal pumpers who extract 25 AFY or less within CVWD's AOB and 10 AFY or less within DWA's AOB. Water Code Section 316335.5 exempts Minimal pumpers within CVWD's Mission Creek Subbasin AOB from any replenishment assessment or production reporting requirements.

3.4 DIRECT AND IN-LIEU REPLENISHMENT

This section describes the replenishment activities in the Mission Creek Subbasin AOB.

3.4.1 Replenishment Facilities

Direct replenishment of the Mission Creek Subbasin Management Area is currently accomplished via the artificial recharge of SWP water exchanged for Colorado River water at the Mission Creek GRF. The Mission Creek GRF is located in the northern portion of the management area near the intersection of Highway 62 and North Indian Canyon Drive (see **Figure 3-1)**. DWA completed construction of the Mission Creek GRF in June 2002, and direct replenishment activities commenced in November 2002.

Table 3-1. Groundwater Production within the Mission Creek Subbasin Management Area

Calendar Year	Production within CVWD AOB, [a] AF	Production within DWA AOB, [b,c] AF	Total Production, AF
1978	854	1,399	2,253
1979	1,001	2,564	3,565
1980	1,107	2,914	4,021
1981	1,421	2,878	4,299
1982	1,302	2,630	3,932
1983	1,442	2,979	4,421
1984	1,915	3,740	5,655
1985	2,148	3,559	5,707
1986	2,159	4,278	6,437
1987	2,234	4,483	6,717
1988	2,302	4,834	7,136
1989	2,606	5,690	8,296
1990	2,512	5,790	8,302
1991	2,292	5,486	7,778
1992	2,188	6,187	8,375
1993	2,528	6,333	8,861
1994	2,863	6,813	9,676
1995	2,865	7,237	10,102
1996	2,838	7,724	10,562
1997	2,104	7,795	9,899
1998	2,757	7,534	10,291
1999	3,004	7,970	10,974
2000	3,433	8,405	11,838
2001	3,929	8,421	12,350
2002	4,371	9,597	13,968
2003	4,425	10,073	14,498
2004	4,628	11,920	16,548
2005	4,247	12,080	16,327
2006	4,757	12,608	17,365
2007	4,547	11,862	16,409
2008	4,543	11,232	15,775
2009	4,813	10,295	15,108
2010	4,484	9,820	14,304
2011	4,653	9,550	14,203
2012	4,582	9,493	14,075
2013	4,415	10,080	14,495
2014	4,154	9,680	13,834
2015	4,090	8,580	12,670
2016	4,175	9,044	13,219
2017	4,281	9,250	13,531
2018	4,175	9,695	13,870
2019	3,973	9,142	13,115
2020	4,655	9,589	14,244
2021	4,582	9,625	14,207
2022	4,390	9,361	13,751

(a) Excludes production by Minimal pumpers who extract 25 AFY or less and other users exempt from the RAC.

(b) Excludes production by Minimal pumpers who extract 10 AFY or less and other users exempt from the RAC.

(c) Production within DWA's AOB as reported by DWA.

3.4.2 Direct Replenishment

Table 3-2 lists the annual volume of Colorado River water delivered to the Mission Creek Subbasin Management Area for direct replenishment at the Mission Creek GRF from CY 2002 to 2022. In 2022, due to the critically dry water year, no SWP Exchange water was delivered to the Mission Creek GRF for direct replenishment. From 2002 to 2022, a total of 167,044 AF was delivered to the Mission Creek GRF for direct replenishment of the AOB.

Table 3-2. Deliveries for Direct Replenishment at the Mission Creek Groundwater Replenishment Facility

Calendar Year	Mission Creek GRF, AF
2002	4,733
2003	59
2004	5,564
2005	24,723
2006	19,901
2007	1,011
2008[(a)]	503
2009[(a)]	4,090
2010[(a)]	33,210
2011[(a)]	26,238
2012	23,406
2013	2,379
2014	4,325
2015	171
2016	0
2017	9,248
2018	2,027
2019[(b)]	3,688
2020	1,768
2021	0
2022	0
Total	**167,044**

(a) Includes deliveries of DWA's non-SWP supplemental water purchased from entities in Kern County for the CPV Sentinel Energy Power Plant.
(b) The volume of water recharged to the Mission Creek GRF in CY 2019 reported in the 2020-2021 Engineer's Report was provisional. The provisional value of 3,498 AF was updated herein to 3,688 AF.

3.4.3 In-Lieu Replenishment

Access to recycled water for in-lieu source substitution is currently unavailable in the Mission Creek Subbasin Management Area. Construction is underway at MSWD's Regional Water Reclamation Facility (WRF), located in the West Whitewater River Subbasin Management Area (see **Figure 2-1)**, and the facility is expected to be operational in fall 2023. As documented in the *2022 Mission Creek Subbasin Alternative Plan Update*, future construction of tertiary treatment at MSWD's Regional WRF will provide recycled water suitable for recharge or non-potable reuse after it is conveyed to the Mission Creek Subbasin.

3.5 FUTURE PROJECTS

The existing direct replenishment activities in the Mission Creek Subbasin Management Area are expected to continue. Currently, CVWD has not selected any replenishment projects for future implementation in the Mission Creek Subbasin AOB.

3.6 NEED FOR CONTINUED REPLENISHMENT

Historical declines in groundwater levels in the Mission Creek Subbasin led to the determination that a management program was required to stabilize levels and prevent associated adverse effects, such as water-quality degradation. The joint management agreement between CVWD and DWA to cooperatively conduct the Mission Creek Subbasin Management Area GRP was developed to serve this need and became effective in 2003.

Groundwater levels, as measured in wells across the management area, have been a key metric in assessing the effectiveness of the GRP and are stabilized or rising. Average change in groundwater levels since 2009 are positive across the management area, which is evidence that implementation of the GRP has effectively abated historical overdraft. Continued artificial replenishment is necessary to maintain groundwater levels and prevent a return to overdraft in the future.

3.7 REPLENISHMENT ASSESSMENT

This section describes the recommended RAC for the Mission Creek Subbasin AOB for FY 2023-2024.

3.7.1 Groundwater Replenishment Program Costs

The RAC includes costs for importing and recharging water, operation and maintenance costs, and administrative costs for the Mission Creek Subbasin AOB. Payments to DWA (as outlined in the Mission Creek Water Management Agreement between DWA and CVWD) are also included in the cost calculations, as allowed by the Water Code. In addition, continuing engineering studies, well meter reading and maintenance, and groundwater monitoring costs incurred by CVWD are included in the cost calculations.

3.7.2 Methods for Determining Groundwater Production

Groundwater producers who produce more than 25 AFY of groundwater in CVWD's Mission Creek Subbasin AOB are required to meter and report their production pursuant to Water Code Sections 31634.5 and 31638.5. Since 2003, when the replenishment assessment became effective in the Mission Creek Subbasin AOB, groundwater producers producing greater than 25 AFY in the AOB have been required to meter and report their production. CVWD has an ongoing program to conduct a thorough field investigation of the use of all wells that may be subject to metering and reporting requirements.

The exact number of exempt Minimal pumpers in the Mission Creek Subbasin Management Area is currently unknown. Minimal pumpers predominantly pump water from small wells used for domestic or limited irrigation purposes. The maximum groundwater pumping by the unmetered Minimal pumpers in the management area is estimated to be less than 500 AFY.

3.7.3 Income Statement

Table 3-3 is a summary income statement showing revenues, expenses, and cash flow for FY 2022 (actual), and projections for FY 2023 and FY 2024. The table notes provide a description of the sources of revenue and expenses.

Table 3-3. CVWD Mission Creek Subbasin Area of Benefit Groundwater Replenishment Program Income Statement

Description	Actual FY 2022	Projected FY 2023	Projected FY 2024
Revenues			
Replenishment Assessment Revenue (a)	$601,875	$590,684	$594,933
Other Revenue (b)	158,200	62,141	64,691
Total Revenues	**$760,075**	**$652,825**	**$659,624**
Expenses			
Total O&M Costs (c)	$326,482	$231,499	$268,044
Administrative Costs (d)	268,885	371,014	446,490
Total Expenses	**$595,366**	**$602,513**	**$714,534**
Net Increase (Decrease) in Cash Flow (e)	**$164,709**	**$50,312**	**$(54,910)**
Ending Reserves	**$4,262,408**	**$4,312,719**	**$4,257,809**

(a) Revenues based on fiscal year actual or budgeted production estimates. RAC for FY 2022 = $135.52/AF, for FY 2023 = $135.52/AF, and for FY 2024 = $135.52/AF.
(b) Other Revenues include investment income and grant revenue.
(c) Operations and Maintenance (O&M) costs include labor, equipment, and materials for the replenishment facilities.
(d) Cost to administer the replenishment assessment program includes personnel, meter reading, billing, groundwater monitoring and report preparation.
(e) Net Increase (Decrease) in Cash Flow excludes depreciation.

3.7.4 Recommended RAC for Fiscal Year 2023-2024

Based on the projected operating costs, revenues, and reserves, CVWD staff recommends no change to the $135.52/AF RAC that became effective on July 1, 2017.

Based on revenues and costs shown in **Table 3-3**, the Fund is projected to have an increase in cash flow of $50,312 in FY 2023 with a decrease of approximately $54,910 in FY 2024. FY 2023 replenishment revenue assumes a 3.5% decrease in production due to drought restrictions that impact CVWD domestic water customers. FY 2024 assumes production at 4,390 AF with no additional reduction. Total O&M costs are the primary cost drivers for the Fund. As shown in the income statement, the Fund is projected to have a positive cash flow in FY 2023, and a slight decrease in FY 2024 and will continue to meet its reserve funding requirements prescribed in CVWD's Reserve Policy.

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4. WEST WHITEWATER RIVER SUBBASIN AREA OF BENEFIT

This section describes the replenishment and groundwater production activities for CY 2022, the condition of the groundwater supplies, the expenses and revenue of the West Whitewater River Subbasin GRP, and the recommended RAC rate for FY 2023-2024 for the West Whitewater River Subbasin AOB.

4.1 DEFINITION OF AREA OF BENEFIT

The West Whitewater River Subbasin AOB is the portion of the West Whitewater River Subbasin Management Area located within the boundary of CVWD. Its boundary description is as follows:

> "Beginning at the northwest corner of Section 4, Township 5 South, Range 7 East, San Bernardino Meridian; then south, along Jefferson Street, to Avenue 40; then west, along Avenue 40, to Adams Street; then south, along Adams Street and continuing south along the east line of Section 18, Township 5 South, Range 7 East, to the southeast corner of said section, which is Fred Waring Drive (Avenue 44); then west, along Fred Waring Drive, to Washington Street; then southeast, along Washington Street, to the south bank of the Whitewater River Stormwater Channel; then west, towards the Santa Rosa Mountains near Happy Point; then westerly along the foothills of the Santa Rosa and San Jacinto Mountains until intersecting the service area boundary of Coachella Valley Water District; then northwesterly along the service area boundary of Coachella Valley Water District to the Whitewater River Groundwater Replenishment Facility; then easterly along the service area boundary of Coachella Valley Water District to the South Branch of the San Andreas Fault (Banning Fault); then southeasterly along the South Branch of the San Andreas Fault (Banning Fault) to the intersection with the east line of Section 29, Township 4 South, Range 7 East; then south along the east line of Section 29, Township 4 South, Range 7 East and Section 32, Township 4 South, Range 7 East, to Avenue 38; then west, to the point of beginning."

4.2 GROUNDWATER CONDITIONS

Current groundwater conditions in the Whitewater River Subbasin—also called the Indio Subbasin—are described in detail in the *Indio Subbasin Annual Report for WY 2021-2022* (CVWD et al., 2023b). This section utilizes the data and findings of that report to summarize the groundwater conditions in the West Whitewater River Subbasin AOB.

Figure 4-1 shows changes in average groundwater levels over the last year, from WY 2021 to WY 2022. Average groundwater levels remained relatively stable or increased by up to 5 ft across most of the AOB. Groundwater levels in the northwestern part of the West Whitewater River Subbasin Management Area near the Whitewater River GRF declined compared to 2021. This decrease is attributed to the reduction in replenishment at the Whitewater River GRF from the record replenishment of 385,994 AF in 2017 to much lower levels of approximately 15,000 AF in 2021 and 2022.

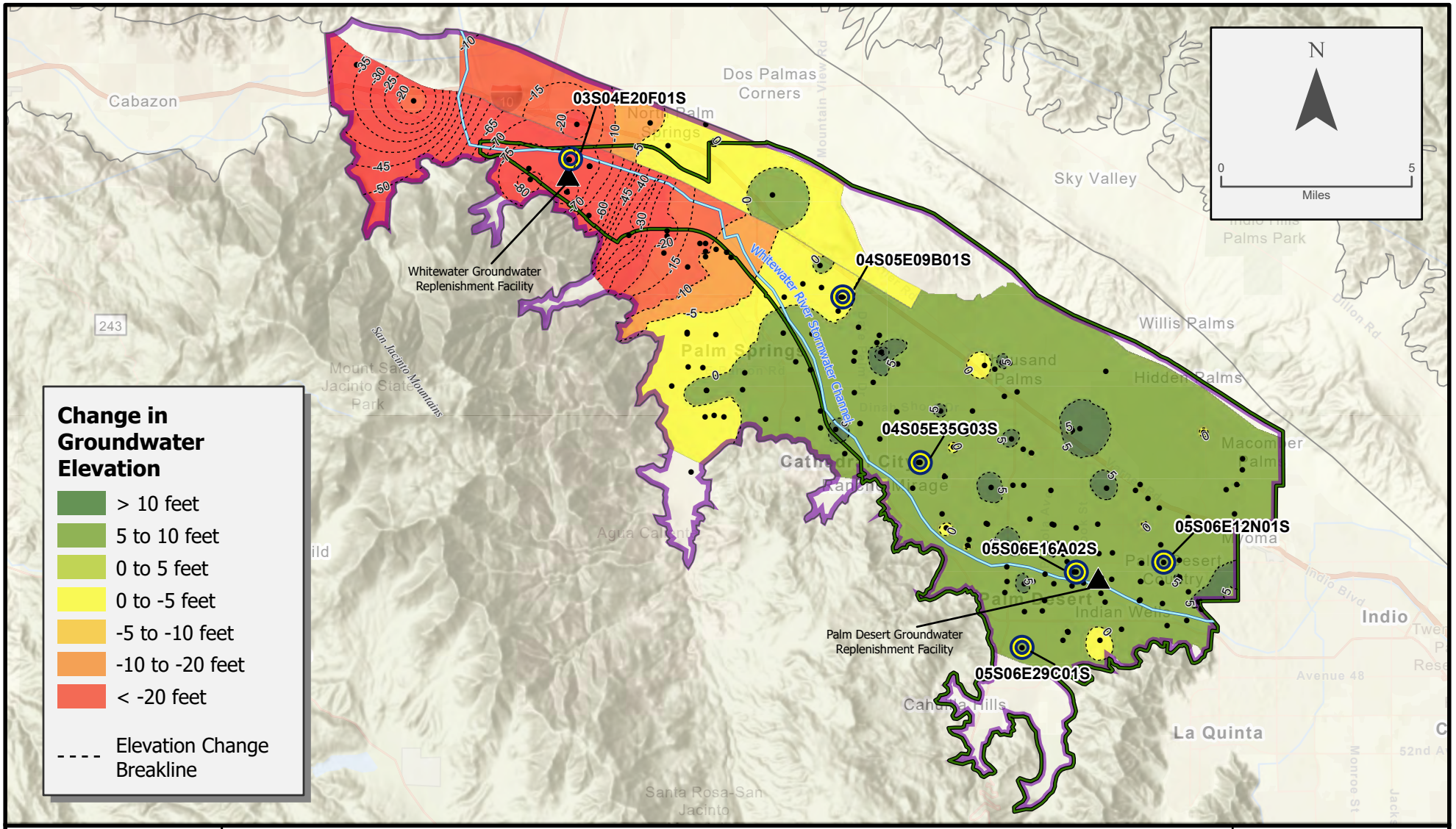
Figure 4-2 shows changes in average groundwater levels from WY 2009 to WY 2022. WY 2009 represents a period of historical lows in most areas of the basin and the difference shows the Subbasin recovery. **Figure 4-3** shows well hydrographs that exhibit representative trends in groundwater levels across the management area over the same period. Since WY 2009, groundwater levels in the northwestern portion of the management area and the AOB have increased by up to 80 ft as a result of direct replenishment at the Whitewater River GRF (see Well 03S04E20F01S). Groundwater levels have increased hydraulically downgradient of the Whitewater River GRF since 2009. Directly downgradient of the Whitewater River GRF groundwater levels increased 40 to 60 ft (see Well 04S05E09B01), and further downgradient groundwater levels increased 10 to 20 ft (see Well 04S05E35G03S). Increases in water levels throughout

most of the basin demonstrate the benefit and effectiveness of the West Whitewater River Subbasin GRP in sustaining the groundwater supplies across the management area. In addition to direct replenishment, an increase in conservation efforts, as evident by an overall decrease in pumping across the basin, has also contributed to increasing groundwater levels. A notable exception is a localized area near the Sun City/Palm Desert area in the northeastern section of the AOB (see **Figure 4-2**) where groundwater levels have experienced localized declines, with one well showing declines of up to 30 ft. Groundwater levels in this area are being addressed through direct replenishment at the Palm Desert GRF and through expansion of the non-potable water system to reduce groundwater pumping.

4.3 GROUNDWATER PRODUCTION

Table 4-1 lists the annual groundwater production volumes and surface-water diversions in the West Whitewater River Subbasin Management Area from CY 1977 to 2022. The table includes data for both CVWD and DWA AOBs. Starting in 2016, the production volumes for DWA's AOB include a small amount of production in the Garnet Hill Subarea. DWA previously assessed production separately for their Garnet Hill Subbasin AOB and West Whitewater River Subbasin AOB. While both are located within the Whitewater River Subbasin (Indio Subbasin), Garnet Hill is designated a Subarea of the Whitewater River Subbasin. As of FY 2021, DWA combined both into one AOB. Beginning in 1982, groundwater pumpers in CVWD's West Whitewater River Subbasin AOB extracting greater than 25 AFY were required to meter and report their production. Reported production has been used since 1982 as accurately representing assessable production in the AOB.

In CY 2022, the assessable production within CVWD's West Whitewater River Subbasin AOB was 122,060 AF, which was approximately 77 percent of total assessable production and diversions within the management area. Total production and surface water diversions in the West Whitewater River Subbasin Management Area were 157,637 AF, which represents a 1 percent decrease from CY 2021. Assessable production excludes groundwater production from Minimal pumpers who extract 25 AFY or less within CVWD's AOB and 10 AFY or less within DWA's AOB. Water Code Section 316335.5 exempts Minimal pumpers within CVWD's West Whitewater River Subbasin AOB from any replenishment assessment or production reporting provisions.



Coachella Valley Water District

West Whitewater River Subbasin AOB

West Whitewater River Subbasin Management Area

Hydrograph Shown on Figure 4-3

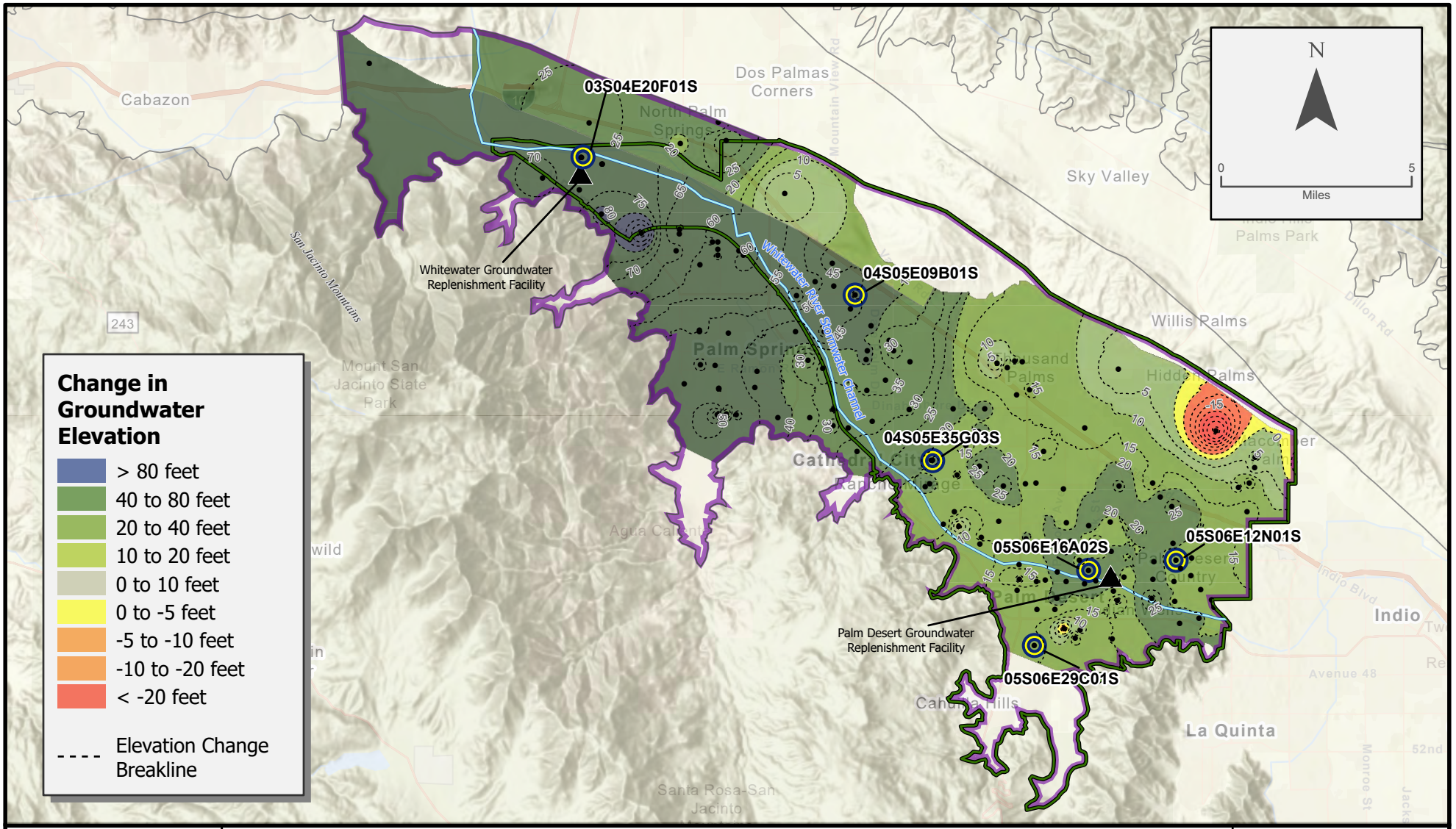
Replenishment Facility

Well Location

Source: CVWD et al. (2023b). Indio Subbasin Annual Report for Water Year 2021-2022. February 2023.

Figure 4-1

WY 2021 to 2022 Change In Groundwater Elevation in the West Whitewater River Subbasin Management Area



Coachella Valley Water District

West Whitewater River Subbasin AOB

West Whitewater River Subbasin Management Area

Hydrograph Shown on Figure 4-3

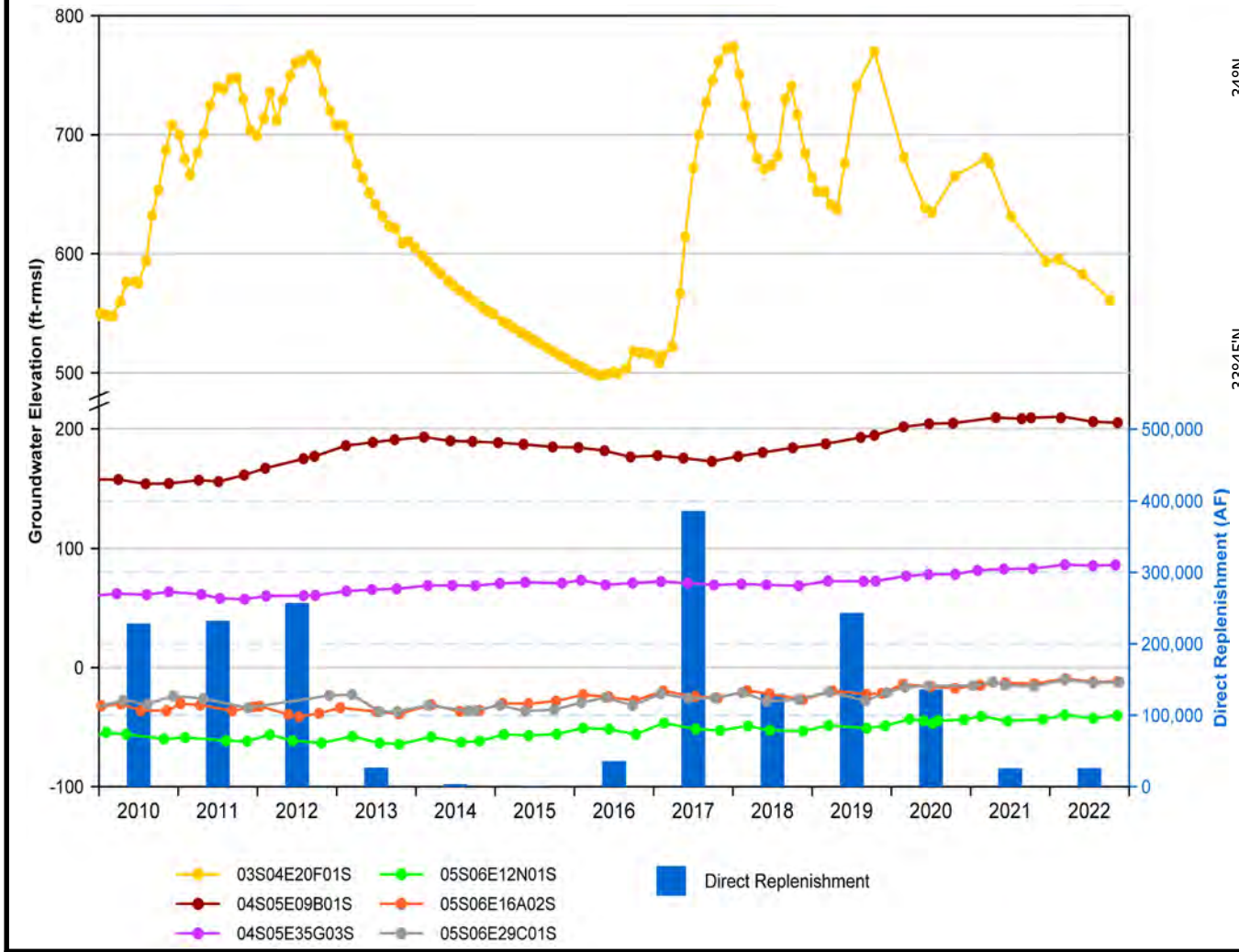
Replenishment Facility

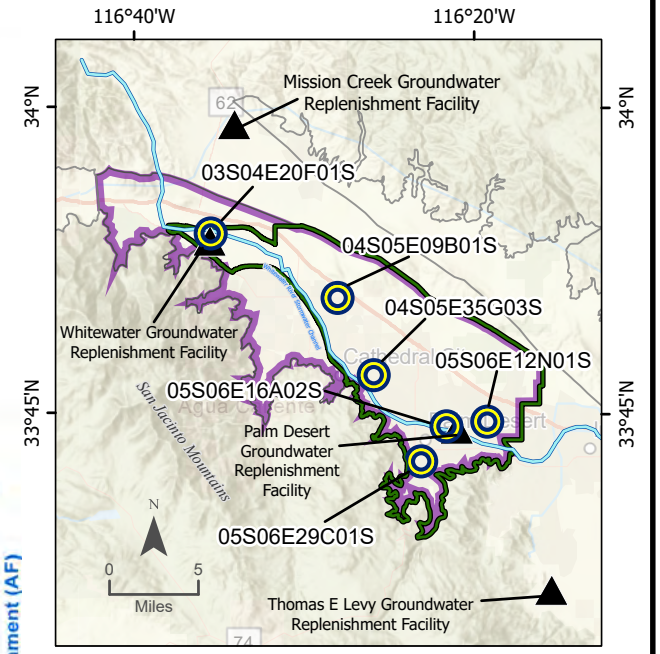
Well Location

Source: CVWD et al. (2023b). Indio Subbasin Annual Report for Water Year 2021-2022. February 2023.

Figure 4-2

WY 2009 to 2022 Change in Groundwater Elevation in the West Whitewater River Subbasin Management Area





Coachella Valley Water District

West Whitewater River Subbasin AOB

West Whitewater River Subbasin Management Area

Well Location

Replenishment Facility

Figure 4-3

Hydrographs and Direct Replenishment for the West Whitewater River Subbasin AOB

Table 4-1. Groundwater Production and Surface-Water Diversions within the West Whitewater River Subbasin Management Area

Calendar Year	Production within CVWD AOB, [a] AF	Production within DWA AOB, [b, c] AF	Surface-Water Diversions, [d] AF	Total Production, AF
1977	67,696	18,661	7,000	93,357
1978	61,172	28,100	8,530	97,802
1979	72,733	29,393	7,801	109,927
1980	84,142	32,092	7,303	123,537
1981	86,973	33,660	7,822	128,455
1982	83,050	33,382	6,512	122,944
1983	84,770	33,279	6,467	124,516
1984	104,477	38,121	7,603	150,201
1985	111,635	39,732	7,143	158,510
1986	115,185	40,965	6,704	162,854
1987	125,229	44,800	5,644	175,673
1988	125,122	47,593	5,246	177,961
1989	129,957	47,125	5,936	183,018
1990	136,869	45,396	5,213	187,478
1991	126,360	42,729	4,917	174,006
1992	128,390	42,493	4,712	175,595
1993	131,314	41,188	6,363	178,865
1994	134,223	42,115	5,831	182,169
1995	134,583	41,728	5,809	182,120
1996	137,410	45,342	5,865	188,617
1997	137,406	43,658	5,626	186,690
1998	142,620	41,385	7,545	191,550
1999	157,148	44,350	6,941	208,439
2000	161,834	44,458	6,297	212,589
2001	125,122	47,593	4,928	208,807
2002	129,957	47,125	4,221	213,410
2003	156,185	43,463	4,627	204,275
2004	159,849	48,093	4,758	212,700
2005	153,462	46,080	4,799	204,341
2006	160,239	48,967	4,644	213,850
2007	157,487	50,037	3,490	211,014
2008	161,695	45,405	3,593	210,693
2009	155,793	41,913	1,443	199,149
2010	141,481	39,352	1,582	182,415
2011	141,028	40,071	1,724	182,823
2012	141,379	39,507	2,222	183,108
2013	143,108	37,730	1,802	182,640
2014	136,027	36,372	1,787	174,186
2015	115,588	30,332	1,539	147,459
2016	115,659	30,705	2,031	148,395
2017	120,383	33,164	1,996	155,543
2018	119,250	33,873	1,632	154,755
2019	113,841	29,771	1,916	145,528
2020	117,770	33,786	2,423	153,979
2021	122,413	36,150	682	159,245
2022	122,060	34,977	599	157,637

(a) Excludes production by Minimal pumpers who extract 25 AFY or less and other users exempt from the RAC.
(b) Excludes production by Minimal pumpers who extract 10 AFY or less and other users exempt from the RAC.
(c) Production within DWA AOB includes production within DWA's Garnet Hill Subbasin AOB (starting 2016).
(d) Whitewater Mutual Water Company, Chino Creek, Snow Creek, and Falls Creek (DWA AOB).

4.4 DIRECT AND IN-LIEU REPLENISHMENT

This section describes the replenishment activities in the West Whitewater River Subbasin AOB.

4.4.1 Replenishment Facilities

Direct replenishment of the West Whitewater River Subbasin Management Area is currently accomplished via the artificial recharge of SWP water exchanged for Colorado River water and QSA water at the Whitewater River GRF and Colorado River water from the MVP at the Palm Desert GRF.

4.4.1.1 Whitewater River Groundwater Replenishment Facility

The Whitewater River GRF is in the western portion of the West Whitewater River Subbasin AOB between the WRSC and Highway 111 (see **Figure 4-1)**. Situated in the flow path of the Whitewater River, this location is ideally suited for large-scale replenishment due to the absence of aquitards that retard infiltration. The Whitewater River GRF went online in 1973.

4.4.1.2 Palm Desert Groundwater Replenishment Facility

The Palm Desert GRF is in the southeastern portion of the AOB (see **Figure 4-1)**. Phase I of the project, consisting of re-purposing existing ponds adjacent to and north of WRP 10, was completed in late 2018 and has been operational since February 2019.

4.4.2 Direct Replenishment

Table 4-2 lists the annual volume of Colorado River water that was delivered to the West Whitewater River Subbasin Management Area for direct replenishment at the Whitewater River GRF and Palm Desert GRF from CY 1973 to 2022. In 2022, 15,011 AF and 10,949 AF of water were delivered to the Whitewater River and Palm Desert GRFs, respectively, for direct replenishment, totaling 25,960 AF of replenishment in the West Whitewater River Subbasin Management Area.

From 1973 to 2022, a total of 3,879,050 AF was delivered to the Whitewater River and Palm Desert GRFs for direct replenishment of the Management Area.

4.4.3 In-Lieu Replenishment

As described in the 2*022 Indio Subbasin Water Management Plan Update*, CVWD delivers imported Colorado River water and recycled water to large irrigators to offset groundwater production. The MVP is a key component in ensuring non-potable water availability to current and future customers. The initial 6.6 miles of pipeline, stretching from the Coachella Canal in Indio to WRP 10 in Palm Desert, was completed in 2009. Currently, 20 golf courses and six other municipal users (i.e., schools and homeowner's associations) are connected either directly to the MVP or to the non-potable water system supplied by the MVP and WRP 10 recycled water and no longer need to rely on groundwater as their primary source of irrigation water. The goal of these golf courses is to meet their irrigation demands with no more than 20 percent groundwater for their total irrigation use each year. As golf courses are connected to non-potable water, the managers sign Non-Potable Water Agreements, which include an 80 percent non-potable water use requirement.

WRP 7, located in the northernmost portion of the East Whitewater River Subbasin AOB, currently serves a blend of Colorado River water and recycled water to two golf courses in the West Whitewater River Subbasin AOB.

Table 4-2. Deliveries for Direct Replenishment to the West Whitewater River Subbasin Management Area

Calendar Year	WWR-GRF, AF	Palm Desert GRF, AF	Total Direct Replenishment in West Whitewater River Subbasin AOB, AF
1973	7,475	0	7,475
1974	15,396	0	15,396
1975	20,126	0	20,126
1976	13,206	0	13,206
1977	0	0	0
1978	0	0	0
1979	25,192	0	25,192
1980	26,341	0	26,341
1981	35,251	0	35,251
1982	27,020	0	27,020
1983	53,732	0	53,732
1984	83,708	0	83,708
1985	251,994	0	251,994
1986	298,201	0	298,201
1987	104,334	0	104,334
1988	1,096	0	1,096
1989	12,478	0	12,478
1990	31,721	0	31,721
1991	14	0	14
1992	40,870	0	40,870
1993	60,153	0	60,153
1994	36,763	0	36,763
1995	61,318	0	61,318
1996	138,266	0	138,266
1997	113,677	0	113,677
1998	132,455	0	132,455
1999	90,601	0	90,601
2000	72,450	0	72,450
2001	707	0	707
2002	33,435	0	33,435
2003	902	0	902
2004	13,224	0	13,224
2005	165,554	0	165,554
2006	98,959	0	98,959
2007	16,009	0	16,009
2008	8,008	0	8,008
2009	57,024	0	57,024
2010	228,330	0	228,330
2011	232,214	0	232,214
2012	257,267	0	257,267
2013	26,620	0	26,620
2014	3,533	0	3,533
2015	865	0	865
2016	35,699	0	35,699
2017	385,994	0	385,994
2018	129,725	0	129,725
2019	235,600	7,757	243,357
2020	126,487	9,700	136,187

Calendar Year	WWR-GRF, AF	Palm Desert GRF, AF	Total Direct Replenishment in West Whitewater River Subbasin AOB, AF
2021	15,006	10,633	25,639
2022	15,011	10,949	25,960
Total	**3,840,011**	**39,039**	**3,879,050**

4.5 FUTURE PROJECTS

Direct and in-lieu replenishment activities in the West Whitewater River Subbasin Management Area are expected to continue and to include the following future projects.

CVWD will continue to prioritize the conversion of golf courses and other municipal users in the West Whitewater River Subbasin AOB from groundwater to in-lieu sources. Current plans are to connect approximately 14 additional golf courses and open spaces along the MVP to offset approximately 12,500 AFY of groundwater pumping, along with 29 additional golf course customers to the WRP 10 non-potable system to offset an additional 28,000 AFY by 2034. Further, CVWD is planning an expansion of the WRP 7 non-potable system including upgrades to the Mile Post 113.2 Canal water pump station to convey Colorado River supply for blending with WRP 7 recycled water. CVWD is seeking grant/loan funding through the Clean Water State Revolving Fund (CWSRF) program, grants from the USBR Title XVI Reclamation and Reuse program, and Sanitation reserve funds to expand the non-potable water system. CVWD has secured approximately $61 million in Clean Water State Revolving Fund (CWSRF) loan, $10 million in CWSRF grants, and $12.7 million in Water Infrastructure Improvements for the Nation (WIIN) grants. In addition, CVWD has also applied for $27 million in CWSRF loan, including a $7 million CWSRF grant in December 2022 for WRP-7 NPW system expansion. CVWD has also applied for a $7.96 million grant through the Sustainable Groundwater Management (SGM) Implementation Grant Program for WRP-7 tertiary treatment expansion.

Currently, CVWD is working on NPW connections to WRP-10 for four new golf courses with target completion and startup of NPW service in December 2023. In addition, CVWD is also working on construction of a new T-1 Pump Station at WRP-10 with a 25,000 gallon per minute capacity with target completion in December 2023.

In January 2023, CVWD started construction for eight new NPW customer connections to WRP-10 with anticipated completion and startup in spring 2025.

The Palm Desert GRF is a direct replenishment project. Phase I involved repurposing existing percolation ponds located north of WRP 10 and started operation in early 2019. Phase II involves construction of three detention basins within the WRSC to the south of the facility and extension of the existing MVP within the northern bank of the stormwater channel. The Environmental Impact Report (EIR) for Phase II was approved by CVWD's Board of Directors in 2018 and the design of Phase II was completed in 2019.

CVWD has reached the following milestones in the project permitting process:

- The California Department of Fish and Wildlife (CDFW) issued the 1600 Streambed Alteration Agreement Permit in August 2021.
- The California Regional Water Quality Control Board issued the 401 Water Quality Certification Permit in April 2022.
- The U.S. Army Corps of Engineers (USACE) sent an initial proffered 404 Individual Permit in June 2022.

USACE has requested revisions to the pending 404 Individual Permit mitigation plan. CVWD will complete the revised mitigation plan by May 2023. Staff expects that the USACE 404 Individual Permit will be finalized in July 2023. The construction of Phase 2 is expected to begin in August 2023 and to be completed by November 2024. As planned, both phases of the Palm Desert GRF will have the capacity to directly recharge up to approximately 25,000 AFY of Colorado River water into the West Whitewater River Subbasin AOB.

4.6 NEED FOR CONTINUED REPLENISHMENT

Historical declines in groundwater levels in the western portion of the Whitewater River Subbasin led to the determination that a management program was required to stabilize the declining groundwater levels and prevent associated adverse effects, such as water-quality degradation and land subsidence. The joint management agreement between CVWD and DWA to cooperatively conduct the West Whitewater River Subbasin GRP was developed to serve this need and became effective in 1976.

Groundwater levels, as measured at wells across most of the AOB, have been a key metric in assessing the effectiveness of the GRP, and are stabilized or rising. The average change in groundwater elevations since 2009 remains positive across most of the AOB, which demonstrates that implementation of the GRP has effectively abated historical overdraft conditions. Continued direct and in-lieu replenishment activities are necessary to maintain groundwater levels, slow or reverse any declining trends, and prevent conditions of overdraft.

4.7 REPLENISHMENT ASSESSMENT

This section describes the recommended RAC for the West Whitewater River Subbasin AOB for FY 2023-2024.

4.7.1 Groundwater Replenishment Program Costs

The RAC includes costs for importing and recharging water, operation and maintenance costs, administrative costs, debt service, and capital improvements necessary to maintain the replenishment facilities for the West Whitewater River Subbasin AOB. Payments from DWA to reimburse CVWD for operating costs (as outlined in the Whitewater Management Agreement between the two agencies) are also included in the cost calculations, as allowed by the Water Code. In addition, continuing engineering studies, well meter reading and maintenance, and groundwater monitoring costs incurred by CVWD are included in the cost calculations.

4.7.2 Methods for Determining Groundwater Production

Since 1982, when the replenishment assessment became effective in the West Whitewater River Subbasin AOB, groundwater pumpers extracting greater than 25 AFY from the AOB have been required to meter and report their production pursuant to Water Code Sections 31634.5 and 31638.5. CVWD has an ongoing program to conduct a thorough field investigation of the use of all wells that may be subject to metering and reporting requirements.

The exact number of exempt Minimal pumpers in the West Whitewater River Subbasin Management Area is currently unknown. Minimal pumpers predominantly pump water from small wells that are used for domestic or limited irrigation purposes. The maximum groundwater pumping by the unmetered Minimal pumpers in the management area is estimated to be less than 500 AFY.

4.7.3 Income Statement

Table 4-3 is a summary income statement showing revenues, expenses, and cash flow for FY 2022 (actual), and projections for FY 2023 and FY 2024.The table notes provide a description of the sources of revenue and expenses.

4.7.4 Recommended RAC for Fiscal Year 2023-2024

Based on the projected operating costs, revenues, and reserves, CVWD staff recommends no increase to the $165.37/AF RAC that became effective on July 1, 2021.

As detailed in **Table 4-3**, the Fund is projected to have an increase in cash flow of $752,900 in FY 2023. For FY 2024, the fund will utilize reserves to cover a projected decrease in cash flow of approximately $9,305,811. FY 2023 budgeted production assumed a 3.5% decrease due to drought restrictions, which impacts pumping levels within the AOB. FY 2024 assumes 120,000 AF of production, which is a decrease of approximately 2,000 AF over calendar year totals. Water purchase costs are the primary cost drivers for the Fund. As shown in the income statement, although the Fund will have a negative cash flow in FY 2024, it is projected to continue to meet its reserve funding requirements prescribed in CVWD's Reserve Policy.

Table 4-3. CVWD West Whitewater River Subbasin Area of Benefit Groundwater Replenishment Program Income Statement

Description	Actual FY 2022	Projected FY 2023	Projected FY 2024
Revenues			
Replenishment Assessment Revenue (a)	$20,607,437	$20,195,602	$19,844,400
General Property Tax (b)	2,214,111	2,380,169	2,451,574
Non-Potable Water Sales (c)	3,634,759	4,107,098	4,767,200
Other Revenue (d)	587,330	590,441	3,038,680
Total Revenues	**$27,043,637**	**$27,273,310**	**$30,101,854**
Expenses			
Total O&M Costs (e)	$2,719,771	$3,825,669	$3,917,793
Power Costs	870,149	836,447	806,712
Administrative Costs (f)	3,247,945	3,423,386	4,369,629
QSA Mitigation Costs	1,287,788	1,494,745	1,915,893
Water Purchases (g)	17,456,083	12,966,587	22,200,558
Pass-Through Contra Expense (h)	(271,052)	-	-
Capital Improvement Budget	297,459	445,036	2,211,310
Debt Service (i)	1,200,000	3,500,000	3,945,387
Transfer To (From) Other Funds (j)	4,623	28,540	40,383
Total Expenses	**$26,812,764**	**$26,520,410**	**$39,407,665**
Net Increase (Decrease) in Cash Flow (k)	**$230,873**	**$752,900**	**$(9,305,811)**
Ending Reserves	**$36,147,613**	**$36,900,512**	**$27,594,701**

(a) Revenues based on fiscal year actual or budgeted production estimates. RAC for FY 2022 = $165.37/AF, for FY 2023 = $165.37/AF, and for FY 2024 = $165.37/AF.

(b) General Property Taxes includes an allocation of CVWD's 1% General Property Tax to the Whitewater Fund.

(c) Non-Potable Water Sales includes revenue received by the Whitewater Fund for the sale of reclaimed wastewater (recycled) and Colorado River Water (canal water) via the MVP.

(d) Other Revenues include investment income, reimbursement of shared facility costs, revenues received from Whitewater Hydro leases, grant revenues, and Supplemental Water Supply Surcharge Revenue for CIP expenditures.

(e) Operations and Maintenance (O&M) costs include labor, equipment, and materials for the replenishment facilities.

(f) Cost to administer the replenishment assessment program includes personnel, meter reading, billing, groundwater monitoring and report preparation.

(g) Water purchases from the Rosedale Rio-Bravo (Glorious Land Company), the Metropolitan Water District, water purchases from the Canal Fund for replenishment activities, and allocable State Water Project expenses.

(h) Pass-Through Contra Expense includes expenditures where there is a direct reimbursement to CVWD (DWA Shared Costs, Other Agency cost shares). The revenue is considered an offset to expenditures.

(i) Debt Service - 15 year variable debt instrument payable to the Coachella Valley Water District's Domestic Water Fund in the amount of $52,340,180. This note reimburses the Domestic Water Fund for funds provided for the construction of the MVP.

(j) Transfer To (From) Other Funds includes reimbursements to the District's Motorpool Fund for its share of District vehicles and equipment purchased by the Motorpool Fund.

(k) Net Increase (Decrease) in Cash Flow excludes depreciation.

5. EAST WHITEWATER RIVER SUBBASIN AREA OF BENEFIT

This section describes the replenishment and groundwater production activities for CY 2022, the condition of the groundwater supplies, the expenses and revenue of the East Whitewater River Subbasin GRP, and the recommended RAC rate for FY 2023-24 for the East Whitewater River Subbasin AOB.

5.1 DEFINITION OF AREA OF BENEFIT

The East Whitewater River Subbasin AOB is the eastern portion of the Whitewater River Subbasin located within the boundary of CVWD. In 2022, sections of the AOB boundary were modified to align with the Indio Subbasin boundary. Its boundary description is as follows:

> "Beginning at the northwest corner of Section 4, Township 7 South, Range 5 East, San Bernardino Meridian; then south, along Jefferson Street, to Avenue 40; then west, along Avenue 40, to Adams Street; then south, along Adams Street and continuing south along the east line of Section 18, Township 5 South, Range 7 East, to the southeast corner of said section, which is Fred Waring Drive (Avenue 44); then west, along Fred Waring Drive, to Washington Street; then southeast, along Washington Street, to the south bank of the Whitewater River Stormwater Channel; then west, towards the Santa Rosa Mountains near Happy Point; then southeasterly along the foothills of the Santa Rosa Mountains until a point located 1/3 mile west and 1/4 mile south from the northeast corner of Section 8, Township 9 South, Range 9 East; then northeasterly, to a point located 1/10 mile west and 1/4 mile north of the southeast corner of Section 4, Township 9 South, Range 9 East; then continuing along the Salton Sea, the Whitewater River Subbasin's southeastern boundary and primary discharge area, as described in California's Groundwater, Bulletin 118 (DWR 2003), then continuing along the developed shoreline of the Salton Sea southeasterly to a point 1/10 mile east and 1/4 mile south of the southeast corner of Section 34, Township 7 South, Range 10 East; then northwesterly along the San Andreas Fault, as described in California's Groundwater, Bulletin 118, to the intersection with the east line of Section 29, Township 4 South, Range 7 East; then south along the east line of Section 29, Township 4 South, Range 7 East and Section 32, Township 4 South, Range 7 East, to Avenue 38; then west, to the point of beginning."

5.2 GROUNDWATER CONDITIONS

Current groundwater conditions in the Whitewater River Subbasin, also called the Indio Subbasin, are described in detail in the *Indio Subbasin Annual Report for WY 2021-2022* (CVWD et al., 2023b). This section utilizes the data and findings from that report to summarize the groundwater conditions in the East Whitewater River Subbasin AOB.

Figure 5-1 shows changes in average groundwater levels over the last year, from WY 2021 to WY 2022. Average groundwater levels remained relatively stable across most of the AOB. A few wells in the northern portion of the AOB experienced declines between five and ten feet, most likely impacted by localized pumping rather than regional trends.

Figure 5-2 shows changes in average groundwater levels from WY 2009 to WY 2022. WY 2009 represents a period of historical lows in most areas of the basin and the difference shows the Subbasin recovery. **Figure 5-3** shows well hydrographs that exhibit representative trends in groundwater levels across the AOB over the same period. Since 2009, groundwater levels in the direct vicinity of the TEL-GRF increased between 45 and 90 ft (see Well 06S07E35L02S in **Figure 5-3**). These increases in groundwater levels are primarily the result of direct replenishment, which has averaged 35,120 AFY at the TEL-GRF since 2010.

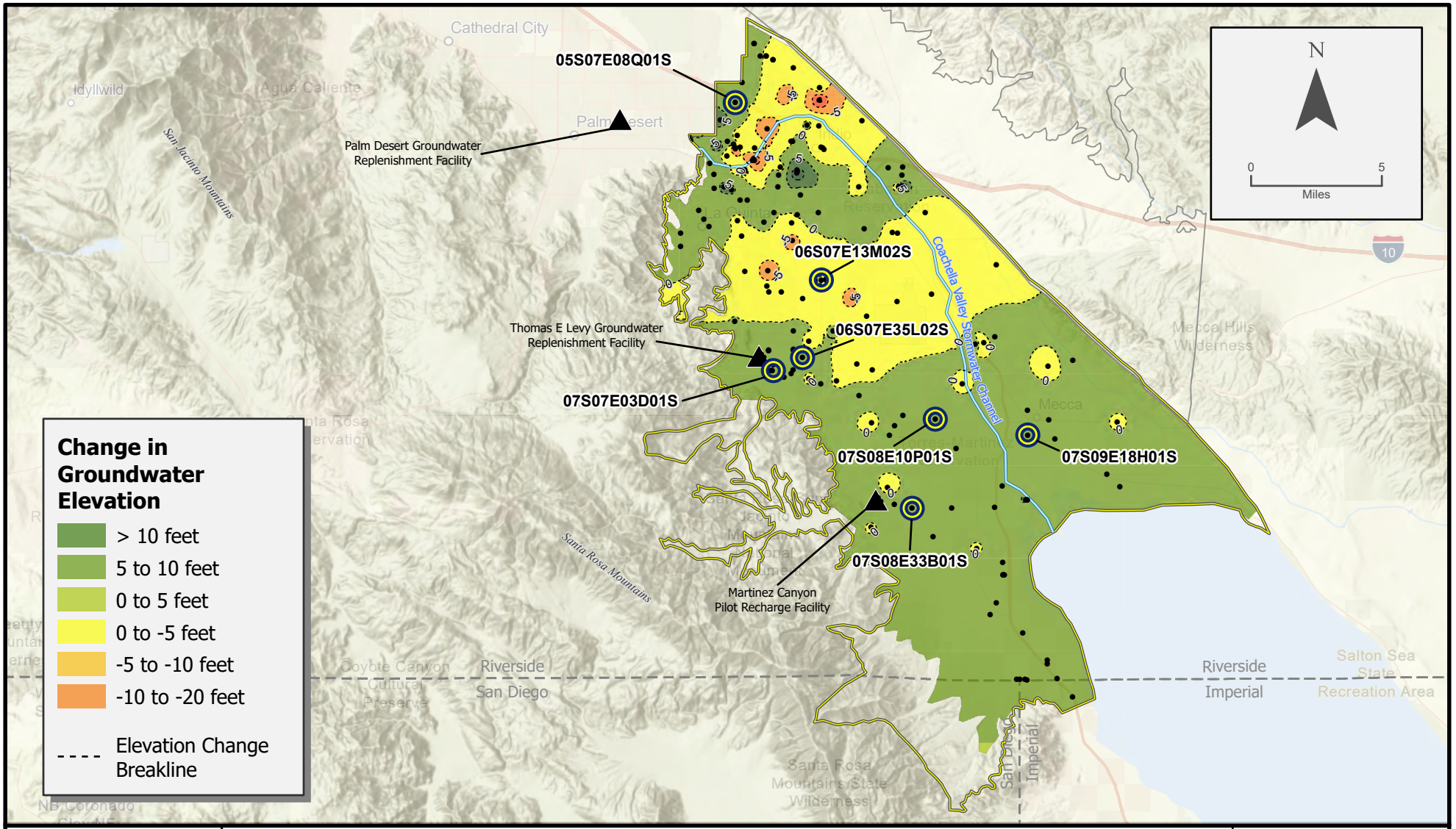
Groundwater levels have also increased 20 to 40 ft across most of the AOB (see Wells 07S09E18H01S, 07S08E33B01S and 07S08E10P01S).

Coupled with conservation efforts, in-lieu replenishment programs (where Colorado River water and recycled water are used to reduce demands on groundwater) have also helped increase groundwater levels across the AOB, as evidenced by a decrease in production over the last decade. In the southern portion of the AOB, artesian conditions remained relatively stable from WY 2021 to 2022. The stable or increasing groundwater levels across the AOB demonstrate the benefit and effectiveness of the GRP in sustaining groundwater supplies.

5.3 GROUNDWATER PRODUCTION

Table 5-1 lists the annual groundwater production volumes in the East Whitewater River Subbasin AOB from CY 1999 to 2022. The 1999 production value is from the 2002 CVWMP (CVWD, 2002a). Production values for the years 2002 through 2011 were determined from reported and estimated unreported groundwater production. Beginning in 2005, when the replenishment assessment became effective in the East Whitewater River Subbasin AOB, groundwater pumpers extracting greater than 25 AF were required to meter and report their production. Reported production has been used since 2012 as accurately representing assessable production in the AOB.

In CY 2022, the assessable production was 118,609 AF. This represents about a 1 percent decrease from 2021. Assessable production excludes groundwater production from Minimal pumpers who extract 25 AFY or less and tribal uses. Water Code Section 31633.5 exempts Minimal pumpers from any replenishment assessment or production reporting provisions.



Coachella Valley Water District

East Whitewater River Subbasin AOB

Hydrograph Shown on Figure 5-3

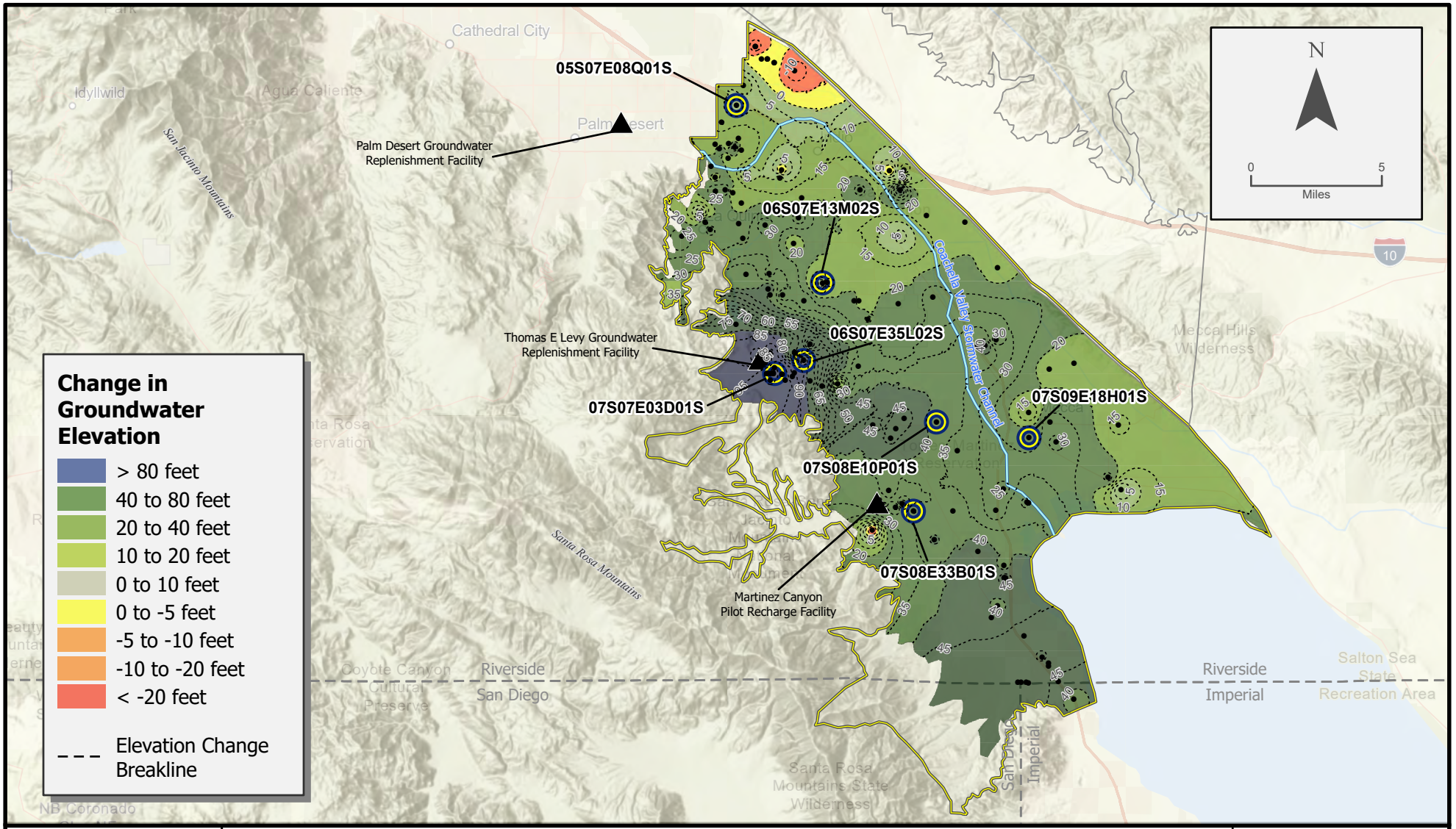
Replenishment Facility

Well Location

Source: CVWD et al. (2023b). Indio Subbasin Annual Report for Water Year 2021-2022. February 2023.

Figure 5-1

WY 2021 to 2022 Change in Groundwater Elevation in the East Whitewater River Subbasin Management Area



Coachella Valley Water District

East Whitewater River Subbasin AOB

Hydrograph Shown on Figure 5-3

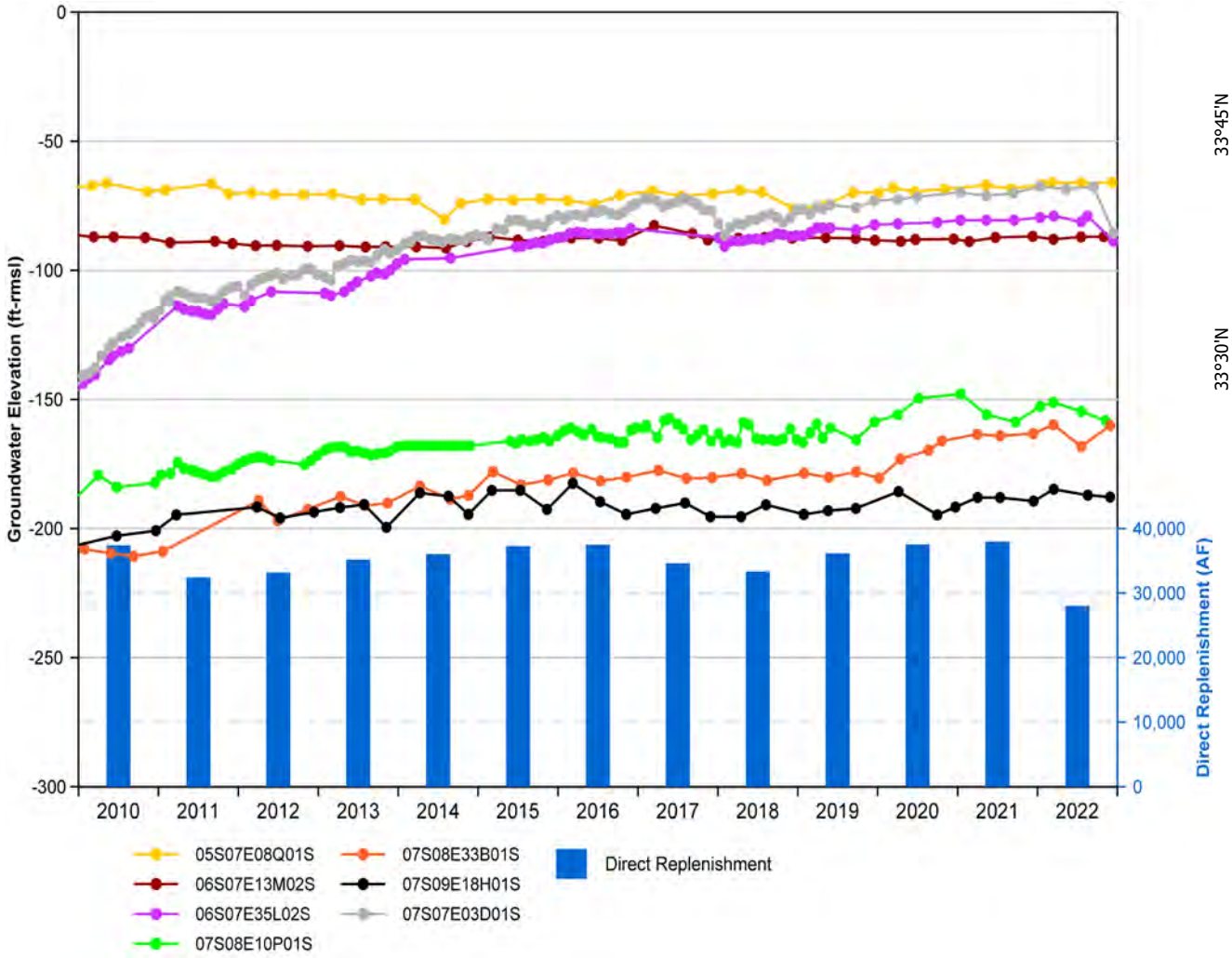
Replenishment Facility

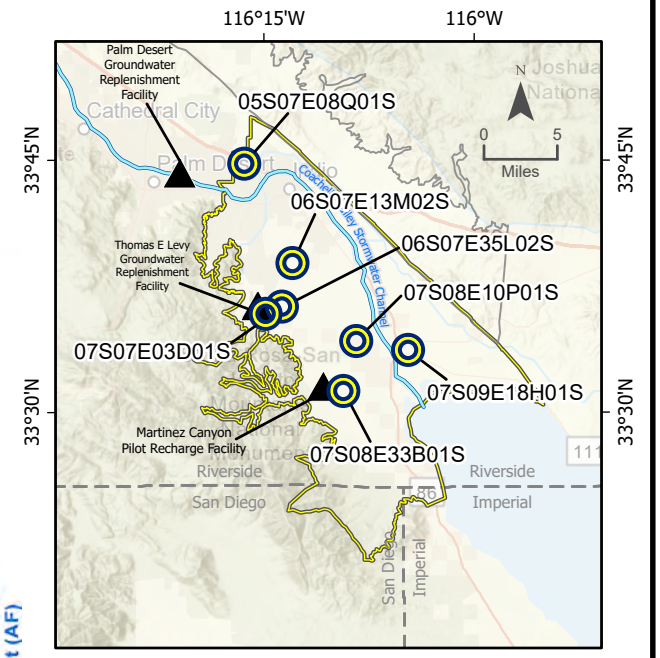
Well Location

Source: CVWD et al. (2023b). Indio Subbasin Annual Report for Water Year 2021-2022. February 2023.

Figure 5-2

WY 2009 to 2022 Change in Groundwater Elevation in the East Whitewater River Subbasin Management Area





Coachella Valley Water District

East Whitewater River Subbasin AOB

Well Location

Replenishment Facility

Figure 5-3

Hydrographs and Direct Replenishment for the East Whitewater River Subbasin AOB

Table 5-1. Groundwater Production within the East Whitewater River Subbasin Area of Benefit

Calendar Year	Groundwater Production[a,b], AF
1999	168,300
2000	166,700
2001	199,800
2002	172,300
2003	172,000
2004	172,000
2005	172,000
2006	172,000
2007	172,000
2008	172,000
2009	160,000
2010	150,000
2011	145,000
2012	120,064
2013	119,194
2014	123,465
2015	113,706
2016[c]	113,333
2017	117,444
2018	120,935
2019	117,269
2020	117,925
2021	119,700
2022	118,609

(a) Excludes production by Minimal pumpers who extract 25 AFY or less and other users exempt from the RAC.
(b) The 1999 production value is from the CVWMP, Table 3-2, Summary of Historical Water Supplies in 1936 and 1999. The CVWMP did not include production values for 2000 and 2001. Production values for the years 2002 through 2012 were estimated from reported and projected unreported groundwater production. The production values for 2012 through 2022 are equal to the reported groundwater production during those CYs.
(c) The 2016 production amount was updated with data reported after publication of the 2017-2018 Engineer's Report.

5.4 Direct and In-Lieu Replenishment

This section describes replenishment activities in the East Whitewater River Subbasin AOB.

5.4.1 Replenishment Facilities

5.4.1.1 Thomas E. Levy Groundwater Replenishment Facility

The TEL GRF went online in June 2009. It is located just south of Lake Cahuilla at Dike 4, a major flood control dike, near Avenue 62 and Madison Street in La Quinta. Prior to TEL GRF going online in 2009, direct replenishment occurred at the same location at the Dike 4 Pilot Facility. This location is ideally suited for large-scale replenishment, given its proximity to Lake Cahuilla and the relative absence of aquitards that would retard infiltration. CVWD conducted a study in 2017 to evaluate the feasibility of increasing groundwater replenishment with Colorado River water at the TEL-GRF. The study recommended additional monitoring to better characterize hydrogeological conditions, and six monitoring wells were installed in 2019 in the vicinity of the TEL-GRF (CVWD et al., 2023a). Based on the results of the additional

monitoring and as described in the *2022 Indio Subbasin Alternative Plan Update*, TEL-GRF recharge may be increased in the future.

5.4.1.2 Martinez Canyon Groundwater Replenishment Facility Pilot Project

In March 2005, CVWD completed construction of a pilot replenishment facility and several monitoring wells on the Martinez Canyon alluvial fan at Avenue 72 and Lemon Blossom Lane. This pilot facility was designed to replenish approximately 4,000 AFY, but the results from the Martinez Canyon Pilot project (operated from 2005 through 2013) indicated that the site may not be ideally suited for groundwater replenishment. There have been no deliveries of replenishment water to the Martinez Canyon GRF since 2013.

5.4.2 Direct Replenishment

Table 5-2 lists the annual volumes of Colorado River water delivered to the East Whitewater River Subbasin AOB for direct replenishment from 1997 to 2022. In 2022, CVWD delivered 27,993 AF of Colorado River water for direct replenishment at the TEL GRF. Deliveries in 2020, 2021, and 2022 averaged of 34,500 AF.

To address the worsening drought conditions on the Colorado River, in 2022 USBR asked all Colorado River water users to achieve an annual reduction of 2 to 4 million AF during CYs 2023, 2024, and 2025. Balancing the need of direct groundwater replenishment for CVWD's long-term groundwater sustainability against the benefits of contributing water to the Colorado River through a short-term suspension of groundwater replenishment delivery, the CVWD Board of Directors approved curtailing replenishment at the TEL Facility in November 2022 for the remainder of CY 2022. This compensated action allowed 9,083 AF to be immediately retained in the Colorado River. This action was memorialized in the 2022 Colorado River Water Conservation Agreement executed between CVWD and USBR on December 5, 2022 (USBR and CVWD, 2022).

In addition, CVWD is currently negotiating two conservation programs with USBR to reduce the consumptive use of Colorado River water up to 35,000 AFY for a three-year term, from 2023 through 2025, for up to a total of 105,000 AF of conservation. The programs would allow the flexibility for the conservation to occur at TEL or one of the other GRFs if needed. The programs are still being discussed with USBR and agreements have not yet been finalized.

From 1997 to 2022, a total of 516,389 AF was delivered to the Martinez Canyon Groundwater Replenishment Facility Pilot Project, Dike 4 Pilot Facility, and TEL GRF for direct replenishment of the AOB.

5.4.3 In-Lieu Replenishment

In addition to the direct replenishment activities described above, CVWD has provided imported Colorado River water since 1949 and recycled water since 1997 to replace groundwater pumping. CVWD continues to work with groundwater users—such as farmers, golf courses, and others—to encourage the use of these alternative water sources. Currently, 32 of 37 golf courses in the East Valley receive Colorado River water or recycled water and no longer rely on groundwater as their primary source of irrigation water. Most of the golf courses receive Colorado River water from the Coachella Canal and its laterals for their non-potable irrigation uses. Nine holes of one golf course receive blended recycled and canal water from WRP 7 for part of the year and one golf course receives Canal water from the MVP. The goal for the golf courses is to meet their irrigation demands with no more than 20 percent groundwater for their total irrigation use each FY. CVWD continues to work with golf course managers to encourage them to sign the updated Non-Potable Water Agreement, which includes this requirement, and all new connections sign a Non-Potable Water Agreement that requires 80 percent non-potable water use.

Table 5-2. Deliveries for Direct Replenishment at the East Whitewater River Subbasin Area of Benefit

Calendar Year	TEL-GRF [(a)], AF
1997	415
1998	1,364
1999	2,802
2000	1,813
2001	3,572
2002	2,360
2003	1,671
2004	3,450
2005	4,743
2006	2,648
2007	5,775
2008	7,473
2009	21,735
2010	37,401
2011	32,417
2012	33,166
2013	35,192
2014	36,030
2015	37,262
2016	37,495
2017	34,614
2018	33,348
2019	36,143
2020	37,536
2021	37,971
2022	27,993
Total	**516,389**

(a) Includes deliveries to TEL GRF, the Dike 4 Pilot Facility, and the Martinez Canyon Groundwater Replenishment Facility Pilot Project.

5.5 Future Projects

Direct and in-lieu replenishment activities in the East Whitewater River Subbasin AOB are expected to continue and include the following future projects.

In addition to various upgrades to the delivery system and existing connections, CVWD completed improvements to the irrigation distribution system within the City of La Quinta, which allow for additional Coachella Canal water utilization for irrigation purposes at golf courses in south La Quinta. Improvements will continue to the L4 Pump Station through 2023 to allow for these golf courses to meet 80 percent of their irrigation needs with non-potable water. Four additional golf courses in the East Valley are planned for connection to receive Colorado River water or a blend with recycled water, to eliminate groundwater pumping in the future.

The Oasis In-Lieu Recharge Project is an in-lieu replenishment (source-substitution) project identified in the *2022 Indio Subbasin Alternative Plan Update*. The project involves the construction of a Canal water distribution system in the Oasis area of the AOB to provide imported Colorado River water for agricultural irrigation on the Oasis slope in-lieu of groundwater production. The project is designed to reduce groundwater production in the area by up to 32,000 AFY. Phase I of the project included two reservoirs to provide additional storage and operational improvements/flexibility in the Oasis area and construction on this phase was completed in December 2020. Construction of Phase 2 includes four reservoirs, five pump stations, approximately 18 miles of distribution pipeline, and expansion of the irrigation distribution system. Phase 2 has an estimated project completion date of June 2023.

CVWD filed Wastewater Change Petition WW0093 with the SWRCB pursuant to California Water Code 1211 in support of a proposed recycled water project for CVWD WRP 4. The project is an integral component of the *2022 Indio Subbasin Water Management Plan Update*, developed to eliminate groundwater overdraft and the associated adverse impacts by, among other measures, developing additional water sources for source substitution. This recycled water project will also provide important water quality benefits by reducing wastewater discharges to the CVSC and the Salton Sea. The project proposes to produce and deliver recycled water from WRP 4 in four phases to a maximum capacity of 20 million gallons per day (mgd). A Preliminary Design Report was completed in February 2023 and CVWD is currently reviewing 60% design plans. CVWD continues to seek resolutions to protests received to the change petition. As part of this process, CVWD will initiate project-specific environmental review pursuant to California Environmental Quality Act (CEQA) and is currently in the process of procuring professional services to complete the CEQA documentation.

5.6 Need for Continued Replenishment

The historical declines in groundwater levels in the eastern portion of the East Whitewater River Subbasin AOB led to the determination that a management program was required to stabilize the declining groundwater levels and prevent associated adverse effects, such as water-quality degradation and land subsidence. CVWD's GRP for the East Whitewater River Subbasin AOB was developed to serve this need and became effective in 2005.

Groundwater levels, as measured in wells across most of the AOB, are a key metric in assessing the effectiveness of the GRP and, since the initiation of direct replenishment at TEL GRF in 1997, have stabilized or are rising. The average change in groundwater levels since 2009 remains positive across most of the AOB, which is evidence that implementation of the GRP has effectively abated the conditions of overdraft that preceded it. Continued artificial replenishment is necessary to maintain these positive trends and prevent a return to overdraft in the future.

5.7 Replenishment Assessment

This section describes the recommended RAC for the East Whitewater River Subbasin AOB for FY 2023-2024.

5.7.1 Groundwater Replenishment Program Costs

The RAC includes the cost of replenishment water, operation and maintenance costs, administrative costs, debt service, and capital improvements necessary to maintain the replenishment facilities for the East Whitewater River Subbasin AOB. Replenishment water for the East Whitewater River Subbasin GRP comes from CVWD's Colorado River water contract and the QSA. The replenishment water is priced at CVWD's Canal Water Class 2 rate. In addition, continuing engineering studies, well meter reading and maintenance, and groundwater monitoring costs incurred by CVWD are included in the cost calculations.

5.7.2 Methods for Determining Groundwater Production

Groundwater producers who extract more than 25 AFY of groundwater, including flowing artesian groundwater, are required to meter and report their production pursuant to Water Code Sections 3164.5 and 31638.5. Beginning in 2005, when the replenishment assessment became effective in the East Whitewater River Subbasin AOB, groundwater pumpers extracting greater than 25 AFY have been required to meter and report their production. CVWD has an ongoing program to conduct a thorough field investigation of the use of all wells that may be subject to metering and reporting requirements.

The exact number of exempt Minimal pumpers in the East Whitewater River Subbasin AOB is currently unknown. Minimal pumpers predominantly pump water from small wells that are used for domestic or limited irrigation purposes. The maximum groundwater pumping by the unmetered Minimal pumpers in the AOB is estimated to be less than 1,000 AFY.

5.7.3 Debt Consolidation

The East Whitewater Replenishment Fund received a loan from CVWD's Domestic Water Fund to construct the TEL GRF in the amount of $60.3 million. Beginning in 2013, this capital debt is now consolidated with the Uncollected RAC First Four Years and Assessed vs. Assessable Amortizations from prior years to form one debt service amount, and such debt will be paid back each year to the Domestic Water Fund.

5.7.4 Income Statement

Table 5-3 is a summary income statement showing revenues, expenses, and cash flow for FY 2022 (actual), and projections for FY 2023 and FY 2024.The table notes provide a description of the sources of revenue and expenses.

5.8 RECOMMENDED RAC FOR FISCAL YEAR 2023-2024

Based on the projected operating costs, revenues, and reserves, CVWD staff recommends no change to the $72.27/AF RAC that became effective on July 1, 2021.

As shown in **Table 5-3**, the Fund is projected to have a positive cash flow of $6,824,624 in FY 2023 and $3,805,681 in FY 2024. FY 2023 replenishment revenue assumes a 3.5% decrease in production due to drought restrictions that impact CVWD domestic water customers. FY 2024 production is estimated at 108,000 AF and reflects a 10,000 AF reduction over calendar year production to plan for reductions in consumption related to the Oasis In-Lieu Recharge project. FY 2024 reflects expenditure savings in power costs and water purchases, as the facility reduces groundwater recharge as part of a voluntary curtailment agreement with USBR. The Fund is projected to maintain a positive cash flow in FY 2023 and FY 2024 and meet its reserve funding requirements prescribed in CVWD’s Reserve Policy.

Table 5-3. CVWD East Whitewater River Subbasin Area of Benefit Groundwater Replenishment Program Income Statement

Description	Actual FY 2022	Projected FY 2023	Projected FY 2024
Revenues			
Replenishment Assessment Revenue (a)	$8,796,744	$8,250,500	$7,805,160
General Property Tax (b)	7,580,117	8,148,626	5,000,000
Non-Potable Water Sales (c)	396,017	415,266	422,163
Other Revenue (d)	509,826	135,325	135,331
Total Revenues	**$17,282,705**	**$16,949,717**	**$13,362,654**
Expenses			
Total O&M Costs (e)	$1,339,497	$1,231,697	$1,497,802
Power Costs (f)	1,505,293	779,911	94,297
Administrative Costs (g)	1,763,588	1,883,859	2,175,382
QSA Mitigation Costs	1,409,767	1,212,000	1,369,312
Water Purchases (h)	4,120,981	1,431,285	442,906
Capital Improvement Budget	34,694,554	4,392,641	2,147,310
Loan Proceeds - Capital Improvement Budget (i)	(35,816,434)	(4,000,000)	(100,000)
Debt Service (j)	3,584,002	3,189,181	1,890,085
Legal Claims Contingency Accrual (k)	5,252,789	-	-
Transfer (From) To Other Funds (l)	137	4,519	39,879
Total Expenses	**$17,854,174**	**$10,125,093**	**$9,556,973**
Net Increase (Decrease) in Cash Flow (m)	**$(571,470)**	**$6,824,624**	**$3,805,681**
Ending Reserves	**$530,745**	**$7,355,369**	**$11,161,050**

(a) Revenues based on fiscal year actual or budgeted production estimates. RAC for FY 2022 = $72.27/AF, for FY 2023 = $72.27/AF, and for FY 2024 = $72.27/AF.

(b) General Property Taxes includes an allocation of CVWD's 1% General Property Tax to the East Whitewater Fund.

(c) Non-Potable Water Sales includes revenue received by the East Whitewater Fund for the sale of reclaimed wastewater (recycled) and Colorado River Water (canal water).

(d) Other Revenues include investment income and miscellaneous charges for services.

(e) Operations and Maintenance (O&M) costs include labor, equipment, and materials for the replenishment facilities.

(f) Power costs are the actual power and utility charges for the recharge facilities. FY 2023 and FY 2024 reflect a reduction in estimated costs due to the voluntary curtailment program that will keep up to 35 TAF of water in Lake Mead each calendar year.

(g) Cost to administer the replenishment assessment program includes personnel, meter reading, billing, groundwater monitoring and report preparation.

(h) Colorado River water purchased from the Canal Fund. The calculated rate per AF is comprised of CVWD's Class 2 rate plus Quagga and gate charges. FY 2023 and FY 2024 reflect reduced purchases due to the voluntary curtailment program

(i) Capital Project loan proceeds to fund the Oasis In-Lieu Replenishment Project.

(j) Debt Service - 15 year variable debt instrument payable to the Coachella Valley Water District's Domestic Water Fund in the amount of $60,285,179 for the Thomas E. Levy Replenishment Facility, with the final payment due in FY 2023. FY 2023 and FY 2024 includes debt service for the Oasis In-Lieu Replenishment Certificates of Participation.

(k) Per Generally Accepted Accounting Principles (GAAP), this is a set aside of funding for potential future legal claim expenses related to replenishment charge litigation. The actual amount, if any, of the liability payments will be determined in the future upon resolution of the litigation.

(l) Transfer To (From) Other Funds is to reimburse CVWD's Motorpool Fund for its share of CVWD vehicles and equipment purchased by the Motorpool Fund.

(m) Net Increase (Decrease) in Cash Flow excludes depreciation.

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