



# CITY OF SANTA FE WATER **2023 ANNUAL REPORT**

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## Executive Summary

2023 commenced with excellent snowpack in both the headwaters of the San Juan – Chama Project (SJCP), and the upper Santa Fe River. Following this exceptional winter snowpack however, Santa Fe experienced a dry summer and a resulting increase in outdoor irrigation. Additionally, the Paseo Real Water Reclamation Facility (PRWRF) was unable to deliver non-potable reuse water for turf irrigation during much of the summer and two golf courses, several recreational fields, and one park were forced to turn to potable water use. Average water use climbed from 87 gallons per capita per day (GPCD) in 2022 to 97 in 2023. Despite this increased demand, abundant Santa Fe River water allowed City of Santa Fe Water (CoSFW) to meet demand while using less groundwater than in 2022.

Eighty-seven percent (87 percent) of 2023 potable production came from surface water resulting in continued recovery to water levels in CoSFW wells after decades of overuse. Since 2010 and corresponding with the Buckman Direct Diversion (BDD) coming online in 2011, aquifer water levels have risen by approximately 60 feet on average in the City Wellfield and 510 feet on average in the Buckman Wellfield.

On the Santa Fe River, approximately 4,393 acre-feet (AF) of water was bypassed to the river below Nichols Reservoir to manage reservoir storage, serve acequias, and meet target flows on the river through town. 5,098 AF of Santa Fe River water (52 percent of total production) was treated to meet City needs. The Living River target of 1,000 AFY was exceeded due to abundant spring runoff that filled Nichols and McClure reservoirs. 35 percent of City potable water supply came from the BDD which delivered 3,420 AF to the City, while City Wells and Buckman Wells contributed a combined 1,283 AF (13 percent).

In 2023, the City's drinking water met all U.S. Environmental Protection Agency (EPA) and State water quality limits. CoSFW completed a lead and copper service line inventory to meet the requirements of the Lead and Copper Rule Revision (LCRR). The lead and copper inventory and water testing will be available to the public in Spring 2024.

Financially, CoSFW is in a strong position, but impending capital spending will require use of cash balances and assumption of debt. CoSFW plans to implement four large capital improvement projects over the next several years: the Nichols Reservoir Outlet Conduit, the Canyon Road Water Treatment Plant Floc/ Sed Project, the McClure Reservoir Outlet Conduit, and the San Juan-Chama Return Flow Project. The Nichols Reservoir Outlet Conduit project will begin in 2024.

Overall, CoSFW continues to build a strong team to continue high quality and transparent operations to ensure a safe, reliable, and resilient water supply will be available to you and future generations.



## Acronyms

AF – Acre-Foot = a unit of measurement for large quantities of water based on irrigation standards. An acre-foot is enough water to cover an acre of land in one foot of water, 325,851 gallons. In Santa Fe, that's enough to support roughly five average single-family homes for one year.

AFY – Acre-Foot per Year. This is the unit of measurement generally used in New Mexico water rights permits including City of Santa Fe Water's water rights portfolio.

BDD – Buckman Direct Diversion.

BDDB – BDD Board of Directors.

BDDWTP – BDD Water Treatment Plant.

BWF – Buckman Wellfield.

cfs – cubic feet per second.

CoSFW – City of Santa Fe Water, also known as City of Santa Fe Water Division, previously Sangre de Cristo Water.

CRWTP – Canyon Road Water Treatment Plant, located at the top of Canyon Road, treats Santa Fe River water.

CWF – City Wellfield.

EPA – United States Environmental Protection Agency.

GPCD – gallons per capita per day, an estimate of the amount of water used in a system per resident served that is used to track and compare the effectiveness of water conservation efforts.

MRG – Middle Rio Grande.

NMED – New Mexico Environment Department, a state agency that regulates water quality measures including those by which CoSFW operates.

OAWR – Optimized Annual Water Rights.

OSE – New Mexico Office of the State Engineer.

PDR – Project Delivery Requirement, the total amount of water permitted by the OSE for diversion at a given acequia headgate.

PRWRF – Paseo Real Water Reclamation Facility, the wastewater treatment plant located on airport road near the airport.

SJCP – San Juan – Chama Project.

TNC – The Nature Conservancy.

WRA – Water Resource Agreement.

## Introduction

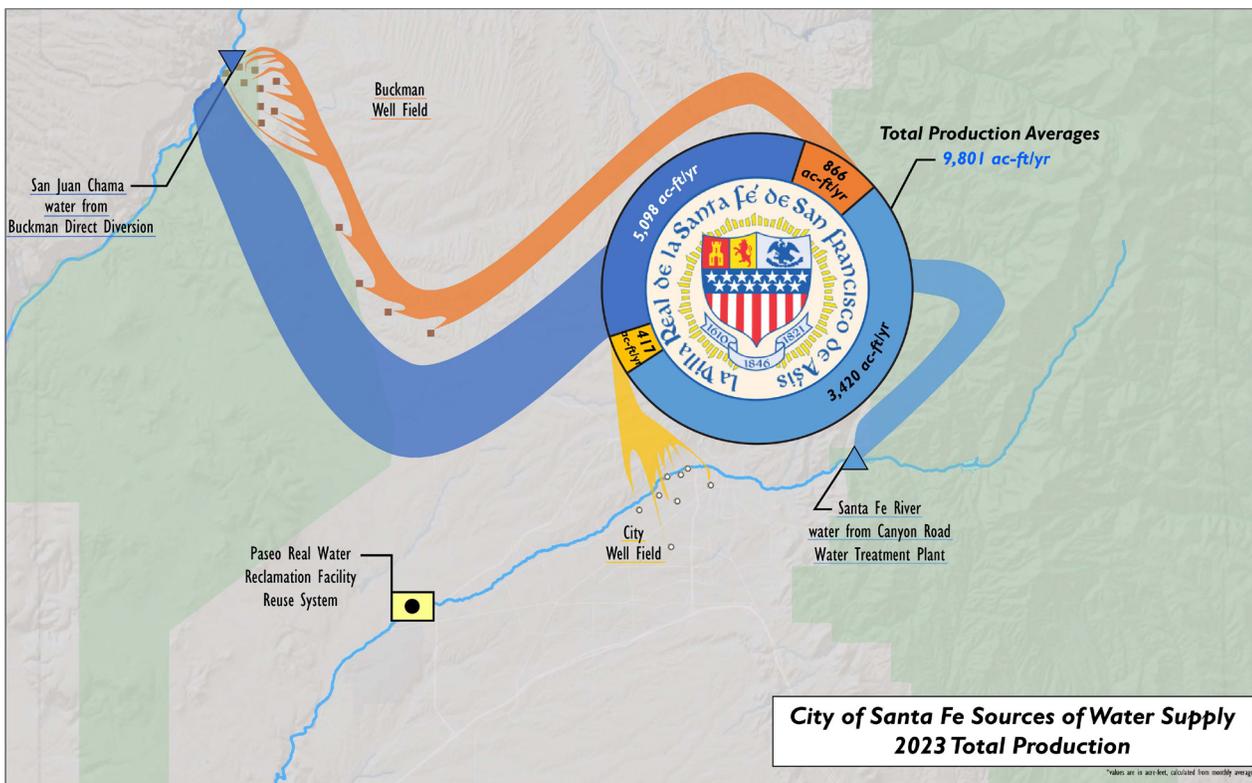
This report summarizes calendar year 2023 for City of Santa Fe Water (CoSFW) including water supply, water demand, water use efficiency and conservation, non-potable water use, water quality, and Santa Fe River operations. The report also offers an overview of the Santa Fe Water System, documenting the intentions, strategies, and challenges faced by CoSFW in 2023.

In 2023, we received a significant amount of snowpack. April 1st snowpack was 160% of normal in the source watersheds for our San Juan – Chama water, and 186% of normal in the headwaters of the Santa Fe River. The wet winter and spring were followed by a dry summer, however, as we received much less rain than normal from July through October (see Figure 5).

Additionally, the Paseo Real Water Reclamation Facility (PRWRF), which typically supplies non-potable water for turf irrigation at the Marty Sanchez and Santa Fe County Club golf courses, faced challenges in providing treated effluent. Consequently, these facilities along with the Municipal Recreation Complex (MRC) and Swan Park resorted to utilizing potable water instead. The unavailability of non-potable reuse water, coupled with an increase in outdoor water use across all sectors due

to reduced rainfall, contributed to a notable increase in water production. For the first time in 10 years, water production rose above 9,000 AF.

Water production in 2023 was 9,801 Acre-Feet (AF). 3,420 AF (35%) of production came from the Buckman Direct Diversion, 5,098 AF (52%) from the Santa Fe River, 417 (4%) from wells within City Limits, and 866 AF (9%) from the Buckman Wellfield. Despite an increase in water production, 87% of 2023 potable supply came from river water, which is a renewable and sustainable water source. The remaining 13% was supplied by groundwater from wells, which we think of as a savings account to be built up for times of need. The 866 AF of groundwater production was less than a quarter of our estimated sustainable groundwater availability of 4,500 AF per year, and as a result groundwater levels rose again in 2023 as they have consistently since 2010. Despite the uptick in overall production, CofSFW effectively met demands in a sustainable manner by predominantly relying on surface water, and despite the large demand, we utilized less groundwater than in 2021 or 2022.



1 - Map of City of Santa Fe Water sources of supply.



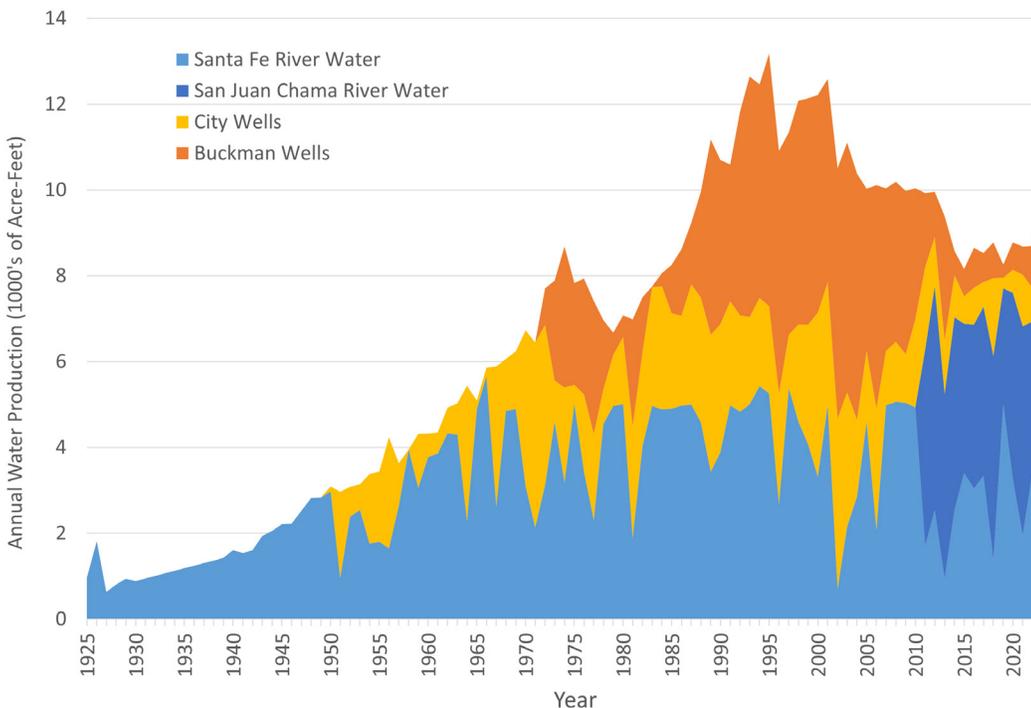
# Water Supply Sources Historical Overview

CofSFW is fortunate to have 4 distinct sources of potable water with which to meet demand. Two of the sources are from rivers, also called surface water, and two are from wells, also called groundwater. Surface water is available to CoSFW from the Santa Fe River and the Colorado River (via the San Juan – Chama Project). Groundwater is available to CoSFW from 7 currently active wells within City Limits known collectively as the City Wellfield, and 13 wells between the City and the Rio Grande known collectively at the Buckman Wellfield.

Surface water moves quickly in defined channels and can be seen and measured easily. Though surface water can be used up, it can't be overused. What flows down the rivers each year is variable and unpredictable, but it is inherently renewable, and as a result CoSFW prioritizes its use, sort of like a checking account. Groundwater on the other hand moves slowly, through large areas beneath the land and cannot be seen or measured easily. Groundwater is also to some degree drought-proof, and so is managed by CoSFW as a backup supply for times of need, sort of like a savings account.

Three periods of water resource use can be distinguished in the historical development of CoSFW's potable water supply, as shown in Figure 2. In the first period before 1995, potable water demand grew exponentially, and in the 1950s and 1970s, the City Wellfield and Buckman Wellfield respectively were added to keep up with demand. In 1995, the City purchased what to that point had been a private water company and began a new period characterized by conservation. Demand was steadily reduced from 1995 to 2015 and has been relatively flat since 2015 despite continued growth in the community throughout this time. The third period of water resource use overlaps the second and started in 2011 when the Buckman Direct Diversion was brought online, providing the City direct access to San Juan – Chama water and beginning a period of surface water dominated production that has allowed the City and Buckman Wellfields to rest and recover after unsustainable overuse in the 1990s and 2000s.

**CITY OF SANTA FE ANNUAL WATER PRODUCTION BY SOURCE 1925-2023**



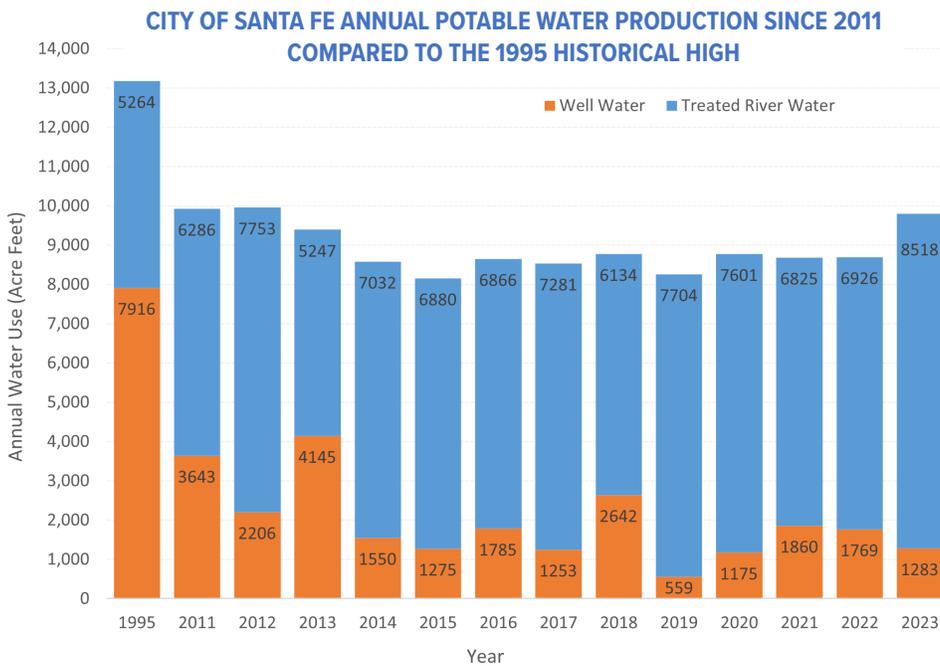
*2 - City of Santa Fe Water Supply 1925-2023.  
1925-1995: Exponential demand growth, 20th Century solution: increase supply.  
1995-present: City ownership of utility, reduced demand through conservation.  
2011-present: Surface water dominated.*



The current supply portfolio has been available since 2011 when the Buckman Direct Diversion came online. Estimated average availability and average actual use of each source from 2011 through 2023 is shown in Table 4. Also shown is the maximum annual use of each source in that time and the permit limits of each source. Estimated one year availability for 2023 from each source if production were maximized is also shown. This one-time production could not be sustained but gives a sense of the potential magnitude of each source in a short duration water emergency.

Generally, the strategy of CoSFW is to maximize surface water use in order to preserve groundwater for drier years. The ample snowpack in the watersheds allowed

for increased reservoir storage and resulted in Santa Fe's ability to produce 87% of potable water to fulfill customer demand in 2023 from treated river water. As a result, water production from wells was less than 1,000 AF (less than a quarter of the 4,500 AF estimated sustainable availability from the well fields) and water levels continue to recover in our wellfields after overuse in the late 90's and early 2000s. Figure 3 shows potable water production from river and well water since 2011 as compared to 1995, when production peaked and the Santa Fe River was the only available surface water source. It should be noted that some groundwater use is necessary to keep wells ready for operation at any time, manage groundwater levels, and comply with environmental and monitoring requirements.



*3 - Potable water production from surface and groundwater sources 1995 and 2011-2023.*

**CITY OF SANTA FE WATER AVAILABILITY 2024, & SUSTAINABLE AVAILABILITY, USE, & RIGHTS 2011-2022\***

Water Source	2024 Estimated Availability** (AF/yr)	2011-2022 Estimated Sustainable Availability*** (AF/yr)	2011-2022 Average Use (AF/yr)	2011-2022 Maximum Use (AF/yr)	One Year Permit Limit (AF/yr)	10 Year Permit Limit (AF/yr)
Santa Fe River	4,000	2,937	2,892	5,098	5,040	Same
City Wellfield	3,500	2,000	954	1,942	4,865	3,507
Buckman Wellfield	8,000	2,500	980	2,890	10,000	Same
San Juan-Chama	6,407	4,740	4,112	5,215	6,407	5,125
<b>Totals</b>	<b>21,907</b>	<b>12,137</b>	<b>8,938</b>		<b>26,312</b>	<b>23,673</b>

\*2011 starting time for analysis because that is when BDD came online and CoSFW first had four distinct sources.

\*\* For SF River 2024: Snowpack based treatable water availability projection for 2024.

\*\* For San Juan-Chama 2024: Storage to start 2024 is in excess of permit limit.

\*\* 2024 City Wellfield amount is limited by current infrastructure not water availability.

\*\* For Buckman Wellfield amount is limited by current infrastructure not water availability.

\*\*\* For SF River 2011-2022: McClure inflow minus Acequia and Living River Requirements starting in 2011.

\*\*\* For San Juan-Chama 2011-2022: Average historical allocation 2011-2022.

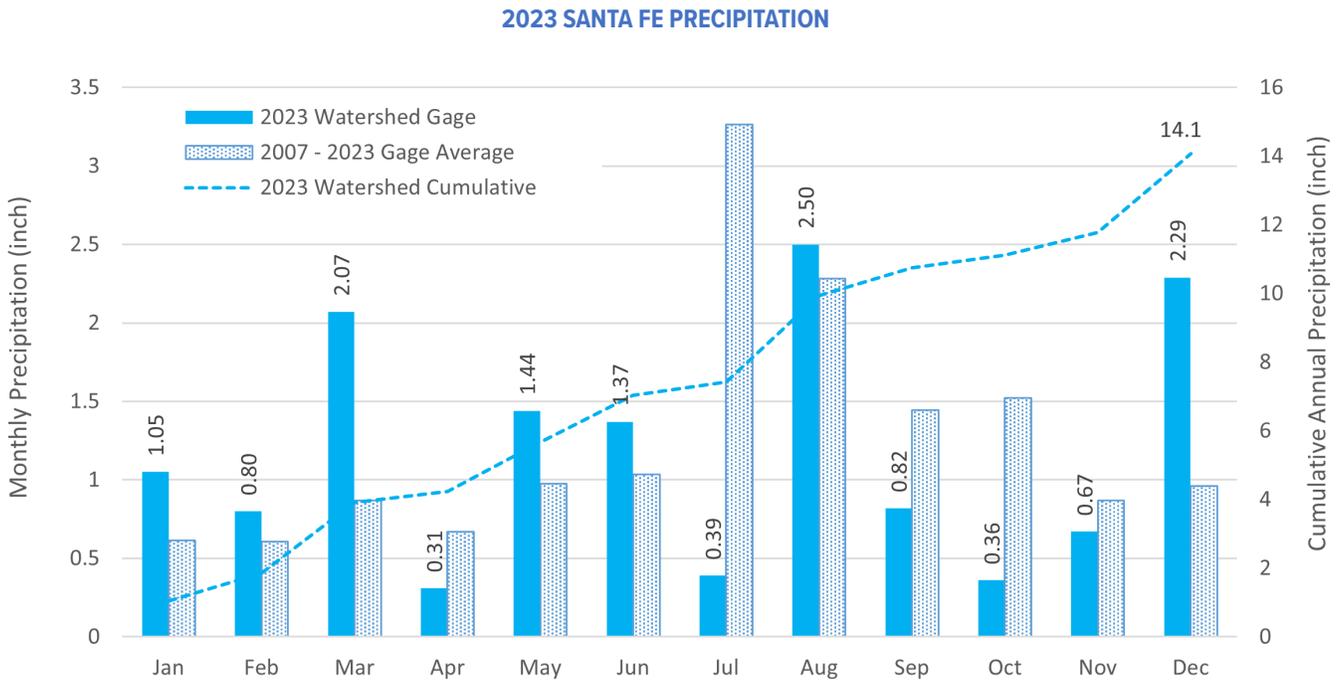
\*\*\* For City and Buckman wellfields 2011-2022: Geohydrologic based estimate of sustainable availability.

*4 - City of Santa Fe Water Availability, Use, and Rights 2011-2022.*



# Precipitation

Overall, 2023 was slightly drier than average. Except for August, this dryness was mostly driven by below average summer and early autumn rains from July-November. In 2023, a rain gage in the upper watershed between Nichols and McClure Reservoirs received a cumulative 14 inches of rain, which is below the average annual rainfall of 15 inches seen at this location from 2007 through 2023. As can be seen in Figure 5, monthly rainfall was above the 17-year monthly average for seven months in 2023, but this was offset by a significant deficit in July, which is historically one of our wettest months. March and December were unusually wet.



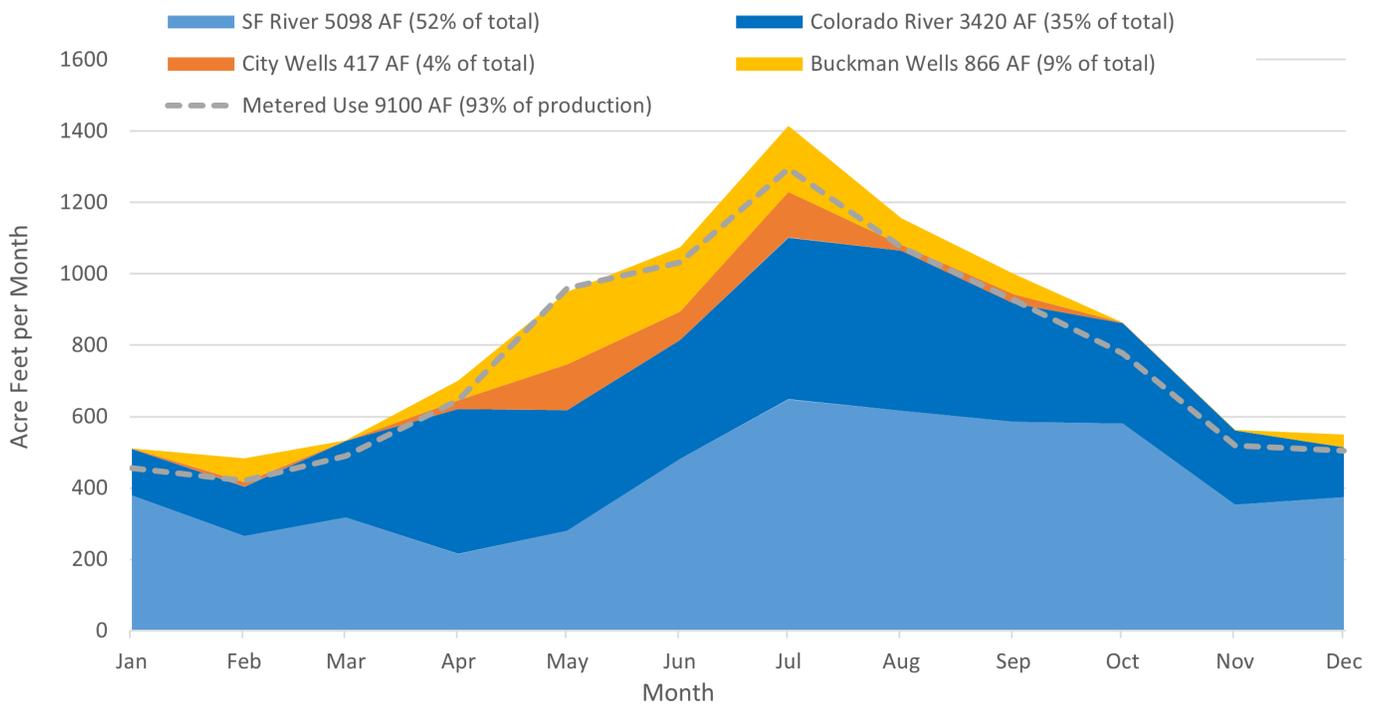
5 - Santa Fe 2023 monthly and annual average precipitation.



## Santa Fe's Five Potable Water Sources in 2023

Figure 6 shows monthly potable water production by source during 2023. The seasonality of water demand is evident with an increase in production from March to October due to outdoor water use. A percentage of produced water does not generate revenue, due to losses to the system or water that was used but not sold. Typically, this represents 8-15% of water produced. Each source is described in more detail in the following sections. We also think of water conservation as our fifth source of supply, and we continue to invest in conservation to reduce remand on our other sources.

2023 CITY OF SANTA FE WATER PRODUCTION AND USE



6 - 2023 Monthly Potable Water Production and Use by Source.



# Potable Water Demand

In 2023, Santa Fe experienced a rise in potable water production, largely attributed to heightened demand during the summer months, influenced by reduced summer precipitation and resulting increased outdoor residential and commercial irrigation, and exacerbated by the unavailability of non-potable water from PRWRF.

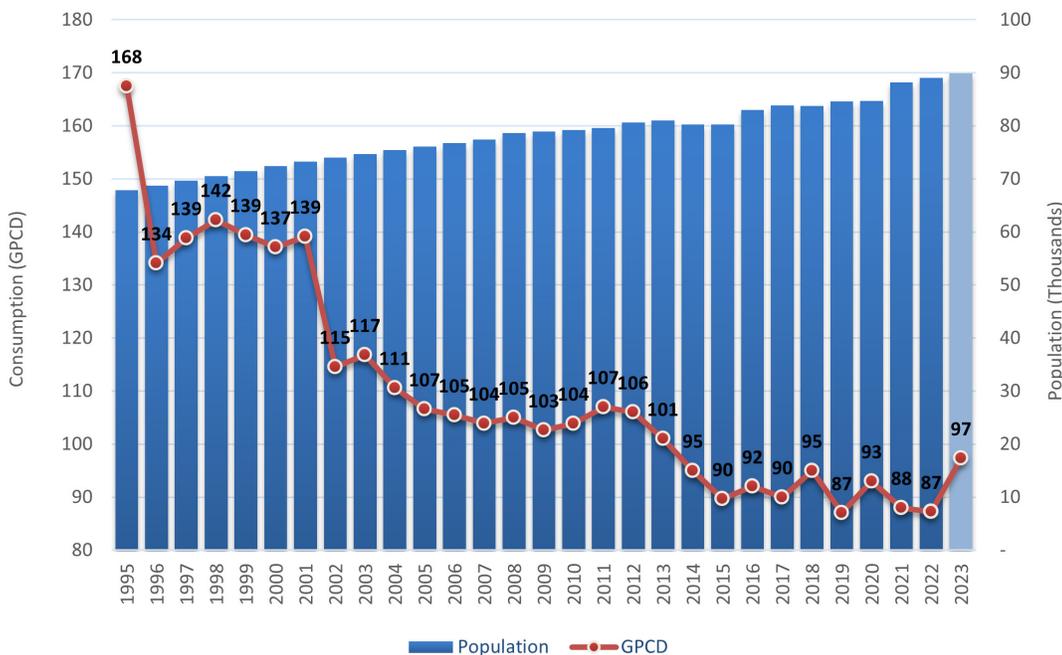
Golf courses (Marty Sanchez and Santa Fe Country Club) and outdoor fields at the MRC and Swan Park that usually use treated reuse water irrigated with potable water from April - August due to complications at PRWRF. These facilities used 145 million gallons (445 AF) of potable water. CoSFW produced 9,801 AF of potable water in 2023, marking the first time in 10 years that production was above 9,000 AF.

## Per Capita Consumption

One measure of water use efficiency is gallons per capita per day (GPCD), which is the total potable production divided by the population served. The measurement is used internally to track program effectiveness over time and is reported annually to the New Mexico Office of the State Engineer (OSE).

As seen in Figure 7, the City of Santa Fe has cut system GPCD nearly in half since purchasing Sangre de Cristo Water Company from PNM in 1995. The water conservation achieved by Santa Fe makes CoSFW more resilient in the face of drought and, in combination with the Buckman Direct Diversion supply coming online in 2011, has allowed for steady wellfield recovery over the past decade. GPCD rose to 97 in 2023. 2023 population data is estimated based on previous growth. The 97 GPCD for 2023 is estimated and will be finalized once the U.S. Census population for 2023 is available. The finalized 2023 GPCD number will be available in the 2024 annual report. Of this 10-gallon increase, approximately 4 gallons is attributed to turf irrigation of golf courses, another 3 to 5 to increased outdoor use due to lack of rainfall in July, September, and October, and another 3 to 4 due to the general variability of this metric.

GPCD AND POPULATION



7 - Population and GPCD since 1995, 2023 numbers are estimated.



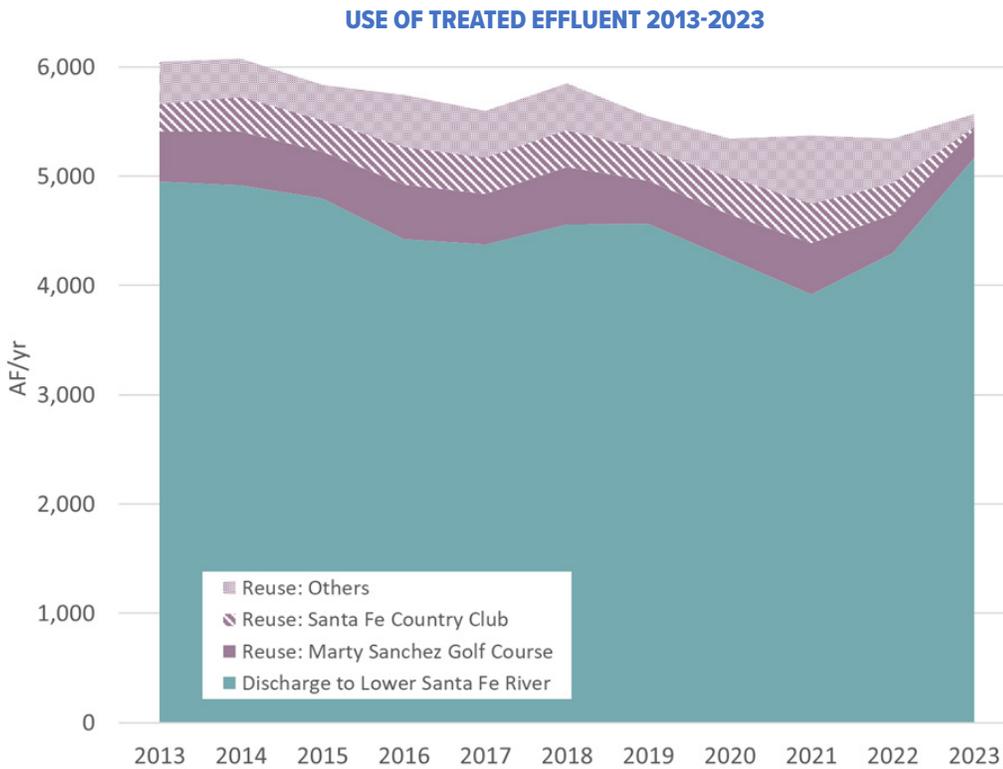
## Non-potable Water Use

Water demands in Santa Fe are not met exclusively with treated drinking water. CoSFW manages bypass flows of Santa Fe River past McClure and Nichols Reservoirs to serve raw water needs of acequias and river flow targets defined by the City’s Living River Ordinance. As mentioned above, in normal years of operation, the Wastewater Management division of the Public Utilities Department provides reclaimed wastewater for a variety of non-potable re-use applications, mostly turf grass irrigation.

### Paseo Real Water Reclamation Facility (PRWRF)

The Paseo Real Water Reclamation Facility (PRWRF) located on Airport Road is operated by the Wastewater Management Division of the Public Utilities Department

and treats all of the wastewater collected by Santa Fe’s sewer system. Unlike CoSFW’s Water Treatment Plants which are able to rotate operations and shut down for occasional maintenance, the PRWRF has been operating continually for decades. Most of the treated water that leaves the facility is returned to the Santa Fe River while some is used to meet non-potable demands, including irrigation of turf at the Marty Sanchez golf course, Santa Fe Country Club, Municipal Recreation Complex, Swan Park, and Santa Fe Downs among others. Figure 8 shows where effluent from the PRWRF has gone since 2013. In 2023, reuse was less than it was in past years due to complications at PRWRF, as noted previously.



8 - Use of treated effluent 2013-2023.



## The Santa Fe River

The Santa Fe River, whose flows are driven mostly by snowfall in the Sangre de Cristo Mountains east of town, has always provided drinking and irrigation water to Santa Fe residents. Prior to the purchase of the water company from PNM in 1995, CoSFW was known as the Sangre de Cristo Water Company because of the original source of its water. CoSFW is permitted to divert up to 5,040 acre-feet/year (AFY) of native water from the Santa Fe River and can store up to 3,921 AF in McClure (3,257 AF capacity) and Nichols (664 AF capacity) reservoirs. 2023 was a rare year in which there was enough snow on the 17,000 acre watershed above the reservoirs to reach these limits and resulted in additional bypass flows in the Santa Fe River (See Table 4). Water released from Nichols, the lower of the two reservoirs, is treated to potable standards at the Canyon Road Water Treatment Plant (CRWTP) and delivered – almost entirely through gravity – to customers throughout Santa Fe.

### Santa Fe River Operations 2023

High snowpack and increased runoff nearly doubled storage on the Santa Fe River as compared to 2021 and 2022, as shown in Figure 9. In 2023, 4,393 AF of Santa Fe River inflows to McClure were bypassed during the calendar year for living river flows, acequia use, and

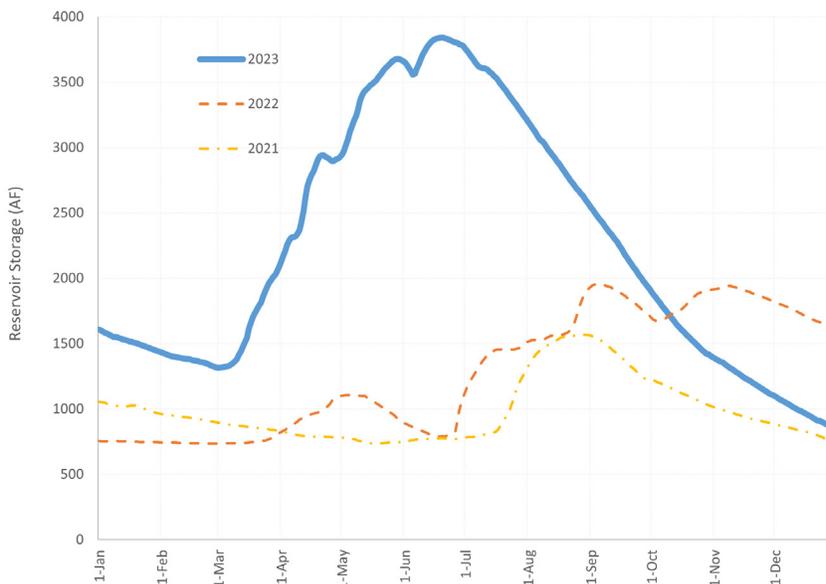
manage reservoir storage. 5,098 AF of water diverted from the Santa Fe River (5,040 AF of native Santa Fe River Water and 58 AF of San Juan – Chama water stored previously “by exchange” as described in Rio Grande Compact Operations section below) was treated by CRWTP for potable use. CRWTP production made up 52% of total potable production in 2023.

### Santa Fe’s Living River

Target flows for a ‘Living River’ provide water to the riparian corridor, recharge to certain CoSF wells, and aesthetic and recreational benefits along the Santa Fe River. In 2023, with April 1st snowpack above normal, the Santa Fe River target flows provided 4,393 AF of water to the Santa Fe River downstream of Nichols Reservoir.

The April 1, 2023, Santa Fe River watershed streamflow forecast predicted over 100% of normal flows, and the Santa Fe River target flows of 1,000 AF from April 15, 2023 through April 14, 2024 were met. The annual volume of target flow was distributed throughout the year based on a target hydrograph developed collaboratively by City of Santa Fe Water, City of Santa Fe River Watershed and Trails Section and the Santa Fe River Commission. The target hydrograph included a

TOTAL SANTA FE RIVER RESERVOIR STORAGE



9 - 2010 - 2023 reservoir storage in the Santa Fe Municipal Watershed.



peak target flow in mid-May of 7 cubic feet per second (cfs). After the mid-May pulse, the target flows remained just over 2.5 cfs through the end of June. From the beginning of July to the end of October, the target flows remained between 1.0 and 0.5 cfs. A base target flows of 0.30 cfs was maintained throughout the winter. Actual calendar year bypass flows were over 4,393 AF due to bypasses made to manage spring and early summer inflows. As of December 31, 2023, 100% of the Living River target volume has been met.

## Acequia Deliveries

Acequias are traditional irrigation ditches whose construction, maintenance, and operation are intertwined with the history of northern New Mexico. There are four operational Acequias which divert water from the Santa Fe River between Nichols Dam and Patrick Smith Park. New Mexico water rights, like the water rights in most Western U.S. States, recognize older rights as superior to younger ones. Some of the Acequia rights on the Santa Fe River may be older than those held by the City and the construction and operation of

the municipal reservoirs and the CRWTP have changed the way that those acequias function. Operations of the City Water System and the acequias was a source of conflict for decades and resulted in a court ordered set of delivery requirements. CoSFW is required to bypass water to Acequia Cerro Gordo and Acequia Madre and to strive to meet the Project Delivery Requirement (PDR) for each. Project delivery is the water required at the head of the entire Acequia system, while farm delivery is the sum of water required at each property boundary. The difference represents losses in the Acequia system outside of the farms. Flows to Acequia del Llano, Acequia Cerro Gordo, and Acequia Madre are measured at the point of diversion from the river. There is no gage or formal CoSFW delivery requirement for Acequia Muralla which diverts available flows when Acequia Madre (the only acequia of the four downstream of Acequia Muralla) is not taking water. 2023 acequia diversions are shown in Table 10.

**SANTA FE RIVER ACEQUIA DIVERSIONS**

Acequia	del Llano <sup>1</sup>	Cerro Gordo	Madre <sup>2</sup>	Muralla <sup>3</sup>
2020 Project Delivery (AF)	77.92	55.45	18.07	Not measured
2021 Project Delivery (AF)	106.3	11.7	43.4	Not measured
2022 Project Delivery (AF)	109.3	10.2	20.0	Not measured
2023 Project Delivery (AF)	109.8	82.0	37.5	Not measured
Project Delivery Requirement (AF)	Not Defined	11.08	82.40	Not Defined
Farm Delivery Requirement (AF)	46.4	5.54	41.2	15.07

### 10 - Annual diversions to acequias from the upper Santa Fe River.

<sup>1</sup> Farm delivery requirement estimate is based on 17.2 acres in a 1977 Hydrographic Survey multiplied by 2.7 feet.

<sup>2</sup> The Acequia Madre diverts river water near the corner of Alameda and Canyon Road, and the acequia effectively ends above Railyard Park. The majority of the water associated with the PDR belongs to a farm near Agua Fria Village that can no longer be practicably served by water diverted near Alameda and Canyon Road.

<sup>3</sup> Acequia Muralla is not metered so diversions are estimates only. Farm delivery requirement is estimated based on 14.5 acres in a 1977 Hydrographic Survey multiplied by 2.7 feet.

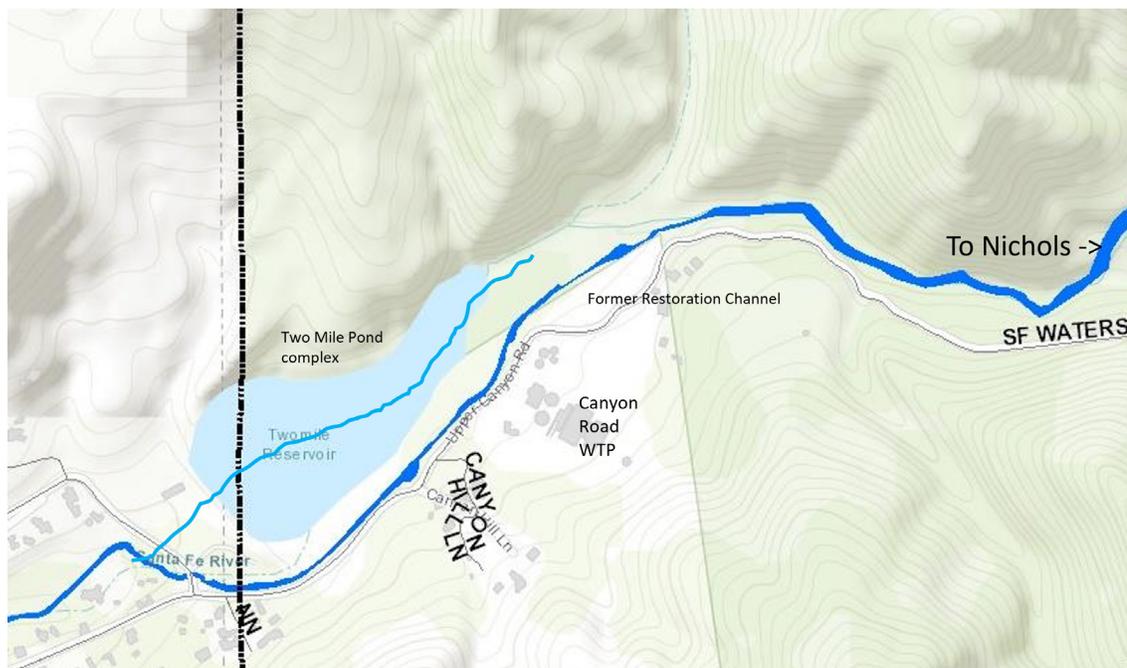
## The Nature Conservancy Restoration Channel and Two Mile Pond

In 1893, the City water utility constructed the 85-foot tall Two Mile Dam on the Santa Fe River, two miles upstream from the Plaza. Eventually the Santa Fe River was redirected to flow around Two Mile Dam, and the reservoir was filled by diversions from this “Bypass Channel” which would, from a legal perspective at least, become the Santa Fe River. In 1994, Two Mile Dam was breached due to safety concerns and a small remnant pond, known as Two Mile Pond, was left behind, but without any direct surface connection to the Santa Fe River. In 2012, a diversion structure was constructed on The Nature Conservancy (TNC) property to channel water from the Santa Fe River within the Bypass Channel into a newly developed “Restoration Channel,” facilitating its flow through Two Mile Pond.

The flows from Two Mile Pond exit the pond by traveling underground through the original Two Mile Dam outlet conduit. Flows then continue through a culvert beneath Cerro Gordo Road, before merging with flows from the Bypass Channel.

Local residents near Two Mile Pond consistently advocated for diverting the maximum amount of water from the Bypass Channel into the Restoration Channel and through Two Mile Pond. Conversely, the Acequia Madre, which diverts water downstream, and

representatives of the Santa Fe River Commission, aiming to ensure water flow along the Santa Fe River reaches as far downstream as possible, have expressed concerns regarding these diversions. In 2018, the New Mexico Office of the State Engineer found the diversion to the Restoration Channel to be without water rights and thus an illegal diversion from the river. In response to this finding, in July of 2023 the diversion structure was removed by TNC. Local residents raised concerns about potential water stagnation in the pond, prompting City staff to locate and clean the outlet structure. This action resulted in a reduction of the pond’s water level by approximately 30 inches, aligning with the original design levels from 1994. However, this alteration sparked community apprehension, leading to the organization of four public meetings aimed at gathering feedback on community values regarding the management of the Two Mile Pond area for habitat preservation, recreational activities, and educational opportunities. In response to the community input, ongoing hydrologic and biologic monitoring of the area has been initiated. The data gathered will aid in making informed policy decisions regarding the management of the Two Mile Pond complex in the future. This includes determining the volume of water to be directed through the area and evaluating whether the pond will be retained or transformed into a potential site for river restoration.



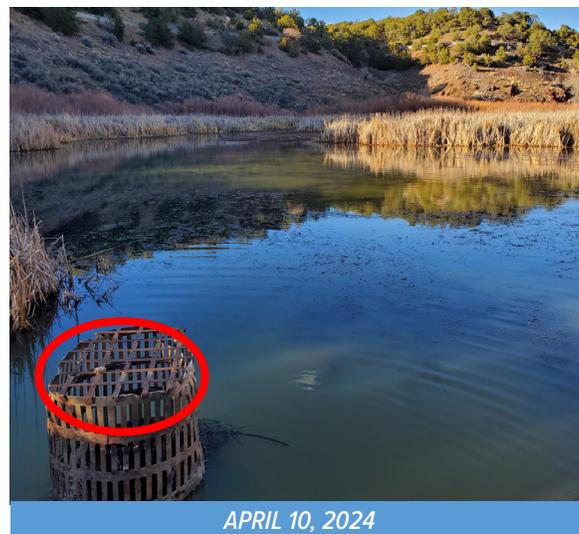
*11 - Santa Fe River Bypass Channel and Two Mile Pond Complex.*

## Planned Dam Rehab

McClure Dam (first known as Granite Point Dam) was completed in 1926 and Nichols Dam (first known as Four Mile Dam) was completed in 1943. Aging inlet works (a tunnel that carries water through each dam to regulate water flow from each reservoir into an “outlet conduit”) were updated between 2014 and 2016 to add automation, metering, and dry access to the inlet works from the dams. Prior to this work, the inlet works were accessed through vertical towers in the reservoirs reached by boat. Investigation by CoSFW associated with the inlet work updates identified potential issues associated with seepage through the dams and into the outlet conduits. In 2019, based on this information, the Office of the State Engineer Bureau of Dam Safety downgraded the status of both dams from “Satisfactory” to “Poor.” A contract was awarded in 2023 to address major renovations to both dams. The renovation project will start with Nichols Dam this year. The construction portion of this project will be on the order of 18 million dollars. CoSFW anticipates spending between 35 and 40 million dollars on the combined infrastructure upgrades. Water operations at CRWTP may be impacted by this construction over the next several years.

## Rio Grande Compact Operations

The Rio Grande Compact (Compact) governs sharing of Rio Grande water between Colorado, New Mexico, and Texas and includes restrictions on reservoir operations for reservoirs added in the basin after 1929. Because the Santa Fe River is a tributary to the Rio Grande, and because we built Nichols in 1942 and expanded McClure after 1929, part of our storage rights are “post-Compact” and are governed by certain provisions in the Compact. Of note is Article VII of the Compact which prohibits storage of native Rio Grande water (as opposed to imported water such as San Juan Chama Project water) in post 1929 reservoir space when water storage at Elephant Butte and Caballo is below a certain threshold. There are two ways that we can store water in Nichols and McClure’s post-Compact pools during Article VII. First, because CoSFW stores San Juan Chama water from the Colorado River in reservoirs along the Chama, which is a tributary to the Rio Grande, Article VII Compact compliance can be maintained by storing San Juan Chama Project water “by exchange” in the Santa Fe River reservoirs while simultaneously releasing San Juan Chama water into the Chama where it becomes native. This leaves the Rio Grande “whole” from a Compact perspective while allowing City of Santa Fe Water to



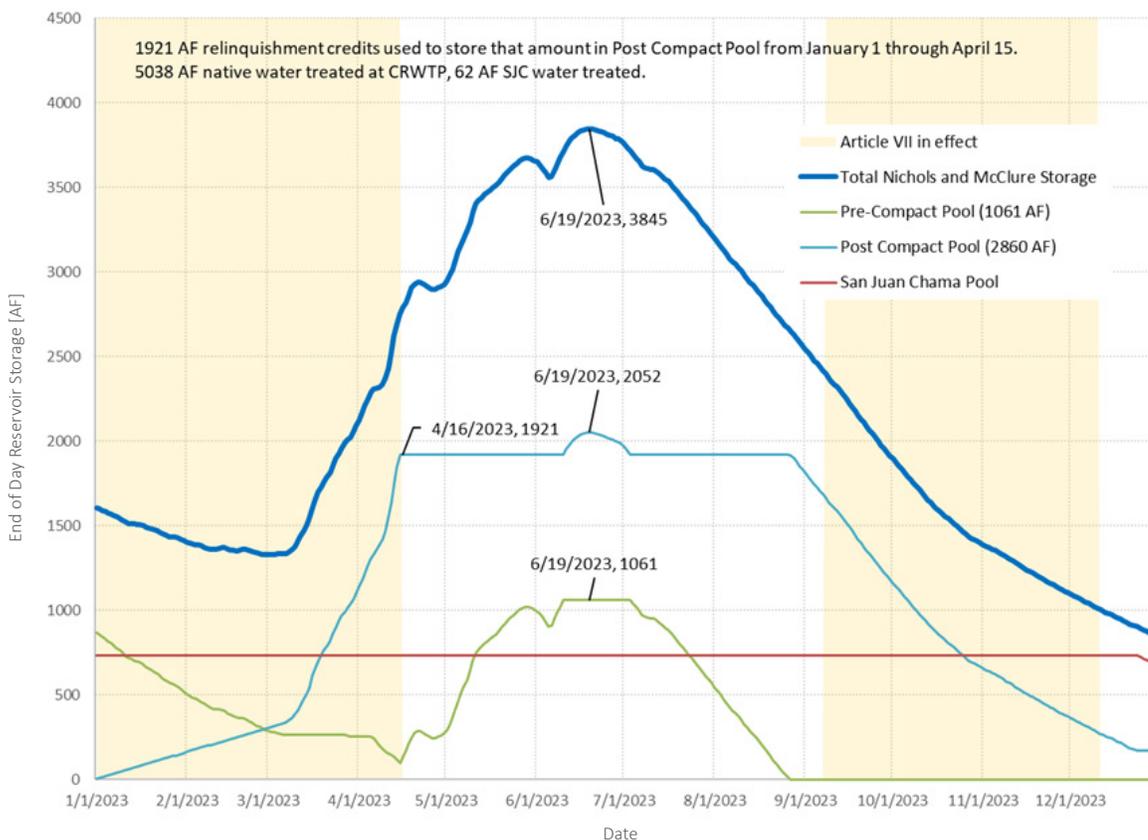
12 - Two Mile Pond outlet structure before (circled in red) and after cleaning.



maintain water in storage in the upper Santa Fe River where elevation, location, and quality are preferable to water in storage in reservoirs along the Chama. The second way we can store water during Article VII is by use of New Mexico “relinquishment credits” if available. Several times historically, when the State of New Mexico has had surplus Rio Grande Compact water stored in Elephant Butte, it has by mutual agreement with Texas released some of that credit for use downstream of Elephant Butte in exchange for an equal number of “relinquishment credits” which can be used by New Mexico for storage of water in post 1929 reservoir during Article VII.

In 2023, Article VII was in effect from the beginning of the year through April 15th and from September 8th through December 10th. CofSFW used 1,921 AF of the 6,405 AF available relinquishment credits to store water in our post-Compact pool, leaving 4,484 AF for use in future years. The Santa Fe River reservoirs started with 732 AF of San Juan Chama Project water (stored by exchange due to Compact operations in 2021) and treated 62 AF of that water leaving 670 AF in storage at the end of the year. All other storage occurred in our 1,061 AF pre-Compact pool which finished the year empty.

### NICHOLS & MCCLURE RESERVOIRS COMBINED STORAGE ACCOUNTING



13 - 2023 Reservoir storage accounting.



## San Juan – Chama Project Water

The San Juan River Watershed is located in Southern Colorado and is part of the larger Colorado River Watershed. The SJCP is a U.S. Bureau of Reclamation project to deliver water from the San Juan River Watershed into the Rio Chama system, where it is stored in Heron reservoir. CoSFW’s SJCP water is stored predominantly in Heron and Abiquiu reservoirs, though some is stored in El Vado at times to help with water operations on the Rio Chama. CoSFW releases stored SJCP water as needed to flow downstream and into the Rio Grande where it can be diverted at the BDD and treated for use. Some of CoSFW’s SJCP water is lost during storage and movement of the water from Heron to BDD.

CoSFW’s maximum SJCP allocation is 5,230 AFY, dependent on water availability in the San Juan watershed. The size of CoSFW’s SJCP allocation was based on historical hydrology at the time of design and construction (1960s) of the San Juan – Chama Project and was considered “firm” meaning hydrologists expected that based on the size of diversions, tunnels, and reservoirs the project would yield that amount of water to contractors in any and all years. Climate change and regional aridification have changed that paradigm and past hydrology is no longer an adequate representation of future conditions. In 2014, for the first time in Project history, contractor’s did not receive their full allocation.

In the past 10 years (2014 – 2023) contractors have only received full allocations three times and have been shorted an average of 12% (Table 14). This is consistent with Bureau of Reclamation analysis used by CoSFW in the 2015 Santa Fe Basin Study that suggested that SJCP contractor allocations would be shorted by an average of 25% by the end of the 21st century.

CoSFW’s SJCP storage water in Heron, El Vado, and Abiquiu Reservoirs from 2021 through 2023 is shown in Figure 15. CoSFW started 2023 with 12,769 AF of SJCP water in storage in the Chama system and ended the year with 14,192 AF. Storage increased because the annual allocation of 5,230 AF exceeded BDD diversion of 2,684 AF, with the remainder of the difference due to evaporative and transit losses.

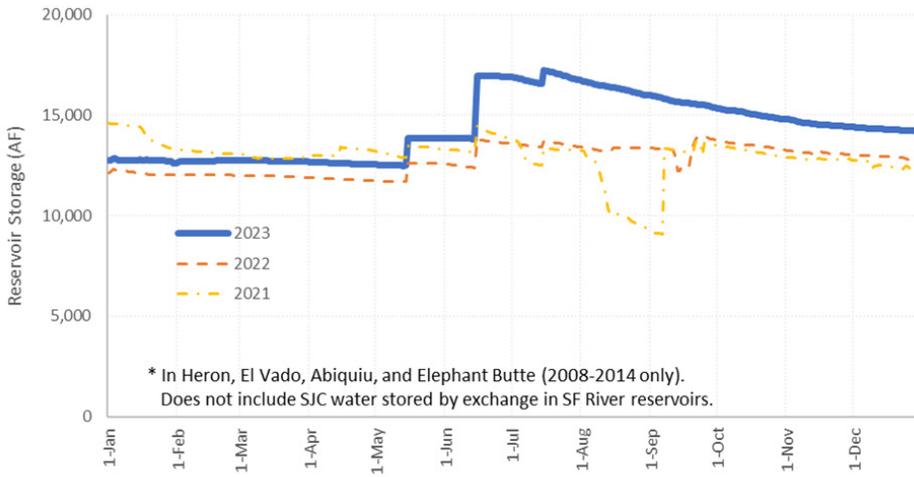
### SAN JUAN CHAMA PROJECT ALLOCATIONS

Calendar Year	CoSFW SJCP Allocation (AF)	As % Total
2014	4650	89%
2015	4855	93%
2016	5029	96%
2017	5230	100%
2018	4676	89%
2019	5230	100%
2020	4240	81%
2021	3425	65%
2022	3371	64%
2023	5230	100%
Average	4594	88%

*14 - City of Santa Fe Water San Juan Chama Project Annual Allocations for Previous Ten Years.*



### TOTAL SAN JUAN CHAMA PROJECT STORAGE



15 - Storage of CoSFW San Juan Chama Project Water in the Chama Watershed 2021-2023.

## Colorado River

CoSF, which relies on Colorado River water obtained via the SJCP, along with 30 other municipal water providers dependent on water from the Colorado River Basin, announced a commitment to substantially expand existing efforts to conserve water, reduce demands, and expand reuse and recycling of water supplies by signing a Memorandum of Understanding (CRB MOU) in 2022. In 2023, the City’s Water Conservation Program collaborated with other CRB MOU signatories and the Alliance for Water Efficiency (AWE) to focus on non-functional turf (NFT) programs. The AWE facilitated a series of regular meetings of the CRB MOU signatories to share NFT programs created to limit turf grass in the Western United States. Based on what was discussed in these meetings and the information the AWE gathered through its broader policy, programming and educational work, the AWE prepared a report focusing on the types of programs created to limit turf grass in the Western United States, titled “Non-Functional Turf: 2023 Summary of Programs and Policies.” CoSF’s conservation program will utilize the findings in this report to pilot its own NFT program in 2024.

## Buckman Direct Diversion (BDD)

The BDD diverts water from the Rio Grande at a point near the terminus of Diablo Canyon, near the former Buckman townsite along the historic Chili Line Railroad. The BDD and the Buckman Wellfield are named for the historical Buckman townsite. The BDD facility is co-owned by CoSFW, the Santa Fe County Water Utility, the Las Campanas Coop, and the Club at Las Campanas, where untreated river water is used for golf course irrigation. The BDD is the City’s largest single source of water, having provided half of the City’s water since coming online in 2011. In 2023, 3,420 AF of potable water deliveries from the BDD Water Treatment Plant (BDDWTP) made up a third (35%) of potable water production for City use.

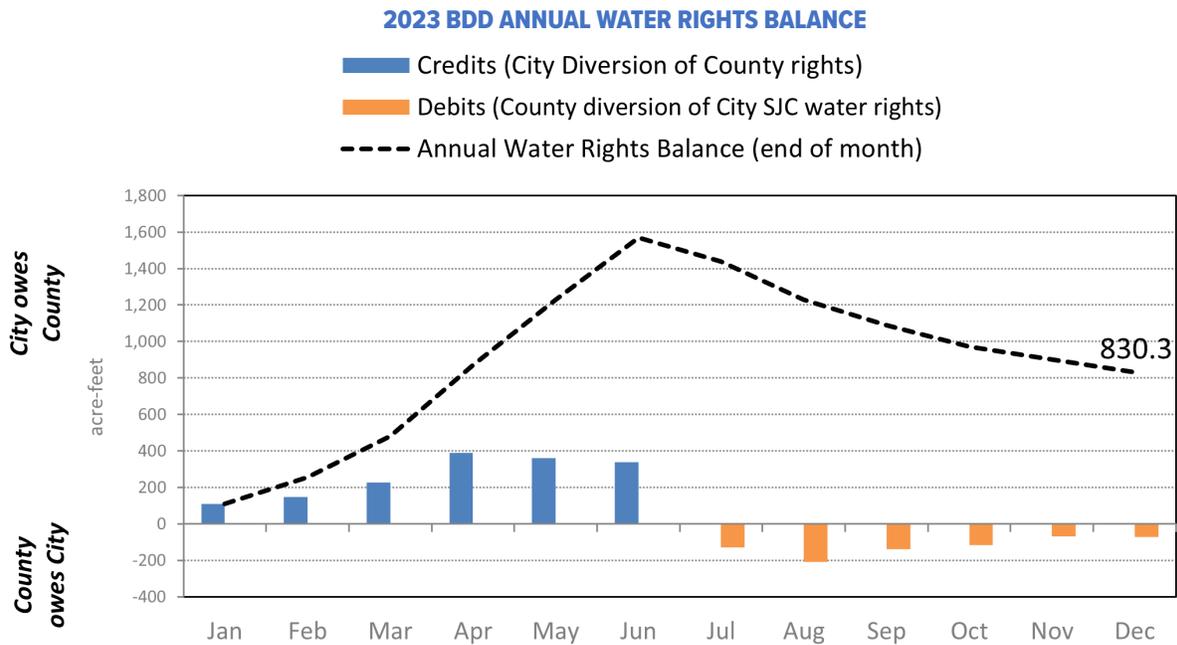
### The BDD Shared Pool

CofSFW diverts SJCP water at BDD, and the County diverts mostly native Rio Grande water at BDD. Since 2020, BDD has formally included “Optimized Annual Water Rights” (OAWR) operations which allows the



City and County to share water rights through the year depending on which water is more available. It was previously noted that 2,684 of CoSFW SJCP water was diverted at BDD, while BDD accounted for 3,420 AF of City use. The difference is primarily a result of OAWR operations. In 2021, the City and County entered into the BDD Shared Pool Agreement which allows for some of the excess balance potentially accrued by the County (which has excess water rights but no ability to store them) in a given year to be deposited into a

“Shared Pool” that the County can draw from when Rio Grande water isn’t available for diversion at BDD. In 2023, the County built up 830.3 AF of credit during the year as a result of OAWR. Considering the carryover from 2022 of 1,100 AF and other shared pool provisions (non-discretionary shutdown, evaporation loss, and maximum carryover), 1,100 AF of credit is available in the Shared Pool to start 2024. Accounting for each of these balances is shown in Figure 16 below.



16 - 2023 BDD annual water rights balance.

DRAFT 2023 Shared Pool Accounting	AF
1. "Annual Water Rights" ending balance	864.2
2. Section 2.a Deposit to shared pool (#1 minus 10% UAW)	777.8
3. Section 3.a Withdrawals, discretionary shutdown	0.0
4. Section 3.b Withdrawals, non-discretionary shutdown*	-24.9
5. Net available for deposit (+) or withdrawal (-) (#2 + #3 + #4)	752.8
6. Carryover from 2022	1,100.0
7. County water credit balance, Dec. 31 (#5 + #6))	1,852.8
8. Section 4 evaporative losses (#7 * -10%)	-185.3
<b>9. Carryover to 2024 (lesser of 1,100 and #7 + #8)</b>	<b>1,100.0</b>

\*6 days of non-discretionary shutdown in May and 1 day in June. Volume estimated as monthly total  
 \* 1.1 withdrawal ratio for non-discretionary shutdowns.

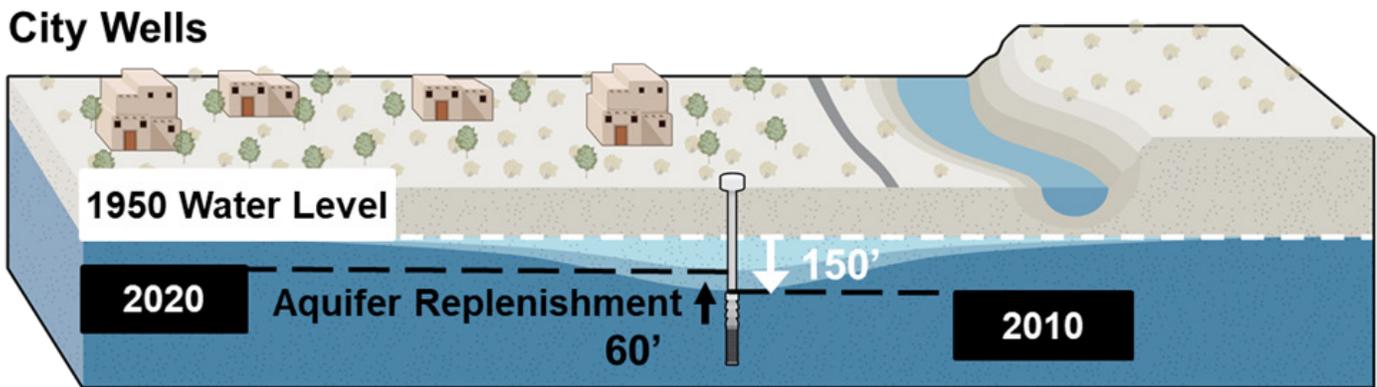
17 - DRAFT 2023 accounting of City-County shared water resource use at BDD.

## The City Wellfield

The City Wellfield (CWF) currently consists of seven production wells within the City Limits, mostly along the Santa Fe River between St. Francis and Frenchy's Field, which pump water from the aquifer beneath Santa Fe. As noted previously in Table 4, from a water rights perspective, CoSFW can legally pump up to 4,865 AFY from the wellfield in any given year, and up to an average of 3,507.2 AFY over any ten-year period. The St. Mike's well, also in the City limits, is older than other wells in the CWF and is permitted separately as a Supplemental Well associated with the City's Santa Fe River permit. In this report the water pumped from the St. Mike's well is included in the CWF totals to differentiate water sources based on ground or surface water. In 2017, CoSFW completed an analysis of CWF including and ranking of rehabilitation and replacement projects that should be completed to maximize the value of the

wellfield and ensure its ongoing availability as a drought resistant supply for CoSFW. Following this analysis, the Torreon Well on the corner of Alameda and Aire was rehabilitated in 2020. Replacement of the St. Mike's well is currently under consideration as the next planned improvement for the CWF.

In 2023, CoSFW produced 417 AF from the CWF, about 60% less than the 1,025 AFY average since BDD came online in 2011, and only 21% of the 2,000 AFY that CoSFW estimates could be pumped from the CWF and the St. Mike's well year in and year out without impacting the long-term productivity of the wells. As a result, CoSFW expects that groundwater was added to storage under the City Limits in 2023, continuing a trend that, since 2010, has seen water levels in the CWF rise by an average of about 60 feet, recovering about 40% of historical drawdown in the wellfield, as shown in Figure 18.



18 - City Wellfield drawdown 1950-2010 and recovery 2010-2020.

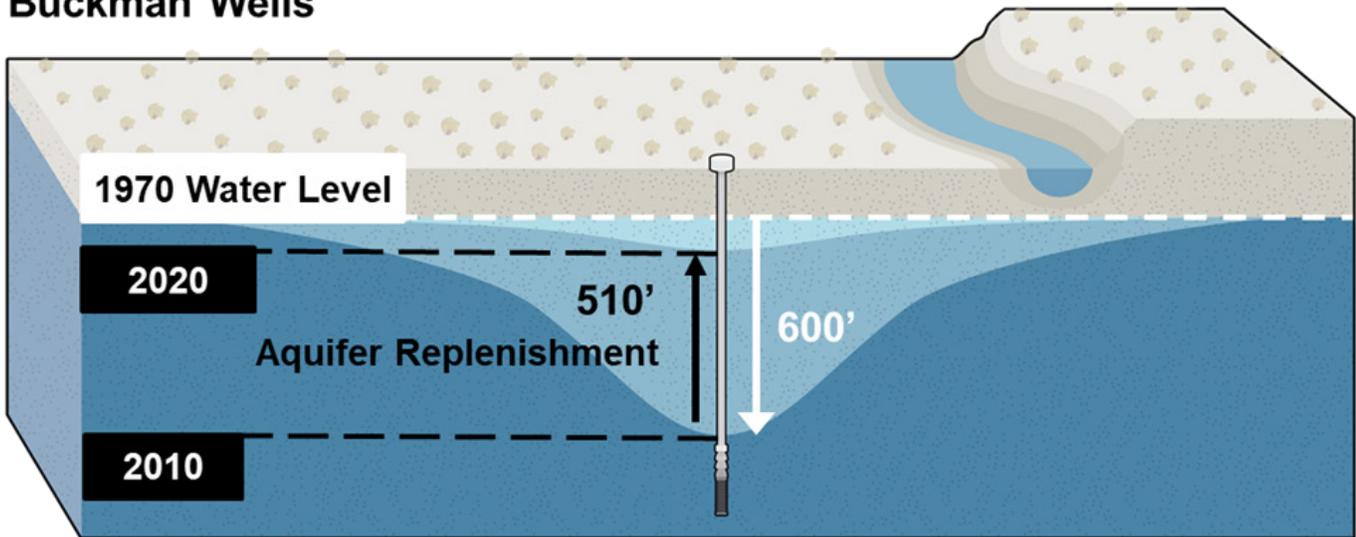
## The Buckman Wellfield (BWF)

The Buckman Wellfield (BWF) consists of 13 wells located near the Rio Grande at the historic Buckman townsite which pump water from a deep aquifer. Water from these wells is pumped to the 10 Million Gallon Tank in the La Tierra Open Space where it is chlorinated before being distributed into the potable drinking water system. Some groundwater pumping each year is necessary to keep wells ready for operation at any time, comply and cooperate on environmental compliance and monitoring, and manage groundwater levels, particularly in the two Buckman Wells closest to the Rio Grande.

In 2023, CoSFW produced 866 AF from the BWF, a little bit less than the 980 AFY average since BDD came online in 2011, and only about 35% of the 2,500 AFY

that CoSFW estimates could be pumped from the BWF year in and year out without impacting the long-term productivity of the wells. As a result, CoSFW expects that as with the CWF, groundwater was added to storage in the BWF in 2023. This continues a trend of rising water levels in the BWF where since 2010 average water levels have risen by 510 feet, recovering about 85% of historical drawdown in the wellfield, shown in Figure 19. It should be noted that the Buckman Wells tap into a confined aquifer and the drawdown and recovery values represent pressure changes in the confined aquifer and for this reason are nearly an order of magnitude larger than values in the unconfined aquifer accessed by the City Wells.

### Buckman Wells



19 - Buckman wellfield drawdown 1950-2010 and recovery 2010-2020.



## Aquifer Testing

CoSFW performed one extended duration constant-rate aquifer test in the Buckman Wellfield in 2023. The aquifer tests were performed at Well-13 (11.5 weeks pumping, 28 weeks recovery). Water level response was measured in several wells, up to about two miles away from the pumping well. Data collected from monitoring wells provides valuable information on aquifer characteristics and regional groundwater connectivity, which will be used to support detailed numerical modeling of the aquifer in upcoming years to support wellfield optimization.

## Surface Water Offsets

When a well is pumped near a river it can induce leakage from the river to fill the underground space created when the water was pumped out, or groundwater that would otherwise have flowed to the river may be intercepted by the space created by the pumping. In either case, there is less water in the river as a result of the groundwater pumping. The strength of this effect depends on many things including the distance between the well and the river and the hydrologic properties of the aquifer being pumped and is further complicated by lags in time between the well pumping and the impact on the river.

The City’s permit requires that CoSFW offset Buckman Wellfield pumping impacts on the Rio Grande and tributaries by acquiring water rights in those basins to ensure that our pumping is not impacting a more senior water right downstream of our impact. CoSFW submits

monthly reports to the OSE which are input into a computer model to determine the extent and duration of surface water impacts each year as a result of pumping the BWF. The impacts from a single year of groundwater pumping are spread over many subsequent years. The annual offset calculations provided by the OSE include both the new offsets incurred as well as the residual offsets owed from previous years of groundwater use.

CoSFW holds numerous surface water rights in surrounding basins to satisfy the OSE offset requirements. Table 20 shows the distribution of offsets for 2022. Calculations for 2023 were not available in time for inclusion of this report and will be available in the 2024 Annual Report.

Developments in Santa Fe must offset their added demand on CoSFW’s water resources. One way to do this is by acquiring water rights and transferring them to CoSFW, specifically to the BWF permit, RG-20516, to meet the increased demand for the development project. Water rights established prior to the 1907 creation of the Territorial (now State) Engineer’s Office from the area between Cochiti Reservoir and Elephant Butte Reservoir are transferred to CoSFW in amounts equal to the project development water budget. In this way development leads to more water rights available to offset BWF pumping. There are also conservation related mechanisms available to CoSFW to offset new water demands through the Water Bank.

Basin	2022* offsets to nearest AF	2022 CoSFW water rights available to nearest AF
Rio Nambé – Pojoaque	60	110
Rio Tesuque	33	36**
Rio Grande above Otowi Gage	103	0***
Rio Grande below Otowi Gage (pre-1907 Rio Grande)	844	1,762****
La Cienega	3	4
<b>Total</b>	<b>1,043</b>	<b>1,912</b>

\*2023 Offsets had not been calculated and released by the OSE at the time of this report.

\*\* 25 AF of City owned water rights, 11 AF of water rights owned by Las Campanas Limited Partnership

\*\*\* San Juan – Chama water releases are used to offset pumping impacts to the Rio Grande above Otowi Gage.

\*\*\*\* 769 AF of City owned water rights designated to specific developments, 183 AF of City owned water rights allocated to affordable housing, 80 AF of City owned water rights undesignated, 358 AF of water rights owned by others but undesignated, and 372 AF of SF County owned water rights undesignated (which are not tracked in the Water Bank). San Juan – Chama Project water could also be used for Buckman Wellfield pumping offsets.

*20 - 2022 surface water rights available for BWF pumping offsets.*



## Water Bank

The Water Bank, defined in City Code 25-10, went into effect on January 1, 2010, and connects land use planning directly to available water supply by requiring developers to offset new demand on the water utility system. The Water Bank tracks water rights and water conservation credits available to support development. The goal of the program is to maintain sufficient water rights and system capacity to meet increasing water demand associated with new construction. Residential, mixed use, and commercial developments with water demands above the thresholds of 10, 7.5, and 5 AFY respectively are considered “large developments” and must offset their water demand by purchasing an equivalent amount of Middle Rio Grande water rights for transfer into the CoSFW’s Buckman Wellfield permit (as explained in the Surface Water Offsets for Buckman Wellfield section). Developments below the previously mentioned thresholds are termed “smaller developments” and can transfer water rights as above, use toilet retrofit credits, or pay a water offset fee. Toilet retrofit credits were obtained during a 2003 – 2009 initiative to replace older, high-flow toilets with more

efficient, low-flow toilets. In practice, the fee option is preferred by developers and used for nearly all smaller developments. The water offset fees charged to developers are used by CoSFW for the purchase of Middle Rio Grande water rights, toilet retrofit credits, or to support conservation efforts. Another way that the Water Bank ensures water availability is by tracking cumulative demand reductions achieved through rebate programs since January 1, 2010, and allowing credits from these reductions to be used to offset the new water demand (as opposed to toilet retrofit credits, which represent water savings achieved before 2010).

Balances and transfers in the Water Bank have been tracked since its inception and Figure 21 shows these balances from 2019 through 2023. Water demand added each year from 2009 through 2023 is shown in Table 22 below. The 160 AF of affordable housing development demand is offset by City water rights. Thus, 718 (558 + 160) AF per year or 63% of calculated added water demand has been offset with water rights, while just over one-third has been offset by fees and the remainder with toilet retrofit credits.

**WATER RIGHTS IN WATER BANK AT CALENDAR YEAR END**



21 - Water Rights in Water Bank 2019-2023.

**CITY OF SANTA FE ADDED WATER DEMAND BY YEAR (AFY)**

Year	09	10	11	12	13	14	15	16	17	18	19	20	21	22	Total	%
Development offset with water rights	10	6	7	19	40	6	37	25	25	6	21	31	133	143	509	50%
Development offset with toilet retrofit credits	1	0.5	0.3	0.5	0.3	10	8	1	4	9	8	2	7	12	63	6%
Affordable housing development	2	6	5	4	4	5	2	2	3	17	8	26	35	20	139	14%
Development offset with fees	0	6	10	17	17	14	15	13	28	25	35	14	54	59	307	30%
Total	13	18	22	40	61	35	62	41	60	57	72	73	229	234	1,018	100%

22 - Added water demand offset methods 2009-2022.



### Water Bank Accounting of Water Conservation

Conservation Credits are a way for CoSFW to account for and track water conservation associated with Water Rebate Credits issued by the Water Conservation Office. Conservation credits accounted each year are deposited in the Water Bank and have been used to offset smaller development projects. Four (4) AF of Conservation Credits were accounted for in 2023 bringing the total

to 96 AF since Water Bank inception, as shown in Table 23. This is less than the 307 AF of water development water demand that has been offset with fees (Table 22). In 2024, CoSFW will request that the Governing Body allocate 500 AF of the almost 1,500 AF that CoSFW estimates has been saved by conservation since the 2010 inception of the Water Bank in order to fill this gap.

**CONSERVATION CREDITS ACCOUNTED BY COSFW (AFY)**

Year: 20__	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Conservation credits	0	32	9	7	6	6	3	8	7	3	4	2	3	2	4	96

*23 - Conservation Credit Accounting 2009-2023.*

## Water Quality

As water travels over the land or through the ground, it dissolves naturally occurring minerals and can also pick up substances from the presence of animals or from human activity. Contaminants in drinking water may include microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants, and radioactive contaminants. To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the number of certain contaminants in water provided by public drinking systems.

In 2023, the City’s drinking water met all U.S. EPA and State water quality limits. Water quality information from each of our sources of water is reported in detail within the Annual Water Quality Report, available online at [https://santafenm.gov/Water\\_Quality\\_Report\\_2023.pdf](https://santafenm.gov/Water_Quality_Report_2023.pdf). Some of the contaminants measured annually include Arsenic, Barium, Nitrate, Radium, Uranium, Lead, and Copper. CoSFW tests regularly throughout the system to ensure sufficient Chlorine levels are in the water to prevent biological growth.

### Lead and Copper Rule Revision (LCRR)

The Lead and Copper Rule is a set of regulations developed by the EPA to address and regulate the levels of lead and copper in drinking water. The rule was first issued in 1991 and has since undergone revisions.

In 2022, the EPA revised the Lead and Copper Rule to include a publicly available inventory of service line materials and increased water testing standards for all utilities. The deadline for compliance for the new rule revisions is October 2024.

In response to the LCRR, Santa Fe developed the Lead Safe Santa Fe program to protect consumers against potential lead exposure from your tap water. The objectives of this program are to provide information on the risks of lead, reduce lead in the system, and provide a public inventory of service line materials. Together, these efforts meet all state and federal guidelines under the EPA’s new LCRR. This information is available at <https://leadsafe.santafenm.gov/>.

Santa Fe does not have any lead pipes in the public distribution system. However, there may be lead present in legacy fittings in our system, and lead can enter the water system from lead pipes of private service lines or lead plumbing within a home. Customer participation in our Lead Safe Water Testing program will help us eliminate any service line uncertainties.



## Santa Fe County Water Deliveries

Up until 2012, CoSFW served a number of customers located outside of City limits. In 2012, the County began operating its own water utility to serve customers outside the City with water derived from the County’s portion of the BDD facility.

Negotiations between the City and County over the operational and financial relationship of the two utilities resulted in the 2005 Water Resource Agreement and its subsequent revision in the 2016 Amended and Restated Water Resources Agreement (WRA). The terms of the WRA specify the conditions under which CoSFW provides water to Santa Fe County at times when BDD is inadequate to meet demand. The WRA also specifies that CoSFW can charge Santa Fe County wheeling fees for County water that is moved (or wheeled) through the CoSFW transmission and distribution system for delivery to the County. A simple example of why this is necessary is Hyde Park Estates where County BDD water can only be delivered by passing through the CoSFW system. A permanent wheeling agreement went into effect in March of 2024.

At the BDD, CoSFW diverts SJC water from the Rio Grande while the County generally diverts native Rio Grande rights. As explained previously (The BDD Shared Pool), coordinated management of the two sources

diverted by the BDD provides flexibility for both the City and County. The shared pool water can be used by the County during shutdowns at BDD in order to avoid terms of the WRA. As seen previously in Table 17, the County used 24.9 AF of shared pool water during shutdowns of the BDD associated with muddy Rio Grande water. In 2023, as a result of the availability of shared pool water, no WRA water was delivered to Santa Fe County.

## Water Resources Planning

CoSFW plans for the future at a variety of different time scales and uses different technical tools to assist in each type of planning. Three of those time scales are shown in Table 24. Planning for low probability, high consequence events which might disrupt the system for weeks to months continues with the development of worst-case catastrophic supply disruption scenarios. To plan for year-to-year variability and help guide seasonal conservation policy, a tool called the Santa Fe Water Resources Indicator was developed in 2021 and was piloted in 2022 and 2023. Long-range planning out to the year 2100 is also underway and will utilize a computer model known as STEWaRDS. Both planning efforts are described below.

### TYPES OF WATER RESOURCES PLANNING DONE BY CITY OF SANTA FE WATER

Time Scale	Technical Tools Used by Santa Fe Water Utilities
Weeks to Months	Worst case scenarios evaluated with hydraulic (pipe network) model
1 Year	Santa Fe Water Resources Indicator
Decades	STEWaRDS long-range water resources planning model

24 - Types of water resources planning.



## Catastrophic Supply Disruption

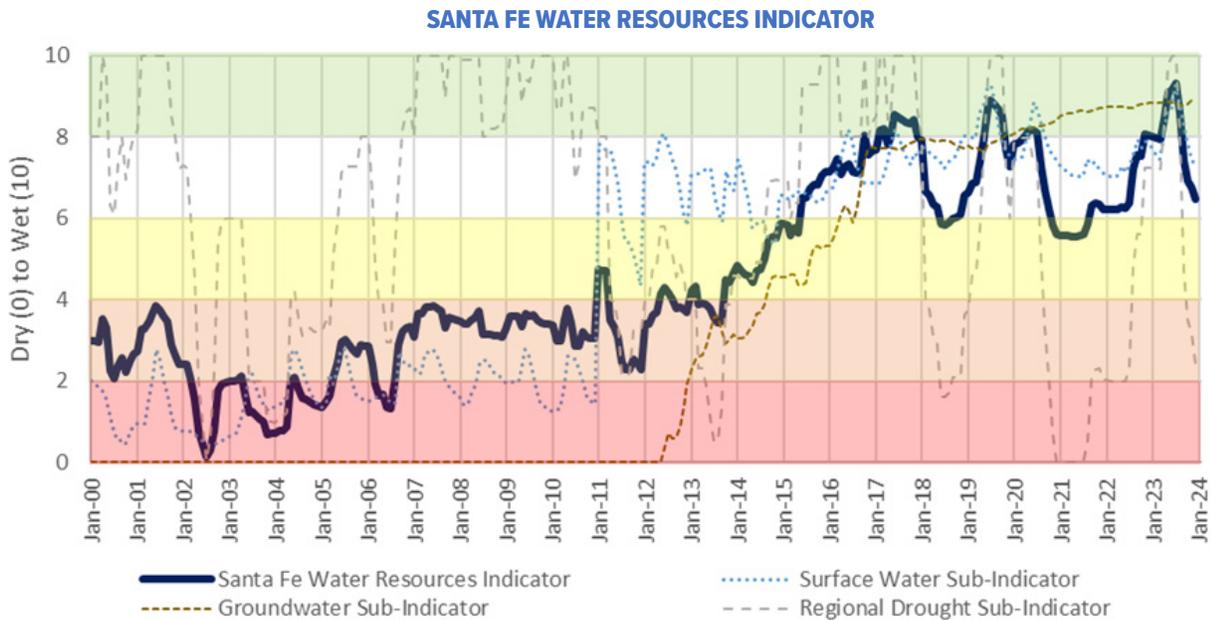
In mid-2022, a Catastrophic Supply Disruption analysis was initiated to better understand and mitigate risks associated with low probability, high consequence events. The analysis explores various scenarios where access to the sources of supply is limited and prevented by unpredictable conditions and the impacts of loss of supply are modeled and used to develop mitigation response actions to ensure continued delivery of safe water to City and County customers. Efforts to compile the analysis into emergency action plans to assist operators in responding to short-term supply disruptions began in 2023 and will continue into 2024.

## Drought Planning – The Water Resources Indicator

The Santa Fe Water Resources Indicator (WRI) is a quantitative tool used to summarize water availability to the City and County Water Utility systems and a way

to inform seasonal conservation policy. The WRI is a transparent, data driven representation of seasonal water resources availability and regional drought conditions in Santa Fe and will be used in the spring of each year to help define any water use restrictions City and County Utility customers can expect during the remainder of the year.

The Indicator goes from zero to ten, representing an emergency to abundant water resource availability, respectively. The WRI uses the following weighted calculation to evaluate available water supplies: 40% represents groundwater availability, 30% represents surface water availability, and 30% represents regional drought conditions. Conservation responses as a function of Indicator level are being developed and will be implemented with the 2025 Update of the Water Conservation Plan.



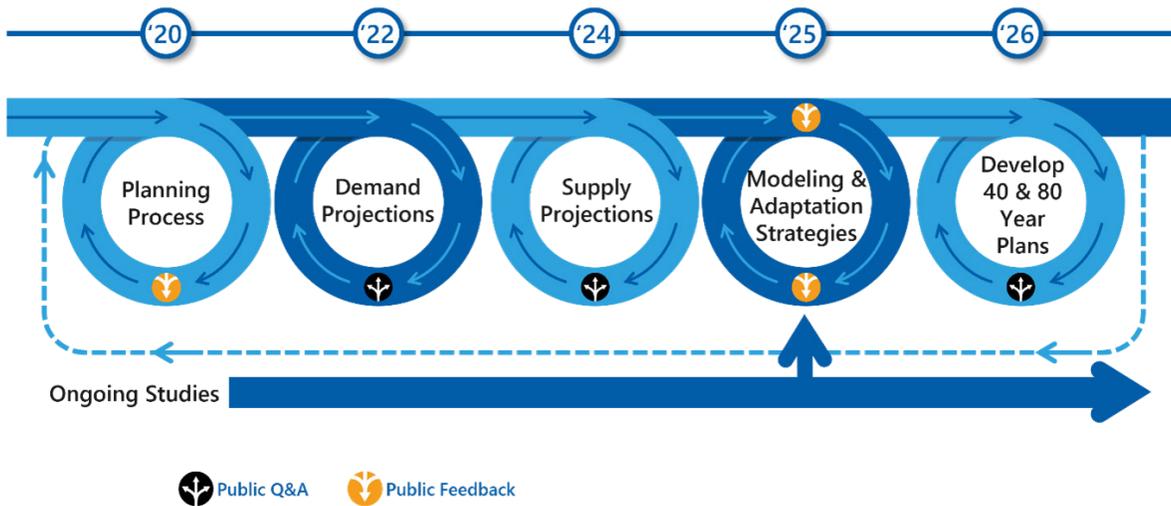
25 - Historical values of the proposed Santa Fe Water Resources Indicator.



## Long Range Planning – Santa Fe Water 2100

In 2015, CoSFW and Santa Fe County Utilities completed a long-range water resource management plan known as the Santa Fe Basin Study (SFBS). The SFBS was the first time any New Mexico entity had included climate change impacts in long range water planning. In 2020, CoSFW and Santa Fe County Utilities initiated a planning cycle to develop long range water resource management plans, which will include updated climate projections, currently being developed and modeled by the Bureau of Reclamation (BOR). The planning process, which was finalized in early 2021, called for development of demand scenarios which were completed in 2022.

Contingent on availability of the updated climate scenarios, presentations and Q&A sessions are planned for 2024 to present the supply projection piece of the planning process. The current schedule is shown in Figure 26 below. The current planning cycle, which began in 2020, is scheduled to be complete by the end of 2026, and will be evaluated, refined, and repeated every 10 years or as necessary in future years.



26 - Planning Cycle for Santa Fe Water 2100.

<sup>4</sup> Water Main Break Rates in the USA and Canada: A Comprehensive Study. March 2018. An Asset Management Planning Tool for Water Utilities. Utah State University Buried Structures Laboratory. Steven Folkman, Ph.D., P.E.



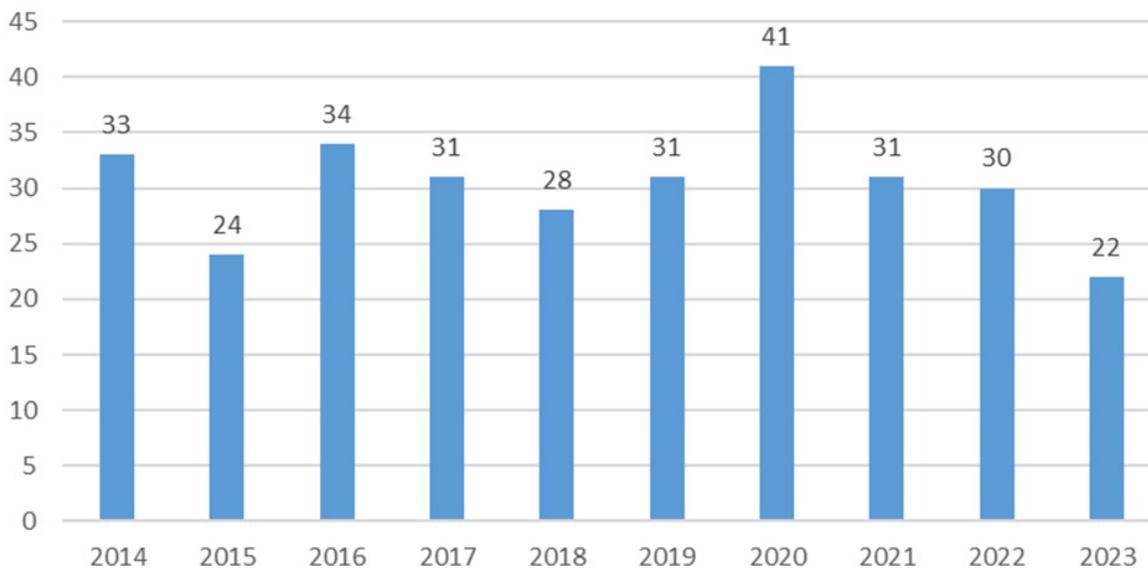
## Transmission and Distribution

The Transmission and Distribution (T&D) Section of CoSFW is responsible for maintaining the pipes and valves in the ground which distribute water from mains to service lines and meters for each account. Fixing main breaks (described below), installing new services and meters, flushing the pipes, and maintaining valves and hydrants are the key activities of T&D.

### Main Breaks

There were 22 main breaks and 10 service lines (relatively small diameter lines between a larger main and the water meter) leaks in 2023. This works out to less than 4 main breaks per 100 miles of pipe (we have approximately 615 miles of water main pipes in our system), which is well below the average of 17 breaks per 100 miles of pipe average for water utilities of our size according to a 2018 Utah State Study. This was below our annual average of about 31 main breaks per year since 2014 (Figure 27).

**CITY OF SANTA FE MAIN BREAKS BY YEAR 2024-2013  
(AVERAGE 31.4 PER YEAR)**



27 - Main Breaks from 2014-2023.



# Financials

## Capital Improvement Projects

In addition to the Nichols and McClure outlet conduit rehabilitations described in the Santa Fe River section previously, which are expected to cost over 38 million dollars combined, CoSFW plans to implement two other large capital improvement projects (CIP) over the next several years. These projects are the Canyon Road Water Treatment Plant Floc Sed project (design is done, construction is slated to start in 2024), and the San Juan Chama Return Flow Project (currently in the design and permitting phase). The total cost for these four projects is estimated at almost 80 million dollars. Projected capital spending for the fiscal years starting in July 2023 through June of 2028 is shown in Table 28 below.

### CAPITAL IMPROVEMENTS PROJECTS

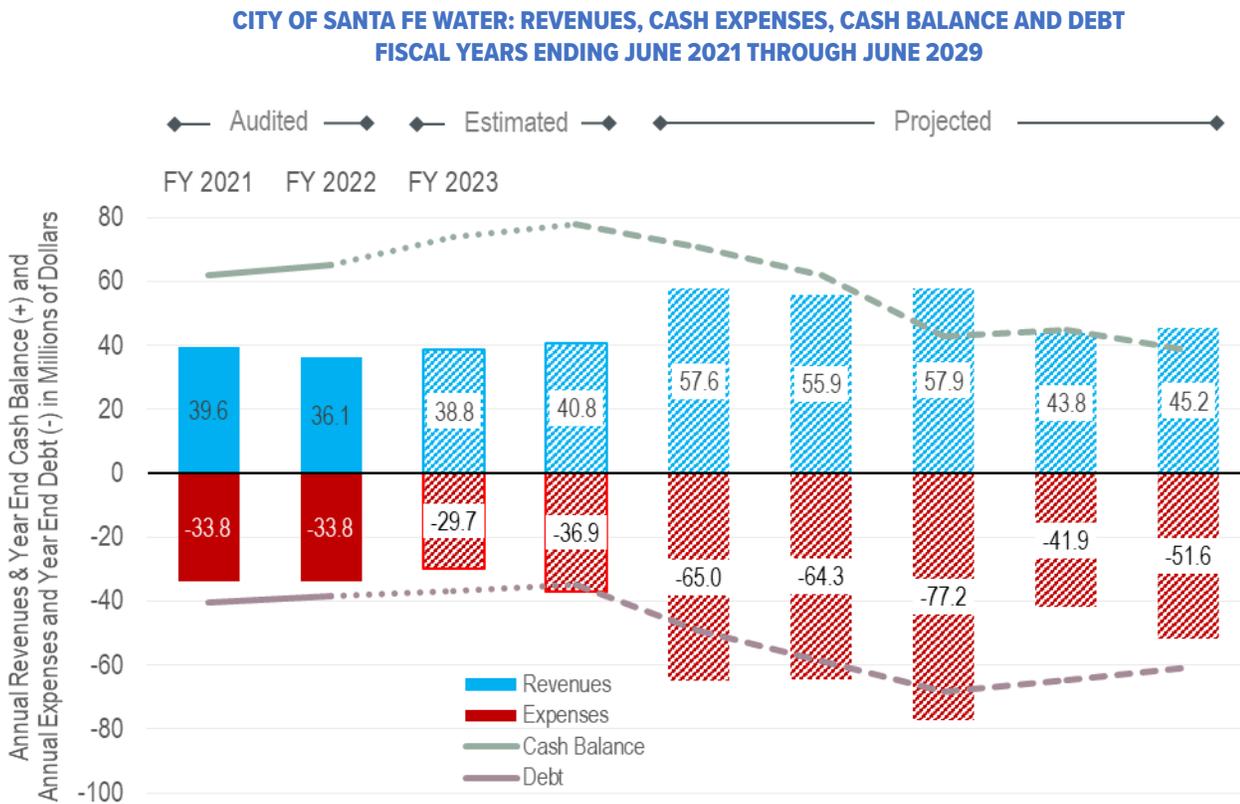
Projects	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	5yr Total
Nichols - outlet conduit rehab	\$ 750,000	\$ 18,000,000	\$ -	\$ -	\$ -	\$ 18,750,000
CRWTP floc/sed rehab	\$ 50,000	\$ 6,000,000	\$ 6,000,000	\$ 2,700,000	\$ -	\$ 14,750,000
SJC return flow project	\$ 1,000,000	\$ 2,250,000	\$ 11,750,000	\$ 11,750,000	\$ -	\$ 26,750,000
McClure - outlet conduit rehab	\$ -	\$ -	\$ 1,500,000	\$ 18,000,000	\$ -	\$ 19,500,000
Priority line replacements	\$ 1,626,563	\$ 1,626,563	\$ 1,626,563	\$ 1,626,563	\$ 1,626,563	\$ 8,132,815
CRWTP filter rehab	\$ 1,166,000	\$ 500,000	\$ 5,000,000	\$ -	\$ -	\$ 6,666,000
CRWTP chem feed upgrades	\$ -	\$ 250,000	\$ 250,000	\$ 2,000,000	\$ 2,000,000	\$ 4,500,000
City Wellfield Optimization - St. Michael's well replacement	\$ 180,000	\$ 856,000	\$ 856,000	\$ -	\$ -	\$ 1,892,000
On-Call contracts	\$ 2,976,407	\$ 2,976,407	\$ 2,976,407	\$ 2,976,407	\$ 2,976,407	\$ 14,882,034
Other	\$ 350,000	\$ 870,150	\$ 250,000	\$ 250,000	\$ 250,000	\$ 1,970,150
<b>Total</b>	<b>\$ 8,098,970</b>	<b>\$ 33,329,120</b>	<b>\$ 30,208,970</b>	<b>\$ 39,302,970</b>	<b>\$ 6,852,970</b>	<b>\$ 117,792,999</b>

28 - Projected capital spending for the fiscal years starting in July 2023 and going through June of 2028.



# Financial Projections

There is audited financial information available for CoSFW through fiscal year (FY) 2022 (July 1, 2021 through June 30, 2022). Audited, estimated (for FY 2023 whose audit is not yet complete and the current fiscal year), and projected (for future years) revenues, expenses, and year end cash balances and outstanding debt balances are shown in Figure 29. Overall, CoSFW is in a strong financial position but significant capital spending in the next few years as described above will require use of cash balances and assumption of additional debt. The jump in revenues and associated increase in debt shown in fiscal years 2025 and 2027 are associated with planned borrowing to cover capital costs associated with the Nichols Dam rehabilitation and San Juan Chama Return Flow Project, respectively.



29 - Key CoSFW financial status and outlook, audited and estimated for past years and projected for future years.



## Closing

In 2023, despite starting with abundant snowpack in the San Juan Watershed and Santa Fe River headwaters, Santa Fe experienced a dry summer resulting in below-average annual precipitation. This resulted in increased outdoor irrigation and a rise in water production, which was exacerbated when the Paseo Real Water Reclamation Facility was unable to provide non-potable reuse water for turf irrigation. As a result, nearly 500 AF (5%) of potable water produced went towards irrigation of golf courses and parks which typically use effluent. These events were somewhat balanced by excellent runoff from the Santa Fe River, such that CoSFW was able to meet higher water demands while pumping less groundwater than in either of the previous two years. The result was a continued rise in aquifer levels as has been seen since 2011. CofSFW met all EPA and state water quality limits and will be rolling out the Lead Safe Santa Fe initiative in 2024. CofSFW remains financially stable despite upcoming capital projects. CoSFW continues to work on long range planning efforts while emphasizing transparency and quality to ensure that a safe, reliable, and resilient water supply will be available to you and generations to come. If you have questions as a result of this report or associated presentations, the CoSFW staff is happy to try to answer them. Visit our website at [www.santafenm.gov/water](http://www.santafenm.gov/water) to get in touch.