CITY OF SANTA FE WATER

Annual Report 2024

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City of Santa Fe Water Staff

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Executive Summary

In 2024, the City of Santa Fe Water (CoSFW) produced 9,399 acre-feet (AF) of potable water, which was approximately 4 percent less than in 2023, and effectively met demands in a sustainable manner by predominantly relying on surface water. Approximately 78 percent of potable water supply came from surface water in 2024, and the remaining 22 percent was supplied by groundwater from wells. This allowed for continued water level recovery 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.

In 2024, 4,045 AF (43.0 percent) of production came from BDD, which is San Juan-Chama Project (SJCP) water imported from the Colorado River Basin, 3,273 AF (34.8 percent) from the Santa Fe River, 708 AF (7.5 percent) from the City Wellfield, and 1,373 AF (14.6 percent) from the Buckman Wellfield. In 2024, the City's drinking water met all U.S. Environmental Protection Agency (EPA) and State water quality standards.

Average per capita water use was 93 gallons per capita per day (GPCD) in 2024, compared to 98 GPCD in 2023. Water demand was highest during the summer months due to outdoor water use. The Paseo Real Water Reclamation Facility upgrades are still underway, and in 2024, approximately 47 AF (or approximately 0.5 percent) of potable water produced by CoSFW was used for irrigation of golf courses and parks that typically use treated wastewater as their source of water supply. This volume was much less than the volume of potable water used for irrigation by these facilities in 2023.

The Nichols Dam Outlet Works Rehabilitation project construction began in July 2024, and in mid-September, CoSFW began pumping water around the reservoir for Canyon Road Water Treatment Plant (CRWTP), acequia irrigation deliveries, and Santa Fe River target flows. This continued through the rest of the calendar year. In 2024, total bypass flows were 1,206.4 AF. The April 15, 2024-April 14, 2025 target flow volume for a 'Living River' of 1,000 AF was met.

Financially, CoSFW is in a strong position, but impending capital spending will require use of cash balances and the assumption of debt. In addition to the Nichols Dam Outlet Works Rehabilitation project that is underway, CoSFW plans to implement four other large capital improvement projects over the next several years: CRWTP floc sed project, CRWTP chemical feed upgrades, McClure Dam Outlet Works Rehabilitation, and the SJC Return Flow project.

Overall, CoSFW continues to build a strong team to provide high quality and transparent operations for our community. We strive to ensure that a safe, reliable, and resilient water supply will be available for our customers for generations to come.

[1]Due to an issue with measurement of County water use through Beacon master meters (County portion of BDD production), City BDD production is estimated. Expected error is less than 80 AF, or two percent.

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 and is equivalent to 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.
CoSF	City of Santa Fe.
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 by each customer served. This estimate 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, including for CoSFW.
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 Paseo Real, just north of the Santa Fe Airport.
Reclamation	United States Bureau of Reclamation.
SJCP	San Juan-Chama Project (imports water from the Colorado River Basin).
TNC	The Nature Conservancy.
WRA	Water Resource Agreement.

Introduction

This report provides an overview of the Santa Fe Water System, City of Santa Fe Water (CoSFW) sources of water supply, and conditions in 2024. It presents historical and current water production information, including the proportional use of CoSFW's four sources of water supply.

CoSFW's goal is to maximize the proportion of surface water use, conserving groundwater for use during drier years. The report discusses historical and estimated current water demands, and outlines 2024 operations and highlights, including the ongoing Nichols Dam Outlet Works Rehabilitation project, ongoing Two-Mile Pond monitoring efforts, PRWRF upgrades and their impact on non-potable water availability. It addresses water quality (in 2024, all U.S. EPA and State water quality standards were met), and provides an overview of the Water Bank and its current conservation credit balance.

The report discusses Santa Fe River operations in 2024, including bypass flows provided to the Santa Fe River downstream of Nichols Reservoir for Santa Fe target flows, acequia irrigation deliveries, and to manage reservoir storage. Rio Grande Compact Operations, imported San Juan-Chama Project (SJCP) water, CoSFW's water rights permits and offsets, and coordination with Santa Fe County are also discussed. CoSFW is leading the way with the development and implementation of science and technology-based tools, such as the STEWaRDS long-range water resources planning model, dashboards, and Water Resources Indicator (WRI), and these efforts are discussed. CoSFW is engaged in many types of planning, including water conservation and drought management, long-range water supply, catastrophic supply disruption, and source water protection planning. An overview of the various planning efforts is provided, including activities that are underway to address fire risk in the wildland urban interface. CoSFW's financial projections and planned capital improvement projects are also discussed.

Overall, CoSFW is in a strong financial position but significant capital spending in the upcoming years will require use of cash balances and assumption of additional debt. CoSFW's 2024 activities and operations have supported our mission to provide a safe, reliable, and resilient water supply to meet Santa Fe's needs for generations to come.

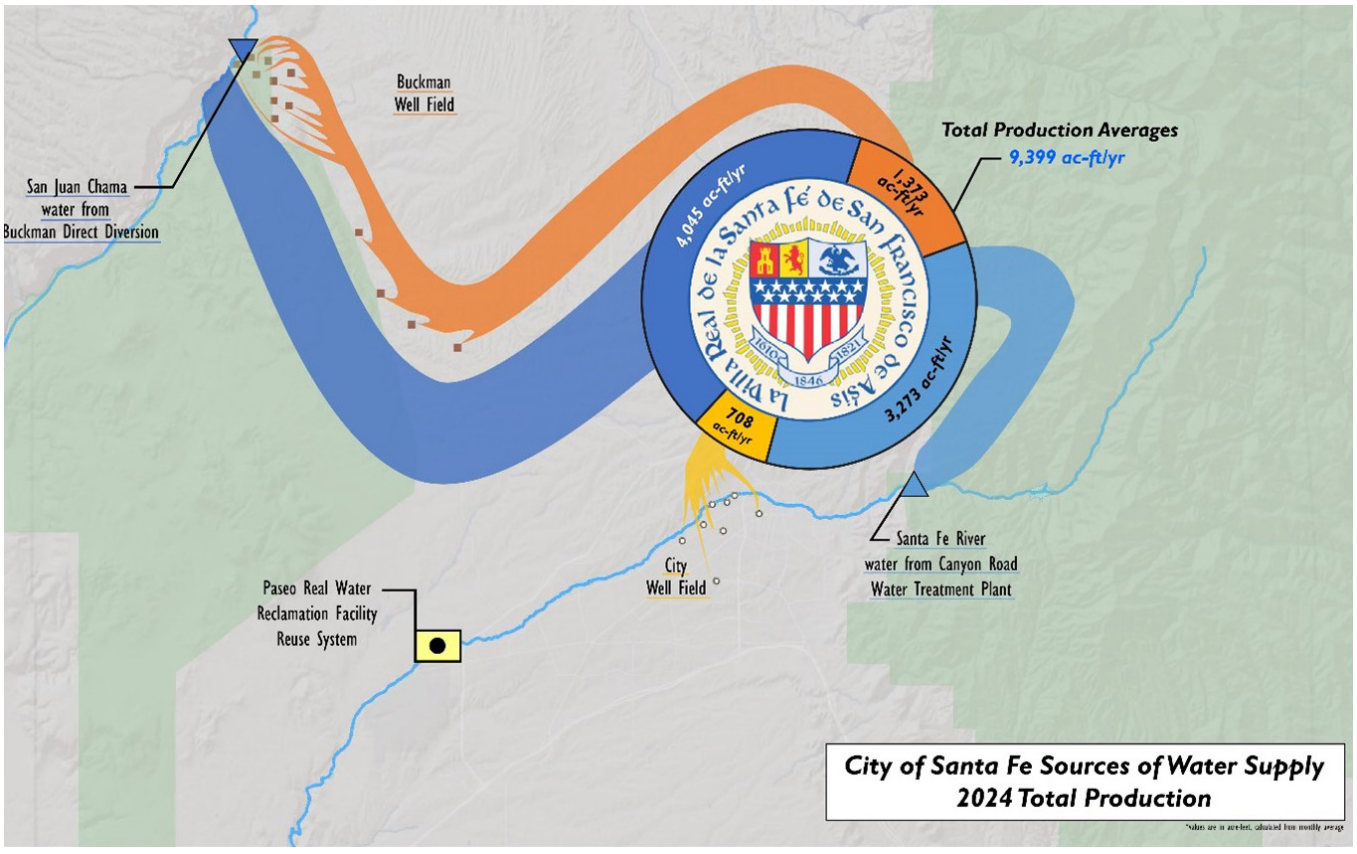
Nichols Reservoir, Santa Fe (prior to draining for the Nichols Dam Outlet Works Rehabilitation Project Construction

Water Supply Sources Historical Overview

CoSFW is fortunate to have four distinct sources of potable water supply (Figure 1). Two of the water sources are supplied by rivers (surface water), and two are supplied by wells (groundwater).

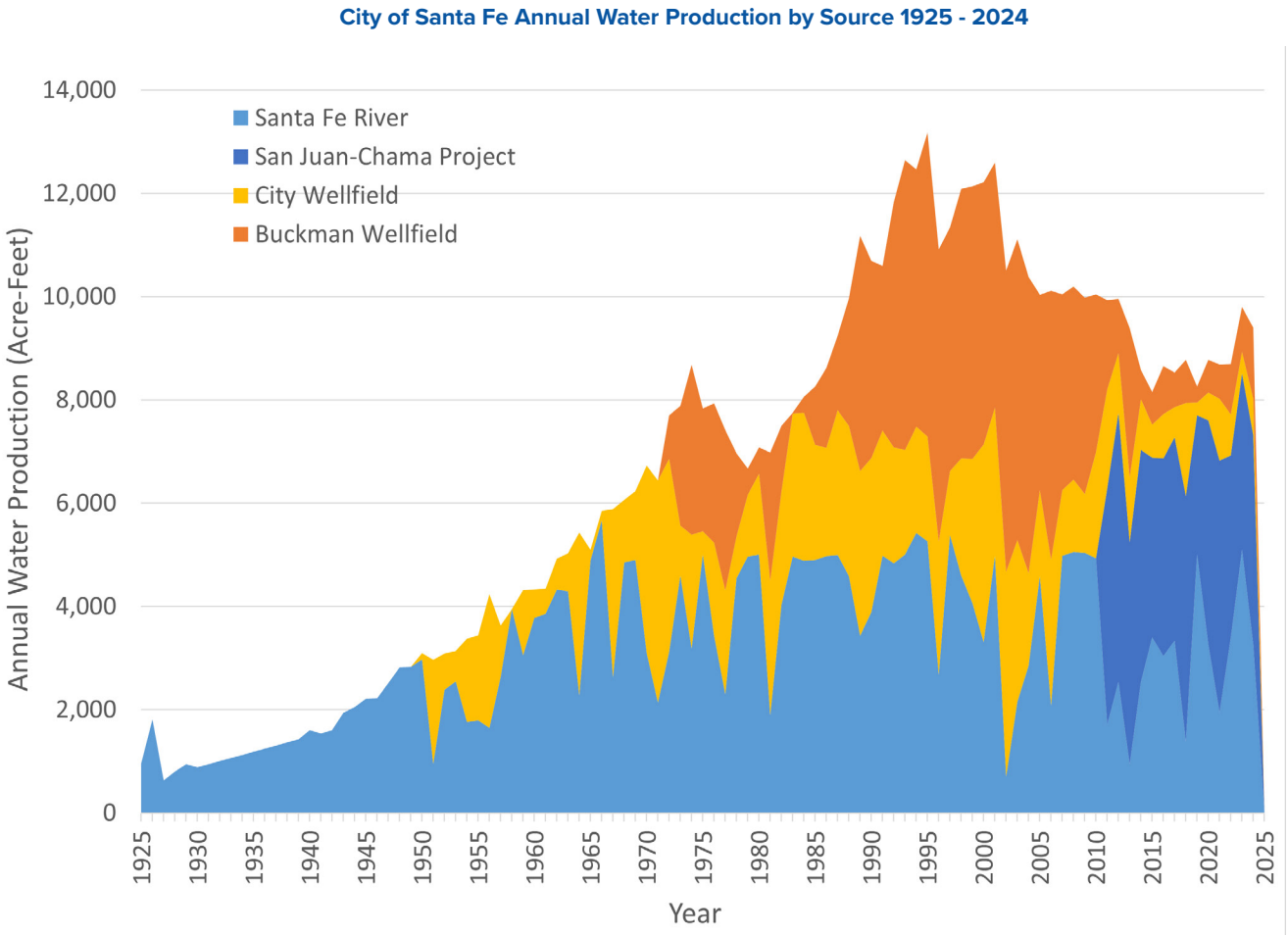
Surface water is available to CoSFW from the Santa Fe River and the Colorado River (imported via the San Juan-Chama Project [SJCP]). Groundwater is pumped from 7 active wells within City limits (the City Wellfield), and 13 wells located between the City and the Rio Grande (the Buckman Wellfield).

Surface water moves quickly in defined channels and the flow can be seen and easily measured. Although the full volume of surface water could potentially be diverted, surface water diversion cannot exceed total flow. The volume of surface water varies from year to year, and these supplies are unpredictable, but surface water supply is inherently renewable. CoSFW prioritizes surface water use over groundwater use, treating our surface water sources like a checking account. Groundwater on the other hand moves slowly, beneath the land surface and cannot be seen or measured as easily. Groundwater supply is to some degree drought-proof, and CoSFW manages groundwater as a backup supply for times of need (e.g., during drought).



1 - City of Santa Fe Sources of Water Supply

Three periods of water resource use can be distinguished in the historical development of CoSFW's potable water supply (Figure 2). Before 1995, potable water demand grew exponentially, and in the 1950s and 1970s, the City and Buckman Wellfields, respectively, were added to keep up with increasing demand. In 1995, the City purchased what had been a private water company and began a new period of water use defined by water conservation. Between 1995 and 2005, water demand was steadily reduced due to water conservation, and has been relatively flat since 2015, despite continued growth in the community. The current CoSFW supply portfolio has been available since 2011, when the BDD came online. The BDD allows for the diversion of imported SJCP water, and 2011 marked the beginning of a period where surface water use has dominated CoSFW water production. This has allowed CoSFW to rest the City and Buckman Wellfields, allowing water levels to recover after unsustainable overuse in the 1990s and 2000s.

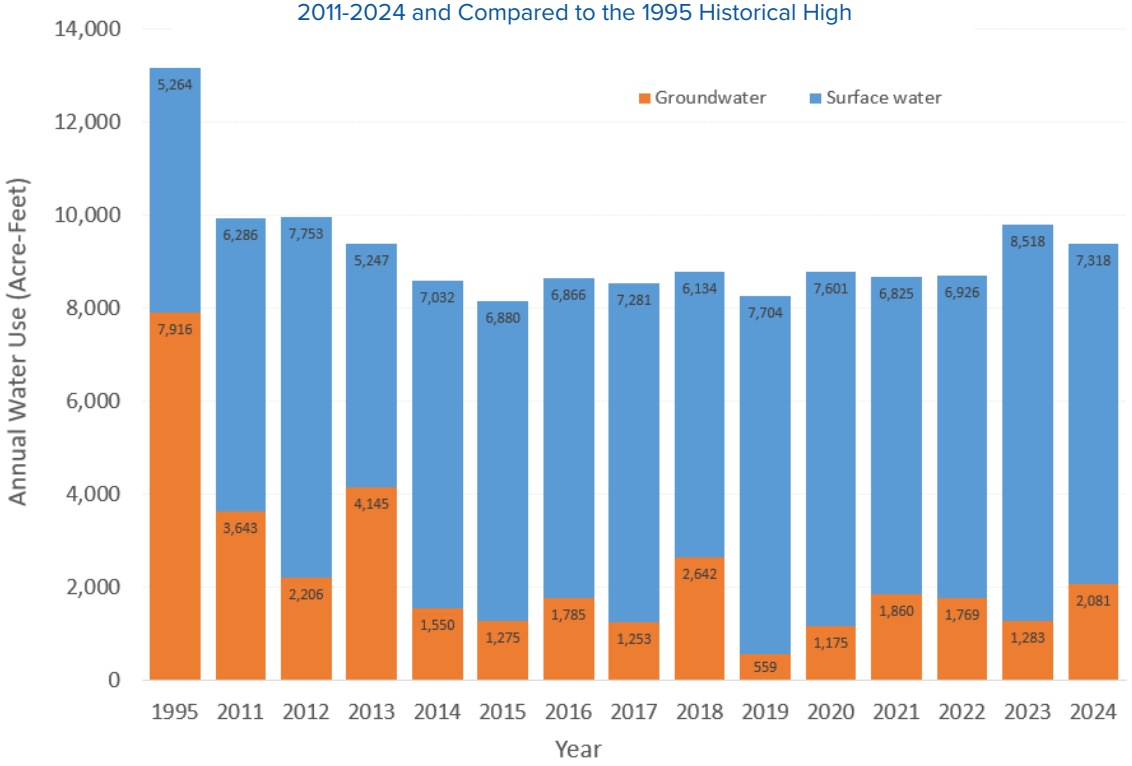


2 - City of Santa Fe Water Supply, 1925-2024. 1925-1995: Exponential demand growth, 20th Century solution: increase supply. 1995-present: City ownership of utility, reduced demand through conservation. 2011-present: Surface water dominated

Figure 3 shows potable water production from surface water and groundwater supply sources since 2011, as compared to 1995, when production peaked and the Santa Fe River was the CoSFW's only surface water source of supply. The total 2024 groundwater production volume of 2,081 acre-feet (AF) was less than half of the CoSFW's estimated sustainable groundwater availability of 4,500 AF per year, and as a result groundwater levels continued to recover in 2024, as they have since 2010. Although the proportion of groundwater use in 2024 (22 percent) was higher than 2023 (13 percent), the proportion of groundwater use in 2024 was comparable to 2022 (20 percent) and 2021 (21 percent). It should be noted that some groundwater use is necessary to keep wells maintained and ready for operation, manage groundwater levels, and comply with environmental and monitoring requirements.

Table 4 shows the estimated availability and average and maximum use of each water supply source for 2011 through 2024. The water rights permit limits for each water source are also shown. The one-year permit limit production volume could not be sustained over time, but provides a sense of the potential magnitude of supply that could be provided from each source in a short-duration water emergency.

City of Santa Fe Annual Potable Water Production
2011-2024 and Compared to the 1995 Historical High



3- Potable Water Production from Surface and Groundwater Sources, 1995 and 2011-2024

Water Source	2011 – 2024 Estimated Sustainable Availability** (AFY)	2011-2024 Average Use (AFY)	2011-2024 Maximum Use (AFY)	One Year Permit Limit (AFY)	10 Year Permit Limit (AFY)
Santa Fe River	2,919	2,919	5,098	5,040	5,040
City Wellfield	2,000	937	1,918	4,865	3,507
Buckman Wellfield	2,500	1,008	2,890	10,000	10,000
San Juan-Chama (BDD)	4,652	4,107	5,215	6,407	5,125
Totals	12,071	8,971	--	26,312	23,673

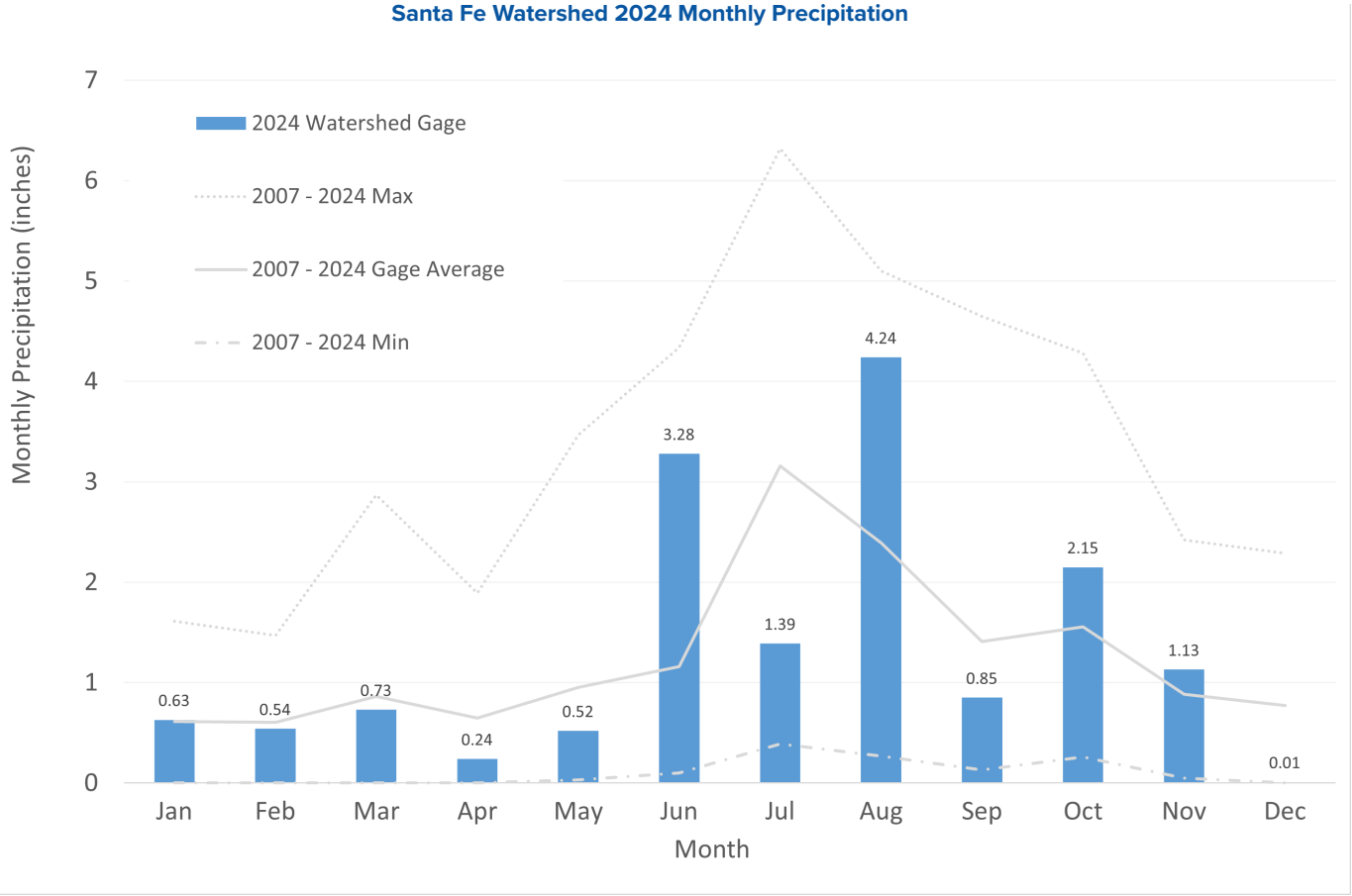
* Analysis begins in 2011 because that is when BDD came online and CoSFW first had four distinct sources of water supply.
** Santa Fe River availability based on 2011-2024 average usage, which approximates McClure inflow minus Acequia and Living River Requirements starting in 2011.
** For SJCP 2011-2024: Average historical allocation 2011 – 2024.
** For City and Buckman Wellfields 2011-2024: Geohydrologic based estimate of sustainable availability.

4 – Water Use and Rights, 2011-2024

Precipitation

In 2024, April 1 snowpack reached 120 percent of normal in the SJCP source watersheds and 150 percent of normal in the headwaters of the Santa Fe River. The melting of the snowpack progressed rapidly in April, resulting in high observed streamflow in the Santa Fe River relative to historical benchmarks; however, runoff tailed off through the remainder of the year, reflecting historical median values.

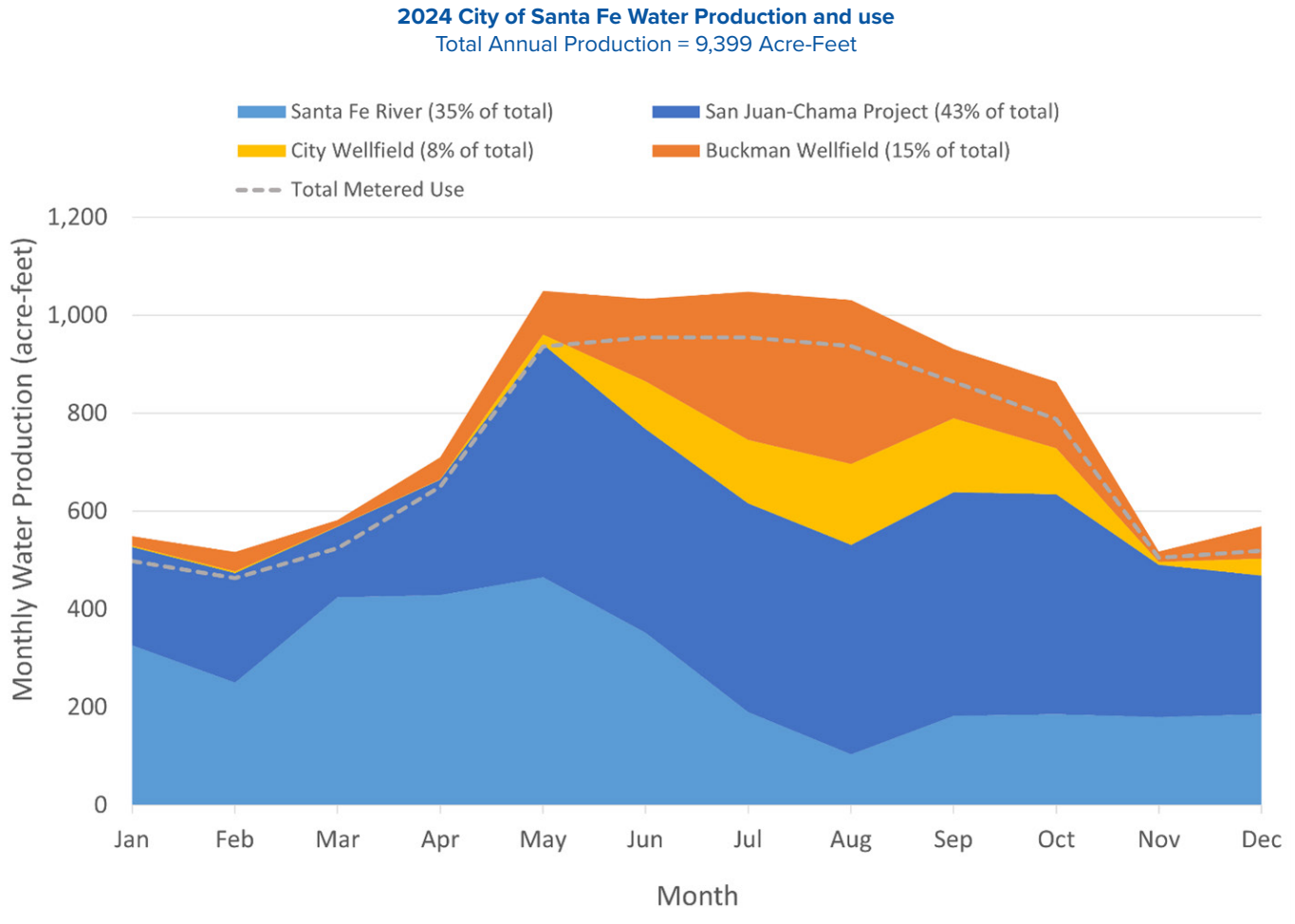
Overall, 2024 was slightly wetter than average. In 2024, the Santa Fe River watershed rain gage located in the upper watershed between Nichols and McClure Reservoirs received a cumulative of 15.7 inches of rain, which is just above the average annual rainfall of 15.1 inches measured at this location from 2007 through 2024. As shown in Figure 5, monthly rainfall totals were above the 18-year monthly average values for five months in 2024 (January, June, August, October, and November), while July and December were significantly drier than normal.



5 - Precipitation, 2024

Santa Fe's Water Demand and Four Potable Water Sources in 2024

In 2024, CoSFW produced 9,399 AF of potable water, which was approximately 4 percent less potable water than in 2023. In 2024, CoSFW met 78 percent of potable water demand using treated surface water. As a result, water production from wells was 2,081 AF, which was less than half of the 4,500 AF estimated sustainable availability from the well fields. Figure 6 shows monthly potable water production by source during 2024. The seasonality of water demand is evident with an increase in production from May to October due to outdoor water use. Each source is described in more detail in the following sections.

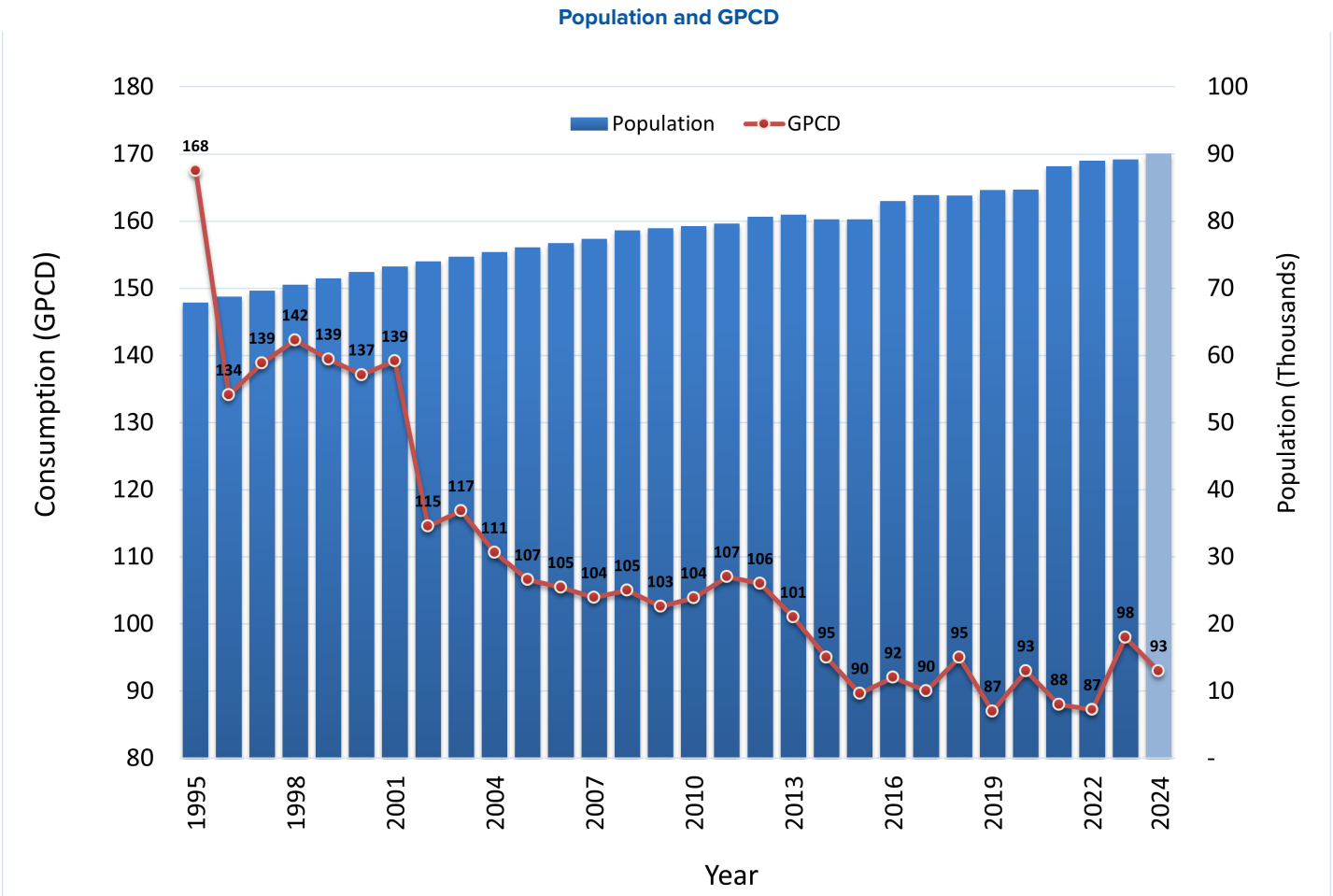


6 – Monthly Potable Water Production by Source and Use, 2024

Per Capita Consumption

One measure of water use efficiency is per capita (per person) water consumption, estimated as gallons per capita per day (GPCD). Per capita use is used internally to track the effectiveness of the water conservation program over time and is reported annually to the New Mexico Office of the State Engineer (OSE).

As shown by Figure 7, the CoSF has reduced our systemwide per capita use by nearly half since purchasing Sangre de Cristo Water Company from the Public Service Company of New Mexico (PNM) in 1995. The water conservation efforts of the community have made CoSFW more resilient in the face of drought and, in combination with the BDD supply coming online in 2011, has allowed for steady wellfield recovery over this timeframe. 2024 systemwide per capita use was estimated to be 93 GPCD, based on an estimated population of 90,050 for 2024, which is a 1 percent increase over the 2023 population of 89,157. The final 2024 GPCD will be reported in the 2025 Annual Report. Since the 2023 Annual Report was completed, the 2023 systemwide per capita use has been finalized at 98 GPCD. This was a 1 GPCD increase over the estimated value that was included in the 2023 Annual Report, with the revised calculation using the 2023 U.S. Census population estimate that became available in September 2024.



7 - Population and GPCD, 1995-2024 (2024 values are estimated)

Non-Potable Water Use

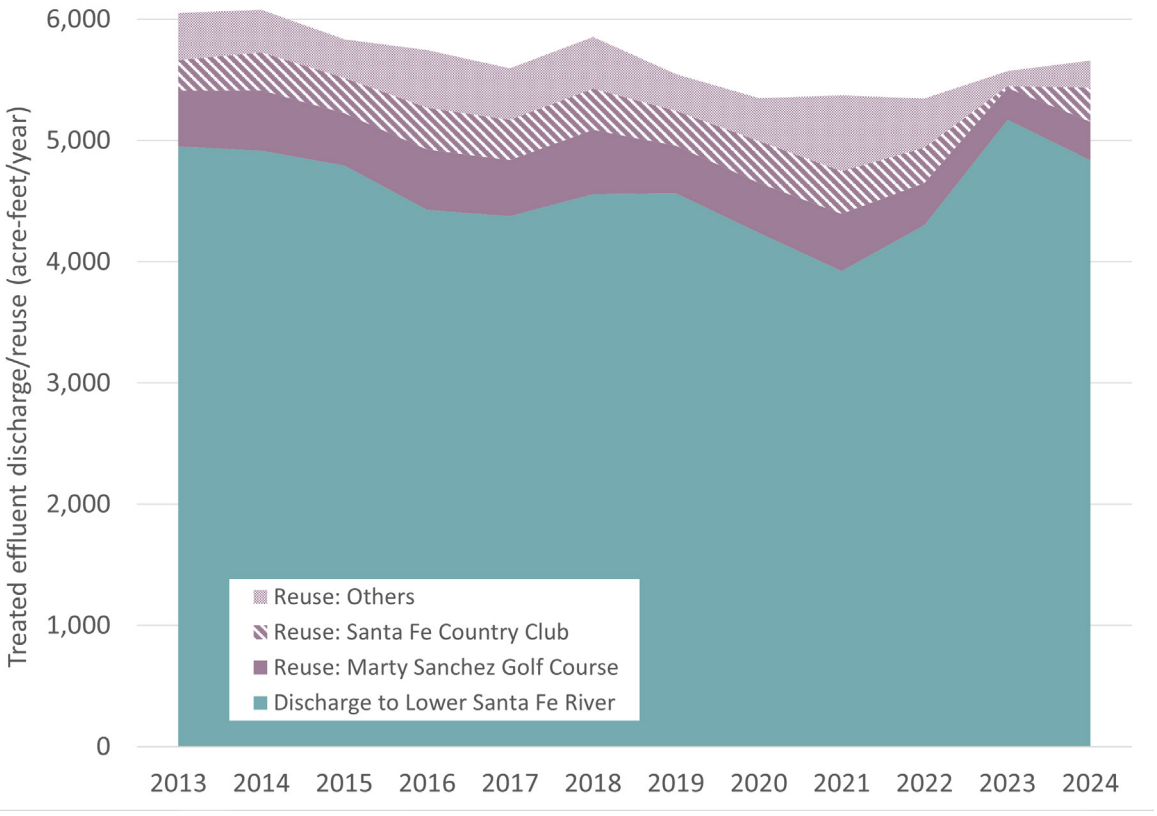
Water demands in Santa Fe are not met exclusively with potable (treated drinking) water. CoSFW manages Santa Fe River bypass flows past McClure and Nichols Reservoirs to serve the raw water needs of acequias and provide the river flow targets defined by the City's Santa Fe River Target Flow Ordinance for a 'Living River.' As mentioned above, in normal years of operation, reclaimed (treated) wastewater is used for a variety of non-potable re-use applications, mostly turf grass irrigation.

Paseo Real Water Reclamation Facility

The Paseo Real Water Reclamation Facility (PRWRF), located on Paseo Real near the Santa Fe Airport, is operated by the Wastewater Management Division of the Public Utilities Department and treats all the wastewater collected by the City of Santa Fe's sewer system. Unlike CoSFW's water treatment plants, which can rotate operations and shut down for occasional maintenance, the PRWRF has been operating continually for decades. Most of the treated wastewater 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 and Santa Fe Country Club golf courses, Municipal Recreation Complex (MRC), among others.

As in 2023, upgrades at the PRWRF are underway. In 2023, these facilities used approximately 145 million gallons (445 AF) of potable water for irrigation when PRWRF was unable to provide non-potable water to meet irrigation demands. In 2024, these facilities used approximately 15 million gallons (47 AF) of potable water for irrigation.

Figure 8 shows the volumes of treated effluent from the PRWRF that have been reused and/or discharged to the Santa Fe River since 2013. In 2023, reuse was less than in past years due to complications at PRWRF, as noted previously. Overall use of treated effluent for irrigation increased in 2024 as compared to 2023.



8 – Use of Treated Effluent, 2013-2024

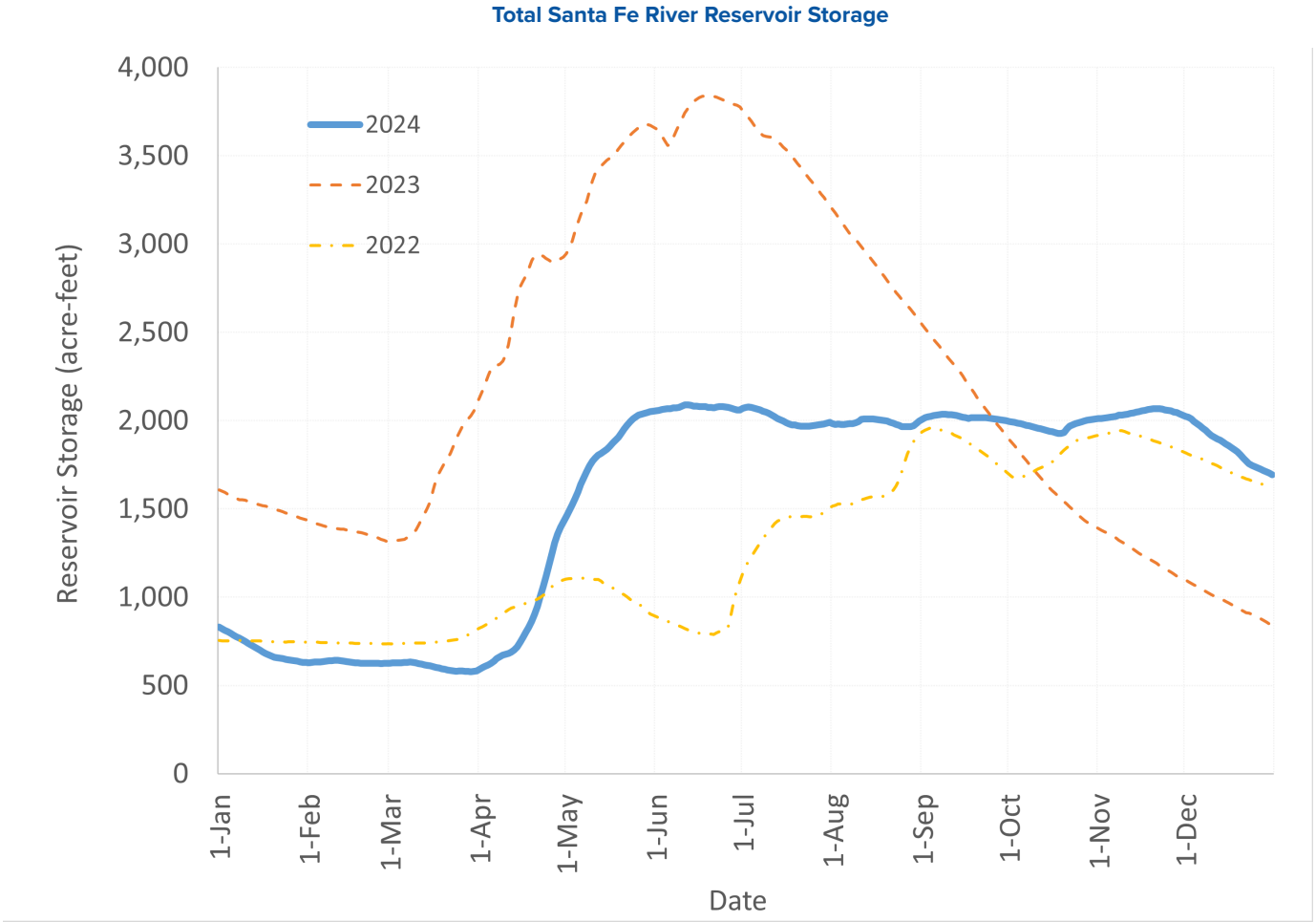
Santa Fe River

The Santa Fe River, whose flows are driven mostly by snowfall in the Sangre de Cristo Mountains east of town, has been used for drinking and irrigation water by Santa Fe residents since the town was founded. 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 water supply source. CoSFW is permitted to divert up to 5,040 acre-feet per 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.

In 2024, above average snow accumulation in the Santa Fe River watershed allowed for both McClure and Nichols reservoirs to be filled to target levels ahead of construction at Nichols Reservoir. Both reservoirs reached approximately 60 percent of total capacity by the start of summer. 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 2024

In 2024, Santa Fe River storage amounted to approximately one-half of the total from the wet winter of 2023. Even so, the 2024 storage totals were still above average compared to the past five years. The combination of above average snowpack totals and flashy April runoff resulted in 2024 storage nearly equaling the combined totals for 2021 and 2022. Figure 9 shows total reservoir storage for the last three years (2022-2024).



9 – Santa Fe Municipal Watershed Reservoir Storage, 2022-2024

The City began draining Nichols Reservoir in spring 2024, in advance of the Nichols Dam Outlet Works Rehabilitation project's construction that began in July. This project will address several dam safety issues, connect the reservoir to the CRWTP with a new, pressurized raw water pipeline, and improve operations related to the dam and reservoir. The reservoir level was drawn down to the low-level valve by June 2024. After July 1, the Nichols Reservoir outflow was matched to the flow volume required for CRWTP, acequia irrigation deliveries, and Santa Fe River target flows. At the end of July 2024, the City pumped the reservoir level down further and opened the stop log, draining the reservoir.

In August through mid-September 2024, there was a stream flowing through Nichols Reservoir, but no water was being stored. In mid-September, a coffer dam was installed to keep water from flowing into the construction area, and the City began pumping water around the reservoir for CRWTP, acequia irrigation deliveries, and Santa Fe River target flows. The flow volume being pumped around the reservoir was kept relatively consistent, with increased flows on Mondays to accommodate the Acequia Madre diversions. Progress on the Nichols Dam Outlet Works Rehabilitation Project to date includes demolishing the existing piping in the intake structure, installing a new 28-inch high-density polyethylene (HDPE) pipe within the original 60-inch concrete outlet conduit and grouting it in place, constructing new valve vaults for control valves at the CRWTP and Nichols Dam, and beginning to install the new filter drain system downstream of the dam. CoSFW estimates that the project will be completed in Fall 2025.

Total calendar year 2024 bypass flows (flows not diverted for CRWTP and provided to the Santa Fe River downstream of Nichols Reservoir for Santa Fe target flows, acequia irrigation deliveries, and to manage reservoir storage) were 1,206.4 AF. In 2024, 3,273 AF of water was diverted from the Santa Fe River, including 3,180 AF of native Santa Fe River water and 93 AF of SJCP water stored previously "by exchange" as described in Rio Grande Compact Operations section below. This water was treated by CRWTP for potable use, and CRWTP production made up 34.8 percent of total potable production in 2024. The SCJP storage volume was 578 AF at the end of 2024.

Santa Fe's Living River

In 2012, Resolution 2012-28 was adopted, which adopted Administrative Procedures for the Santa Fe River Target Flow Ordinance, Article 25-13 SFCC 1987. Target flows for a 'Living River' provide water to the riparian corridor, recharge certain CoSF wells, and provide aesthetic and recreational benefits along the Santa Fe River. The target hydrograph sets stream flow targets in cubic feet per second (cfs) and a schedule for increasing and decreasing flows. The total volume of the target hydrograph is 1,000 AFY, with the total volume being adjusted in dry and critical-dry years. In 2024, April 1st snowpack was above normal and the April 1, 2024 Natural Resources Conservation Service (NRCS) streamflow forecast for the Santa Fe River near Santa Fe SNOTEL station predicted over 100 percent of the 30-year median flows for the period of 1991-2020.

This set the target flow volume at 1,000 AF for April 15, 2024 to April 14, 2025, and the Santa Fe River target flow volume was met throughout 2024. The annual volume of target flow was distributed throughout the year based on the target hydrograph outlined in the Administrative Procedures for Santa Fe River Target Flows, adopted by Resolution No. 2012-28. The target hydrograph calls for a spring pulse followed by summer flows, a summer pulse, and low flows during the fall and winter season. In 2024, flow was increased to 1 cfs by the end of April, followed by a peak flow of 7 cfs by the end of May, then flow of 2.5-3.0 cfs for the first week of June through September 1st, 1 cfs for September 1st through September 15th, 0.6 cfs for September 16th-October 15th, and base target flows of 0.3 cfs for October 16th to the beginning of April 2025. Higher flows occurred in November and December 2024 due to reservoir releases for Rio Grande Compact Compliance.

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 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, predating the construction and operation of the municipal reservoirs and the CRWTP, which have changed the way downstream acequias function.

CoSFW system and acequia operations were a source of conflict for decades, resulting in a court ordered set of delivery requirements. The 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. The PDR is the water volume required at the head of the entire acequia system, while farm delivery is the sum of water required at each property boundary. The difference accounts for 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 located downstream of Acequia Muralla) is not taking water. The 2020 through 2024 acequia diversions are shown in Table 10. Due to the Nichols Reservoir drawdown, construction and the methods required for acequia irrigation deliveries in 2024, the 2024 acequia diversion volumes have been estimated, as discussed below.

Acequia	del Llano[1]	Cerro Gordo	Madre[2]	Muralla[3]
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
2024 Project Delivery (AF)	69.2 [a]	11.4 [a]	39.7 [a]	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

a = Estimated volume (see notes in text).

10 – Upper Santa Fe River Annual Acequia Diversions, 2020-2024

[2]Farm delivery requirement estimate is based on 17.2 acres in a 1977 Hydrographic Survey multiplied by 2.7 feet.

[3]The Acequia Madre diverts Santa Fe River water near the corner of Alameda and Canyon Road, and the acequia effectively ends above Railyard Park. Most of the water associated with the PDR belongs to a farm located near Agua Fria Village that can no longer be practicably served by water diverted near Alameda and Canyon Road.

[4]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.

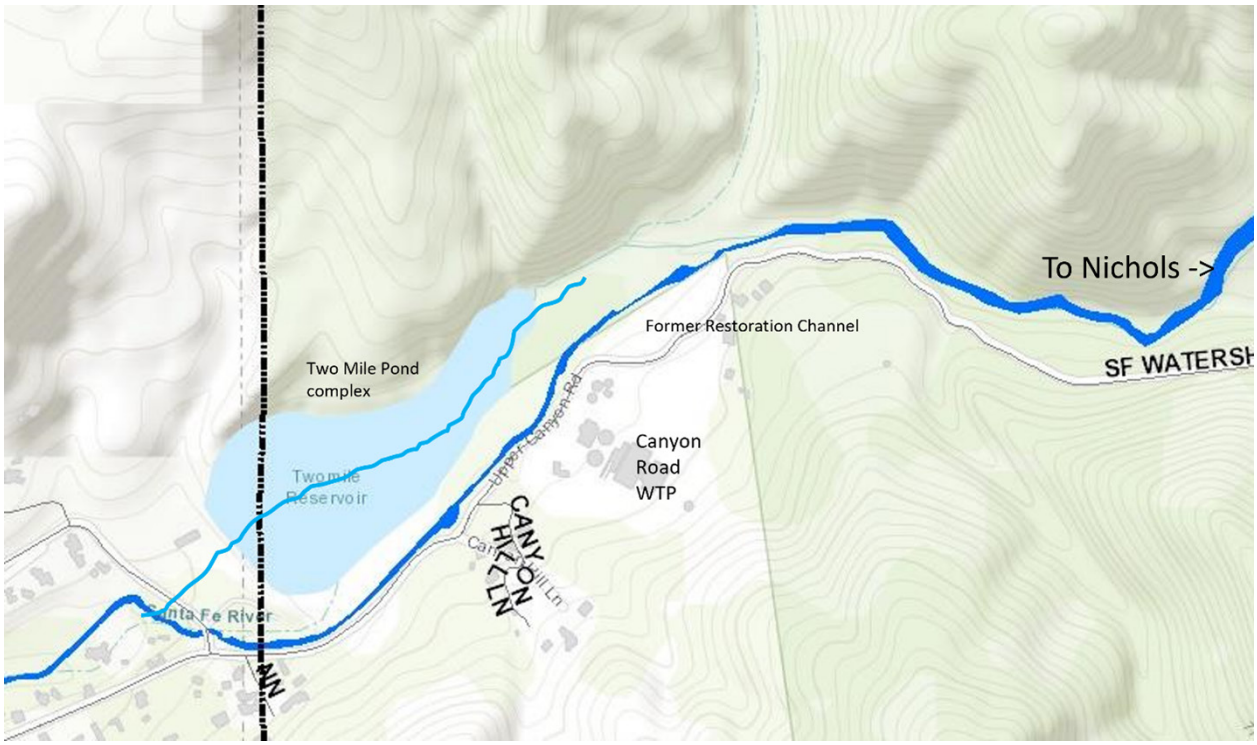
The Acequia del Llano irrigates between April 15 and October 30 each year, unless the irrigation season is truncated due to frozen river conditions. With Nichols Reservoir having been drained in 2024, the Acequia del Llano deliveries had to be pumped to the acequia's diversion. The City installed a meter to measure the 2024 Acequia del Llano diversions, but it clogged and its use was discontinued. The City estimated the Acequia del Llano diversion volume using available meter readings for the acequia diversions and then based on flow and run time estimates. During this period, the Acequia del Llano irrigated 24 hours per day for 5 days per week.

The Acequia Cerro Gordo irrigates between May 1 and October 30 each year. The OSE installed a gage to measure the Acequia Cerro Gordo diversions; however, this gage measures flow before a bypass returns water to the river, so the OSE's gage measurements do not reflect the acequia's diversion volumes. The City estimated the 2024 Acequia Cerro Gordo diversion volume using a flow rate of 0.19 cfs for 10 hours per day on three days per week in May through July, and 0.24 cfs for 10 hours per day on two days per week in August through October. Flow rates and irrigation days were obtained from the acequia's irrigation schedule, which was submitted to the OSE.

The Acequia Madre irrigation season starts at the end of April or early May each year, after the annual ditch cleaning. The City estimated the 2024 Acequia Madre diversion volume, assuming that a minimum of 2 cfs was diverted for 10 hours per day on Mondays (the day they were scheduled to irrigate) from May 6 to October 14.

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 into a newly developed "Restoration Channel," facilitating its flow through Two-Mile Pond (Figure 11).



11 – Santa Fe River and Two-Mile Pond Complex

Local residents near Two-Mile Pond have advocated diverting the maximum amount of water from the Santa Fe River into the Restoration Channel and through the Two-Mile Pond complex (Figure 11). Conversely, the Acequia Madre, which diverts water downstream, and representatives of the Santa Fe River Commission, aiming to ensure Santa Fe River flow reaches as far downstream as possible, expressed concerns regarding these diversions. In 2018, the OSE 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 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 concern, 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, a hydrologic and biologic monitoring of the area was initiated, and the data collected 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.

In 2024, Two-Mile Pond Complex riparian area monitoring activities included monthly moisture and vegetation index imagery to assess changes in water stress and riparian area canopy health; monthly riparian area monitoring for biotic and abiotic metrics, soil moisture, and water quality; and continuous streamflow monitoring at 5 locations. The primary water source for the Two-Mile Pond system is shallow groundwater that discharges from the base of Old Stone Dam, which originates as snowmelt and precipitation that infiltrates into the alluvium upgradient. In 2024, the average flow from the base of Old Stone Dam was 0.3 cfs (135 gpm), which was enough flow to offset evapotranspiration from the riparian system and keep the pond full (to the current standpipe setting). Approximately 259 acre-feet of water flowed through the system in 2024 and of this, about 31 AF was lost to evapotranspiration and 228 AF was discharged to the Santa Fe River downstream of Two-Mile Pond. Loses from the Santa Fe River channel adjacent to the Two-Mile Pond system are minimal and Two-Mile Pond did not change size in 2024, although drought conditions caused a significant reduction in soil moisture along the outer fringes of the riparian area starting in September. The Two-Mile Pond Complex riparian area is in excellent condition with intact functions and processes, diverse vegetative communities with almost no exotic weeds, a relatively large size, and natural buffers. The riparian system is largely undisturbed and provides excellent habitat for native flora and fauna.

Planned Dam Rehab

McClure Dam (originally known as Granite Point Dam) was completed in 1926, and Nichols Dam (originally known as Four Mile Dam) was completed in 1943. Aging inlet works (the 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 these updates, 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 OSE Dam Safety Bureau downgraded the status of both dams from "Satisfactory" to "Poor." A contract was awarded in 2023 to address major renovations to both dams.

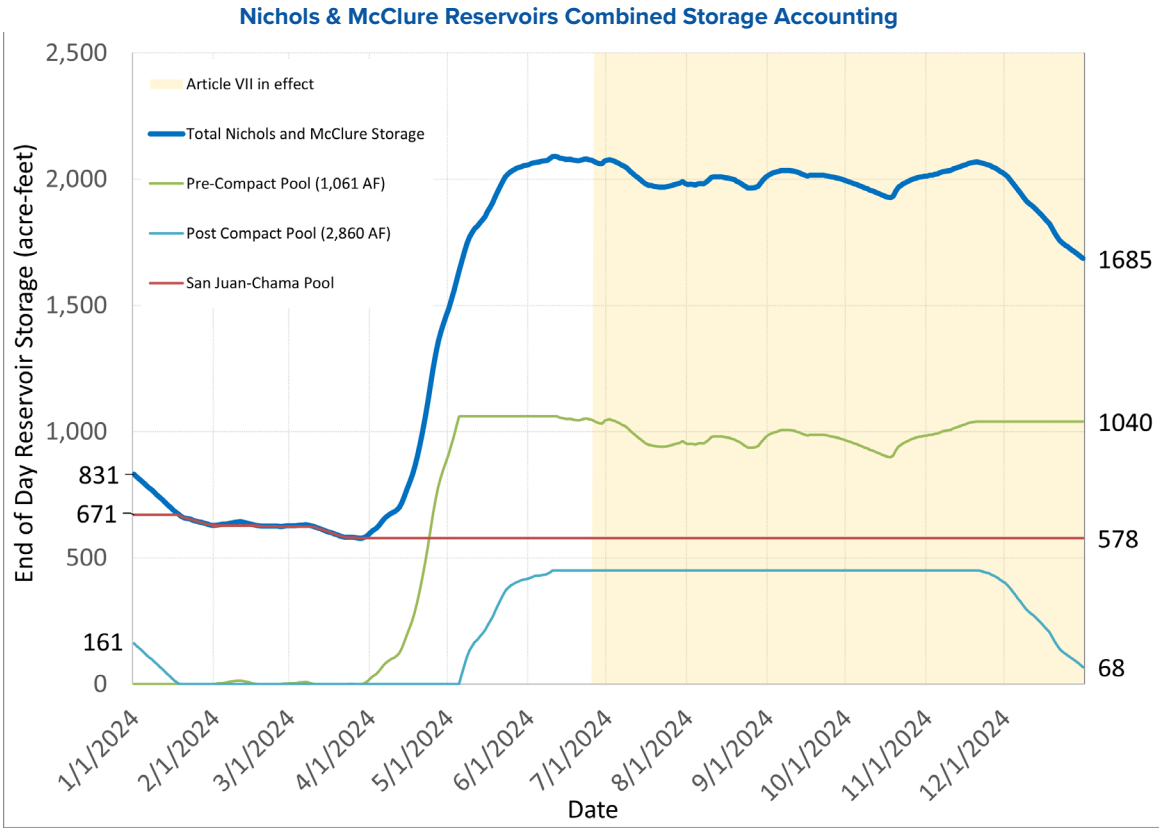
The Nichols Dam Outlet Works Rehabilitation project construction began in 2024 and is projected to cost approximately $19 million. As discussed in the Santa Fe River Operations 2024 section above, CoSFW began draining Nichols Reservoir in spring 2024, in advance of the outlet conduit rehabilitation project's construction that began in July. The project's construction has gone as planned, and CoSFW estimates that the project will be completed in Fall 2025. The McClure Dam Outlet Works Rehabilitation project design will begin in fiscal year 2025, and construction is anticipated to begin in fiscal year 2028. CoSFW anticipates spending between $38 and $43 million on combined infrastructure upgrades for both dams. Water operations at CRWTP will 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 Rio Grande basin after 1929. Because the Santa Fe River is a tributary to the Rio Grande, and because Nichols Reservoir was built in 1942 and McClure Reservoir was expanded 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 SJCP water) in post-1929 reservoir space when water storage at Elephant Butte and Caballo Reservoirs is below a certain threshold.

There are two ways that CoSFW can store water in Nichols and McClure's post-Compact pools during Article VII. First, because CoSFW stores SJCP water from the Colorado River in reservoirs along the Rio Chama, which is a tributary to the Rio Grande, Article VII Compact compliance can be maintained by storing SJCP water "by exchange" in the Santa Fe River reservoirs, while simultaneously releasing SJCP water into the Rio Chama where it becomes native. This leaves the Rio Grande "whole" from a Compact perspective, while allowing the CoSFW to 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 Rio 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 Reservoir, it has by mutual agreement with Texas released some of that credit for use downstream of Elephant Butte Reservoir in exchange for an equal number of "relinquishment credits" that can be used by New Mexico for storage of water in post-1929 reservoirs during Article VII.

In 2024, Article VII was in effect starting June 26 and through the end of 2024. During spring snowmelt runoff, the pre-compact pool was filled to 1,061 AF, and an additional 451 AF was stored in the post-compact pool. The 451 AF that was stored in the post-compact pool was released to the Santa Fe River starting in November 2024, as requested by the State of New Mexico in accordance with Article VI of the Compact. Release rates were limited due to construction at Nichols Reservoir, so 383 AF of the 451 AF was released by the end of 2024, and the remaining 68 AF was released in January 2025. Figure 12 shows the Nichols and McClure Reservoirs combined storage accounting for 2024.



12 - 2024 Reservoir Storage Accounting

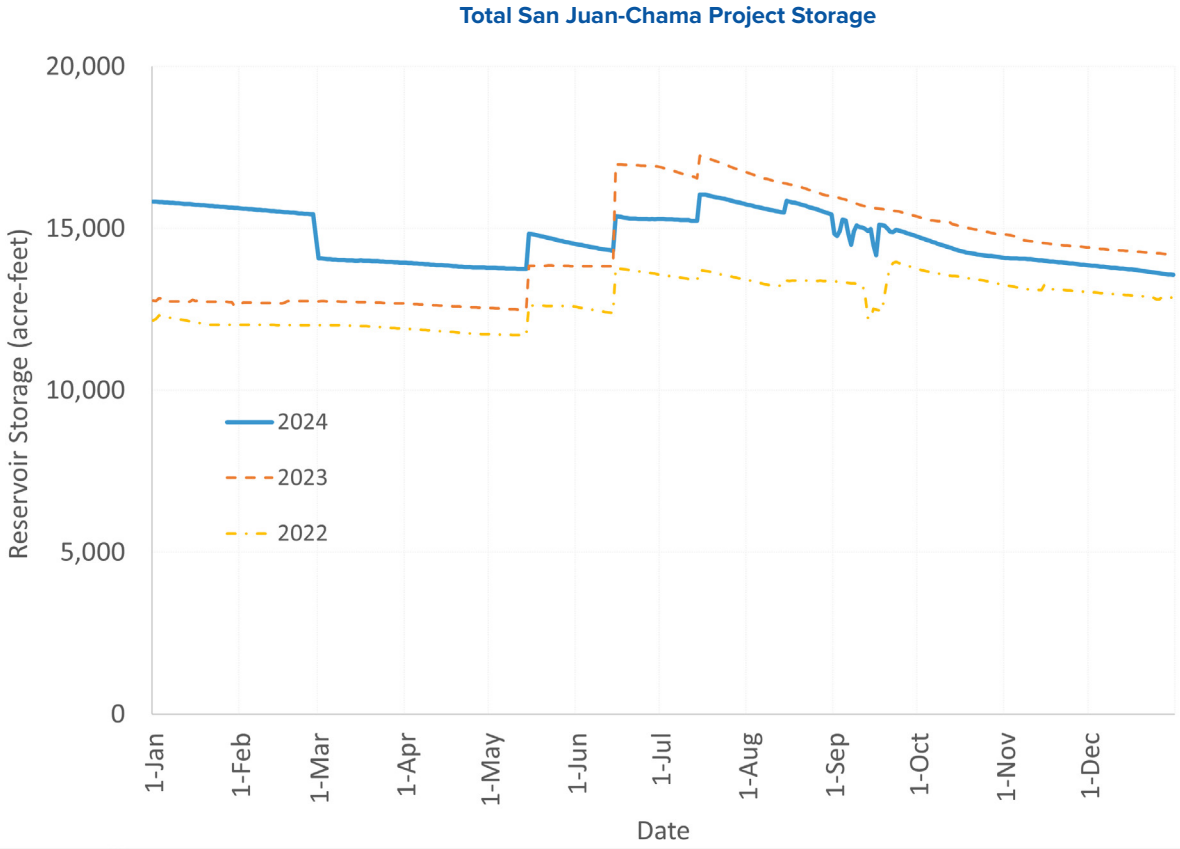
San Juan–Chama Project Water

The San Juan River watershed is located in southwestern Colorado, northwestern New Mexico, southeastern Utah, and northeastern Arizona and is part of the larger Colorado River watershed. The SJCP is a U.S. Bureau of Reclamation (Reclamation) project that diverts water from the San Juan River watershed in southwestern Colorado and delivers it to 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 water is stored in El Vado Reservoir at times to help with water operations on the Rio Chama. The CoSFW releases stored SJCP water from Abiquiu 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 Reservoir to BDD.

Calendar year	CoSFW SJCP allocation (AF)	Percent of full allocation (percent)
2015	4,855	93
2016	5,029	96
2017	5,230	100
2018	4,676	89
2019	5,230	100
2020	4,240	81
2021	3,425	65
2022	3,371	64
2023	5,230	100
2024	5,230	100
Average	4,652	89

13 – City of Santa Fe Annual SJCP Allocations, 2015 - 2024

The CoSFW's maximum SJCP allocation is 5,230 AFY, dependent on water availability in the San Juan River watershed. The size of CoSFW's SJC allocation was based on historical hydrology at the time of design and construction (1960s) of the SJCP, and was considered "firm" meaning hydrologists expected that the project would yield that amount of water to contractors in any and all years based on the size of diversions, tunnels, and reservoirs. 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 SJCP history, contractors did not receive their full allocation. In the past 10 years (2015-2024) contractors have only received full allocations four times, and have been shorted by an average of 19 percent in the other 6 years (Table 13). This is consistent with 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 percent by the end of the 21st century.



14 –Storage of CoSFW SJCP Water in the Chama Watershed, 2022-2024

The CoSFW's SJCP storage water in Heron, El Vado, and Abiquiu Reservoirs from 2022 through 2024 is shown in Figure 14. At the start of 2024, CoSFW had 14,192 AF of SJCP water in storage in the Rio Chama system and storage decreased to 13,550 AF by the end of the year, despite the annual allocation of 5,230 AF exceeding the BDD diversion of 3,662 AF. This was in large part because CoSFW was required to transfer 1,332 AF of water to the Albuquerque Bernalillo County Water Utility Authority (Water Authority) in accordance with a City-Water Authority agreement for CoSFW use of Water Authority storage space in Abiquiu Reservoir, which covered storage fees for years 2019-2023. CoSFW no longer has water stored in the Water Authority's storage space, and does not anticipate additional storage fees for at least the next several years.

Colorado River

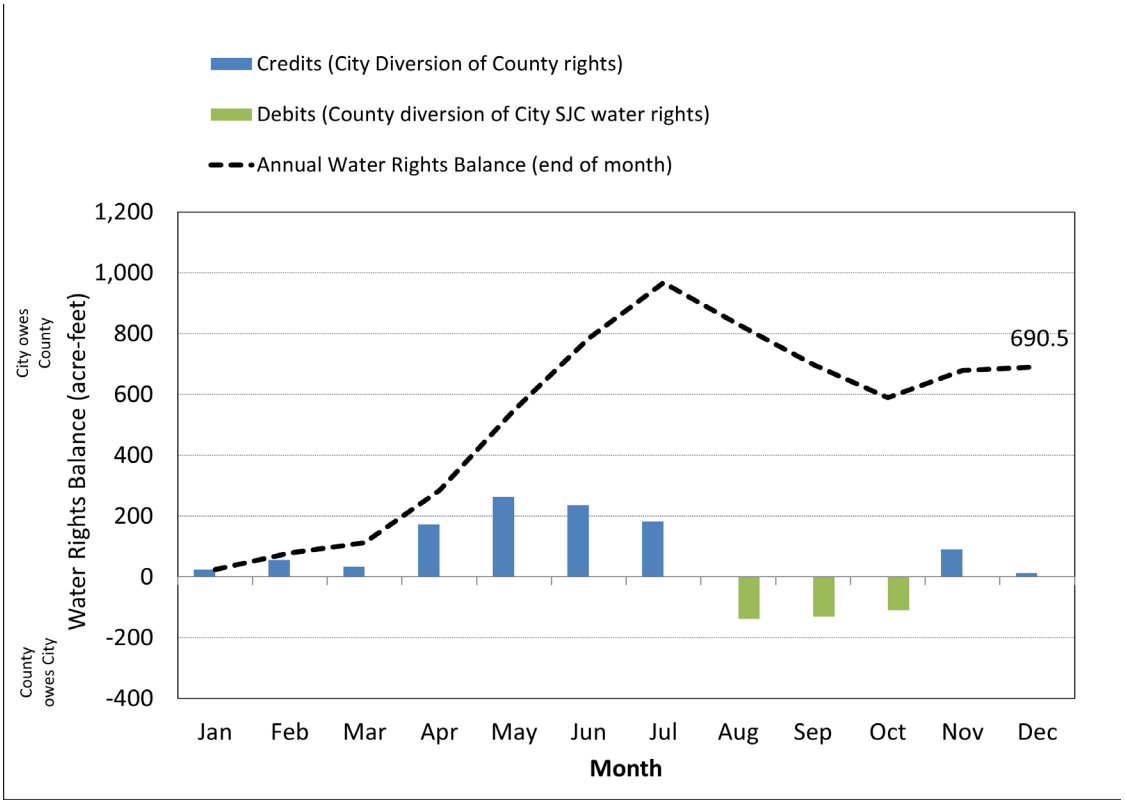
As the CoSFW relies on imported Colorado River water obtained via the SJCP, we are a signatory to a memorandum of understanding (MOU) that was established and signed by and among Colorado River municipal and public water providers in November 2022 in response to the current drought (Colorado River Basin MOU, 2022). The MOU cites the success of direct and indirect water conservation programs over the last 20 years but highlights the need for additional water conservation considering climate change and the hydrological shifts that are expected to result (Colorado River Basin MOU, 2022). Specific actions that the signatories committed to by signing the MOU include continuing and expanding existing indoor and outdoor water use efficiency programs and introducing programs to reduce the quantity of non-functional turf grass by 30 percent through replacement with drought- and climate-resilient landscaping, while maintaining vital urban landscapes and tree canopies (Colorado River Basin MOU, 2022).

Buckman Direct Diversion

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, Santa Fe County Water Utility (County), 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 supply, having provided half of the City's water since coming online in 2011. In 2024, 4,045 AF of potable water deliveries from the BDD Water Treatment Plant (BDDWTP) made up less than half (43.0 percent) of total potable water production for City use.

BDD Shared Pool

CoSFW 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 allow the City and County to share water rights through the year depending on which water source is more available. It was previously noted that in 2024, 3,662 AF of CoSFW SJCP water was diverted at BDD, while BDD accounted for 4,045 AF of City use. The difference in these values is primarily due to 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 Rio Grande 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 is not available for diversion at BDD. In 2024, the County built up 690.5 AF of credit during the year because of OAWR. Considering the carryover from 2023 of 1,100 AF and other shared pool provisions (non-discretionary shutdown, evaporation loss, and maximum carryover), 1,100 AF of credit was available in the Shared Pool to start 2025. Figure 15 presents the BDD annual water rights balance monthly for 2024, and Table 16 provides the draft Shared Pool accounting for 2024.



15 – BDD Annual Water Rights Balance, 2024

DRAFT 2024 Shared Pool Accounting	AF
1. "Annual Water Rights" Ending Balance	690.5
2. Section 2.a Deposit to Shared Pool (#1 minus 10% UAW)	621.4
3. Section 3.a Withdrawals, discretionary shutdown	0.0
4. 'Section 3.b Withdrawals, non-discretionary shutdown*	-16.1
5. Net Available for deposit (+) or withdrawal (-) (#2 + #3 + #4)	605.4
6. Carryover from 2023	1,100.0
7. County water credit balance, December 31 (#5 + #6))	1,705.4
8. Section 4 evaporative losses (#7 * -10%)	-170.5
9. Carryover to 2025 (lesser of 1,100 and #7 + #8)	1,100.0

*3 days of non-discretionary shutdown in June. Volume estimated as monthly total * 1.1 withdrawal ratio for non-discretionary shutdowns

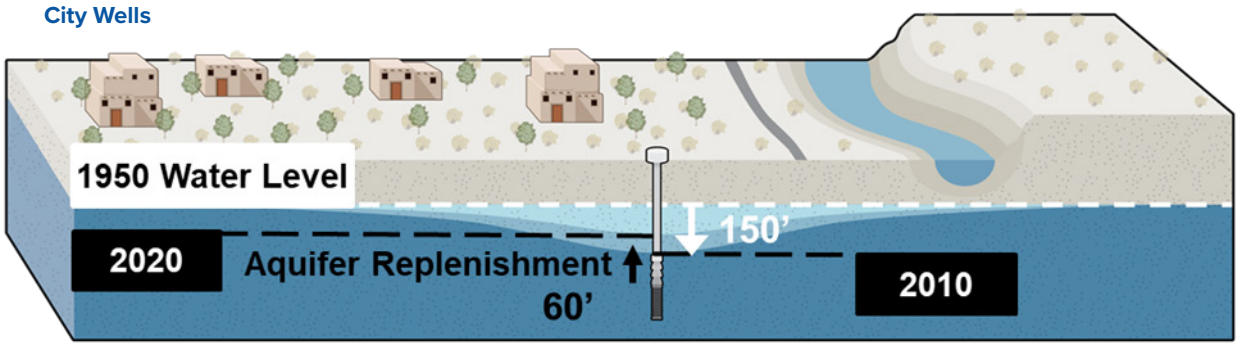
16 – Accounting of City-County Shared Water Resource Use at BDD, 2024 Draft

Updated BDD/Systemwide Accounting

The City is working to develop a dashboard for BDD accounting, which will automate the water rights and reporting to the OSE, as well as internal BDD accounting of water use and water rights. The internal accounting specifies which water rights were used by each of the BDD partners, and includes the optimized annual water rights accounting discussed above. The accounting requires data from multiple sources (BDD, Reclamation, and Beacon meters measuring flow to the County), and is time-consuming for City, County, and BDD staff alike. Automating the accounting will minimize staff time spent on updating the accounting and reduce the likelihood of accounting errors. It will also facilitate water resources and water rights management by making current data more easily accessible to staff.

City Wellfield

The City Wellfield (CWF) currently consists of seven production wells located within the City Limits, mostly along the Santa Fe River between St. Francis Drive and Frenchy's Field. These wells pump water from the aquifer beneath Santa Fe. As noted previously (Table 4), from a water rights perspective, the CoSFW can legally pump up to 4,865 AFY from the CWF 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 located within 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 groundwater or surface water. In 2017, CoSFW completed an analysis of CWF, including a list 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, located on the corner of Alameda and Camino Alire was rehabilitated in 2020. Replacement of the St. Mike's well is currently under consideration as the next planned improvement for the CWF.



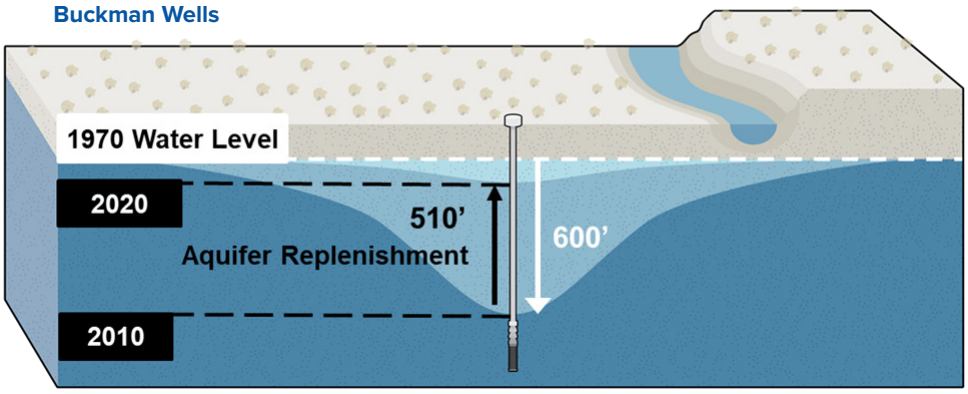
17 – City Wellfield Drawdown 1950-2010 and Recovery 2010-2020

In 2024, CoSFW produced 708 AF from the CWF, or approximately 75 percent of the 937 AFY average CWF production since BDD came online in 2011, and 35 percent of the 2,000 AFY that CoSFW estimates could be pumped from the CWF plus St. Mike's well every year without impacting the long-term productivity of the wells. As a result, CoSFW expects a continued trend, since 2010, of rising water levels in the CWF. Since 2010, water levels have risen by an average of about 60 feet, recovering about 40 percent of historical drawdown in the wellfield (Figure 17).

Buckman Wellfield

The Buckman Wellfield (BWF) consists of 13 wells located near the Rio Grande at the historic Buckman townsite. These wells 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 located closest to the Rio Grande.

In 2024, CoSFW produced 1,373 AF from the BWF, or approximately 35 percent more than the 1,008 AFY average BWF production since BDD came online in 2011, and 55 percent of the 2,500 AFY that CoSFW estimates could be pumped from the BWF every year without impacting the long-term productivity of the wells. As a result, the CoSFW expects a continued trend of rising water levels in the BWF, where average water levels have risen by 510 feet since 2010, recovering about 85 percent of historical drawdown in the wellfield (Figure 18). 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.



18 – Buckman Wellfield Drawdown 1950-2010 and Recovery 2010-2020

Aquifer Testing

In 2024, CoSFW installed permanent transducers in all lower Buckman Wellfield wells (wells 1-9) to monitor water levels. The data that is collected comes into the CoSFW dashboard automatically and staff can evaluate the information in near real-time. These data provide important information about well condition and water level trends in the aquifer, and they inform our aquifer testing targets and plans. In winter 2024-2025, CoSFW performed controlled tests at four of the lower Buckman wells, which entailed pumping for one to two weeks, followed by several weeks of recovery. Water level response was measured in all production wells and several dedicated monitoring wells, up to about two miles away from the pumping wells. Data collected 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 because 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 water rights permit requires that CoSFW offset BWF pumping impacts on the Rio Grande and its 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 the 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 19 shows the distribution of offsets for 2023. Calculations for 2024 were not available in time for inclusion in this report and will be included in the 2025 Annual Report.

Basin	2023* offsets to nearest AF	2025 CoSFW water rights available to nearest AF
Rio Nambe – Pojoaque	60	106
Rio Tesuque	33	65
Rio Grande above Otowi Gage	103	0**
Rio Grande below Otowi Gage (pre-1907 Rio Grande)	738	1,457***
La Cienega & Santa Fe River	4	4
Total	938	1,632

* 2024 Offsets had not been calculated and released by the OSE at the time of this report.
** SJCP water releases are used to offset pumping impacts to the Rio Grande above Otowi Gage.
*** 755 AF of City owned water rights designated to existing developments, 59 AF of City owned water rights allocated to existing affordable housing, 133 AF of water rights designated for future affordable housing, 78 AF of City owned water rights undesignated, 431 AF of water rights owned by others but undesignated, and 372 AF of SF County owned water rights undesignated (which are not included on the above table and are not tracked in the Water Bank). SJCP water could also be used for BWF pumping offsets.

19 – 2023 Surface Water Rights Available for BWF Pumping Offsets

Developments in Santa Fe are required to 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.

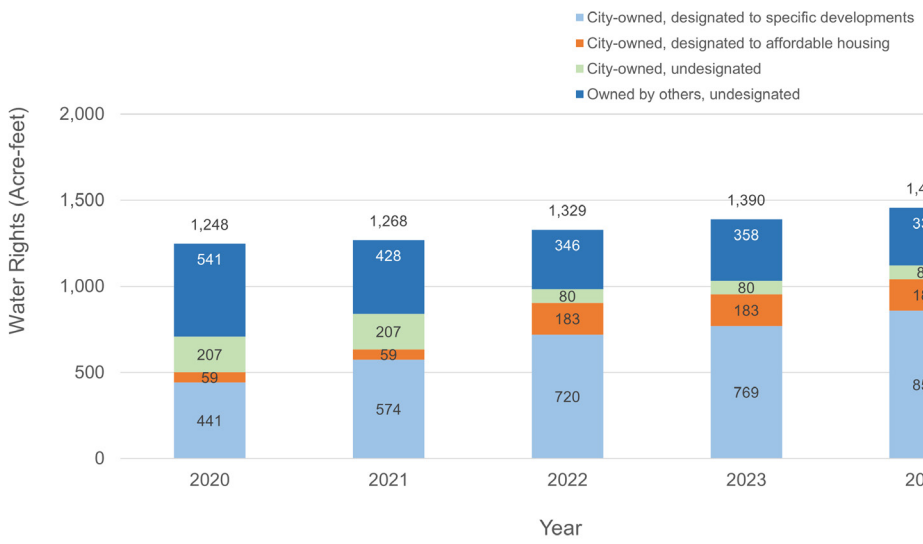
Water Bank

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 was established to ensure that new water demands are offset by (1) purchasing or leasing water rights transferred from the Rio Grande, (2) water credits resulting from potable water conservation, or 3) water credits resulting from return flow infrastructure. 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 BWF water rights permit (as explained in the Surface Water Offsets for Buckman Wellfield section). The number and volume of water right transfers to the City from developers has been increasing, for example, a total of 31 AFY in water rights were transferred in 2020 compared to 89 AFY in 2024 (Table 21). “Smaller developments” with demand requirements below the previously mentioned thresholds can transfer water rights as above, exchange toilet retrofit credits, or pay a water offset fee. Toilet retrofit credits were issued during a 2003-2009 initiative to replace older, high-flow toilets with more efficient, low-flow toilets. Toilet retrofit credits were for 0.025 acre-foot per toilet, or 40 toilet retrofits per acre-foot of water. No new toilet retrofit credits have been issued since 2009.

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 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. Balances and transfers in the Water Bank have been tracked since its inception and Figure 20 shows these balances from 2020 through 2024. The methods for adding water rights to the Water Bank each year from 2009 through 2024 are shown on Table 21 below (volumes for 2009-2018 are presented as sums for the 5-year periods of 2009-2013 and 2014-2018).

Water Rights in the Water Bank at End of Calendar Year



20 – Water Rights in Water Bank, 2019-2024

Water Demand Offset Methods (AFY)

Year	2009-2013	2014-2018	2019	2020	2021	2022	2023	2024	Total	Proporation (%)
Development offset with water rights	82	99	21	31	133	143	49	89	647	51
Development offset with toilet retrofit credits	3	32	8	2	7	12	3	1	67	5
Affordable housing development	21	29	8	26	35	21	20	26	186	14
Development offset with fees	50	95	35	14	54	59	43	31	381	30
Total	**156**	**255**	**72**	**73**	**229**	**235**	**115**	**147**	**1,281**	**100**

21 –Water Demand Offset Methods, 2009-2024

Water conservation credits are generated by conserving water across the City. These credits are deposited in the Water Bank and may be used to offset smaller development projects. In 2024, all the standard water conservation credits that were credited to the Water Bank were generated by the Water Conservation Office rebate program. Two (2) AF of water conservation credits were generated in 2024, bringing the total water conservation credit volume since Water Bank inception to 98 AF (Table 22). In 2024, Resolution 2024-10 was adopted, transferring 500 AF of water credits from the City's surplus sustainable water supply (water conserved since the Water Bank's inception in 2010) to the Water Bank to offset future water demand associated with affordable housing, small development projects, City projects, or other projects in the interest of the City's priorities (Table 22). This transfer was made to fill the gap between the water conservation credits available in the Water Bank and the affordable housing and small development project demand for these credits.

Water Conservation Credits Deposited in the Water Bank (AFY)

Year	2009-2013	2014-2018	2019	2020	2021	2022	2023	2024	Total
Standard Conservation credits	54	27	4	2	3	2	4	2	98
Conservation credits allocated by Governing Body	0	0	0	0	0	0	0	500	500

22 – Conservation Credit Accounting, 2009-2024

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 U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the concentrations of certain contaminants in water provided by public drinking systems.

In 2024, the City's drinking water met all U.S. EPA and State water quality standards. Water quality information from each of our sources of water is reported in detail in the Annual Water Quality Reports, available online at https://santafenm.gov/public-utilities/water/water-resources-1/water-quality-keeping-our-water-safe. The 2024 Annual Water Quality Report will be completed in spring 2025 and will then be posted to this site. Some of the contaminants measured annually include arsenic, barium, nitrate, radium, uranium, lead, and copper. The CoSFW tests regularly throughout the system to ensure sufficient chlorine levels are in the water to prevent biological growth.

Lead and Copper Rule Revision

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 issued the Lead and Copper Rule Revision (LCRR) to require 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 was October 2024.

In response to the LCRR, CoSFW developed the Lead Safe Santa Fe Initiative program to protect consumers against potential lead exposure from 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 LCRR. Information about this program and the completed lead and copper service line inventory are 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 the water system, and lead can enter the water system from lead pipes of private service lines or lead plumbing fixtures within a home. Customer participation in our Lead Safe Water Testing program will help us eliminate any service line material uncertainties.

Santa Fe County Water Deliveries

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 (WRA) and its subsequent revision in the 2016 Amended and Restated WRA. The terms of the WRA specify the conditions under which CoSFW provides water to the County at times when BDD cannot meet demand. The WRA also specifies that CoSFW can charge the 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 2024.

At the BDD, CoSFW diverts SJCP water from the Rio Grande while the County generally diverts native Rio Grande rights. As explained previously, 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 to avoid the terms of the WRA. As discussed previously, in 2024, the County used 16.1 AF of shared pool water during shutdowns of the BDD associated with muddy Rio Grande water (Table 16). In 2024, because 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 (Table 23) and uses different technical tools to assist in each type of planning.

Planning for low probability, high consequence events that could disrupt the system for weeks to months is performed by developing worst-case catastrophic supply disruption scenarios. To plan for year-to-year variability and help guide seasonal drought management policy, a tool called the Santa Fe WRI was developed in 2021 and has been piloted since 2022. The CoSFW has a water conservation and drought management plan, which is updated every 10 years. This plan will be updated in 2026. Long-range water supply planning for an 80-year planning horizon (to year 2100) is underway, utilizing a computer model known as STEWaRDS. These 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	Catastrophic Supply Disruption evaluated with hydraulic (pipe network) model
1 Year	Santa Fe Water Resources Indicator
Decadal	Santa Fe Water Conservation and Drought Management Planning
Decades	STEWaRDS long-range water resources planning model

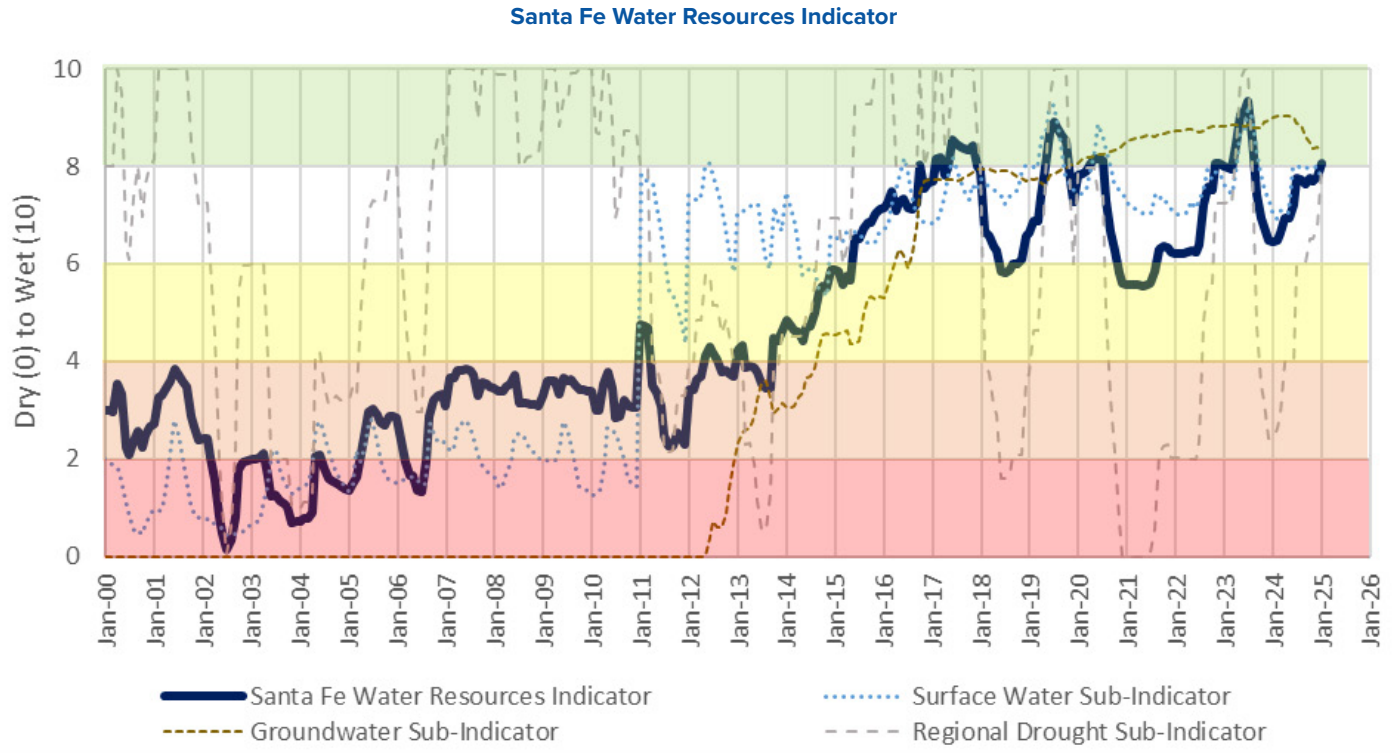
23 – Types of Water Resources Planning

Catastrophic Supply Disruption

In mid-2022, a catastrophic supply disruption analysis was initiated to better understand and mitigate potential 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 customers. Efforts to compile the analysis into emergency action plans to assist operators in responding to short-term supply disruptions began in 2023 and are ongoing.

Drought Planning – Water Resources Indicator

The Santa Fe WRI is a quantitative tool used to summarize water availability to the City and County water systems and a way to inform seasonal drought management policy. The WRI is a transparent, data driven representation of seasonal water resources availability and regional drought conditions in Santa Fe. The WRI score is recalculated each spring to define any water use restrictions City and County customers can expect during the remainder of the year.



24 – Santa Fe Water Resources Indicator Values, 2000-2024

The WRI uses a weighted calculation to rate seasonal drought on a scale of zero (dry) to ten (wet). This calculation takes into account the volume of groundwater pumping over the previous 10 years for the City wellfield and previous 3 years for the Buckman Wellfield (40 percent weight), volume of surface water in storage (30 percent weight), and regional drought conditions (30 percent weight). The regional drought indicator is based on the weekly drought score for Santa Fe County in the U.S. Drought Monitor (a USDA-NOAA product). Drought management responses as a function of WRI score are being developed as part of the 2026 water conservation plan update. The April 1, 2024 WRI score was 6.80. Figure 24 shows historical WRI values for 2000 through 2024.

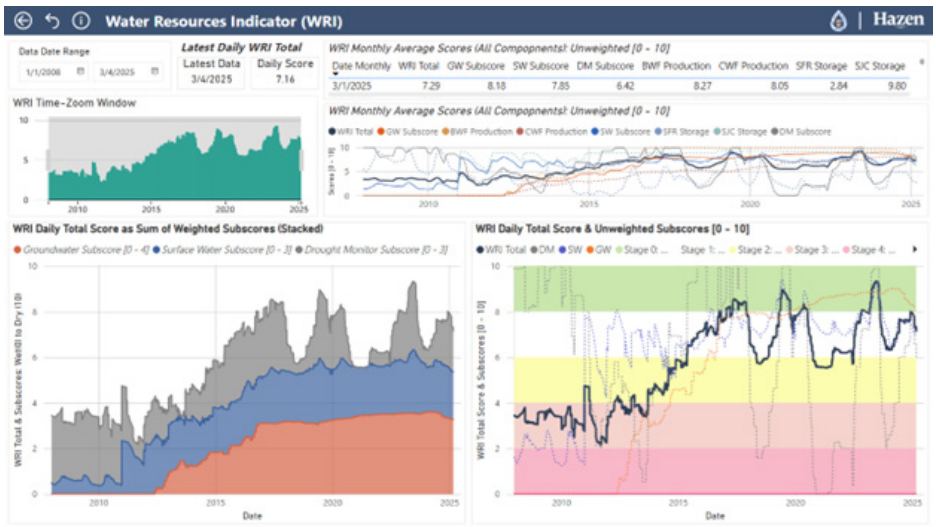
WRI Dashboard

Within the broader push to enhance data modeling and analysis, CoSFW has created a dynamically responsive visualization page for the WRI. This is one of CoSFW's dashboard pages, developed by Water Division staff for assistance with real-time comprehensive data analysis and efficient decision making.

The WRI Dashboard contributes to drought planning in the following ways:

1. All constituent data feeding into WRI calculations are automatically updated on a weekly basis. This keeps WRI scores current and readily available for real-time assessment when seasonal decision-making is required.
2. Source data validation and the resultant WRI score quality assurance and quality control (QA/QC) is built into the data automation process. This means that when seasonal decision making is required, the process of updating information and assuring its quality does not have to go through a lengthy, disorganized, or redundant sequence of manual steps. Instead, QA/QC is built into the rules forming the data flow and calculations, ensuring consistent and reliable results in a more timely and efficient manner.

The WRI Dashboard displays the Total WRI Score along with sub-scores representing the measure's three primary components: groundwater, surface water, and the drought monitor. Implications for drought stage conditions and scores for more granular components representing surface water storage and groundwater production are also displayed on the page. Historical and current WRI Dashboard values are displayed according to the latest available data and at both monthly and daily timesteps. Figure 25 shows the WRI Dashboard visual interface.



25 – WRI Dashboard Visual Interface

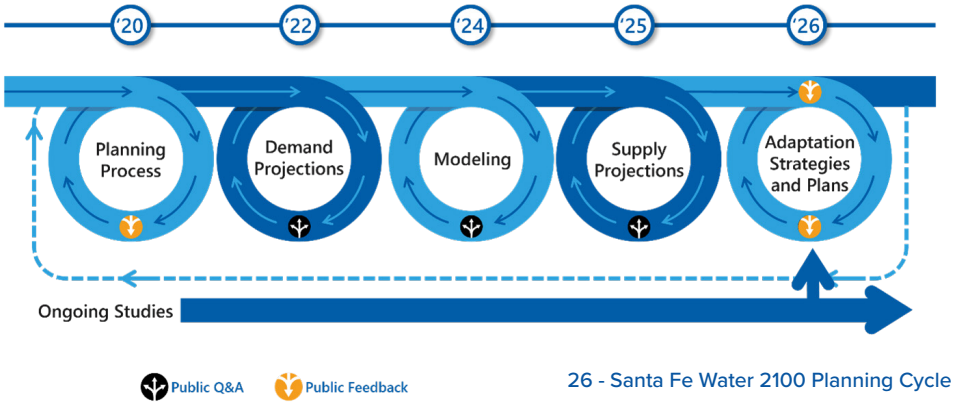
Water Conservation

CoSFW has been implementing a successful water conservation program since the City purchased the water utility in 1995. The objective of CoSFW's water conservation program is to achieve permanent long-term reductions in water demand. The purpose of the drought contingency plan is to prepare the City to respond to specific circumstances and to reduce water use to either maintain a set of drought mitigation measures or to avoid even further cuts in use. These two efforts are administered separately by CoSFW's Water Conservation Office staff. CoSFW staff update the water conservation office scorecard annually, which defines the program's goals. The program's current focus is on education and outreach, customer service, partnerships and pilot projects, and program management.

Long-Range Water Supply Planning – Santa Fe Water 2100

In 2015, the CoSFW and 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 supply planning. In 2020, the CoSFW and County initiated a planning cycle to develop long-range water resource management plans, which will include updated climate projections, currently being developed and modeled by Reclamation. The planning process, which was finalized in early 2021, called for development of demand scenarios which were completed in 2022.

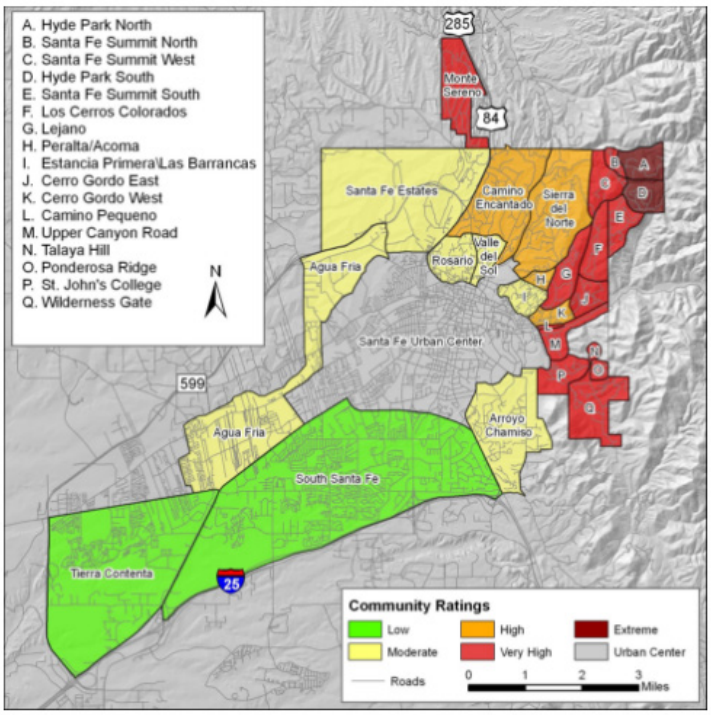
Contingent on availability of the updated climate scenarios, presentations and Q&A sessions are planned for 2025 to present the supply projection piece of the planning process. The current Water 2100 planning cycle process is shown in Figure 26. The Water 2100 planning cycle will be evaluated, refined, and repeated every 10 years, or as necessary in future years.



26 - Santa Fe Water 2100 Planning Cycle

Source Water Protection

To provide a safe, reliable, and resilient water supply, the CoSF maintains critical infrastructure throughout the City, such as waterlines, water tanks, booster stations, and water and energy sources of supply. Some of this infrastructure is located in areas that are at risk from wildfire, as identified in the 2006 Wildland Fire Hazard and Risk Analysis (https://santafenm.gov/document_center/document/899), and shown on Figure 27.



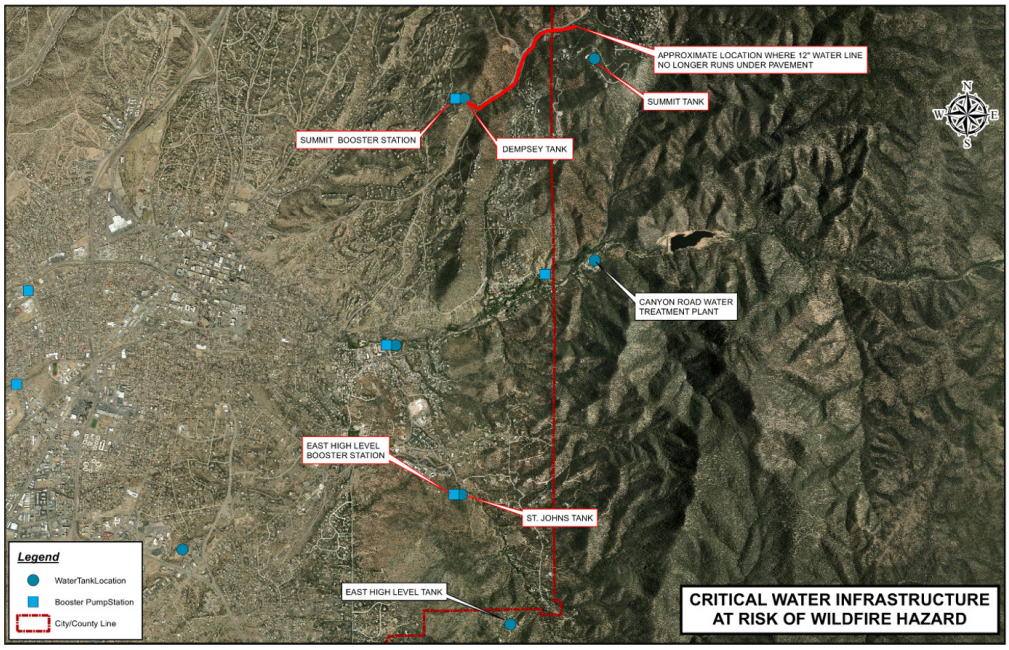
27 –Santa Fe Wildland Fire Risk

In 2024, CoSFW in partnership with the City of Santa Fe Fire Department's Wildland Division (SFFD) continued with source water protection efforts. To provide a safe, reliable, and resilient water supply, the City maintains critical infrastructure throughout the city: waterlines, water tanks, booster stations, and water and energy sources of supply. To address fire risk in the wildland urban interface, CoSFW and the SFFD have identified the following priority activities: provide a wildfire hazard assessment to critical infrastructure related to water storage and delivery systems, identify wildfire mitigation recommendations that can be implemented as funds and time are available, and aid in establishing wildfire mitigation and prevention strategies. Eight CoSFW utility infrastructure locations have been identified in high to extreme fire risk areas within CoSF and Santa Fe County (Figure 28), including:

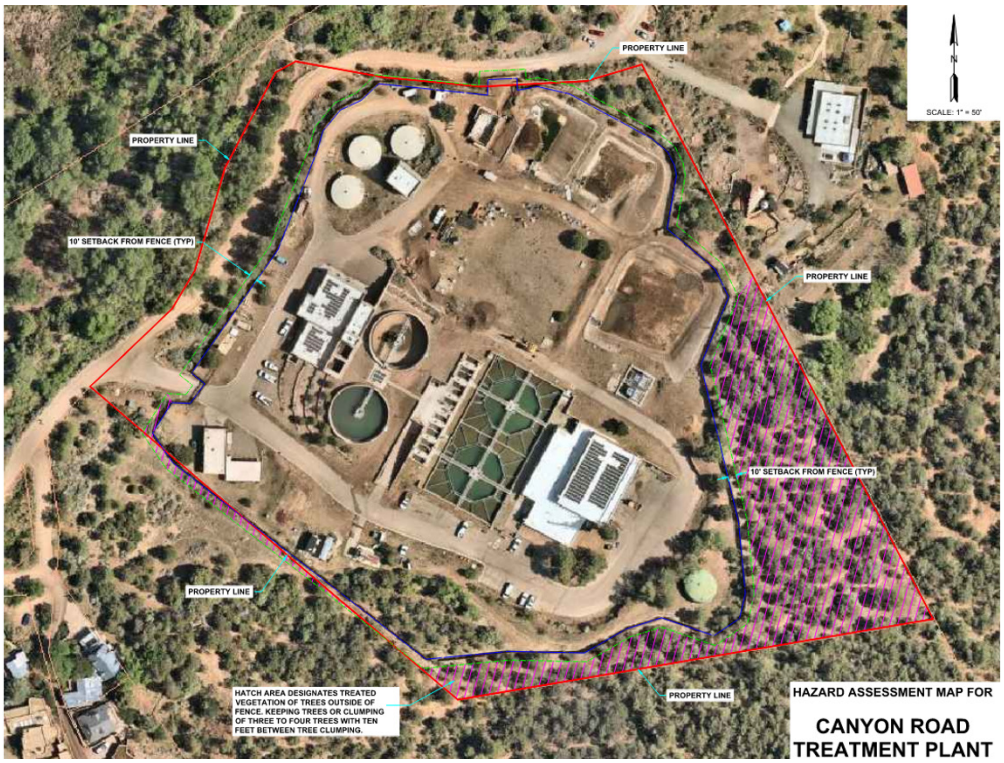
1. CRWTP
2. Summit tank
3. Dempsey tank
4. Summit booster station
5. Electrical power line to Dempsey Tank
6. St. John's tank
7. East High Level booster station
8. East High Level tank

As an example, Figure 29 shows the CRWTP fire mitigation areas treated in 2024. SFFD and Forest Stewards Guild thinned and cleared vegetation on 2.65 acres for wildfire prevention around the CRWTP infrastructure (in Figure 29, purple hatching shows the 2024 treatment area).

In 2024, PNM prepared a Wildfire Mitigation Plan, and the CoSFW is now coordinating with PNM on their new Public Safety Power Shutoff (PSPS) program to prevent wildfires, as outlined by that plan.



28 – Critical Water Infrastructure in High to Extreme Fire Risk Areas



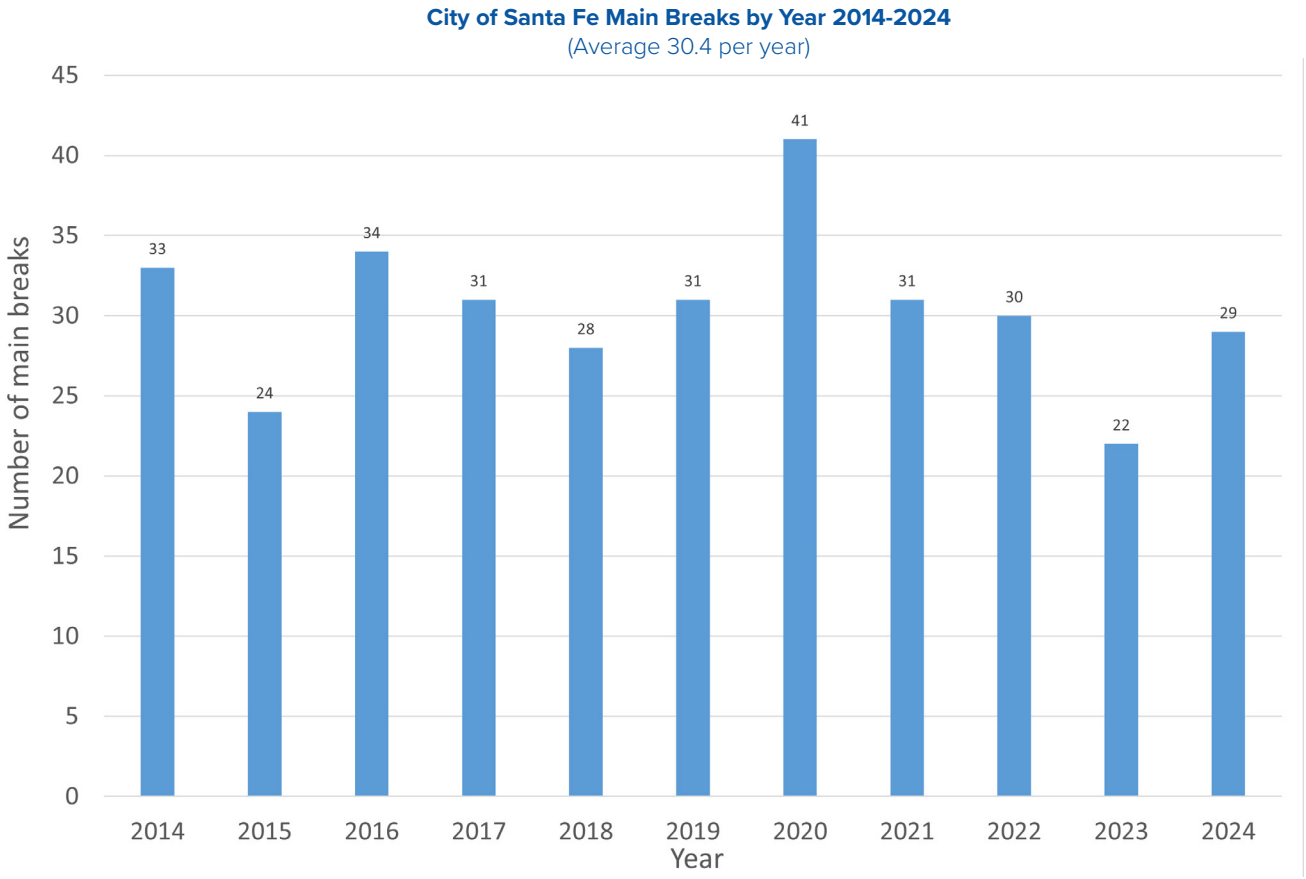
29 – Fire Mitigation Treatment Areas near CRWTP

Transmission and Distribution

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

Main Breaks

There were 29 main breaks and 9 service line (relatively small diameter lines between a larger main and the water meter) leaks in 2024. This was fewer than 5 main breaks per 100 miles of pipe (the CoSFW system includes approximately 615 miles of water main pipes), which is well below the average of 17 breaks per 100 miles of pipe average for water utilities of similar size, according to a 2018 Utah State Study . The number of main breaks in 2024 (29) was just less than the CoSFW annual average of about 30 main breaks per year since 2014 (Figure 30).



30 - Main Breaks, 2014-2024

Financials

Capital Improvement Projects

In addition to the Nichols Dam Outlet Works Rehabilitation project that is currently underway, the CoSFW plans to implement four other large capital improvement projects (CIP) over the next several years: CRWTP floc sed project (design is complete, construction is slated to start in fiscal year 2026), CRWTP chemical feed upgrades (targeting 30 percent design in fiscal year 2025), McClure Dam Outlet Works Rehabilitation project (design will begin in fiscal year 2025, construction is anticipated to start in fiscal year 2028), and the SJC Return Flow Project (currently in the design and permitting phase). The total cost for these five projects is estimated to be over $100 million. Projected capital spending for the fiscal years 2025 through 2029 (July 1, 2024-June 30, 2029) is shown in Table 31 below.

Capital Improvements Projects

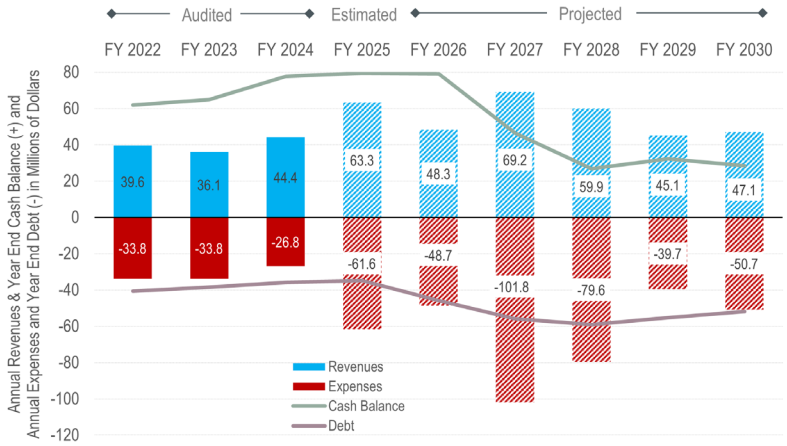
Projects	FY24-25	FY25-26	FY26-27	FY-27-28	FY-28-29	5 Year Total
Nichols - Outlet Conduit Rehabilitation	$18,000,000	$1,008,338	-	-	-	$19,008,338
CRWTP Flocculation & Sedimentation Rehabilitation	-	$8,000,000	$8,000,000	$4,000,000	-	$20,000,000
SJC Return Flow Project	$2,000,000	$250,000	$23,750,000	$23,750,000	-	$49,750,000
McClure - Outlet Conduit Rehabilitation	-	$1,500,000	$18,000,000	-	-	$19,500,000
Priority Line Rehabilitation (PLR)	$1,626,563	$1,626,563	$1,626,563	$1,626,563	$1,626,563	$8,132,815
CRWTP Filter Rehabilitation	$932,800	-	-	-	-	$932,800
CRWTP Chemical Feed Upgrades to Meet Current Codes	**$420,000**	$250,000	$4,000,000	$4,000,000	-	$8,670,000
On-Call Contracts	$2,395,158	$2,195,158	$2,195,158	$2,195,158	$2,195,158	$11,175,791
Other	$646,766	$290,000	-		-	$936,766
Total	**$26,021,287**	**$15,120,059**	**$57,571,721**	**$35,571,721**	**$3,821,721**	**$138,106,510**

31 - Projected Capital Spending, Fiscal Years 2025-2029

Financial Projections

There is audited financial information available for CoSFW through fiscal year (FY) 2024 (July 1, 2023 through June 30, 2024). Audited, estimated (for the current fiscal year), and projected (for future years) revenues, expenses, and year end cash balances and outstanding debt balances are shown in Figure 32. 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 outlet conduit rehabilitation and SJC Return Flow Project, respectively.

City of Santa Fe Water: Revenues, Cash Expenses, Cash Balance and Debt
Fiscal Years Ending June 2022 through June 2030



32 – Financial Status and Outlook (audited, estimated, and projected)

2024 Annual Highlights

Highlights for CoSFW's work in 2024 follow:

Projects and Programs

- Significant progress was made on the Nichols Dam Outlet Works Rehabilitation project. The contractor demolished the existing piping in the intake structure, installed a new 28-inch HDPE pipe within the original 60-inch concrete outlet conduit and grouted it in place, constructed new valve vaults for control valves at the CRWTP and Nichols Dam, and began installing the new filter drain system downstream of the dam. Throughout construction, the contractor has maintained flows to the river and acequias by pumping around the dam to the river downstream. Figure 33 shows the installation of the HDPE pipe within the existing outlet conduit, Figure 34 shows the drained reservoir, cofferdam, bypass pumping arrangement, and intake structure, and Figure 35 shows the construction of the new Nichols valve vault.
- CoSFW received a permit from the OSE for the SJC Return Flow Project in April 2024, completed the 60 percent design deliverable in December 2024, and will be issuing the draft Environmental Assessment.
- 2024 was a transition year for the Water Conservation Office. Staff continued to implement the existing water conservation programs and revised the annual scorecard that outlines the specific water conservation activities for the next year, in preparation for the water conservation and drought management plan update that will be completed in 2026.
- CoSF works to maintain critical infrastructure throughout the City, including water system infrastructure that is in areas that are at risk from wildfire. In 2024, the City of Santa Fe Fire Department's Wildland Division (SFFD) and Forest Stewards Guild thinned and cleared vegetation on 5.9 acres around the CoSFW utility's infrastructure for wildfire mitigation.
- CoSFW began coordinating with PNM on their new Public Safety Power Shutoff (PSPS) program to prevent wildfires, as outlined by PNM's 2024 Wildfire Mitigation Plan.

33 – Installation of new HDPE pipe within existing outlet conduit

34 – View of drained reservoir, cofferdam, bypass pumping arrangement, and intake structure

- The data collection capabilities of the SCADA and Historian systems were increased, which will allow the water data collection systems to be integrated with the Water Resources dashboard.
- Buckman Wellfield monitoring and testing tasks included installing 10 transducers to measure water level data from production wells and automatically push the data to dashboards. This facilitated the performance of aquifer tests in all active lower Buckman wells.
- The hydraulic model was calibrated and will be used to create emergency response scenario standard operating procedures for CoSFW water operators to use.
- A CRWTP filter underdrain upgrade and media replacement project is underway and is 60 percent complete.
- CoSFW staff evaluated asset management software vendors, and a new vendor (OpenGov) was selected and is now under contract. Implementation tasks will begin in summer 2025.

35 – Construction of the new Nichols valve vault

Funding

- CoSFW was recommended for a 2024 New Mexico Water Trust Board grant/loan award of $15.25 million. This funding will support the Nichols Dam repair, CRWTP improvements, and SJC Return Flow Project.
- CoSFW received a commitment for $5.3 million in grant funding from Reclamation for the SJC Return Flow Project. Combined with a similar amount that was previously awarded, this increases the Federal commitment to 25 percent of total project costs.
- CoSFW Water Resources staff worked with United States Representative Teresa Leger Fernandez's staff to prepare a $2.3 million 2025 funding request to be added to the Appropriations Committee bill for CoSF water and wastewater projects.

Awards and Publications

- CRWTP won the 2024 Good Housekeeping Award from the New Mexico Water and Wastewater Association.
- In February, Municipal Water Leader, a utility industry magazine called CoSFW "A Model for Water Use Efficiency in the West". The story is available at https://municipalwaterleader.com/volume-11-issue-2-february/.
- In August, the International Journal of Wildland Fire published the article, "Pre-fire assessment of post-fire debris-flow hazards in the Santa Fe Municipal Watershed" by Manuel Lopez (National Forest Foundation), Ellis Margolis (USGS), Anne Tillery (USGS), Steve Bassett (The Nature Conservancy) and Alan Hook (City of Santa Fe, Water Division). This paper concluded that post-fire debris flows with varying debris volumes are likely to occur following wildfire in the watershed, but fuel treatments (thinning of forest vegetation and prescribed burning) can reduce the likelihood and volume. The article is available at https://www.publish.csiro.au/WF/WF23065.
- CoSFW Source of Supply staff saved almost $15,000 by reducing electricity use on request during times of peak demand as part of PNM's Peak Saver program.

Permitting

- CoSFW Water Resources staff worked with the OSE to get formal credit for SJCP water that is released from Abiquiu Reservoir for diversion at BDD that does not end up getting diverted (due to unexpected events that occur in the 24 hours it takes for the release to reach BDD). These credits are now applied towards pumping impacts on the Rio Grande.

Outreach

- CoSFW T&D and BDD delivered 1.4 million gallons of water to the City of Las Vegas after flash floods in late June brought ash, silt, and fire debris from the Hermit's Peak/Calf Canyon Fire into the Gallinas River and Bradner Reservoir, upsetting their water treatment process.
- The CoSFW Water Conservation Office increased the public outreach efforts for their programs and the City's science and technology-based tools (e.g., STEWaRDS model, dashboards, and WRI). Outreach activities included showcasing the City's WaterWise program at the 2024 Home Show, holding a WaterWise panel at the Southside library, and putting on the Next Generation Water Summit in June.
- Water Resources and Conservation staff presented the latest updates to the Santa Fe Water 2100 Long-Range Water Supply Planning Project at two community outreach events with emphasis on development of the new STEWaRDS decision model tool being used to analyze water supply and demand scenarios under the latest climate change hydrology.

Closing

In 2024, April 1 snowpack reached 120 percent of normal in the SJCP source watersheds and 150 percent of normal in the headwaters of the Santa Fe River. The melting of the snowpack progressed rapidly in April, resulting in high observed streamflow in the Santa Fe River relative to historical benchmarks; however, runoff tailed off through the remainder of the year, reflecting historical median values. Overall, 2024 was slightly wetter than average. Monthly rainfall totals were above the 18-year monthly average values for five months in 2024 (January, June, August, October, and November), while July and December were significantly drier than normal.

In 2024, CoSFW effectively met demands in a sustainable manner by predominantly relying on surface water, allowing for continued water level recovery after decades of overuse. Approximately 78 percent of potable water supply came from surface water, and the remaining 22 percent of potable water supply was supplied by groundwater from wells. The proportion of surface water use was less in 2024 compared to 2023 (78 percent in 2024 compared to 87 percent in 2023), but was comparable to 2022 and 2021. CoSFW met all EPA and state water quality standards in 2024.

The Nichols Dam Outlet Works Rehabilitation project has been in construction in 2024, the work has gone as planned, and CoSFW estimates that the project will be completed in Fall 2025. CoSFW plans to implement four other large capital improvement projects over the next several years, which will require use of cash balances and assumption of additional debt. CoSFW remains financially stable despite upcoming capital projects.

CoSFW continues to work on long-range water supply and source water protection planning efforts to ensure that a safe, reliable, and resilient water supply will be available to our customers for generations to come. If you have questions, the CoSFW staff are happy to try to answer them. Please visit our website at www.santafenm.gov/water to get in touch.

References

Colorado River Basin MOU, 2022. Memorandum of Understanding by and among Colorado River Basin Municipal and Public Water Providers. November 15, 2022.