City of Santa Fe Water
2022 Annual Report

Nichols Reservoir in the upper Santa Fe River watershed.

Compiled & Written by

City of Santa Fe Water Staff

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EXECUTIVE SUMMARY

2022 might be remembered as the year of five seasons in Santa Fe. Instead of summer, we had an apocalyptic fire season that included almost no rain in May and the first half of June, which was abruptly replaced by remarkably wet conditions. For the third winter in a row winter snowpack was below normal. These moderately dry winter conditions turned to extremely dry spring conditions and set the stage for the nearby Calf Canyon/Hermits Peak fire to become the largest fire in New Mexico history, burning over 340,000 acres. While this catastrophic fire burned to our East and the Cerro Pelado fire burned in the Jemez to our West, there was a palpable sense of stress and worry around our community.

Conditions changed seemingly overnight, with the arrival of strong and continuous rains in mid-June our community breathed a sigh of relief. Over four inches of rainfall fell at a location in the upper Santa Fe River watershed in the second half of June alone (equivalent to almost a quarter of the annual total). Partly as a result of these extraordinary monsoon rains, total potable water production by City of Santa Fe Water (CoSFW) was below 2020 levels and nearly identical to 2021 levels, despite continued City growth.

Eighty percent (80 percent) of 2022 potable production came from river water (which is replenished each year to a known degree and we think of as our checking account). For eight of the last nine years surface water has supplied at least 79 percent of our total water production. As a result, water levels in CoSFW wells (which we think of as a savings account to be built up for times of need) continue to rise 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 Well Field and 510 feet on average in the Buckman Well Field.

On the Santa Fe River, 691 acre-feet (AF) of water was bypassed to the river below Nichols Reservoir to meet acequia needs and target flows on the river through town, and 3,390 AF (39 percent) was treated to meet City needs. 41 percent of City potable supply came from the BDD which delivered 3,536 AF to the City, while City Wells and Buckman Wells contributed a combined 1,769 AF (20 percent) to round things out. In 2022, the City's drinking water met all U.S. Environmental Protection Agency (EPA) and State water quality limits. Santa Fe River reservoir levels are higher to start 2023 than they have been in the past two years, and so far in 2023 an abundant snowpack locally and regionally bodes well for the upcoming year.

On the planning front, CoSFW began a short-term catastrophic disruption scenario evaluation, and continued our long-range water planning effort by completing development of long-range demand scenarios and presenting them to the public.

In 2022, brown water and a couple of high-profile main breaks got more attention than we would have liked, but we have plans in place to address both issues.

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. These four projects are likely to cost between 40 and 80 million dollars to complete.

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 Well Field.

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, which treats Santa Fe River water.

CWF – City Well Field.

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.

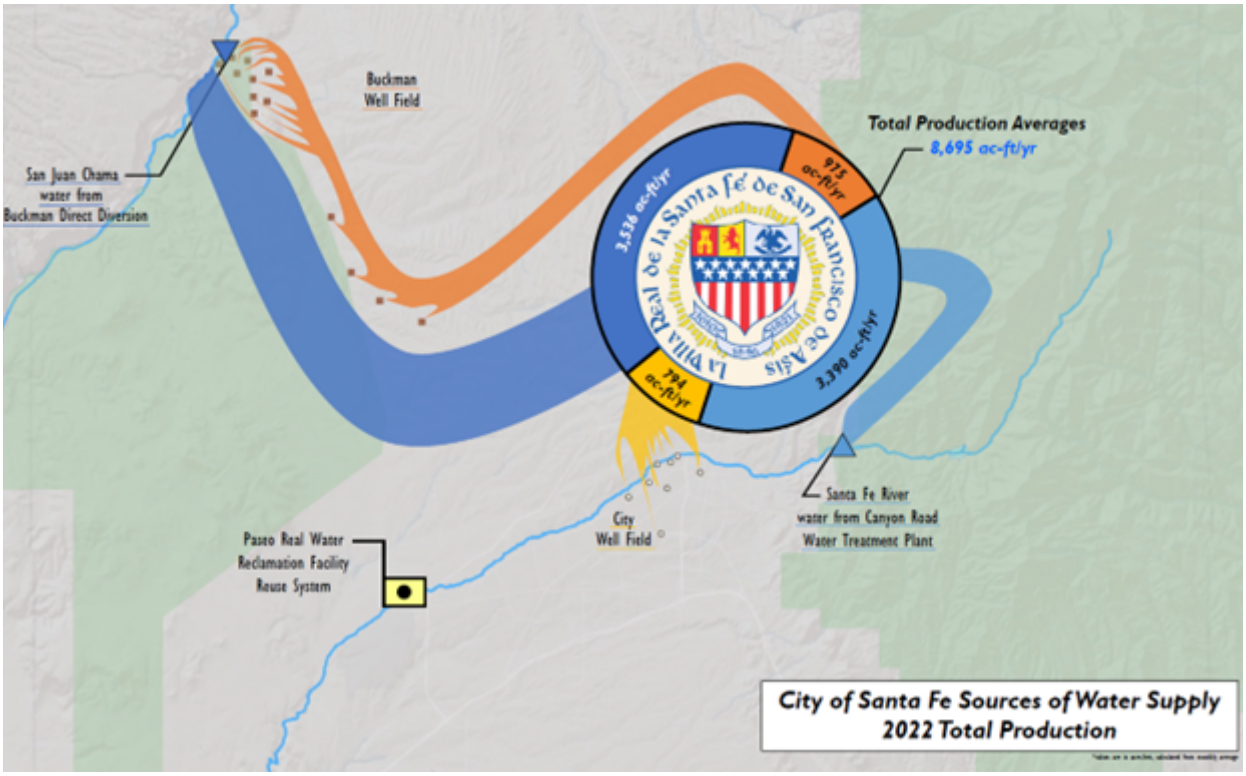
TNC – The Nature Conservancy.

WRA – Water Resource Agreement.

INTRODUCTION

This report summarizes information about City of Santa Fe Water (CoSFW) in the last year, including water supply, water demand, water use efficiency and conservation, non-potable water use, water quality, and Santa Fe River operations. The report also provides an overview of the Santa Fe Water System and archives the intentions, strategies, and challenges faced by CoSFW in 2022.

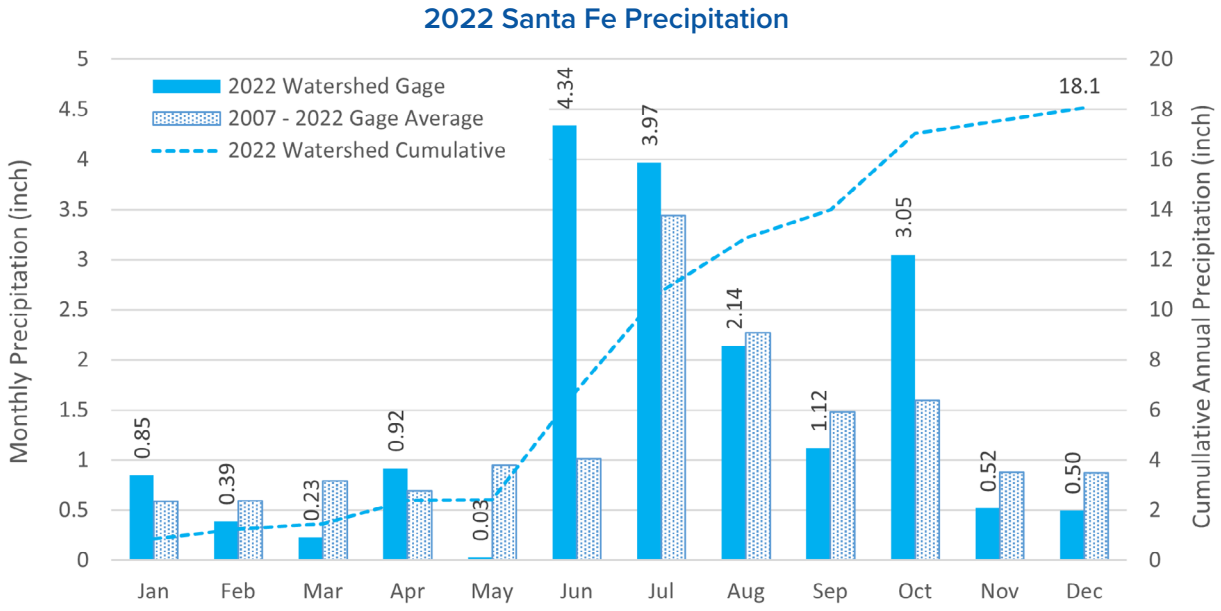
From a local water perspective, 2022 started out unremarkably, snowpack was marginal in the headwaters of the San Juan River (where our San Juan – Chama water originates) and poor in the headwaters of the Santa Fe River (85 percent and 53 percent of normal respectively on April 1st). However, things took a turn for the worse when extremely dry conditions in May set the stage for fire across the state. The fires burned until the summer rains arrived with remarkable moisture in mid-June and continued through the summer providing supplemental water for lawns and gardens. Total water production in 2022 was 8,695 Acre-Feet (AF), essentially equivalent to 2021 (8,685 AF). 3,536 AF (41 percent) of production came from the BDD, 3,390 AF (39 percent) from the Santa Fe River, 794 (9 percent) from wells within City Limits, and 975 AF (11 percent) from the Buckman Wellfield. Despite relatively low river flows, 80 percent of 2022 potable supply came from river water (which is resupplied each year to a known degree and we think of as our checking account). The remaining 20 percent was supplied by groundwater from wells (which we think of as a savings account to be built up for times of need). The 1,769 AF of groundwater production was less than half of our estimated sustainable groundwater availability of 4,500 AF per year, and as a result groundwater levels rose again in 2022 as they have consistently since 2010.



1 - Map of CoSFW sources of supply.

PRECIPITATION

Overall, 2022 was wetter than average due mostly to above average summer rains from July-October. In 2022, a rain gage in the upper watershed between Nichols and McClure Reservoirs received 18 inches of rain, which is above the average annual rainfall of 15 inches at this location from 2007 through 2022. As can be seen in Figure 2, average monthly rainfall was above the 15-year average in almost half of the months in 2022. June and October were unusually wet.



2 - Santa Fe 2022 monthly and annual average precipitation.

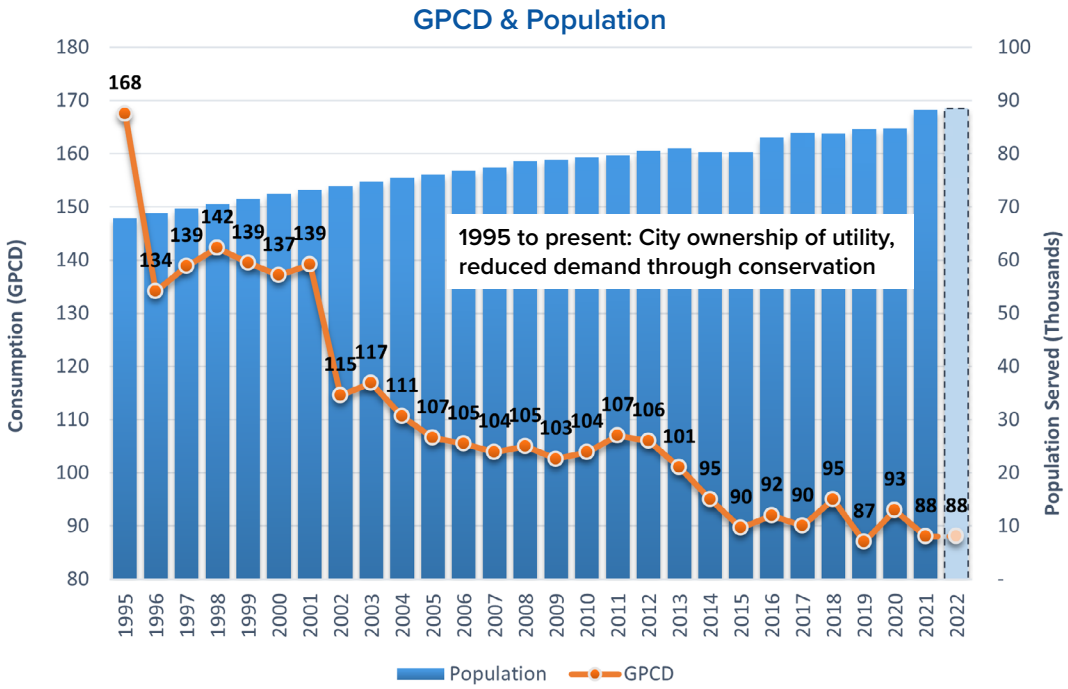
POTABLE WATER DEMAND

For the ninth year in a row, total CoSFW potable water demand was below 9,000 AF. This is about 33 percent lower than the 13,200 AF production seen in 1995, despite an increase to population served of about 25 percent in that same time period.

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 to the New Mexico Office of the State Engineer (OSE) who requires submittal of the calculation annually for the City's water right permit compliance.

As seen in Figure 3, 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 BDD supply coming online in 2011, has allowed for steady wellfield recovery over the past decade. 2022 population data is estimated based on previous growth and so the 88 GPCD for 2022 is estimated and will be finalized once the U.S. Census population for 2022 is available. The finalized 2022 GPCD number will be available in the 2023 annual report.



3 - Population and GPCD since 1995; 2022 numbers are estimated.

WATER SUPPLY SOURCES HISTORICAL OVERVIEW

CoSFW is fortunate to have four 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.

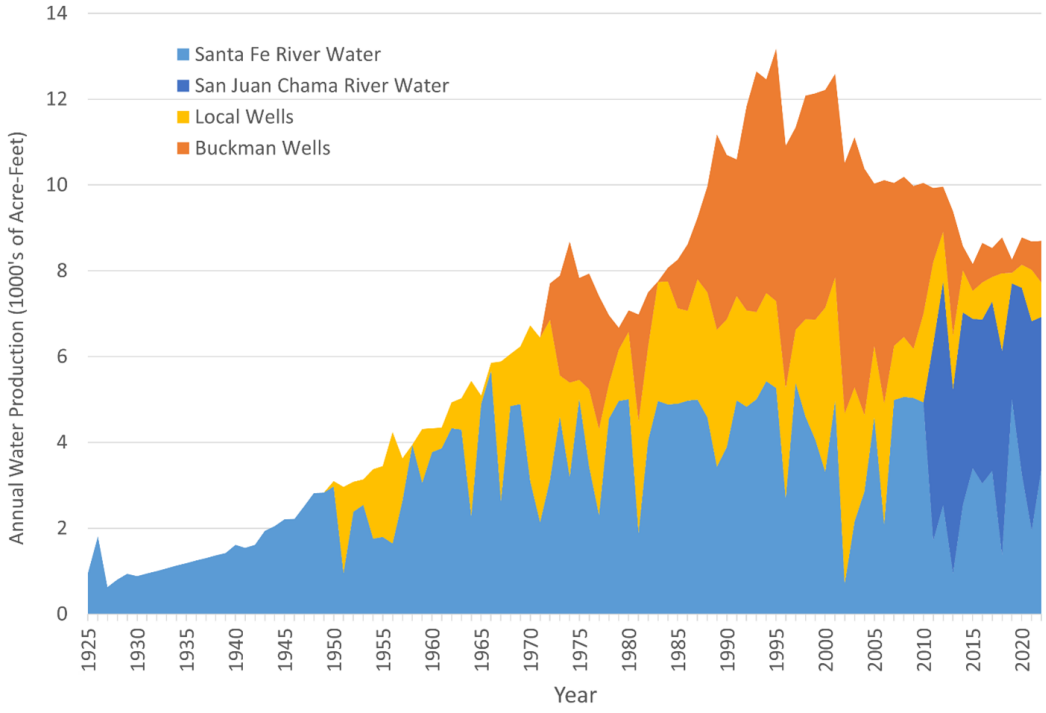
Surface water moves quickly in defined channels and can be seen and measured easily. Though surface water can be used up, it can't be overused. What flows down the rivers each year is variable and unpredictable, but it is inherently renewable, and as a result CoSFW prioritizes its use, sort of like a checking account. Groundwater on the other hand moves slowly, through large areas beneath the land and cannot be seen or measured easily. CoSFW estimates that the amount of groundwater that could be sustainably pumped from our wells in the Santa Fe River watershed (2,000 AFY, see Figure 4 below) is similar in magnitude to the surface water produced on average by flows from snowmelt and rainfall in the upper Santa Fe River watershed. Groundwater makes up a large volume of our water supply and 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 (Table 5). 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 BDD 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.

The current supply portfolio has been available since 2011 when the BDD came online. Estimated average availability and average actual use of each source from 2011 through 2022 is shown in Table 5. 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.

City of Santa Fe Annual Water Production by Source 1925 - 2022



4 - CoSFW Supply 1925-2022. **1925-1995:** Exponential demand growth, 20th century solution: increase supply. **1995 to present:** City ownership of utility, reduced demand through conservation. **2011 to present:** Surface water emphasis allows recovery of groundwater supply.

CoSFW Availability 2022, & Sustainable Availability, Use, & Rights 2011 – 2022*

Water Source	2023 Estimated Availability** (AFY)	2011 - 2022 Estimated Sustainable Availability*** (AFY)	2011-2022 Average Use (AFY)	2011-2022 Maximum Use (AFY)	One Year Legal Limit (AFY)	10 Year Legal Limit (AFY)
Santa Fe River	5,040	2,937	2,708	5,006	5,040	Same
City Wellfield	3,500	2,000	999	1,942	4,865	3,507
Buckman Wellfield	8,000	2,500	989	2,890	10,000	Same
San Juan-Chama	6,407	4,700	4,170	5,215	6,407	5,125
Total	22,947	12,137	8,866		26,312	23,673

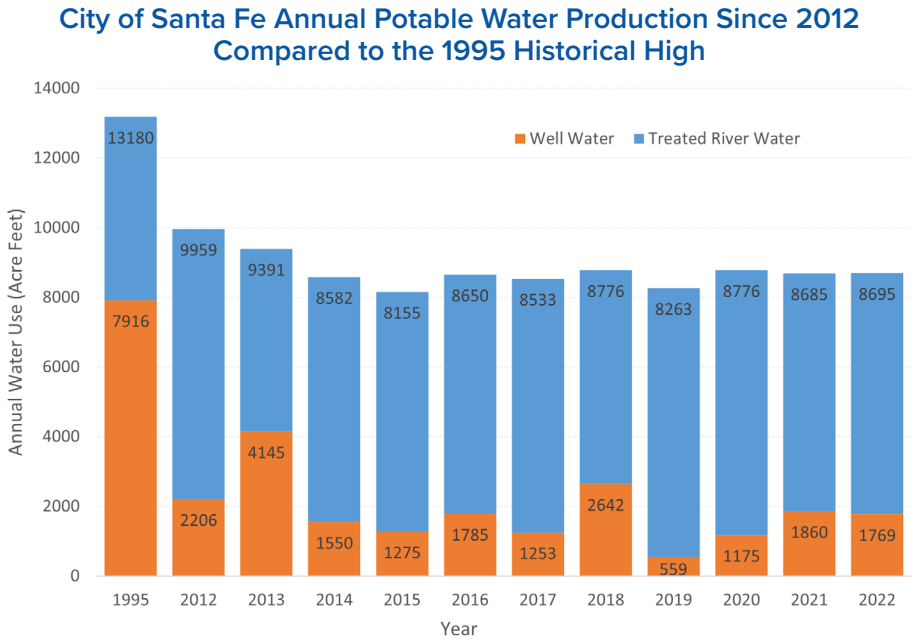
* 2011 starting time for analysis because that is when BDD came online and CoSFW first had four distinct sources.
** For SF River 2023: Snowpack based treatable water availability projection for 2023 is greater than water right.
** For San Juan-Chama 2023: Storage to start 2023 is in excess of permit limit.
** 2023 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.

5 - CoSFW availability, use, and rights 2011-2021.

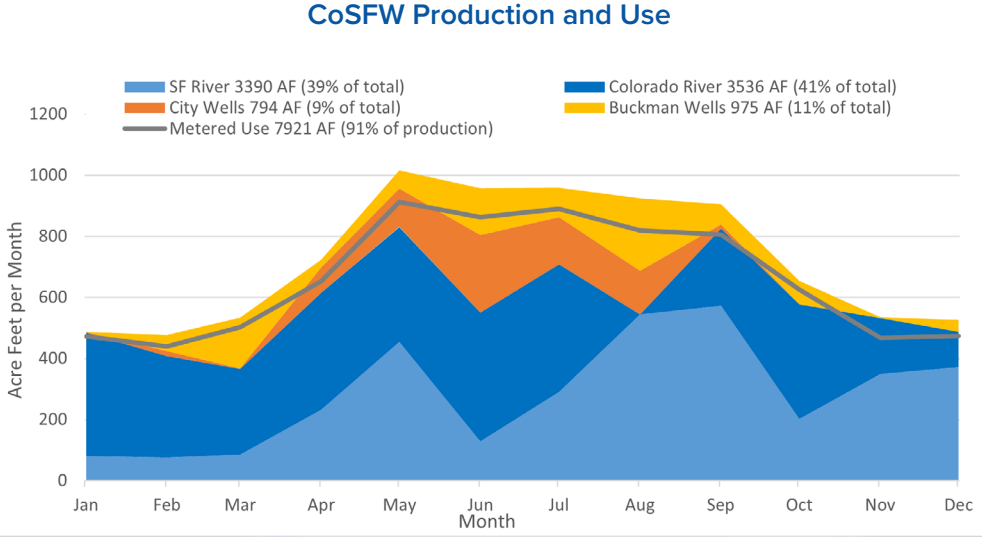
Generally, the current approach of CoSFW is to maximize surface water use in order to save groundwater for drier years. Despite a third consecutive dry winter, and partly due to high summer rainfall in the watershed, Santa Fe was able to produce 80 percent of the potable water needed to meet customer demand with treated river water in 2022. As a result, for the eighth year of the past nine, water production from wells was less than 2,000 AF (less than half 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 1990s and early 2000s. Figure 6 shows potable water production from river water and well water since 2011 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 compliance and monitoring.

SANTA FE'S FOUR POTABLE WATER SOURCES IN 2022

Figure 7 shows monthly potable water production by source during 2022. The seasonality of water demand is evident with an increase in production from March to October due to outdoor water use. 94 percent of potable water produced was delivered to customers through meters. The other 6 percent represents unaccounted losses from the system and any uses of water for which no revenue was generated. Each source is described in more detail in the following sections.



6 - Potable water production from surface and groundwater sources 1995 and 2012 – 2022.



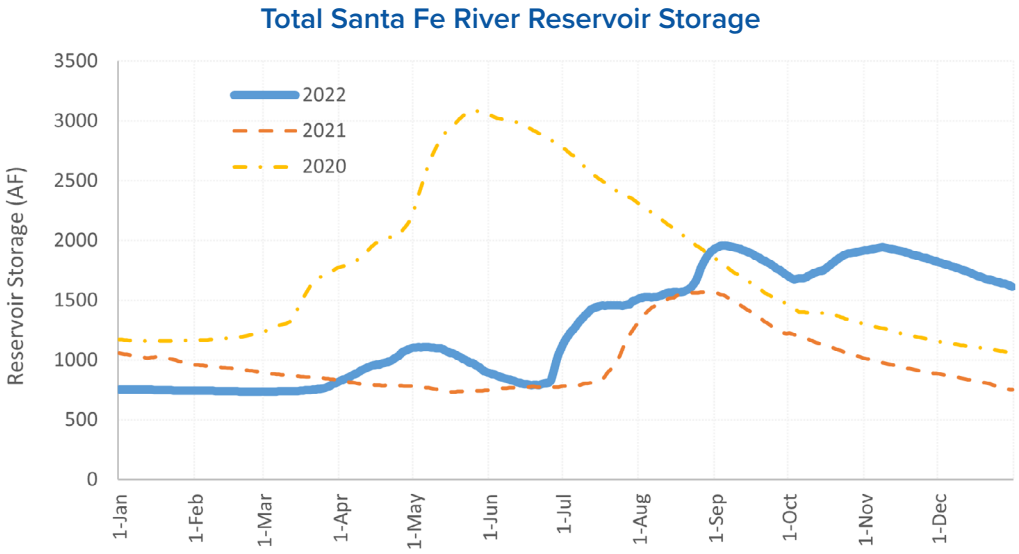
7 - 2022 monthly potable water production by source.

The Santa Fe River

The Santa Fe River, whose flows are typically 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 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 most years there is not enough snow and rain on the 17,000-acre watershed above the reservoirs to reach these limits (See Table 5). 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 2022

The 2022 pattern of a dry start and a wet end was seen on the Santa Fe River, and as a result in reservoir storage in Nichols and McClure as seen in Figure 8. The total annual Santa Fe River flows gaged above McClure were the 8th wettest in the past 24 years since a gage went in at that location, and 119 percent of average for that time period, but exactly average when compared to inflows to McClure since 1966. Only one third of flow into McClure occurred from March through June which is the 5th lowest percentage for these months in the past 24 years. In 2022, 691 AF of Santa Fe River inflows to McClure were bypassed during the calendar year for living river flows and acequia use, and 3,390 AF was treated by CRWTP for potable use. CRWTP production made up 39 percent of total potable production in 2022.



8 - 2020 - 2022 reservoir storage in the Santa Fe municipal watershed.

Santa Fe's Living River

Target flows for a 'Living River' support Santa Fe River's riparian corridor, recharge to certain CoSFW wells, wildlife habitat and an aesthetic and recreational benefit along the Santa Fe River. In average years, the Santa Fe River target flows provide up to 1,000 AF of water to the Santa Fe River downstream of Nichols Reservoir and in drier years, with expected flows at or below 30 percent of normal, flows provide a minimum of 300 AF.

The April 1, 2022, Santa Fe River watershed streamflow forecast predicted 55 percent of normal flows resulting in Santa Fe River target flows of 550 AF from April 15, 2022 through April 14, 2023. The annual volume of target flow was distributed throughout the year based on a target hydrograph developed collaboratively by CoSFW, City of Santa Fe River Watershed and Trails Section and the Santa Fe River Commission.

The target hydrograph included a peak target flow in mid-May of six cubic feet per second (cfs). After the mid-May pulse the target flows remained just under two cfs through the end of June. From the beginning of July to the end of October, the target flows remained around one cfs transitioning to a base, target flow of 0.15 cfs through the winter. Actual calendar year bypass flows were 552 AF, as of December 31, 2022, 81 percent of the target volume and CoSFW anticipates reaching 100 percent of the target volume by April 14, 2023.

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. 2022 acequia diversions are shown in Table 9.

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
Project delivery requirement (AF)	Not defined	11.08	82.40	Not defined
Farm delivery requirement (AF)	46.4	-	-	15.07

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

The Nature Conservancy Restoration Channel

The only surface non-irrigation water diversion along the Santa Fe River east of the Plaza is at The Nature Conservancy (TNC) Restoration Channel in the Santa Fe Canyon Preserve (Preserve). The Preserve is at the top of Cerro Gordo Road around and within the former Two-Mile Reservoir site. Two Mile Reservoir was used for many decades before being decommissioned in 1993. The reservoir was used to store water for the adjacent CRWTP and its predecessor, a filter plant whose foundations and remnants are still present just north of the Preserve trailhead. The Restoration Channel is used to divert water from the Santa Fe River, along the south side of the Preserve, to a channel on the north side of the Preserve which flows through the remnants of Two-Mile Reservoir. The diversion has resulted in water management and water rights challenges through the years and in 2022 CoSFW, TNC, and OSE spent time working towards a potential solution to these issues which will continue in 2023.

Rio Grande Compact Operations

The Rio Grande Compact (Compact) which governs sharing of Rio Grande water between Colorado, New Mexico, and Texas was signed by the 3 states in 1938. After that agreement went into effect, CoSFW expanded reservoir storage in the Santa Fe River. Because this expansion occurred after the Compact was signed, and because the Santa Fe River is a tributary to the Rio Grande, this newer “post-compact” storage space is governed by certain provisions in the Compact. Because CoSFW also stores San Juan-Chama water from the Colorado River in reservoirs along the Rio Chama, which is a tributary to the Rio Grande, at times Compact compliance can be maintained by storing San Juan-Chama “by exchange” in the Santa Fe River reservoirs while simultaneously releasing San Juan-Chama water into the Rio Chama where it becomes native.

[1] Farm delivery requirement estimate is based on 17.2 acres in a 1977 Hydrographic Survey multiplied by 2.7 feet.
[2] 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.
[3] 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.

This leaves the Rio Grande "whole" from a Compact perspective while allowing 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. In 2022, The Santa Fe River reservoirs maintained 732 AF of San Juan-Chama water (stored by exchange due to Compact operations in 2021) in storage throughout the year. All other storage was in our 1,061 AF "pre-compact" pool, except for two temporary flood water storage events centered in September and November respectively.

McClure Dam (first known as Granite Point Dam) was completed in 1926 and Nichols 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." Major renovations to both dams, which will address these potential seepage issues, are scheduled to begin in 2023 and will last several years. The renovation project will start with Nichols Dam. CoSFW anticipates spending between 30 and 40 million dollars on these infrastructure upgrades. Water operations at CRWTP may be impacted by this construction over the next several years.

San Juan – Chama Project Water

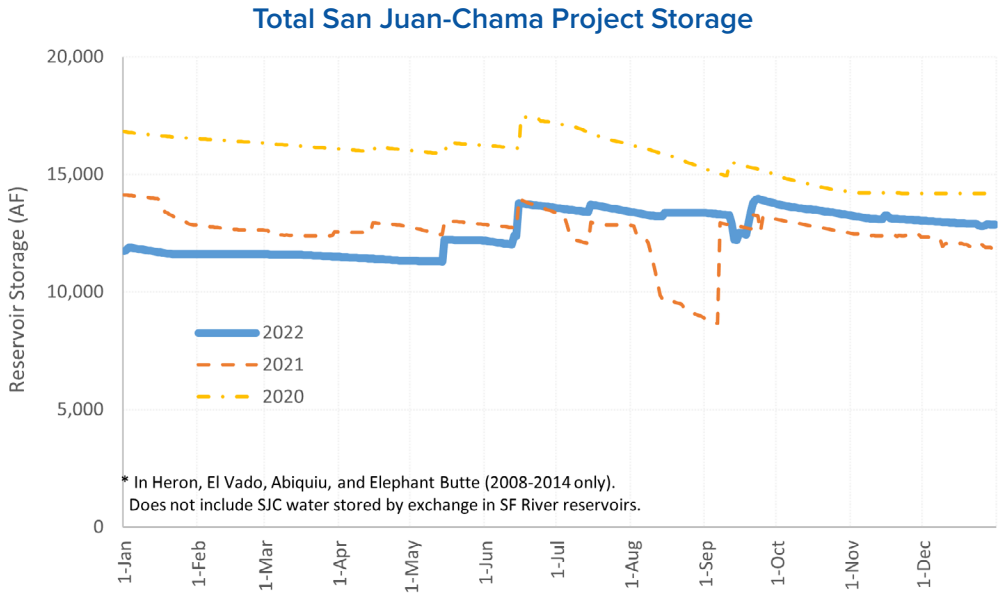
The San Juan River watershed is located in Southern Colorado and is part of the larger Colorado River watershed. The SJCP is a U.S. Bureau of Reclamation project to deliver water from the San Juan River watershed into the Rio Chama system, where it is stored in Heron reservoir. CoSFW's SJCP water is stored predominantly in Heron and Abiquiu reservoirs, though some is stored in El Vado Reservoir 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 SJC 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, contractors did not receive their full allocation. In the past 10 years (2013 – 2022) contractors have only received full allocations three times and have been shorted an average of 12 percent (Table 10). 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 percent by the end of the 21st century.

Calendar Year	CoSFW SJCP Allocation (AF)	As % Total
2013	5,230	100%
2014	4,650	89%
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%
Average	**4,594**	**88%**

10 - CoSFW San Juan-Chama Project annual allocations for previous 10 years.

CoSFW's SJCP water in storage in Heron, El Vado, and Abiquiu Reservoirs from 2020 through 2022 is shown in Figure 11. CoSFW started 2022 with 11,742 AF of SJCP water in storage in the Chama system, and ended the year with 12,855 AF. The annual allocation of 3,371 AF was supplemented with 600 AF of Las Campanas leased SJCP water that was transferred into CoSFW storage in 2022.



11 - Storage of CoSFW San Juan-Chama Project water in the Chama watershed 2020-2022.

Colorado River

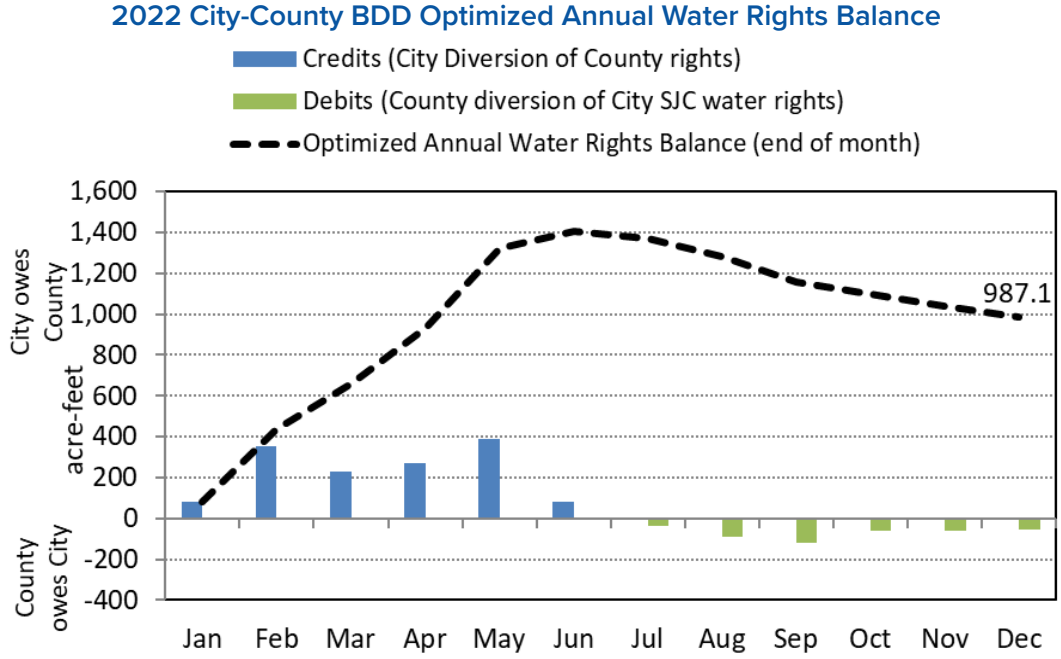
CoSFW, which relies on Colorado River water obtained via the SJCP, along with 30 other municipal water providers dependent on water from the Colorado River Basin, announced a commitment to substantially expand existing efforts to conserve water, reduce demands, and expand reuse and recycling of water supplies by signing a Memorandum of Understanding (MOU) to meet the following requirements: 1) Develop programs to replace non-functional or passive turf grass with drought resistant and climate resistant landscaping, while maintaining vital urban landscapes and tree canopies where appropriate. 2) Increase water reuse and recycling program where feasible. 3) Continue and expand conservation and efficiency programs to accelerate water savings. While CoSFW's water conservation program has already met most of these requirements, the MOU did provide targets not yet addressed by CoSFW, such as removal of non-functional turf.

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 is a facility co-owned by CoSFW, the Santa Fe County Water Utility, 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 47 percent of the City's water since coming online in 2011. In 2022, 3,536 AF of potable water deliveries from the BDD Water Treatment Plant (BDDWTP) made up the majority (41 percent) of potable water production for City use.

The BDD Shared Pool

The City 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. For the reader really paying attention, it was previously noted that 2,773 AF of CoSFW SJCP water was diverted at BDD, while BDD accounted for 3,536 AF of City use. The difference is 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 2022, the County built up 987.1 AF of credit during the year as a result of OAWR. Considering the carryover from 2021 of 455.2 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 2023. Accounting for each of these balances is shown in Figure 12 below.



12 - 2022 BDD annual water rights balance.

2022 Shared Pool Accounting	AF
1. "Annual Water Rights" ending balance	987.1
2. Section 2.a Deposit to shared pool (#1 minus 10% UAW)	888.4
3. Section 3.a Withdrawals, discretionary shutdown	0.0
4. 'Section 3.b Withdrawals, non-discretionary shutdown*	-88.1
5. Net available for deposit (+) or withdrawal (-) (#2 + #3 + #4)	800.3
6. Carryover from 2021	455.2
7. County water credit balance, Dec. 31 (#5 + #6))	1,255.4
8. Section 4 evaporative losses (#7 * -10%)	-125.5
9. Carryover to 2023 (lesser of 1,100 and #7 + #8)	**1,100.0**
*14 days of non-discretionary shutdown in August and 1 day in September. Volume estimated as monthly total * 1.1 withdrawal ratio for non-discretionary shutdowns.	

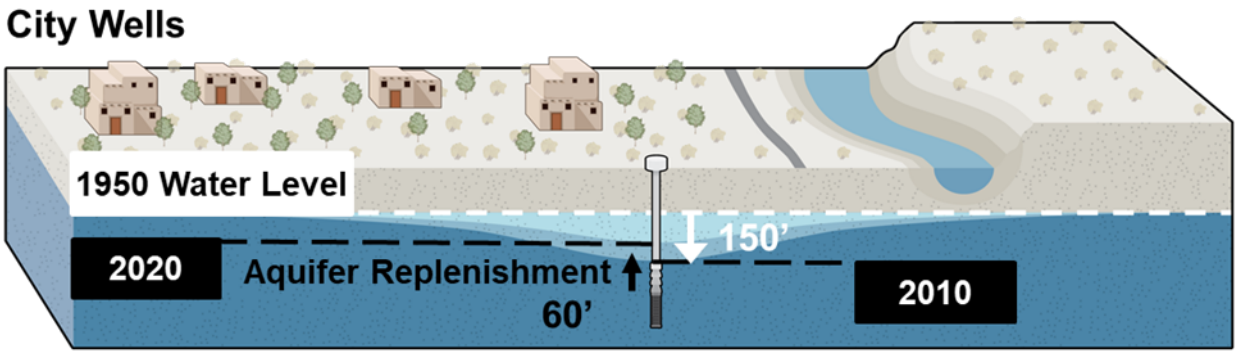
13 - 2022 accounting of City-County shared water resource use at BDD.

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 5, 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. Michael'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. Michael'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 Alire was rehabilitated in 2020. Replacement of the St. Michael's well is next on the list of planned improvements for the CWF.

In 2022, CoSFW produced 794 AF from the CWF, about 23 percent less than the 1,025 AFY average since BDD came online in 2011, and only 40 percent of the 2,000 AFY that CoSFW estimates could be pumped from the CWF and the St. Michael'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 2022, continuing a trend that, since 2010, has seen water levels in the CWF rise by an average of about 60 feet, recovering about 40 percent of historical drawdown in the wellfield, as shown in Figure 14.

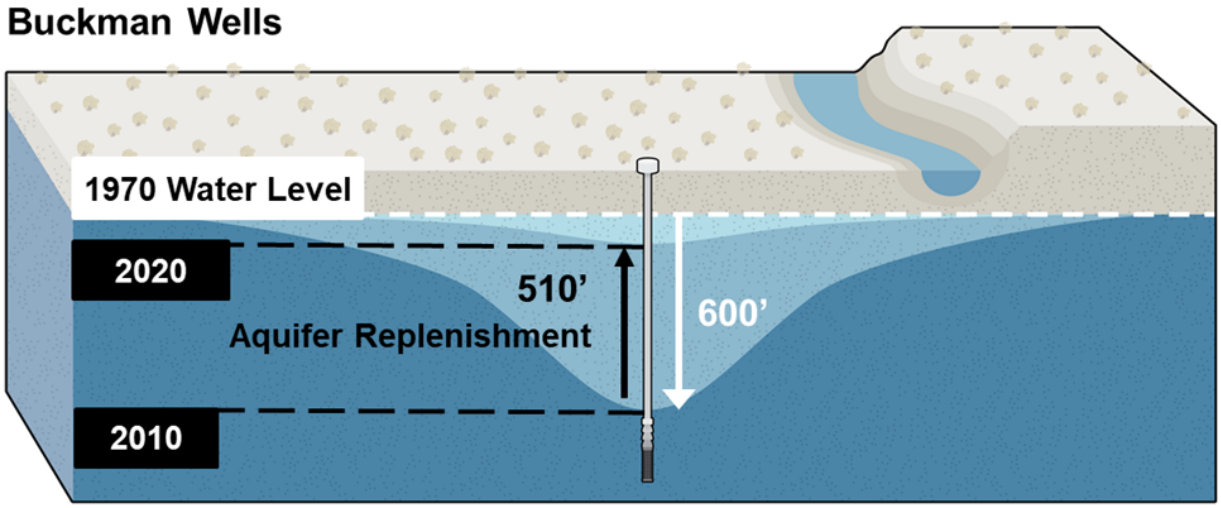


14 - City wellfield drawdown 1950-2010 and recovery 2010-2020.

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 2022, CoSFW produced 975 AF from the BWF, more or less equivalent to the 991 AFY average since BDD came online in 2011, and only about 40 percent 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 2022. 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 percent of historical drawdown in the wellfield (Figure 15).



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

Aquifer Testing

CoSFW performed two extended duration constant-rate aquifer tests in the BWF. Aquifer tests were performed at Well-1 (5 weeks pumping, 6 weeks recovery) and Well-8 (6 weeks pumping, 5 weeks recovery). Water level response was measured in 16 wells, up to about a mile away from the pumping wells. 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 well field 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 BWF Permit requires that CoSFW offset BWF 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. 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 16 shows the distribution of offsets for 2021 (calculations for 2022 were not available in time for inclusion here).

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	2021* offsets to nearest AF	2022 CoSFW water rights available to nearest AF
Rio Nambe – Pojoaque	59	107
Rio Tesuque	34	28
Rio Grande above Otowi Gage	104	0**
Rio Grande below Otowi Gage (pre-1907 Rio Grande)	767	1,740***
La Cienega	4	4
Total	**968**	**1,879**

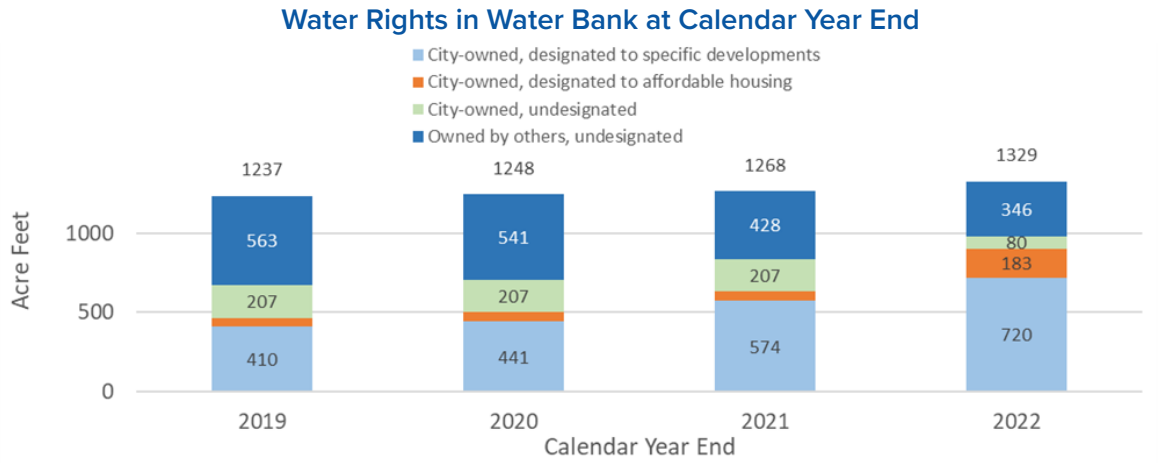
**2022 Offsets had not been calculated and released by the OSE at the time of this report.*
*** San Juan – Chama water releases are used to offset pumping impacts to the Rio Grande above Otowi Gage.*
**** 720 AF of City owned water rights designated to specific developments, 183 AF of City owned water rights allocated to affordable housing, 80 AF of City owned water rights undesignated, 346 AF of water rights owned by others but undesignated, and 412 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.*

16 - 2022 surface water rights available for BWF pumping offsets.

Water Bank

The Water Bank, defined in City Code 25-10, effective January 1, 2010, 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, and 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 permit (as explained in the Surface Water Offsets for BWF 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 important conservation efforts. Another way that the Water Bank allows for growth is through the demand reductions achieved through rebate programs since January 1, 2010 (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 17 shows these balances from 2019 through 2022. Water demand added each year from 2009 through 2022 is shown in Table 18 below. The 139 AF of affordable housing development demand is offset by City water rights. Thus, 648 (509 + 139) AF per year or 64 percent of calculated added water demand has been offset with water rights, while almost one third has been offset by fees and the remainder with toilet retrofit credits.



17 - Water rights in Water Bank 2019-2022.

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%

18 - 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 conservation activities including 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. Two (2) AF of Conservation Credits were accounted for in 2022 bringing the total to 92 AF since Water Bank inception, as shown in Table 19. This is less than the 307 AF of water development water demand that has been offset with fees (Table 18), meaning the remaining 215 AF will need to be offset with City owned, but undesignated, water rights unless a mechanism can be developed to account for other conservation that has occurred since the inception of the Water Bank. An effort to formally account for some amount of the nearly 1800 AF that CoSFW estimates has been saved by conservation since the 2010 inception of the Water Bank is underway.

Conservation Credits Accounted by CoSFW (AFY)

Year: 20__	09	10	11	12	13	14	15	16	17	18	19	20	21	22	Total
Conservation credits	0	32	9	7	6	6	3	8	7	3	4	2	3	2	92

19 - Conservation credit accounting 2009-2022.

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.

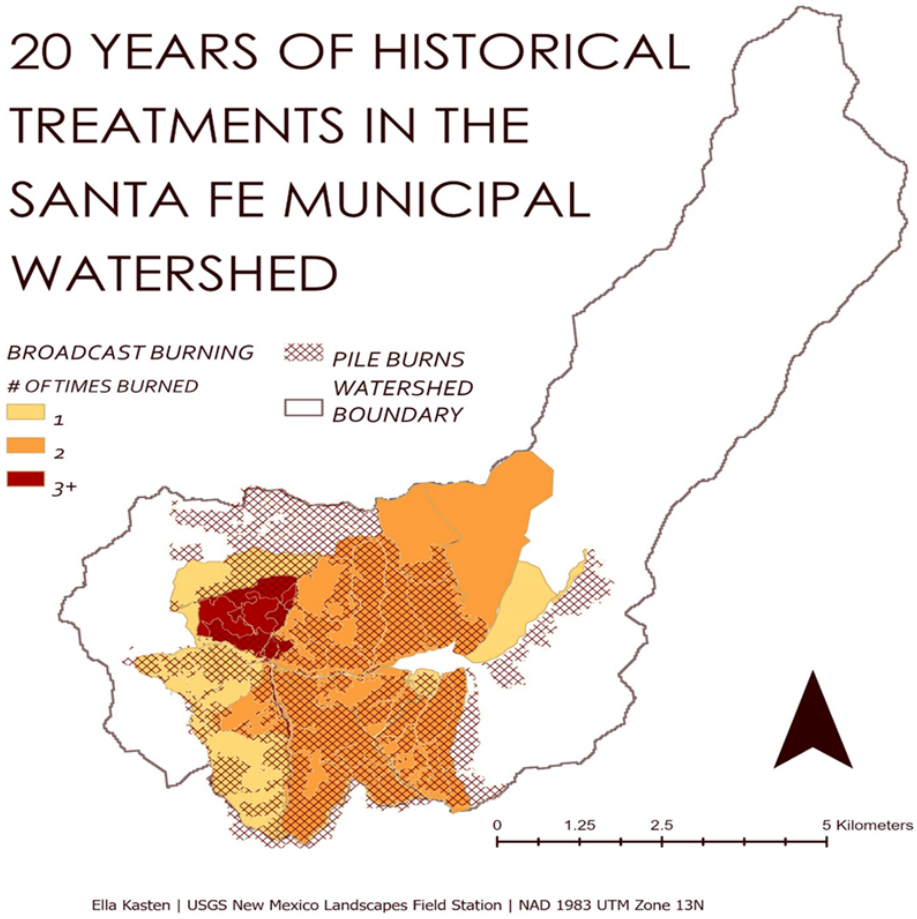
Water quality information from each of our sources of water is reported in detail in the Annual Water Quality Report, available online at https://santafenm.gov/public-utilities/water/water-resources-1/water-quality-keeping-our-water-safe. Some of the contaminants measured annually include Arsenic, Barium, 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. In 2022, the City's drinking water met all U.S. EPA and State water quality limits.

In 2021, The New Mexico Environment Department (NMED) with the City of Santa Fe completed a Source Water Assessment and drafted a Source Water Protection Plan, which includes a determination of source water protection areas of concern. The susceptibility rank of the entire CoSFW system continues to be 'moderately low' in 2022.

One of the highest risks identified within CoSFW's Source Water Protection Plan is wildfire. Surface water systems are likely to experience more immediate and long-term effects than are groundwater systems, but the water infrastructure of both types of systems are vulnerable. In 2022, New Mexico experienced two catastrophic wildfires: the Hermits Peak/Calf Canyon fire in the Gallinas and Pecos watersheds and the Black Fire in the Gila Wilderness. The wildfire season in the southwestern United States has been trending longer with larger fires over the last several decades. In response, the City of Santa Fe has taken a proactive approach to protecting the upper Santa Fe River and the two, in-stream municipal reservoirs within the Santa Fe Municipal watershed from the threat of wildfire. Since 2001, the City of Santa Fe, in collaboration with the Santa Fe National Forest, has successfully thinned over 11,000 acres of overgrown forest within the watershed and mitigated the threat of fire surrounding this surface water supply.

CoSFW is one of eight nationally recognized water utilities working collaboratively to fund US Forest Service efforts in partnership with City of Santa Fe Fire to reduce the fire hazard and restore the forest[4]. This work has also significantly reduced the risk of post-fire processes such as flooding, landslides, and debris flows that are often of even greater concern to both source water quality and infrastructure.

[4] Protecting Drinking Water at the Source: Working with the USDA Forest Service. 2020. American Water Works Association and USDA, Forest Service.



20 - Low-intensity, prescribed burning in the Santa Fe municipal watershed.

Brown Water

Brown water flow from potable pipes is typically the result of either a mechanical disruption that increases water velocities in the pipes, or a change in water chemistry in the water in those pipes. In either case the discoloration results from chemical precipitates or scales inside the pipes being mobilized and discoloring the water. From May through August 2022, CoSFW experienced an unusually large number of brown water complaints. This general increase was punctuated by three distinct events with a high degree of discoloration noted in specific locations including June (7th – 8th) and August (25th through 29th) events resulting from mechanical disruptions and a July (5th – 8th) event presumed to be a result of chemical changes. The constituent that caused the discolored water in all of the events was manganese, a mineral common in food and a natural component in our Santa Fe River supply that is also added during treatment at CRWTP. For these reasons, manganese deposits are not uncommon in distribution pipes, particularly on the east side of town. Current work planned for Nichols Reservoir includes the addition of an aeration system to the reservoir which will reduce the need for manganese use during water treatment. In addition, a pipe flushing plan focusing on areas experiencing a high rate of brown water complaints will start this spring, and a comprehensive chemical analysis of different City water supplies and the chemical build up within the pipes will begin in April.

SANTA FE COUNTY WATER DELIVERIES

Up until 2012, CoSFW served a number of customers located outside of City limits. Following the conclusion of a round of annexations that ended in 2012, ending a period of annual annexations that began in 1955, 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 begin to 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. An interim wheeling agreement between the City and County was signed in 2022 and a permanent agreement is under development. A master meter is currently under construction at Campo Conejo to allow wheeled water to me measured at that point.

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 13, the County used 88.1 AF of shared pool water during shutdowns of the BDD associated with muddy Rio Grande water. As a result of the availability of shared pool water, in 2022, no WRA water was delivered to Santa Fe County.

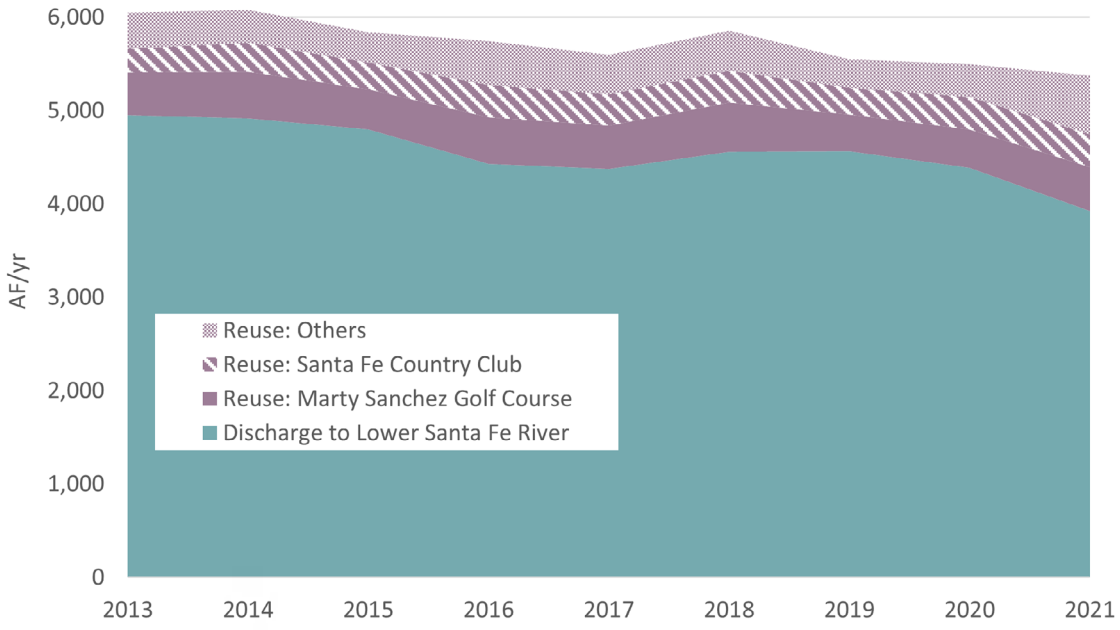
NON-POTABLE WATER USE

Water demands in Santa Fe are not met exclusively with treated drinking water. As discussed above, CoSFW manages bypass flows of Santa Fe River past McClure and Nichols Reservoirs to serve (non-potable) needs of acequias and river flow targets defined by the City's Living River Ordinance. 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, and Santa Fe Downs among others. In 2022 the City of Santa Fe filed suit in the First Judicial District against the Santa Fe Country Club, a user who traditionally has not had to pay for effluent with the desire of developing a new arrangement by which the Country Club will pay for this valuable resource. Figure 21 shows where effluent from the PRWRF has gone since 2013.

Use of Paseo Real Water Reclamation Facility Treated Effluent 2013-2021



21 - Use of treated effluent 2013-2021.

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 22. 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. 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.

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. The analysis will be compiled into emergency action plans to assist operators in responding to short term supply disruptions.

Types of Water Resources Planning Done by CoSFW

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

22 - Types of water resources planning.

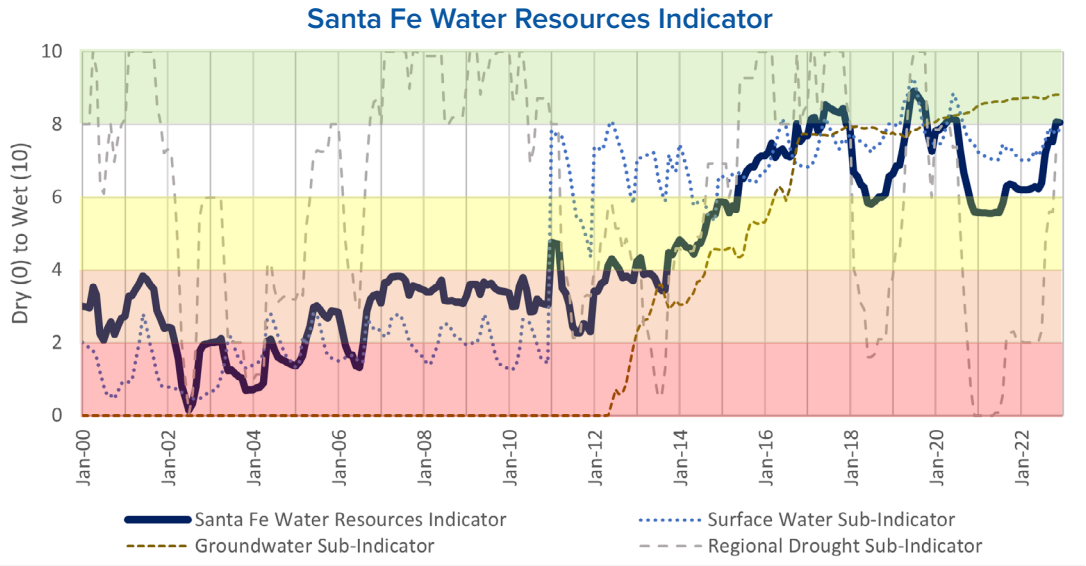
Drought Planning – The Water Resources Indicator

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 possible 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 proposed 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 percent represents groundwater availability, 30 percent represents surface water availability, and 30 percent represents regional drought conditions. The values from zero to ten of the Indicator since 2000 are shown in Figure 23. The zero value in 2002 corresponds to one of the most difficult periods in the history of CoSFW. From that point forward, conservation efforts and weakening regional drought conditions allowed the indicator to rise slowly to about four in 2011, when the BDD came online, and to almost nine in 2017. Tree ring data suggests the 22 year period shown in Figure 23 was the driest 22 year period since at least 800 AD, so it is particularly remarkable that the Santa Fe WRI representation of water availability to utility customers increased so markedly during that period.

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.

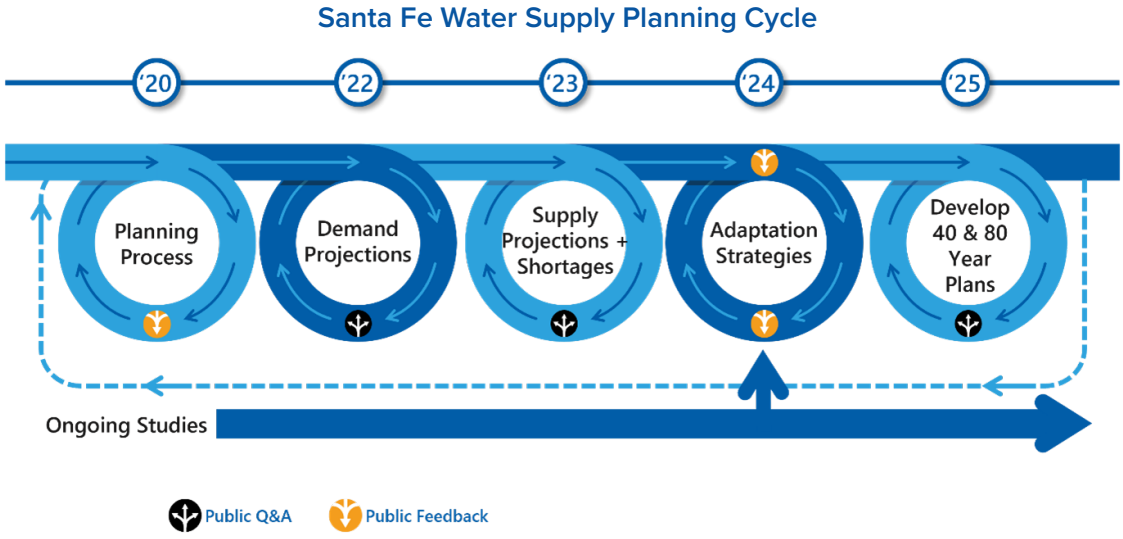


23 - Historical values of the proposed Santa Fe Water Resources Indicator.

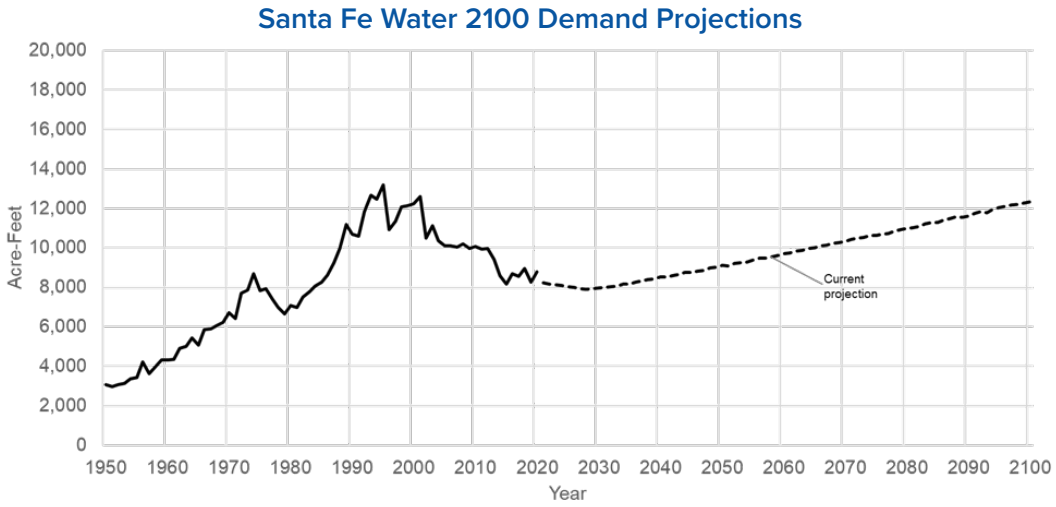
Supply projections, scheduled for 2023, will use climate projections data currently being developed by BOR. Assuming availability of these projections, presentations and Q&A sessions are planned for late 2023 to update the public on the supply projection piece of the planning process. The current schedule is shown in Figure 24 below. The current planning cycle, which began in 2020, is scheduled to be complete by the end of 2025, and will be evaluated, refined, and repeated every 10 years or as necessary in future years.

Santa Fe Water 2100 Demand Projections

CoSFW completed demand projections in 2022 and held public Q&A sessions. Total City water demand is a function of both population and average water usage per person ("per-capita"). Since about 1995, population has been increasing while per-capita water usage has been decreasing. Per-capita water usage reduction has outpaced population growth, resulting in decreasing total demand since 1995. Because population growth and per-capita water usage are largely independent of one another, demand projections were made based on separate projections of population growth and change in per-capita water usage. Population projections were based on those of the University of New Mexico's Bureau of Business and Economic Research and are consistent with other regional and national population projections. Per-capita water usage projections were developed based on a model that accurately predicts our historical change in per-capita water usage as a function of price, weather, and conservation trends. Combining population and per-capita usage projections results in projected total demand of about 12,000 AFY in year 2100, as showing in Figure 25.



24 - Planning cycle for Santa Fe Water 2100.



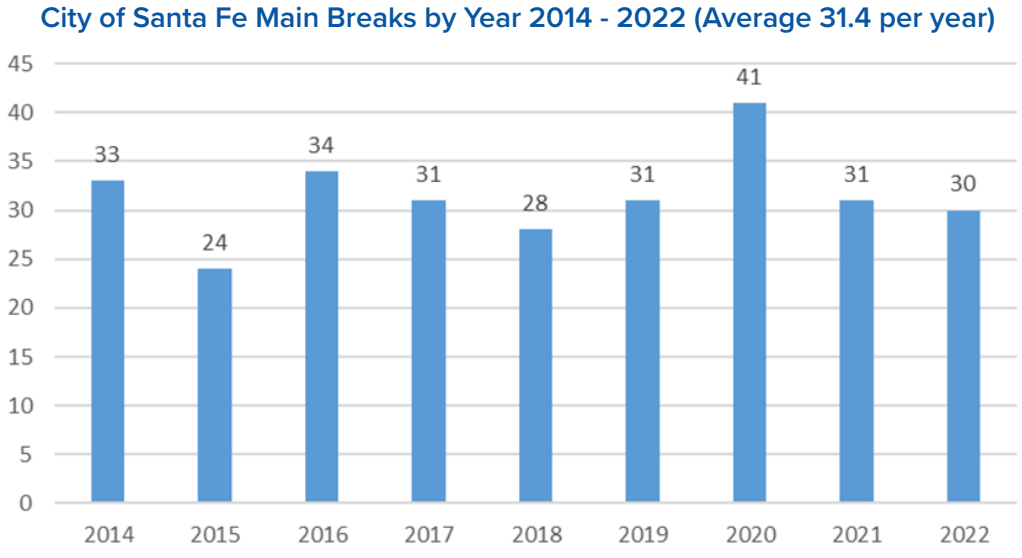
25 - Santa Fe Water 2100 CoSFW demand projections.

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. In 2022, end point exchanges (described below) became a key activity as well.

Main Breaks

There were 30 main breaks and 10 service line (line between main and water meter) leaks in 2022. This works out to just under 5 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[5]. This was close to our annual average of about 31 main breaks per year since 2014. However, although the number of breaks was near average, the estimated water loss from all breaks more than double the 2017-2021 average as a result of several very large breaks. Total water loss from the 2022 main breaks and service leaks is estimated at about 17 million gallons (0.6 percent of 2022 production), with the five largest breaks estimated to have resulted in 11.5 million gallons of water loss, and the single largest break, which occurred on Juniper Drive in January, was estimated to have resulted in 4.5 million gallons of lost water. For context, the 2017-2021 estimated average annual water loss from main breaks and service leaks was 7.3 million gallons.



27 - Main breaks from 2014-2022.

[5] 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.

26 - Juniper Drive on January 12, 2022 after a devastating water main break.

3G End Point Exchange

Water use data for each CoSFW customer is read continuously by a water meter and sent out across a cellular network daily by a meter "end point". In January of 2021, CoSFW was informed that the 3G network that our nearly 34,000 end points use would sunset at the end of 2021. Fortunately, that deadline was pushed to the end of 2022, and the T&D team stepped up and completed the change out of every end point in the system to end points that are 4G and 5G compatible. Flushing and valve maintenance were put on the backburner while the team focused on the meter end-point transition and saved CoSFW (and ultimately our rate payers) $750,000 had it been outsourced.

STRATEGIC PLANNING

The mission of CoSFW is to provide a safe, reliable, and resilient water supply to meet the City's needs. Strategic planning allows us to occasionally step back, (re)define our core mission and values, (re)vision our desired future, and make a plan to get there. In 2020, CoSFW engaged in a strategic planning process. Input from CoSFW staff, other City staff, and community stakeholders was used to develop the plan. The mission, vision, and values developed in this process feed into four goals, which were used to develop scored performance measures on a CoSFW "Scorecard". Complementary scorecards for each Section within CoSFW were also developed. Table 28 shows these goals and the 2021 and 2022 CoSFW self-assessed grades. It is important to note that our water is safe, as usual, the City's drinking water met all U.S. Environmental Protection Agency (EPA) and State water quality limits in 2022. Catastrophic supply disruption planning and water resources planning described above ensure that the water system is also reliable and resilient, respectively. Overall, CoSFW is satisfying our core mission, and the scorecard represents efforts to improve around our strong core position.

Goal	2021 CoSFW Grade	2022 CoSFW Grade
Increase system safety, reliability, and resiliency	B-	B
Workforce development	B	B
Strengthen organizational systems	B	C
Improved communication	A	B-

28 - CoSFW strategic planning scores.

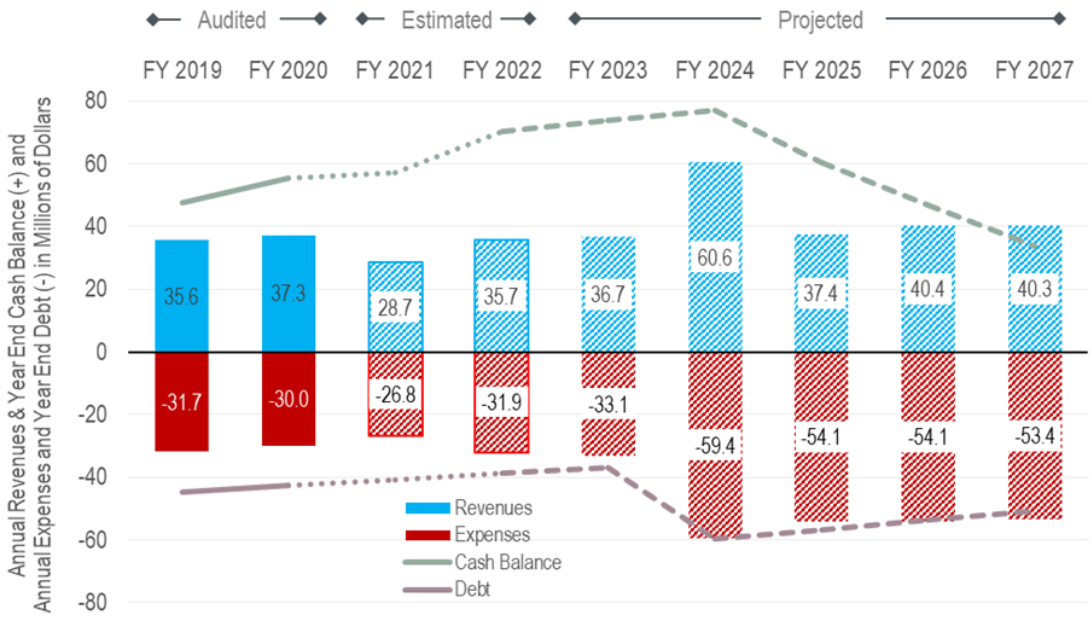
FINANCIALS

The most recent audited financial information for CoSFW is for the fiscal year ending June 30, 2020. Estimated (for years that have ended but whose audit is not yet complete) and projected (for the current fiscal year and 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 will require use of cash balances and assumption of additional debt. The jump in revenues and associated increase in debt shown in fiscal year 2024 are associated with a planned bond issuance to cover capital costs associated with the San Juan-Chama Return Flow Project.

Capital Improvement Projects

CoSFW plans to implement four large capital improvement projects (CIP) over the next several years. These projects are the Nichols Outlet Conduit rehabilitation (slated to start in 2023), the Canyon Road Water Treatment Plant Floc/Sed project (also slated to start in 2023), the San Juan-Chama Return Flow Project, and the McClure Outlet Conduit rehabilitation. In 2022, total cost for these four projects was estimated at 75.2 million dollars. Projected capital spending for the fiscal years starting in July 2022 and going through June of 2027 is shown in Table 30 below.

CoSFW: Revenues, Cash Expenses, Cash Balance and Debt
Fiscal Years Ending June 2019 through June 2027



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

Projects	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	5yr Total
Nichols - outlet conduit	$ 100,000	$ 11,900,000	$ 6,000,000	$ -	$ -	$ 18,000,000
CRWTP floc/sed	$ 200,000	$ 7,000,000	$ 7,000,000	$ 2,100,000	$ -	$ 16,300,000
SJC return flow project	$ 500,000	$ 2,000,000	$ 1,500,000	$ 11,750,000	$ 10,250,000	$ 26,000,000
McClure - outlet conduit	$ -	$ -	$ 800,000	$ 800,000	$ 2,400,000	$ 4,000,000
Priority line replacements	$ 1,626,563	$ 1,626,563	$ 1,626,563	$ 1,626,563	$ 1,626,563	$ 8,132,815
CRWTP chemical feed upgrades	$ -	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 1,000,000
St. Michael's well replacement	$ 180,000	$ 856,000	$ 856,000	$ -	$ -	$ 1,892,000
On-Call contracts	$ 2,168,752	$ 2,168,752	$ 2,168,752	$ 2,168,752	$ 2,168,752	$ 10,843,760
Other	$ 1,166,875	$ 1,050,000	$ 250,000	$ 250,000	$ 250,000	$ 2,966,875
Total	**$ 5,942,190**	**$ 26,851,315**	**$ 20,451,315**	**$ 18,945,315**	**$ 16,945,315**	**$ 89,135,450**

30 - CoSFW projected CIP spending through June 2027.

CLOSING

Thank you for taking the time to read through CoSFW's 2022 Annual Report. 2022 was characterized by extremely dry conditions in May and the first half of June and associated, catastrophic fires to our east. These extreme drought conditions changed seemingly overnight in mid-June with the beginning of an above average monsoon season, our second in a row, and overall, we finished the year producing effectively the same amount of water as in 2021. 2022 was the third year in a row, and 11th of the 12 years since BDD has been online, in which BDD provided the majority of water to CoSFW. As this goes to print in April 2023, there is hope for a good amount of Santa Fe River water this year, but if it doesn't come, our wellfields and BDD remain poised to keep us in a good water place. From an infrastructure perspective, brown water, and a couple of high profile main breaks got more attention than we would have liked, and we have plans in place to address both issues. Overall, CoSFW is building a strong team to continue to ensure 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 to get in touch.