

2012 Annual Water Report



City of Santa Fe Municipal Reservoir, Autumn 2012

City of Santa Fe
April 2013



Water Division

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- Utility Billing Division
- Wastewater Division
- Water Budget Office

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Introduction



Santa Fe Watershed 1926

As water resources in northern New Mexico become increasingly limited and the region's population continues to grow, the improved understanding of water-related issues is imperative. As one of the largest municipal water suppliers in the state, the City of Santa Fe Water Division delivers billions of gallons of water each year to customers in the greater Santa Fe urban area.

The purpose of this report is to provide the Santa Fe community with an annual report that summarizes the state of the City of Santa Fe's Water Division and the water resources we depend upon. This report compiles and summarizes information about the City of Santa Fe's Water Division including water demand, conservation, water supply, water rights, offsets

and credits, types of water use, water quality, system maintenance, energy use, climate change, and utility financial information.

This report fulfills the reporting requirements of the City of Santa Fe Ordinance 2009-38 "Water Budget Requirements." The information presented within this report contains water data through December 2012 and the anticipated 2013 water and supply projections. Averages from previous years are included for comparison. For the sake of brevity, not all the supporting data is included here in this report. Supporting information is available on the City of Santa Fe's website at www.santafenm.gov or by contacting the City of Santa Fe Water Division directly.

The information presented within this report contains water data through December 2012 and the anticipated 2013 water and supply projections.

2013 Water Demand and Supply Projections

Anticipated Demand (acre-feet)

Total: approximately 10,000 acre-feet*		10,005
City Customers		9,850
Water Deliveries:	Santa Fe County	150
	Hyde Park Estates	5

*assumes a minimum of 100 gallons per capita per day and limited, new water demand.

Anticipated Supply Source (acre-feet)

Total Production:	10,000
Santa Fe River use (CRWTP ¹)	2,020
City well use	1,150
Buckman well use	1,600
Buckman Direct Diversion	5,230

1. Canyon Road Water Treatment Plant

This page summarizes the City's anticipated water demand and supply picture for 2013. Further details can be found in subsequent sections of this report.

Storage Projected for December, 2013 (acre-feet)

Target end of year storage in Santa Fe municipal reservoirs	1,576
Total anticipated stored San Juan-Chama Water:	
Heron Reservoir	5,230
El Vado Reservoir	0
Abiquiu Reservoir	3,600
Elephant Butte Reservoir	14,000
Total storage in the Rio Grande Basin	24,406

Anticipated Santa Fe River flows (acre-feet)

Santa Fe River target flows	320
Effluent releases to the Santa Fe River	4,000

Anticipated 2013 Offset Requirements (acre-feet)

Rio Grande	1,200
Rio Tesuque	35
Rio Nambe-Pojoaque	59
La Cienega Area	2
Total Offsets	1,296

Private Wells

Estimated number of private wells within the city limits	711
Anticipated number of replacement wells drilled	0
Anticipated number of new private wells	0

2013 basic 5/8" meter residential water rate

Monthly service charge	\$18.42
Sept-April	\$6.06/1,000 gallons for first 7,000 gallons, \$21.72/1,000 gallons thereafter
May-Aug	\$6.06/1,000 gallons for first 10,000 gallons, \$21.72/1,000 gallons thereafter

An acre-foot is equivalent to 325,851 gallons.

Water Demand

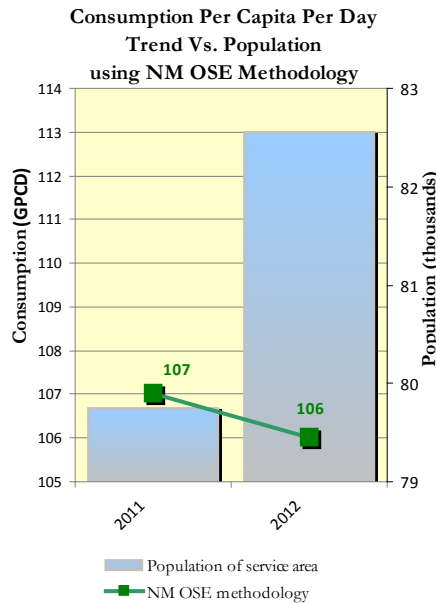
Per Capita Consumption

A common metric for comparing annual water use and water conservation effectiveness is gallons per capita per day (gpcd); which is derived by dividing the amount of water supplied to the City of Santa Fe by the population of water division customers served.

In 2012, the City of Santa Fe Water Division customer demand of 9,777 acre-feet resulted in a service-area gpcd of 106, based upon the New Mexico Office of the State Engineer's (NM OSE) methodology, one of the lowest gpcd values of any comparable city in the country. The calculated gpcd does not include deliveries to wholesale customers, such as Santa Fe County or Las Campanas (see page 18, Wholesale Water Deliveries, for water usage by these wholesale customers).

The NM OSE methodology bases the population served upon the number of water division residential customers multiplied by an American Community Survey (ACS)-derived vacancy rate, now based upon 2011 data, and an ACS-based residents per occupied household value. The submittal of the NM OSE gpcd fulfills compliance with the NM OSE's diversion permit for surface water to the Buckman Direct Diversion facility.

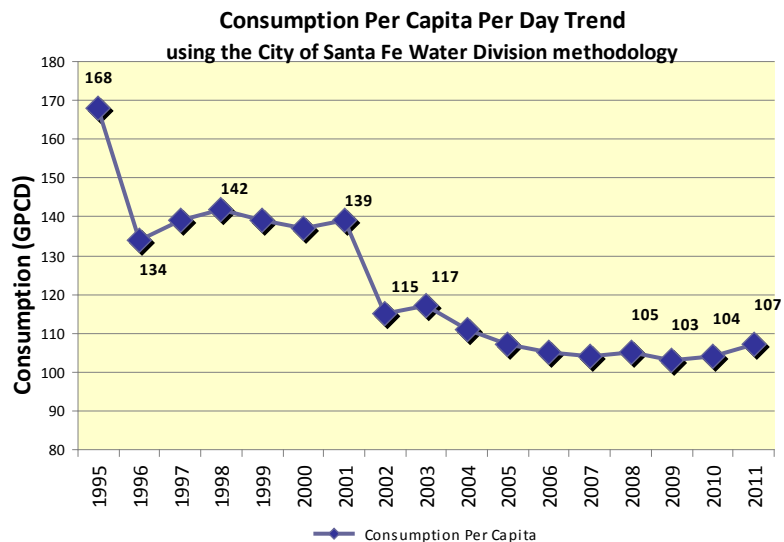
The creation of a new multi-family billing category in 2006 caused a shift in total water usage from commercial to residential/multi-family. In 2012, the largest sector of water usage for the 106 gpcd was single-family residences at 56%. Multi-family residences accounted for 10% and commercial accounts 20% of total water usage.



Comparative graph of the City of Santa Fe's NM OSE gpcd vs. the estimated water utility customer population for 2011 and 2012

Prior to utilizing the NM OSE gpcd methodology, the City of Santa Fe Water Division gpcd method, used for the previous seventeen years, determined the population served upon the most recent (2010) U.S. Census population data (adjusted for households that rely solely on domestic well water) and updated it annually utilizing growth rates from annual housing permits.

In 2012, the City of Santa Fe Water Division customer demand of 9,777 acre-feet resulted in a service-area gpcd of 106, based upon the New Mexico Office of the State Engineer's methodology, one of the lowest gpcd values of any comparable city in the country.



Historical comparative graph of the City's gpcd for 1995 to 2011

Water Bank

In 2012, 4.05 acre-feet was allocated to affordable housing units, leaving an ending balance of 36.91 acre-feet.

The City of Santa Fe (City) has a series of ordinances that require all new projects to offset their demand to the City of Santa Fe Water Division supply. The options available for the offset of new water demand include water rights acquisition and conservation in existing development. The City's water bank tracks the inflows (credits), outflows (debits), ownership, and designated use. For detailed information, please refer to the following ordinances and city code; 2005 Water Transfer Ordinance, 2009-38 Water Budget Requirements (effective January 1, 2010), and Water Conservation provisions in City Code Chapter 25.

Water credits are derived from multiple sources:

- a. Transfer of Middle Rio Grande water rights for development projects as required under the 2005 Water Bank Ordinance (and modified by 2009-38) or for water banking;
- b. Transfer of Middle Rio Grande water rights for water banking as per the 2009-38 Water Bank Ordinance
- c. Water conserved through the current conservation rebate program;
- d. Toilet retrofits credits verified by June 30, 2010 by Water Budget Administration Office;
- e. City of Santa Fe Water Division's water right acquisition program;
- f. Water conserved by City-initiated conservation programs; and
- g. Water conserved via a conservation credit program.

Any new water demand on the City water system requires a water credit

from the credit bank in an equal amount. As defined by ordinance, development projects that require less than 10 acre-feet of water (residential), less than 7.5 acre-feet of water (mixed use), or less than 5 acre-feet (commercial) can acquire the necessary water from the alternatives "a", "b", "c", and "d" above. All projects with larger water demands must use option "a" or "b". Water credits generated through City efforts (i.e. "e" and "f" previously listed) are available for the water needs of the City (e.g. new parks, municipal buildings, convention center, etc.) or City-supported projects (e.g. affordable housing dwelling units, Santa Fe River). Once water is allocated to a project from a water credit account, the appropriate "debit" is made from the appropriate account in the water bank.

By the end of 2012, 39.64 acre-feet of water was available for allocation to the City's needs or City supported efforts (e.g. new parks, municipal buildings, convention centers, affordable housing dwelling units, and the Santa Fe River).

For 2013, the affordable housing unit credits are adequate. In 2012, 4.05 acre-feet was allocated to affordable housing units, leaving an ending balance of 36.91 acre-feet. If, as in 2012, 27 homes are built a year under the Santa Fe Homes Program (SFHP) and Housing Opportunity Program (HOP) using approximately 0.15 acre-feet from the water bank per home, the affordable housing units credit pool of 36.91 will last for nine years.

Water Bank Accounting

Affordable Housing Offsets	2009	2010	2011	2012
Initial balance	-5.20	51.67	45.46	40.96
Governing body allocations to affordable housing	59.32	0.00	0.00	0.00
Annual dedications to affordable housing	-2.45	-6.21	-4.50	-4.05
End-of-year affordable housing water credit pool balance, comprised of water rights and conserved water	51.67	45.46	40.96	36.91
Developer Offsets	2009	2010	2011	2012
Initial balance	0.00	0.00	26.28	25.45
Conservation credits generated	0.00	32.46	9.04	7.15
Annual dedications to private projects	0.00	-6.19	-9.87	-16.54
City revenue from sales		\$100,000	\$160,000	\$270,000
End-of-year conserved water credit reserve balance for sale to developers	0.00	26.28	25.45	16.05
City Water Rights Credits	2009	2010	2011	2012
Initial balance	0.00	0.00	39.64	39.64
Deposits into water bank	9.62	39.64	0.00	1.09
Withdrawals (allocations by governing body)	-9.62	0.00	0.00	0.00
End-of-year balance of city owned water rights not yet allocated by governing body	0.00	39.64	39.64	40.73
Privately Owned Water Credits	2009	2010	2011	2012
Initial balance	403.28	455.89	483.50	518.21
Deposits into water bank	62.74	33.32	41.75	0.00
Withdrawals (dedications by developers to their projects)	-10.13	-5.71	-7.04	-19.31
End-of-year balance of privately owned water rights	455.89	483.50	518.21	498.90
Privately Owned Water Credits from Old Toilet Retrofit Program	2009	2010	2011	2012
Initial balance	150.00	111.00	93.00	80.00
Withdrawals (dedications by developers to their projects)	-39.00	-18.00	-13.00	-18.00
End-of-year balance of privately owned water rights	111.00	93.00	80.00	62.00

Water Bank Accounting Table is in acre-feet except as noted

Water Conservation Retrofit & Rebate Programs

In addition to gallons per capita per day, the City of Santa Fe can quantify the success of the Water Conservation Program through the retrofit, rebates and incentives programs.

Quantifying the success of a water conservation program can be difficult. Many cities rely upon their annual gallons per capita per day (gpcd) calculation as a measure of the success of their water conservation program. In addition to gpcd, the City of Santa Fe can quantify the success of the Water Conservation Program through the retrofit, rebates and incentives programs. These programs and the credited water savings have changed over the years, including the revised or new regulations associated with these programs.

The chronology below summarizes the ordinances and resolutions pertaining to how water is conserved, and also the incentive programs (retrofits and rebates) which were created as a way to encourage community participation in the water conservation requirements.

2002 Annual Water Budget Requirements (adopted by Resolution 2002-55 and revised by Resolution 2003-106). All new construction served by the City water utility must implement stringent water conservation requirements and offset new demand through retrofitting high-use toilets, typically 3.5 or 5 gallons per flush (gpf), with low flush toilets (1.6 gpf) or by purchasing pre-1907 Middle Rio Grande surface water rights.

2002 The City of Santa Fe purchased 75 gallon rain barrels for distribution; 1,000 customers were able to purchase one rain barrel each for \$35, a significant savings from the actual cost of \$74.95. This program only lasted a few months before the supply of rain barrels was exhausted.

2003 Establishment of the Water

Budget Program, also known as the Toilet Retrofit Program, was created to track the number of toilet retrofits and accumulated water savings. Pre-certifications are water credits awarded to entities that have retrofitted any number of toilets but have not designated the water credits to a future project.

2004 A Rebates Program was introduced for hot water recirculators (\$100), washing machines (\$100) and rain barrels (\$30) resulting in water savings of 67.26 acre/feet between 2004 and 2009, when the program ended.

2005 The Water Rights Transfer Program (SFCC 1987 § 25-12). The ordinance modified offset requirements for new development. The City code now requires offsets with Middle Rio Grande surface water rights, transferred to the City, instead of toilet retrofits for commercial developments greater than 5 acre-feet and residential developments greater than 10 acre-feet.

2009 A 1998 analysis "Water Use in Santa Fe" was updated to include additional customer sectors. These sectors (e.g. single family, apartment, office, medical, religious, schools, parks) are used in creating development water budgets. The report, Water Use In Santa Fe (2009), is available on the City's website at: <http://www.santafenm.gov/DocumentView.aspx?DID=5017>

2009/10 Water Demand Offset Requirements (adopted by Ordinance #2009-38). The ordinance replaced the Annual Water Budget Requirements (Toilet Retrofit Program). Outstanding

toilet retrofit credits are moved into the Water Bank as they are being redeemed. Components of the new City code include:

- The development of a Water Budget and a Building Permit Requirement (SFCC 1987 § 14-8.3): Applicants are required to offset demand through dedication of water conservation credits or transferred water rights.
- City's Water Budget (SFCC 1987 § 25-9): Water managers are required to prepare annual accounting of current and projected supply and demand, and allocate water made available by water rights purchases, leases, and conservation measures to meet priorities, including affordable housing.
- City Water Bank (SFCC 1987 § 25-10): A water bank was established to account for water credits derived from conservation programs and water rights transfers to offset future demand. Some of the credits are available for purchase by developers or for allocation to City priorities.
- Conservation Credit Programs (SFCC 1987 § 25-11): credits generated by water conservation rebates and water conservation contracts.
- Water Rights Transfer Program (SFCC 1987 § 25-12): requires that new commercial development greater than 5 acre-feet and residential development greater than 10 acre-feet acquire and transfer water rights to City before obtaining building permit.

2010 A new rebate program was instituted for which credits would now go into the Water Bank instead of the Water Budget Program. Rebates

were offered for high-efficiency toilets (HET) (\$175/residential, \$504/commercial), water free urinals (\$630), high-efficiency clothes washers (\$480), rain barrels (\$12-\$50 depending on size) and water harvesting systems (\$0.25/gallon), and for commercial process efficiency, resulting in 32.4626 acre/feet of conservation credits delivered to the Water Bank.

Note: This program was funded in part with a grant from the American Recovery and Reinvestment Act of 2009. The program was ended in July 2010 due to depletion of funds.

2011 Beginning, May 1, 2011, rebates were offered for high-efficiency toilets (HET) (\$175/ residential, \$125, \$250, or \$500/commercial depending on type), water free urinals (\$500), high-efficiency clothes washers (\$150 or \$350 depending on type), rain barrels (\$12-\$50 depending on size) and water harvesting systems (\$0.25/ gallon), and for commercial process efficiency, resulting in 9.0402 acre-feet of conservation credits delivered to the Water Bank.

2012 Rebates for the same products and at the same values as 2011 were continued in 2012, resulting in 7.1504 acre/feet of conservation credits delivered to the Water Bank (see the chart on the next page.)



2012

Commercial Use	Qty of Rebates	\$ Amount per Rebate	Water Savings In Acre-Feet per Rebate	\$ Amount for all Rebates	Water Savings In Acre-Feet for Water Bank
Flushometer Valve HET		\$ 500.00	0.033600	\$ -	0.00
Tank Type HET	6	\$ 250.00	0.016800	\$ 1,500	0.10
Hotel/Motel HET		\$ 125.00	0.002200	\$ -	0.00
Water Free Urinal		\$ 500.00	0.042000	\$ -	0.00
HE Clothes Washer replacement for top loading washer		\$ 350.00	0.023300	\$ -	0.00
HE Clothes Washer exchange for any front loading Clothes Washer		\$ 150.00	0.008800	\$ -	0.00
CPE (Commercial Process Efficiency)			0.450000	\$ -	0.00
Sub Total				\$ 1,500	0.10 acre-feet
Residential Use					
HET Residential	254	\$ 175.00	0.005300	\$ 44,450	1.35
HE Clothes Washer replacement for top loading washer	228	\$ 350.00	0.023300	\$ 79,800	5.31
HE Clothes Washer exchange for any front loading Clothes Washer	41	\$ 150.00	0.008800	\$ 6,150	0.36
Rain Barrel 50-99 g	12	\$ 12.00	0.000800	\$ 144	0.01
Rain Barrel 100-199 g	3	\$ 25.00	0.001500	\$ 75	0.00
Rain Barrel 200-299 g	1	\$ 50.00	0.003100	\$ 50	0.00
Water Harvesting	1	\$ 0.25	0.000015	\$ 216	0.01
Sub Total				\$ 130,885	7.05 acre-feet
Total				\$ 132,385	7.15 acre-feet

Conserved water allocated to the Water Bank in 2012.

Water Conservation Office

The City of Santa Fe has built a comprehensive and effective water conservation program from incremental steps that began in 1997. Currently, the Water Conservation Office provides educational activities for all ages, administers rebate and incentive programs, enforces the water conservation requirements of various City ordinances, uses media for public outreach and leads by example with xeriscape demonstration gardens. Tiered water rates have also played a key role in reducing consumption.

A number of strategies have been developed to engage the many audiences that make up the City of Santa Fe. These programs are designed to educate each audience about the benefits of conserving water as well as provide the tools and knowledge necessary to make the desired changes. Some of the most popular programs are summarized below:

Children's Programs

9th Annual Children's Water Conservation Poster Contest: The 2012 theme for the posters and related educational activities was "Living in a Drought".



- 375 posters were submitted by 1st-6th grade students
- 18 posters were selected for the 2013 Water Conservation calendar

- The grand prize winner's poster is featured on the back of a City bus for one year

10th Annual Children's Water Fiesta, April 11-12, 2012:

- 650 4th grade students from 9 different Santa Fe Public Schools attended the Fiesta
- 14 organizations donated their time and effort for both days
- 14 activities were presented each day, of which 5 were new activities for this year.

RiverXchange: This was a new program in 2012, which provided a year-long curriculum for students to explore key water concepts through study of their local river ecosystem, hands-on activities, field trip and service project.

- 125 5th grade students participated
- Field trips to Santa Fe River, Buckman Regional Water Treatment Plant and Waste Water Treatment Plant
- Guest speakers from five partner agencies, including New Mexico Office of the State Engineer, New Mexico Environment Department, presented on water conservation, water quality, stormwater, river ecosystems and wastewater treatment.

Adult Programs

Mayor's Challenge for Water Conservation: This is a friendly competition between U.S. cities, sponsored by a non-profit organization, The Wyland Foundation, to see which city can be the most water conscious. 2012 was Santa Fe's first year to participate, and despite having been misclassified as a city of 100,000 or more, Santa Fe came in 4th in this water conservation pledge campaign,

The Water Conservation Office provides educational activities for all ages, administers rebate and incentive programs, enforces the water conservation requirements of various city ordinances, uses media for public outreach and leads by example with xeriscape demonstration gardens.

demonstrating our residents' commitment to water conservation.

Fix-A-Leak Week: This is a nationwide EPA WaterSense campaign, which occurred on March 12-18, 2012. The Water Conservation Office partnered with NM OSE to create the "Bad Flapper" campaign, featuring a 1920's silent-movie style villainess, to demonstrate the number one cause of leaky toilets - a faulty flapper. The campaign included:

- Commercials shown on KOAT channel 7
- Commercials in both DeVargas and Regal Santa Fe Theaters
- Newspaper ads
- Bill inserts
- Radio commercials
- Dye tab cards for detection of leaky flappers were handed out to customers at the Water Division

Santa Fe Master Gardener Association: Presentations on drip irrigation to the Master Gardener Association Intern Class.

Qualified Water Efficient Landscaper (QWEL) Certification Training:

- QWEL class offered at Santa Fe Community College in Fall 2012
- The City of Santa Fe is the only New Mexico agency offering this training which is endorsed by the U.S. EPA WaterSense program

Weekly Radio Talk Show: Now in its 10th year, "Water Talk", a 30 minute radio show on KSVE 810 am is hosted by City staff. The hosts discuss water conservation, with contributions from guests, including The City of Santa Fe's Water Resources Coordinators, Public Utilities Engineer Technician, Public Utilities Department and

Water Division Director, Public Utilities Billing Director, Public Utilities Planner, Water Resources and Conservation Manager, City Councilors and others.

Public Outreach and Marketing

Commercial Outreach: 5,500 letters from the Water Conservation Office were included with business license renewal notices sent out in December. The letters provided the City of Santa Fe Comprehensive Water Conservation Requirements, information about rebates, and contact information to order restroom signage. As a result of the letter, 100 signs were sent out.

Water Conservation Median: St. Michaels at Calle Lorca - Sponsored by the Water Conservation Office, with assistance from City Parks, Water Transmission and Distribution, and Custodial Services, the median was redesigned to capture 1,200 gallons of stormwater runoff to water the new drought tolerant trees and shrubs.

Demonstration Gardens: Water Division Office and Water Division Annex for the Water Conservation program have gardens showcasing water harvesting techniques, recycled water feature powered by solar, themed plantings and efficient irrigation with a weather based controller. A new active water harvesting system, with two 1,000 gallon tanks, was installed to collect parking lot stormwater runoff for use on plantings at the Water Division Annex.

Water Rate Structure

The City of Santa Fe maintains a pricing structure that encourages water conservation. A two-tier rate structure with water usage based upon meter size

and time of year is in place as approved by the governing body. This rate structure benefitted the success of the City of Santa Fe's Water Conservation and Drought Management Programs.

For a basic 5/8" meter the residential, multi-family, and commercial rate, including the monthly service charge, water rates are as follows:

- Monthly service charge: \$18.42
- During the months of Sept.-April the water rate charge is \$6.06/1,000 gallons for the first 7,000 gallons, \$21.72/1,000 gallons thereafter.
- During the months of May-Aug. the water rate charge is \$6.06/1,000 gallons for the first 10,000 gallons, \$21.72/1,000 gallons thereafter.

Drought

According to the National Weather Service the 2011 to 2012 24-month period up to December 2012 was the warmest and driest period in New Mexico since the late 1890's. Also, The City of Santa Fe received only 47% of normal, annual precipitation in 2012.

The basic definition of drought by the National Drought Mitigation Center (NMDC) is a deficiency of precipitation over an extended period of time, usually a season or more. Furthermore, drought is a normal, recurrent feature of climate. The most commonly used definitions of drought are based on meteorological, agricultural, hydrological, and socioeconomic effects.

The Natural Resources Conservation Service (NRCS) annually provides streamflow forecasts in the spring for the Rio Grande Basin based upon snowpack moisture content, soil conditions, forecasted precipitation,

and seasonal temperatures. In 2012, the Santa Fe River streamflow forecast was 60% of the 30 year average. In 2013, the streamflow forecast for the Santa Fe River is 32% of the 1981-2010, 30 year average.

For the Rio Grande, the NRCS' 2012 streamflow forecast at Otowi Bridge was 39% of the 30 year average. At Otowi Bridge is the USGS' gaging station to measure flow for deliveries to the BDD Project. In 2013, the NRCS' 2013 streamflow forecast is only 30%; however, storage in the Rio Grande basin, is 31 percent of the 30 year average and 63 percent of the storage levels from one year ago. Critically low flows in the Rio Grande are of concern to the BDD Project because the facility is required to curtail diversions during critically low flow periods pursuant to federal permit conditions associated with endangered species as stated by in the BDD Project's Environmental Impact Statement and Record of Decision. Also, when flows are below approximately 200cfs, the facility cannot physically divert water from the river. Even if supplemental stored San Juan-Chama project water is released from upstream reservoirs there must be enough "carriage water" with adequate flows in the Rio Grande to deliver the City of Santa Fe's portion of surface water to the BDD Project's intake structure downstream.

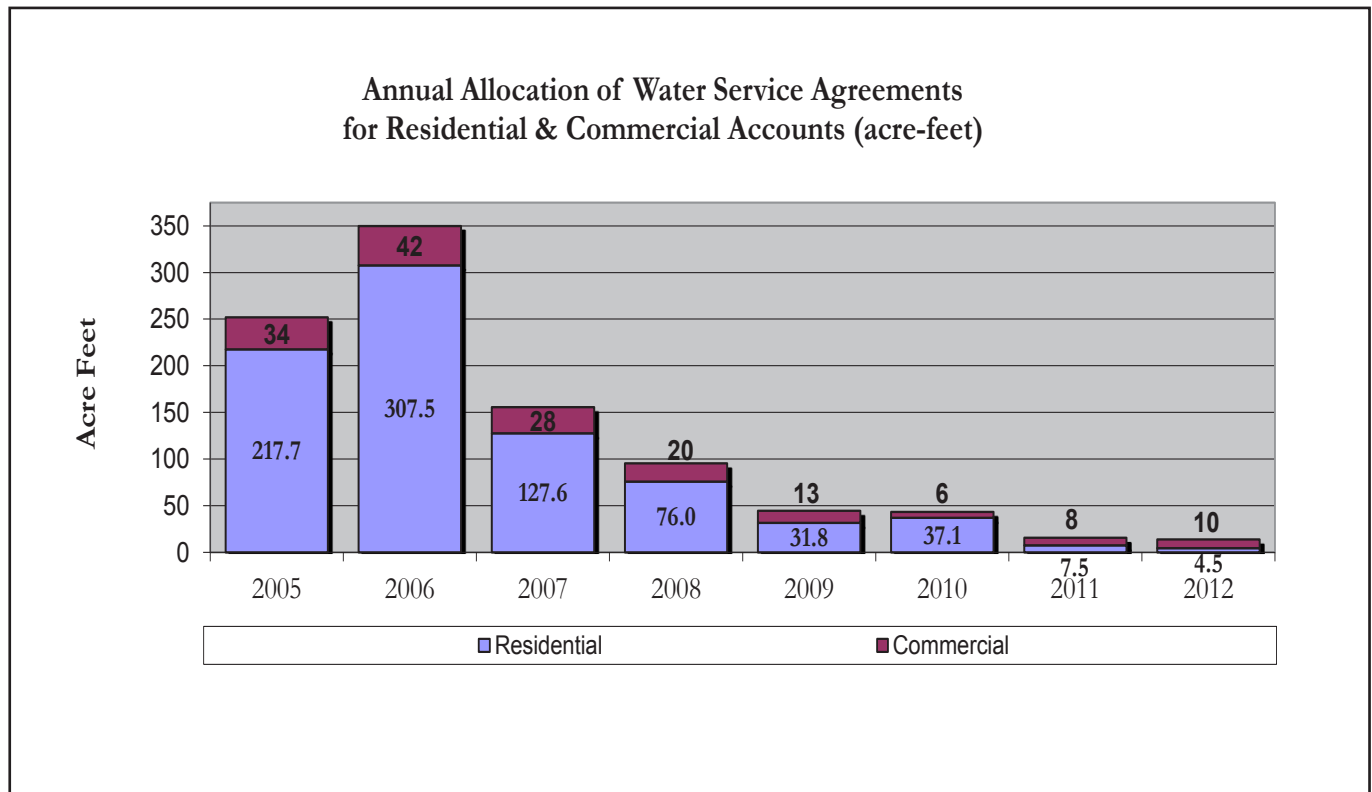
Despite two years of persistent and severe drought with high peak daily water demands and because of water conservation efforts, the City of Santa Fe Water Division's total water production has remained under 10,000 acre-feet and the customers water demand has consistently remained under 110 gallons per capita per day.

According to the National Weather Service the 2011 to 2012 24-month period up to December 2012 was the warmest and driest period in New Mexico since the late 1890's.

Near-future Water Demands

Any entity seeking new water service within the City limits must complete either an Agreement for Metered Service (AMS) or an Agreement to Construct and Dedicated (ACD). An AMS is typically an agreement to connect a single meter or multiple meters, such as a subdivision or commercial centers, to the City of Santa Fe Water Division's distribution system. An AMS is typically used when the applicant is not seeking fire

service or a main extension. An ACD is an agreement for fire service or a main extension for any size of meter. The applicant must specify the type of connection on the application from which staff establishes a water budget based on standard water usage criteria. The annual water allocation in AMS and ACD showed a sharp decrease from 2006-2007; demand for new services for 2012 stood at 14.5 acre-feet.



Annual allocation of water through AMS and ACD Water Service Agreements

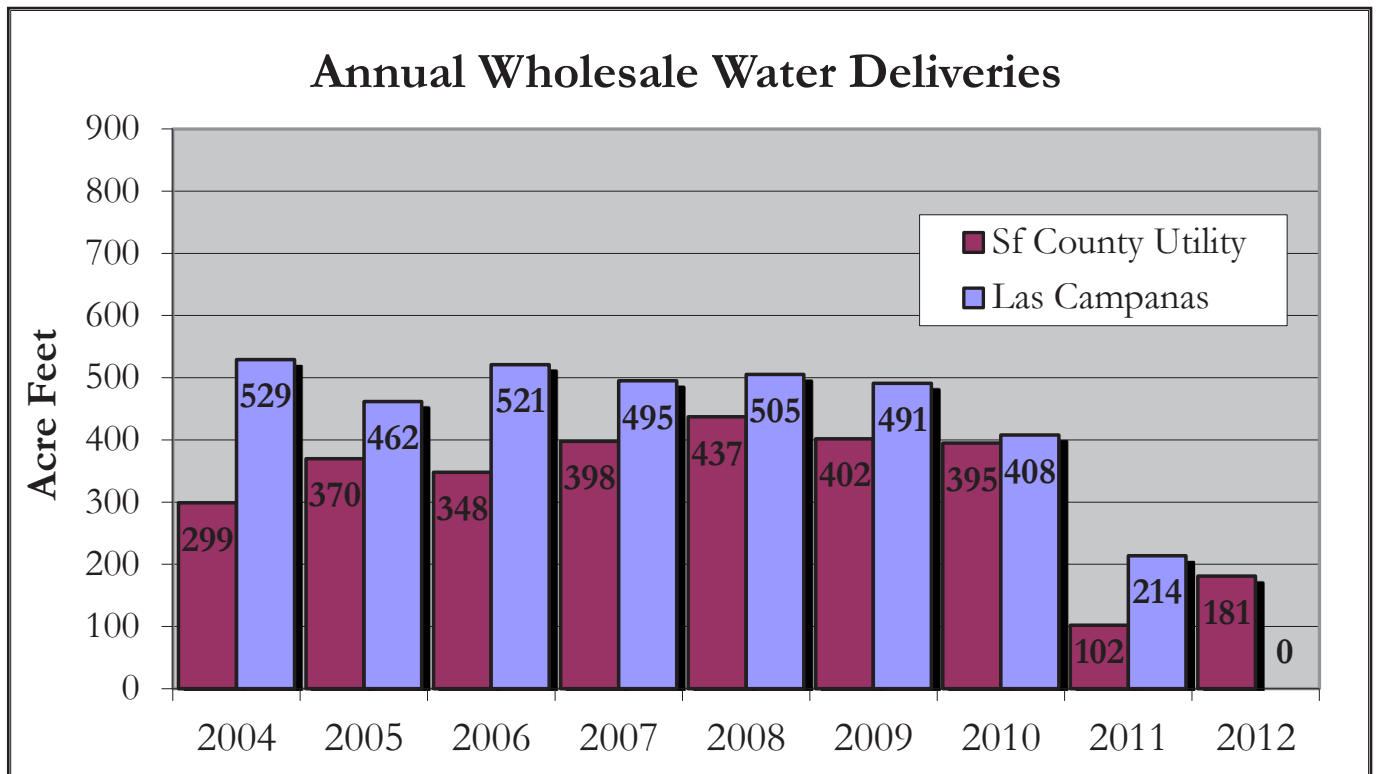
AMS and ACD Water Service Agreements in acre-feet																
	2005		2006		2007		2008		2009		2010		2011		2012	
	Units	Demand (AFY)	Units	Demand (AFY)	Units	Demand (AFY)	Units	Demand (AFY)	Units	Demand (AFY)	Units	Demand (AFY)	Units	Demand (AFY)	Units	Demand (AFY)
Residential																
Single Family	587	141.8	965	246.4	307	68.8	187	43.2	5	1.3	198	36.9	12	1.9	14	2.96
Apartment/Con	153	32.1	285	59.9	185	38.9	116	24.4	0	0.0	0	0.0	10	1.6	3	1.4
Guesthouse	77	9.2	9	1.1	6	0.7	5	0.6	2	0.2	0	0.0	1	0.1	1	0.1
Mobile Home	0		1	0.2	0		0	0.0	133	30.3	1	0.2	0	0.0	0	0.0
Senior Complex	246	34.4	0		137	19.2	56	7.8	0	0.0	0	0.0	28	3.9	0	0.0
Subtotal Resid	1063	217.7	1260	307.5	635	127.6	364	76.0	140	31.8	199	37.1	51	7.5	18	4.5
Commercial	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)	sq. ft.	Demand (AFY)
Office (Non-med)	44355	2.7	22115	1.3	60923	7.3	83717	4.7	51452	3.1	1600	0.1	22249	1.6	15342	1.07
Office (Medical)	52699	7.9	42000	6.3	33281	10.0	20300	3.1	2996	0.4	8272	0.6	0	0.0	8816	0.63
Retail Store	30470	1.8	51993	3.1	33280	4.0	1200	0.1	6929	9.0	29113	2.9	150000	6.8	7000	0.45
Grocery Store	9259	1.1	0		0		0		0	0.0	0	0.0	0		6000	0.76
Restaurant (Full)	0		20525	5.9	0		0		0	0.0	0	0.0	0		144 (seats)	2.88
Restaurant (Lir	1500	2.5	0		0		3022	8.4	1	0.0	0	0.0	0		0	0.00
Wholesale, Wa	4273	0.2	149050	6.0	0		37846	1.5	10612	0.4	2000	0.1	0		0	0.00
Industrial Man	0		4375	0.2	0		0		0	0.0	0	0.0	0		0	0.00
Church (witho	7541	1.2	0		0		0		0	0.0	0	0.0	0		0	0.00
Lodging (Limit	46	6.9	0		0		0		0	0.0	0	0.0	0		0	0.00
Schools, Elem	0		605	4.8	0				0	0.0	0	0.0	0		550 (students)	2.90
Other (not liste	196249	9.9	64977	14.6	29001	6.7	141	1.7	0	0.0	14368	2.7	0	0.0	7000	0.81
Subtotal Comm	346392	34.2	355640	42.2	156485	28.0	146226	19.5	71990	12.9	55353	6.4	172249	8.3	44158	9.5
Total Allocation:		251.8		349.7		155.5		95.5		44.8		43.5		15.8		14.0

AMS and ACD Water Service Agreements

Wholesale Water Deliveries

In 2012, Santa Fe County water utility took delivery of water under the City/County Water Resources Agreement during the times when the BDD facility was not producing water.

Before 2012, the City has contracts to deliver wholesale water to Las Campanas and Santa Fe County Utility; however, with the successful completion of the Buckman Direct Diversion (BDD) facility in January 2011, the BDD facility has become the primary source of water for Santa Fe County's water utility. Las Campanas' potable water needs are being met by Santa Fe County's water utility under the terms stipulated in a bulk water agreement between Santa Fe County and Las Campanas. Since the BDD facility has been completed, the 2005 City/County Water Resources Agreement provides Santa Fe County with up to 500 acre-feet per year of wholesale delivery water from the City of Santa Fe, with an additional 850 acre-feet available under drought and emergency conditions. In 2012, Santa Fe County water utility took delivery of water under the agreement during the times when the BDD facility was not producing water.



Annual Wholesale Water Deliveries

Water for the Santa Fe River

As directed by ordinance, in mid-April of each year the annual target flow allocation is determined based upon projections for the year's anticipated watershed yield (Santa Fe River runoff forecasts). The 2013 flow target was set at 320 acre-feet based upon reduced moisture content in the upper Santa Fe watershed snowpack. During the previous year, staff has engaged in a range of activities that are outlined in the Target Flow Administrative Procedures, e.g., establishing the annual hydrograph (flow pattern) for target flows; monitoring flows for time and distance traveled within the river channel; and record-keeping of target flow volumes. The Target Flow hydrograph has also been administered to provide flows that "support community events scheduled along the Santa Fe River" as provided for in the ordinance.

As directed by the Target Flow ordinance, and outlined in the Target Flow administrative procedures, staff shall provide the governing body with an annual report that describes Target Flow operations and flow volumes for the preceding year, plus the planned Target Flow hydrograph for the coming year. This year's annual report on Santa Fe River Target Flow will be provided to the governing body in April, 2013.

Voluntary River Conservation Fund

In accordance with City Code Chapter 25-8.1, the City of Santa Fe set up a voluntary river conservation fund for citizens to donate money to the City for the purchase, acquisition, long-term leasing of consumptive water rights in quantities sufficient to sustain the total water demand for either a living Santa Fe River or for the preservation and continuation of sufficient water flowing through the Rio Grande. Since, Fiscal Year 2006-2007 the volunteer donations have amounted to approximately \$111,500. Currently, with the match provided by the City of Santa Fe, the total amount of the Voluntary River Conservation Fund is approximately \$223,000.

The Santa Fe City Council has adopted an amendment to the Voluntary River Conservation Fund ordinance to expand the purposes for which the fund may be utilized. The amended ordinance expands "the use of the donated funds to include projects that will improve the flow of water in the Santa Fe River in ways that enhance the ecosystems of the Santa Fe River and its riparian corridor." Funds collected prior to March 16, 2013 shall be used as stipulated in the original ordinance.



Annual Children's Fishing Derby and River Festival along the Santa Fe River

Year	Targeted Bypass Flow for the Santa Fe River per Ordinance (Acre-feet)	Actual Flow to Santa Fe River below Nichols Reservoir (Acre-feet)*
2008	200	200
2009	700	719
2010	800	2,033
2011	300	321
2012**	600	542

*Note: Actual Flow to Santa Fe River attributed to the targeted bypass flow, reservoir management releases, reservoir spillover, and stormflow

**2012's actual flow is a partial total from 4/16/2012 to 4/15/2013

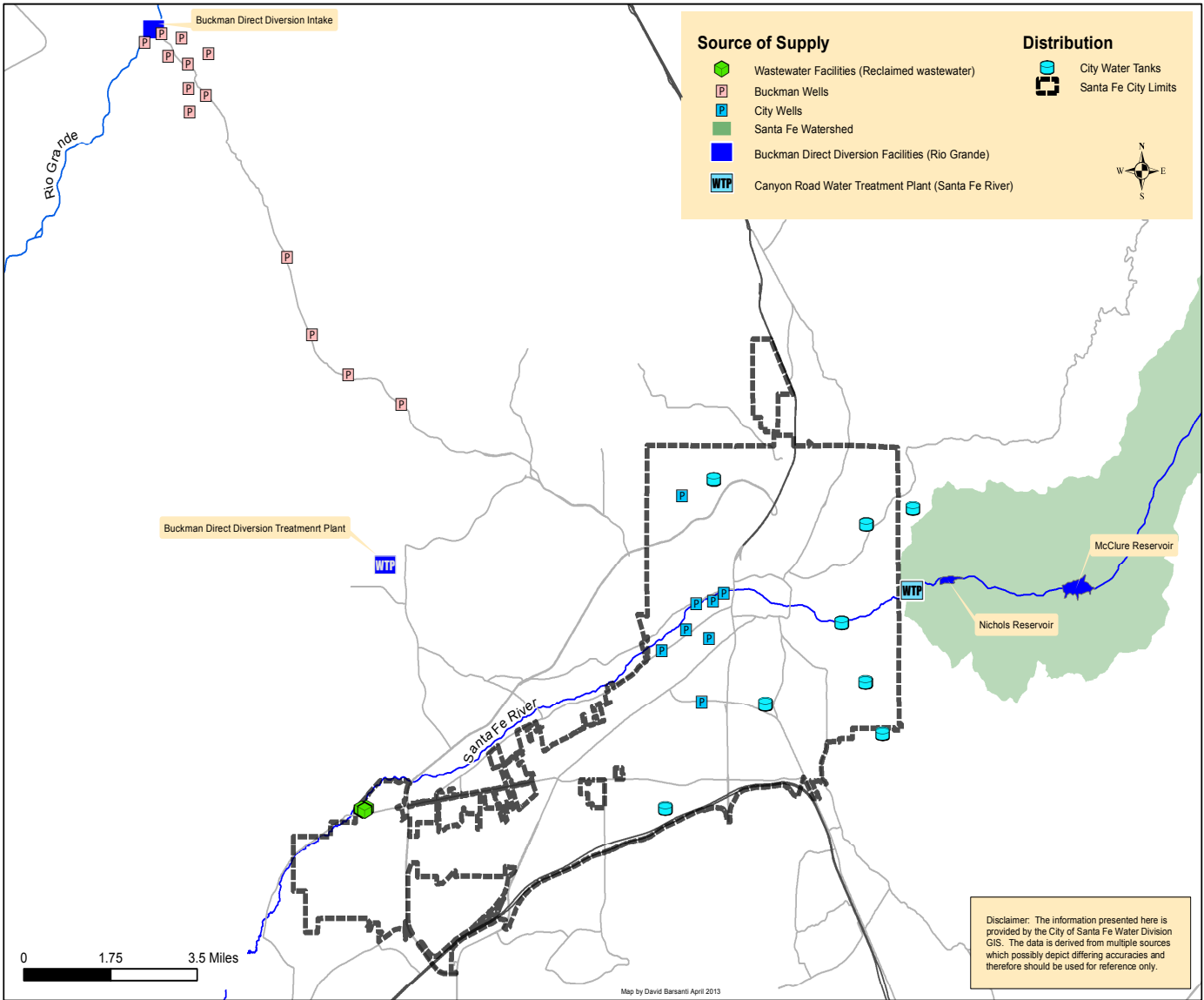
Our Water Supplies

Sources of Potable Supply

The City of Santa Fe Water Division produces an adequate, reliable, safe and sustainable water supply for its customers from one of the City's four supply sources: the Santa Fe River, the City well field, the Buckman well field, and the Rio Grande via the Buckman Direct Diversion Facilities, all identified in the map below. Also, the City of Santa Fe Water Division utilizes reclaimed wastewater and water conservation to reduce the total supply of potable water.



City of Santa Fe Water Division Source of Supply



Map of the City of Santa Fe Water Division Sources of Supply

The City of Santa Fe has been relying on the Santa Fe River for its community needs since the founding of the City four hundred years ago. Since 1995, when the City purchased Sangre de Cristo Water Company from PNM, the City has managed a declared water right of 1,540 acre-feet per year and a licensed water right of 3,500 acre-feet per year on the river for a total of 5,040 acre-feet. Water from the Santa Fe River is treated at the Canyon Road Water Treatment plant (map on previous page), from which it flows into over 600 miles of distribution lines throughout the City.

Stream gage records dating back to 1915 identify the mean inflow (50th percentile) of the Santa Fe River in the upper watershed to be approximately 4,909 acre-feet with the 25 and 75 percentiles being 3,065 and 7,045 acre-feet, respectively.

The Santa Fe Water Improvement Company built a reservoir on the Santa Fe River in 1881. Currently the City has a license to store up to 3,985 acre-feet (combined) of Santa Fe River water in McClure and Nichols Reservoirs. Both municipal drinking water supply reservoirs are located east of the City within the closed upper Santa Fe River municipal watershed.

Groundwater wells in the Santa Fe area account for a majority of the available municipal water supply. The City has seven active groundwater wells within the City limits, most of which are

focused near the Santa Fe River (see map). The wells were installed in the 1940s and 1950s, and have been re-drilled or upgraded over the years. The City also has thirteen groundwater wells in the Buckman well field, northwest of town (map on previous page). The newest Buckman wells are all 2,000 feet deep and began producing water in 2003.

Buckman Direct Diversion Project

Initially operated by the Design-Build Contractor beginning in January 2011, the Buckman Direct Diversion (BDD) Project produced a total of 4,983 acre feet of high quality drinking water throughout the year. Since assuming operational responsibility in May 2011, BDD staff has undertaken a series of high performance strategic initiatives aimed at becoming an industry leader. On-going efforts to establish “world class” maintenance practices will ensure infrastructure reliability and longevity in order to get the most out of the community’s financial investment. The FY 2012-13 Proposed Budget contains published performance metrics covering financial performance, energy consumption, treatment process efficiency and regulatory compliance. Evaluating and reporting on project performance on a routine, publicized basis will keep citizens and elected officials apprised of the “value” received from the Buckman Direct Diversion Project. The Buckman Direct Diversion project is a \$221-million regional water supply

City of Santa Fe Diversion Water Supply Portfolio		
Source	Water Rights (acre feet)	Available Water (acre feet)
Santa Fe River	5,040	4,040 assuming 1,000 to river
City Wells	3,586*/ 4,865	sustainable use
Buckman Wells	10,000	sustainable use
Buckman Direct Diversion	5,230**	available beginning in 2011

* when the City uses the Northwest well

** City's San Juan-Chama water

The City of Santa Fe Water Division surface water supplies have the advantage of being renewable, high quality, and energy efficient

project that allows water customers in the City and County to use renewable surface water instead of relying mostly on groundwater unsustainably. Construction on the project began in October of 2008 and was completed by December, 31 2010.

The project includes a raw water intake on the east bank of the Rio Grande at Buckman; 6 booster stations; a 15 million gallon per day, \$150 million, state-of-the art water treatment plant; and 26 miles of transmission pipeline (raw and finished). The project is governed by a joint City and Santa Fe County board. More information on the project can be found at www.bddproject.org.

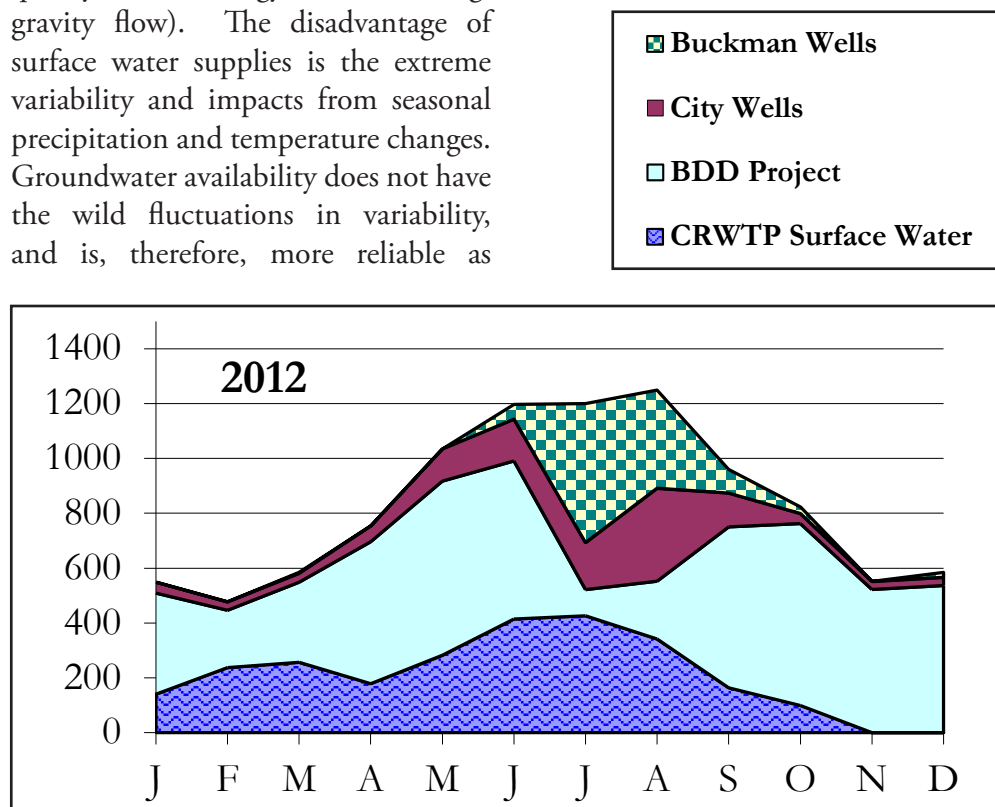
Conjunctive Use and Sustainability

The City of Santa Fe Water Division surface water supplies have the advantage of being renewable, high quality, and energy efficient (e.g. gravity flow). The disadvantage of surface water supplies is the extreme variability and impacts from seasonal precipitation and temperature changes. Groundwater availability does not have the wild fluctuations in variability, and is, therefore, more reliable as

long as it is not overused. To have a sustainable and reliable water supply source, the City municipal utility conjunctively uses both surface water and groundwater. Conjunctive management is a water resources principal that espouses maximizing the use of renewable surface water, and preserving the groundwater when needed for droughts or emergencies, allowing for its more sustainable use.

Production by Supply Source

As shown in the 'Monthly Water Production by Source' graphs below, the City has taken advantage of increased availability of surface water from the Buckman Direct Diversion Project to decrease use of the City and Buckman well fields, allowing them to rest for use in drier years, when surface water is not as readily available. In 2012, total production for the City of Santa Fe Water Division was 9,958 acre-feet, which included 181 acre-feet for Santa Fe County Water Utility.



2012 Production by source of supply

Water Rights used for ‘Offsets’

In addition to water rights that the City can directly divert for water supply, the City maintains a portfolio of ‘offset’ surface water rights that are associated with the Buckman well field and the Northwest Well. The purpose of these acquired water rights is to keep the nearby stream systems ‘whole’ or unaffected by the impacts that pumping groundwater has on surface water. The City has acquired sufficient water rights to satisfy its current obligation on the Rio Grande, Rio Tesuque, and Rio Pojoaque through a combination of acquired surface water rights, the City’s San Juan Chama water, leased San Juan Chama water, and stored San Juan Chama water.

City’s Surface Water Offsets (Acre-Feet)		
Stream system	Water rights (af)	Offsets needed in 2012 (af)
Rio Tesuque*	49	34
Rio Pojoaque*	88	59
Rio Grande**	1,438	1,173
La Cienega	1	2

*includes water owned by Las Campanas

** includes water owned by Santa Fe County and Las Campanas

Water Storage

The City stores water in three ways: in the municipal reservoirs in the upper Santa Fe River watershed, on the Rio Grande/Rio Chama system, and by ‘relinquishment’ water.

The Municipal Reservoirs

The water utility stores Santa Fe River water in McClure and Nichols Reservoirs in the upper watershed (see map on page 20). Storage levels of the reservoirs for the end of 2012 were 1,132.4 acre-feet or 29% of the total storage capacity. While the City water utility has been targeting a carry-over storage of 40% to hedge against

drought-induced summer supply deficit, once the Buckman Direct Diversion came online, a lower carry-over storage target is acceptable.

Stored San Juan-Chama

Project Water

For the past decade, the City has been storing its unused portion of San Juan-Chama water in reservoirs along the Rio Chama-Rio Grande river system. As of December 2012, the City had a total of 31,297 acre-feet stored, with 5,230 acre-feet stored in Heron Reservoir, 0 acre-feet in El Vado Reservoir, 9,921 acre-feet in Abiquiu Reservoir and 16,146 acre-feet in Elephant Butte Reservoir.

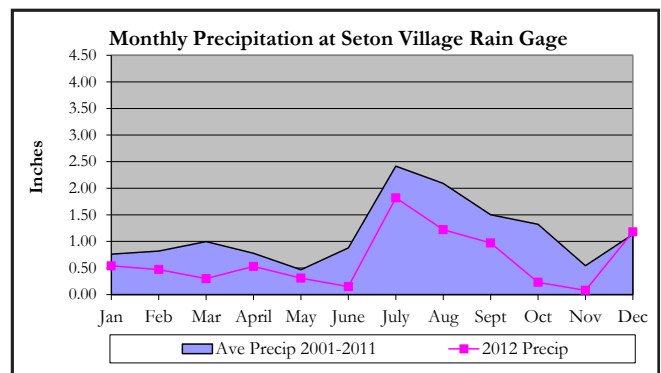
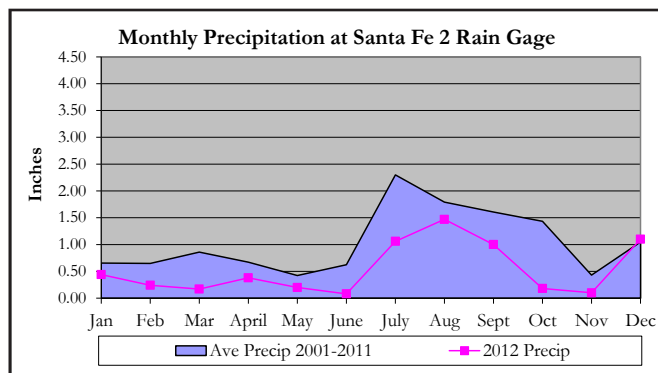
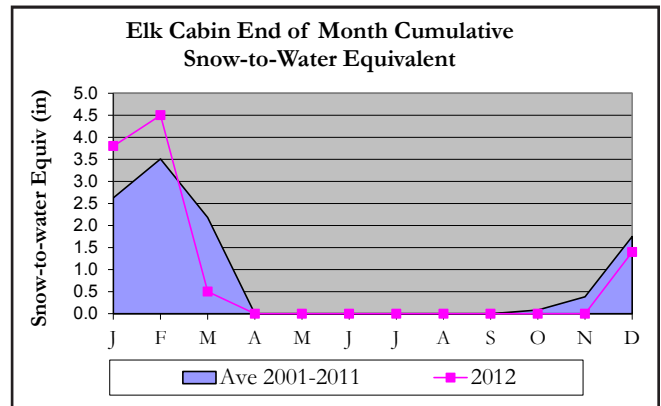
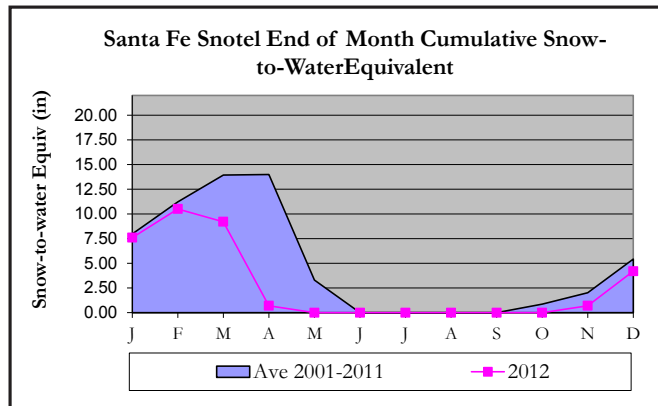
Relinquishment Credits

New Mexico receives relinquishment credits when the quantity of Rio Grande water provided to Texas is above that required by the Rio Grande Compact. Relinquishment water allows the City to store relinquishment ‘credit’ water in the municipal reservoirs during times when the Rio Grande Compact would otherwise limit the City’s right to store surface water. As an alternative to using relinquishment credits, the City often releases its San Juan Chama water into the Rio Grande in exchange for the permission to store Santa Fe River water, which would otherwise be prohibited by the Rio Grande Compact. The New Mexico State Engineer has granted the City a total of 7,500 acre-feet of relinquishment credits: 6,052 acre-feet in 2003 and 1,448 acre-feet in 2008. The City has a current balance of 6,207 acre-feet.

Precipitation

'SNOTEL' weather stations accurately measure snow pack as well as precipitation in the form of water (http://www.wcc.nrcs.usda.gov/snotel/New_Mexico/new_mexico.html). The snow-to-water equivalence (SWE), a measurement of how much moisture is within the snow pack, is used to predict spring runoff and watershed yield. There are two Snotel weather stations in the upper Santa Fe River watershed: 'Santa Fe' at an elevation of 11,445 feet and, 'Elk Cabin' at 8,210 feet. Santa Fe reported a peak accumulation of 12.7 inches of SWE for March, 2012. Elk Cabin reported a peak accumulation of 3.5 inches of SWE for February, 2012.

Precipitation data is also gathered in two additional locations in Santa Fe. Santa Fe 2 (approximately 2 miles southwest from the Santa Fe plaza) reported 6.42 inches for the year of 2012. This was 47 percent of the normal precipitation of 13.70 inches for this location. Seton Village (approximately 4.5 miles south of downtown Santa Fe) reported 7.80 inches for the year of 2012. This was 53 percent of the normal precipitation of 14.65 inches for this location.



Water Quality

The City was served by four distinct sources of supply in 2012. The 17,000 acre Santa Fe Watershed provides surface runoff to the Santa Fe River where it is stored in the McClure and Nichols Reservoir prior to treatment. Surface water from the Santa Fe River and Rio Grande is treated through conventional and advanced treatment processes at the Canyon Road Water Treatment Plant and Buckman Regional Water Treatment Plant (BRWTP), respectively. The City Well Field is mostly located in close proximity to the Santa Fe River and consists of 7 active wells located within the City limits of Santa Fe. The Buckman Well Field consists of 13 wells located near the Rio Grande, approximately 15 miles northwest of Santa Fe.

All four sources are treated with chlorine which is used for disinfection and pathogenic microorganism removal. Surface water is further treated by the use of conventional and advanced water treatment processes including coagulation and flocculation, sedimentation, and multi-media or microfiltration.

Monitoring Surface and Ground Water Quality

Since 2009, the City has been working with several regional partners in various collaborative efforts to characterize the occurrence of uranium, arsenic and nitrate in the regional groundwater. Over 500 private well samples have been collected and analyzed in the field and in local laboratories. In general the report shows nitrate levels above approximate background of 2mg/L in much of the municipal area, with a few wells showing nitrates above the drinking water standard

of 10mg/L. The results of the 2009 study suggest that naturally-occurring uranium is present in the groundwater in the mountain zone, while arsenic is concentrated in wells along a series of north-south oriented faults in the center of the basin. More information is available on the website of the NM Environment Department at:

[*Click here to see report*](#)

(nmenv.state.nm.us/fod/LiquidWaste/documents/SF.Co.09.water.test.results2.pdf)

The City continues its collaborative efforts to monitor the Buckman Well Field with the New Mexico Environment Department and Los Alamos National Laboratory to ensure that there is no evidence of contaminant migration from past and present Laboratory operations that could potentially threaten the regional aquifer which provides water to the City's Buckman Wells. All samples taken in 2012 from the Buckman Wells, and shallow aquifer monitoring wells within the Buckman Well Field near the Rio Grande, did not indicate the presence of contaminants which could be associated with Laboratory operations.

Operation of the Buckman Regional Water Treatment Plant commenced on January, 2011, at which time the facility started providing water from the Rio Grande directly to the City of Santa Fe's water system. All compliance samples taken by the City of Santa Fe and the New Mexico Environment Department's Drinking Water Bureau show that water treated by the facility is in compliance with all standards and provisions of the Safe Drinking Water Act during calendar year 2012.

The City participated in efforts during 2011 and 2012 with the New Mexico Environment Department to classify Santa Fe Lake and the two City water supply reservoirs, Nichols Reservoir and McClure Reservoir, under a separate “lakes only” classification with appropriate designated uses. The City also worked with the NMED Surface Water Quality Bureau in 2012 to classify formerly unclassified segments of the river throughout its “urban” reach and reclassify a previously classified segment below the City’s wastewater treatment facility. The classifications proposed by NMED and the City were adopted by the New Mexico Water Quality Control Commission on November 12, 2012. These new classifications will better serve the citizens of Santa Fe in protecting both the existing and attainable uses of the river. This is especially important in light of the Santa Fe River target flows planned by the City into the future which, in part, have resulted in flow patterns more characteristic of intermittent streams. The upper intermittent portions of the river below Nichols Dam will now be protected for Coolwater Aquatic Life and Primary Contact Uses. The ephemeral reach below the Guadalupe Street bridge crossing will be protected for primary contact uses and limited aquatic life uses. The segment from Santa Fe’s wastewater treatment plant outfall to the boundary of Cochiti Pueblo will now be classified for Coolwater Aquatic life and Primary Contact uses. The new stream classifications assigned to the urban reach of the Santa Fe River by the NMED will probably also result in more frequent monitoring of water quality by both the City and State and increased controls on nonpoint contributions of contaminants to the River in the future.

Drinking Water Quality

The City of Santa Fe’s drinking water continues to be of excellent quality. The addition of another surface water source to the City’s water supply and less frequent use of the City’s well fields has resulted in the lowering of some naturally occurring contaminants and constituents such as arsenic and calcium & magnesium hardness. The following table (City of Santa Fe 2012 Water Quality Table) lists contaminants which have associated Primary Maximum Contaminant Levels (MCLs) that are regulated by the U.S. Environmental Protection Agency (EPA) and New Mexico Environment Department and were detected in the City’s drinking water samples collected by the City and New Mexico Environment Department (NMED) in 2012. The compounds below represent a small fraction of the substances tested; testing is required for over eighty contaminants. All other EPA and NMED regulated contaminants were not detected in sampling performed during 2012. Drinking water may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk, especially when they are at levels below the EPA’s MCLs.



City of Santa Fe Regulated Compliance Monitoring

Contaminant	Units	MCL	MCLG	City Well Field ^d	Sample Date	Buckman Tank ^f	Sample Date	Canyon Road WTP	Sample Date	Buckman RWTP	Sample Date	Violation	Typical Source
Inorganic Contaminants													
Arsenic	ppb	10	0	4.6	18-May-11	1.6	17-Jun-11	ND	7-Mar-12	ND	12-Apr-12	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	ppm	2	2	0.8	24-Aug-11	0.073	17-Jun-11	0.0076	7-Mar-12	0.039	12-Apr-12	No	Discharge from drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	ppm	4	4	0.18 (0.13 - 0.18)	18-May-11	0.25	17-Jun-11	0.13	7-Mar-12	0.22	12-Apr-12	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Selenium	ppb	50	50	1.7 (1.1 - 1.7)	16-May-11	ND	17-Jun-11	ND	7-Mar-12	ND	12-Apr-12	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Nitrate [as N]	ppm	10	10	7.1 (2.6 - 7.1)	3-May-12	ND	3-May-12	ND	7-Mar-12	ND	12-Apr-12	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion from natural deposits
Radioactive Contaminants													
2011/2012													
Gross Alpha Emitters	pCi/L	15	0	1.1	9-Aug-12	1.3	16-Jun-11	0.6	16-Jun-11	0.9	30-Nov-11	No	Erosion of natural deposits
Gross Beta/Photon Emitters	pCi/L	50 ^a	NA	ND	9-Aug-12	2.4	16-Jun-11	0.7	16-Jun-11	2.6	30-Nov-11	No	Decay of natural and man-made deposits
Radium 226/228	pCi/L	5	0	0.45	9-Aug-12	0.18	16-Jun-11	0	16-Jun-11	0.02	30-Nov-11	No	Erosion of natural deposits
Uranium	ppb	30	0	ND	9-Aug-12	ND	16-Jun-11	ND	16-Jun-11	1	30-Nov-11	No	Erosion of natural deposits;
Surface Water Contaminants													
Turbidity ^d (highest single measurement)	NTU	TT = 0.3	0	NA	NA	NA	NA	1.6	Continuous	0.99	Continuous	No	Soil Runoff
Turbidity ^f (lowest monthly % meeting limits)	NTU	TT = % <0.3 NTU	0	NA	NA	NA	NA	99.4%	Continuous	99.3%	Continuous	No	Soil Runoff
Total Organic Carbon (TOC)	ppm	TT (35%-45% Removal)	NA	NA	NA	NA	NA	39% to 70% removal ^b	Monthly in 2012	NA	NA	No	Naturally present in the environment
Notes: a. EPA considers 50 pCi/L to be the level of concern for beta particles. b. The City complies with alternative compliance criteria to meet TOC removal. c. The range represents the high/low values within the compliance period. d. Turbidity is a measure of the cloudiness of water. Turbidity is a good indicator of the effectiveness of the filtration system. e. City wellfield: Alto, Agua Fria, Ferguson, Osage, Santa Fe, St. Mikes & Torreon. f. Buckman Wells 1-13 and Northwest Well.													
										Key to Units, Terms and Abbreviations NA: Not Applicable ND: Not Detected NTU: Nephelometric Turbidity Units			
										ppm: parts per million, or milligrams per liter (mg/l) ppb: parts per billion, or micrograms per liter (ug/l) pCi/l: picocuries per liter (a measure of radioactivity)			
										TT: A Treatment Technique standard instead of Maximum Contaminant Level			

City of Santa Fe Water Division water quality table from Consumer Confidence Report

Microbial and Disinfection Byproducts Rule

The Microbial and Disinfection Byproducts Rules (MDBPs) is a set of interrelated regulations that address risks from microbial pathogens and disinfectants/disinfection byproducts (DBPs). The rule focuses on public health protection by limiting exposure to DBPs (known carcinogens), specifically total tri-halomethanes (TTHM) and five halo-acetic acids (HAAs), which can form in water through the use of disinfectants used to control microbial pathogens.

In previous years the City selected sampling locations that distinguished between production sources and thus, samples from distribution could be referenced back to a particular source. During 2012 however, the City's various sources of drinking water supply were mixed in the distribution system throughout the year and therefore samples are more representative of the water system as a whole, rather than by individual source.

All quarterly sampling performed by the City in 2012 pursuant to the regulatory requirements of the Safe Drinking Water Act indicate that the Santa Fe Drinking Water System readily meets all EPA standards for TTHMs and HAAs.

Lead and Copper Rule

Tests for lead and copper are taken from customer taps located throughout the City once every three years. The most recent round of lead and copper testing took place in August of 2012. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

The results of the City's 2012 lead and copper monitoring determined that all households sampled were below both "action level" concentrations and Maximum Contaminant Levels mandated under the Safe Drinking Water Act for lead and copper.

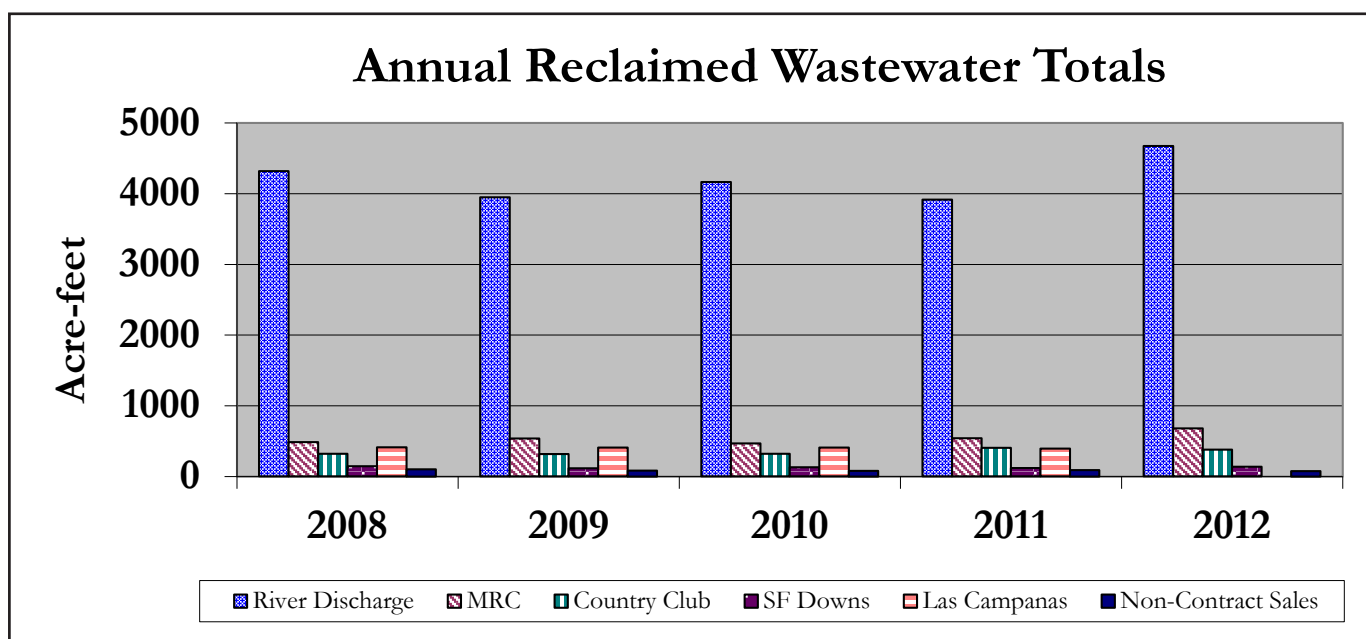
More information about contaminants in the City's public water supply and the potential health effects of specific can be obtained by calling the City at 955-4232 or the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791), or visiting www.epa.gov/safewater. The City's water quality report for 2012, and previous years, is also available at the City of Santa Fe Water Division.

Treated Effluent Water Deliveries

The City of Santa Fe's (City) reclaimed wastewater (treated effluent) has many uses and is an important component of the City of Santa Fe Water Division's water supply portfolio. The reclaimed wastewater from the City's treatment plant is sold directly to contractor's via the onsite stand pipe. The reclaimed wastewater has many uses including: for dust control and other construction purposes; irrigation to the municipal recreational fields at the Municipal Recreational Complex (MRC) and the infield at Santa Fe Downs; irrigation for the Marty Sanchez Links de Santa Fe and the Santa Fe County golf courses; dust control at the Caja del Rio regional landfill; watering livestock and wildlife on the Caja del Rio mesa; contributing to a small flowing stream and pond at the education-scape at the NM Game & Fish facility; and enabling flow in the Santa Fe River downstream of the the City's wastewater treatment plant to support the river & riparian ecosystem and local agriculture. The golf course

at Las Campanas has not been using reclaimed wastewater for golf course irrigation since 2011. The completion of raw water transmission lines from the Rio Grande in 2012 now allows the Club at Las Campanas to irrigate their golf course using surface water.

Production of reclaimed wastewater increased to 1,940 million gallons (5,953 acre-feet) in 2012 versus 1,780 million gallons (5,464 acre-feet) in 2011. In 2012, 21% of the treated wastewater was reused and the remaining 78% (1,523 million gallons) flowed into the Santa Fe River. The City is currently reviewing the Reclaimed Wastewater Resources Plan, which prioritizes current reclaimed wastewater uses and identifies strategies and implementing actions to optimize current and future use of the resource. More information on current reclaimed wastewater (treated effluent) planning efforts is available at www.santafenm.gov/index.aspx?nid=2576.



Preparing for Climate Change

The City of Santa Fe Water Division has the responsibility to prepare the municipal water utility for a range of conditions that might result from global climate changes like less alpine snowpack, earlier peak stream flows, reduction in total streamflow, greater evaporative losses, more extreme weather events, and increased summer demand from a hotter, drier, and longer summer season. Fortunately, much of the future water supply planning that has been incorporated in the adopted Long Range Water Supply Plan contemplates how the City's water supply need can be managed using our diverse water portfolio under a range of conditions, including drought. However, the utility recognizes the need to evaluate the vulnerability of the water system to predicted impacts, develop response strategies to reduce those potential impacts, reduce our own contribution to greenhouse gas emissions and educate ourselves and the community on the impact that global warming will likely have on our water supplies and water utility.

Energy Use in 2012

The City of Santa Fe has worked to increase the use of renewable energy and reduce the total energy consumption associated with running the water utility.

Hydroelectric Facility

This facility, which became operational on June of 2011, captures the energy of the finished water flowing from the Canyon Road Water Treatment Plant 2 miles downhill to the 5 million gallon tank located at Camino Cabra and Upper Canyon Rd. The water pressure in the 20 inch pipeline resulting

from the 180 ft of net head is capable of generating 100 kilowatts of energy using a pump turbine system, which is net-metered with the St. John's booster station. Renewable energy provided by the system offsets energy the City would otherwise need to purchase from PNM, thereby effectively reducing water utility operating costs at this site. In 2012, with only 40% of normal water production from the Canyon Road Water Treatment Plant, the hydroelectric facility generated 161,000 kWh of renewable energy, which saved the City approximately \$13,700 in operational expenses, based on average energy costs (on- and off-peak rate).

In addition to operational cost savings, the City has executed a Renewable Energy Credit (REC) purchase agreement with PNM for RECs generated from the hydroelectric facility. This agreement will generate an additional \$3,220 in revenue for the City.

Buckman Direct Diversion Solar Projects

The BDD Water Treatment Plant Solar project has been operating since February 2011. The facility produces up to 1 megawatt DC of solar electrical energy and provides approximately 1/2 the energy required to run the BDD Water Treatment Plant. Under a Power Purchase Agreement, BDD buys power generated from this privately owned and operated solar facility.

As of the end of 2012, the solar system had generated 2.19 million kWh of renewable energy, for which the BDD paid the solar power provider \$339,000. This cost was offset by the REC payment that BDD received from PNM, amounting to \$328,650. All told, BDD paid approximately \$11,000 (\$0.05/kWh) for

the 2.19 million kWh generated by the solar facility in 2012. Without the solar facility, this same energy would have cost BDD approximately \$180,000.

The BDD Booster Station 2A Solar Project is a proposed solar facility that includes high efficiency photovoltaic panels on an 8 acre area adjacent to the Buckman Direct Diversion Booster Station 2A. The project has been approved for \$5 million in funding by the New Mexico Finance Authority. The City has concluded the design-build procurement of the contractor as well as the construction manager and has submitted the interconnection application to PNM. It is anticipated that construction will begin in August of 2013 and the project will be completed by the end of the year.

The 2.016 megawatt AC PV solar system will have an output of 88,644,253 kWhr over 30 years and provide a financial benefit of \$4,589,886 over 30 years, accounting for all O&M costs, loan financing costs, Renewable Energy Credit revenue, energy bill savings and BLM lease costs. The total development cost for the solar PV system, including construction management, will be \$4,611,701.00.

PNM Peak Saver

This is an electrical Demand Management Program designed to relieve PNM's Grid during Peak Periods. It is a no-cost voluntary program that pays performance-based incentives to participants without penalties of any kind. Through the use of real time power monitoring, City of Santa Fe and EnerNOC can monitor and measure the electrical consumption at the facility. The Peak Saver season is from Jun 1- Sept 30 each year. Weather events are most likely to be called in the afternoon on the hottest days of the year and

for the last four hours of the day. The City Buckman Well Field participated in the PNM Peak Saver program in 2012 during which time there were 10 PNM Peak Saver events which resulted \$10,939.00 in revenue for the City.

Water Utility Energy Efficiency Program

The City of Santa Fe water utility typically incurs approximately \$1.4 million in electricity and \$200,000 in gas costs annually. The City's current on-peak energy usage is 35-40%. In an effort to reduce on-peak energy usage, the Water Division designed, instrumented, and activated an energy efficiency program. This construction phase of this project was completed in August 2012, with funding from the EPA's Drinking Water State Revolving Fund. Since that time the program monitors real-time energy usage at 28 major pumping sites within the water utility and, to the extent possible, automates pump/motor controls to prioritize energy usage in off-peak periods while maintaining minimum water tank reservoirs.

In 2012, the program saved the Water Division approximately \$7,000.00 in avoided on-peak charges at several pumping sites. In the future, as the water utility develops more water storage capacity and the Hospital Tank returns to service, it is expected that that this program can reduce the water utility's on-peak usage to 10-15%, which will result in substantial operational cost savings.



Fiscal Responsibility

The Water Division is committed to managing the water utility to maintain fiscal responsibility to its customers. This is achieved by an annual review of our 10-year finance plan and 10-year capital improvement plan (CIP) with the goal of maintaining a high level of service while increasing effectiveness and efficiency. In early 2009, the City Governing Body approved a water rate increase in the amount of 8.2% for five consecutive years. The rates increase is needed to pay for the Buckman Direct Diversion project, a key component in providing the community with a reliable and sustainable supply, and approximately \$100 million of infrastructure improvements.

This rate increase coupled with the approved 10-year finance plan and CIP, allowed the Water Division to receive an AA+ rating from Standard & Poors and an AAA rating from Fitch for our \$61 million bond sale in November 2009. These ratings are among the highest received by a water utility west of the Mississippi River. This excellent bond rating translates into a reliable, lower-cost income source for the City of Santa Fe Water Division.

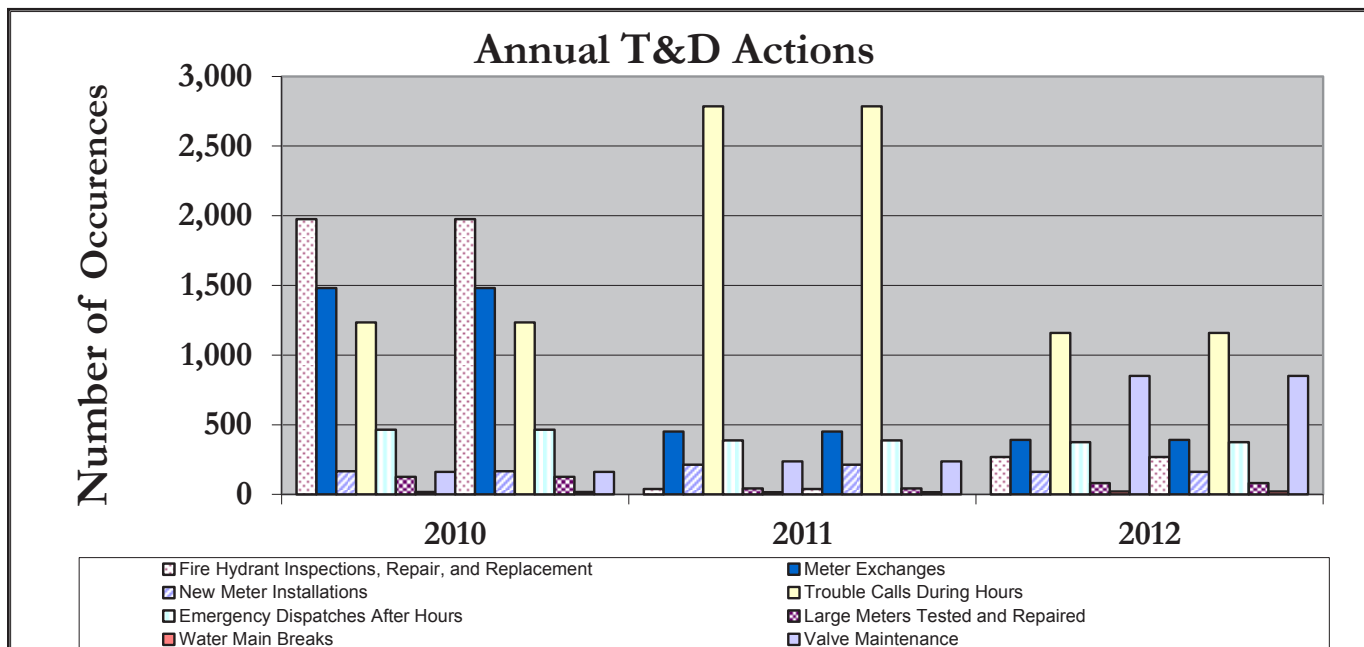
fire hydrants on the city's water mains. Throughout 2012, the T&D section completed the replacement of 8 large meters, 391 meter exchanges, and 162 new meter installs. Also during 2012, the T&D section maintained 850 mainline isolation valves and serviced 3 mainline replacements. Replacing meters is required to record water use. Mainline valve maintenance is necessary to assure the proper shut down during emergency situations. During the winter months of 2012, T&D crews serviced 12 frozen meters and service lines. Furthermore, T&D responded to over 1,100 trouble calls over the past year, all of which were completed. The Water Division's Transmission and Distribution department has always worked hard to provide courteous and reliable customer service.

The City of Santa Fe Water Division has recently completed the installation of a Supervisory Control and Data Acquisition pressure monitoring system, which collects real-time water pressure information, monitored 24 hours a day. This allows T&D to identify potential water system problems prior to a problem occurring. The City currently has 17 of these sites installed and working.

System Maintenance

The City of Santa Fe Water Division, Transmission & Distribution section (T&D) flushes the City's water distribution system to remove accumulated silt and sediment from the distribution system piping and to address customer complaints regarding water quality. Annual flushing is required in maintaining pipelines and removing magnesium and iron build up. In 2012, T&D flushed 58 dead end lines and completed flushing 127





City of Santa Fe Water Division, Transmission & Distribution section responses in 2012

