

# Executive Summary

## Long-Range Water Supply Plan July 2008

In 2004, the City of Santa Fe (City) began a Long-Range Water Supply Plan (Water Plan) to secure a sustainable and reliable water supply for the City's residents and water customers. The Water Plan charts the road map for optimizing existing water supplies and for providing new supplies. Implementation of the Water Plan will reduce or eliminate the need for relying on emergency use restrictions like those implemented during the 2002 drought. The Water Plan is based on detailed analyses of needs and options, and incorporates public input and direction from the City Council.

Although the analyses were completed in late 2005, the Water Plan was not finalized because a federal and state permit for the Buckman Direction Diversion (BDD) had not been received. As of mid-2008, the key federal and state permits for the BDD have been obtained.

The 2005 analyses have been modified to reflect the extraordinary degree of water conservation accomplished by the City's customers in the last 3 years. These changes are discussed more fully in Section 3. The continuing additional conservation reduces the future gap between demand and supply, and delays the time when new supplies will be needed, but does not affect the overall results of the Water Plan.

### Santa Fe's Water Supply Needs

Growth in the City's service-area population was projected using the principles of the regional water plan. By 2045 the City will need to supply over 18,000 acre-feet per year (AFY) to about 120,000 persons. This projection assumes a demand for potable water of 110 gallons per person per day for normal (non-drought) conditions, plus 12 gallons per person per day for non-potable water use, and includes contractual obligations of the City.

The City's existing and planned sources of supply fall short of meeting projected demands by 2021; the deficit reaches 2,700 AFY by 2045 (Figure ES-1). This is the case even after the BDD is constructed to meet current short-term needs.

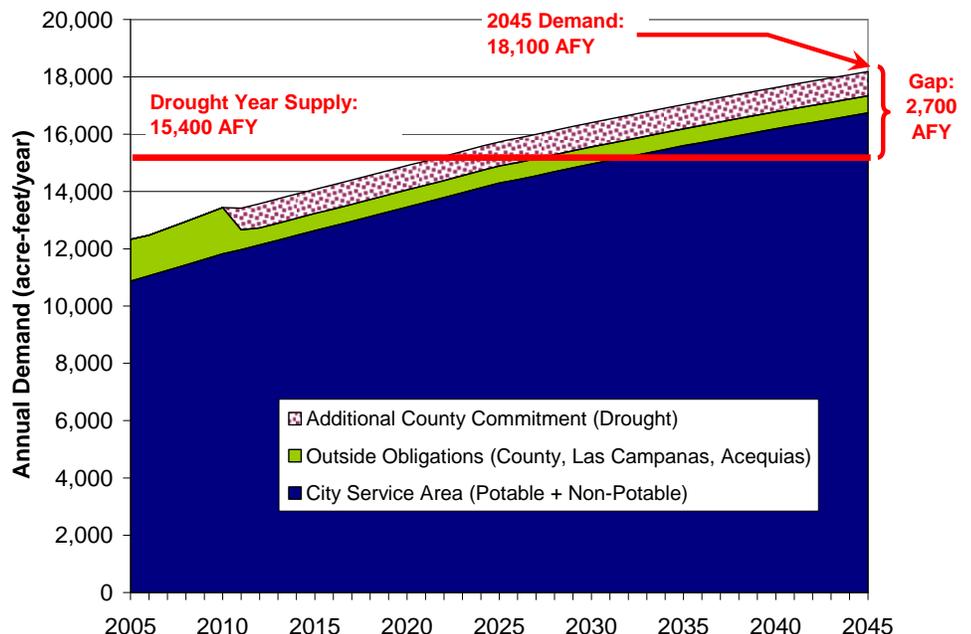


Figure ES-1  
Projected Demand and Supply Balance



Through major recent and ongoing investments, and through the community's precedent-setting achievements in water conservation, Santa Fe has established a solid foundation for meeting the City's future water needs. Because of that solid foundation, the estimated cost to supply our future needs are much less.

### Recent and Ongoing Accomplishments

- ▶ State-of-the-art water conservation programs and progress
- ▶ Six new large production wells: Buckman wells 9-13 and the Northwest well
- ▶ Upgrades to the Canyon Road Water Treatment Plant
- ▶ Buckman Direct Diversion (BDD) project designed to use San Juan-Chama water by 2011
- ▶ Water lease agreement with the Jicarilla Apache Nation
- ▶ Extension of the City's San Juan-Chama Project water contract into perpetuity
- ▶ City's Water Rights Transfer Ordinance

## The Buckman Direct Diversion Project

The BDD is designed to provide infrastructure to divert the City's contracted San Juan-Chama (SJC) water, which cannot otherwise be fully used. Intensive and expensive efforts by the City and its BDD partners have been underway since 2001 to obtain the required federal and state permits and environmental approvals, to complete BDD planning and preliminary design, and to hire a design-build contractor. The City expects successful completion of these efforts and groundbreaking in 2008, and initial operation of the BDD in 2011.

This Water Plan builds upon the assumption that the BDD project will be successfully completed. Should mandatory federal and state permits and approvals be denied and the project not implemented, the Water Plan policies and recommendations will need to be reconsidered.

## Evaluation of Future Water Supply Options

In developing the Water Plan, the City considered over 30 different water supply and demand management options. Using a structured process, the City developed and compared 11 different supply portfolios (e.g., combinations of supply options) to address the gap between supply and demand that is projected for 2045. The portfolios were compared on the basis of the following six objectives:

- ▶ Improve Reliability and Sustainability
- ▶ Ensure Technical Implementability
- ▶ Manage Costs
- ▶ Protect the Environment
- ▶ Ensure Acceptability
- ▶ Ensure Timeliness

To assist in analyzing the opportunities and complex constraints of the City's existing sources of supply, the City developed a water systems operations model, called Water Management and Planning Simulation (WaterMAPS).

The model reflects the City's current water supply portfolio for operational decisions on source-of-supply, but also facilitates analysis of new water supply and demand management alternatives for long-range planning.



## Recommended Water Plan

Santa Fe's projected demand for the next 40 years can be met without a new major infrastructure project using the water supply components listed below.

### Future Water Supply Components

- ▶ Increase reliance on sustainable surface water
- ▶ Use groundwater for peak demands and drought protection
- ▶ Enhance the City's conservation programs
- ▶ Optimize existing sources
- ▶ Acquire and divert additional water (preferably through BDD)
- ▶ Maintain a living Santa Fe River through town

Figure ES-2 illustrates how the components will work in concert to achieve a reliable and sustainable annual and peak-season supply despite inherent variability in surface water availability and historic over-reliance on groundwater.

- ▶ Santa Fe River surface water from the Canyon Reservoirs (blue) will be fully utilized when water is available, while maintaining a living Santa Fe River
- ▶ The completion of the BDD (yellow) allows the City to significantly reduce its reliance on groundwater (greens), and will also allow implementation of the Living River concept; expanded use of the BDD (red) will meet growing needs
- ▶ Past conservation (speckled) and recent extra conservation (speckled grey) significantly reduce the water needed over the next 40 years

- ▶ The City will continue to use treated effluent (lavender) to reduce demands on potable supplies

The Water Plan calls for substantial reduction in groundwater use, maintaining groundwater production at sustainable levels and preserving the aquifer as a critical drought reserve. At the same time, conservation and reuse of treated wastewater effluent will play an increasingly large role in meeting demands. This projected supply mix was determined to best meet the objectives established as part of the Water Plan.

It is assumed throughout the Water Plan that the BDD will be successfully completed. If the BDD is not constructed, new portfolios would be created and evaluated to meet the City's water supply objectives using a combination of options that do not include the BDD. The supply gap would also need to be increased to account for the unavailability of the anticipated 5,230 AFY from the BDD. While this analysis was not done in this Water Plan, the analysis would use the process, options, and tools developed for this Water Plan.

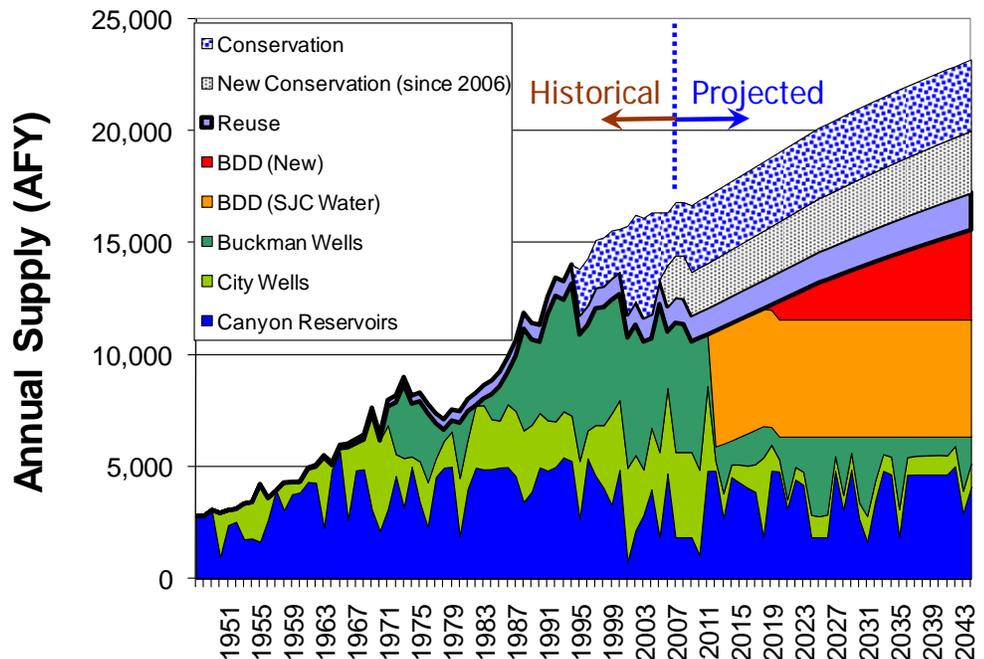


Figure ES-2  
Historical and Future Sources of Supply



## Long-Range Water Supply Policies

Based on the findings of the Water Plan, the City has established the following eight major policies to meet future water supply needs.

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| <p>A. The City will continue and improve its aggressive water conservation program.</p> <p>B. The City will acquire the necessary water and environmental permits to meet the City's future demands.</p> <p>C. The City will use groundwater sustainably.</p> <p>D. The City will optimize its use of treated effluent.</p> <p>E. The City will optimize its use of existing water rights and infrastructure to stretch existing supplies.</p> | <p>F. The City will seek to minimize or eliminate the use of emergency drought restrictions.</p> <p>G. The City will provide water to maintain a living Santa Fe River, except under drought or emergency conditions.</p> <p>H. The City will monitor system performance and revisit its water needs, and adjust its actions as necessary to fully meet its demands sustainably, and cooperate in securing a reliable water supply for the region.</p> |
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