



Albuquerque Bernalillo County
Water Utility Authority



**Water Resources
Management Strategy
Revised Policies**

August 2007



Introduction

This document sets forth the Albuquerque Bernalillo County Water Utility Authority's (Water Authority) Water Resources Management Strategy (Strategy) – a long-range water supply plan for the metropolitan area. The purpose of the Strategy is to provide a safe and sustainable water supply for the metropolitan area by: (1) determining and utilizing the existing water resources owned by the Water Authority and (2) planning and making the best choices for future supplies and management.

The original policies in the Strategy were adopted by the City of Albuquerque in 1997. In 2003, the Water Authority Board adopted the Strategy as the water supply plan for the Water Authority and established a water resources task force to explore all issues and matters germane to water resources planning and management. The policies in the Strategy called for the construction and operation of new water supply projects including the San Juan-Chama Drinking Water Project and the North and South Reuse and Recycling projects. As these projects are constructed and operational, the original policies need to be updated and new water resources policies are needed to guide the Water Authority in the future.

The Albuquerque/Bernalillo County Comprehensive Plan sets out goals and policies for land use, environmental, and resource management decisions. It requires that “the water resources of the metropolitan area shall be managed to ensure permanent adequate supply” and to “maintain a dependable, quality supply of water for the urbanized area’s needs.” While the Water Authority does not have platting and planning jurisdiction, land use decisions and water resources management are linked.

The Water Authority was a partner in the development of the Middle Rio Grande Regional Water Plan. The Water Authority Board accepted the regional water plan and is working to implement the policies and projects called for in the plan. The regional water plan and the water resources task force’s resource documents were used as guidance documents in updating existing and formulating new policies.

In developing the original Strategy document, the City of Albuquerque established a Water Resources Customer Advisory Committee (CAC) in 1995. The original CAC had representatives and leaders from community, environmental, business and neighborhood groups. The Water Authority used the same approach and established a new CAC in 2007. One of the priorities of the new CAC was to provide input, feedback and support for updating the policies in the Strategy. The CAC completed their review and revisions to these policies in August 2007. The next step is to obtain broad public input on these policies before they are considered by the Water Authority Board.

To carry out the mandate of providing a safe and sustainable water supply, the Water Authority needs to establish specific policies. **Section 1** of this Water Resources Management Strategy defines the new policies needed to accomplish the goals of the Comprehensive Plan and to implement existing and new projects. **Section 2** describes the accomplishments and projects constructed as part of the previously adopted Strategy.

Establishment of the Water Utility Authority

In January 2003, the New Mexico Legislature approved Senate Bill 887 which transferred the municipal Water and Wastewater Utility to the Albuquerque Bernalillo County Water Utility Authority (Authority). Senate Bill 887 became law in June 2003 (NMSA 1978 § 72-1-10). During the 2005 New Mexico Legislative Session, Senate Bill 879 was passed which provided the Authority the statutory powers provided to all public water and wastewater utilities in the state.

Membership

The Albuquerque Bernalillo County Water Utility Authority is a political subdivision of the state. The Authority governs the water and wastewater utility for all of Albuquerque and Bernalillo County. The Authority's membership includes 3 Bernalillo County Commissioners, 3 Albuquerque City Councilors, the Mayor of Albuquerque and a Village of Los Rancho Trustee as an Ex Officio member. The current members of the governing board are as follows: Councilor Martin Heinrich Chair, Commissioner Deanna Archuleta Vice-Chair, Commissioner Alan B. Armijo, Councilor Issac Benton, Mayor Martin Chavez, Councilor Michael Cadigan, Commissioner Teresa Cordova, and Trustee Pablo Rael, Ex Officio. The Executive Director of the Authority is Mark S. Sanchez.

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A. Update and Maintain a Water Budget

POLICY A: The water budget shall be the reporting, planning and management basis for water resources management for the Authority. The water budget shall be updated annually and reviewed no less than every five years.

RATIONALE: The water budget should be considered a dynamic element to be updated and reevaluated periodically because natural processes and their effects are not always predictable.

This policy involves three elements, outlined below.

1. Interactive Model of the Water Budget

POLICY A.1: The Authority shall acquire or develop a flexible interactive model of the water budget that can evaluate simultaneous multiple scenarios including alternative hydrologic and climatic conditions and forecasts, water supply and demand. The interactive model should be developed using the best available science and should be updated as relevant scientific information is available.

2. Annual Review of the Water Budget

POLICY A.2: The water budget and the scientific scenarios analyzed shall be compiled into a report and presented to the Authority on an annual basis. The Authority shall review the water budget and consider policies consistent with its five-year goals and one-year objectives for the water resources management program.

3. Consistency with the Regional Water Budget

POLICY A.3: To the extent possible, all future water budgets and alternatives shall be developed within the framework of the regional water budget accepted by the Authority.

B. Balance Demand with Renewable Supply by Using San Juan-Chama Water as the Primary Source of Supply

POLICY B: The Authority shall protect its right to fully use its San Juan-Chama and Rio Grande surface water as a direct water supply and transition to other renewable supplies when available and appropriate. The Authority shall limit the use of ground water except to meet peak demands or during times of drought.

RATIONALE: A safe and sustainable water supply is needed to maintain the dependable quality supplies called for in the Albuquerque Bernalillo County Comprehensive Plan. A safe and sustainable supply is also of paramount importance if the Comprehensive Plan's other goals related to land use, environmental protection and heritage conservation, and community resource management are to be achieved. Use of renewable surface water will also protect the aquifer and the community from the effects of overpumping ground water and will provide a water supply system that is renewable in perpetuity.

Recommendations:

1. The Authority should develop a program to determine the safe yield of the regional ground water supplies when the San Juan-Chama Drinking Water Project is operational. The program should be completed working in collaboration with research institutions.
2. The Authority should utilize a combination of renewable supplies including the deep aquifer, surface water, industrial and municipal effluent, impaired groundwater and recycled water.
3. The Authority should match the various sources of supply with the needs of different users while considering the end use and water quality.
4. The Authority should recycle and reuse as much water as possible while considering the use of storm water for irrigation and aquifer recharge.
5. The Authority should take all the necessary steps to protect their water rights.

C. Establish and Maintain a Ground-Water Drought Reserve

POLICY C: The Authority shall establish a ground-water drought reserve that maintains sufficient water in storage in the aquifer to provide water supply during a prolonged drought. Water levels in the aquifer shall be maintained so that a drought reserve shall be accessible without causing adverse, irreversible impacts to the aquifer.

RATIONALE: A portion of the high-quality, easily accessible ground water stored in the aquifer needs to be preserved to allow for its use during future drought conditions. This would enable the Authority to provide an uninterrupted supply while avoiding depletion of Rio Grande flows when surface water flows are below acceptable flow levels due to drought. Ground water used as a drought supply has very high economic and quality-of-life value. Previous studies of the frequency and severity of droughts in the southwest suggest that a drought reserve is prudent.

Recommendations:

1. The Authority should proceed to implement an aquifer storage and recovery (ASR) program beginning with the necessary pilot studies and permitting phase such that the program can be implemented when the San Juan-Chama Drinking Water Project is operational.
2. The Authority should identify areas of natural recharge and protect lands which are recharge windows and corridors.
3. Water levels in the aquifer should be reported to the Authority Board on an annual basis once the Drinking Water Project is operational.
4. The Authority should complete the necessary hydrologic studies to update the analysis in the Value of Water Study to determine the appropriate timeframe for the drought reserve taking into account potential hydrologic and climatic changes.

D. Update and Implement the Water Conservation Strategy

POLICY D: The Authority will take the necessary steps to fully achieve its adopted water conservation goal to reduce per capita use 40 percent by 2014 compared to the base period average of 250 gallons per person per day. In addition to the ongoing programs providing significant resources to reduce water use, the Authority's water resources and conservation programs will address State evaluation criteria by: (1) providing public education regarding the need and methods for conserving, (2) metering of all Authority water uses, (3) accounting for different types of uses (residential, commercial, etc.) and comparison of amounts of use to western norms, and (4) utilizing drought contingency plans.

RATIONALE: As a scarce commodity, water should be conserved. Water conservation is required by the Authority's adopted water conservation strategy (Bill No. R-04-12). Water conservation progress has been excellent, but full implementation is necessary. Successful implementation of the conservation program is a foundation for this Water Resources Management Strategy. In addition to representing wise management and stewardship of the water resources, successful implementation of an effective conservation program is by State law a regulatory prerequisite for obtaining the future permits the Authority will require.

REPORTING: Water Conservation savings are evaluated and reported on a calendar year basis. The water conservation program reports annual conservation reductions as compared to the baseline figures from 1987 to 1994 including per account reductions for each customer class (residential, industrial, multi-family, commercial and institutional). In addition, the Authority compares peak usage as compared to the baseline. The per account methodology is the preferred method for comparison as opposed to per capita figures although per capita figures are also computed and reported.

Recommendations:

1. The water conservation goal should be reviewed every five years along with all new water conservation programs to determine if progress is being made on implementing new programs and reducing water consumption.
2. The Authority should encourage water conservation through economic credits or incentives.

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3. The Authority's water resources and conservation programs should continue to provide education, metering, accounting for the various water uses and customer classes, and drought contingency plans.
4. The Authority should adopt and implement drought management measures as necessary to reduce demand during droughts.
5. The Authority should utilize the per account methodology for reporting overall water use reductions in addition to reductions by customer class.

E. Support Regional Water Resources Planning and Management

POLICY E: The Authority shall pursue efforts to enhance regional water resources planning and management activities within the Middle Rio Grande Valley. The Authority shall work cooperatively with its neighbors—the Pueblos, the Middle Rio Grande Conservancy District, Middle Rio Grande Valley cities and counties, and involved state and federal agencies. The Authority shall become proactively involved in and monitor the progress of regional and interstate water management initiatives that may affect the Authority and the region.

RATIONALE: The Authority recognizes the need to work in cooperation with other entities that share use of the Middle Rio Grande Valley's water resources. The regional planning process must be extended to include other water use in the region. Regional water resources planning needs to address uses for public and domestic water supply, irrigated agriculture, livestock, commercial, industrial, fish, wildlife and recreation. The Authority, neighboring jurisdictions, and other water users need to work with State, regional, and federal agencies with water management responsibilities.

This policy involves four elements, outlined below.

1. Continue and Expand Technical Investigations in the Middle Rio Grande Valley

POLICY E.1: The Authority shall continue its proactive role to ensure that the necessary technical investigations are completed efficiently and expeditiously and that they result in the use of an improved quantitative model for water rights administration in the Middle Rio Grande.

RATIONALE: The investigations necessary to improve the quantification of the water resources of the region including the Authority's cooperative program with the United States Geological Survey and others should continue to further understand and present the best available scientific information available.

2. Seek to Implement the Middle Rio Grande Regional Water Plan

POLICY E.2: The Authority is committed to seek common solutions within a regional context. The Authority shall ~~seek to work~~

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cooperatively with others in the Middle Rio Grande Valley to implement the accepted Regional Water Plan.

RATIONALE: The Authority recognizes that its planning cannot occur in isolation. In addition to implementation of the necessary technical investigations described above, regional issues that need to be pursued include: water conservation, reclamation, and reuse; an inclusive public process to determine acceptable tradeoffs among urban, agricultural, and riparian water needs; equitable sharing of costs and benefits; appropriate use and regulation of domestic wells; preservation and enhancement of aquifer recharge through land-use planning; maintenance and enhancement of the existing irrigation canal and drain system; and management of flood waters and development of aquifer storage and recovery capabilities.

3. Work in partnership with Federal and State Agencies in coordinating and promoting sound water management in the Middle Rio Grande.

POLICY E.3: The Authority shall work with federal agencies including the Bureau of Reclamation, Corps of Engineer's and Bureau of Land Management, the State Engineer and the Interstate Stream Commission to find common solutions for water management on the Rio Chama and the Rio Grande.

RATIONALE: The Authority recognizes that partnering and cooperating with the State and Federal agencies provides unique opportunities to solve complex and difficult problems.

4. Work cooperatively with federal, state and local entities to quantify water rights in the Middle Rio Grande.

POLICY E.4: The Authority shall prepare for a basin adjudication in the Middle Rio Grande. In addition, the Authority shall seek alternative legal strategies (negotiated settlements) in addition to the traditional adjudication process.

RATIONALE: The Authority supports quantifying water rights in the Middle Rio Grande and should work cooperatively with federal, state and local entities in developing alternative strategies to adjudication.

F. Pursue the Conjunctive Management of Available Water Resources

Policy F. The Authority will enhance the sustainability of the water supply by effectively combining the use of surface water, reclaimed water, and shallow and deep potable and brackish ground water.

RATIONALE: Enhancing the efficiency of the Authority's water use, as called for in the Albuquerque Bernalillo County Comprehensive Plan, requires conjunctive management and use of all available resources: surface water for municipal and industrial supply and for irrigation, as well as use of lower-quality shallow ground water for irrigation and nonpotable use. Reclamation and reuse of existing water supplies, where economically feasible and protective of human health and the environment, represent viable methods of increasing the usefulness of a limited water supply.

This policy involves the following three elements.

- Use reclaimed wastewater, surface water, and shallow ground water for irrigation and nonpotable uses.
- Favor reclaimed water use.
- Determine and use a combination of surface water and deep aquifer ground water for municipal and industrial supply.

1. Use Reclaimed Wastewater, Surface Water and Shallow Ground Water for Irrigation and Nonpotable Uses

POLICY F.1: To the extent practicable, eliminate the use of high-quality water from the deep aquifer for irrigation of parks, golf courses, and other large turf applications. Use reclaimed wastewater, surface water, and shallow ground water for irrigation and nonpotable uses. Use of shallow ground water will be augmented with enhanced recharge as necessary to protect shallow ground-water levels.

RATIONALE: The water quality of reclaimed wastewater, surface water, and portions of the shallow ground-water system, though generally not adequate for use as a drinking water supply (without additional treatment), is well suited for irrigation and certain industrial uses. Shallow ground-water use must be augmented with enhanced recharge to avoid harmful water-level declines.

2. Favor Reclaimed Water Use

POLICY F.2: The Authority will favor the use of reclaimed water where economically feasible and protective of human health and the environment. The Authority will take action to ensure the appropriate use of nonpotable supplies to meet nonpotable needs. This may include providing economic incentives as necessary to encourage the use of reclaimed water.

RATIONALE: Reclaimed water from industrial and municipal effluent sources can be an economically feasible alternative to the use of deep aquifer pumping to meet industrial and irrigation demands, which do not require drinking water quality sources. However, sufficient treatment must be provided to protect public health and the environment. Consideration must also be given to satisfying the return flow needs of the Rio Grande from a water-rights-permitting, Rio Grande Compact Compliance and environmental standpoints.

3. Use Surface Water and Deep Aquifer Ground Water Conjunctively for Municipal and Industrial Supply

POLICY F.3: Use pumping from the deep aquifer to meet seasonal peak demands and as a drought reserve. Provide for methods to store available surface water in the aquifer and to recover it from storage.

RATIONALE: The use of ground water will always be a key component of the Authority's supply system. Using the Authority's surface water for municipal and industrial supply will protect the aquifer so that it is available to meet seasonal peak demands and as a drought reserve. Without a ground-water component of supply, the Authority would need extremely expensive surface water storage facilities and larger and more costly treatment facilities to meet seasonal peak demands.

Successful establishment of a drought reserve requires that water withdrawn from the aquifer during times of drought be replenished during times of above average water availability. In Albuquerque, this requires artificial recharge of the aquifer with deep recharge wells. It is essential that this capability be developed and demonstrated.

G. Develop and Implement Long-Term Water Acquisition Plan

POLICY G: The Authority will pursue a portfolio of potential additional sources of supply. This may entail legal and institutional changes to provide for short-term leases and long-term acquisition of rights and supplies. Full consideration will be given to the financial considerations in addition to the regional context and consideration of agricultural and environmental issues.

RATIONALE: The Albuquerque Bernalillo County Comprehensive Plan calls for new water rights to be acquired if necessary to accommodate increasing needs. The legal and physical availability of water supplies, however, depends on a number of extremely complex and difficult issues that need to be resolved. Resolution of these issues will need to involve others within the region.

Recommendations:

1. The Authority should seek legislation to allow for water leasing and banking on a local, regional and interstate basis.
2. The Authority should continue to acquire water rights in the Middle Rio Grande on a voluntary basis. As a condition of sale, the Authority should seek to prohibit additional water uses on the property. When considering acquisition, the Authority should strive to balance agricultural and environmental values in the transfer to and from areas.
3. The Authority should investigate and enter into agreements for short-term leases in times when wet water is available to offset the needs for purchasing and acquiring water rights during times of drought and for aquifer recharge.
4. The Authority should stay active in evaluating other rights transfer in the Middle Rio Grande and should take proactive stances when necessary.
5. The Authority should protect and enhance its storage rights in Abiquiu and shall pursue and file the necessary applications to appropriate flood flows including spills at Elephant Butte or other surface flows that may be available for storage in Abiquiu.
6. The Authority should investigate the potential of desalination as a future water supply considering financial, energy and environmental factors.
7. The Authority should develop a program to examine the feasibility and impacts of very deep aquifer (greater than 3,000 feet below ground surface) pumping.
8. The Authority shall examine the need for additional short and long-term storage.

H. Implement the Water Quality Protection Plans and Policies

POLICY H: The Authority will take steps to fully implement the Ground-Water Protection Policy and Action Plan. Prevention of future contamination, protection of aquifer recharge areas, and the remediation of existing ground-water contamination will be areas of special emphasis and high priority. In addition to the ground-water protection efforts, the Authority will implement its Source Water Assessment and Protection Program, a watershed-based approach to protecting surface water.

RATIONALE: The Albuquerque/Bernalillo County Ground-Water Protection Policy and Action Plan (County Resolution No. AR 121-93 and City Enactment No. 81-1994) is another cornerstone of this Water Resources Management Strategy. This program is well underway, but its continued implementation is vital to the success of the Water Resources Management Strategy. The ground-water system is essential for water supply and as a drought reserve. Its protection from contamination is of paramount importance. The results of recent technical investigations show that the extent of the productive aquifer is smaller than earlier studies suggested. Most recharge of the deep aquifer system occurs via the currently substantially contaminated shallow ground-water system in the Inner Valley. Contamination within recharge windows is being transported toward public water supply wells. These conditions must be addressed or the viability of the ground-water component of the supply is imperiled. In addition to the ground-water protection efforts, preserving surface water quality will become even more important to the Authority's customers when the San Juan-Chama Drinking Water Project is operational.

Recommendations:

1. The Authority should continue to provide high-quality drinking water and discharge treated effluent that meets or exceeds federal and state standards.
2. The Authority should be proactive in identifying potential water quality threats to surface and ground water resources and should implement programs to the extent possible to protect the water resources in the Middle Rio Grande.
3. The Authority should consider the occurrence, fate and potential treatment of emerging contaminants in current and future water supplies and should actively participate in research which will become more important as the availability of water resources becomes more constrained.

I. Equitably Incorporate the Costs of Providing a Safe and Sustainable Water Supply into Water Rates

POLICY I: The Authority shall ensure that an equitable water rate structure is implemented to provide a stable and predictable revenue stream sufficient to cover operating and capital replacement costs, as well as finance system expansion and acquisition of new water supplies. The Authority shall consider water conservation in the development and implementation of water rates and fees. Rate increases when necessary will be gradual to the extent possible. Provisions will be made to assure that low-income individuals continue to receive affordable basic water and wastewater services.

RATIONALE: Water rate structures play an essential role in communicating the value of water to water customers, thus promoting long-term efficient use. The value of water includes (1) the Authority's operation and maintenance costs; (2) capital costs and debt service to procure, preserve and develop additional supplies to meet growing demands; and (3) social and environmental "opportunity costs" of losing other benefits of the water and natural waterways. Future water rates and fees should be equitably shared and should be fair and recognize that high-volume uses are not necessarily bad or wasteful. For example, large families use more water than small ones, even though their per capita use may be the same.

Consideration should be given to the life-cycle costs of projects, the degree to which existing water resources are utilized and potential savings to customers that accompany wise resource management. Costs related to arsenic treatment or other required mandates, or the avoidance of drought effects and land surface subsidence will be much greater if this strategy is not implemented.

Recommendations:

1. The Authority should continue increasing water rates and implementing steeply increasing block rates to encourage water conservation, including a very low rate for low water use customers and increasing to very high rates for large water users. Surcharges for excess use could vary by customer class, targeting water classes that have not achieved water conservation goals.
2. The Authority should implement policy changes to increase the cost of service principals to include a scarcity value of water. Current legal restrictions place limits on how much revenue a utility can recover prevents rates high enough to induce water conservation. The Authority should investigate whether opportunity cost or scarcity value could be included in its cost calculations, allowing it to set rates high enough to cover these components of the total cost of delivered water.

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3. Water rates should include a “lifeline” feature so that low income and low usage households are not overly burdened.
4. The Authority should review the water bill periodically so that the actual water usage is the focus of the bill with a specific statement about the benefits of conserving water. The water bill should state the Authority’s water conservation goals.
5. The Authority should review and evaluate the water and sewer rate structure biannually and should continue the water rate stabilization fund to offset the need for rate increases when revenue fluctuates due to weather and other factors.
6. The Authority should continue to offer financial aid for costs associated with connecting water and sewer infrastructure to qualified low income customers. The Authority should consider establishing a revolving fund to assist these customers.

J. Protect Valued Environmental and Cultural Resources of the Region

POLICY J: The Authority shall identify and provide resources to preserve and protect valued environmental resources of the region. The Authority shall work independently and in partnerships to ensure that its activities do not irreparably harm the aquifer, river and Bosque and the cultural resources of the region.

RATIONALE: The regional aquifer, Bosque and the Rio Grande are exceptional resources of great value to both residents and wildlife that provide the region with an environment unique in the West. The Authority should adopt policies and work cooperatively to protect these environmental features. The Authority should acknowledge that New Mexico has historically been an agriculturally based society and our history and cultures were founded on it.

Recommendations:

1. The Authority should work with local, state and federal agencies to protect the areas of natural infiltration and recharge from development. These areas should be designated as open space for environmental, aesthetic, recharge potential and water quality.
2. The Authority should encourage the State to recognize instream flows as a beneficial use and should acknowledge and quantify the riparian use of water within the Authority's management area.
3. The Authority should consider the impacts on environmental and cultural resources and take appropriate steps to mitigate unavoidable effects considering the Rio Grande ecosystem in its entirety.
4. The Authority should encourage agricultural, historical, educational and cultural programs that aim to educate the public on the value of water conservation and best management practices for irrigation, environmental and cultural water-related resources.
5. The Authority should participate and support the Endangered Species Act Collaborative Program and other programs that promote habitat restoration and initiatives to recover endangered species in the Middle Rio Grande.
6. The Authority should implement the proposed mitigation programs for the Drinking Water Project including ongoing monitoring and reporting.

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7. The Authority should work cooperatively with federal, state and local entities to promote environmental and recreational opportunities on the Rio Chama and the Rio Grande.
8. The Authority should work with the City and County in acquiring and retaining river related open space in the region and assist with programs to enhance aquifer recharge and protect wildlife habitat.

K. Preserve and Enhance the Quality of Life in the Region

POLICY K: The Authority seeks a Water Resources Management Strategy that will preserve and enhance the quality of life within the region. The implementation of the Authority’s water resources programs and projects shall include support of infrastructure needs (basic water and wastewater services) and public amenities (parks, green belts, etc.). In addition, the benefits and costs of implementation will be shared equitably—among current and future residents of the region.

RATIONALE: As the largest municipal and industrial provider in the state, the Authority recognizes its obligation to continue to strive to enhance the quality of life within the region. Factors influencing quality of life include support of desired socioeconomic growth and development, support of public amenities, and lack of disruption of normal activities.

Recommendations:

1. The Authority should work with the City and County to ensure that current and future public spaces and recreation spaces are water efficient.
2. The Authority should adopt policies, where appropriate, to require water conservation in public spaces. Existing public spaces should be retrofitted for water conservation.
3. The Authority should work with the City and County to provide incentives to employers through the use of industrial revenue bonds, planning activities, and support of recruitment and training services as a technique for achieving new employment opportunities in accordance with adopted policies including the Planned Growth Strategy.

L. Link Land Use Planning with Water Management

Policy L. The Authority shall coordinate and cooperate with the City, County and all other entities with planning authority to integrate water management policies with land use decisions. The Authority recognizes that additional water resources shall be acquired to serve future customers in accordance with the approved water budget.

Rationale: While the membership of the Authority consists of elected officials from the City, County and Village of Los Ranchos, the Authority has no decision making power for land use decisions. Future development in the region requires coordination to integrate land use, transportation, economic development and other planning efforts with water resources management.

Recommendations:

1. The Authority should continue the current no-net-expense policy. Developments outside of the service area should provide water rights or funding for the purchase of new water rights as a condition or service in accordance with the no-net-expense policy.
2. The Authority should work with the City and County to update the Albuquerque/Bernalillo County Comprehensive Plan and/or other plans to encourage full build-out of available land in the service area and promote concurrency between development and infrastructure service levels.
3. The Authority should ensure that it's capital planning process is based on the City and County growth and development master plans so that land use and infrastructure policies are consistent.
4. The Authority should support the increase of urban building densities and infill development consistent with adopted land use plans as higher density development can reduce outdoor water usage and other environmental benefits.
5. The Authority should encourage the City, County and State to adopt Building Code and low water use landscaping standards for all new construction.
6. The Authority should encourage conservation oriented economic development that focuses on minimized water usage.
7. The Authority should request that member governments take water supply availability and cumulative impacts into account when making land use development decisions and that member governments adopt policies integrating

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land use, transportation, economic development and other planning efforts with water resource management.

8. The Authority should continue its review process so that each new industrial, commercial, residential and municipal development is reviewed to ensure ongoing availability of adequate water supplies.

M. Encourage and Facilitate Public Involvement and Support

POLICY M: The Authority should continue and expand education to keep the public informed about the choices and tradeoffs involved in making water management decisions and will invite public comment and participation in implementation of these policies.

RATIONALE: An informed public contributes to the successful implementation of water resources management solutions. It is the public that defines the values of the region, upon which the policies are based.

Recommendations:

1. The Authority should develop and maintain a water education curriculum for schools to teach children the importance, value and appropriate use of water in the region.
2. The Authority should develop an adult education program to encourage a more complete awareness of the full range of water related subjects and to encourage voluntary water conservation programs.
3. The Authority should consider preparing public service announcements on all aspects of water resources management and should continue the public marketing campaigns.
4. The Authority should continue to partner with real estate, design, building and construction industry groups to educate their membership concerning water conservation means and methods.
5. The Authority should consider interactive tools to engage the public on efficient water resources management such as self assessment water calculator, a water audit tool for the website, or a computerized version of the water budget that details water levels in the aquifer, enabling users to individually participate in water management scenarios.

Section 2 – Water Resources Management Strategy Accomplishments

The original Albuquerque Water Resources Management Strategy (Strategy) was a policy level document with recommendations for projects and other activities to be completed to provide a safe and sustainable water supply. The City and now the Authority have worked diligently to accomplish the policies, projects and other water related activities in the Strategy. The following is a list of Strategy accomplishments including the policies, projects and other activities.

CURRENT POLICIES

A. Proceed immediately to develop and fully use the surface water supplies that the City now owns.

The City and now the Authority has worked hard to implement the Drinking Water Project (DWP) to divert and fully use all of the Authority's San Juan-Chama water. The project is under construction and will be operational in 2008. The major permits for the project including the Record of Decision (ROD) on the Final Environmental Impact Statement and the Office of State Engineer's permit were received in June and July, 2004. Construction of the \$375 million project started in September 2004 and has continued to this date.

B. Establish a ground-water Reserve for use in times of drought.

The ground water drought reserve is to provide supplement supply during peak times and during droughts. The ground water drought reserve included any and all measures that preserve and protect the aquifer including conservation, ground water protection, reuse and reclamation projects and the Drinking Water Project. A ground water monitoring well was constructed in the major cone of depression on the eastside (Jerry Kline Park) to provide a baseline for comparing existing and future conditions of the aquifer. Other monitoring wells were installed as part of the Authority's long-term study program with the US Geologic Survey.

C. Pursue and support regional water resources planning and management.

The City and Authority have been active partners in developing the Middle Rio Grande Regional Water Plan working with the Mid Region Council of Governments and the Interstate Stream Commission. The Regional Water Plan was accepted by the Authority in 2005 and we have continued to work on implementation activities.

D. Pursue use of a combination of reclaimed (recycled) water, surface (river) water, water from the shallow aquifer, and water from the deep aquifer. Match the various qualities of water available with the needs of different users. For example, lower quality waters--such as shallow ground water--could be used for irrigation and some industrial supplies, while high quality water from the deep aquifer should be reserved when possible for domestic use.

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The North I-25 Industrial Reuse and Surface Water Reclamation project has been operational since 2003 and continues to provide non-potable water for irrigation and industrial uses in the northeast heights and north valley. The Southside Municipal Effluent Polishing and Reuse project has been designed and construction is scheduled to start in late 2007.

E. Pursue acquisition of new water supplies as needed.

The Authority has continued to purchase and acquire native water rights on a voluntary basis.

F. Continue implementing the City's water conservation strategy and programs.

The Authority has aggressively implemented the City's water conservation program including a new 1% rate increase solely for water conservation. The new rate increase provided funding for new programs including dedicated funding for the commercial and industrial program. The original goal of 30% reduction to 175 gallons per capita per day was reached in 2005. A new 10% reduction goal was adopted to reduce per capita use to 150 gallons per capita per day by 2014.

G. Continue implementing the Ground-Water Policy and Action Plan.

The Authority has continued to fund and implement the Ground Water Policy and Action Plan. The program has been expanded to include surface water to provide protection of surface water supplies for the Drinking Water Project.

H. Ensure that water rates reflect the cost of providing a safe and sustainable water supply, fairly distribute the rate burden, and foster conservation.

Seven dedicated water rate increases were established in the Strategy and were implemented starting in 1998 and completing 2004. A new water rate structure was implemented to encourage water conservation and to fairly distribute the costs of the new water supply across all sectors. The Authority has also adopted a no net expense policy for new development outside the water service area.

I. Protect valued environmental resources.

The Final Environmental Impact Statement (EIS) was completed that identified several environmental mitigation measures to protect the Rio Grande and the Bosque. In addition, the Authority has continued to support river restoration, silvery minnow habitat and breeding programs. The Authority is also one of the founding members of the Endangered Species Act Collaborative Program and continues to fully support those efforts.

Section 2 – Water Resources Management Strategy Accomplishments

J. Encourage and facilitate public involvement.

The implementation and continuation of the programs and projects have included extensive public involvement with thousands of hours of public meetings and hearings, presentations, neighborhood and civic groups. In addition, the Authority has established the Customer Advisory Committee to facilitate public input and involvement.

K. Update the Albuquerque/Bernalillo County Comprehensive Plan, this strategy, and other City plans as necessary.

The Comprehensive Plan was updated to reflect the policies of the Strategy.

PROJECTS

The following list of conceptual projects was identified in the Strategy to provide a safe and sustainable water supply. The status of the projects is provided along with accomplishments where the projects are complete and operational.

- Build and operate infiltration galleries in the metropolitan area near the Rio Grande to divert 97,000 acre-feet/year of water.

Nine diversion alternatives were evaluated including infiltration galleries to determine the most environmentally sensitive and best technological means of getting the San Juan-Chama water from the river. A new diversion dam with fish screens along with a fish passage channel was completed south of Alameda Boulevard in 2006.

- Build and operate a water treatment plant to bring the water diverted from the river to drinking water standards.

In 2004, the Authority began construction of a new 120 million gallon per day water treatment plant which will be completed in July 2008. The new water treatment plant includes the best available technology to meet or exceed drinking water standards for decades to come.

- Build and operate water transmission pipelines to deliver treated surface water throughout the City's water service area.

The Drinking Water Project included 38 miles of transmission pipelines of which more than 34 miles have been constructed. Another 8 miles of raw water transmission pipelines have been constructed from the Raw Water Pump Station to the new water treatment plant in 2007.

Section 2 – Water Resources Management Strategy Accomplishments

- Develop and operate a demonstration program for aquifer storage and recovery (ASR). Continue operation and study of how this technology might be used in overall water management.

The Authority is constructing the Bear Canyon Aquifer Storage and Recovery program using State grant funds. The demonstration project will apply approximately 1,000 acre-feet per year of water in the Bear Canyon arroyo from November through March in 2007 and 2008. We are also developing a large scale ASR project when the DWP comes on-line.

- Over time, build and operate a series of water reclamation (recycling) facilities at the Southside Water Reclamation Plant.

The City constructed the first water reuse facility to use non-potable for wash and other water needs at the Southside Water Reclamation Plant that has saved about one million gallons per day. Construction will commence on the Southside Municipal Effluent Polishing and Reuse project in late 2008 and will be operational in late 2009.

- Over time, build and operate water recycling facilities in the North Interstate 25 area, to include both reclamation of industrial wastewaters and small-scale diversion of water from the Rio Grande.

The North I-25 Industrial and Surface Water Reclamation project was constructed and is fully operational. The project provides up to 3,000 acre-feet of water for irrigation and industrial use in the north valley and northeast heights.

- Develop and operate a recharge enhancement program in the Central Valley that will make possible to use about 900 acre-feet/year of shallow ground water for irrigation on a sustainable basis.

The Authority is promoting the use of the shallow aquifer for non-potable uses in the valley area. A specific program to implement this objective has not been identified to date as other water sources (Fruit Avenue Superfund Cleanup) have become available.

Other Activities

- Define performance measures and guidelines for the establishment and maintenance of the drought reserve.

The aquifer monitoring plan including drilling and operating numerous monitoring wells has been completed. The aquifer is monitored to determine the extent of continued drawdown and filling when the DWP comes on-line.

Section 2 – Water Resources Management Strategy Accomplishments

- Conduct rate studies and adopt a new rate structure that fairly distributes the costs of providing a sustainable water supply.

A new water rate structure was analyzed and implemented by the Authority to provide permitting, design and construction funding for the Strategy.

- Continue study of Middle Rio Grande Valley hydrogeology to foster better understanding among all those involved of the consequences of water management policies and of the opportunities for regional action.

The Authority has continued to provide matching funding for ongoing hydrogeological investigations in the Middle Rio Grande. The Authority provides \$225,000 for this program annually to continue and better our understanding of the aquifer and its relationship to the river.

- Work with the Middle Rio Grande Conservancy District (MRGCD) and neighboring jurisdictions to formulate and gain adoption of a regional water management strategy using the guidelines provided by the Interstate Stream Commission for this purpose.

The Middle Rio Grande Regional plan has been completed and is currently being implemented by the member jurisdictions. Implementation is being carried out in cooperation with the Mid Region Council of Governments.

- Work to ensure that administrative rules and policies of the State Engineer take into account recent advances in our understanding of the aquifer and its hydrologic connection to the river.

The State Engineer adopted new administrative guidelines for water rights administration in the Middle Rio Grande in September 2004.

- Continue and expand public involvement and public education programs that foster aquifer protection, conservation, sensible water practices and policies, and a better understanding of the community values that should be reflected in water policy.

The Authority considers public involvement and education critical to the success of water resources and conservation programs. These programs have continued and will be a high priority for the future.