

Scenarios

Scenario Development Committees developed draft scenarios that included three overall regional water plan key goals:

- Preserve water for a healthy native Rio Grande ecosystem
- Preserve water for the region’s agricultural, cultural and historic values
- Preserve water for economic and urban vitality

The scenarios were presented to the public in another series of Community Conversations and then converged into one draft scenario for review by the Water Assembly, Water Resources Board and the Public.

THE PLAN

The draft scenario was then modified and mapped into the draft Middle Rio Grande Regional Water Plan. We found no single “silver bullet” solution to this complex problem. Action is needed across the board by all stakeholders.

Highlights of the draft plan recommendations:

- CONVERSION TO XERISCAPE - Residential, Commercial, Industrial, Institutional and Municipal
- RAINWATER HARVESTING - Residential, Commercial, Industrial, Institutional and Municipal
- CONVERSION TO LOW-FLOW APPLIANCES - Residential, Commercial, Industrial, Institutional and Municipal
- GREYWATER REUSE - Residential, Commercial, Industrial, Institutional and Municipal
- TREATED EFFLUENT REUSE - Commercial, Industrial, Institutional and Municipal
- ADJUDICATION AND WATER RIGHTS SETTLEMENT
- ENFORCE WATER USE REGULATION
- WATERSHED MANAGEMENT PLANS
- COMPREHENSIVE, INTEGRATED AND CONTINUED WATER USE PLANNING
- MEASURE ALL WATER USES
- LEVEL ALL IRRIGATED FIELDS
- UPGRADE AGRICULTURAL CONVEYANCE SYSTEMS
- CONVERT TO LOW WATER USE PLANTS
- DEVELOP NEW WATER SUPPLIES - Desalination and importation
- RESTORE BOSQUE
- IMPLEMENT EDUCATION PROGRAMS

PUBLIC INVOLVEMENT

How We Planned

Developing the Middle Rio Grande Regional Water Plan was an open, inclusive and participatory process. More than 2,000 people contributed time, energy and effort into creating. All parts of the process encouraged public input and discourse on the contents of the plan.

The Planning Process

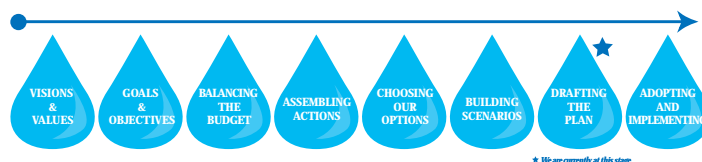
- Annual Assemblies - Yearly meetings to inform public on the progress of the plan.
- Community Conversations - Six series of conversations in the three counties that allowed the public and the planners to interact on a smaller scale.
- Regional Forums - Facilitated discussions bringing the entire region together.
- Public Opinion Surveys - 2 surveys record regional public opinion on water issues.
- Technical Analysis - Expert scientific analysis and modeling of supply, demand, and alternative actions.

- Interaction with Governmental and Non-Governmental Organizations - flow of information between the Water Assembly and various organizations on the water planning process.

WHO PLANNED

Water Assembly: The planning process was guided by the all-volunteer water assembly in partnership with the Mid-Region Council of Governments and its Water Resources Board. The Assembly included highly diverse subgroups representing a variety of interests in Bernalillo, Valencia and Sandoval Counties. The Water Resources Board is comprised of local government representatives.

THE PROCESS



NEXT STEPS

Acceptance and Implementation: The Regional Water Plan is advisory, not a directive. The next steps are acceptance of the plan and implementation of the actions needed to preserve all of our futures: This may include increased public awareness and education, incentives, policies, publicity, ordinances, laws, regulations, taxes, water rights purchases, pricing, and other means of managing the consumptive use of water within the Region. Additional studies and projects that could enhance water supplies may also be required.

TERMS

- 1. Withdrawal:** Water that is either diverted from its natural path in the surface-water system or pumped from wells. Some of this water may return to either the surface-water or groundwater system.
- 2. Depletion or Consumption:** That part of a withdrawal that has been evaporated, transpired, or incorporated into crops or products, consumed by people or livestock, or otherwise removed from the water environment. It includes the portion of groundwater recharge resulting from seepage or deep percolation (in connection with a water use) that is not economically recoverable in a reasonable number of years, or is not usable.
- 3. Acre Foot:** The amount of water that will cover one acre to a depth of one foot - 325, 851 gallons.

REFERENCES

S.S. Papadopoulos and Associates, Inc.: *Middle Rio Grande Basin Water Supply Study, August 4, 2000.*

USGS: *Report 02-4200, 2000 Simulation of Ground-water Flow in the Middle Rio Grande Basin.*

ISC 2000: *OSE/ISC Framework for Public Input to a State Water Plan, December 2000.*

FURTHER INFORMATION

The Middle Rio Grande Regional Water Planning is being conducted through a partnership between the Mid-Region Council of Governments and the Water Assembly.

The complete draft plan is available at the website, www.WaterAssembly.org, or can be obtained from MRCOG. Comments on the draft plan can be sent to either MRCOG at 317 Commercial NE, Albuquerque, NM 87102 or via email from the website. The draft plan is currently being considered by your local government. Please contact local government officials with comments on the plan.

ABSTRACT OF THE DRAFT

MIDDLE RIO GRANDE REGIONAL WATER PLAN 2000-2050

FOR BERNALILLO, VALENCIA & SANDOVAL COUNTIES

CONTENTS:

- What is regional water planning?
- What have we learned?
- What is our water budget?
- What are our values?
- How can we balance our budget?
- What are our recommendations?

Plan’s Mission:
Balance Use with
Renewable Supply

The region must now determine how to best continue to have sufficient, affordable, clean water to meet environmental and human needs, while maintaining all of our desired New Mexican lifestyles.

Prepared by the Water Assembly. P.O. Box 25862, Albuquerque, NM 87125-5862 • www.waterassembly.org
In partnership with the Mid-Region Council of Governments
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OUR REGION

The Middle Río Grande Region is one of 16 water planning regions in New Mexico. It comprises Sandoval, Bernalillo and Valencia counties— an area covering 5,495 square miles. More than half of New Mexico’s population lives here, making the region the largest urban water user in the state.

The region averages 9 inches of rain per year, and relies on both surface and ground water to support the region’s industry, agriculture, environment and people. Surface water sources include the Río Grande, the Río Jemez, the Río Puerco and the San Juan/Chama project. Limited ground water resources currently supply all of the region’s municipal and drinking water needs. These resources are not as extensive as once believed. The region must take

steps now to protect and conserve available water resources.

Our water use is constrained by physical and legal factors. The arid climate is quite variable. Extraction of groundwater cannot continue indefinitely without consequences. Downstream neighbors are entitled to their share.

“The population has grown by 21 percent since 1993 and is forecasted to continue to grow at an average rate of 1.5 percent per year. These population increases have caused dramatic increases in ground-water withdrawals from the aquifer system, resulting in large ground-water level declines. Because the Río Grande is hydraulically connected to the aquifer system, these groundwater withdrawals have also decreased flow in the Río Grande. [USGS 2002]

Plan’s Mission:
Balance Use with Renewable Supply

WHAT WE LEARNED AND ACCOMPLISHED

During the planning process, information has been gathered and analyzed, and alternatives posed and recommended. The essentials have been summarized below:

How is our water managed?

Two agencies, the Office of the State Engineer (OSE) and the Interstate Stream Commission (ISC), have the primary responsibility for managing our water. The New Mexico Environment Department (NMED) has lead supervision over water quality.

To administer the water, OSE issues a permit for the right to use a certain amount. These permits, or “water rights,” are assigned a date, the priority of which governs administration. Pueblo water rights, not managed by the OSE, are paramount (have the most seniority), and have not been quantified, nor have the future needs and thus uses been quantified for tribal entities. Water rights throughout the region, with the exception of a partial decree in the Jemez, have not been adjudicated. Domestic well permits are issued by the OSE. Water rights to all of the surface water have been issued— so that new users have to acquire permits from existing users.

The Río Grande Compact helps to ensure that water is shared by three states. The Middle Río Grande’s share is governed by this agreement, which the ISC administers on behalf of New Mexico.

NMED, along with the U.S. Environmental Protection Agency (EPA) monitors water quality for various users and uses. Water may be managed to benefit species listed as endangered due to human actions.

The OSE recently issued a report for New Mexico, declaring:

THE KEY FACT ABOUT OUR WATER— DEMAND EXCEEDS SUPPLY

Our Water Budget

A water budget is the correlation (or difference) between how much water enters a region and how much leaves. Here’s what our supply and usage looks like today:

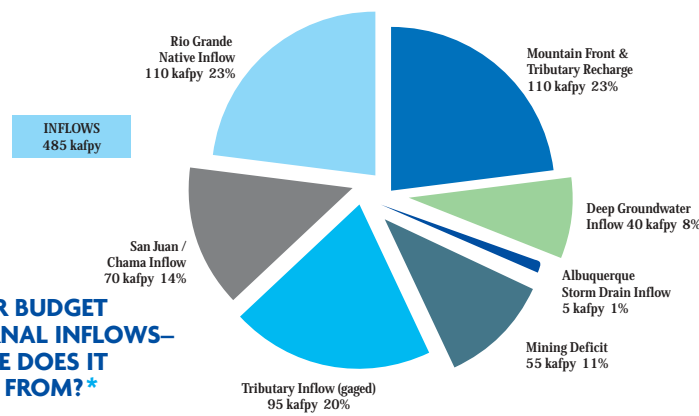
WHAT IS REGIONAL WATER PLANNING?

The regional water plan should answer five questions:

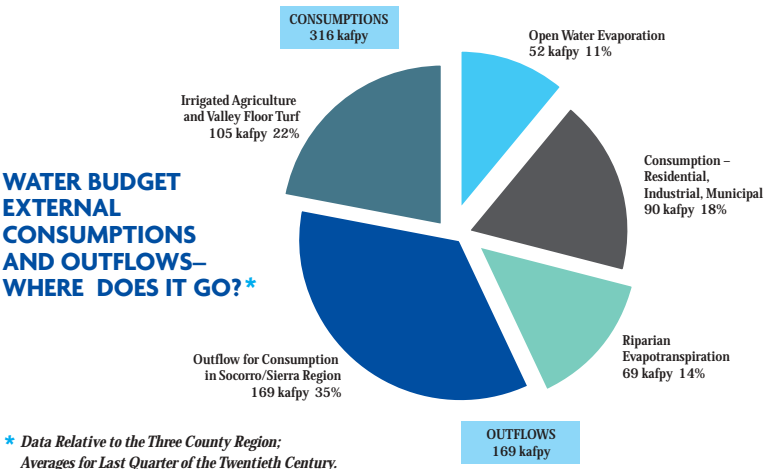
1. What is the water supply available to the region?
2. What is the region’s current and projected water demand ?
3. What alternatives are available to meet the projected demand with available supplies, including management alternatives to increase supply and reduction of demand via conservation or other measures?
4. What are the relative advantages and disadvantages of each alternative?
5. What is the selected set of alternatives that comprise the plan and how will those alternatives be implemented?



WATER BUDGET EXTERNAL INFLOWS— WHERE DOES IT COME FROM? *



WATER BUDGET EXTERNAL CONSUMPTIONS AND OUTFLOWS— WHERE DOES IT GO? *



* Data Relative to the Three County Region; Averages for Last Quarter of the Twentieth Century.

Overspending our Water Budget

On average our region has been “overspending” its water budget, the “mining deficit,” by about 55,000 acre-feet of water per year above what is renewable from various water sources. Increases in uses, such as population increases, may further impact the regional water deficit, unless we take some steps.

Consequences of Overspending & Constraints

As all of us know, there are side effects to overspending— satisfying the present comes with delayed costs. Nor can we ignore the constraints.

- Physical indicators include the lowering water table—160’ in places under Albuquerque. Continued lowering may result in land subsidence or water quality degradation, and may effect senior water rights holders and the health of the river. Costs to extract water will increase.
- Variability of precipitation means that the surface water supply will differ from year to year.
- The OSE has declared the Río Grande to be a fully appropriated basin, meaning there have been more water use permits issued than there is actual wet water. In times of shortage, administration of this system with ambiguous ownership may lead to junior water right holders being shut down, or improperly taking water from senior holders.
- The river, which is not a water right holder, provides water to the shallow aquifer, bosque habitat and downstream users.
- Not adhering to the Compact can and most likely will result in enforcement action being taken to ensure the delivery of water. The overuse of the Pecos River provides an example not to follow.

“In summary, the water supply of the Middle Río Grande is marked by limitation and variability. The successful water planning process will operate in recognition of these concepts.” [PAPADOPOULOS, 2000]

- Drought - New Mexico had about 15% to 18% more average rainfall in the last 25 years than in the last two thousand years. Recent tree-ring studies indicate that New Mexico has had a series of “wet” years and National Weather Service studies on the Pacific Decadal Oscillation suggest that the state may be returning to its normal, drier climate.
- Water Quality - Continual draw from the aquifer can have an adverse effect on water quality. Utilizing surface water will require increased costs.

Future Trends

If we continued to use water as we are now, and continue the historic population trends, the prediction is that our demand will increase by 95,000 acre feet per year to support projected 50 year growth.

Balancing our Water Budget

Reducing our consumption and/or increasing our supply so as to balance the budget are not as easy as they might appear. It’s easier to ask someone else to curtail their usage. From where will the water come?

“ Many groundwater users, including municipalities and industries in the Middle Río Grande, were allowed to begin pumping without securing water rights. Because of return flows of treated wastewater and the delayed impact of groundwater pumping on river depletions, this practice has not resulted in net river flow diminishment. However, the accumulated eventual need for groundwater users to acquire and transfer water rights is very large and exceeds the quantity of currently transferable water rights...Further, the ability of return flows from pumped groundwater to offset river depletions caused by pumping depends on ever increasing groundwater pumping. When pumping levels off, which it must, return flows will no longer be sufficient to offset the depletion of the Río Grande caused by historic pumping.”

[ISC FRAMEWORK]

WHY PLAN?

- To reduce or eliminate ground water depletions.
- To protect regional water interests.
- To retain control of our water future.
- To balance different demands for water with the supply.
- To achieve balance with neither big winners nor big losers.
- To ensure water for future generations.

PURPOSE

The plan is intended to assist water rights holders, individuals, businesses, organizations, and governments - local, state and federal, in balancing our water budget.

OUR VALUES

Adopted by the Water Assembly and the Water Resources Board, the mission and the goals, reflecting our regional values, came from an extensive public process.

Overriding Preamble:

The development and implementation of the Regional Water Plan is intended to support policies, programs and projects that meet the goals of the plan. Recognizing the limited resource and consistent overuse of the region’s water, the following mission and supporting goals are established for the regional water plan.

Overriding Mission:

Balance Water Use with Renewable Supply

GOALS:

- Ensure that the Mission is fulfilled through fair, open and inclusive public planning and implementation processes
- Preserve Water for a Healthy Native Río Grande Ecosystem
- Preserve Water for the Region’s Agricultural, Cultural, and Historical Values
- Preserve Water for Economic and Urban Vitality
- Preserve Water for the Qualities of Life Valued by Residents in the Region
- Develop Broad Public and Official Awareness of Water Facts and Issues, Especially the Limited Nature of Water Resources
- Conserve Water
- Promote a System of Water Laws and Processes that Support the Regional Water Plan and its Implementation
- Provide Appropriate Water Quality for Each Use
- Manage Water Demand Consistent with the Stated Mission
- Balance Growth with Renewable Supply*

*Accepted by the Water Assembly and not by the WRB.

Alternative Actions

At many public meetings and workshops across the region over the past five years, the general public, technical experts and water managers developed suggestions to balance the region’s water budget. The process generated 273 suggestions. Through elimination of duplication and by combining similar suggestions, a list of 44 candidate alternative actions were developed for evaluation by the public and the assembly. The actions were divided in seven broad categories.

Detailed analyses of the 44 alternatives were conducted and feasibility studies were conducted on 25 quantifiable alternatives. The public evaluated the alternatives in a series of community conversations, and the Alternatives Working Team then started the process of putting all the alternatives into various combinations or scenarios to provide a framework for recommendations.