

ELEMENT 8: WATER RESOURCES

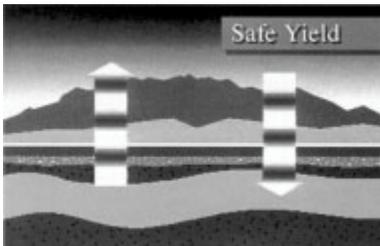
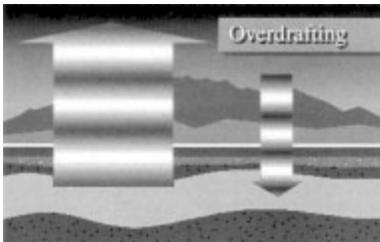
VISION The vision for Tucson's natural resources is an urbanized community which is both respectful of and responsive to its unique physical setting. The vision recognizes that preservation of natural resources will retain the positive community image which will, in turn, encourage economic development. Tucson's natural resources form interdependent natural systems that need to be preserved.

Water conservation practices will be promoted and required through restrictions on water intensive land uses, as well as promotion of native landscaping and expanded use of recycled effluent. The Tucson *Vision* emphasizes the importance of education about safe disposal of hazardous wastes.

Livable Tucson Goals	Clean Air and Quality Water Includes reduced pollution and provision of clean, potable water.
	Efficient Use of Natural Resources Includes conservation of resources and use of sustainable energy sources.

Regional Communication and Coordination

Background Water is a vital resource for human life and a healthy environment and economy. Since settlement of the Old Pueblo began, all inhabitants of the Tucson region have depended on the same underground water resource. Regional growth and development have resulted in a significant lowering of the water table, with economic and environmental consequences. Competition for limited groundwater among agriculture, the Native American Tribes, the mines, private and municipal water companies, and private well owners has necessitated finding new water resources and has resulted in passage of significant new legislation and water management guidelines.



One of the important water goals of the community is attainment of safe yield, when no more water is withdrawn from the aquifer than is replenished. New water supplies and a community-wide emphasis on conservation are needed to achieve this goal. While arrival of water from the Central Arizona Project (CAP) will provide a new water resource, maintenance of a dependable supply of good quality groundwater will continue to be an essential factor in defining Tucson's future health and prosperity. As the largest municipal water provider in the area, the City, through its water utility, Tucson Water can play an important role in assuring the supply and quality of Tucson's water resources.

Policy 1: Support efforts to improve regional cooperation and communication among appropriate agencies and communities.

Supporting Policies

- 1.1 Support Arizona Department of Water Resources efforts to assure that all water providers and users in the Tucson Active Management Area (TAMA) participate equitably in the attainment of safe yield.
- 1.2 Assist the private water companies in conservation, long-range planning, and identification of their roles as water suppliers for the region.
- 1.3 Coordinate with Pima County, Oro Valley, Marana, Sahuarita, and the Pima Association of Governments to maximize the regional use of effluent and integrate effluent management plans.
- 1.4 Coordinate regional efforts to enact local water quality protection mechanisms to implement state and federal programs.

Policy 2: Expand processes to communicate current and planned water programs to the public and expand opportunities for interested citizens to participate meaningfully in long-term planning decisions.

Sustainable Water Supplies

Background

Additional water supplies will be required to serve Tucson’s current population and the projected growth of the region. A continuing water conservation ethic will significantly enhance the future water supply. Conservation is the most economical water source for both provider and user, reducing operating and capital costs. Water rates, conservation programs, and community education will be the primary elements to further conservation efforts.



Reuse is another important source of supply. Wastewater is the only supply that will grow as the population increases. Expansion of the City’s reclaimed water system to serve more irrigation and industrial customers will constitute the major water reuse efforts in the region.

In addition to conservation and reuse, new water supplies will be needed. Groundwater levels are declining and state laws and regulations limit the amount of groundwater that can be pumped. CAP water is an important new supply. Tucson Water will begin delivering this water to customers in the spring of 2001; and eventually, it will constitute over half of the utility’s supplies.

The 100-year Assured Water Supply Designation the City has received from the Arizona Department of Water Resources provides an analysis of the water resources physically and legally available to the City. It demonstrates how the City may use these resources to provide for the current population and accommodate projected growth.

Policy 3: Continue to promote water conservation.

Supporting Policies

3.1 Implement conservation programs that meet Tucson Water's Third Management Plan conservation requirements.

3.2 Support conservation and efficient water use in an effort to minimize the need for new water sources.

3.3 Expand programs and regulations to reduce water waste, such as the Water Waste and Tampering Ordinance.

Policy 4: Continue to develop and implement programs for the reuse of water.

Supporting Policies

4.1 Continue to research and implement programs to increase the use of reclaimed water and secondary effluent.

4.2 Continue to identify potential reclaimed water customers and construct facilities to serve them.

4.3 Develop incentives to encourage the use of reclaimed water.

Policy 5: Continue to develop and implement programs for new sources of water.

Supporting Policies

5.1 Complete and maintain the Clearwater Renewable Resource Facility to treat and distribute CAP water.

5.2 Continue research and implementation of programs to recharge CAP water.

5.3 Continue to pursue acquisition of new water supplies.

Policy 6: Maintain a 100-year Assured Water Supply Designation from the Arizona Department of Water Resources.

Policy 7: Promote and expand conservation programs, reuse, and acquisition of new water supplies through water rates.

Supporting Policies

7.1 Continue to work with the Citizens' Water Advisory Committee and other appropriate groups to refine the water rate structure to give stronger conservation signals while not creating a hardship on the economically disadvantaged.

7.2 Continue to work with the Citizens' Water Advisory Committee and other appropriate groups to determine the role price should play as an incentive to use reclaimed water.

7.3 Continue to work with the Citizens' Water Advisory Committee and other appropriate agencies to determine how the costs of acquiring new water supplies are included in the rates.

7.4 Continue to provide the public information on the water rate structure, striving to make water rates easy to understand.

Water and Utility Management

Background Many important decisions, which will determine the future course for water programs and management in Tucson, are yet to be made by the Arizona Department of Water Resources and other state and federal agencies. These issues include the quantification of safe yield, the development of safe yield strategies, and federal water quality standards. Water interest associations, such as the Western Urban Water Coalition, will have a significant impact on the final outcome of federal regulations.

An important new water management tool is underground storage of water resources, including effluent, stormwater, and excess CAP water. Underground storage allows the City to store water supplies now, when they are available, for use in the future. Underground storage may also play an important role in certain aspects of water quality management and in prevention of land subsidence.

Policy 8: Continue to review and adopt guidelines, incorporating community input, for managing the Tucson Water utility.

Policy 9: Work cooperatively with State of Arizona agencies to refine existing water legislation and achieve the adoption of plans, policies, and regulations.

Supporting Policies 9.1 Assist in the development of quantification of safe yield and the development of safe yield strategies for the TAMA.

9.2 Assist Arizona Department of Water Resources in the development of management plans, regulations, and legislation relating to conservation, underground storage and recovery, use of groundwater, and acquisition of new sources of supply.

Policy 10: Continue to work with the federal and state agencies and water interest associations to develop policies, programs, and facilities for water management.

Supporting Policies 10.1 Work with appropriate agencies to develop state and federal water quality standards that protect public health.

10.2 Work with the CAP to allow transport of non-CAP water in the CAP system.

10.3 Participate with water interest associations, such as the Western Urban Water Coalition and the Western Coalition of Arid States, to address water supply issues through legislation, policy, and rules.

Water Analysis and Documentation

Background Water, as one of the most important issues facing the region, has received much attention in the last decade. New legislation, numerous studies, and new programs have generated a significant amount of new information. It is important to document the details of these programs and studies to provide a basis for analysis and comparison. The public and various agencies need to be able to access reliable data and track the decision-making process for greatest understanding and community consensus. It is also important to standardize methods and record keeping as much as possible to facilitate comparisons.

Policy 11: Document ongoing water programs and analyses and make this information easily accessible to agency personnel and the public.

Supporting Policies

11.1 Standardize data collection and methods for economic comparison of alternative water supplies and programs.

11.2 Analyze the costs and impacts of alternative conservation programs to optimize their effectiveness for clearly defined user groups.

Land Use

Background Water use is the result of two factors: service area population and per capita water use. In turn, water availability influences where and when growth occurs. Types of land use can strongly influence both population growth and per capita use of water. Many of the highest water users within the city, important to the economic base, own their wells and water rights. Recent economic development efforts have focused on attracting "clean" high-technology industries, which are often high water users. Water use is also related to the types of residential land use; on the average, single-family residences utilize more water than multifamily residences.

Appropriate land use decisions can help assure the quality of Tucson's groundwater by preventing contamination in sensitive areas.

Policy 12: Continue to research the relationship between water supplies and service, land use, and growth of the region.

Supporting Policies 12.1 Include conservation of water resources in plans and policies to guide land use decisions.

12.2 Develop plans and policies to assist in land use decisions that protect water quality.

Policy 13: Continue to pursue appropriate land uses for City-owned retired farmland in the Avra Valley.

Environmental Restoration and Enhancement

Background A community desire to preserve riparian and wildlife habitats has generated efforts throughout the region to develop multibenefit projects which combine water supply augmentation/treatment with environmental restoration and enhancement. The City has developed the Sweetwater Wetlands as an example of how a multibenefit project can work. Often these multibenefit projects will require the cooperation of several jurisdictions and state and federal agencies.

Policy 14: Pursue water plans and policies that protect and benefit natural ecological systems.

Supporting Policies 14.1 Continue to research and implement water recharge and other water projects to serve the multiple needs of the community and the natural ecological systems, such as the multibenefit projects planned by the City.

14.2 Continue to monitor and study the impacts of groundwater pumpage and recharge on wildlife and riparian habitat and, where appropriate and feasible, implement measures to protect the habitat.

14.3 Evaluate new water sources to determine the impacts on the natural ecological systems.

14.4 Work cooperatively with federal agencies, such as the Bureau of Reclamation, to develop and implement projects that augment water supplies and enhance riparian areas.

Water Quality

Background



Water quality is equally as important as water quantity. Maintaining high standards for Tucson's groundwater is vital, even CAP water is introduced to the community. When shortages of CAP water and delivery interruptions occur, groundwater use will be part of the backup system to assure an adequate water supply.

Another water quality issue is the expense of complying with increasingly stringent federal standards for drinking water and nonpoint source pollution requirements. Standards and requirements will continue to change for a variety of reasons. New testing technology enables the identification and quantification of new contaminants. New problems associated with existing contaminated soils leaching into groundwater may emerge. Also, the waste and by-products of new technologies may generate new contaminants. Procedures and funds will be needed to address existing and new contamination of Tucson's groundwater.

Policy 15: Protect and enhance the quality of Tucson's water sources.

Supporting Policies

- 15.1 Analyze and mitigate the potential for contamination of groundwater supplies from proposed industrial or commercial land uses.
- 15.2 Coordinate with Pima County, other jurisdictions, and businesses to locate landfills or other groundwater-polluting land uses to minimize the potential for the contamination of groundwater.
- 15.3 Pursue programs and funds to mitigate groundwater pollution caused by existing and historic land uses which may pose a threat to water resources.
- 15.4 Continue to research and develop water quality programs for pollution prevention for commercial and industrial water users.
- 15.5 Develop plans, policies, and procedures and identify funding sources to comply with federal and state water quality programs as they are developed.