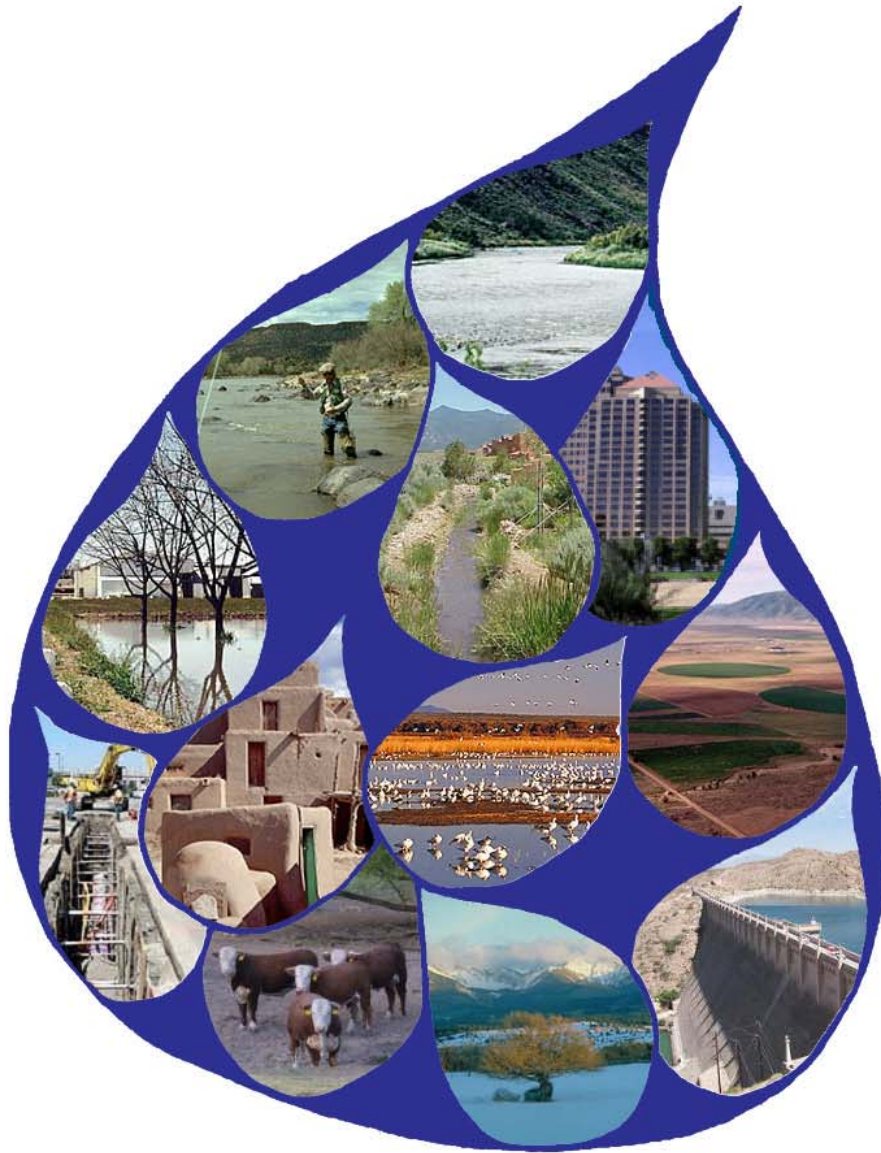


Office of the State Engineer / Interstate Stream Commission



NEW MEXICO STATE WATER PLAN

December 23, 2003

WORKING TOGETHER TOWARDS OUR WATER FUTURE

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Much of the public input was gathered during 29 public meetings, which were held in villages, towns, cities, pueblos and a Navajo Chapter House and allowed the ISC staff to listen to suggestions from more than 1,500 citizens about statewide water policy-making. Many people contributed resources, time, logistical support, and general goodwill at these meetings, and their support is gratefully acknowledged, as is the help of the New Mexico State Land Office in conducting the public meetings. We also thank our contracted facilitators of the public meetings for their professional and effective engagement of meeting participants and their listening and documenting of citizen concerns.

More than 140 people, both decision-makers and proactive citizens, participated in a consensus-building Town Hall. We thank the participants and New Mexico First, who organized and facilitated the event, for helping to inform the State about citizen and stakeholder policy concerns for the State Water Plan. In particular, we thank the representatives from many of the Tribes, Pueblos and acequias of New Mexico; their involvement provided an enlightening reminder of New Mexico's diversity. We also appreciate the private foundations that generously provided grants to non-agency participants to defray their expenses.

Apart from the public meetings, numerous individuals, state agencies, and stakeholder groups also provided comments by fax, email, hand delivery, and phone, and we appreciate their thoughtful review and input. The Utton Center's dedication to our needs throughout the process of synthesizing the public comments is also recognized and appreciated. We also sincerely appreciate the efforts of Daniel B. Stephens & Associates, Inc. for their assistance to ISC/OSE in the final compilation of this State Water Plan.

We recognize that this state water planning effort is in many ways a continuation of and an umbrella for the regional water planning efforts that have been underway for several years. In that light, we are grateful to members of the Ad Hoc Regional Water Planning Committee for their work and recommendations for integration of the regional water plans into the State Water Plan. Clearly, the regional water plans will provide the local input and detail needed to fill in the state policy framework.

Finally, we thank the members of the Water Trust Board, the Governor's Blue Ribbon Task Force on Water, the Planning Committee and Commissioners of the Interstate Stream Commission, and the staff of the Office of the Governor for their generous support and encouragement throughout this water planning effort.

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Introduction

Water is the common denominator of New Mexico's future and the indispensable element of quality of life for the state's residents. New Mexico must take control of this vital resource at a time when nature is pinching supplies through a drought, and man-made issues – from endangered species matters to interstate water conflicts – are further threatening or squeezing those already dwindling supplies.

This State Water Plan, prepared at the direction of Governor Bill Richardson in response to a mandate from the 2003 Legislature, is a blueprint to move the State forward into the 21st century with 21st century techniques and technology applied to conserve and to increase the supply of water.

Under the leadership of the State Engineer, who is also Secretary to the Interstate Stream Commission (ISC) and Chairman of the Water Trust Board, a draft plan was presented to the public in a joint meeting of the ISC and Water Trust Board on October 22, 2003 in Santa Fe. After review of that draft document by the public, other State agencies, Tribal governments, other interested stakeholders, and the Governor's Blue Ribbon Task Force on Water, the lead collaborators revised the draft.

This 2003 State Water Plan is therefore the outcome of months of intensive work by the three named agencies, with input from a broad spectrum of New Mexico's citizens and institutions, to develop a vision for strategic management of New Mexico's water resources in the future, in keeping with Section B of the State Water Plan Act. Section B directs that:

The State Water Plan shall be a strategic management tool for the purposes of:

- (1) promoting stewardship of the State's water resources;
- (2) protecting and maintaining water rights and their priority status;
- (3) protecting the diverse customs, culture, environment and economic stability of the State;
- (4) protecting both the water supply and water quality;
- (5) promoting cooperative strategies, based on concern for meeting the basic needs of all New Mexicans;
- (6) meeting the State's interstate compact obligations;
- (7) providing a basis for prioritizing infrastructure investment; and
- (8) providing statewide continuity of policy and management relative to our water resources.

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The State must move aggressively to accomplish these goals. To supply water to grow the New Mexico economy while meeting existing needs, the State must move to expand supplies through desalination, efficiency improvements, and recycling. This State must become a world center in research, development and application of technologies to reclaim and recycle water, both ground water and surface water.

This generation must build a State with rich opportunities for the generations yet to come. As New Mexico moves aggressively forward to build a 21st century economy, the State must move aggressively to put in place the legal and physical structures to provide the water to serve this progress. Growth in population and in industry must be managed for the State's general welfare.

The New Mexico Constitution protects the users of water, with the most senior being first in line. For the 21st century, the State must develop water market and water banking mechanisms that will facilitate the voluntary movement of water from old uses to new, with the marketplace supplying the appropriate rewards and the State providing the necessary safeguards.

The water rights of Indian Pueblos and Tribes will be protected, as will the water rights of members of acequias – community irrigation ditch systems – which rights generally predate the Treaty of Guadalupe Hidalgo which brought American sovereignty to what is now New Mexico. Nothing in the State Water Plan will impair or limit the claims that these senior water rights holders assert.

The role of agriculture in New Mexico's future is recognized, and the water necessary to serve that role must be supplied.

The imperative of securing sufficient water to serve the needs of New Mexico's dynamic urban and industrial areas must remain an objective of water planning. The obligation to restore the ecological balance of our surface watercourses must be recognized and met in the implementation of State water policy. Water quality issues must have equal standing with water quantity issues.

The State will plan and prioritize major water infrastructure improvements to get supplies to where they will serve the greatest good in facilitating economic development and in serving existing and future populations.

The State Engineer will initiate an active management program to assert and maintain administrative authority over the allocation of water. Adjudication of water rights in all basins will be expedited.

New Mexico must establish the physical and legal tools to protect the State's water supplies and maintain administrative authority over the State's water resources. Threats to the State's administrative authority over its water may arise from failure to comply with Interstate Compacts, from failure to protect senior rights, or from failure to provide means for the federal government to meet its Endangered Species Act obligations within the framework of State water law. Cooperation and collaboration in meeting endangered

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species requirements will be a priority, but the State will go to court where necessary to protect the State's administrative authority over its water.

The State Water Plan will lay the foundation and provide guidance for the State's effort to maintain administrative authority over its water resources. It will be a living document, gaining detail and new emphasis as new technologies and new water needs enter the picture. Its primary objective will always be to protect current water users while allowing continued development of the resource to meet the needs of the future.

The State Water Plan does not attempt to identify and resolve region-specific water management issues, because resolution of those issues must include local decision-makers. Still, the sheer number and variety of issues discussed within the State Water Plan demonstrate the complexity of New Mexico's water situation. What at first glance may appear to be a single issue often reveals a web of interrelated matters, which are in turn part of or affected by other issues.

Without an understanding of the complexity of New Mexico's water situation, developing strong, clear policy statements and implementation strategies for statewide common priorities can be difficult. This State Water Plan articulates the policies that will guide the State's management of its water resources into the future, and presents implementation strategies for doing so.

This 2003 State Water Plan is organized following the provisions contained in Sections C through F of the Act. Each Section includes policy statements and implementation strategies, followed by a brief background discussion and a summary of public opinion expressed during the public involvement process.

Specifics and detail on how the State intends to accomplish these aims is contained in the pages that follow.

Section C.1 Identify and reflect the common priorities, goals and objectives that will have a positive impact on the public welfare of the state.

Background

Public welfare has both regional and state contexts. The OSE and ISC believe the **regional** public welfare is best informed by reference to the individual regional water plans. This section focuses on the **State** context of public welfare, and while it does not define “public welfare” for the State, it outlines the fundamental common water-related priorities and objectives identified in the State water planning process that will have a positive impact on the public welfare of the State.

The New Mexico Constitution establishes that all the water in the State belongs to the public and, to the extent that it is unappropriated, it is available for appropriation according to State law. New Mexico’s statutes charge the State Engineer and the ISC with the management, distribution, investigation, protection, conservation, and development of the State’s waters. Through this administrative system the State must manage its waters to meet existing water rights, to meet its interstate river compact obligations, and to protect the State’s waters. Today, these responsibilities have dimensions that simply could not have been anticipated a hundred years ago. Forces beyond New Mexico’s control have brought it to a critical point of decision. If the State lacks the capacity to actively manage its water, it risks the loss of administrative authority over some of its water to the federal government, the United States Supreme Court, or another state. Conversely, the State can invest in its future through active water resource management.

Various state agencies, boards and commissions including, but not limited to the New Mexico Interstate Stream Commission (ISC); the Office of the State Engineer (OSE); the New Mexico Environment Department (NMED); the Water Quality Control Commission (WQCC); the Energy, Minerals, and Natural Resources Department (EMNRD); the Department of Game and Fish (NMDGF); the New Mexico Acequia Commission; and the Water Trust Board (WTB) have statutory authority and responsibility over specific water matters that require policies to guide both State and Regional planning and management efforts. These matters include but are not limited to:

- Conducting and completing water rights adjudications and managing the waters of the state
- Regulating potentially polluting discharges to the state’s surface and ground water
- Maintaining compliance with interstate stream compact delivery requirements and ensuring delivery by upstream states

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- Addressing federal mandates such as the Clean Water Act, Endangered Species Act, Resource Conservation and Recovery Act, Safe Drinking Water Act, Wild and Scenic Rivers Act, among others.
- Developing and maintaining comprehensive databases and information systems
- Quantifying and regulating water resources and water quality
- Coordinating with federal agencies within the Departments of Interior, Energy, and Agriculture, and with the U.S. Army Corps of Engineers
- Evaluating and regulating the use of New Mexico's saline and brackish water
- Evaluating and regulating the use of produced water from oil and gas operations

Common Priorities, Goals, and Objectives

During the planning process, multiple items were identified and/or discussed as possible common priorities for New Mexico, which if properly addressed, would have a positive impact on the public welfare of the State. From that very large list, the OSE and ISC developed the following list of fundamental statewide common priorities, goals, and objectives. This list is not presented in any order or priority; the relative priority of these will vary in different areas of the state given the specific issues that are applicable to each area.

- *Ensuring that water is available for the continued and future economic vitality of the State;*
- *Ensuring a safe and adequate drinking water supply for all New Mexicans;*
- *Developing water resources to expand the available supply;*
- *Promoting conservation and the efficient use of water;*
- *Promoting drought planning;*
- *Protecting, maintaining, and enhancing the quality of the State's waters;*
- *Providing for fish and wildlife habitat preservation and maintenance and for river restoration;*
- *Protecting senior water rights;*
- *Maintaining and enforcing interstate stream compact compliance;*
- *Preserving state administrative authority over the State's waters; and*

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➤ *Completing water rights adjudications.*

The following subsections provide a brief background on each of these fundamental common priorities.

Ensuring that water is available for the continued and future economic vitality of the State

The availability of water has always been and will continue to be inextricably linked to the economic vitality of New Mexico's diverse communities. Early in the State's history, water primarily supported local, subsistence-based economies including hunting and gathering societies as well as subsistence-based agriculture and extractive industries where communal production or barter for the products was the norm. Today, its role has evolved to supporting activities which allow our participation in a global economy characterized by diverse endeavors that span that entire spectrum of economic activity. Our citizens still hunt and gather nature's abundance; they still engage in subsistence agriculture, as well as large-scale commercial agriculture for local, regional and global markets; they produce all manner of products and services; they depend on water to support recreational economies such as fishing, boating, golfing, rafting, skiing and tourism; they play an important role in contributing to the national security of the United States; and they produce high technology products which are used worldwide. All of these activities are directly dependent on the availability of sufficient water of the quality needed for the specific uses.

In addition to being diverse, the State's economy is highly decentralized. People throughout the State contribute to the overall economic picture, with people in rural areas producing agricultural, mineral and other naturally occurring products, and those in urban areas providing goods and services as well as industrial and technological products. The continued viability of the diverse entities that supply water for these economic activities is of vital importance to the State. These include municipal suppliers; community water systems including mutual domestic water consumer associations, water cooperative associations, water and sanitation districts, and privately owned public utilities; acequias; irrigation districts; and conservancy districts.

New Mexico's continued economic vitality is also crucially dependent on its ability to preserve its pristine environment, including its spectacularly scenic wild rivers and wilderness watersheds. Both employers and workers are drawn to live and remain in the State by these environmental features and a comprehensive State Water Plan must recognize the importance of preserving and enhancing New Mexico's rivers and watersheds.

Ensuring a safe and adequate drinking water supply for all New Mexicans

The availability of safe and adequate drinking water supplies for all New Mexicans is of paramount importance to the health and safety of the State's citizens. The provision of adequate safe drinking water supplies for their citizens is primarily the responsibility of local agencies and entities, while the State's role is to support local agencies through the

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combined efforts of the Environment Department, OSE/ISC, and the Water Trust Board. In addition, a significant number of New Mexicans obtain their drinking water from domestic wells. The State needs to strengthen the institutional protections it provides for these users.

Developing water resources to expand the available supply

New Mexico's surface waters in many parts of the State have been fully appropriated since the early to middle 1900s. Most of the municipal and community water supplies developed since then have relied on the State's substantial potable ground water reserves. However, much of that ground water is in storage in aquifers that are hydrologically connected to the State's rivers and is not available for use because the pumping of that ground water would reduce river flows and impair senior surface rights. Therefore, development of these ground water resources has required the identification, purchase and retirement of surface rights. Continued development of potable water supplies will necessitate further development of both surface and ground water resources. Some alternatives that have been identified include:

- Developing the State's limited remaining unappropriated surface water in those basins where it is practical to do so.
- Developing potable ground water in basins where ground water is not closely connected to river flow.
- Characterizing the State's brackish and saline ground water resources to determine where their development is economically feasible.
- Removing accumulated sediment to increase storage capacity in reservoirs with low evaporation losses.
- Constructing new water storage facilities in areas with low evaporation losses where economically and environmentally feasible.
- Implementing Aquifer Storage and Recovery projects where hydrologically and economically feasible

In some areas of the state surface water is potentially available for appropriation but both the timing of the availability of that water and the need to protect senior rights makes development of these resources difficult. In other areas potable ground water occurs in basins that are not hydrologically connected to a stream system, but these resources are often far removed from areas of potential use and would require expensive pipelines to deliver the water.

Large areas of brackish or saline ground water exist that may provide water to meet some New Mexico demands. In these cases, water treatment plants, sludge disposal plants, and pipelines would likely be needed to make the water available for use. Detailed

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hydrologic and engineering studies and cost-benefit analyses will be required as these resources are economically developed.

Promoting conservation and the efficient use of water

At present, even during periods of average water supply, demand in many parts of the State would exceed supply if all water rights and permits were fully exercised. As New Mexico's population grows and demands for water increase, conservation and efficient use of water will be increasingly necessary to meet the State's present and future needs for water. Thus, New Mexico's water conservation programs must be strengthened and adequately funded.

Promoting drought planning

Drought is a cyclic climate pattern in semiarid New Mexico. In times of drought the State's water resources cannot meet even the current needs of water users throughout the state, much less accommodate new and increasing demands such as federal environmental mandates. The increase in New Mexico's population over the past several decades has further increased our vulnerability to drought. Given these challenges, it is critical to plan for drought and educate New Mexico residents about drought conditions and the threats posed by drought to the environment, to our economy, and to the public welfare.

Protecting, maintaining, and enhancing the quality of the State's waters

This common priority recognizes that protecting, maintaining, and enhancing the quality of the State's waters is critical to sustaining the state's residential population, businesses, and agriculture for present and future generations of New Mexicans. Once water becomes contaminated, it is extremely expensive to restore to its original quality, and in many cases restoration is not possible at any cost.

The New Mexico Water Quality Act is a legislative recognition of the importance of this common priority and incorporates water quality protection provisions designed to ensure the long-term protection of New Mexico's water resources. Critical to the accomplishment of this long-term goal are the completion of surveys, compilation of data, and maintenance of databases on the State's water supplies and water quality.

Providing for fish and wildlife habitat preservation and maintenance and for river restoration

If the State attempts to obstruct the United States from meeting its obligations under the Endangered Species Act, New Mexico's administrative authority over its water will be threatened. Therefore, the State must manage its water in ways that allow the U.S. to meet these obligations within the confines of State law. In addition, the State has its own strong environmental commitment, as this common priority recognizes.

Protection of fish and wildlife habitat and river restoration and maintenance are important goals of the State. Fish and wildlife, and their habitats, enjoy substantial

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protection in existing New Mexico law. New Mexicans clearly believe that river restoration and protection of threatened and endangered species are important environmental goals, but do not believe federal demands for water for listed species should compromise State water law, rights and interests.

Therefore, it is incumbent upon the State to continue to vigorously pursue its current policy of seeking cooperative solutions to water conflicts arising from the United States' need to ensure that the activities of its many federal water projects in New Mexico do not jeopardize listed species and to identify and address similar issues in other basins of the state before they become large problems. In sum, the State must be at the forefront of all aspects of efforts to preserve and recover endangered or threatened species, both in refugia and in the wild. The State must accomplish this work within the existing framework of State water law.

Protecting senior water rights

New Mexico water law and administration is based on the concept of prior appropriation. The prior appropriation doctrine of water rights administration is unique to the western United States, some of which, like New Mexico, adopted the doctrine through their state constitutions when they became a state. Under the doctrine, those individuals intrepid enough to first settle the desert-like region were recognized as having a prior right to use of the limited water supply. In this way, the earliest water users could protect the availability of their water supply from interference by newcomers.

Many of the water resources of what is today the State of New Mexico were developed prior to statehood, by Pueblos and Tribes, and by European settlers under the laws of Spain and Mexico. In consequence, Pueblos, Tribes, and acequias often hold the senior water rights on many New Mexico streams. The State recognizes that the Pueblos, Tribes and acequias assert certain rights and protections stemming from these historical developments. Similarly, some land grant heirs also assert certain rights and protections that stem from these same historical developments.

The Pueblos and Tribes assert water rights that arise under federal law and that they are entitled to a time immemorial priority for certain of their water rights. The State respects the sovereignty of the Pueblos and Tribes and will pursue appropriate methods of consultation and coordination with the Tribes when considering policy decisions that may affect them. Nothing in this state water plan will impair or diminish the sovereignty or the water rights of the Tribes and Pueblos.

Both the acequias and land grants assert certain protections under the Treaty of Guadalupe Hidalgo. The State recognizes the value of the acequias' historical, cultural, ecological and economic contributions to the State and, therefore, promotes the continued viability of acequias. The State will continue to recognize the existence of the terms of any treaty entered into by the United States conferring property rights protections on citizens being subjects of that treaty. Nothing in this state water plan will impair or diminish the

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right of acequias or land grants to assert protection of water rights under the Treaty of Guadalupe Hidalgo.

Ultimately, in order to protect senior water rights, there is no alternative to administration of the State's waters. In order to accomplish this, the rights must be adjudicated or otherwise quantified and ranked. Quantification of senior water rights is important to provide certainty to all water right holders, to facilitate the active management of the State's waters, and to enable the State to maintain administrative authority over its waters.

Maintaining and enforcing interstate stream compact compliance

Interstate stream compacts are agreements developed between states and ratified by those states and the U.S. Congress that apportion between the signatory states the surface waters of selected streams that cross state borders. Interstate compacts are both state and federal law. New Mexico has entered into eight interstate stream compacts including the Colorado River Compact, the Upper Colorado River Compact, the Rio Grande Compact, the Pecos River Compact, the Canadian Compact, the La Plata Compact, the Animas La Plata Project Compact, and the Costilla Creek Compact. These compacts both protect the State's use of its waters and prescribe the amount of water that New Mexico must pass to the downstream state. As demonstrated by the results of the *Texas v. New Mexico* litigation over the Pecos River Compact, the consequences of not complying with compact delivery obligations can be severe.

New Mexico's ability to administer its water will be threatened if New Mexico fails to meet its interstate compact obligations. Therefore, New Mexico must manage its water to meet those obligations, as Section 1.B(6) of the State Water Plan Act requires and as this common priority recognizes.

Preserving state administrative authority over the State's waters

The fundamental common priorities and objectives identified in this section require the State to actively manage its water resources for the benefit of the people of New Mexico. Thus the State Water Plan Act calls for the State Water Plan to establish a clear vision and policy direction for active management of the State's waters. In the long-term, that policy vision will help the State accomplish the ends set out in Section 1.B. of the Act. In the short-term, active water management is also necessary because New Mexico faces threats to its administrative authority of its waters from:

- other states;
- the courts; and
- the federal government.

The threat to New Mexico's administrative authority of its water from state and federal courts will arise if New Mexico fails to meet its interstate compact obligations, does not comply with ESA-related efforts to protect endangered species, or does not manage its water to protect senior rights in times of shortage. Therefore, it must actively manage its

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water in a manner that satisfies these many demands, as Section 1.B(2) of the Act contemplates and as this objective recognizes.

Completing water rights adjudications

In order to accomplish the effective administration of water rights, the rights must be quantified and ranked. The legal process that establishes this quantification and ranking is called adjudication of water rights.

Water rights adjudications are comprehensive legal proceedings to determine all rights to the use of the State's waters. State law requires that all water rights in a stream system be adjudicated in a court proceeding. Adjudications serve several important purposes, including: the quantification and legal determination of surface water rights that predate the State's adoption of the 1907 water code; the quantification and legal determination of ground water rights that predate the State Engineer's assertion of administrative authority over a ground water basin; and the quantification and determination of the relative priorities of all water rights, Indian and non-Indian, that share a common or hydrologically connected source.

Comprehensive water rights adjudications define all water rights in a stream system relative to each other in a single court decree. Adjudication decrees define all competing demands on the stream system's water supply so that the State Engineer can effectively carry out his statutory mandate to administer water to satisfy those demands. Adjudication decrees thus greatly facilitate the State Engineer's ability to actively manage the State's water resources to protect senior water rights and ensure that New Mexico meets its interstate stream obligations.

In addition to the claims of non-Indians based on state water law, New Mexico's stream systems also are subject to the water right claims of 23 Indian Pueblos and Tribes, which often claim the most senior water rights on the system. Of these, the claims of 17 Pueblos and Tribes are involved in currently pending water right adjudications. Indian water right claims are of critical significance because of their claimed early priorities and their size, which in some cases has the potential to exceed the quantities of water apportioned to the State under relevant interstate compacts. Because Indian water right claims frequently arise under federal law, rather than state law, comprehensive stream system adjudications are necessary to fully determine and quantify these claims. Under the McCarran Amendment and related case law, the adjudication by a court of all water rights in stream system is the only way to define and quantify Indian water right claims so that they can be integrated into a uniform and efficient system of water rights administration.

Public Opinion

Public comments made in the public involvement process of the State Water Plan as well as countless meetings of various Regional Water Planning groups underscored that public welfare has different meanings in different locations of the state. Many citizens stated that the concept of regional public welfare is best informed by reference to each of

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the 16 Regional Water Plans rather than by reference to a blanket statewide definition. They also expressed a preference that the State Engineer emphasize statewide issues in determining State public welfare common priorities.

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Section C.2: Establish a clear vision and policy direction for active management of the state's waters.

Policy Statements

- *The State shall efficiently and effectively manage its surface and ground water to maximize the use of the State's water supply to satisfy existing water rights and to meet its interstate stream compact obligations.*
- *The State shall accurately measure its water uses and inventory the quantity and quality of its water supply.*
- *The State shall promote water markets that enable the efficient management and movement of water rights within the State in accordance with the applicable legislative and legal safeguards.*
- *The State should devote resources to the OSE sufficient to ensure that, within the required time, the State Engineer has the basin infrastructure, technical data, models, and plans to conduct and credibly defend in court water rights administration in those basins where the consequences of failure to administer are anticipated to be the most severe.*

Implementation Strategies

- The State Engineer will prepare plans consistent with the prior appropriation doctrine, for priority administration of every basin.
- The State Engineer will establish water districts and appoint water masters to administer diversions and existing water rights as necessary.
- The State Engineer should encourage voluntary agreements among users for coping with water shortages, but must be prepared for priority administration of water rights where such voluntary agreements are not reached or if they do not achieve the required result.
- The ISC should actively protect the State's interests in water related Endangered Species Act Litigation to ensure that federal demands for water for threatened and endangered species do not compromise State water law, rights and interests.
- The Office of the State Engineer should receive funding adequate for the acquisition of the technological and scientific tools necessary for efficient administration and management. The tools include:
 - real-time measuring and metering of all water uses (return flows as well as diversions);

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- consistent standardized remote sensing technologies;
 - GIS technologies;
 - improved surface and ground water models; and
 - water districts, water masters, and water master manuals.
- Where appropriate, the State Engineer should include communities and water management entities in water administration matters.
 - Resources should be allocated to fully implement active water resource management in accordance with the following priority list:
 - where the threat to State administrative authority from failure to perform is most severe;
 - where threat of interstate conflict is high;
 - where the economic consequences of lack of ready water markets are high; and
 - where water conservation will be served.
 - The State Engineer should consider changes in the present system of domestic well permitting and administration, specifically by limiting or conditioning new domestic well permits to prevent impairment of senior water rights (discussed further under Section C.7).
 - The ISC and the State Engineer should continue to vigorously pursue and enforce compliance with all interstate compacts both within the state and by the other compact signatories.
 - The ISC will plan, design, and implement projects to aid the State in meeting its interstate compact delivery requirements.
 - The State Engineer will develop a strategy for the coordinated enactment of statutes, promulgation of regulations, and development of policies to achieve efficient, localized water markets.

Discussion

To support the State Water Plan, the OSE and ISC is implementing a vision and policy for managing the State's waters known as "active water resource management." This strategy is designed to assure that these water agencies have the resources to accomplish the State Water Plan's goals of protecting, managing, and developing New Mexico's water resources, by using the broad powers of the agencies.

As discussed in Section C.1, administration of the State's waters is growing increasingly complex, and includes meeting existing appropriations, meeting interstate river compact obligations, satisfying endangered species and other environmental requirements goals, and protecting the State's waters. The threats and challenges currently confronting New Mexico and its water are diverse, and failure to effectively meet these

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challenges could result in the loss of administrative authority over some of its water to the federal government, the courts, or another state.

If New Mexico is to administer its waters, the State must commit to well-defined water resources management policies and invest the necessary monetary and personnel resources. If the State Water Plan is to be successfully implemented, the three components of active water resource management—measurement, management, and markets—must be fully supported.

Measurement

To meet its various obligations—including water rights, compact, and environmental obligations—New Mexico must accurately measure its water supply and water use. Measurement requires (1) meters to physically measure the amount of surface water flowing in New Mexico’s rivers, (2) monitoring wells and meters to better estimate the volume of ground water available from the State’s aquifers, and (3) snow pack gauging for estimating spring run-off. Measurement also requires metering all ground and surface water diversions and return flows to account for all depletions.

Due to federal funding constraints, the State can no longer fully depend on the federal government’s assistance for certain types of measurement, such as the United States Geological Survey (USGS) stream flow gaging program. Moreover, the State should no longer simply rely on federal funding assistance, because such assistance might be subject to Endangered Species Act or National Environmental Policy Act considerations that might conflict and adversely affect the State’s water interests.

Management

Historically many of New Mexico’s most senior water users - including Tribes, Pueblos, acequias, irrigation districts, and conservancy districts – have managed their own water resources. Both New Mexico statutes and court decrees recognize the water sharing customs upon which some of these entities manage their water. Generally these entities manage their water at the ditch and farm level.

Municipalities and community water systems that generally are more junior in priority also manage their own water resources and have a significant social and economic impact on the State. It is expected that these entities will continue to manage their water supplies far into the future.

Today, it is incumbent upon the State to acquire the ability to efficiently and effectively manage its water at the level of stream systems and ground water basins to maximize the use of the State’s water supply to meet existing water rights, to meet any required environmental demands, and to meet its interstate stream compact obligations. Effective management will require:

- completing active water resource management plans for stream systems as needed;
- providing staff and resources for the physical management of the water supply;

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- completing regional and State planning so that the future use of water can be anticipated in any water right administration or water management scheme;
- streamlining the administrative process for the transfer of water rights to ensure timeliness and responsiveness to filed applications;
- adjudicating all water rights to increase the State's ability to accurately identify and supply water to existing uses (Section D.1);
- completing the WATERS (Water Administration and Technical Engineering Resource System) database to provide ready access to the information necessary to administer water rights and manage the water supply (Section D.2); and
- completing regional and State planning so that the future use of water can be anticipated in any water right administration or water management scheme.

Markets

New Mexico's water rights markets are in their infancy. New Mexico's surface waters are generally fully appropriated, and many areas of the State rely upon non-sustainable ground water aquifers (that is, the ground water is being depleted because it is being pumped out faster than it is being replenished). Because New Mexico water supplies are not expanding as demand increases, the State must develop well-defined voluntary water rights markets that will allow the identification and dedication of existing water rights to new uses either on a temporary or permanent basis. As water demands from existing and new uses increase, the demand for marketing of water through these voluntary transfers of existing water rights will grow.

The term "water market" is a broad one, and includes such diverse markets as: local, temporary shifts of use within a ditch or acequia; temporary fallowing agreements for conservation or efficiency purposes; formal water banks established by acequias for preservation of cultural and local uses; water banks established to provide a temporary "soft landing" for junior users facing priority administration; expedited transfer policies that make it easier for local community water supplies to get water; water banks established to provide a reliable supply for increasing local community water needs; and efficiently functioning markets through which permanent transfers to new uses can be accomplished.

However, all these diverse water markets are subject in their operation to many statutory safeguards and protections. For every proposed water rights transfer, the State Engineer is required to evaluate the issues of impairment to existing users and whether the proposed transfer is consistent with the statewide conservation of water and the public welfare. In addition to these general statutory protections the legislature has also provided specific protections for some of the entities involved in water transfers and markets – for example, the 2003 legislature provided that acequias have certain powers to restrict proposed transfers that they determine would be detrimental to the acequia.

While effectively functioning markets are necessary for the above purposes, the State should ensure that effective regulations and policies exist that will protect. The Town Hall,

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in its 2003 report affirmed that the "OSE is charged with administration of water rights within its jurisdiction through active water resource management. Effective administration depends on good data management and appropriate tools for priority administration and enforcement of water rights. We recognize the role of Pueblos and Tribes in management of their water resources. The role of acequias and irrigation districts in local water management is also affirmed."

The State's ability to actively manage its water resources will be facilitated by policies that allow timely and efficient transfers of water between uses to meet both short-term shortages and long-term economic development needs. As discussed in Section C.9, however, these policies must protect the customs, culture, environment and economic health and stability of the state's diverse communities.

Public Opinion

Throughout the public involvement process the public overwhelmingly supported active water resource management, yet the methods and mechanisms utilized to achieve proper management were debated frequently. This consensus is reflected in the Town Hall 2003 report which "affirms that the OSE is charged with administration of water rights within its jurisdiction through active water resource management. Effective administration depends on good data management and appropriate tools for priority administration and enforcement of water rights. We recognize the role of Pueblos and Tribes in management of their water resources. The role of acequias and irrigation districts in local water management is also affirmed."

Overall the public involvement process highlighted that greater improved measuring and metering is needed to understand how much water is available and is being used at any one time. The necessity for the State Engineer to devote greater resources to the creation of reliable data regarding existing and potential sources of water also received overwhelming support. Concern was often voiced with regard to the commodification of water and the potential impacts such water markets could have on traditional uses and communities. Other active water management concerns that were mentioned frequently include the need for improved coordination between State agencies, greater compensation for water conservation practices, and the use of regional water planning data.

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Section C.3: Include an inventory of the quantity and quality of the state's water resources, population projections and other water resource demands under a range of conditions.

Policy Statements

- *The State of New Mexico shall coordinate and expand on existing efforts by its various agencies and institutions to collect, integrate, and disseminate data regarding current and future water supply, water uses, and water quality to facilitate informed and responsible decision-making.*

Implementation Strategies

- OSE/ISC will undertake joint efforts with the Environment Department to improve communication and coordination between those agencies, in recognition of the fact that water quality and quantity are intrinsically linked.
- OSE/ISC, in cooperation with the Environment Department, will continue existing water quantity and water quality data collection and management efforts, and will expand water resource analysis programs such as geologic and aquifer mapping projects.
- OSE/ISC, in coordination with water users, will develop prioritized measurement and monitoring plans to better quantify the quantity and quality of available water supplies, and water withdrawals, depletions and returns.
- OSE/ISC will continue the development of methodologies and tools such as water resource models for estimating the longevity of water supplies, and will provide guidance to local water users in their application.

Discussion

To ensure that water is available for the continued and future economic vitality of the State, we must understand the quantity and quality of our water supply and the current and future demands on that supply. To do so, the State must continually support the collection and compilation of data related to the State's water resources and population. The Office of the State Engineer and the Environment Department, often in coordination with other State and federal agencies should spearhead the effort to collect and periodically update quantitative water quantity and quality data. The State's research institutions collect and compile information on population projections. In addition, a part of the regional water planning effort is to compile and analyze existing information on water quantity and quality in their regions as well as to make a 40-year population projection. No one State or federal agency currently serves as a clearinghouse for the compilation of all available information

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needed to inventory the quantity and quality of the State's water resources, population projections, and other water resource demands under a range of conditions.

The following subsections discuss the different types of information required to effectively plan for future water supply.

Water Quantity

One of the first questions that planners ask in developing water plans is how much water is available for use in a particular region. That question can be very difficult to answer reliably for surface water because of New Mexico's high natural variability in surface water supply and because, in many parts of the State, surface flows are also committed to downstream uses in New Mexico and other states. Generally, these in-state and interstate delivery obligations vary year-to-year due to flow and reservoir storage conditions.

Estimating New Mexico's potentially available ground water supply is also difficult. The volume of ground water stored in aquifers can be and has been estimated for many of the State's aquifer systems, but these estimates are often highly uncertain due to data limitations. In addition, total storage does not equate to available supply, because, for example, not all the water stored in the aquifer is potable (fresh), because the aquifer character does not allow quick release of water from storage, and because wells cannot physically extract all the ground water stored in an aquifer. The pumping of wells in stream-connected aquifers will ultimately deplete stream flows, affecting surface water supplies and impairing senior water right holders. In such cases, even where ground water exists in storage for new uses, these uses will not be permitted unless senior surface water users are protected by the transfer of valid water rights. A similar situation also exists for non-tributary aquifers. Although ground water may be physically in storage for a proposed use, the new use cannot be permitted if it will cause excessive water level declines in existing senior wells. In addition to these physical and institutional factors, water quality conditions, economic constraints, local land-use regulations, and land ownership also blur ground water availability assessments.

Water budgets are discussed in Section C.4 and generalized water budget estimates for some of the 11 major river basins and aquifer systems of the State are provided in Appendix A. The estimates of ground water in storage are based on hydrologic data collected cooperatively by OSE, the U.S. Geological Survey (USGS) and New Mexico Bureau of Geology and Mineral Resources, and by private consultants. Reservoir storage and stream discharge measurements are collected in a cooperative program with the USGS and in cooperation with other federal and local agencies.

New Mexico's water stewards must reliably estimate the longevity of their sources of water supply to adequately plan for their future demands. Defensible hydrogeologic data and models are required to do so. In addition, securing water for future needs requires that water right permits and/or transfers be obtained and that water be physically available. Statewide and regional inventories alone are inadequate to address the water supply

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variation and longevity for specific water purveyors. To plan for a dependable water supply, smaller-scale local analyses are required that take into consideration localized aquifer properties and infrastructure constraints specific to each water purveyor.

Water Quality

The New Mexico Environment Department (NMED) maintains a number of sources of water quality data for both ground and surface water. The U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS) also maintain long-term databases of water quality measurements. Pursuant to Section 305(b) of the federal Clean Water Act, New Mexico, through the NMED and the Water Quality Control Commission, prepares and submits to Congress biennial Water Quality and Pollution Control in New Mexico reports that summarize where designated uses of water are being attained and provide a comprehensive overview of the quality of the State's waters.

According to the latest report, almost 3,080 miles, or 52% of New Mexico's more than 5,875 perennial stream miles, have some level of impairment with respect to designated or attainable uses, and 124,140 out of a total of 148,883 lake acres, or 83%, do not fully support designated uses. Information provided in the report regarding ground water quality indicated that at least 1,200 cases of ground water contamination have been identified in New Mexico since 1927, with 188 public and nearly 2,000 private water supply wells impacted.

The quality of the State's ground water resources has been inventoried in the New Mexico Environment Department's *Ground Water Quality Atlas*, available online at http://www.nmenv.state.nm.us/gwb/GWQ%20Atlas/GWQ_Atlas.html. Ground water quality data in the atlas is listed by county and, where available, by public water supply system within the county. Public drinking water quality reports are already available online in the atlas for 23 municipal and public water supply systems in New Mexico's 33 counties.

About 90 percent of New Mexico's population depends on ground water for drinking, and it is the only source of potable water in many areas of the state. Therefore, protection of ground water is important for public health and welfare. The quality of ground water in New Mexico varies widely. Mountain aquifers, recharged by recent rain and snow melt, often yield high quality water. A tremendous amount of fresh water occurs in the basin-fill aquifers along the Rio Grande, stretching from Colorado to Texas. But ground water in New Mexico often contains naturally occurring minerals that dissolve from the soil and rock that it has flowed through. Some ground water in the southern part of the state is too salty to be used for drinking. High levels of natural uranium, fluoride, and arsenic occur in various areas around the state. Because all water eventually moves through the entire water cycle, pollutants in the air, on land, or in surface water can reach any other part of the cycle, including ground water. The shallow sand-and-gravel aquifers of the river valleys are most vulnerable to contamination. Currently a major source of contamination in these aquifers is septic tanks.

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Population Projections

In order to plan for future state water needs, it is important to understand demographic trends in the state. Estimates of current and future population have been developed on a regional basis by the University of New Mexico Bureau of Business and Economic Research (BBER) for the State Water Plan effort. Using the past 40 years as the baseline, the BBER projected population to 2060 and that information is summarized here. See Appendix B for analysis and detail. The projection is different than the traditional county-by-county population projections, and was performed to assist the planning regions with completing water supply and demand projections based on a uniform anticipated population growth, as well as a uniform historical population baseline. It was developed under the assumption that, barring catastrophic events such as epidemics, war, and other unforeseen circumstances, projecting population based on past and current demographic trends is logical.

Overall, the population of the State is expected to grow over the next 60 years but the rate of population growth is expected to decline. Reasons for the anticipated decline in growth rate include declining fertility, increased life expectancy, internal migration becoming dominated by retirement migration, and international migration becoming more restrictive.

The region identified by BBER as the fastest growing in New Mexico is Estancia. By 2060, the population in the Estancia region is expected to almost quadruple to 118,000 from its current population of just over 30,000. However, even this rapid growth rate represents a slowing down from historical levels. The Middle Rio Grande region is second in projected growth over the next 60 years, from 700,000 to 1.3 million. This growth is expected to be primarily outside of the Albuquerque/Bernalillo County area.

Three water planning regions – Lower Rio Grande, Jemez y Sangre, and San Juan – are anticipated to exceed 200,000 in population by 2050, with the first two of these three regions reaching this milestone in less than a decade. In addition to the Estancia region, population in the Northwest and Southwest regions will exceed 100,000, as projected by this analysis. Northwest should reach this population in less than a decade, Southwest by 2040, and Estancia by 2055. Colfax and Rio Arriba are projected to remain below 20,000 in population during the 60-year projection period. With the exception of the Mora/San Miguel planning region, all regions in the eastern part of the state are expected to grow at an annual rate of under one percent.

Other Water Resource Demands

One way of estimating water resources demands is to evaluate historical water use data to identify trends. The Office of the State Engineer's Water Use and Conservation Bureau conducts statewide water use inventories every five years and publishes the final reports in a series entitled *Water Use by Categories in New Mexico Counties and River Basins, and Irrigated Acreage*, available online. Withdrawals and depletions are tabulated by category, county, and river basin for nine water use categories which include public water supply,

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self-supplied domestic, irrigated agriculture, livestock, self-supplied commercial, industrial, mining, power, and reservoir evaporation. These water use databases and the water use reports are the most reliable source of water demand data available in the state. Because both water use information and population information are available for the past 25 years, it should be possible to determine trends in water use based on population growth. Such a demand trend analysis could not be performed in time to be included in this State Water Plan but will be in the next edition.

As a general statement about water resource demands, irrigated agriculture consumed the largest portion of the available supply over the five-year period described in the *Water Use 2000* report and it is likely to do so for the foreseeable future. As one would expect given the population trends described above, municipal and industrial water use is growing and is anticipated to continue growing. In addition, water dependent demands (not necessarily water use demands) are increasingly being made regarding recreation on the State's rivers, reservoirs, and lakes. Water resource demands for river and reservoir recreation are unique in that the recreation itself is not tied to the ownership of a water right, so river outfitters rely on runoff and reservoir releases to meet their needs while reservoir based recreation seeks to maintain stable reservoir water level elevations. Water for endangered species is another new demand on the State's water resources with no current associated water right. Stream flows required for the federal government to maintain endangered species and associated habitat have been at odds with the deliveries from reservoirs to water rights holders.

Public Opinion

It was the belief of a majority of the participants of the public involvement process that effective management could not be accomplished without an accurate inventory of the existing water supply available in the state. A broad consensus of the public who participated was that population growth needs to be tied to available water supplies. This view was expanded by a number of participants to potentially include local growth restrictions when population exceeded supply.

Water quality also drew significant comment from the public. Many believed that if the State encouraged watershed health, both water quality and quantity would improve. Participants encouraged the OSE and ISC to work with the New Mexico Environment Department to develop water quality guidelines for water transfers and aquifer recharge procedures.

Section C.4: Include water budgets for the state and for all major river basins and aquifer systems in the state.

Policy Statements

- *The State should devote adequate resources to the OSE/ISC for the prompt completion of water budgets for the state and all major river basins and aquifer systems in the state, building upon efforts by regional water planners.*

Implementation Strategies

- The OSE/ISC will update the river basin and aquifer system water budgets as needed, but at least every five years, making all appropriate use of existing and future regional water planning documents and data.
- The OSE/ISC will support and encourage the frequent and consistent collection of data as needed to improve water budget estimates.
- The OSE/ISC will support and conduct measurement, metering and monitoring of those aspects of the water budget needed to develop defensible water budgets for areas where accurate inventories of water inputs, losses, uses, and outputs is important to the State.
- The OSE/ISC will support research on the less precise components of the water budget such as evaporation of water from open water bodies and wetted sands and evapotranspiration from riparian areas and selected crops.

Discussion

A statewide water budget can logically be expected to offer a complete, if necessarily less than precise, summation of the water inputs, losses, and uses for the state. Depending on the availability of data, individual river basin or aquifer system water budgets may provide somewhat more precise summaries of inputs, losses, and uses for those specific areas.

A water budget is directly analogous to a household or institutional budget in which income and savings (water supply) is compared to expenses (water depletions) over some given time interval (typically annually). Thus a water budget is designed to answer the question of whether the available water supplies are sufficient to meet current and projected future water needs.

To develop water budgets requires that all of the inputs—beginning with rain and snow and including surface and ground water flow—and all of the outflows, losses, and uses, both natural and those related to human activity, be accounted for. The OSE/ISC in

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preparing the *Framework for Public Input to a State Water Plan* used information from the regional water plans and other available data to develop general surface water and ground water budgets for the 11 major river basins and aquifer systems in the state. The water budget information presented in Appendix A updates that information. In addition, the 16 water planning regions in New Mexico have developed or are developing water budgets specific to their regions. The reader should coordinate with their regional water planning entity for specific information concerning the water budget in their region.

Because some of the largest components of water budgets, specifically the evaporation and transpiration of water from natural landscapes, have until recently not been well measured, development of accurate annual water budgets on the river system or basin scale is difficult. In addition, because of the great variation in the kinds of information that must be brought together, water budgets represent not a single moment in time, but average values that were current as of the time period the data used in the developing the budgets were collected. This averaging masks the large variations from year to year, particularly in the input or “income” side of the balance, and it also ignores longer-term climate trends that may strongly affect the inputs, and influence the losses as well.

A water budget for a large area in a temperate, low-precipitation climate like that in much of New Mexico inevitably demonstrates that most of the input water (i.e., precipitation) is lost before it can be put to human use. Consequently, water management is largely limited to manipulation of a small fraction of the total amount of water that enters the state or a region. It is important to note how different even the major basins within the state are from one another, and thus, by implication, why it may be difficult to match supplies with water resource demands.

Some of the budget components, specifically the evaporation and evapotranspiration estimates, are much less precise than others. Improving many of these estimates will require new technologies and ongoing commitments to data collection and assembly. Where these data needs impact water resource management objectives, new programs will have to be developed to ensure that the estimates are refined.

Finally, because the water supply in many parts of New Mexico is subject to interstate compacts and other legal constraints, the amount of water physically available is not necessarily legally available. Realistic water budgets must take these constraints into account. Appendix A discusses in detail the water resource management issues within each basin that may limit the use of water in the basin.

Public Opinion

A majority of the participants of the public involvement process expressed the belief that effective management could not be accomplished without an accurate inventory of the existing water supply available in the state. A broad consensus of the people who participated was that population growth needs to be tied to available water supplies. This view was expanded by a number of participants to potentially include local growth restrictions when population exceeded supply.

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Section C.5: Develop water conservation strategies and policies to maximize beneficial use, including reuse and recycling by conjunctive management of water resources and by doing so to promote nonforfeiture of water rights.

Policy Statements

- *The State shall engage in a coordinated and concerted effort to promote conservation and efficient use of water in all water use sectors as one of the cornerstones of New Mexico's efforts to meet the State's present and future water needs.*

Implementation Strategies

- OSE/ISC will continue its program of public water conservation education directed at users in all water use sectors and coordinated with local, federal, and Tribal governments.
- OSE/ISC will initiate a continuing program of demonstration projects to showcase and promote water conservation techniques and technologies.
- OSE/ISC will establish an ongoing program of technical assistance to support the development and implementation of water conservation programs by governments, water providers, and other water users.
- The ISC will encourage the inclusion in all regional and local water plans of conservation measures based on best practices developed for local hydrologic conditions, legal constraints, and water uses.
- The OSE/ISC will encourage local governments and water providers to develop and implement comprehensive water conservation plans and will recommend that a water conservation plan be required in any application for State financial assistance for water development infrastructure.
- In prioritizing funding requests for infrastructure and conservation projects, State funding agencies should consider the net increase in usable water resources that a proposed project would produce.
- The State should create a long-term source for funding water conservation efforts and infrastructure.
- The State should consider providing tax, interest rate, cost-sharing, rebates, or other economic incentives to promote water conservation or re-use.

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- The State should consider providing economic incentives, including low interest loans, for agricultural water users to implement best management practices to maximize conservation and efficient water use.
- The State should consider providing economic or other incentives for domestic well users to retire their wells and connect into existing public water supply systems.
- OSE/ISC will publicize the legislature's 2003 enactment providing that improved irrigation methods resulting in the conservation of water shall not affect an owner's water rights.

Discussion

At present, even during periods of average water supply, demand in New Mexico would exceed supply if all water rights and permits across the State were fully exercised (Section C.4). As the State's population increases and develops new uses for water, and as federal environmental mandates increase stresses on the State's available water resources, conservation and efficient use of water must be one keystone in New Mexico's efforts to meet the State's present and future needs for water.

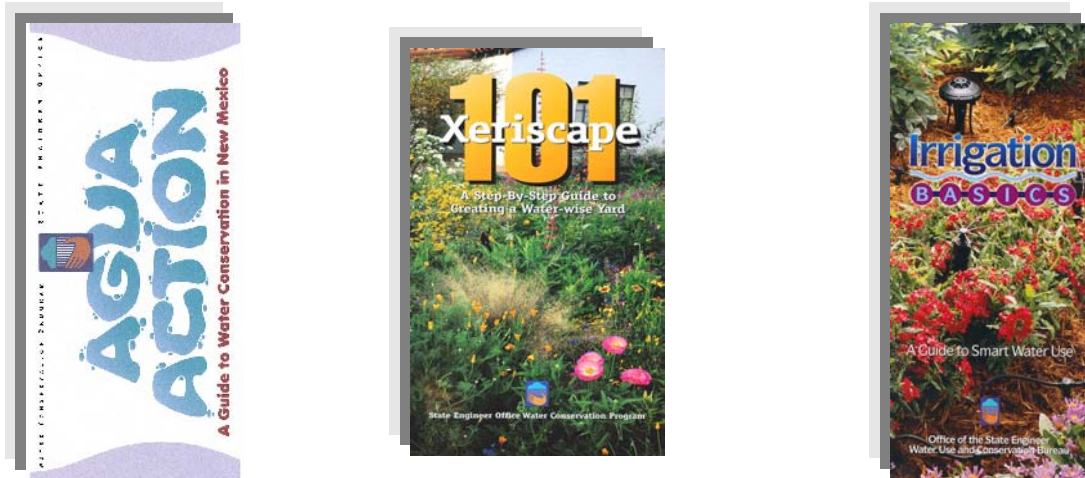
However, conservation and increased efficiency will not by themselves magically solve the State's water supply problems. Some projects aimed at increasing water use efficiencies, if inappropriately or carelessly implemented, could impair other water uses, hinder the State's ability to meet its interstate obligations, or fail to result in additional salvaged water. Metering and measuring, the interrelation of drought management and conservation, local hydrologic environments and water use patterns, and the net effect of proposed conservation measures on total available ground and surface water resources are critical factors that must be considered when planning water conservation efforts and developing incentives to promote conservation. Nevertheless, sound plans for conservation and increased efficiency do play an important role in maximizing the water available for beneficial use in New Mexico, and the State must continue to encourage their implementation.

Generally, the majority of water conservation efforts in the State have thus far been focused on municipal and industrial water users; however, additional effort needs to be applied to conservation and improved efficiency of agricultural water uses. The potential exists to achieve significant water savings from agricultural operations, and the legislature's 2003 enactment providing that improved irrigation methods resulting in the conservation of water shall not affect an owner's water rights should help to encourage conservation and alleviate fears of losing one's water rights.

The OSE's Water Conservation Program responds to the increasing pressures on the State's limited water supply and the reality that, in many parts of the State, water saved through efficient use, conservation, and reuse may be the only practical new source of water. The OSE program focuses on research and demonstration; technical support; public education and involvement; policy initiatives such as water-conservation guidelines; and

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water-conservation initiatives within State government. The OSE has completed a Conservation guide targeted specifically for use by municipalities. Also, a *Framework for a Comprehensive Statewide Municipal and Industrial Water Conservation Program*, available on the Governor's Drought Task Force website, outlines best management practices for municipal and industrial water conservation. If New Mexico is to succeed in stretching its water resources to cover more uses, then conservation and outreach programs must be funded and strengthened.



Conservation brochures for public awareness and education

Public Opinion

Conservation and education were the issues most voiced in the public involvement process. In general, there is the feeling that New Mexico is wasting too much water and that we must increase our efforts to conserve. The “use it or lose it” policy is a key area of concern; people feel it compels water-rights holders to waste what they don’t need now in order to preserve their rights and ability to use it later.

A number of ideas were offered about how to address this issue, including banking, storing, leasing, and lending existing water rights. In addition to continuing time-tested methods of conservation, many public meeting participants agreed that alternative methods such as recycling water and using gray water would reduce water usage. Many participants believed that growth must be planned and infrastructure kept in good repair. Watershed management to increase water yield and keep the forests healthy was a popular theme with meeting participants.

There was overwhelming support for education at all levels regarding our water situation (living in a desert with a growing population). This concern related both to the need to conserve and to educate on conservation. Many rural residents feel that city dwellers must be educated in the realities of drought and conservation.

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There was also widespread support to encourage conservation through financial incentives such as tax breaks and rebates.

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Section C.6: Include a drought management plan designed to address drought emergencies, promote strategies for prevention of drought-related emergencies in the future and coordinate drought planning statewide.

Policy Statements

- *The State shall promote preparedness to prevent emergencies and minimize the harm to the State's economy, environment, and citizens that can result from periods of drought.*
- *In drought emergencies, the State shall seek to ensure that all residents have adequate drinking water.*

Implementation Strategies

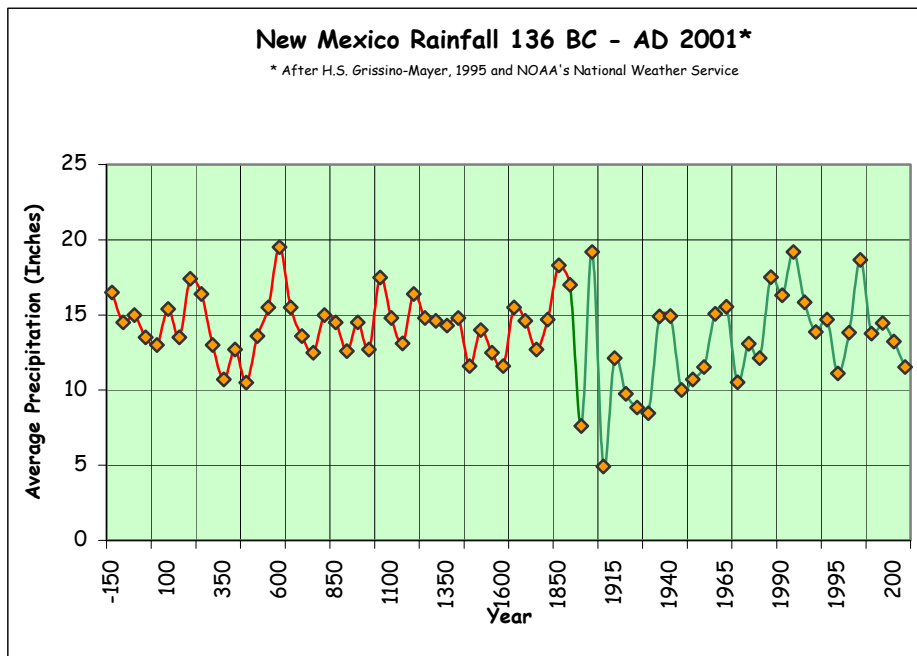
- The State's Drought Task Force will operate continuously and actively plan for drought emergencies.
- The State should fully fund and staff the Drought Task Force.
- The State should fully fund the activities of the Drought Task Force Strike Team and Work Groups including:
 - the Strike Team that responds to drinking water emergencies and assists with drought mitigation measures;
 - the Agricultural Sector Work Group's water conservation studies and workshops;
 - the Drinking Water Work Group's regional collaboration project;
 - the Wildlife and Wildfire Work Group's mapping of species at risk and aquifer recharge locations; and
 - the Water Development Work Group's brackish water mapping and small scale desalination workshops.
- The OSE/ISC will encourage the development of voluntary water sharing agreements as a preferred way of respecting senior rights and preserving the customs of traditional communities during times of drought.
- The OSE/ISC will encourage local governments to develop and implement comprehensive conservation and drought management plans.
- The OSE/ISC will disseminate drought-related educational materials through an active OSE program as well as through water providers.

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- In prioritizing funding requests for infrastructure and conservation projects, State funding agencies should consider the potential for proposed projects to reduce drought impacts on the public welfare.

Discussion

Cyclic drought is a recurrent climate pattern in semiarid New Mexico, and the increase in New Mexico's population over the past several decades has dramatically increased our vulnerability to drought. As the State and the State's river corridors in particular continue to develop, the effects of drought will be more keenly experienced. In times of drought the State's water resources cannot meet even the current needs of water users throughout the state, much less accommodate new and increasing demands such as federal environmental mandates. Given these challenges, it is critical to both inform and educate New Mexico residents about drought conditions and the threats posed to the environment, to our economy, and to our health.



The New Mexico Drought Task Force was created by Executive Order in 1996. The five-member Task Force was chaired by the Secretary of Energy, Minerals and Natural Resources and consisted of three Cabinet Secretaries, the State Engineer, and a member of the Office of the Governor. Under this leadership the first New Mexico Drought Plan was published in 2002.

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The current New Mexico Drought Task Force (<http://www.seo.state.nm.us/doing-business/DroughtTaskForce/DroughtTask-menu.html>) was created by Executive Order 2003-019 in the spring of 2003. The current 12-member Task Force is chaired by the State Engineer and includes six Cabinet Secretaries, Directors of four State agencies, and the Director of Policy and Planning from the Office of the Governor. The Drought Task Force completed the update to the New Mexico Drought Plan in the fall of 2003.

The New Mexico Drought Task Force has created a Strike Team and six Work Groups (described below) to build upon previous efforts and to address specific sectors impacted by drought. The current groups were convened in the summer of 2003 and have been working to determine their sector's vulnerabilities to drought, to formulate plans and policy proposals to mitigate drought impact, and to take action to reduce the impact of drought. The Work Groups provide a means for representation and participation by a broad spectrum of stakeholders, with representatives from Federal, State, Tribal, and local government agencies as well as private sector organizations.

Strike Team

The Strike Team was established to respond to calls for emergency assistance when drinking water supplies are affected by drought conditions. Strike Team members are from several State agencies and have expertise in the fields of hydrology and water resources, emergency management, finance, and engineering and construction programs. The team analyzes emergency requests that come to the Drought Hotline at the New Mexico Finance Authority, and if the problem is drought-related, recommends that the Drought Task Force request the Governor release emergency funds to resolve the problem.

Monitoring Work Group

The Monitoring Work Group includes water resource, agriculture, and climate professionals from all levels of government. The group is responsible for gathering and analyzing all available climatological data, soil moisture readings, reservoir storage levels, and other pertinent information necessary to determine the current status of drought conditions in the State of New Mexico. Based on this analysis, the monitoring work group issues notices regarding various stages of drought that trigger actions by the Drought Task Force. In addition to monitoring current conditions, the group examines and reports on long-term forecasts to assist the Drought Task Force in their preparedness and response actions.

Drinking Water Work Group

The Drinking Water Work Group is comprised of professionals knowledgeable in fields such as water resources and planning, water construction programs, and water financing. The group works to prevent community water systems from reaching emergency status through improved planning, proper management, and by identifying new opportunities for multi-system collaboration. The group also identifies methods to reduce water use and

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makes policy recommendations to the Drought Task Force for that will encourage water conservation.

Agriculture Work Group

Drought can produce profound impacts on the state's agricultural industries, and farmers and ranchers have historically been the communities most visibly affected by drought. The Agriculture Work Group includes representatives from livestock and farming associations, land management offices, water resource groups, and fish and game programs. The group focuses on mitigating the drought impacts to the agricultural sector, investigating opportunities and incentives for agricultural water conservation, and helping the agriculture industry to effectively respond to drought. The Agriculture Work Group works closely with the Monitoring Work Group to obtain soil moisture and precipitation forecast data.

Wildlife and Wildfire Work Group

Drought greatly increases fire danger and negatively affects forest and wildlife health. In addition to the potentially catastrophic effects of large forest fires, drought increases the susceptibility of forests to outbreaks of insects and disease. The devastating 2002 and 2003 infestation of the pinon bark beetle is an outgrowth of drought. In addition, wildlife suffer from lack of forage, and low stream flows increase threats to endangered and threatened species. The forestry, emergency management, game and fish, water use, and land management professionals of the Wildlife and Wildfire Work Group focus their efforts on all of these drought impacts and make recommendations for mitigation. This group closely coordinates activities with the Agriculture Work Group, particularly concerning the Forest Health Initiative.

Recreation, Economic Development, and Tourism Work Group

The tourism industry represents a significant sector of the overall state economy, particularly with respect to the skiing and recreational opportunities available in the state. A Recreation, Economic Development, and Tourism Work Group will be formed and include representatives from tourism, economic development, and parks agencies and organizations. This group will consider opportunities to reduce the socioeconomic impacts of drought across the state, recommending new initiatives, and assisting with preparedness for and mitigation of drought impacts on recreation, tourism, and the New Mexico economy.

Water Development Work Group

Developing new sources of water will be important to the continued viability of the state. Particularly in times of drought, alternatives to diminished surface water are critical, as are new sources of ground water to offset or avoid excessive depletions. This new work group will identify ways to develop new sources of water, including treating brackish water reserves and treating wastewater to extend the life of existing water supplies.

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Public Opinion

Public comments regarding drought planning were numerous. A significant number of participants believe that we need to better prepare for drought. A participant summed up others concerns by stating “we need long term, pre-planned drought management, rather than year-to-year planning.” Many suggested that the compacts should be revisited due to changing conditions such as drought and Endangered Species claims.

Education was also mentioned as a way to promote further understanding of the consequences of unplanned drought to the economy and the livelihoods of many residents of the state. Significant comments emphasized the need to educate new residents to the state of the reality that we live in a desert by providing educational material of household and landscaping conservation techniques.

Some participants voiced the necessity for farmers to reduce the amount of water used in times of drought by changing the type of crop grown. This comment was followed by the request that the water saved from this conservation technique not result in a loss of water right lost due to non-use. (Current statutes protect water rights holders from loss of water right due to drought.)

The creation of regional drought contingency plans also received significant comment.

Section C.7: Recognize the relationship between water availability and land-use decisions.

Policy Statements

- *The State shall seek to ensure that land use decisions are consistent with available water supplies.*
- *The State shall seek to ensure that land use decisions do not adversely impact the State's water resources.*
- *The State shall promote the efficient use of water and the protection of water quality in all new development.*
- *The State shall continue to respect, preserve, and support existing local zoning, planning and subdivision authority.*

Implementation Strategies

- The State Engineer will work with NMED to encourage local governments to utilize Zoning and Land Use regulation to assure that development is consistent with available water supplies, conservation and water quality policies, and does not adversely impact the State's water resources.
- Where water availability is limited, the State will study the potential for development of new water supplies.
- When new development occurs on land to which valid water rights are appurtenant, the State Engineer should promote the use of those water rights for the new development.
- The OSE/ISC will promote improved water availability and water quality assessments by:
 - collaborating with federal, State, and local entities to improve communication, data sharing, development of study programs, and to acquire funding for water availability studies;
 - improving measuring, metering and other data collection activities;
 - collaborating with water research entities to develop water resource models; and
 - assessing measures to improve water resource quantifications by the private sector to better address site-specific water availability and quality issues.
- The OSE/ISC should respect, preserve and support existing local zoning, planning and subdivision authority and collaborate with local governments to promote:

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- development of land use regulations and design criteria that can be used to:
 - reduce future water consumption by limiting landscaping area, requiring or encouraging native or drought-tolerant vegetation, and requiring low-flow water fixtures;
 - promote use of renewable water resources, Aquifer Storage and Retrieval projects, inclusion of water reuse, and projects to enhance aquifer recharge;
 - impose restrictions on domestic well use as a condition of approving development;
 - restrict the proliferation of domestic wells and septic systems by requiring new developments to utilize existing utilities if the utility is ready, willing and able to serve;
 - protect aquifer water quality by requiring development plans to include centralized wastewater treatment and disposal, or centralized management of de-centralized wastewater systems;
 - in rural areas where centralized or centrally managed wastewater treatment and disposal is not feasible, assure adequate lot size and spacing between septic tanks and wells; and
 - ensure that unused or abandoned wells are properly plugged and abandoned.
- zoning regulations that can be used to:
 - Limit development in hydrologically sensitive areas such as CMAs, flood plains and recharge areas;
 - Preserve areas for certain high value water related uses such as agriculture and riparian habitat.
- a thorough review of State Subdivision Laws to:
 - assess the State Engineer's Recommended Guidelines for Subdivision Regulations;
 - strengthen water availability demonstration requirements;
 - review how the impact of the OSE opinion on available water supply can be strengthened;
 - determine whether subdivisions of a certain size should require community water systems and water rights for approval; and
 - determine whether subdivisions of a certain size should require centralized or centrally managed wastewater treatment and disposal.
- a thorough review of options for better regulating domestic wells in general.

Discussion

Land use decisions can significantly impact both the quantity and quality of local water supplies. In addition local water availability affects land-use decisions by a number of direct and indirect means. The integration of water resource considerations in the land use approval process includes a number of entities:

- The State Engineer is charged with the administration of the waters of the State. The State Engineer must approve or deny any appropriation of water.

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- The New Mexico Environment Department is charged with regulating wastewater and other discharges and this also influences land-use decisions.
- Local governments (Tribal, municipal and county) are charged with land-use and development regulation. Those same local governments have varying levels of responsibility to integrate water availability into the land-use decision-making process.

Most development, whether residential, commercial or industrial, will require a long-term water supply. The local governments charged with approving such development must take into account a development's anticipated water needs and balance that with the available supply. The duration of water availability is also an important consideration in land-use decisions, particularly if ground water is the source of supply, as these resources are finite and are not replenished quickly. High-water-use developments may be inappropriate in water-scarce areas.

Proper stewardship also mandates that the quality of water supply sources be protected. Land uses that produce contaminants must include provisions for containing, treating, and/or disposing of contaminants in a manner that will prevent contamination of the water supply, in accordance with State laws and regulations. Once contaminated, water supply sources may not be usable for certain uses without expensive treatment.

Local governments use zoning and land-use regulations and design criteria to effectively mitigate many undesirable aspects of development. Zoning ordinances can assure that development will be restricted to appropriate areas, and design criteria can be used to promote water use efficiency, moderate water use and protect water quality.

Land subdivisions present a number of significant issues with respect to water supply. When a new subdivision is proposed, the OSE assists the local government in its evaluation of the proposal by analyzing physical availability of a water supply for the proposed development. The OSE subdivision review determines whether water supply is sufficient to sustain the proposed development for 40 years. A 40-year planning horizon may be inadequate for many uses. Some local governments require that water be sufficient for periods of up to 100 years. In these instances, the OSE will assess water availability to the longer period. The OSE opinion regarding the availability of water is not binding, however, and the local government may choose to ignore a finding that the water supply for the development is insufficient.

Another significant subdivision problem is the development of large subdivisions using domestic wells and septic tanks. Community water and wastewater treatment systems have a number of advantages over the use of domestic wells and septic tanks and are typically the best method to provide a safe and secure water supply.

If a community water system is used, an adequate water right and permit must be obtained. The permitting process requires a rigorous determination of water availability, assessment of off-site effects, possible impairment of existing water rights, and the opportunity for notice and protest. Domestic wells, on the other hand, are automatically

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issued and not subject to a thorough review. As a consequence, domestic wells can adversely impact senior water rights and our ability to meet interstate stream compact obligations, and can reduce the availability of limited water supplies.

Local government land-use decisions should recognize that contamination of water supply sources is more likely when there are numerous domestic wells since every domestic well is a potential avenue along which contaminants may migrate. Community water systems, on the other hand, utilize few wells and are more likely to be properly constructed.

The use of septic tanks, particularly in areas where the water table is shallow, may contaminate water supplies. Local governments should consider the advantages offered by community wastewater treatment systems, including the potential to use treated effluent to augment stream flows or to provide water for non-potable community reuses such as landscaping. In comparison, the water discharged to septic tanks is often lost to evaporation and transpiration or moves as contamination to underlying aquifers.

Public Opinion

Throughout the public involvement process, many comments pointed to the need to regulate land use based on water availability. Public comments reflected the necessity to plan for the water needs of not only current but also future populations. The public strongly recommended the State Engineer have the authority to deny applications for new appropriations where critical management areas are established. The public also expressed a desire the State Engineer work with local governments to craft ordinances that promote wise water planning for the future. Many requested the State Engineer develop educational materials and programs to increase awareness of the desert condition and methods to conserve water through such methods as xeriscaping.

Section C.8 Promote river riparian and watershed restoration that focuses on protecting the water supply, improving water quality and complying with federal Endangered Species Act of 1973 mandates.

Policy Statements

- *The State shall support and conduct watershed restoration projects with a high potential to increase the water supply or improve the quality of water.*
- *The State shall support and, as appropriate, conduct river riparian restoration and water acquisition activities to protect endangered species and to reduce the likelihood of additional listings.*
- *The State shall seek to ensure that river riparian and watershed restoration is performed, and water is acquired to meet Endangered Species Act related river flow targets and/or high priority environmental needs, in accordance with the following principles:*
 - *The acquisition and use of water must be in accordance with State water law and State water rights administration regulations.*
 - *Water required for endangered species must be acquired through willing buyer/willing seller transactions.*
 - *State Engineer permits are required for all habitat restoration activities that result in increased depletions of water.*
 - *New Mexico's ability to meet its obligations under interstate stream compacts must not be compromised.*

Implementation Strategies

- The ISC will coordinate with other State agencies to engage in and provide leadership for collaborative program and other efforts to protect and improve the status of Endangered Species Act listed (threatened or endangered) species, and potentially listed species, while simultaneously protecting existing and future water uses. The involved agencies will do so by:
 - implementing actions to increase the population of the listed species or potentially listed species in the wild and in refugia/aquaria:
 - constructing, operating, and maintaining aquaria and naturalized refugia for the listed species;
 - aiding in efforts to move listed fish to reaches of the State's rivers that are less apt to dry;

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- conducting and supporting habitat restoration activities in river reaches that have low potential of drying during drought periods in a manner that does not create additional depletions of water or provides for offset of new depletions;
 - seeking Water Trust Board funding to implement projects and/or cooperative agreements that aid in the recovery of listed or potentially listed species or satisfy water demands for the species in full accord with State law and permitting requirements;
 - identifying, conducting, and/or supporting focused habitat restoration activities in river systems to reduce the threat of litigation or additional Endangered Species Act listings;
 - conducting and supporting basic research, monitoring, and assessments on:
 - habitat and water flow requirements of selected listed or potentially listed species;
 - interaction between surface water and ground water in critical river management areas;
 - sediment yield of the basins, how that sediment provides habitat, and how changes in sediment yield affect habitat;
 - water quality;
 - riparian evapotranspiration; and
 - the potential for water banking and water markets to address effectively Endangered Species Act-related water flow demands;
 - monitoring and metering river flow conditions as necessary;
 - rescuing and moving endangered fish as necessary; and
 - coordinating with and overseeing daily river management by basin stakeholders to ensure efficient and effective use of water.
- The OSE/ISC will provide State law-based method(s) for the federal Government and others to secure water and thus avoid seizure of irrigation district, conservancy district, Pueblo, municipal, industrial or individual water right holder water.
 - The OSE/ISC will work with water users to improve irrigation efficiency and/or implement forbearance or water banks/markets such that wet water can be leased or purchased and diversion rates can be reduced to help meet river flow targets for listed species while still providing the appropriate amount of water to valid water right holders.
 - The ISC will support the OSE in developing and implementing mechanisms to ensure water secured pursuant to this policy will flow to the area of use.
 - The OSE/ISC will create mechanisms for strategic river reserves to provide water for high priority uses.
 - The OSE/ISC and Water Trust Board in collaboration with NMED and EMNRD will:

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- support watershed restoration activities to increase available surface water supplies and improve or protect water quality; and
- engage in and provide leadership for collaborative watershed restoration efforts that have a high potential to increase the water supply and decrease fire threat but that also include re-vegetation and restoration of ecosystem function.
- The OSE/ISC in collaboration with the State's national labs and research institutions, will research, document and conduct technical studies to evaluate the change in surface water yield from watershed restoration projects.

Discussion

There is little doubt that vegetation types and densities have changed considerably in the last century in many of the State's river riparian and watershed areas. The vegetation changes range from the invasion of non-native species such as salt cedar and Russian olive into river riparian areas, to increased native tree densities in upland watersheds. These vegetation changes can increase the severity of wildland fire, modify habitat, change the amount of water used, and alter the hydrologic cycle in those areas. For example, in large areas of our upland watersheds, tree densities are so high that a significant portion of local snowfall is suspended in the tree canopies and subsequently sublimates (i.e., passes directly from the solid to the vapor state) without reaching the ground. Consequently, less moisture is available to contribute to snowmelt runoff now than at times in the past when the tree densities were lower.

Successful riparian and watershed restoration efforts should seek to enhance water supply or improve water quality while protecting the associated ground and surface water resources. Such watershed management efforts will be more successful if they encourage and support community and stakeholder involvement in both decision-making and restoration activities. Several local watershed groups composed of a variety of stakeholders are already functioning within the state, mostly on a voluntary basis. By supporting and building upon these efforts, the State may better achieve its riparian and watershed restoration goals.

River riparian restoration and watershed management may also help to address water related federal Endangered Species Act (ESA) issues. There are currently significant water related issues associated with endangered or threatened species on every major river in New Mexico. Three federally endangered aquatic species exist in the San Juan River, two in the Gila River, and one in the Rio Grande, and threatened aquatic species exist in the Pecos and Canadian rivers. In addition, endangered or threatened avian species are present on several of the State's river systems. These species were listed as threatened or endangered for varying reasons, but as the amount of surface water in the State's rivers is reduced due to drought or other reasons, the riparian habitat of these species is additionally threatened. Given ongoing endangered-species litigation, if habitat is not available for these species in areas of our rivers that are less prone to drying, a real risk exists that the federal

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government will be forced to take surface water from valid water right holders and use it for endangered species purposes.

The State of New Mexico is actively working to meet the challenges of enabling the federal government to comply with the ESA while protecting New Mexico's economic uses of water and its ability to meet interstate compact obligations. Where applicable, these efforts involve the cooperation of basin stakeholders (e.g., on the San Juan River, Pecos River, and Rio Grande). Avenues used by the State to achieve successful resolution of ESA issues include actively seeking collaborative solutions; providing State-law-based methods to secure water for ESA purposes; protecting State interests in water related ESA litigation; conducting, supporting, and/or funding basic research, monitoring, and assessment of existing systems; and prioritizing and implementing actions likely to improve the status of endangered species. These avenues, summarized below, are being carried out by numerous State agencies.

Collaborative Solutions

Endangered Species Act Collaborative Programs: The State is a leader in developing and implementing ESA collaborative programs for protecting and improving the status of listed species while simultaneously protecting existing and future water uses. These programs can and do take on different organizational forms but generally serve as forums for affected stakeholders to discuss concerns and potential solutions, to contribute to recovery of the listed species, to develop creative and flexible options under the ESA to meet the species' and human needs in compliance with applicable federal and State laws, and to secure interim and long-term funding for those efforts. Specific examples include the Middle Rio Grande Endangered Species Act Collaborative Program and the San Juan Recovery Implementation Program.

More specifically, these programs generally have two primary goals:

- to promote recovery of the listed species by methods such as preserving reproductive integrity, improving habitat, and supporting scientific analyses; and
- to exercise creative and flexible options under the ESA to meet the species' and human needs in compliance with applicable federal and State laws. This requires that the programs will not impair valid water rights of individuals and entities, including the Tribes, Pueblos, and acequias of the State, or compromise the State of New Mexico's ability to comply with its interstate stream compact delivery obligations.

NMED Clean Water Act Section 319 Program: The U.S. Environmental Protection Agency awards funding annually to the New Mexico Environment Department to implement non-point source pollution reduction projects under Section 319 of the federal Clean Water Act. The Environment Department in turn works with local watershed groups to identify and fund projects that emphasize collaborative approaches to addressing water quality problems among the stakeholders of a watershed. This program funds development of pilot projects for watershed restoration that can serve as guides for larger projects to be

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implemented by the stakeholders or by others. Each Section 319 project includes an outreach component to encourage this technical transfer.

National Environmental Policy Act Projects: In addition to being leaders in collaborative programs, the State, through the Interstate Stream Commission, is serving as a joint lead agency with the U.S. Bureau of Reclamation and/or the U.S. Army Corps of Engineers on National Environmental Policy Act compliance measures, involving river and reservoir operations of the Pecos River and Rio Grande. These efforts include ensuring that federal agency river and reservoir management actions will not compromise New Mexico's compact deliveries, describing the water availability realities within each river system, and participating in consultations between the lead federal agencies and the U.S. Fish and Wildlife Service on endangered species concerns.

State Law-Based Methods for Securing Water

Through the efforts of the Governor's Office, the Office of the Attorney General, and the Interstate Stream Commission, the State has negotiated and implemented short-term (two- to three-year) water management agreements that provide water to meet ESA-related river flow targets while protecting State water users and complying with State law and the compacts. These agreements have been successful in preventing water management failures from occurring on a year-to-year basis, but they have not provided longer-term certainty either for the farmers and municipalities or the listed species.

To provide certainty for its water users, the State must develop additional State-law-based methods for the federal government and others to secure water over the long-term to meet ESA-related or high environmental priority river flow targets. Establishing a firm, long-term ESA-related water supply will preclude potential seizure of water from valid water right holders such as irrigation districts, conservancy districts, Pueblos, municipalities, and individual water right holders.

Protecting State Interests in Water Related ESA Litigation

The Town Hall participants agreed that the State should actively protect its interests in ESA litigation. Additionally, based upon public input at the public meetings, New Mexicans clearly believe that protection of threatened and endangered species is an important environmental goal, but they do not believe that federal demands for water for listed species should compromise State water law, rights and interests. The State has protected the State's water interests in ESA litigation and will continue to do so as described in Section C.1.

Characterization, Basic Research, Monitoring and Assessment

To ensure that management actions taken to address ESA concerns actually do so without producing significant unintended consequences, such as increased flooding, compact under-deliveries, water quality degradation, and the loss of habitat for other species, a full and current understanding of the science of river systems and listed species habitat is required. Therefore, the State is supporting and/or funding basic research on the

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habitat and water flow requirements of selected listed species; the interaction between surface water and ground water in Critical Management Areas; the characteristics and impact of sediment movement in various basins; the water quality of critical streams; the amount and type of riparian vegetation water use; and the potential effectiveness of water banking and water markets to address drought and ESA-related water flow demands. In addition, because conditions are constantly changing, the State is supporting and conducting efforts to monitor and assess management actions such that the activities can be modified to provide more effective preservation and restoration efforts.

Public Opinion

Although opinions voiced at the public meetings were diverse, a number of speakers were adamant that the State work to restore its river riparian and watershed areas. However, as mentioned above, the overarching public opinion appears to support such restoration efforts only if they do not compromise State water law, rights and interests. The Town Hall participants recognized the value of maintaining healthy and diverse ecosystems throughout the state and the critical role of riparian areas in achieving that goal. They agreed that tools used by the OSE must reflect a proactive collaborative approach to restoring and maintaining watersheds and that the State should pursue control of non-native phreatophytes as long as those efforts include revegetation and restoration of ecosystem function. Water quality also drew significant comment from the public. Many believed that if the State encouraged watershed health, both water quality and quantity would improve.

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Section C.9: Consider water rights transfer policies that balance the need to protect the customs, culture, environment and economic health and stability of the state's diverse communities while providing for timely and efficient transfers of water between uses to meet both short-term shortages and long-term economic development needs.

Policy Statements

- *The State shall promote a water rights transfer process that is as efficient as possible without lessening protections for the customs, culture, environment, and economic health and stability of the state's communities.*
- *The State shall support the creation of water banks to allow the temporary reallocation of water among voluntary water bank participants.*
- *The State shall promote mechanisms to ensure that water will be available for the continued and future economic vitality of the State.*

Implementation Strategies

- The State Engineer will promote effective advertisement of water right transfer applications to allow existing water right owners to protect their water rights.
- The State Engineer will review existing statutes and regulations, propose revisions, and implement authorized revisions to expedite water rights transfers.
- The State Engineer will encourage creation of water banks within acequias to promote the customs, culture, environment, and economic health and stability of the associated communities.
- The State Engineer will encourage the creation of water banks in areas that are experiencing significant growth and/or that are prone to water supply shortages in order to ensure economic vitality.

Discussion

A transfer of a water right may include a change in the water right's place of use, point of diversion, or purpose of use. The current State Engineer administrative process for water right transfers can be time-consuming, limiting the effectiveness of the process in time-critical instances. The State's economic development needs for water require that the State

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Engineer develop a more timely and effective transfer process, but any expedited transfer process must be balanced with protection of existing cultures, traditions, and water rights.

Because water banks, when appropriately established and monitored, allow the temporary re-allocation of water among voluntary water bank participants without the need for a formal water right transfer or change of ownership, they have the potential to provide an efficient and timely alternative means to mitigate short-term shortages. Existing statutes allow water banking with State Engineer approval, and existing statutes allow water banking within acequias. The State Engineer should continue to promote the development of water banking in New Mexico.

In order to protect the customs, culture, environment and economic health and stability of the State's diverse communities, water banks and transfer processes must provide for full public notice and opportunity to protest. For every proposed water rights transfer, the State Engineer is required to evaluate the issues of impairment to existing users and whether the proposed transfer is consistent with the statewide conservation of water and the public welfare. In addition to these general statutory protections, the legislature has also provided specific protections for some of the entities involved in water transfers and markets – for example, the 2003 legislature provided that acequias have certain powers to restrict proposed transfers that they determine would be detrimental to the acequia.

Public Opinion

One of the comments most frequently voiced throughout the public involvement process was the need to respect senior water rights. The need for the protection of the customs, culture, environment, and economic health and stability of the State's diverse communities was also mentioned frequently. Other comments relating to water transfer policies dealt the continuation of historic uses, the necessity to protect Tribal water rights and acequia and agricultural livelihood and culture. A great amount of value was placed on the food that agriculture produces.

Comments showed that there is a deep fear of water being transferred and taken from traditional uses and placed in urban areas. There was considerable disagreement and debate around whether water should be an economic commodity and open to the free market or not. Similar disagreements centered on the issue of prioritization of beneficial use. An overwhelming theme that emerged was the basic human right to water for domestic purposes of every individual. Shortage sharing, water for beautification, drought awareness and planning, the reality that we live in a desert, and the steady loss of water to cities were other common topics that emerged.

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Section C.10: Promote strategies and mechanisms for achieving coordination with all levels of government.

Policy Statements

- *The State shall coordinate the efforts of its various water management agencies to ensure consistency in implementation of State policy and effective use of State resources.*
- *The State shall coordinate and consult with federal water management agencies to assure that their actions are consistent with the State Water Plan and to maximize the effective use of State and federal resources.*
- *The State shall have an open door policy at all levels of government for Pueblos and Tribes, to voice their concerns and discuss issues regarding water and water rights.*
- *The State shall work with the Pueblos and Tribes and other affected governmental entities, to seek mutually beneficial solutions and outcomes in water related disputes and to avoid litigation.*
- *The State shall coordinate with associations representing local water management entities such as acequias, mutual domestic water users, water cooperatives, water and sanitation districts, irrigation districts, and conservancy districts to promote State water policy and to provide education regarding State initiatives and programs.*

Implementation Strategies

- The State Engineer; Secretaries of the Environment Department, Energy Minerals and Natural Resources Department, Department of Public Safety and Agriculture Department; Directors of the Interstate Stream Commission, Game and Fish Commission and Homeland Security; and the State Land Commissioner will meet on a quarterly basis to discuss and facilitate issues including, but not limited to, endangered species, watershed management, water quality, water and disaster planning, water supply and infrastructure security, water project development, development of new sources of water supply, management of State-owned water resources, and interstate stream compact compliance.
- The OSE/ISC and NMED will strive to coordinate water quantity and water quality efforts, including the promulgation of more effective Subdivision Development Regulations and to ensure that water rights transfers do not negatively impact water quality protection efforts.
- The OSE/ISC will encourage the sharing of water information through a common water library and database accessible to all water users, decision makers and the public.

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- The OSE/ISC will coordinate with other State and federal agencies on data requirements and funding mechanisms needed for the acquisition of remotely sensed data and other geographic information systems data.
- The OSE/ISC, NMED, and EMNRD will coordinate with federal agencies to leverage available State funds and to maximize the effectiveness of riparian and watershed vegetation management projects.
- The ISC will continue its efforts to represent the State as a “joint lead” in the preparation of federally required National Environmental Policy Act (NEPA) compliance for Endangered Species Act projects and other water management activities.
- The OSE/ISC and NMED will meet with individual acequias, mutual domestic water users, water cooperatives, water and sanitation districts, irrigation districts, and conservancy districts as needed to address issues of local concern.

Discussion

Effective water stewardship requires not only the cooperation of the water user, but also the effective coordination of the various governmental entities that manage, administer, regulate, or otherwise influence how water is used. This then dictates that there be effective coordination not only among local, State and federal government agencies, but also with Pueblos/Tribal governments, the governmental subdivisions of the State, and water entity governing bodies. The coordination with larger governing bodies can and often must be managed through direct interaction among agencies. Coordination with the smaller governmental units can in certain instances only be managed by interaction with larger associations of similar interests. In either instance, however, the State and its individual water management agencies must reach out to other agencies and entities with governing responsibilities and authorities.

Public Opinion

A number of citizens voiced concern about the current lack of coordination between governmental agencies with regard to water management and suggested that better communication between agencies be fostered. Specific comments were received from various State agencies that provided suggestions in many cases of how this may be accomplished. In addition to State agency collaboration, many participants voiced the need for coordination with research institutions and the continued government-to-government consultations between Nations, Pueblos and Tribes throughout the state.

Section C.11: Integrate regional water plans into the state water plan as appropriate and consistent with state water plan policies and strategies.

Policy Statements

- *The State shall use the Regional Water Plan Ad Hoc Committee report as a guide for integrating the regional and state water plans. More specifically, the State by and through its various agencies shall retain and exercise statutory authority to:*
 - *address issues of overarching statewide concern being guided by the State Water Plan;*
 - *accommodate and protect the diversity of New Mexico's communities and regions by deferring to the guidance provided by the regional water plans for regional issues; and*
 - *develop procedures and criteria to guide decisions where there are important differences between regions, or between a region and the State.*
- *The State should support and adequately fund the completion, update and implementation of regional water plans.*

Implementation Strategies

- The ISC will continue to provide guidance and oversight of regional water planning process, and to review and provide technical comments on regional water plan submittals.
- The ISC will continue to fund the completion of regional water plans subject to available appropriations.
- The ISC will communicate issues of overarching State concern to regional water planners.

Discussion

In 1987, the New Mexico Legislature authorized a regional water-planning program to be administered by the New Mexico Interstate Stream Commission. To implement that program, the state was divided into 16 planning regions, and the ISC developed a template for the creation of regional plans and, as appropriations allowed, provided funding to individual regions for the development of the regional plans.

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The regional water plans were originally intended to provide the basis for a statewide water plan for New Mexico. Due to inadequate funding and other reasons, only six regions have thus far been able to complete their plans. All six of these completed plans have been accepted by the ISC. Regional water planning is continuing, and regional plans will continue to be important components of the comprehensive statewide water plan.

The regional plans provide the local perspective on water management to meet the region's needs. They provide insight into the region's view of the public welfare and they analyze contain analyses of water supply and demand and how these will be balanced now and in the future. Thus, the regional water plans provide the basis for the statewide plan's reconciliation of basin and statewide water management priorities.

The Regional Water Plan Ad Hoc Committee, appointed by the Interstate Stream Commission to develop recommendations to address Section C.11 of the State Water Plan Act, developed a thoughtful and useful report that is incorporated into this State Water Plan as Appendix C. The report discusses approaches to integrating regional water plans with the State Water Plan and provides findings and recommendations on numerous topics of concern to both the State and the regions.

Public Opinion

Throughout the listening sessions and the Town Hall meeting and in comments received on the draft plan, it was apparent that the public believes that there needs to be effective and ongoing local input into water planning and water decisions. It was stated a number of times that the best planning is local planning and that the State plan must take into account local conditions. The regional water plans that have been and are being created around the state provide the best opportunity to integrate local priorities into the State Water Plan.

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Section C.12: Integrate plans of water supply purveyors, including those of local government, privately owned public utilities, associations, cooperatives, irrigation districts and acequias as appropriate and consistent with state water plan policies and strategies, as those plans are completed and submitted to the Office of the State Engineer.

Policy Statements

- *The State shall coordinate with water supply purveyors in the development of water plans, and should integrate those plans as appropriate to the development of the State water plan.*

Implementation Strategies

- The OSE/ISC will encourage water supply purveyors, including local governments, privately owned public utilities, associations, cooperatives, irrigation and conservancy districts, and acequias, to notify the OSE/ISC that they are developing water plans.
- OSE/ISC will consult with these planning entities to ensure consistency of those plans with State water policies, and will consider for integration into the State Water Plan those water plans completed and submitted to the State Engineer.

Discussion

In addition to the water plans developed by the 16 water planning regions, other water management entities routinely create water plans to as a wise guide to their operations. These include local governments, municipal and community water suppliers, and irrigation and conservancy districts. For example, entities such as acequias and irrigation districts which provide water-banking services to their members often develop water plans.

In addition, some municipal and community water supply entities also create so-called "40-year plans," to support their applications to the State Engineer for water rights transfers. These 40-year plans are specifically provided for by statute so that the applicant can obtain the benefit of ability to hold certain water rights unused for a development period without being subject to loss for non-use.

While these 40-year plans are currently the only water plans required to be submitted to the State Engineer, there is no reason why other water plans should not be brought to the attention of State water planners for possible integration into the statewide water plan. Further, as suggested by this Section C.12 of the State Water Plan Act, the State Engineer

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is an appropriate State party to formally receive these plans and refer them to State water planners for consideration.

Public Opinion

The public involvement process brought out the importance that many citizens felt in integrating local and regional water systems to create efficiencies in administration and maintenance of these systems.

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Section C.13: Identify water-related infrastructure and management and investment needs and opportunities to leverage federal and other funding.

Policy Statements

- *The State shall identify, prioritize, and fund water related infrastructure and management projects that protect New Mexico's water resources for New Mexico uses.*
- *The State should identify dedicated funding sources to leverage federal and other funding to pay for water related projects.*

Implementation Strategies

- The Water Trust Board will prioritize and fund regionally significant projects, especially large infrastructure projects associated with new water supply development, Indian water rights settlements, and regional water and wastewater systems that improve services, operations, and economies of scale.
- The OSE/ISC and the Water Trust Board will evaluate the benefits of establishing and funding a statewide program to assist municipalities and community water systems to undertake water loss audit, leak detection, and repair programs.
- The OSE/ISC and the Water Trust Board will establish and fund metering and measuring programs beginning with critical areas where active water resource management is imperative.
- The ISC will conduct feasibility studies to identify pilot projects for aquifer storage and recovery projects and desalination projects, and recommend the pilot projects to the Water Trust Board for funding.
- The ISC and Water Trust Board will prioritize and fund water related management projects that will result in widespread and long-term public benefit, including
 - watershed and riparian restoration and management;
 - implementation of Endangered Species Act collaborative programs;
 - conservation measures such as water reuse, implementation of water-efficient building codes, and best practice management for agriculture;
 - agriculture and irrigation efficiency measures;
 - drought mitigation;
 - wildfire risk management; and

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- active water resource management.
- OSE/ISC will coordinate with the Water Trust Board to:
 - promote the establishment of new dedicated funding sources to flow into the Water Project Fund for the Water Trust Board to fund water projects statewide, including:
 - GARVEE bonds that offer a means to assemble upfront capital on the basis of federal pledges of future funds to repay investors;
 - grants from programs such as the Water and Wastewater Grant Fund, supported by the State Legislature, and utilized to match federal funds;
 - additional funds raised by issuing bonds backed by Government Gross Receipts Taxes; and
 - PILT (payment in lieu of taxes) monies for water projects and related activities.
 - establish a centralized review process for funding water projects statewide;
 - increase funding for capacity development at the NMED Drinking Water Bureau;
 - establish a dedicated fund from the water loss, leak detection and repair program by setting aside a percentage of recovered revenue from each system serviced;
 - encourage rates for water systems that are based on cost of service principles;
 - encourage county and local governments to research the benefits of impact fees for new water infrastructure; and
 - encourage research on alternative funding sources including, but not limited to, those derived from:
 - state lottery;
 - severance tax for infrastructure;
 - sales, liquor, or cigarette taxes; and
 - Philanthropic giving
- The OSE/ISC and the Water Trust Board shall consult with the New Mexico congressional delegation to assist in the prioritization of water projects for federal funding.

Discussion

New Mexico is facing a water crisis due to aging water infrastructure, prolonged drought conditions, increased wildfire risk, demands of endangered species, increasing federal regulations, interstate water compact requirements and an underutilization of surface water sources (when those supplies are available).

Availability of water that is good quality and affordable is critical to the quality of life, ecological health, and continued economic vitality of New Mexico. Demand reduction is important but will be insufficient in the long-term to meet the needs of a growing population and economic growth. Insuring that our water supplies are adequate for our needs will require a substantial investment in existing water systems as well as water

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development. The substantial investment will require coordination and collaboration between the Legislature, the Water Trust Board and the Governor's Finance Council.

WATER SUPPLY INFRASTRUCTURE NEEDS: New Mexico's water infrastructure is aging, and in many areas of the state it is inadequate to meet current demand. In addition, new federal drinking water regulations will require increased treatment, driving up the cost and stressing the management and financing of smaller community water systems. Prolonged drought conditions have already put many smaller systems at risk. Increased wildfires threaten watersheds important for water supplies as do demands of endangered aquatic species and interstate water compact delivery requirements.

Investment in upgrades and expansions to existing systems will be required to secure water for domestic, commercial, industrial, and economic development needs. Current water system structures and financing, many of which were developed more than half a century ago, are often inadequate to meet current needs. The New Mexico Finance Authority (NMFA) currently manages a number of grant and loan programs for water and waste water projects, including several federal funding programs in conjunction with the New Mexico Environment Department's Drinking Water Bureau. The Legislature also appropriates money on an annual basis for individual water and waste water projects. However, appropriations have been inadequate to meet demand, and in many cases applications are from small systems that lack appropriate management, rates, and infrastructure to support future needs.

Aging infrastructure also results in tremendous water loss through leakage. Many community water systems now have overlapping areas, inadequate water rights to meet future demand, are often adjacent to municipalities or other large water systems, and would benefit from regional collaborative efforts. The need for infrastructure repair and replacement also offers the opportunity to create new conveyance systems that can separately deliver for irrigation, landscaping, industrial and other non-potable uses water that does not require the same level of treatment as drinking water.

In addition to community water system needs, the state must invest in large water conveyance projects in order to meet future demand. The 2001 Legislature, through the Water Project Finance Act, created the 15 member [Water Trust Board \(WTB\)](#), a fifteen member Board of cabinet secretaries and appointees intended to identify, prioritize and fund projects for the storage, conveyance and delivery of water; implementation of the Endangered Species Act Collaborative Programs; restoration and management of watersheds; flood prevention; and conservation.

The intent of the WTB legislation was to provide a substantial funding source that could match federal funds for these large water projects, estimated to cost hundreds of millions of dollars. The Act also created the Water Trust Fund and the Water Project Fund to provide the necessary financial support framework for these investments. To date, no money has gone into the Water Trust Fund, which would require a substantial endowment to generate adequate funding on an annual basis. The Act also created the Water Project Fund, with the intention that interest from the Water Trust Fund would go into the Project

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Fund and be used for large water projects. Absent a large endowment in the Water Trust Fund, the Water Project Fund has been dependent on annual appropriations from the Legislature. In 2003, the Legislature passed House Bill 882, Governor Bill Richardson's initiative to dedicate 10% of the Severance Tax Bond Proceeds to the Water Project Fund. While this will generate an average of \$10,000,000 per year, it is still not adequate to meet the needs or to match the substantial federal funds that New Mexico will require to improve its water infrastructure.

DEVELOPMENT OF NEW WATER SUPPLIES: In addition to enhancing the capacity and sustainability of existing water supply systems, New Mexico needs to make a substantial investment to increase water supplies to meet future economic development, social development, quality of life and environmental needs. The state has substantial supplies of saline or brackish water that can be treated for non-potable uses as well as for drinking water. Wastewater treatment and reuse also offers opportunities to increase the water supply. New storage methods, particularly aquifer storage and recovery, also need to be explored to decrease losses to evaporation and secure water for use during times of drought. In addition to these water sources, New Mexico also has excellent research institutions as well as the national laboratories, providing opportunities for pilot projects as well as for the creation of an international center for water treatment research and development. (see also Section C.14)

Public Opinion

Many citizens who participated in the public involvement process of the State Water Plan believed that significant portions of the State's water infrastructure are in need of significant repair. Some individuals pointed to the need for State and federal funding to address these infrastructure needs. Some comments suggested that local governments make assurances that developers pay for all infrastructure and obtain all water rights necessary for their proposed developments before they are allowed to build and sell units. A number of citizens also discussed the need for the State to conduct a study of the condition of the State's water infrastructure in order to better inform the Water Trust Board.

Section C.14: Promote collaboration with and strategic focusing of the research and development of the state's national laboratories and research institutions to address the state's water challenges and to bring to the state demonstration projects in desalination, conservation, watershed restoration, weather modification and other technological approaches to enhancing water supply and management.

Policy Statements

- *The State shall use all means available to evaluate and pursue viable approaches for enhancing water supply and management.*
- *The State shall coordinate, prioritize, fund, and execute studies and research on critical water issues with the state's national laboratories and research institutions.*

Implementation Strategies

- The OSE/ISC will coordinate the creation of a multi-agency taskforce to identify, focus, and prioritize studies and research in cooperation with federal, private, and the state's national laboratories and research institutions.
- Currently identified areas where collaboration in research would yield benefits include:
 - effective means to produce net increases in usable water resources, and to increase water use efficiencies without increasing overall stream or aquifer depletions;
 - desalination, conservation, watershed restoration, evaporation reduction, water re-use, and water treatment;
 - treatment and use of produced water (water produced as a byproduct of petroleum production);
 - weather modification;
 - physical processes of water supply, transport, and consumption;
 - remote sensing, metering and measurement, and GIS technologies;
 - hydrologic budgets, modeling, and characterization, including water quality and contaminant transport;
 - aquifer storage, recovery, and wastewater recharge;

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- advanced watershed land-use methods, maintenance, and recovery including new phreatophyte-control technologies;
- data collection/analysis, development of models and advanced instrumentation, metering and sensing equipment; and
- accurate, real-time measurement of evapotranspiration.

Discussion

Research institutions, universities, and national laboratories represent an assembly of the latest scientific knowledge and competence. Properly focused, these institutions are capable of bringing the highest level of scientific and technical competence to bear on water issues within the state.

Advanced technical and scientific approaches to water resource management, supply assessment, measurement, alternative water supplies, enhanced water production and salvage, and water quality and treatment will be necessary to meet the present and future needs of the State. The resources of public and governmental research bodies can be harnessed to assist the State in meeting the present and future needs of New Mexico.

Public Opinion

There was overwhelming support by the public that better water data be developed and integrated into the management of the State's water resources. The need for data in the following areas was mentioned frequently:

- better quantification of existing water sources (surface and ground) and demand (amount of use by user-type);
- evaporation measures and solutions;
- basin transfer costs and benefits;
- cost estimates and ecological potentials for alternative supplies (including pipelines and desalinization);
- better metering and measuring; and
- improvement to the WATERS database.

The State's national laboratories and research institutions were often mentioned as the mechanisms to achieve this call. The public also emphasized the need for better communication and collaboration between State and local governments and research entities.

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Section D.1. Include work plans and strategies for completion of water rights adjudications, with required supporting documentation, including hydrographic surveys, aquifer mapping and aerial mapping of irrigated land

Policy Statements

- *The State shall accelerate the adjudication of water rights by prioritizing adjudications, setting out projected schedules and timelines for their completion, allocating the necessary State resources, and obtaining federal funding where possible.*
- *The State shall continue to pursue adjudication process improvements to make the process more efficient and understandable to water right owners.*

Implementation Strategies

- The OSE will provide information and details on the prioritization and scheduling of water rights adjudications, including estimated completion dates based upon existing resources.
(See Appendix D, which sets out projected schedules and timelines for the completion of pending water rights adjudications. Appendix D is a preliminary draft estimate of projected schedules and timelines for the completion of the non-Indian components of pending adjudications given existing resources. It assumes the best-case scenario that progress on completing adjudications will not be delayed by unforeseen litigation events. Appendix D will be reviewed, updated, and amended as warranted by changing conditions. Projected schedules for the initiation and completion of future hydrographic surveys and adjudications will be addressed in a separate appendix to be developed in the future.)
- The OSE will periodically provide Gantt charts to update the public on progress towards completion of adjudications (see Appendix D).
- The OSE will develop an adjudication plan for each stream system, and a four-year strategic plan for the prioritization and scheduling of pending adjudications and the allocation of resources for their completion.
- The OSE will develop a hydrographic survey plan and four-year strategic plan for the Hydrographic Survey Bureau to complete surveys for pending adjudications and to initiate surveys for future adjudications.

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Discussion

Water rights adjudications are comprehensive legal proceedings to determine the rights of individuals or entities to use the State's public waters. State law requires that all water rights in a stream system be *adjudicated* in a court proceeding (NMSA 1978 §§72-4-15 through 72-4-19). The product of a water rights adjudication is a single court decree that defines all competing demands on the stream system's water supply (i.e., all the water rights) so that the State Engineer can effectively carry out his statutory mandate to apportion and administer water to satisfy those demands. Adjudication decrees thus greatly facilitate the State Engineer's ability to actively manage the State's water resources to protect senior water rights and ensure that New Mexico meets its interstate stream obligations.

Adjudications serve several important purposes, including the quantification and legal determination of surface water rights that predate the State's adoption of the 1907 water code, the quantification and legal determination of ground water rights that predate the State Engineer's assertion of administrative authority over a ground water basin, and the quantification and determination of the relative priorities of all water rights, Indian and non-Indian, that share a common or hydrologically connected source.

Water rights adjudications have been completed for roughly 20% of the State. As shown in Figure 1, another approximately 60% of the state is subject to 11 currently pending adjudication suits. These 11 active adjudications involve approximately 65,000 non-Indian defendants and 17 defendant Indian Tribes or Pueblos, as summarized in Table 1. Completion of these adjudications would greatly facilitate water planning by all entities and would help the State Engineer more actively manage the State's water resources to stretch the available supply to most efficiently meet existing and future demands.

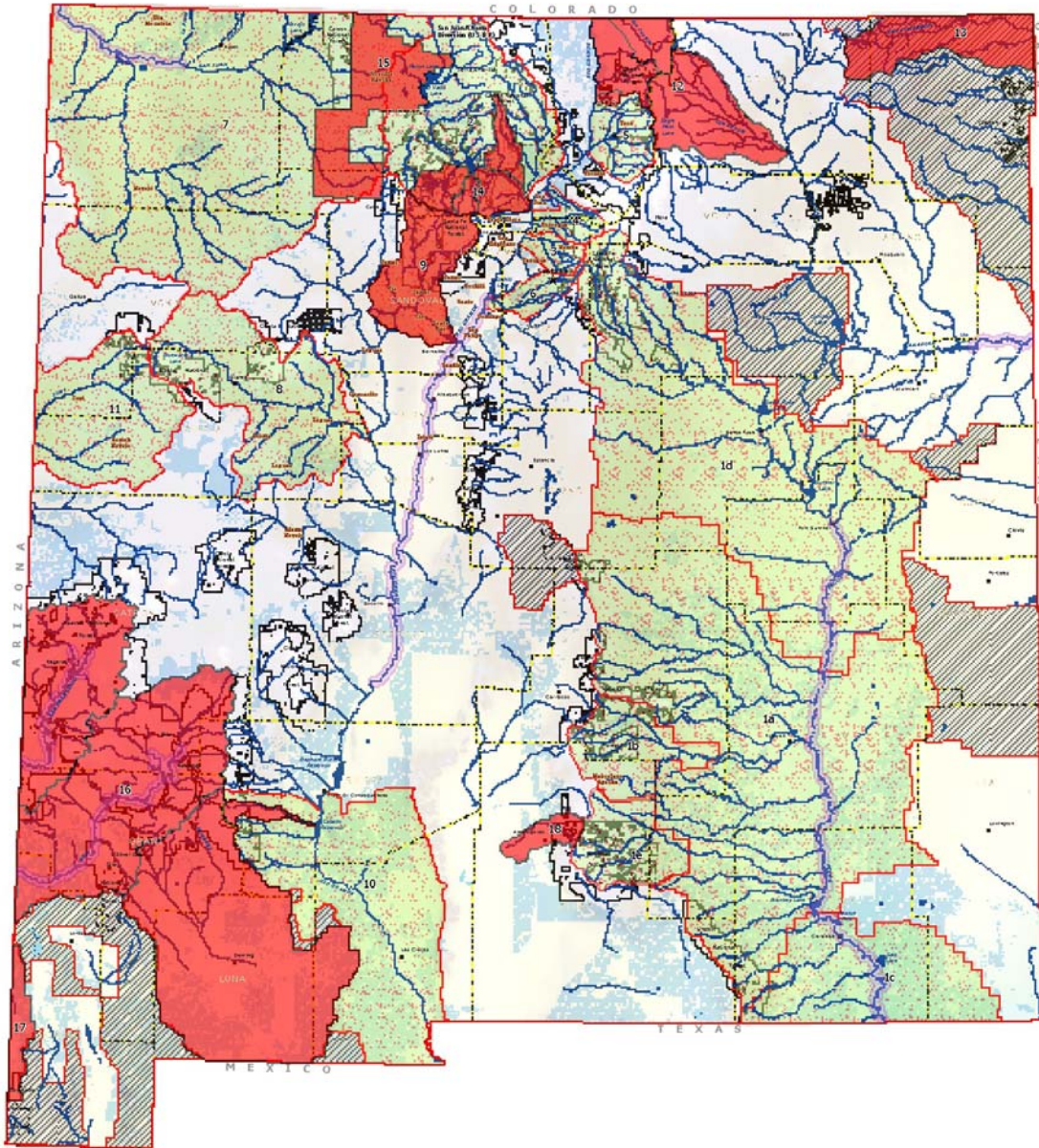
The adjudication process is briefly summarized in the following subsections.

Hydrographic Survey

A hydrographic survey is an inventory of all water right claims in a stream system, and typically takes the form of maps and detailed reports on the ownership and elements of each water right claim surveyed. State law directs the State Engineer to make hydrographic surveys of each stream system and source of water supply in the State, beginning with those most used for irrigation.

The Hydrographic Survey Bureau (HSB) of the OSE Litigation and Adjudication Program produces hydrographic surveys. To do so, the HSB gathers information from county ownership records, State Engineer water rights records, historical records, field surveys, field interviews, historical aerial photography, and current aerial photography (unfortunately, the available information and source documents obtained are not always the most up-to-date or accurate). The HSB compiles the findings of this phase into a hydrographic survey report and associated maps. This information is then filed with the

ACTIVE WATER RESOURCE MANAGEMENT IN NEW MEXICO
COMPLETED AND ACTIVE WATER RIGHTS ADJUDICATION WORK



MAP KEY #1
Active Water Rights Adjudications in New Mexico

Use the number in the Map # column to find corresponding area on the map.

Map #	Adjudication	Filing Date	OSE Hydrographic Survey	Survey Date
1a	State vs. Lewis (Roswell-Artesia Basin)	1958	Cottonwood Creek Pecos R. and tributaries above Avalon Groundwater Section Pecos River Pump Section Pecos River - Supplemental Report	1932 1933 1937 1979 1982
1b	State vs. Lewis (Hondo River, Rio Bonito and Rio Ruidoso)	1974	Rio Bonito Subsection Rio Hondo Subsection Rio Ruidoso Subsection	1972 1975 1975
1c	State vs. Lewis (Carlsbad Basin)	1978	Black River Carlsbad Irrigation District Section Carlsbad Underground Water Section	In Progress In Progress In Progress
1d	State vs. Lewis (Upper Pecos, Ft. Sumner and Gallinas)	1980	Pecos River (Above Avalon) Teolote Creek Gallinas River Pecos R. Section - Ft. Sumner Subsection Pecos R. Underground (Above Avalon)	1922 1922 1922 1976 1977
1e	State vs. CID	1976	Rio Peñasco	1998
2	State vs. Aragon (Rio Chama)	1961	Rio Chama -Rio Puerco Section Rio Chama -Abiquiu to Española Rio Chama -Ojo Caliente Section Rio Chama -El Rito Section Rio Chama -Cañones/Polvareda Gr. Rio Chama -Carrilón Section Rio Chama -Rio Cebolla Section Rio Chama -Gallina Section Rio Chama -Rio Nutrias Section Rio Chama -Tierra Amarilla Section Rio Chama -Rio Brazos Section Rio Chama -Rutherford Section	1953 1961 1968 1971 1973 2000 2000 2000 2000 2001 2001 2002
3	State vs. Aamodt (Rio Pojoaque)	1966	Nambe-Pojoaque-Tesuque	1966
4	State vs. Abbott (Santa Cruz/Truchas)	1968	Santa Cruz Rio de Truchas	1966 1970
5	State vs. Abeyta (Taos/Hondo)	1969	Rio Hondo Rio Pueblo de Taos and Rio Fernando de Taos Rio Grande del Rancho	1969 1969 1969
6	State vs. Anaya (Santa Fe)	1971	Santa Fe (Vol. I) Santa Fe (Vol. II)	1976 1978
7	State vs. United States (San Juan)	1975	San Juan - Navajo River Section (Vol. I) San Juan - Pine River Section (Vol. II) San Juan - La Plata River Section (Vol. III) San Juan River Section (Vol. IV) San Juan - Animas River Section	1980 1981 1982-83 1982-86 Incomplete
8	State vs. Kerr McGee (Rio San Jose)	1982	Bluewater	1985
9	United States vs. Abouleman (Jemez Pueblo and WSRP Federal Claims)	1983	Jemez River	1988
10	Elephant Butte Irrigation District (Lower Rio Grande Basin)	1986	Nutt-Hockett Lower Rio Grande Basin	1999 2000
11	United States vs. NM State Engineer (Zuni River Basin)	2001	No existing OSE survey	N/A
12	Cimarron/Rayado, Costilla, Red River, San Cristobal			
13	Dry Cimarron			
14	Rio Chama/Abiquiu, El Rito, Cañones, Jemez, Rio Puerco			
15	Jcarilla Apache			
16	Mimbres, Gila, Gila/San Francisco			
17	Gila/San Simon			
18	Fresnal/La Luz			

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ourt and lays the foundation for the Court's determination of the water rights involved in the adjudication. It is presumed by the Court to be correct, and any party wishing to dispute its findings bears the burden of proving the survey wrong.

Table 1. Currently Pending Water Rights Adjudication Suits

<u>ADJUDICATION</u>	<u>DEFENDANTS</u>	<u>PUEBLO/TRIBE</u>
<u>Lewis</u> (Pecos) (state court, filed 1956)	18,000	Mescalero Apache
<u>EBID</u> (Lower Rio Grande) (state court, filed 1996)	20,000	None
<u>NM v. US</u> (San Juan) (state court, filed 1975)	8,000	Navajo Nation
<u>Aamodt</u> (N-P-T) (federal court, filed 1966)	2,500	Nambe, Pojoaque, San Ildefonso, Tesuque
<u>Abeyta</u> (Taos/Hondo) (federal court, filed 1969)	4,000	Taos
<u>Abousleman</u> (Jemez) (federal court, filed 1983)	2,000	Jemez, Santa Ana, Zia
<u>Abbott</u> (Santa Cruz/Truchas) (federal court, filed 1968/70)	2,500	Nambe, San Ildefonso, Pojoaque, Santa Clara, San Juan
<u>Aragon</u> (Chama) (federal court, filed 1969)	4,500	San Juan, Jicarilla Apache
<u>Anaya</u> (Santa Fe) (state court, filed 1971)	1,500	Cochiti
<u>Kerr-McGee</u> (San Jose) (state court, filed 1983)	1,000 est.	Acoma, Laguna
<u>A & R Productions</u> (Zuni) (federal court, filed 2001)	1,000 est.	Zuni, Ramah Navajo, Navajo Nation

Total Defendants: 65,000

Total Defendant Pueblos: 14 (San Ildefonso, Santa Clara, San Juan, Acoma, Laguna, Cochiti, Zuni, Zia, Santa Ana, Jemez, Tesuque, Pojoaque, Nambe, Taos)

Total Defendant Indian Tribes: 3 (Navajo, Mescalero Apache, Jicarilla Apache)

During the adjudication, the HSB provides technical support to the special assistant attorneys general who prosecute the adjudication to completion. This support can take many forms, including ownership research, mapping, and additional field investigations and review of historical water use data for disputed claims.

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Traditionally, the water right claimant has not been an integral part of the hydrographic survey process, other than to grant permission for HSB personnel to enter the property and to be briefly interviewed during the field investigation. The HSB is now implementing new approaches that involve the claimant much earlier in the survey process. For example, the HSB in conjunction with the Water Resources Allocation Program of the OSE now conducts field offices in areas where a new survey is to be performed to update water rights records (especially ownership records, which often are out of date) and to answer the questions of claimants regarding the adjudication and hydrographic survey processes. This new approach has been shown to enhance the efficiency of the initial field surveys, minimize the apprehensions of water right claimants concerning the adjudication, and significantly reduce the amount of field re-checks required in the adjudication process.

Adjudications

Upon completion of the hydrographic survey, a water rights adjudication is typically initiated by special assistant attorneys general, who file suit on behalf of the State to obtain the judicial determination of all rights to the use of water in the stream system. For each water right claim within the scope of an adjudication, the legal bases and characteristics of the water right, based on the hydrographic survey, are set out in a written offer of judgment conveyed to the claimant. If the offer is accepted, the elements of the water right are confirmed in an order of the Court entered specifically for that water right. If the claimant rejects the offer, the State's attorneys and hydrographic survey staff typically meet with the claimant in an effort to resolve any disputes. If these efforts are unsuccessful, the claim is litigated between the State and the claimant through evidentiary hearings before a Special Master or Judge.

Once all individual water rights have been adjudicated between the State and individual claimants, water right owners may challenge the water rights of others during the *inter se* (among themselves) phase of the adjudication. After holding hearings on all *inter se* challenges, the Court issues a final decree that defines the rights of each water right owner on the stream system.

Adjudication process improvements are central to the implementation of the State Water Plan. Additional funding and staff resources provided by recent legislatures have produced substantial progress in water rights adjudications, but due to the huge number of individual parties involved and the complexity of the legal issues that frequently arise, the costs continue to be high and the process laborious. It is becoming increasingly apparent that the adjudication process must be improved so that it will be able to handle the massive adjudications that the State still needs to undertake.

In response, the State Court system and the State Engineer are working together to make the adjudication process more efficient and transparent for water right owners through new procedural rules for adjudications and a new system of Water Courts. The New Mexico Supreme Court has appointed a committee to review judicial procedures for water right adjudications and to make recommendations for new procedural rules to expedite adjudications. In addition to procedural rule changes, the State might achieve

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significant benefits by establishing a system of Water Courts comprised of a water division with a designated Water Judge within each existing District Court. Designated Water Judges could preside over water right adjudications as well as all appeals to District Court from State Engineer permit decisions. Special training in water law and procedure could be provided to Water Judges, special masters, and their staff. Such a system would enhance the ability of court staff and judges presiding over water rights matters to develop the necessary specialized expertise in water law and procedure, as well as greater familiarity with water rights issues in a particular area of the state. It also would provide greater continuity and stability in water right adjudications and in judicial review of State Engineer decisions, and as a result water right cases likely would be resolved in a more timely fashion. Greater continuity and stability in judicial review of State Engineer actions and decisions will be increasingly important as the State Engineer more actively manages the State's water resources.

In addition, the State Engineer is focusing existing OSE resources on the goal of expediting the completion of water rights adjudications. Organizational changes are being made to allow attorneys and hydrographic surveyors to work more closely and collaboratively to accomplish specific adjudication milestones, and the technical resources of the OSE are being realigned to improve efficiency as well. Plans for the completion of the hydrographic surveys and adjudications for specific stream systems are being developed. To the extent possible and appropriate, adjudication plans will be submitted to the relevant adjudication courts for review and approval.

Adjudication of Pueblo and Tribal Water Right Claims

In addition to the claims of non-Indians based on State water law, New Mexico's stream systems are also subject to the water right claims of 23 Indian Pueblos and Tribes, which often claim the most senior water rights on the system. Of these, the claims of 17 Pueblos and Tribes are involved in currently pending water right adjudications, most of which are in the Rio Grande stream system. Indian water right claims are of critical significance because of their claimed early priorities and their size, which in some cases has the potential to exceed the quantities of water apportioned to the State under relevant interstate compacts.

Because Indian water right claims typically arise under federal rather than State law, comprehensive stream system adjudications are necessary to fully determine and quantify these claims. Under the McCarran Amendment and related case law, the adjudication by a court of all water rights in a particular stream system is the only way to define and quantify Indian water right claims so that they can be integrated into a comprehensive decree that supports an efficient and effective system of water rights administration.

The adjudication of Indian water rights, however, can be extraordinarily complex, resource-intensive, and time-consuming. The history of Indian water rights litigation in New Mexico and the West strongly suggests that all parties are better served by informed and sincere attempts to resolve Indian water right claims through negotiation rather than litigation. The certainty provided by comprehensive stream system decrees that

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incorporate negotiated Indian water rights settlements will create enormous benefits for the State. Such negotiated settlements are only possible, however, if the State commits the necessary funds and resources to settle Indian water right claims.

Public Opinion

In both the listening sessions and at the Town Hall, it was noted that the adjudication process is too cumbersome, too lengthy, and too adversarial. Many participants advocated the increased use of mediation or similar dispute resolution techniques. Acequias, municipalities, and irrigators, and most Tribes and Pueblos, agreed that the process needs to be made more efficient. In addition, the legislature has requested that the OSE look for ways to expedite the completion of adjudications.

The quantification of New Mexico's water resources must be done promptly in order to provide the necessary data to make wise, responsible decisions regarding rights. It was stated frequently that this inventory must honor and account for Pueblo and Tribal sovereignty and water rights, as well as relevant treaties, compacts, and decrees, and where necessary (as in the case of the Treaty of Guadalupe Hidalgo), must clarify protections for domestic, agriculture, and acequia uses. In order to quantify resources, this process must bring together, at the community level, representatives of federal, State, Tribal, city/county, acequia, and land grants, including all appropriate local water entities. Various participants emphasized that the public and the judiciary must be educated regarding the process of adjudicating water rights.

Section D.2: Include work plans and strategies for creation and completion of a comprehensive database and an electronically accessible information system on the state's water resources and water rights, including file abstraction and imaging of paper files as well as information on pending adjudications

Policy Statements

- *The State shall develop and maintain an enterprise-wide GIS framework to integrate data on the State's water resources and facilitate public access to that data.*

Implementation Strategies

- The OSE will continue the development of the WATERS (Water Administration Technical Engineering Resource System) database. The WATERS database will be developed to be compatible with the data input requirements for the various ground water, surface water, and other models approved for use by the State Engineer for application to New Mexico water issues. The database will be readily accessible to all water rights holders and the general public, including Indian Tribes and Pueblos.
- The OSE will accelerate the development of the WATERS database by prioritizing the abstraction and imaging of paper water rights files, setting out projected schedules and timelines for completion, and allocating the necessary resources.
- The OSE will provide information and details on the prioritization and scheduling of water rights files being abstracted, imaged and entered into the WATERS database. (See Appendix E, which sets out projected schedules and timelines with priorities for WATERS population.)
- The OSE will provide estimated completion dates for population of the WATERS database by basin, based on existing resources (see Appendix E).
- The OSE will periodically provide Gantt charts to update the public on progress towards completion of the WATERS database.
- The OSE will integrate water rights administration, water rights adjudication, and water quantity and quality databases and hydrographic survey maps and reports in a publicly accessible e-GIS platform.

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Discussion

The State Engineer is custodian of thousands of priceless and irreplaceable water rights files. Each file may reflect numerous events that may impact a water right claim. The State Engineer has developed an electronic information resource, the WATERS (Water Administration and Technical Engineering Resource System) database, to manage the information in these files and support the State Engineer's efforts to actively manage the State's waters. WATERS is an analysis and information tool that can be shared with the public and researchers outside the agency.

Historically, water rights information was stored in the paper files of the OSE. All of the OSE's paper files are now being organized and stored electronically in the WATERS database as indexed images of the original papers. All future water rights transactions will be added to WATERS, keeping water rights files updated and stored in a more efficient and accessible format. Ultimately, WATERS will be used to integrate water rights related data available from inside and outside the agency using Geographic Information Systems (GIS) technology. WATERS electronic files and images of all the water rights documents will be readily available to OSE/ISC staff and to the public via the Internet. Agency staff and others will be able to search the files by name, by location of the place of diversion, by the type (surface or ground) of water resource the right pertains to, or by location on a map.

Public Opinion

Comments stressing the increased need for reliable, retrievable, and complete data were frequently made during the listening sessions and at the Town Hall. Water users, consultants, attorneys, real estate agents and the general public who utilize the information contained in the State Engineer's water rights files on a daily basis all agree that completion of the WATERS database should be a priority. Many individuals feel that it is too burdensome to have to go to a District Office to look through water rights files that contain large amounts of paper that don't always relate directly to the actual right in question. In addition, the legislature has provided the funding to accomplish this task and is eagerly awaiting a return on the investment.

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Section D.3. Include work plans and strategies for measuring of surface and ground water uses in the state as necessary for management of the state's water resources

Policy Statements

- *The State should prioritize and allocate resources for the comprehensive measurement and metering of surface and ground water supplies and uses in the state to support active management of the State's water resources*

Implementation Strategies

- The State Engineer and the ISC will allocate available resources to improve measuring and metering in accordance with the following priority list:
 - where threat to senior water rights from inadequate water resource administration is high;
 - where threat to State administrative authority from inadequate water resource administration is most severe;
 - where threat of interstate conflict is high;
 - where Critical Management Areas have been declared;
 - where water conservation will be served; and
 - where requested by water right owners.
- The OSE/ISC will provide information and details on the prioritization from the above list and create schedules for measurement and metering projects. (See Appendix F, which sets out projected schedules and timelines with priorities for measurement and metering of water uses.)
- The OSE/ISC will provide estimated completion dates for measurement and metering of water uses, based on existing resources (see Appendix F).
- The OSE/ISC will periodically provide Gantt charts to update the public on progress towards completion of the measuring and metering of water uses.
- Subject to appropriation, the State Engineer and the ISC will create a Hydrography Bureau whose responsibilities will include:
 - prioritization of projects to measure water use and water supply statewide by basin;
 - coordination with the USGS and NRCS for water supply measurement and snow pack monitoring;

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- development and implementation of agreements for water suppliers to conduct water use measurement projects, including design and construction of metering equipment and measurement and reporting of water use data; and
- collection and reporting of water use and water supply data.
- Coordination with other State agencies and institutions in the integration and dissemination of water use and water supply data.

Discussion

As discussed in Section C.2 above, measurement of New Mexico's water supply and water uses is one of the three central components of active water resource management. Accurate and timely measurement of surface and ground water uses will be a key to the State Engineer's success in actively managing the State's waters.

Where water deliveries to users are measured, this has generally been accomplished due to court orders or in response to crises. For example, almost all water diversions in the Lower Pecos River Basin are being measured in compliance with court orders. In this case, local authorities maintain the measurement devices, while OSE employees read the meters and enter data into the WATERS database. In some areas, excessive diversions noted through metering require replacement of the unauthorized water. Roswell artesian aquifer users report that the single most important factor in the substantially reduced total withdrawals from this aquifer and recovery of their water table was the insistence on measuring diversions and limiting them to the amounts for which water rights are held.

The State is currently funding installation and refurbishment of diversion measurement from the San Juan River below Navajo Dam and on the Animas River and the Rio Chama below El Vado Dam. This is being done in response to demands from the federal government that New Mexico prevent unauthorized uses. Limited supplies in 2003 and the crisis that could be triggered by lack of administration were the motivating factors. Similar improvements were made several years ago on the Rio Costilla in response to demands by Colorado for New Mexico's compliance with the Costilla Creek Compact. Future needs exist elsewhere, most notably along the full length of the Rio Grande in New Mexico.

Measuring water use relies on past, present, and probable future programs that provide data on surface (i.e., river or stream) water flows, surface water diversions, ground water withdrawals, return flows, and the effects of ground water pumping. The OSE/ISC and the US Geological Survey jointly fund ground water and surface water measurement programs in New Mexico. However, the USGS stream-gaging program in New Mexico has followed a national trend of decline. In New Mexico, the number of active USGS gages has declined substantially over the past 10 years, and the network now has about the same number of active gages as were used before the 1950s drought. The decline is attributed to reduced federal and State funding and to rising operating costs. Some neighboring states, such as Colorado, are performing more measurement themselves as part of their own active water

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management programs, and New Mexico may need to increase its own direct efforts as well.

Ground water levels tend to change gradually and slowly. In cases such as the Ogallala Aquifer in Eastern New Mexico, these changes may be permanent if pumping of the aquifer continues. For ground water that is connected to surface water, measurement can tell us how quickly the resource is being depleted and can help us calculate how pumping may deplete stream flow.

For surface water, measurement must be accurate enough to capture the enormous flow variations that occur between storm events and from drought and normal seasonal changes. Improving the measurement of low and high flows of surface water is a high priority because the amount of flow in extreme conditions is particularly critical. Quick access to this information is important so that water managers can make important decisions based on current conditions.

In addition to providing the factual foundation for the accomplishment of the water management objectives mentioned above, metering and measuring is also important to support adjudications, to prolong the life of Critical Management Areas, and to administer water rights transfers and other flexible marketing and management options such as water banking and aquifer storage and recovery.

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Section D.4: Include work plans and strategies for taking inventory of existing water wells and determining appropriate disposition of unused wells.

Policy Statements

- *The State shall prioritize the efforts to identify unused wells and determine their disposition based upon public health and safety, water quality, adjudication, and administration considerations.*
- *The State shall encourage the plugging or other appropriate disposition of unused wells where those wells pose a threat to public health and safety or water quality.*

Implementation Strategies

- The OSE will continue development of the WATERS database to inventory, as completely as possible, all existing wells. (See Section D.2 for additional implementation strategies for the completion of the WATERS database.)
- The OSE will investigate innovative methods of determining whether wells are unused, including public outreach efforts, and other alternatives to costly on-the-ground physical inspections.
- The State Engineer will coordinate with NMED and other State agencies to establish criteria for the appropriate disposition of unused wells that threaten public health and safety or water quality.
- The State Engineer will coordinate with NMED in the review of existing regulations, and the development and promulgation of new regulations that address wellhead protection and capping of abandoned wells.

Discussion

Drilling and pumping from water wells in New Mexico generally requires a permit from the State Engineer. An inventory of all permitted water wells will be accomplished by completion of the WATERS database. As discussed in Section D2, this process is ongoing.

The existence of a water right does not, however, mean that a well is actively being used. The only way to determine that is through an on-site inspection of the well. Given the thousands of wells that exist in New Mexico, staff and budget constraints dictate that such an effort proceed according to clearly established priorities that take into account public health and safety, water quality, water rights adjudications, and administration

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considerations. The State may elect to concentrate its resources only on those wells where determining the use status of the well serves a specific policy objective.

Because unused wells can present safety concerns and can serve as an avenue for pollutants to contaminate ground water, unused wells are most commonly plugged and abandoned. The New Mexico Environment Department promulgates guidelines for effective and safe abandonment of wells.

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Section E: The Interstate Stream Commission and the Office of the State Engineer shall consult directly with the governments of Indian nations, tribes and pueblos to formulate a statement of policy and process to guide:

(1) coordination or integration of the water plans of Indian nations, tribes and pueblos located wholly or partially within New Mexico with the state water plan; and

(2) final adjudication or settlement of all water rights claims by Indian nations, tribes and pueblos located wholly or partially within New Mexico.

Policy Statements

- *No injury to Pueblo and Tribal Water Rights. In accordance with N.M. Stat. Sec. 72-14-3.1(J), the State planning process will not limit Pueblo or Tribal water claims. It is understood that there are other processes that must occur before Pueblo and Tribal water claims can be finalized. Pueblos and Tribes may not want to share information about future water needs before their claims are resolved.*
- *Respect for Pueblo and Tribal Rights. The Pueblos and Indian Tribes in New Mexico assert aboriginal, time immemorial, and/or federal reserved water rights to both surface and ground water necessary to ensure a permanent homeland for future generations of each Pueblo and Tribe, which they further assert are not subject to forfeiture or abandonment. The Pueblos and Tribes also assert that these rights encompass both water quality and quantity, which are inseparable and require the protection of watershed environments. Some Pueblos and Tribes also assert storage rights, contract water rights, and/or State law based water rights. The State acknowledges that the Pueblos and Indian Tribes will assert these rights throughout the water planning process. The State will continue its practice of consulting in good faith on a government-to-government basis as described below.*
- *Cultural and Traditional Importance of Water. The Pueblos and Indian Tribes in New Mexico highly value water and are deeply connected to their water through ancient custom and traditions that are passed from generation to generation. The State of New Mexico recognizes the importance of passing on such sacred values and will respect the Pueblos' and Tribes' traditional, cultural, and religious values and uses of water in the planning process and in the government-to-government consultation described below.*
- *Sovereign Status of Pueblos and Tribes. The Pueblos and Indian Tribes in New Mexico are sovereign governments that assert authority and responsibility over water use and water quality within Tribal territories. The State respects the water management, laws, policies and practices of each of the Pueblos and Indian Tribes and will work*

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cooperatively with each Pueblo and Indian Tribe on a government-to-government basis as described below.

- *Government-to-Government Consultations for Water Planning. In accordance with N.M. Stat. Sec. 72-14-3.1(E)(1), and recognizing the unique situation of each Pueblo and Indian Tribe, the State will conduct meaningful consultations on a government-to-government basis directly with the Tribal leadership and/or governing body of each New Mexico Pueblo and Indian Tribe to formulate a mutually agreeable statement of policy and process to guide coordination and integration of the water plan and/or policies of each Pueblo and Indian Tribe with the State Water Plan.*
- *Government-to-Government Consultation for Water Settlements and Adjudications. In accordance with N.M. Stat. Sec. 72-14-3.1(E) (2), and recognizing the unique situation of each Pueblo and Tribe in the State, the State will conduct meaningful consultations on a government-to-government basis directly with the Tribal leadership and/or governing body of each New Mexico Pueblo and Indian Tribe including any representative or counsel who may be designated by the Pueblo or Tribe, and in conjunction with representation from the United States on behalf of the Pueblo or Indian Tribe as appropriate, to formulate a mutually agreeable statement of policy and process to guide the final adjudication or settlement of the water rights claims of each particular Pueblo and Tribe.*

Implementation Strategies

- The State should initiate government-to-government talks with Pueblos and Tribes as an efficient way to identify areas where negotiated settlements to water disputes may be possible; other parties should not be involved during this reconnaissance phase.
- Where reconnaissance phase discussions suggest that the possibility of a negotiated settlement is good, the State should promptly obtain and commit those resources necessary for negotiations, including hydrographic survey and legal staff. Note that successful negotiations may require almost the same level of resources as would be devoted to litigation.
- The State should make sustained contributions to an Indian water rights settlement trust fund or to a separate trust fund. A dedicated fund shows the State's commitment and capability and serves as a strong incentive to settle for the United States and Tribes and Pueblos.

Discussion

In addition to holding four of the public listening sessions at Tribal locations, the State consulted with representatives of the majority of New Mexico's various Indian Tribes and Pueblos concerning the State Water Plan indirectly through the state water plan Town Hall process and directly through eight meetings limited solely to State and Tribal/Pueblo

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government representatives. Many Tribal representatives participated in the Town Hall, bringing insight into Tribal water issues into the overall mosaic of the State's water stewardship responsibilities. However, not all Tribes, Nations and Pueblos have participated in these meetings. The participants agreed that although these meetings are a part of the consultation process, they do not serve as the sole mechanism for consultation, but are rather steps in the process of consultation.

The State will seek to conduct meaningful consultations on a government-to-government basis directly with each respective Tribe, Nation and Pueblo specifically related to coordination and integration of the water plans of Tribes, Nations, and Pueblos and final adjudication or settlement of their water rights claims.

This process was specifically provided for by the legislature and carried out to the greatest extent possible given the limited time within which the State plan has been drafted. Significantly, however, this process provided a positive result as the foregoing consensus policy statements and implementation strategies were crafted.

Public Opinion

Four of the 29 listening sessions were held at Tribal locations: the Pueblos of Jemez, Acoma and Isleta, and the Navajo Nation Chapter House of Shiprock. Tribal water quality standards, the right of Tribes to use water for continued economic development, and their contributions to river restoration were mentioned in public comments. The necessity to mesh regional and state water plans and draw on the expertise of regional planners for assistance in ongoing management of water resources in New Mexico was frequently mentioned. Indian Tribes, Nations, and Pueblos stated the importance of ongoing and more personal government-to-government consultations to create and implement systems for addressing and resolving water issues that cross political boundaries. Tribes, Pueblos and Nations also raised concerns about the possibility that voluntary shortage-sharing agreements may fail to recognize the seniority of their water rights within a stream system.

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Section F: The interstate stream commission shall convene water planners and stakeholders from diverse constituencies to advise it and the office of the state engineer on the state water plan, including statewide policies, priorities, goals and objectives for the plan, issues of statewide concern and strategies for implementation of the plan.

Policy Statements

- *The State shall continue its coordinated and concerted efforts to convene water planners and stakeholders to advise the State Engineer and Interstate Stream Commission on issues relating to State Water Plan development and implementation.*
- *The State shall continue its coordinated and concerted public outreach and education efforts to promote involvement in the State water planning process.*

Implementation Strategies

- The OSE/ISC and the Water Trust Board will continue public outreach and education efforts to ensure public involvement in the State water planning process.
- The OSE/ISC will strengthen its outreach and education efforts to all New Mexicans regarding water issues. This process will include dissemination of information related to the following topics:
 - New Mexico water law;
 - active water resource management
 - Measuring;
 - Metering; and
 - Markets;
 - forfeiture and abandonment;
 - conservation;
 - interstate compacts;
 - endangered and threatened species;
 - land management;
 - conjunctive management;
 - additional sources; and
 - water rights adjudications/
- The OSE/ISC will utilize the Governor's Blue Ribbon Task Force on Water to provide advice on the State Water Plan, including statewide policies, priorities, goals and objectives for the plan, issues of statewide concern and strategies for implementation of the plan.

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- The OSE/ISC will continue to utilize the Regional Water Plan Ad-hoc Committee to advise the OSE/ISC on review of regional water plans, their integration into the State Water Plan, and on further development and implementation of the State Water Plan.

Discussion

A central element in developing the State Water Plan is to ensure that public input and participation are appropriately included in the development of State level water policy. To that end, the Interstate Steam Commission embarked on an ambitious public involvement process.

The public involvement process began with an intense schedule of 29 “listening meetings” geographically dispersed throughout the state. The meetings began July 9, 2003 and ended September 11, 2003. The purpose of the facilitated meetings was to gather input from all regions of the state with regard to the public’s values about the management of the States water resources. To do so, the meetings were structured around a series of questions developed by agency staff and presented by a facilitator with participant discussion following each topic.

Among the 29 meeting locations, 1,500 citizens representing over 230 communities participated. Four of the meeting locations were on Tribal and Pueblo lands, and all meetings were open to the public. New Mexico media covered the meetings, including providing advance notice to New Mexico communities regarding location, times and purpose of the meetings.

In addition to the listening meetings, comments were also taken by fax, email, hand delivery and phone.

A key component to making the public comments available to the policy writers of the plan was the public comment synthesis document (see Appendix G). The synthesis document effectively captures the essence of the public comments that were voiced throughout the listening meeting process and the comment period. This synthesis was referred to frequently during the policy development process.

Another landmark event in State water policy development was the consensus building Town Hall held in Albuquerque from September 23 through 25, 2003. The Interstate Stream Commission contracted with New Mexico First, a non-profit organization, to convene the Town Hall, which brought together more than 140 people, both decision-makers in their official capacity and proactive citizens randomly selected through a lottery process. Building on the comments of the 1,500 New Mexicans who participated in the listening meetings, Town Hall attendees developed recommendations for the Office of the State Engineer, Interstate Stream Commission and the Water Trust Board regarding the management of water in New Mexico. The guidelines proposed by the Town Hall include respect for the diverse lifestyles and values of New Mexico—spiritual, cultural, environmental and economic. The Town Hall further stated that good stewardship requires

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partnerships among individuals, institutions, governments and sovereign Nations across New Mexico.

Public Opinion

Stewardship was probably the most passionately articulated topic. Inevitably, discussions about protecting our water resources led to conservation. Significant concern was expressed for taking into consideration the water needs of future generations. Citizens voiced the need for State water policy to look at the broad picture—caring for the natural system, plants and animals. At the same time, virtually all comments related to the federal Endangered Species Act placed human needs at a higher level of importance than the species' needs.

Widespread support for preserving agricultural values was consistently voiced. There was strong agreement that urban and rural, rich and poor, developers and agriculturalists should share the responsibility for conserving and sacrificing equally. There is a perception in rural areas that municipalities are overusing and consuming water without restraint, thereby depriving rural areas and agriculture of what is rightfully theirs. Many eloquently expressed preserving water for traditional and historic users—Native Americans, acequias, and multi-generation farmers. Urban participants mostly expressed desires to preserve the Bosque, to protect our river ecosystems, and to use water for in-stream flow. Comments on values and ethics reflected feelings of fear and separation, as well as powerfully conveying the need to work together. From the statement that this country was built on individualism and the individual should prevail, to the statement that water is a spiritual and community value to be seen holistically, diversity in values was expressed.

The public involvement process of the State Water Plan drew more rural residents than urban ones. The rural majority of the process was explained by one participant to be due to fear of the loss of their water rights and their way of life due to population growth and current economic conditions. In general, rural residents felt that their rural lifestyles were more readily impacted by water shortages.

A significant number of participants expressed the need for better data. Citizens believe that quantification through the adjudication process needs to be a priority of the State. Participants also encouraged the Office of the State Engineer to increase its resources in determining water availability (supply). Citizens voiced desires for the State to partner with other State agencies and research institutions to further water quality assurances and the research and development of new sources of water.