

DRAFT

2003 New Mexico State Water Plan

Presented to the October 22, 2003, Joint Meeting
New Mexico Interstate Stream Commission and Water Trust Board

Draft Document for Review – Do Not Cite or Quote

To be presented for adoption by the New Mexico Interstate Stream Commission
Early December, 2003

Jim Dunlap, Chairman, Kirtland
J. Phelps White, III, Vice-Chairman, Roswell
John R. D'Antonio, Jr., Secretary, Santa Fe
Judith M. Espinosa, Albuquerque
Patricio Garcia, Espanola
Julia Davis Stafford, Cimarron
Buford Harris, Mesilla
Blane Sanchez, Isleta
James Wilcox, Carlsbad



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Preface

Welcome to the *2003 New Mexico State Water Plan*. The Office of the State Engineer, the Interstate Stream Commission, and the Water Trust Board, are all charged with developing a State Water Plan, to be adopted by the Interstate Stream Commission, and presented to the Interim Water and Natural Resources legislative committee. The State Engineer serves as Secretary to the Interstate Stream Commission and Chairman of the Water Trust Board, so I know firsthand how challenging it feels to move to a statewide water policy direction. New Mexico, like many western states, is entering the fifth consecutive year of below-average annual precipitation. Given the fact that average annual precipitation in the most populated portions of the State is less than 10 inches per year, hydrologic reality demands that we implement a plan to discontinue water policy decision-making dominated by crisis management.

When Governor Bill Richardson signed the State Water Plan Act into law on April 4, 2003, we knew that we would have a mere six months to put together a State Water Plan in accordance with the provisions of that Act, and have it completed by the end of 2003. Although the direction in the Act to place an emphasis on public input and public participation could have been seen as incompatible with such a short timeframe, we proactively used the public involvement process to listen to citizen and stakeholder concerns about the complex issues that cry out for statewide water policy now, rather than waiting until “we have enough time”. For this reason, this first plan is primarily a policy document, which means that it lists objectives and policies that are needed to provide the order, transparency and accountability to take us from the reactive path of crisis management, toward a balanced future with predictable management protocols.

In the drought of the 1950’s, New Mexico showed tremendous leadership among western states in water planning policy-making. We implemented conjunctive management of groundwater and surface-water withdrawals, and declared groundwater basins to manage the impacts of increased pumping on rivers governed by interstate compacts. During the 1980’s and 1990’s we experienced a predominantly wet period with some of the highest precipitation years in recorded history, along with explosive population growth – a feature common to other western states during that time period. In 2003 our State has a vibrant and varied economy built upon both traditional and nontraditional water uses. However, the current drought conditions, which are expected to persist for several more years, have dramatically illustrated the potential for conflict between water users faced with a shrunken supply and an expanded demand. Since a sizeable fraction of our population wasn’t born when our state last addressed the challenges imposed in consecutive below-average precipitation years, the next five years may be a shock to many, whether they were born here, or born elsewhere. That is why meeting the deadline imposed for completion of this plan was so important.

I believe that the objectives and policies proposed in this 2003 New Mexico State Water Plan, if funded and implemented in the next five years, will bring us much closer to finishing the long-term goal of allowing our citizens to make informed choices about a sustainable water supply. When we listened to comments voiced from around the State, and we read the consensus document produced by the Town Hall participants, we heard one common theme to get us to a balanced and sustainable future – stewardship. The State Water Plan defines stewardship as the State managing its water resources in an efficient and effective manner to meet common priorities and objectives while maintaining proper regard to the rights of others. In reality, such stewardship of our water resources must be practiced by everyone and by every entity – individuals; local, state, federal and tribal governments; agriculture, mining, manufacturing and service industries; land and water managers, and water supply providers. The Office of the State Engineer and the Interstate Stream Commission have committed to embracing the State Water Plan objectives and policies in our Strategic Plan, in acceptance of our stewardship responsibility. The Water Trust Board likewise welcomes the State Water Plan objectives and policies for guiding them in their important stewardship role of funding water projects.

I invite you to visit our website at www.ose.state.nm.us to keep informed. We archive documents for ready reference by staff and the public, we provide updates of progress in implementation, and we provide continued opportunity to receive your feedback at nmwaterplan@ose.state.nm.us. There is still much to do to keep us going in the right direction, and I encourage you to stay involved with and committed to defining New Mexico's future.

John R. D'Antonio, Jr. P.E.
State Engineer

Santa Fe, New Mexico
December 15, 2003

Acknowledgments

Many people contributed resources, time, logistical support, and general goodwill at 29 public meetings, in villages, towns, cities, pueblos and a Navajo Chapter House, for the staff of the Interstate Stream Commission (ISC) to listen to suggestions from over 1,500 citizens about statewide water policy-making. Their support is gratefully acknowledged. We thank the ISC planning staff and contractors for their efforts in organizing, leading and facilitating the public meetings as well listening and documenting citizen concerns at the meetings. We also thank the New Mexico State Land Office, a separate executive branch agency in the New Mexico state government with a significant resource planning mandate, for contributing resources to aid the ISC in conducting the public meetings.

Over 140 people, both decision-makers in their official capacity and proactive citizens randomly selected through a “lottery”, participated in a consensus-building Town Hall, to assist the State in understanding citizen and stakeholder policy concerns for the State Water Plan. We thank the participants and New Mexico First, who organized and facilitated the event, for helping to inform the State about common goals and policies for New Mexico’s water. In particular, we thank the representatives from many of the tribes, nations and pueblos and acequias of New Mexico. Their involvement provided an opportunity for everyone, to have their “eyes opened” to New Mexico’s diversity. We also appreciated the private foundations that generously provided grants to non-agency participants to defray their expenses.

Finally, we thank the members of the Water Trust Board, the Governors Blue Ribbon Water Task Force, the Planning Committee and the 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..

Organization of the 2003 New Mexico State Water Plan Document

The State Water Plan Act requires updating at a minimum, every five years. This first edition is a policy document that focuses on the objectives and policies needed to guide the state's future planning and water management. The document is organized as follows:

1. Executive Summary.
2. Introduction – this section explains the current setting and the climate, precipitation and population trends.
3. State Water Plan: Vision and Stewardship.
4. State Water Plan: Policies – this section is the policy component of the document.
5. Appendices – this section contains additional detailed information to support the requirements of the Act, or to explain the objectives and policies. Information is contained in both links to web postings as well as documents that are attached to this edition; thus allowing continual updating as new information becomes available for web postings.

Users of this document can find useful background information via website links, including the following:

- *Framework for Public Involvement for a State Water Plan* document at: <http://www.seo.state.nm.us/water-info/NMWaterPlanning/framework.html>
- Fact Sheets on key water terms at: <http://www.seo.state.nm.us/water-info/NMWaterPlanning/fact-sheet-2003-07-28.html>
- Frequently Asked Questions about water rights at: <http://www.seo.state.nm.us/faq/index.html>
- Frequently Asked Questions about water conservation at: <http://www.seo.state.nm.us/water-info/conservation/h2o-faq.html>
- Glossary of key water terms at: <http://www.seo.state.nm.us/doing-business/water-glossary.html>
- Completed Regional Water Plans accepted by the Interstate Stream Commission at: <http://www.seo.state.nm.us/water-info/NMWaterPlanning/RegionalPlans.html>
- Summaries of comments from the 29 statewide listening sessions in 2003 at: <http://www.seo.state.nm.us/water-info/NMWaterPlanning/public-comments.html>
- Interstate Stream Commission/New Mexico First Town Hall Consensus Document, 2003 at: <http://www.seo.state.nm.us/water-info/NMWaterPlanning/FirstTownHall.pdf>
- New Mexico's Drought Plan, 2002 at: <http://www.seo.state.nm.us/doing-business/DroughtTaskForce/2002-05-31-drought-plan.pdf>

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- *New Mexico Water Resource Atlas*, 2002 at:
<http://www.seo.state.nm.us/water-info/NMWaterPlanning/nmwateratlas.pdf>
- *Ground Water Quality Atlas for New Mexico*, 2003 at:
http://www.nmenv.state.nm.us/gwb/GWQ%20Atlas/GWQ_Atlas.html
- *Ground Water Atlas of the United States* – Arizona, Colorado, New Mexico, Utah, 1995 (published by the U.S. Geological Survey) at:
http://capp.water.usgs.gov/gwa/ch_c/index.html
- New Mexico Drought Summit 2003 presentations at:
<http://www.seo.state.nm.us/doing-business/DroughtTaskForce/2003Summit.html>

Persons without Internet access should call (505) 827-6160 or (505) 764-3880 for assistance in obtaining copies of information, or they may go to any location of either the Office of the State Engineer or the Interstate Stream Commission:

Locations of both offices of the State Engineer and the Interstate Stream Commission:

Springer Square Building
121 Tijeras, N.E., Suite 2000
Albuquerque, NM 87102
(505) 764-3888; 764-3880

Bataan Memorial Building
407 Galisteo Street
(P. O. Box 25102)
Santa Fe, NM 87504-5102
(505) 827-6140; 827-6160

Locations of offices of the State Engineer:

1900 West Second Street
Roswell, NM 88201
(505) 622-6521; 622-6467

1680 Hickory Loop – Suite J
Las Cruces, NM 88004-0729
(505) 524-6161

216 South Silver
(P. O. Box 844)
Deming, NM 88031
(505) 546-2851

100 South Oliver Drive
Aztec, NM 87410-2432
(505) 334-9481, ext. 261

State Engineer field office days are held in various locations statewide as needed – call for details and schedule.

EXECUTIVE SUMMARY

This State Water Plan presents a vision for New Mexico's water management future, identifies and outlines broad policy issues of statewide importance involved in managing the State's water resources, and presents State of New Mexico objectives for addressing those issues. The document does not attempt to identify and resolve region-specific issues because those types of issues are usually better resolved on a local level. Still, the sheer number and variety of common priorities discussed within the State Water Plan demonstrates the complexity of New Mexico's water situation. What at first glance may appear to be a single issue is often a web of interrelated matters, which are in turn part of or affected by other issues. Without an understanding of the complexity of the New Mexico situation, developing strong and clear policy statements and objectives for even common priorities can be difficult. Consequently, staff of the Interstate Stream Commission and the Office of the State Engineer listened to the concerns of over 1,600 citizens at 29 public meetings held across the state from July to September 2003 and those of 140 stakeholders at a consensus building Town Hall held in Albuquerque in September 2003. In particular, the Town Hall process proved useful in identifying common priorities.

Although not described in great detail in this Executive Summary, the State Water Plan and its appendices also describe the three basic components of active water resource management – measurement, management, and markets – in some detail; outline the principal threats and challenges currently confronting the State of New Mexico; provide basin descriptions, water quantity and quality inventories; and provide projections of population as well as associated future water demands.

Vision Statement

New Mexico, as a semi-arid state, recognizes the need to utilize its limited water resources efficiently and wisely and to preserve and protect the quality and quantity of its water into the future, acknowledging the essential role of water in shaping the state as it is and will be. The State Water Plan presents a path to optimize water use within the State through active water resource management with balance and sustainability as its underlying tenets. Active water resource management incorporates measurement and management of the available water supplies and the development of water markets to apportion the resource to the highest priority uses. The Plan also strives to foster a statewide culture of stewardship in which all individuals and institutions take responsibility for protecting and preserving water resources. The management efforts shall recognize and respect traditional uses including but not limited to pueblos, tribes, acequias, irrigation districts, and conservancy districts and other existing uses such as industrial, municipal, and fish and wildlife habitat maintenance. The Plan must also recognize and allow for shifts in demand due to evolving economic and social realities, while continuing to affirm that water is our most important resource and that it must be protected for the generations to come.

Overview of Active Water Resource Management

New Mexico's semi-arid climate yields an average of less than 15 inches of precipitation annually. While the water supply in some areas of the State is renewable, many communities rely solely on non-sustainable pumping from groundwater aquifers. Whether renewable or not, there is a finite supply of available water. In many areas of the State, demands on water supplies equal or exceed its availability, particularly in dry years. Even as demand for water increases within the State, New Mexico must continue to comply with the terms of each of its interstate river compacts.

Obviously, New Mexico must manage and use its water resources evermore efficiently. Clearly, for New Mexico to improve the efficiency of water use, the State must commit to a well-defined water resources management policy and invest the necessary monetary resources. But it will take more than just monetary resources to address the diverse and complex threats and challenges currently confronting New Mexico and its water. .

Active Water Resource Management is the State's response to the challenges and threats that confront New Mexico and its water. This management framework has three components: Measurement, Management, and Markets.

Measurement: Measuring how much water we have and how it is being used is the cornerstone of ensuring proper water distribution. The state must measure its water supply, water use, and water quality to better understand where the water comes from, goes to, and is being used as well as to understand and control sources of water quality impacts.

Management: Because water demand now exceeds supply in most years, New Mexico must efficiently and effectively manage and regulate its rivers and groundwater to meet existing water rights, environmental demands, interstate stream compact obligations, and to protect water quality. New Mexico will do so using measurement data, the outcomes of adjudications and settlements, and by developing plans for managing priority rights in un-adjudicated areas, in an effort to ensure fairness and predictability to support both individual water rights and a stable economy.

Markets: Because the surface water supply of many of New Mexico's rivers is fully appropriated, any new demand on the water supply requires that an existing water use be curtailed. Water markets, including well-defined methods of water banking and/or leasing, will provide a mechanism to address these changing water demands while allowing New Mexico to meet its compact delivery obligations without impairing other water right holders.

The success of the active water resource management framework is dependent on adequate and timely funding to control, protect, preserve, and develop New Mexico's

waters. Without full support of the three components of active water resource management, full implementation of the State Water Plan will not be successful. With adequate resources, OSE/ISC and the NMED can and will successfully protect, preserve, develop, and manage New Mexico waters.

The potential of active water resource management can be demonstrated by the recent improvements in professional staff, internal processes, modern information technology and specialized contract support at the ISC and OSE. Because measurement is key to understanding our available water resources, the ISC has worked with a number of conservancy and irrigation districts in recent years to improve or expand their water metering capability. The efforts, while not complete, have aided those entities in managing their water supplies in the continuing drought. Because water rights adjudications are the cornerstone to effective management, the existing adjudication system is being examined to find improvements that will allow the entire State to be adjudicated in a reasonable time frame. In addition, existing water right records are being imaged into a database as a water management tool and will be accessible via the internet. Because water markets will provide the mechanism for moving water to where it is most needed, the state's water rights transfer system is being evaluated to see how it can become more efficient.

Development of Common Priorities and Objectives

Two decades of greater-than-average rainfall in many areas of the state and a desire to postpone tough choices enabled the *laissez-faire* water development approach of the past to persist. As the current drought has shown us, we cannot continue down this path; instead, we must take control of our future. Essentially, the Office of the State Engineer is on the brink of a transition from administration of almost exclusively paper permits and documentation to priority administration of wet water use under valid water rights. The following section outlines the fundamental common priorities needed for the state to actively manage its water resources for the benefit of the people of New Mexico and how they were identified during the planning process.

Each reader no doubt will have a different perspective on which policy issues are most urgent and most significant. The list of broad issues and objectives listed within this executive summary is not intended to be exhaustive; rather its purpose is to stimulate productive debate concerning the most broad policy issues facing the state, while avoiding simplistic and ineffective answers that delay coming to terms with effective and often complex solutions. The body of the State Water Plan itself attempts to develop a more exhaustive list.

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; the Energy, Minerals, and Natural Resources Department (NMEMNRD); the Department of Game and Fish (NMDGF); and the Water

Trust Board (WTB) have statutory authority and responsibility over specific water matters that require policies to guide both future the State and Regional planning and management efforts.

These matters include but are not limited to:

1. conducting and completing water rights adjudications
2. regulating potential polluting discharges to the state's surface and groundwater
3. maintaining compliance with interstate stream compact delivery requirements
4. addressing federal mandates such as the Clean Water Act, Endangered Species Act, and Resource Conservation and Recovery Act, etc.
5. development and maintaining comprehensive database(s) and information system(s)
6. quantifying and regulating water resources and water quality
7. coordination with federal agencies
8. coordination and consultation with Indian nation, tribal, and Pueblo governments
9. Evaluating and regulating the use of New Mexico's saline and brackish water
10. Evaluating and regulating the use of produced water from oil and gas operations

From the above items, multiple common priorities and objectives were discussed and/or identified as primary elements of the **State's stewardship** responsibility. These include:

1. maintaining interstate stream compact compliance;
2. protecting senior water rights, specifically including Indian Pueblo, Tribal, and Acequia water rights, which are often among the most senior rights on many New Mexico stream systems;
3. preserving state administrative authority over its waters; and
4. providing for river restoration and for fish and wildlife habitat maintenance, reflecting the strong environmental policies of existing New Mexico law.

The State Water Plan defines responsible stewardship as the management of water resources in an efficient and effective manner to meet varying demands while maintaining proper regard for the rights of others. The State of New Mexico will work to accomplish its stewardship responsibilities by:

- Providing accurate, contemporary water information to enable state and local decision makers to manage water resources efficiently.
- Creating and maintaining inventories of water quantity and flow rates, water use, and water quality data for use by all state agencies and decision makers.
- Assisting the Legislature and the Governor in developing effective state water policies to protect New Mexico's water and promote responsible development.
- Identifying and providing priority recommendations to the Legislature and Governor for water-related infrastructure and management and investment needs and opportunities to leverage federal and other funding.
- Providing New Mexico citizens access to the water information they need to deal with water issues at the grassroots level.

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- Projecting future water demands so the state can prepare for the effects of growth and existing or new federal mandates.
- Coordinating a concerted state agency effort to actively plan for and address drought impacts.
- Conducting adjudications and developing and implementing settlements agreements where possible.
- Developing basin specific plans for priority administration in unadjudicated basins with currently available data and being prepared to implement those plans while at the same time encouraging cooperative solutions for all stakeholders.
- Enforcing water use priorities and/or cooperative agreements
- Managing aquifer depletions in stream-connected aquifers to limit impairment to downstream water users, compact compliance, and river riparian areas.
- Providing information and coordination to with the federal government’s water agencies and cooperating on specific projects to respond to the mandates of federal legislation and regulation.
- Conducting a coordinated and concerted effort to increase water use efficiencies and promote conservation in all water use sectors.
- Regulating pollutant discharges to the waters of the state to maintain and/or improve water quality.
- Coordinating and leading efforts to plan for and address river and watershed restoration and endangered species issues.
- Conducting and/or supporting projects designed to maintain New Mexico’s interstate stream compact deliveries.
- Aggressively addressing interstate compact issues in order to protect New Mexico’s water resources from downstream competitors and ensure that upstream deliveries of water continue.

Introduction

Demand for New Mexico's scarce and most vital natural resource – **WATER** – is ever increasing, both by its growing population and economy and by other states seeking to increase their supplies. Recent population projections indicate that by 2050 New Mexico's current population of 1.8 million will swell to 3.3 million people—a startling increase of 85%. If accurate, New Mexico's growth will be second only to that of California among western states.

New Mexico's semi-arid climate yields an average of less than 15" of precipitation annually. While the water supply in some areas of the State is renewable, many communities rely solely on non-sustainable groundwater acquirers. Whether renewable or not, there is a finite supply of available water. Over the last half century, overall water use has continually increased especially during the plentiful water decades of the 1980's and 1990's. In many areas of the State, the demands on the water supply will reach or exceed its availability.

Acknowledging New Mexico's average annual precipitation and current water supply situation gives rise to tough decisions. Wet years may provide sufficient water to meet most of New Mexico's current needs, but dry years (and worse yet, consecutive dry years) will leave many needs high and dry.

The complexities involved in the administration of the State's water supply to meet existing and future uses present the New Mexico Office of the State Engineer and the Interstate Stream Commission (OSE/ISC) with considerable challenges. As a general proposition, New Mexico has a reasonably identifiable finite water supply. The major portion of the State's water is allocated to agriculture. These long-established agricultural uses are now confronted with competition from urban centers seeking to meet existing demand and to secure additional water rights to meet added demand from the growth of their populations. These competing demands have precipitated a discussion over how to maintain an existing agrarian culture while meeting the water needs of the State's growing population. It is inevitable that this discussion will intensify in the coming years as the increased demand for water increases the economic value of water. This discussion is occurring throughout the western states.

As if meeting the foregoing existing and anticipated water demands is not enough of a challenge, New Mexico must manage the waters of its interstate rivers so it complies with the eight different interstate river compacts to which it is a party.

While other western states are confronted with similar issues, no state has been confronted with so many issues on so many fronts at the same time. Such pressures make mandatory a State Water Plan - a living document which can function as a roadmap and an aid to decisionmaking.

Only comprehensive water planning allows responsive, efficient, and proactive management of New Mexico’s water resources. Without adequate planning, there is no surety that New Mexico’s water resources can be developed, preserved, or protected. New Mexico is engaged in two very important levels of water planning: regional and statewide. The regional water plans identify supply and demand and allows communities and citizenry to identify and choose priorities for water use and development. The State Water Plan links the regional needs in the context of the State as a whole, and ensures that State’s needs and obligations are addressed.

The initial version of that Plan is presented here.

This State Water Plan is an initial policy-identification step: it contains long-term strategies based upon meeting identified Common Priorities and Objectives; it contains short-term strategies based on the need to address immediate threats to the State's administrative control over its waters, as recognized in the Common Priorities and Objectives. The next step in the process is obtaining feedback from governments, agencies, and stakeholders on the proposed policies presented herein. Agreement on those policies will be necessary to initiate implementation of approved actions. The OSE and ISC found the Town Hall process most useful in identifying Common Priorities and Objectives and in providing feedback on proposed policies.

The State Water Plan is presented here as the State Water Plan Act is organized, with specific policy discussion and proposed policies appearing after each quoted subsection of the Act which set required standards for the Plan.

Finally, we note that an updated and revised set of Basin Descriptions and Issues, originally published in the Framework for Public Input to a State Water Plan, will be provided as an Appendix.

State Water Plan: Vision

New Mexico, as a semi-arid state, recognizes the need to utilize its limited water resources efficiently and wisely and to preserve and protect the quality and quantity of its water into the future, acknowledging the essential role of water in shaping the state as it is and will be. The State Water Plan presents a path to optimize water use within the State through active water resource management with balance and sustainability as its underlying tenets. Active water resource management incorporates measurement and management of the available water supplies and the development of water markets to apportion the resource to the highest priority uses. The Plan also strives to foster a statewide culture of stewardship in which all individuals and institutions take responsibility for protecting and preserving water resources. The Plan recognizes and respects traditional uses - including those of Pueblos, Tribes, acequias, irrigation districts, and conservancy districts - and other existing uses such as industrial, municipal, and fish and wildlife habitat maintenance. The Plan also recognizes and allows for shifts in demand due to evolving economic and social realities, while continuing to affirm that water is our most important resource and that it must be protected for the generations to come.

State Water Plan: Stewardship

The organizing principle of the State Water plan is a statewide culture of stewardship in which all individuals and institutions take responsibility for protecting and preserving water resources.

Responsible stewardship means the management of water resources in an efficient and effective manner to meet the varying demands with proper regard to the rights of others. The State of New Mexico will work to accomplish its stewardship responsibilities by:

- Providing accurate, contemporary water information to enable state and local decision makers to manage water resources efficiently.
- Creating and maintaining inventories of water quantity and flow rates, water use, and water quality data for use by all state agencies and decision makers.
- Assisting the Legislature and the Governor in developing effective state water policies to protect New Mexico's water and promote responsible development.
- Identifying and providing priority recommendations to the Legislature and Governor for water-related infrastructure and management and investment needs and opportunities to leverage federal and other funding.
- Providing New Mexico citizens access to the water information they need to deal with water issues at the grassroots level.
- Projecting future water demands so the state can prepare for the effects of growth and existing or new federal mandates.

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- Coordinating a concerted state agency effort to actively plan for and address drought impacts.
- Conducting adjudications and developing and implementing settlements agreements where possible.
- Developing basin specific plans for priority administration in unadjudicated basins with currently available data and being prepared to implement those plans while at the same time encouraging cooperative solutions for all stakeholders.
- Enforcing water use priorities and/or cooperative agreements
- Managing aquifer depletions in stream-connected aquifers to limit impairment to downstream water users, compact compliance, and river riparian areas.
- Providing information and coordination to with the federal government’s water agencies and cooperating on specific projects to respond to the mandates of federal legislation and regulation.
- Conducting a coordinated and concerted effort to increase water use efficiencies and promote conservation in all water use sectors.
- Regulating pollutant discharges to the waters of the state to maintain and/or improve water quality.
- Coordinating and leading efforts to plan for and address river and watershed restoration and endangered species issues.
- Conducting and/or supporting projects designed to maintain New Mexico’s interstate stream compact deliveries.
- Aggressively addressing interstate compact issues in order to protect New Mexico’s water resources from downstream competitors and ensure that upstream deliveries of water continue.

State Water Plan: Policies

The 2003 New Mexico State Water Plan is organized in parallel with the 2003 State Water Plan Act's substantive requirements set forth in Section C. of the Act. First, the State Water Plan must:

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.

Regional Public Welfare and Water Planning. We note the important fact that "public welfare" has both regional and state contexts. The OSE and ISC believe the **Regional** public welfare is best defined by reference to the individual regional water plans.

State Public Welfare Elements

Two decades of greater-than-average rainfall in many areas of the state and a desire to postpone tough choices enabled the laissez-faire water development approach of the past to persist. As the current drought has shown us, we cannot continue down this path; instead, we must take control of our future. Essentially, the Office of the State Engineer is on the brink of a transition from administration almost exclusively of paper permits and documentation to priority administration of wet water use under valid water rights. The following section outlines the fundamental common priorities needed for the state to actively manage its water resources for the benefit of the people of New Mexico and how they were identified during the planning process.

The OSE and ISC, with the aid of New Mexicans from all walks of life, have identified the following common priorities, goals, and objectives (**Common Priorities and Objectives**) that are elements of **State** public welfare:

- I. Interstate Compact Compliance;**
- II. Protection of Senior Water Rights, specifically including Indian Pueblo and Tribal water rights, which are often the most senior rights on many New Mexico stream systems;**
- III. Preservation of the State's Administrative Authority over its waters; and**
- IV. River Restoration and Fish and Wildlife Habitat Maintenance, reflecting the strong environmental policies of existing New Mexico law.**

Conservation of Water was also widely considered to be an element of statewide public welfare, but it is specifically considered separately under Section C.5 below.

Common Priority and Objective I - Interstate Compact Compliance.

New Mexico is bound to the water delivery and reporting requirements of eight interstate stream compacts. The respective legislature of each signatory State, as well as the Congress of the United States approved these compacts. Many of these compacts are the subjects of United States Supreme Court decrees. Non-compliance with downstream delivery obligations can have severe legal and economic consequences.

Policies:

1. The State shall vigorously pursue and enforce compliance with all interstate compacts.

2. The following particular projects are urgently needed to secure or maintain compact compliance on two of New Mexico's most important stream systems:

Rio Grande: Improved conveyance efficiency (pilot channel project; low-flow conveyance channel project); Ability to limit Middle Rio Grande diversions if necessary; Above-Otowi depletion survey.

Pecos: Augmentation wellfield to provide CID supply and stateline flows; Implementation of Settlement Agreement.

Common Priority and Objective II - Protection of Senior Water Rights.

New Mexico is a prior appropriation state. The prior appropriation doctrine of water rights administration is unique to the western United States. Some states, like New Mexico, adopted the doctrine upon statehood through their state constitutions. 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. In addition, the numerous Pueblos and Tribes of New Mexico have water rights generally derived from federal law, rather than state law, and possess the senior water rights on many streams. For the State to administer water rights for the protection of all water rights owners, effective and efficient water management is required. New Mexico must pursue and implement an aggressive series of complex actions to increase its capacity to actively manage water for the benefit of all New Mexicans.

In sum, the **Common Priority and Objective of Protecting Senior Water Rights** cannot be accomplished without active water resource administration:

1. The State Engineer must have the resources to administer water rights - it is a fundamental statutory function.
2. Water rights administration may be necessary either to protect senior rights or to ensure compliance with interstate compacts.
3. Administration of water rights is not possible without adequate metering and measurement to support controls.

There is no alternative to administration: the State Engineer must have the staff and technical tools to administer water in every basin where the need exists; part of the plan for active water management must also address the need to obtain the necessary metering and measuring, as recognized by Section 1.D(3) of the State Water Plan Act.

Policies:

- 1. The State should devote resources to Office of the State Engineer sufficient to ensure that, within the required time, he has the basin infrastructure, technical data and staff to credibly defend in court water rights administration in those basins where the consequences of failure to administer are the most severe.**
- 2. The State should strongly encourage cooperative agreements among users for coping with drought, but must be prepared for priority administration of water rights where such agreements are not reached or if they do not achieve the required result.**
- 3. The State should consider changes in the present domestic well statutory characteristics and in the State Engineer permitting and administration of these wells, specifically giving the state engineer authority to deny new domestic well permits in critical management areas or in cases of impairment of senior rights, discussed further under Section C.7 below.**
- 4. No new water should be appropriated in a declared fully appropriated basin except when new unappropriated water of that basin becomes available and then only in accordance with existing state law.**

Common Priority and Objective III. Preservation of the State's Administrative Authority over its waters.

The State Water Plan Act calls for the State Water Plan to establish a clear vision and policy for active management of the state's waters. In the long-term, that policy will help 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 control of its waters from:

1. other states;
- 2 the courts; and
3. the federal government.

Without the ability to control its water, New Mexico will have lost control over its water destiny. This need is implicitly recognized in items 1.B(1) and B(4) of the Act, and **Common Priority and Objective III** above.

At the beginning of the 20th century, the State adopted the prior appropriation system of water right administration through its Constitution. 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 OSE/ ISC with the management, distribution, protection, conservation, and development of the State's waters. Today, these responsibilities have dimensions that simply could not have been anticipated a hundred years ago. Through this administrative system the State must manage its waters to meet existing appropriations, to meet its interstate river compact obligations, and to protect the State's waters. Today, however, 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 control 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.

The threat to New Mexico's control of its water from other states will arise if New Mexico fails to meet its interstate compact obligations. Therefore, New Mexico must manage its water to meet those obligations, as 1.B(6) of the Act requires, and as **Common Priority and Objective I** above recognizes.

The threat to New Mexico's control of its water from state and federal courts will arise if New Mexico does not manage its water to protect senior rights in times of shortage. Therefore, it must manage to protect those rights, as 1.B(2) of the Act contemplates and as **Common Priority and Objective II** above recognizes.

The threat to New Mexico's control of its water from the federal government will arise if the State attempts to obstruct the United States from meeting its obligations under the Endangered Species Act. Therefore, the State must manage its water in ways that allow the US to meet these obligations within the confines of State law. In addition, the State has its own strong environmental commitment, as **Common Priority and Objective IV** above recognizes.

Already these minimum requirements for water management imply substantial commitments to improvements in our measuring capabilities, to accelerating the pace of adjudications, and to the pursuit of cooperative solutions to ESA conflicts. If we are to actually achieve the goals set out in Section 1.B of the State Water Plan Act, an even greater commitment will be required.

Policies:

[See Policies for Protection of Senior Water Rights, above; and Policies for Active Water Resource Management, under Section C.2 below]

Common Priority and Objective IV. River Restoration and Fish and Wildlife Habitat Maintenance, reflecting the strong environmental policies of existing New Mexico law.

As the Town Hall process made clear, New Mexicans strongly support an environmental mandate for river restoration, including restoration and preservation of fish and wildlife habitat and protecting and recovering both federal and state threatened and endangered species, cooperatively with the United States.

Two fundamental premises implicit in this formulation of **Common Priority and Objective IV** are:

1. River restoration and maintenance and protection of fish and wildlife habitat is an important goal of the State.
2. Federal demands for water for listed species should not 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 insure that the activities of its many federal water projects in New Mexico do not jeopardize listed species. That this approach is both possible and practical is illustrated by the fact that the Interstate Stream Commission, its Directors, and its staff have been highly successful in finding innovative ways to provide upstream Rio Grande conservation pool storage and releases to preserve the endangered Rio Grande silvery minnow. In 2001, ISC obtained the first-ever State Engineer permit for maintenance of the silvery minnow's habitat, and provided 70,000 AF for the minnow. In 2003, the ISC arranged a credit relinquishment agreement with Texas which provides another 70,000 AF over three years for the minnow.

ISC has also been a leader in promoting cooperative and technical programs which will facilitate the long-term recovery of the minnow, not merely its preservation. Even before the silvery minnow lawsuit was filed, ISC convened and supported the ESA Collaborative Program, a long-term funding and recovery program. ISC also conceived, implemented, and helped pay for the highly-successful Silvery Minnow Natural Refugium.

In sum, ISC has been at the forefront of all aspects of efforts to preserve and recover the silvery minnow, both in refugia and in the wild, it began these efforts before the litigation

even arose, and it has continued them even during that difficult and protracted litigation. Finally, that these results have been accomplished within the Law of the River and while ensuring that all water obtained has been from willing sellers, lends credence to the belief that there is more opportunity, not less, for cooperative solutions to these extremely complex water use conflicts, and more basis for belief in their efficacy, than ever before.

Policies:

- 1. OSE and ISC should actively pursue cooperative water agreements with the federal government in the future whenever they can be fashioned in such a way that water to satisfy federal demands for listed species should is acquired:**
 - a. on a willing buyer/willing seller basis, not seized;**
 - b. in full accord with State law (specifically including all State Engineer permitting and transfer requirements); and**
 - c. in a manner that does not prejudice the State's ability to meet its interstate compact obligations.**

- 2. The following projects are urgently needed to mitigate conflicts between federal demands and state uses:**

Rio Grande: Provide state law-based water for feds to avoid seizure of MRGCD and Pueblo water; Ability to administer rights on Rio Chama to allow ESA water to flow to the Middle Rio Grande.

Pecos: Provide state law-based water for feds to avoid seizure of CID and FSID water; Ability to administer rights to prevent unauthorized diversion of ESA water.

San Juan: Ability to administer rights to prevent unauthorized diversion of reservoir releases intended for ESA purposes.

Achieving these common priorities and objectives in the state's various water basins can only be done with an **active water resource management** plan, as recognized by Section C.2 of the Act, requiring that the State Water Plan:

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

The vision and policy for active management of the state's waters which is being implemented by OSE and ISC to support the State Water Plan is known as "Active Water Resource Management," a strategy 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 agency.

At the beginning of the 20th century, the State adopted the prior appropriation system of water right administration through its Constitution. 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 OSE/ ISC with the management, distribution, protection, conservation, and development of the State's waters. Today, these responsibilities have dimensions that simply could not have been anticipated a hundred years ago. Through this administrative system the State must manage its waters to meet existing appropriations, to meet its interstate river compact obligations, and to protect the State's waters. Today, however, 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 control 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.

If New Mexico is to successfully maintain its administrative control over its waters, the State must commit to a well-defined water resources management policy and invest the necessary monetary resources. But more is required. The threats and challenges currently confronting New Mexico and its water are diverse and complex. It is critical that the three components of active water resource management - measurement, management, and markets - be fully supported if the State Water Plan is to be successfully implemented.

Measurement

New Mexico must accurately measure its water supply and water use. Measurement requires meters to physically measure the amount of surface water flowing in New Mexico's rivers, monitoring wells and meters to better estimate the volume of groundwater available from the State's aquifers, and snow pack gauging for estimating spring run-off. Measurement also requires metering all diversions, both ground and surface water, and accounting for all depletions.

Due to federal funding limits, the State can no longer rely on the federal government's assistance with certain types of measurement, such as the United States Geological Survey (USGS) stream flow gaging program, for use by the OSE/ISC to actively manage the State's water resources. Moreover, the State should no longer simply rely on federal government agency programs for assistance because such assistance might be subject to endangered species act considerations that might conflict and adversely affect the State's water interests.

Management

New Mexico must efficiently and effectively manage its rivers and groundwater 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. New Mexico must complete its regional and state planning so that the future use of water can be anticipated in any water right administration or water management scheme. It must also ensure that the administrative process for the transfer of water rights is timely and responsive to the filed applications. The adjudication of all water rights will increase the State's ability to accurately identify and supply water to existing uses.

New Mexico must also complete its 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. Effective and efficient management also requires staff in the field for the physical management of the water supply.

Markets

New Mexico's water rights markets are in their infancy. The surface water supply of most, if not every, river is fully appropriated and many areas of the State rely upon non-sustainable groundwater aquifers (that is, the groundwater is being depleted because it is being pumped out faster than it is being replenished). Because New Mexico water supplies are finite, the State will develop well-defined water rights markets. As water demands from expanded existing and new uses increase, the marketing of water through the transfer of existing water rights will grow.

The Town Hall "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."

Already these minimum requirements for water management imply substantial commitments to improvements in our measuring capabilities, to accelerating the pace of adjudications, and to the pursuit of cooperative solutions to ESA conflicts. If we are to actually achieve the goals set out in Section 1.B of the State Water Plan Act, an even greater commitment will be required.

Policies:

1. Adequately fund acquisition by the Office of the State Engineer of technological and scientific tools necessary for efficient administration, including the following specific tools:

- Real-time measuring and metering of all water uses (return flows as well as diversions)—using consistent, standardized remote sensing, GIS technologies, modernized gauging stations, improved surface and ground water models, and locking mechanisms—is key to ensuring that users’ rights are not being impaired. Given the commitment to transparency and the need to develop consensus for stewardship among all New Mexicans, all available data derived from measuring/metering should be made available to the public in user-friendly format via a centralized website.
- The OSE should complete and perfect the WATERS (Water Administration Technical Engineering Resource System) database, using sophisticated, comprehensive computerized modeling, to quantify and monitor water supply and quality. This involves updating information on all surface stream systems and water basins and accounting for the interaction between surface and groundwater. Maintenance and expansion of the database should be coordinated with users throughout the state to identify needs as well and to invite cooperation. All parties involved in the development of the WATERS data base shall strive to achieve compatibility with the data input requirements for the various ground water flow, surface flow, ecological and other models approved for use by the OSE for application to New Mexico water issues. The database should be readily accessible to all water rights holders and the general public, including Indian Tribes, Nations, and Pueblos, and to be used by the OSE for water rights enforcement and administration, particularly in light of long-term cumulative impacts on other water right holders and on interstate compacts.
- Since stewardship is a shared responsibility in New Mexico, enforcement of water rights should involve local communities, which should also monitor compliance with locally developed comprehensive water conservation plans.

2. The OSE should use and expand existing tools to administer water use, including conjunctive management of surface and ground water where appropriate, e.g., scientific data show they are hydrologically connected.

In addition to providing the factual foundation to allow water management to accomplish the minimum requirements set out above, metering and measuring is also important to support adjudications, water rights transfers, and other flexible marketing and management options such as water banking and aquifer storage and recovery. Improved measuring capabilities for these purposes should follow after support for the minimum functions are met. That is:

3. Resources should be allocated to accomplishment of improved measuring and metering in accordance with the following priority list:

- a. Where threat to state administrative control from failure to perform is most severe;
- b. Where threat of interstate conflict is high;
- c. Where economic consequences of lack of ready water markets are high;
- d. Where water conservation will be served.

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.

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

This section of the Act addresses quantitative information that is collected and updated periodically by the Office of the State Engineer and the Environment Department, often combined with information collected by federal agencies. To date, information from tribal governments is not routinely provided to the Office of the State Engineer and the Environment Department, because tribal water rights have not been adjudicated, another example of how adjudication of water rights provide better certainty of total available water supply. This section shows how existing methods of information collection can be used to provide details about water quantity and quality, and water budgets. Because of the cyclical nature of updating information, and the comprehensive effort needed to perform adequate review of complex datasets and measurements, some of the information may be in draft form, and thus not available to cite or quote.

Except for the San Juan Basin and the San Juan/Navajo Nation planning region, and the Estancia closed basin and the Estancia planning region, the major river basins and aquifer systems do not generally coincide with the sixteen planning regions, as discussed in the section on basins in the Introduction to this plan. Currently, data exist for planning regions, to facilitate completion of regional water plans.

Inventory of the quantity and quality of the state’s water resources

Water quantity and quality are inextricably linked. This linkage underpins the process by which tribal water quality standards are adopted and implemented. Water quality measurements are catalogued separately for both ground water and surface water in New Mexico, which mirrors the state’s leadership role in management of water quantity by regulating both surface and ground water withdrawals. The New Mexico Water Quality Act, passed into law in 1967, specifically included ground water within its scope, unlike the federal law at that time. The Act created the New Mexico Water Quality Control Commission and authorized it to adopt both surface and ground-water quality regulations and standards. Two federal agencies, the U.S. Environmental Protection Agency and the U.S. Geological Survey, maintain long-term databases of water quality measurements.

The quality of the state’s groundwater resources has been inventoried in the New Mexico Environment Department’s *Ground Water Quality Atlas*, available online. Ground water quality data in the atlas is listed by county, and by public water supply system within the county, where available. Stand-alone atlases for Curry, Los Alamos and Santa Fe counties provide an overview of contamination incidents and water supply features. 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. Of these systems, 18 rely 100% on ground water, and three rely on a combination of ground and surface water. About 90 percent of New Mexico's population depends on ground water for drinking water, 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. It contains naturally occurring minerals that dissolve from the soil and rock that it has flowed through. Mountain aquifers, recharged by recent rain and snow melt, often yield high quality water. A tremendous amount of fresh water occurs in the Rio Grande valley fill aquifer, stretching from Colorado to Texas. Some ground water in the southern part of the state is too salty to be used for drinking. High levels of natural uranium occur in some ground waters in northern Santa Fe County, in the Grants-Gallup area, and in Quay County. Naturally high fluoride and arsenic also occur in various areas around the state. The earth has natural cleansing processes that can filter out, dilute, transform or destroy both natural and human-made contaminants in the subsurface. 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 concern of contamination in these aquifers is septic tanks.

The inventory of surface water quality is being finalized, in conjunction with the promulgation of the Triennial Review of surface water quality standards. Information is available in the atlas on ground water for water quality in three water supply systems that rely 100% on surface water – Raton, Aztec and Farmington. Generally, surface water systems are fed by a combination of snowmelt and runoff, and maintain high water quality until the water passes through areas of surface contamination.

Inventory of population projections

Prior to enactment of the State Water Plan Act, the New Mexico Interstate Stream Commission contracted with the University of New Mexico, Bureau of Business and Economic Research, to provide a demographic and population study for water planning purposes. This study profiled the historical and projected population of the sixteen statewide planning regions. This profile is different than the traditional county-by-county population projections, and was performed in order 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. The census tract and block boundaries were geo-rectified using GIS technology. Since the 1990 Census, it has been possible to use GIS technology to geo-rectify precisely census boundaries consistent with regional planning boundaries.

Using the past 40 years as the baseline, population projections for 60 years forward are available by planning region. The assumption is that, barring catastrophic events such as epidemics, war, and other unforeseen circumstances, projecting population based on past

and current demographic trends is logical. The Middle Rio Grande planning region has the highest population—about 700,000. Three regions – Lower Rio Grande, Santa Fe/Los Alamos and Lower Pecos Valley – have current populations between 100,000 and 200,000, which means that the next most populous regions are significantly (more than 50%) smaller than the most populous region of the state. Five regions – Northwest, Southwest, Northeast, Tularosa/Sacramento and Lea – had current populations between 50,000 and 100,000. The remaining regions have current populations below 50,000, with Colfax and Rio Arriba populations both below 20,000.

Overall, the rate of population growth is expected to decline during the next 60 years. Reasons include declining fertility, increased life expectancy, internal migration becoming dominated by retirement migration, and international migration becoming more restrictive. However, regions vary in the rate at which this decline is likely to occur. In 1999 Estancia was the first region to complete its regional water plan. By 2060, the population in that region is expected to almost quadruple its current population of just over 30,000. This region's projected growth to almost 118,000 is the most rapid population growth of any region, yet it represents a slowing down from past historical levels. Since 1970, Estancia has been the fastest growing planning region in the State. The Middle Rio Grande region is second in projected growth over the next 60 years, from 700,000 to 1.3 million. This growth represents a doubling of population for this planning region. Growth is expected to be primarily outside of the Albuquerque/Bernalillo County area, as Sandoval County becomes more of a bedroom community for those commuting to jobs in Santa Fe. Three regions – Lower Rio Grande, Jemez y Sangre, and San Juan – will exceed 200,000 in population by 2050, with the first two of these three regions reaching this milestone in less than a decade. Besides Estancia, 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, considered a weak rate of population growth. In northern New Mexico, Rio Arriba is expected to continue on a negative population growth track. Three regions in the western part of the state – San Juan, Northwest and Southwest – are projected to have moderate growth rates (between 1% and 1.5% per year) until 2020, and then drop lower after that time. Even the strong population growth in the Rio Grande corridor is expected to drop below one percent annually after 2020. The Jemez y Sangre (where job growth in Santa Fe is anticipated) and Estancia regions are projected to maintain annual growth rates of one percent and 1.8 percent, respectively, through 2060.

Inventory of other water resource demands under a range of conditions

Water resource demands for recreation are unique in that most recreational uses are not tied to the ownership of a water right. Recreation is a fast-growing component of the State's economy. For instance, river outfitters rely on movement of water in streams to provide high thrill kayaking and whitewater recreational opportunities during times of high snowmelt runoff. When water is being moved out of storage to supplement irrigation demand, releases have been timed to provide flows to accommodate the weekend increase in users. For open water recreation, the water right is being protected by storage in a reservoir behind a dam, so that use can be parlayed through the growth cycles of many crops. Both of these demands can be severely curtailed during drought, and may be further exacerbated due to the active movement of water required to comply with interstate compact restrictions, and to meet environmental protection criteria.

Ground water, someone noted, is like a credit card; but surface water is like a debit card. Pumping of ground water usually increases during drought conditions, and can be a factor for communities that rely on surface water for meeting basic human needs. Irrigation of agriculture based on ground water often increases in dry years, due to the increased evapotranspiration rates of crops. However, many farmers have found that the use of soil moisture gages and other instrumentation has increased the efficiency with which they apply water to their crops. The State Engineer tries to prevent the negative effects of ground-water subsidence by declaring Critical Management Areas, where additional ground-water wells are restricted due to existing drawdown rates in the aquifers being pumped.

The demands for endangered species may not be able to be met by incorporating flexibilities in water use when storage of surface flows has been exhausted due to sustained drought impacts. In most cases, the demands for species survival are similar to recreation demands, in that they do not by themselves own a water right. Furthermore, deliveries of water required in a stream system to maintain endangered species habitat are often at odds with the delivery schedule of water users who have adapted river releases to meet their needs. During drought cycles, these adaptations and the species needs are often in conflict. Based on current reservoir levels, the ability to provide opportunities to meet full demand will be severely limited, due to projections of not only multi-year; but also, multi-decadal drought outlook.

Water budgets for the state

The first question that water planners ask is how much water is available. As discussed in the Introduction, New Mexico's high natural variability in water supply makes it very difficult to state how much water supply is available without either limiting the quantity to a worst-case scenario, or using a mathematical average that represents smoothing of quantity over time in ways that are physically unlikely. Both accommodations of variability have the unintended consequence of creating implications about total water rights available, and this State Water Plan is not intended to abridge existing water rights.

Therefore, for a broad-brush approach, a household-budget based approach to determining water demand is used. Historically, water use data has been aggregated by Office of the State Engineer by county, so the fact that the planning regions tend to break along county lines within watersheds is not surprising. The Office of the State Engineer's Water Use and Conservation Bureau has conducted statewide water use inventories every five years since 1975 and has published the final reports in a series entitled *Water Use by Categories in New Mexico Counties and River Basins, and Irrigated Acreage*. Thus, the trends in water use provide information for roughly the same baseline time period as population information exists. Therefore, it should be possible to determine trends in water use based on population growth.

The most recent inventory year for water use, 2000, coincides with the most recent U.S. Census information. Withdrawals and depletions for the inventory year are tabulated by category, county, and river basin for nine water use categories which include public water supply, self-supplied domestic, irrigated agriculture, livestock, self-supplied commercial, industrial, mining, power, and reservoir evaporation. In this report, a withdrawal is the amount of water taken from a surface or groundwater source. The use, or depletion, is that part of a withdrawal that has been evaporated, transpired, incorporated into crops or products, consumed by man or livestock, or otherwise removed from the water environment. These water use databases and the water use reports published by the Office of the State Engineer are the most reliable source of water demand data available in the state. For this first edition of the State Water Plan, water use data for the 2000 calendar year has been aggregated for the 16 water-planning regions.

In the year 2000, New Mexico's population of 1,819,046 people (U.S. Census 2000) used up (depleted) 2,596,575 acre-feet of water. Of this depletion amount for that year, reservoir evaporation totaled 431,437 acre-feet of water, leaving 2,165,138 acre-feet of water depleted by the human population in New Mexico (riparian depletions are not measured as a water use, and therefore are not included in water use figures). This non-evaporation depletion is an average of 1.19 acre-feet per person, or 1,063 gallons per capita per day of water. Of this amount, only 0.19 acre-feet per person is from municipal and industrial uses, or an average of 171 gallons per capita per day. Looking at just domestic well depletions and public water supply depletions by planning region, the variation in the average gallons per capita per day used within the sixteen planning regions ranges from a low of 53.7 gallons per capita per day in Rio Arriba, to a high of 186.3 gallons per capita per day in the Lower Pecos Valley.

Seven planning regions use over 100 gallons per capita per day from domestic wells and public water supplies, and their distribution appears climate correlated. Besides the Lower Pecos Valley at 186.3 gallons per capita per day, these include Lea County at 139.4 gallons per capita per day, Colfax County at 126.5 gallons per capita per day and the Lower Rio Grande planning region at 114.1 gallons per capita per day. The remaining three regions using more than 100 gallons per capita per day from domestic wells and public water supplies are 109.4 gallons per capita per day in Northeast New Mexico planning region, 108.5 gallons per capita per day in the Tularosa-Sacramento-Salt Basin planning region, and 104.0 gallons per capita per day in the San Juan planning

region. Of the six completed regional water plans, four are regions that use more than 100 gallons per capita per day.

Nine regions use less than 100 gallons per capita per day from domestic wells and public water supplies, and they include Southwest New Mexico at 99.2 gallons per capita per day, the Middle Rio Grande region at 97 gallons per capita per day, Jemez y Sangre at 94.5 gallons per capita per day, and Northwest New Mexico at 88 gallons per capita per day. Using significantly less are the Estancia basin at 71.1 gallons per capita per day, Socorro-Sierra at 69.6 gallons per capita per day, Taos at 67.9 and Mora-San Miguel at 67.1 gallons per capita per day, with Rio Arriba using the least, at 53.7 gallons per capita per day. These variations in usage of water on a personal level represent the variability in opportunities for conservation stewardship on a personal basis.

The water use by agriculture based on cash receipts, is available only by county. In New Mexico in 2000, the following counties had total depletions (less evaporation) that is less than the statewide average: Bernalillo, McKinley, Cibola, Los Alamos, Santa Fe, Sandoval, Otero, Lincoln, San Miguel, Valencia, Grant, Catron, and Rio Arriba, according to water use figures for that year. Of these counties, the cash receipts percent of total receipts that were derived from agriculture, based on New Mexico Department of Agriculture reports, were less than 10% for all of these counties except San Miguel, Valencia and Catron. Valencia County's percentage of agricultural receipts was 10.9%; San Miguel, 15%; and Catron County, 63.8%. Of the counties whose per capita depletions (less evaporation) is greater than the statewide average, all except Taos (3.1%) and San Juan (6.7%) counties had agricultural receipts, based on New Mexico Department of Agriculture reports, where the percentage of total cash receipts was greater than 10%. Eleven of these 18 counties (Sierra, Mora, Socorro, Curry, Chaves, Quay, Harding, Roosevelt, De Baca, and Union) had agricultural cash receipts that totaled greater than 40% of the total cash receipts for that county. The highest was Harding County at 91.2%, and the lowest was Curry County at 40.0%. Thus, the highest agricultural use of water is generally not in the highest population areas of the state.

Water budgets for all major river basins and aquifer systems in the state

Most river basin systems are fully utilizing available water supplies. Few aquifer systems in the state are withdrawing water at rates that allow replenishment at or near the pumping rate. Using the water use data by region, one can see how water demand varies within basins and aquifer systems. High ground water use with low surface water use regions are not good candidates for conjunctive management of fresh water, but may be good candidates for conjunctive management of desalinated water, using aquifer storage and recharge. High surface water use regions are vulnerable to drought impacts, especially when winter snow pack is also low. Regions that have balanced use of surface and ground water should look at per capita domestic use for conservation opportunities,

to get through droughts. Regions with high statewide depletions but low domestic use are likely the sources of water transferred or leased to meet to new uses.

For the following planning regions, water supply and demand information is available: Estancia, Lea, Lower Pecos Valley, Tularosa/Sacramento Basin, Colfax, and Jemez y Sangre. Information is under review for the Socorro-Sierra, Lower Rio Grande and Middle Rio Grande regions. Only the Jemez y Sangre region has predicted that demand will outstrip supply, with a sharper imbalance likely during drought scenarios. Additional information is in the basin discussions, as well as within these regional water plans, both of which are available online.

San Juan Basin

One of the few planning regions to fully coincide with natural watershed boundaries is the San Juan Basin and Navajo Nations planning region, Region #2. For this region, total depletions rank fourth in the state at 10.25% of the state's total, with surface-water depletions over eight times the volume of ground water consumption.

Gila-San Francisco, San Simon Valley and San Agustin Basins

The Gila-San Francisco, San Simon Valley, and San Agustin basin is home to two planning regions. The northeastern corner of the basin is within the Socorro-Sierra planning region, and the remainder of the basin comprises the bulk of the Southwest planning region. It should be noted that the western edge of the basin extends over New Mexico's western boundary into Arizona. The Little Colorado Basin's southern portion, in Catron County, and the Southwest Closed Basin in Hidalgo, Grant and Luna counties are also part of the Southwest planning region. The Southwest New Mexico planning region ranks eighth at 5.14% in total withdrawals in the state, with ground water consumption exceeding surface water depletions by a factor of five.

Little Colorado Basin

The Little Colorado Basin in New Mexico is the western portion of the Northwest New Mexico planning region, with its southern portion within New Mexico being within the Southwest New Mexico planning region. Like the Gila-San Francisco, San Simon Valley, and San Agustin watershed, the Little Colorado straddles the western boundary of New Mexico into Arizona. The Northwest New Mexico planning region depletes the least of the sixteen regions, or 0.81% of the state's total depletions. Ground water withdrawals exceed surface water depletions by over a factor of four.

Southwest Closed Basins

The Southwest Closed Basins are primarily contained within the Southwest region, except for the eastern portion within Dona Ana County, which is within the Lower Rio Grande region. The Southwest New Mexico planning region ranks eighth at 5.14% in

total withdrawals in the state, with ground water consumption exceeding surface water depletions by a factor of five.

Salt Basin

The Tularosa-Sacramento Salt Basin ranks 14th statewide in total depletions at 1.24%, with ground water depleted at a rate of over 3 times the depletions of surface water.

Estancia Basin

The Estancia Basin planning region is ranked 12th statewide in total depletions at 1.59%, and ground water depletions are 791 times surface water depletions.

Tularosa and Hueco Basins

The Tularosa-Sacramento Salt Basin ranks 14th statewide in total depletions at 1.24%, with ground water depleted at a rate of over 3 times the depletions of surface water.

Rio Grande Basin

The Upper Rio Grande Basin is mostly within the Rio Arriba and Taos planning regions, but the populated areas of Los Alamos County, Espanola, Santa Fe, and six pueblos located between Embudo and Cochiti Lake are included within the Jemez y Sangre region. The Jemez y Sangre planning region ranks 13th statewide in total depletions, at 1.55%, and depletions in surface water exceed groundwater withdrawals by a third. Rio Arriba planning region ranks 10th with 2.08% of total statewide depletions, and surface water consumption is 41 times as great as ground water. Taos planning region ranks 11th at 1.65% of the state's total, with surface water consumption nine times the consumption of ground water.

The Middle Rio Grande Basin is technically within six planning regions. A minor portion of the eastern edge of the watershed boundary in Torrance County, is in the Estancia Basin planning region. Similarly, minor portions of the western watershed boundary are within the Southwest planning region, in Catron and Grant counties. The northeastern portion of the Middle Rio Grande Basin is in the Jemez y Sangre planning region, and the northwestern portion is within the Northwest planning region, in the counties of McKinley and Cibola. The Middle Rio Grande and Socorro-Sierra planning regions are the northern and southern portions, respectively, of the middle part of the basin. Like the Jemez y Sangre region, these represent the most populated areas of the basin, and are also home to six pueblos located in Sandoval and Bernalillo counties. The Middle Rio Grande planning region ranks 6th statewide at 7.05%, while the Socorro-Sierra planning region ranks 3rd statewide at 11.94% of total depletions, based on water year 2000 data. For the Middle Rio Grande, the ground water withdrawals are only 10% greater than surface water withdrawals. In the Socorro-Sierra, ranked 3rd statewide at 11.94%, the depletions from surface water are almost nine times the groundwater consumption.

Lower Rio Grande

The Lower Rio Grande and Southern Jornada basins are split between the Socorro-Sierra region to the north, and the Lower Rio Grande region to the south. The Lower Rio Grande planning region ranks 5th statewide in total depletions, with consumption of surface water two-thirds greater than the consumption of ground water. In the Socorro-Sierra, ranked 3rd statewide at 11.94%, the depletions from surface water are almost nine times the groundwater consumption.

Canadian and Dry Cimarron Basins

The Canadian and Dry Cimarron Basins are within three planning regions. The Colfax region is the northwest portion, the Mora-San Miguel region is the southwest portion, and the eastern portion is in the Northeast region. The Colfax region, at 1.18%, ranks 15th statewide in depletions, with 20 times as much surface water depleted as ground water. The Northeast region ranks 2nd at 18.33% of total depletions, with ground water depletions exceeding surface water by a factor of four. The Mora-San Miguel region is ranked 9th, with depletions at 2.98% of the state's total, where surface water exceeds ground water by a factor of 35.

Southern Jornada

The Lower Rio Grande and Southern Jornada basins are split between the Socorro-Sierra region to the north, and the Lower Rio Grande region to the south. The Lower Rio Grande planning region ranks 5th statewide in total depletions, with consumption of surface water two-thirds greater than the consumption of ground water. In the Socorro-Sierra, ranked 3rd statewide at 11.94%, the depletions from surface water are almost nine times the groundwater consumption.

Pecos Basin

The Lower Pecos Valley is within four planning regions. The northwest corner of the basin is within the Estancia Basin planning region, and the northeast portion is within Northeast region. The bulk of the watershed basin, except for Lea County, is within the Lower Pecos planning region, with the southeast portion within the Lea County planning region. The Lower Pecos Region is first in percent of statewide depletions, at 18.56%, with ground water exceeding surface water by roughly four times. The Lea County region is 7th at 5.61% of statewide depletions, and ground water consumption is 2,200 times the depletions from surface water.

The Upper Pecos basin is within primarily two regions, the southeast half being in the Northeast region, and the northwest half being in the Mora-San Miguel region. In the southwest corner, the portion within Tarrant County is in the Estancia Basin. Tiny portions on the west and north, in the headwaters in the Sangre de Cristo range within

Santa Fe County, are within the Jemez y Sangre region. The Northeast region ranks 2nd at 18.33% of total depletions, with ground water depletions exceeding surface water by a factor of four. The Mora-San Miguel region is ranked 9th, with depletions at 2.98% of the state's total. Surface water exceeds ground water by a factor of 35.

Southern High Plains

The Southern High Plains are primarily split between Northeast region in the north, and Lea County region in the south. A tiny portion on the west that is part of Chaves County, is within the Lower Pecos planning region. This basin straddles the eastern boundary of the state with Texas, where it is quite extensive. The Northeast region ranks 2nd at 18.33% of total depletions, with ground water depletions exceeding surface water by a factor of four. The Lea County region is 7th at 5.61% of statewide depletions, and ground water consumption is 2,200 times the depletions from surface water.

Objective: To increase efficiency and ease of data sharing, and to encourage regions to use all available information and data collection activities to provide accurate, useful information for local planning needs.

Policies:

The State of New Mexico shall encourage and support efforts to provide wide dissemination of water use data to facilitate informed and responsible decisionmaking.

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

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. 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.

At the same time, conservation and increased efficiency do not yield a "silver bullet" that will magically solve the State's water supply problems. Projects that appear to increase water use efficiencies, if inappropriately or carelessly implemented, can impair other water uses and hinder the State's ability to meet its interstate obligations or not result in additional salvaged water. Metering and measuring, the interrelation of drought management and conservation, local hydrologic environments and water use patterns, the relationship between diversion amounts and consumptive uses, and the net effect of proposed conservation measures on total available ground and surface water resources are complex but critical considerations when planning water conservation efforts and developing incentives to promote conservation.

The OSE's Water Conservation Program is being developed to respond to the increasing pressures on the State's limited water supply and the fact that, in many parts of the State, efficient use of water and conservation may be the only practical new source of water. OSE's program focuses on research and demonstration; technical support; public education and involvement; policy initiatives such as water-conservation guidelines for Public Water Supply, Commercial and Industrial, Large Turf Areas, and Irrigated Agriculture; and water-conservation initiatives within State government. The OSE recently completed a Conservation guide targeted specifically for use by municipalities. If New Mexico is to succeed in stretching its water resources to cover more uses, ultimately the OSE conservation program must be strengthened.

Conservation Policy:

The State shall engage in a coordinated and concerted effort to increase water use efficiencies and promote conservation in all water use sectors through:

- **Providing a continuing program of public education on water conservation directed at users in all water use sectors, and coordinated with local, federal, and tribal governments.**
- **Providing a continuing program of technical assistance to support the development and implementation of water conservation programs by governments, water providers, and other water users.**

- **Incorporating in all regional and local water plans of conservation measures based on best practices developed for local hydrologic conditions, legal constraints, and water uses.**
- **Encouraging local governments and water providers to develop and implement comprehensive water conservation plans, and requiring a water conservation plan as a prerequisite for any State financial assistance for water development infrastructure.**
- **Creating a long-term source for funding water conservation efforts and infrastructure.**
- **Providing tax, interest rate, cost-sharing, or rebate incentives for water conservation.**
- **Prioritizing all funding provided for infrastructure and conservation projects on the net increase in usable water resources that a proposed project would produce.**
- **Pricing water use to at least meet cost of production and at such rates that conservation is encouraged.**
- **Funding research in cooperation with federal agencies and national laboratories into effective means to produce net increases in usable water resources, and to increase water use efficiencies without increasing overall stream or aquifer depletions.**
- **Encouraging water re-use**
- **Continuing research into and support for more efficient agricultural water use.**
- **Preventing loss of that consumptive amount of a water right that is conserved for other purposes by marketing through approved water banks.**

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.

Drought is a recurrent climate pattern in arid New Mexico. 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 the needs of water users throughout the state, much less accommodate new and increasing demands such as federal environmental mandates. A reactive response to drought events will be ineffective. A proactive program of drought contingency planning is needed for the State to respond to drought emergencies effectively and to minimize the impact of future drought events.

Drought Planning and Action Policy:

The State shall engage in a coordinated and concerted effort to plan proactively for and address drought impacts by:

- **Actively planning for drought emergencies through continuous operation of the State Drought Task Force.**
- **Assessing every two years the vulnerability to drought of municipal water supplies.**
- **Fully funding and staffing the Drought Task Force Drinking Water Strike Team to address proactively the drinking water needs of communities vulnerable to drought and to recommend programs and projects to lessen drought emergencies.**
- **Establishing standard policies for drilling public wells and handling abandoned domestic wells, including restrictions on new domestic wells during drought periods.**
- **Implementing priority administration as necessary, including the installation of water masters.**
- **Developing strategies to meet interstate obligations and federal environmental mandates in times of drought, including facilitated and efficient water markets and water-sharing agreements.**
- **Applying principles of shared shortage with respect for traditional communities' rights.**
- **Fully funding and staffing an Agricultural Water Use Strike Team under the Drought Task Force to address proactively agricultural water uses vulnerable to drought and to coordinate local, tribal, state, and federal drought assistance.**
- **Encouraging local governments to develop and implement comprehensive drought management plans, supported by predictive hydrologic modeling of water resources.**
- **Disseminating drought-related educational materials through public systems as well as an active OSE program.**

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- **Providing a long-term source of funding to ameliorate drought effects through education, planning, and infrastructure improvements.**
- **Prioritizing all funding provided for drought-related infrastructure and other projects on the potential for proposed projects to reduce drought impacts on the public welfare.**

Information about the State’s Drought Management Plan, the Drought Task Force chaired by the State Engineer, and helpful technical information to understand the meaning of the multi-year drought cycle, can be found at the link noted on page XXXX.

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

Land-use decisions affect water availability by a number of direct and indirect means. Such decisions are generally made by local governments (tribal, municipal and county governments) and in most cases, those same local governments have varying levels of discretion to impose conditions which might help mitigate the impacts of such development. Various state agencies also play a role in regulating the impacts of development on our water supply.

Almost all development, whether residential, commercial or industrial will require some water supply for its sustenance. 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. High water use commercial and industrial developments may be inappropriate in water scarce areas.

In addition to assessing the availability of adequate supply, proper stewardship 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 contaminants from entering into the water supply. Once contaminated, water supply sources are often not usable for certain uses without expensive treatment. The New Mexico Environment Department (NMED) is charged with protecting water quality.

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

In many areas, wells are constructed in shallow ground water aquifers that can be readily contaminated from activities on the ground surface. Unused or improperly constructed wells provide a means of transmitting pollutants from the ground surface and from septic tanks into the groundwater supply. It is more cost-effective to properly plug and abandon unused wells and thus protect ground water from contamination, than to develop alternative water supplies or treat contaminated water sources.

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 purpose of subdivision review is to determine whether or not the water will be physically available to sustain the development for 40 years (some local government entities require demonstration that water will be available for longer than 40 years). The OSE opinion regarding the availability of water is not binding however and the local government may choose to ignore an analysis that finds insufficient water supply. Additionally, a 40-year planning horizon may be inadequate for many uses.

Another significant subdivision problem is the development of large subdivisions on domestic wells. Such development can result in significant additional depletions creating significant problems in basins that are over appropriated.

The Town Hall Consensus Report contains numerous statements relevant to these issues including:

- “Since stewardship is a shared responsibility in New Mexico, enforcement of water rights should include local communities, which should also monitor compliance with locally developed comprehensive water conservation plans.”
- “No new water should be appropriated in a declared fully appropriated basin except when new appropriated water of that basin becomes available and then only in accordance with existing state law.”
- “We find that the domestic well statute needs to be amended to give the state engineer authority to deny new domestic well permits in critical management areas.”
- “Collaborative action should occur to develop local water budgets to balance the gap between supply and demand.
- “Collaborative action should occur to strengthen water quality protection programs.”
- “The state should promote water conservation through performance-based ordinances adopted by communities and counties. The ordinances should include conservation plumbing, gray water systems, rainfall harvesting, and storm water catchments provided they don’t violate water compacts. Incentives also such as implementing progressive rate structures and metering should be used to promote conservation. Xeriscaping and other landscaping standards, restricting use to certain days of the week, eradicating non-native plant species, avoiding urban sprawl, encouraging golf courses parks, and public and private entities to plant drought-tolerant grasses, and promoting community planning are other useful techniques that can promote conservation and more efficient use of water.”
- “The state should encourage low water use industries.”
- “... the state should encourage the home-building industry to make water efficient demonstration homes widely available for homebuyer education purposes.”
- “An increase in the OSE’s financial and human resources is essential for ... integration of OSE active water resource management with local land-use planning.

Land Use/Water Policy:

- 1) The OSE and NMED shall actively promote the efficient use and quality protection of water by all new development.**

2) The OSE and NMED shall encourage local governments to utilize Zoning and Land Use regulation to discourage water intensive development, to assure that development does not adversely impact our water resources and to encourage water conservation and water quality protection

3) When new development (including single family residences) is planned on land to which valid water rights are appurtenant the OSE should facilitate the transfer of those water rights to a new use including for providing water to the new development.

Strategy:

The State should collaborate with local governments to promote:

- A) 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 aquifer recharge by limiting impermeable surfaces and requiring on-site surface runoff retention structures;
 - impose restrictions on domestic well use as a condition of approving development;
 - restrict the proliferation of domestic wells by requiring new developments to utilize existing utilities if the utility is ready, willing and able to serve;
 - protect aquifer water quality by assuring adequate spacing between septic tanks and wells; and
 - ensure that unused or abandoned wells are properly plugged and abandoned.
- B) Zoning regulations that can be used to:
- limit development in hydrologically sensitive areas such as flood plains and recharge areas;
 - preserve areas for certain high value water related uses such as agriculture and riparian habitat.
- C) A thorough review of State Subdivision Laws to:
- assess the adequacy of a 40-year water supply planning horizon;
 - review how the impact of the OSE opinion on available water supply can be strengthened; and
 - determine whether subdivisions of a certain size should require water rights for approval.
- D) A thorough review of options for better regulating domestic wells in general.

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.

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. The State of New Mexico does also. Additionally, the state supports watershed restoration activities, especially in snowpack source areas that may result in an increase in available surface water supplies. There are currently significant issues associated with endangered or threatened species on every major river in New Mexico. The state will support and conduct river riparian restoration to accommodate protection of endangered species and to reduce the likelihood of additional listings in conformance with state water law and relevant compacts. In addition, the state will support and conduct watershed restoration projects in the major snowpack areas of the state to increase the supply and improve the quality of snowmelt runoff water for New Mexico water users.

The State of New Mexico is working proactively with basin stakeholders to meet the challenges of complying with the federal endangered species act (ESA). The goals of the state are to protect species to the extent practicable while protecting New Mexico's economic uses of water and its ability to meet compact obligations. There are three principal elements that must be met to provide water for protection of endangered species.

- First, the acquisition and use of water must be in accordance with state water law and state water rights administration regulations. Appropriate State of New Mexico water rights permits are required for all habitat restoration activities conducted by the United States and others that result in increased depletions of water.
- Second, New Mexico's ability to meet its obligations under interstate stream compacts to make downstream deliveries of water must not be compromised.
- Third, the federal government must pay for water it requires for endangered species through willing buyer/willing seller transactions. The United States Constitution prohibits the federal government from just confiscating water for its purposes without compensation.

In the support of the above goals and elements, the state is pursuing several avenues to achieve successful resolution of ESA issues including: actively seeking collaborative solution; 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 activities are being carried out through the efforts of the Lt. Governor’s Office, the Office of the Attorney General (NMOAG), the Interstate Stream Commission (NMISC), the Department of Game and Fish (NMDGF), the Department of Agriculture (NMDA), and the Environment Department (NMED).

Collaborative Solutions:

ESA Programs:

The state is a leader in developing and implementing Endangered Species Act 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, and potentially resolve concerns; to contribute to recovery of the listed species; 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 analysis all in a manner that benefits the ecological integrity of the affected riverine and riparian ecosystems; and
- To exercise creative and flexible options under the ESA so that water use and development can proceed in compliance with applicable federal and state laws. This requires that the Programs will not impair: valid state or federal-reserved water rights of individuals and entities; federal or other water rights of Indian nations and Indian individuals, or Indian trust assets; and the State of New Mexico’s ability to comply with its Interstate Stream Compact delivery obligations.

Over the past three years, on the order of \$20 million dollars has been secured from the federal government and \$4.0 million from state agencies and the New Mexico Water Trust Board to address ESA issues in the middle Rio Grande. The funding has been used to rescue and move silvery minnow as the river dries; build, maintain, and operate aquaria and the naturalized refugia; secure water to meet river flow targets; conduct biologic, geomorphic, hydrologic, and water-resources-management research and modeling; and implement habitat restoration projects. The Program is currently drafting authorizing legislation that seeks, in part, to secure an additional \$150 million of federal and state monies to address the middle Rio Grande ESA issues over the next ten years. Addressing ESA issues on the San Juan River began several years before the middle Rio Grande effort; consequently; it is more mature but is of similar monetary scale.

As part of its collaborative program efforts, the state will work with its water users to improve irrigation efficiency and implement water banking and water marketing. The goal of these efforts is to reduce river diversion rates and stored water releases to meet ESA-related flow targets while providing water to valid water right holders at the appropriate times. In addition, the state will continue to conduct and fund research and monitoring to improve river management and to implement non-water actions to increase the populations of listed species in the wild and in refugia/aquaria.

NEPA Projects:

In addition to being leaders in Collaborative Programs, the state, through the NMISC, 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, but are not limited to: ensuring that federal agency river and reservoir management actions will not affect compact deliveries; describing the water availability realities within each river system; and having a seat at the table during consultation between the lead federal agencies and the U.S. Fish and Wildlife Service on endangered species concerns.

State Law-Based Methods for Securing Water:

The state through the efforts of the Governor’s Office, the Office of the Attorney General, and the Interstate Stream Commission 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 include the 2001 Conservation Water Agreement and the 2002 Emergency Drought Water Agreement on the Rio Grande, the 2003 shortage sharing agreement on the San Juan, and various unnamed water storage and release agreements on the Pecos. These agreements have been successful in preventing Klamath River-type water management failures to occur on a year-to-year basis, but they have not provided longer-term certainty.

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 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. The methods will include plans to administer rights to allow ESA water as direct flow or that released from storage to flow to the area of use.

Protecting State Interests in Water Related ESA Litigation:

The Town Hall participants indicated that the state should protect the state’s interest in ESA litigation. The State has done so and will continue to do so as described earlier under Section C.1. under common priority 4.

Characterization, Basic Research, Monitoring and Assessment:

While the state recognizes that changes in the hydrology, river channel configurations, land use activities, and the spread of exotic vegetation have adversely impacted many native riverine ecosystems and species within the state, it also recognizes the importance of ensuring that today's management actions that are made to address ESA concerns actually do so and that significant unintended consequences, such as increased flooding, compact under deliveries, water quality degradation, and the loss of habitat for other species do not occur. In addition, we also recognize that in many cases there is not currently sufficient scientific knowledge to guide river management and habitat restoration decisions regarding listed species.

The state believes the ESA Collaborative Programs can only be effective if their activities/actions are re-evaluated on frequent, recurring bases and adjusted to reflect new information and/or changes in conditions that may affect species recovery. Therefore, the state is supporting and/or funding basic research on the habitat and water flow requirements of selected listed species; the interaction between surface water and groundwater in critical management areas; the sediment yield of the basins, how that sediment provides habitat, and how changes in sediment yield affect habitat; water quality; riparian vegetation evapotranspiration; and the potential effectiveness of water banking and water markets to address ESA-related water flow demands. The NMISC has coordinated with or funded researchers at UNM, NMSU, NMT, and SAHRA (An NSF funded center for studying the Sustainability of Semi-Arid Hydrology and Riparian Areas) to conduct basic research; worked with Collaborative Programs to conduct and fund such work; and has conducted work in priority areas.

High Priority Actions:

The state's efforts to date addressing ESA issues reflect two facts: 1) there is uncertainty and controversy regarding the types of work that should be undertaken and when and where that work should occur; and 2) there is a shared sense of urgency to take actions that will prevent extinction, initiate visible progress toward recovery, and promote long-term recovery. To address uncertainty the state is supporting, funding, and conducting research and basic science as described above. To address urgency, the state is taking action now. On the Rio Grande, the state, primarily the NMISC and NMDGF, are working with stakeholders on the Rio Grande to:

- Monitor and meter river flow conditions on a daily basis and rescue and move fish as necessary;
- Coordinate daily during the irrigation season with the appropriate federal and local agencies to ensure that the river is managed and stored water released in an efficient manner
- Build, maintain, and operate aquariums for the silvery minnow;
- Design, fund, and assist in the construction, operation, and maintenance of the naturalized rearing facility for the silvery minnow

- Improve metering and the efficiency of water deliveries to and within the Middle Rio Grande Conservancy District
- Conduct habitat restoration for the silvery minnow in Albuquerque Reach; and
- Restore flow capacity at San Marcial Railroad Bridge

Endangered Species Act and River Riparian and Watershed Restoration Policy:

The State shall engage in coordinated and concerted efforts to plan for, provide matching funds, and address endangered species issues and river riparian and watershed restoration by:

- **Engaging in and providing leadership in collaborative program efforts to protect and improve the status of listed species, and potentially listed species, while simultaneously protecting existing and future water uses.**
- **Conducting and/or supporting watershed restoration activities, especially in snowpack source areas where the activities may result in an increase in available surface water supplies.**
- **Providing a state law-based method(s) for the federal Government to secure water and thus avoid seizure of Irrigation District, Conservancy District, Pueblo, and/or individual water right holder water.**
- **Developing and implementing plans to administer rights to allow ESA water released from storage to flow to the area of use.**
- **Coordinating with and overseeing daily river management by basin stakeholders to ensure efficient and effective use of both stored and direct flow water.**
- **Working with its water users to improve irrigation efficiency and/or implement forbearance such that river diversion rates can be reduced while meeting river flow targets for listed species and providing the appropriate amount of water to valid water right holders.**
- **Conducting and supporting basic research, monitoring, and assessments on the habitat and water flow requirements of selected listed species; the interaction between surface water and groundwater in critical management areas; the sediment yield of the basins, how that sediment provides habitat, and how changes in sediment yield affect habitat; water quality; riparian vegetation evapotranspiration; and the potential effectiveness of water banking and water markets to address ESA-related water flow demands.**
- **Implement non-water actions to increase the population of the listed species in the wild and in refugia/aquaria:**

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- **Constructing, operating, and maintaining aquaria and naturalizes refuges for the listed species**
- **Aiding in efforts to move ESA listed fish to reaches of our rivers that are less apt to dry.**
- **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 water or provides for offset of new depletions.**

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.

The State Engineer is obligated by the State Articles of the Constitution to administer water by the Doctrine of Prior Appropriation. Priority administration in most basins in the state is not logical because most areas of the state are not adjudicated and because of economic impacts to the state would be tremendous. In areas where water shortages occur, shortage sharing agreements or voluntary rotation of diversions may be the best alternatives to priority administration.

Active water management is the future of New Mexico. In order to provide necessary administration of water rights within the state of New Mexico, the State Engineer must be able to actively manage each individual river and ground water basins. Water Masters in the field can provide individual water management in conjunction with resources provided by State Engineer staff. In addition, metering of all water diversions within the state is the first step to active water management. The State Engineer must endorse funding resources to provide water masters in conjunction with metering of all diversions.

In order to protect the customs, culture, environment and economic health and stability of the state's diverse communities a mechanism must be provided to allow information on pending water right applications to be open and readily available to the public. This would allow these entities to provide their objections to water right transfers. The State Engineer cannot protect their interests without their input. This will also slow down the water right application process.

Efficient water banks that would provide an expedited means of transfer of water rights is a means of allowing transfer without the normal bureaucratic water right application process. Existing statutes allow water banking with State Engineer approval and existing statutes allow water banking within acequias as long as the acequia adopts guidelines. The State Engineer must pursue solutions to develop these methods of water administration.

Policies:

The State of New Mexico shall encourage creation of water banks to allow the expedited transfer of water rights in areas of water shortage.

The State Engineer shall encourage creation of water banks within acequias to promote the customs, culture and environment of the state.

The State Engineer shall promote effective advertisement of water right applications to allow acequias, cities, villages and other entities to protect their existing water rights.

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

LOCAL GOVERNMENT

It shall be the policy of the State of New Mexico to promote coordination with local governments and allow for more restrictive covenants, ordinances, and/or conditions regarding water use at the local level.

Policies:

The State of New Mexico shall encourage the designation of Critical Management Areas (CMA) as defined by the OSE to limit or restrict additional groundwater depletions in areas that have: a hydrologic connection to a Compact Compliance regulated river basin; and/or mined basins with a limited aquifer thickness or an excessive drawdown rate.

The State of New Mexico shall strive to integrate data collection efforts for all water related information in the state, and by all levels of government in the state, into a centralized and shared database.

STATE GOVERNMENT

The State of New Mexico shall strive to coordinate water quantity and water quality efforts between the OSE and the NMED to promulgate more meaningful Subdivision Development Regulations to assure that water systems are established, in lieu of individual domestic well and septic system developments. The establishment of water systems will assure that adequate water rights are acquired and proper water quality standards adhered to.

STATE AND FEDERAL GOVERNMENT

It is important to acquire digital ortho-photography for the state of New Mexico to address critical issues in the areas of water, emergency management, infrastructure evaluation, environmental abatement, and economic development. Digital color infrared imagery will assist the OSE in: determining the extent of irrigated acreage for a specific parcel of land; checking for irrigation that occurs on lands without water rights; provide a valuable tool to assist in the review of water right applications; and support the hydrographic surveys necessary in the adjudication of water rights.

The State of New Mexico shall strive to coordinate state and federal data requirements and identify funding mechanisms towards the acquisition of statewide geographic data for New Mexico.

The State of New Mexico shall strive to coordinate state and federal efforts to maximize effectiveness of riparian and watershed vegetation management projects and associated funding.

The State of New Mexico shall strive to continue the state “joint lead” status in preparation of all federally required Environmental Impact Statements related to the Endangered Species Act (ESA) and National Environmental Policy Act (NEPA), as they relate to all federal water management plans.

The State of New Mexico shall continue its efforts in litigation, planning and collaborative problem solving to meet federal mandates without encroaching on the water rights of New Mexicans or causing economic hardship to New Mexico’s regional economies.

PUEBLO/TRIBAL GOVERNMENT

The Governor of the State of New Mexico, Bill Richardson, executed a Statement of Policy and Process recognizing and respecting the sovereignty of each Pueblo and their respective tribal governments. (The agreement executed on January 17, 2003 did not include the Navajo Nation, Jicarilla Apaches or the Mescalero Apaches).

The statement included the encouragement and promotion of government-to-government relationships based on mutual respect and open communication on a host of issues including water.

The State of New Mexico held approximately 6 meetings with Pueblo/Tribal leaders and representatives to discuss their desire to participate in the State Water Planning process, which culminated in the New Mexico First Town Hall on September 23-25, 2003. The Town Hall was very well attended by Pueblo/Tribal representatives.

It shall be the policy of the State of New Mexico to have an open door policy for Pueblos and Tribes to voice their concerns and discuss issues regarding water and water rights.

It shall be the policy of the State of New Mexico to work with the Pueblos and Tribes to establish procedures that set forth the framework to seek mutually beneficial solutions and outcomes and to avoid litigation on water related issues.

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

In 1987, the New Mexico Legislature authorized a regional water-planning program to be administered by the New Mexico Interstate Stream Commission (72-1-43 and 72-14-44 NMSA, Cum. Supp. 1993). To implement that program, the state was divided into sixteen planning regions, 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.

The regional water plans were originally intended to provide the basis for a statewide water plan for New Mexico. Unfortunately, due to inadequate funding and other reasons, only six regions have thus far been able to complete and have their plans accepted by the ISC. Nevertheless, regional water planning is continuing and regional plans are and will continue to be important aspects of a comprehensive statewide water plan. Their applicability relative to the state water plan must be clearly articulated and understood.

The regional plans provide the local view of how water should be managed to meet local needs. They provide insight into the local definition of public welfare and can serve to provide a detail of water supply and demand and how these will be balanced now and in the future. Ideally, the RWP's will provide the basis for approaching and reconciling water issues from the proper basin-scale and state-wide perspectives.

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 ___. 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.

Policies:

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:

- a) address issues of overarching statewide concern being guided by the state water plan;**
- b) 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;**
- c) seek to develop procedures and criteria to guide decisions where there are differences between regions, or between region(s) and the state relative to issues that are important to both the region and the state; and**
- d) support the completion, update and implementation of regional water plans.**

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.

Currently 40-year water plans are required by statute to be submitted by municipalities, as part of the water rights permit process. Water plans are also submitted to the Interstate Stream Commission as part of the Regional water planning process and numerous regional hydrologic reports are submitted in the water right application process and for subdivision review. In addition, water quality and water supply studies are provided to the Environment Department. These studies are open to public but are not shared or stored in any common means of reference for review. The State Engineer should pursue a means of accumulating this information in a common library that would allow research of all pertinent information for a common area that would allow totally educated evaluations of water resources.

Objective: To improve the usefulness and applicability of all water information studies by creating a library accessible to all water decision makers and would benefit all citizens of the state.

Policies:

The State Engineer shall encourage the sharing of water information through some common water library for all water users and decision makers.

The Interstate Stream Commission, in collaboration with the Office of the State Engineer and the Water Trust Board, shall undertake a review of the State Water Plan every five years at a minimum, and ensure that public participation and public input are integrated throughout the planning process when refinement and updating occur.

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

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).

The 2001 Legislature, through the Water Project Finance Act, created the Water Trust Board (WTB), a fifteen member Board empowered to assist the New Mexico Legislature in prioritizing and funding water projects statewide. The Act also created the Water Trust Fund and the Water Project Fund to provide the necessary financial support framework.

House Bill 882 (2003) dedicated 10% of the Severance Tax Bond Proceeds to the Water Project Fund for use by the Water Trust Board to fund water projects statewide. The WTB is charged with prioritizing projects for recommendation to the Legislature for financing from the Water Project Fund and adopting rules and regulations governing the terms and conditions of grants or loans made from the Water Project Fund. The WTB is authorized by statute to recommend projects for funding that are 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.

It shall be the policy of the State of New Mexico to support the Water Trust Board’s charge to prioritize funding projects that help the State:

- **Retain control over New Mexico’s water resources for New Mexicans – for economic, social, cultural and ecological uses.**
- **Implement actions that are consistent with the priorities of the State Wide Water Plan and Regional Water Plans.**
- **Fund geographically significant (regional) projects, especially large infrastructure projects and supportive efforts; e.g., watershed restoration, endangered species recovery and flood control that contribute effectively toward a larger scheme.**
- **Comply with water drought and conservation plans.**
- **Address the “greater good” by supporting those water projects that will result in significant widespread and long-term public benefit including watershed restoration, riparian habitats, ecosystem protection, and recreational uses of water.**
- **Contribute significantly toward sustainability of our water supply and natural systems.**
- **Provide regional benefit and produce the greatest amount of wet water.**

It shall be the policy of the State of New Mexico to seek water project funding pools such as:

- **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 (GGRT).**
- **PILT (payment in lieu of taxes) monies for water projects and related activities.**
- **Consideration of non-traditional sources such as land use impact fees, special assessment districts, low-cost loans, taxes on water diversions and use.**

Funding Criteria shall include:

- **The increase in wet water.**
- **The reinforcement of community and/or traditional values.**
- **The variety of objectives served.**
- **The balance between rural uses and urban development.**
- **Public health and safety issues.**
- **The increase in conservation/efficiency.**
- **Degree of funding leveraged by matching state dollars.**
- **Compliance with the State, Regional, drought plan and conservation plans.**
- **The community commitment to a viable operations and maintenance plan.**
- **The Contribution to negotiated resolution of Indian tribal, nation, and pueblo claims.**
- **The long-term benefit.**
- **The conservation of and increases in available wet water through improvements in agricultural infrastructure.**

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.

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.

Policies:

1) The State shall work with research institutions, universities, and national laboratories to collaboratively fund and execute research into:

- **Desalination, conservation, watershed restoration, evaporation reduction, water re-use, and 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.**
- **Advanced watershed land-use methods, maintenance, and recovery including new phreatophyte-control technologies.**

2) The State, through a multi-agency taskforce, shall coordinate with federal and state universities, research institutions, and laboratories to prioritize and focus research efforts, where possible, on the most critical of water issues, including:

- **Data collection/analysis, development of models and advanced instrumentation, metering and sensing equipment.**
- **Accurate, real-time measurement of evapotranspiration.**
- **Adapting innovative technologies to water-related problems.**

Alternative water sources fall into the categories of new water and salvaged water, and the OSE should use all means available to evaluate, establish and pursue water supplies such as inter-basin transfers and acquiring new water through exchange, lease or purchase.

Section D: Include work plans and strategies for:

- 1. Completion of water rights adjudications, with required supporting documentation, including hydrographic surveys, aquifer mapping and aerial mapping of irrigated land*
- 2. 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*
- 3. Measuring of surface and ground water uses in the state as necessary for management of the state's water resources*
- 4. Taking inventory of existing water wells and determining appropriate disposition of unused well*

ADJUDICATIONS

Adjudications are legal determinations of water rights. The State Engineer initiates and prosecutes general stream adjudications, which are for the purpose of determining all rights to the use of the stream system's water, by completing and filing with the court a survey of water uses - a hydrographic survey. In addition to the need to adjudicate state law - based rights, most New Mexico stream systems have Indian and Tribal users, often with the most senior water rights. Because these rights may arise under federal law, rather than state law, adjudication of Indian and Tribal water rights can be very complex and time-consuming.

Water Rights

Water rights are the basis, and often the most difficult to develop, of the FRAMEWORK inputs. In New Mexico water is given special and unique treatment. Article XVI of New Mexico's Constitution declares all water in the State belongs to the public and is subject to appropriation for beneficial use by individuals. The Constitution also provides that in times of shortage, senior water rights take precedence over junior rights. To this end, the Legislature has enacted a comprehensive statutory scheme to establish a water right administration scheme. A set of priorities has been established. To use public waters, a water right is necessary. No one can use water without having a water right. A water right is a legal title or a property right to use public waters. The legal title comes in different degrees of certainty—the greatest degree of certainty is a legal title to the water issued through the Court System. The State Engineer is charged with performing water rights adjudications, which ultimately lead to a Court issuing a determination on who owns what waters. The Court will further establish the priority of that right of ownership.

Hydrographic Survey

A hydrographic survey is the first step of adjudicating a water right. The State Engineer conducts hydrographic surveys and investigations of each stream system and water supply source in the State. This complex task suffered in the past from a lack of funds and from trying to do too many surveys simultaneously. The resulting outcome caused many years of delay. There is a short time window between completing a survey on the

ground and processing it through the Court system, otherwise the survey can quickly become stale and out of date. The agency has demonstrated in the Lower Rio Grande that it can quickly complete accurate surveys using modern mapping and data storage technology—surveys that might have taken 20 years to complete can now be completed in three years.

Adjudication

Upon completion of the survey, the State Engineer, through special assistant attorney generals, institutes the adjudication process to obtain a judicial determination and definition of water rights within each stream system and underground basin. The method of conducting this process is defined under State law. The adjudication of water rights establishes the legal right to use water. Water rights are private property rights—they belong to the person who put the water to beneficial use. The sum of all the individual water rights throughout a water basin establishes the total quantity of water demand in the basin. The water right adjudication process is one of the tools available to the State Engineer to measure water uses.

Eliminating the adjudication backlog is one of the agency’s top priorities. Additional funding and staff resources provided by recent legislatures have substantially improved the water-rights adjudication progress, but the costs continue to be high and the legal process is laborious. This issue must be addressed. It is becoming increasingly apparent that the State Engineer must work with the State Court system to evaluate the adjudication process so that the process can be modernized to handle the massive adjudications that the State needs to undertake.

Pueblo and Tribal Water Rights Claims

New Mexico is home to 23 Indian Pueblos and Tribes. The Pueblo claims are generally in the Rio Grande Basin, and the most significant Tribal claim is the Navajo Nation’s claim in the San Juan River Basin. The magnitude of potential Indian claims exceeds the quantities of water apportioned to the State under relevant interstate compacts – such as the Rio Grande Compact and the Upper Colorado Basin Compact.

Ongoing Indian Water Rights Adjudications

To prepare for the adjudication of water rights for the 23 Pueblos and Tribes within New Mexico, the State Engineer began adjudications of the tributaries to the major river systems over 30 years ago, which emphasizes that the delays and uncertainties inherent in this process should not be underestimated.

The history of Indian water rights litigation in New Mexico and the West strongly suggests that all parties, including the State and its citizens, are better served by informed and sincere attempts to resolve these cases through negotiation rather than by continued litigation. Such negotiated settlements are only possible if the State commits funds and resources to settle Indian water right claims. Because of certainty, the State will reap enormous benefits from settlement. The ISC and State Engineer strongly encourage continued and expanded legislative support for the negotiation and implementation of

many Pueblo and Tribal Indian water rights settlements. If appropriately funded, the new Water Trust Fund can provide for State compliance in Indian water rights settlements.

WATERS

The State Engineer is custodian of thousands of priceless and irreplaceable water right files. Each may include numerous events that may impact a water rights claim. Historically, water-rights files were often abstracted many times for many different purposes. Using the WATERS, database, all of the State Engineer's paper files will be organized and stored electronically as indexed images of the original papers. 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. All future water rights transactions will be automatically added to WATERS, keeping water rights files updated in a more efficient format. These files and images of all the water rights documents will be available to OSE/ISC staff at their desks, using their computers. They are now being made available to the public, via the Internet

WATERS, the State Engineer's and Interstate Stream Commission's electronic information resource, provides the data and information required for the Active Water Resource Management FRAMEWORK to function. WATERS is an analysis and information tool that can be shared with the public and researchers outside the agency. WATERS will focus the data available from inside and outside the agency on the geographic location of interest using Geographic Information Systems (GIS) technology. GIS strategy and design will be completed during fiscal year 2001. WATERS vision includes:

- Providing New Mexico with the increasingly complex and essential data needed to successfully manage its water
- Increasing productivity and efficiency of OSE/ISC staff.
- Improving customer service.
- Integrating all information systems in the agency; e.g., the Water Right Administration System, the Subdivision Review System, the Hydrographic Survey System, and the Water Rights Adjudication Tracking System.

At the time of this draft work plans for: 1) adjudications; 2) WATERS; 3) Active Water Resource Management; and 4) Water Rights Backlog were being completed; they will be provided in an Appendix to this document.

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.*

The State agrees with the following Pueblo and Indian Water Rights Guiding Principles submitted by several representatives of Tribes and Pueblos:

1. 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.
2. Cultural and Traditional Importance of Water. The New Mexico Pueblos and Indian Tribes highly value water and are deeply connected to their water through ancient customs 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 consultations described below.
3. Sovereign Status of Pueblos and Tribes. The State of New Mexico recognizes that each Pueblo and Indian Tribe is a sovereign government with authority and responsibility over water use and water quality within its territory. The State will respect the water management, laws, policies and practices of each Pueblo and Indian Tribe, and will work cooperatively with each Pueblo and Indian Tribe on a government-to-government basis as described below.
4. 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.
5. 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 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.

Continued uncertainty regarding the quantities and priorities of Indian and Tribal water rights is a detriment to all water rights owners. The State must redouble its efforts to conclude these adjudications and eliminate this critical uncertainty. Negotiated settlements are strongly preferred.

Policies:

The State should initiate government-to-government talks with Pueblos and Tribes as an efficient way to identify areas where settlements may be possible; other parties should not be involved during this reconnaissance phase.

Where reconnaissance phase discussions suggests that the possibility of a negotiated settlement is good, the State should promptly obtain and commit the necessary resources that will be needed for those negotiations, including hydrographic survey and Indian water rights legal staff. Note that successful negotiations may require almost same level of resources as would be devoted to litigation.

Make sustained contributions to an Indian water rights settlement trust fund or to a separate trust fund. A continually increasing fund shows the State's commitment and capability and serves as a strong incentive to settle for the United States and Tribes and Pueblos.

Section F: 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.

A central element in developing the State Water Plan is to ensure that the public input and participation is appropriately included in policy decisions involving water resources of the state. To that end the Interstate Stream Commission embarked on an ambitious public involvement process, supported by the Office of the State Engineer and the Water Trust Board agency and appointed members, as well as the State Land Office, and Indian tribes, nations and pueblos within the state.

The Interstate Stream Commission contracted with New Mexico First, a non-profit organization, to convene in a consensus-building Town Hall in Albuquerque on September 23-25, 2003. Over 140 people, both decision-makers in their official capacity and proactive citizens randomly selected through a “lottery”, came together at an historic moment for the state’s stewardship of its water resources. Building on the comments of some 1500 New Mexicans who participated in a comprehensive statewide public listening process, Town Hall attendees developed recommendations for the OSE, the ISC and the Water Trust Board regarding use 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 partnerships among individuals, institutions, governments and sovereign nations across New Mexico.

The process leading up to the Town Hall was an intense  schedule of 29 public 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 our water resources. The meetings, described as “listening outside the box”, were structured around a series of questions presented by a facilitator with discussion following each topic. Over 230 communities were represented by those who participated in these facilitated meetings. Attendance at these evening meetings averaged 50 persons per location, and ranged from seven to 175 persons. 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 of their purpose.

Stewardship was probably the most passionately articulated topic. Inevitably, discussions about protecting our water resources led to conservation. There was significant concern expressed for taking the long view in the water plan, by caring for future generations. People wanted 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 voiced. There was strong agreement that the responsibility for conserving and

sacrificing should be shared equally by urban and rural, rich and poor, developers and agriculturalists.

There is a perception in rural areas that municipalities are overusing and consuming water without restraint, which is 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.

Many more participants gave comments related to rural issues than urban issues. More rural residents attended and voiced their comments, than those who live in the larger cities. One reason is that people in rural areas fear their water rights and their way of life are threatened by population growth and current economic conditions. They also believe that rural lifestyles are more readily impacted by water shortages. One participant illuminated this fact with the comment that, in the cities, all people have to do to get water is turn on the tap, but farmers may see that their irrigation water supply significantly reduced or simply not available. Overall, farmers expressed a great deal of fear that their water would be lost, and their water rights taken.

Objective: Continue the public outreach and public involvement begun in educating the public about the state water plan, and implementation of state water policies.

Policies:

The State of New Mexico shall ensure that the public is kept informed of future water planning efforts, and timelines for updating the State Water Plan.

The State of New Mexico shall establish a citizen’s steering committee to provide input for continued public involvement in water planning.