Working Toward Solutions:

Integrating Our Water and Our Economy

State Water Plan
2013 Review

A 2013 Review of the State Water Plan

Governor Susana Martinez

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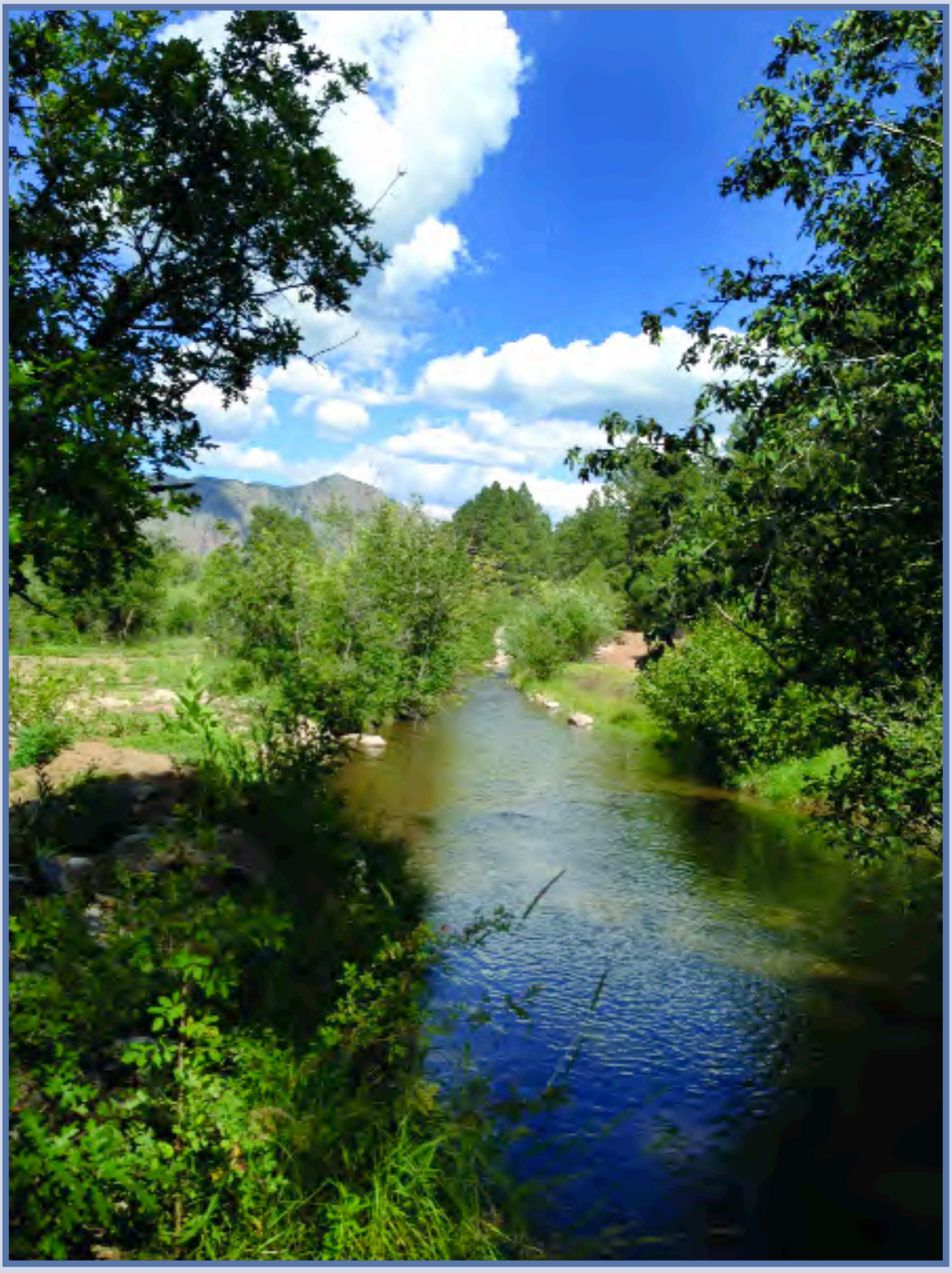


Brazos Ditch, 2013

Cover: Pecos River north of Roswell, New Mexico, 2013

FOREWARD

Extreme precipitation variability dominating New Mexico's semi-arid climate has fueled struggle and conflict over water throughout the State's history.

Dear New Mexicans,

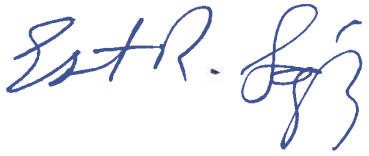
We have prepared this report to document the New Mexico Interstate Stream Commission's 2013 Review of the 2003 State Water Plan. Based on this Review, we conclude that it is necessary to prepare an update of the 2003 State Water Plan. We anticipate having a full update of the plan by December 2015.

Extreme precipitation variability dominating New Mexico's semi-arid climate has fueled struggle and conflict over water throughout the State's history. The weather events of 2013 provide a perfect illustration of these extremes. Yet opportunities exist even within periods of drought and flood to optimize water use, embrace innovation and build a stronger economy.

We will work with our communities, our leaders and our water users to build a healthy economy while strengthening our current water infrastructure, prioritizing goals for water development and management projects and maximizing efficient use of taxpayer dollars spent on water projects.

This document is the first of many steps to update and strengthen the State Water Plan so that it contributes to a viable and resilient economy.

Thank you,



Estevan López, P.E. Director
New Mexico Interstate Stream Commission

Kayaking on the Rio Grande

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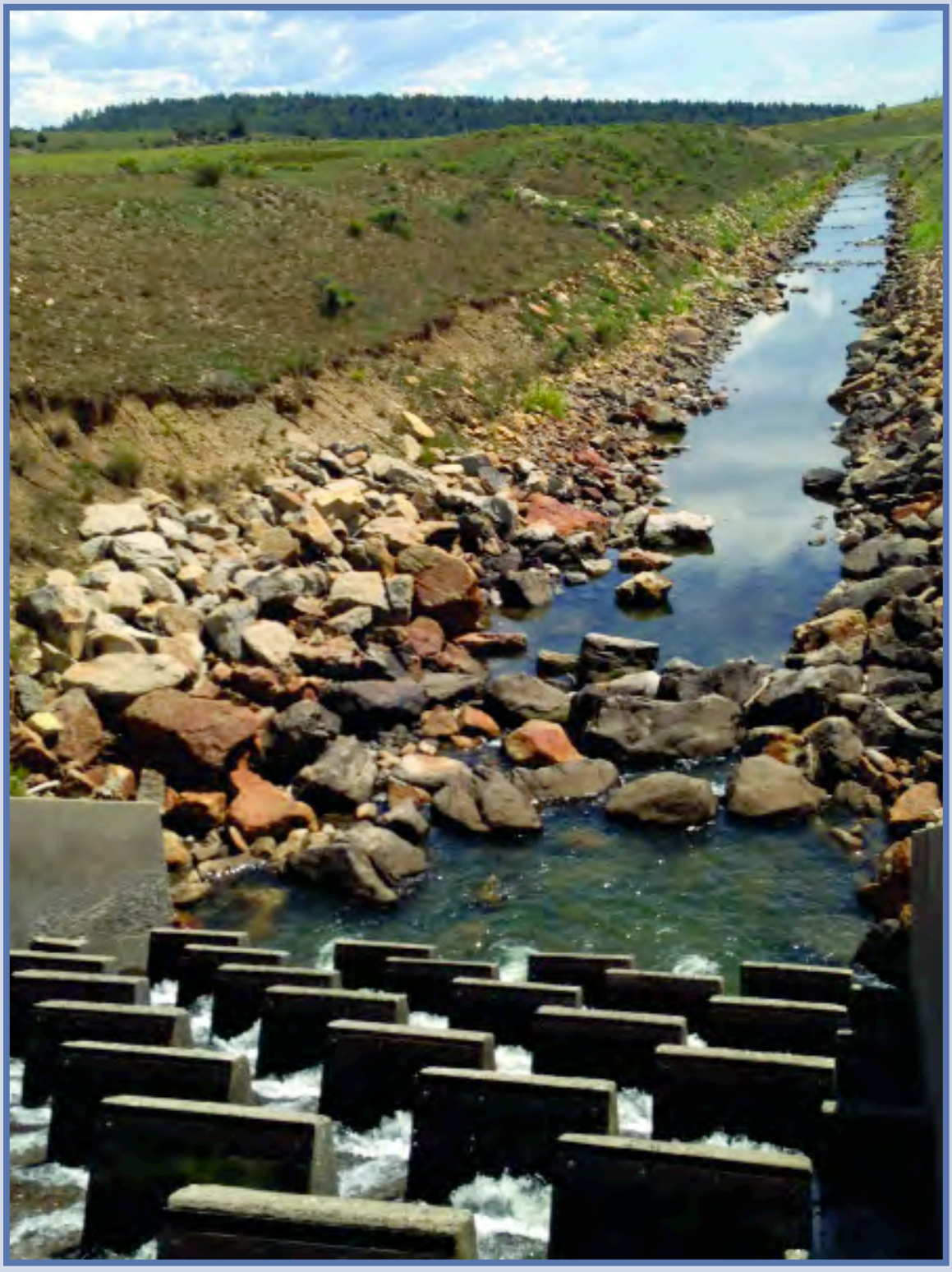


Azotea Tunnel Outlet, San Juan Chama Project near Chama, New Mexico, August 2013

INTRODUCTION

Water is the common denominator of New Mexico's future and is indispensable to the quality of life of the state's residents. Water is a basic necessity of life and the foundation of all economic activity, neither of which can occur without an adequate water supply. New Mexico must actively and efficiently manage its limited water supplies to ensure both.

The 2013 State Water Plan Review was written at the culmination of statewide precipitation extremes. The ongoing drought has dominated New Mexico since 2000 and peaked in 2013 when 42 percent of our state was categorized by the National Drought Mitigation Center as experiencing "Exceptional Drought." However, in September 2013, one week of extraordinary rain brought statewide flooding. New Mexicans were forced to adjust to extreme drought and floods all within one agricultural growing season.

Precipitation extremes over the last several years have had dire consequences on New Mexico's economy. Vast areas of the State's forests have burned during record-setting forest fires and attendant economic losses have been extensive. Tourism at state parks declined, which reduced revenue for the state and for local businesses dependent upon boaters, campers and people enjoying our great outdoors. The agricultural community has been devastated by the drought and has struggled to survive through extended years of drought. Smaller communities such as the villages of Magdalena and Maxwell have been confronted with little or no drinking water either as a direct result of drought or, as in the case of Magdalena, complicated by the need for water infrastructure improvements. Other communities such as the cities of Las Vegas and Portales have been working diligently to diversify their drinking water supplies and engage in strict conservation strategies—both of which require state and federal support.

Looking back, the 2003 State Water Plan was a policy blueprint designed to move the State forward using the best available science and conservation practices while increasing available water supply. The 2013 State Water Plan Review, prepared at the direction of Governor Susana Martinez, provides a summary of the current status of key water management issues and a review of the directives set forth in the 2003 State Water Plan. This Review is not exhaustive nor is it intended to be a detailed review of the areas that are discussed. Rather, it highlights critical issues that provide the rationale for a wholesale update of the Plan.

This Review provides information to the New Mexico state legislature, agencies, constituencies, and other stakeholders and suggests topics to be addressed in the update of the State Water Plan. It considers the infrastructure required to incentivize economic growth in our water planning regions and to insulate the economy from extreme precipitation events. Additionally, the review serves as the foundation for the State Water Planning and Regional Planning Programs, both of which are implemented through the Interstate Stream Commission and supported by the Water Trust Board through capital investment in water projects and program development.

State Engineer Verhines standing in the Storrie Lake Canal, May 2012

2013 STATE WATER PLAN REVIEW

The New Mexico Constitution establishes that all water in the state belongs to the public and, to the extent that it is unappropriated, is available for appropriation according to state law. New Mexico's statutes charge the State Engineer with the management and distribution and the Interstate Stream Commission with the investigation, protection, conservation and development of the state's waters. Through this administrative system, the state manages its waters to meet water demands, to satisfy its interstate river compact obligations, and to protect the state's waters.

Various other state agencies, boards, and commissions, including the New Mexico Environment Department, the Water Quality Control Commission, the Energy, Minerals and Natural Resources Department, the Department of Game and Fish, the New Mexico Department of Agriculture, the New Mexico Acequia Commission, and the Water Trust Board have statutory authority and responsibility over specific resource management issues that impact state and regional planning and water management efforts.

The State Water Plan is a management tool designed to promote stewardship of the state's water resources, protect and maintain water rights and their priority status; protect the diverse customs, culture, environment and economic stability of the state; protect both water supply and water quality; promote cooperative strategies in order to satisfy the basic needs of all New Mexicans; meet the state's interstate compact obligations; provide a basis for prioritizing infrastructure investment; and, provide statewide continuity of policy and management relative to our water resources. As such, the State Water Plan is a strategic management tool to assist those entities responsible for its execution.

The State Water Plan was initially written in 2003 and a review of the plan is conducted every five years. The 2008 review provided a brief summary of the 2003 State Water Plan progress toward meeting legislative objectives, and identified potential improvements to the plan and conditions that had changed over the previous five years. This 2013 Review differs from the 2008 Review in that it provides a more detailed look at selected categories of the state's major water management activities.

The 2013 Review includes elements of the statutes relevant to the water management category, the 2003 State Water Plan directives and a current reflection of the status of the 2003 directives. Additionally, the 2013 Review underscores our determination that circumstances have changed sufficiently such that an update of the 2003 State Water Plan is warranted.

Storrie Lake with very little water, Las Vegas, New Mexico, May 2012

Chapter 1

EXTREME PRECIPITATION EVENTS: DROUGHTS & FLOODS

OVERVIEW

In times of drought, the state's water resources cannot meet even the current needs of water users throughout the state.

Resiliency is part of the identity of New Mexicans, just as drought is part of our semi-arid climate. As of August 2013, the state had struggled under extreme drought conditions for thirty-six consecutive months, the driest and hottest period in the last hundred and eighteen years. Then, in September 2013, parts of New Mexico received about a year's supply of rain in a single week or less, flooding regions across the state as well as filling reservoirs with much needed water.

The current challenge is to strengthen the state's resiliency and lessen our vulnerability to extreme precipitation events.

New Mexico continues to implement and adopt water management practices, build secure water infrastructure and enhance water conservation measures to ensure public safety, economic opportunities and growth. State and regional water planning are integral components for coordinating efforts for meeting New Mexican water needs.

Santa Rosa Reservoir 2011

Santa Rosa Reservoir 2012

NEW MEXICO STATUTES[1]*

Section 72-14-3.1 (C)(6) [State water plan statute]: 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.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

In the 2003 State Water Plan, drought is regarded as a factor relevant to public welfare. "In times of drought, the state's water resources cannot meet even the current needs of water users throughout the state; much less accommodate new and increasing demands such as federal environmental mandates." (State Water Plan, 2003)[2].

Additionally, drought management is described in the plan by a set of implementation strategies focusing upon actions of the Drought Task Force, development of water shortage sharing agreements, and water conservation and drought education. Specifically, the 2003 State Water Plan recommended that the state's Drought Task Force be in continuous operation to mitigate drought impacts and reduce the state's vulnerability to drought.

CURRENT STATUS

For the last several years, extreme drought conditions have impacted New Mexico both directly and indirectly. Record setting wildfires over the past three years have caused substantial damage to our watersheds, which provide drinking water for a significant portion of our population. Wildfires produce water quality changes that impact fish and other aquatic organisms, drinking water supplies and agricultural water conveyance. Moreover, reduced precipitation means there has been little aquifer recharge. And, notwithstanding the September 2013 rains, the levels of most reservoirs in the state continue to be low. Consequently, communities dependent upon surface and groundwater have become increasingly vulnerable.

In certain New Mexico communities, water supply and public safety are also threatened by dilapidated water infrastructure. Many of New Mexico's water storage and water control needs have been met through the construction of hundreds of dams throughout the state. A number of these dams are over 50 years old and some of them predate statehood. Many of New Mexico's dams have some form of identified deficiency. Many of these identified problems relate to potential performance in an extreme event such as a flood. Other deficiencies are the result of deferred maintenance and age while others are related to concerns such as uncertainties with design and construction methods. The estimated cost for improvement of all publicly-owned dams in New Mexico exceeds $140 million. The investment that has been made in New Mexico's dam-related infrastructure requires continued reinvestment to meet present and future community needs. Because the reinvestment in New Mexico dams is a costly long-term project, the need to plan, prioritize, and make effective use of all funding resources is critical.

The flooding of September 2013 dramatically illustrated New Mexico's dependence upon adequately maintained and properly designed dams and other flood protection infrastructure. Under the direction of Governor Susana Martinez, the New Mexico Environment Department launched an outreach campaign to identify and support communities whose drinking water systems were vulnerable to water quality and quantity impacts. This campaign initiated actions to prevent catastrophic economic damage and threats to public safety. Similarly, the New Mexico Office of the State Engineer assessed flood protection infrastructure and prioritized remedial actions where necessary.

Drought impacts on agriculture included a dramatic reduction in surface water irrigation allotments to farmers. For example, the 2013 surface water irrigation season in the Lower Rio Grande was notable for being the shortest on record.

** All statutory citations in the Review are to the New Mexico Statutes Annotated 1978.*

State Engineer Verbines standing in a dry riverbed, Rio Grande near Las Cruces, New Mexico, May 2012

The effects of drought are far reaching and include impacts to tourism and recreation that can span all seasons.

Throughout the state, economic impacts to agriculture included loss of crop production, fallowed farmland, decreased crop yield, increased production costs due to supplemental groundwater pumping, increased investment in deepening of existing wells and drilling of supplemental wells.

Economic impacts from drought for livestock producers in New Mexico included worsening range conditions, reduced soil moisture and loss of production, decreases in herd size, increased costs of production due to higher feed costs and water hauling costs, tax liabilities from herd liquidations and decreased property tax rolls for counties. Production of rangeland forage was decreased, erosion increased and the threat and establishment of invasive species increased.

The effects of drought are far reaching and include impacts to tourism and recreation that can span all seasons. The most obvious are reductions in activities, such as boating, rafting, canoeing, fishing, snowmobiling, or skiing, resulting from lower water levels or snowpack. Indirect drought impacts are more difficult to quantify, but include ancillary economic consequences such as decreased tourism visits, cancellations in hotel stays, and reduction in booked holidays.

These could stem from negative perceptions of dryness, fire bans, or wildfires burning near vacation destinations. Wildlife viewing or hunting may also be affected, causing reduced revenues for nearby towns and communities. The Ruidoso News reported in June of 2013, "...that visitors at state parks over Memorial Day weekend declined 40.6 percent from 2012, to just under 315,000." The ultimate result is decreased tourism and recreation dollars for the local economy and a reduction of sales and hotel taxes, potentially contributing to unemployment.

The Rio Grande north of Las Cruces, New Mexico, May 2012

New Mexico Drought Task Force

In light of the unprecedented drought conditions of recent years, Governor Susana Martinez directed the Drought Task Force to explore options to mitigate drought impacts. The New Mexico Drought Task Force oversees drought preparedness activities in the state and works to identify and reduce New Mexico's vulnerabilities to drought.

The New Mexico Drought Task Force is comprised of representatives from the following New Mexico agencies: Office of the State Engineer, Interstate Stream Commission, Environment Department, Economic Development Department, Department of Health, Tourism Department, Department of Agriculture, Finance Authority, Department of Finance and Administration, Homeland Security and Emergency Management, Energy Minerals and Natural Resources Department and the Office of the Governor. The New Mexico Drought Task Force is chaired by the State Engineer.

Currently, the New Mexico Drought Task Force has two active committees: the Monitoring Work Group and the Impact Assessment Committee. The Monitoring Work Group includes water resource and climate professionals from all levels of government and monitors available climatological, soil moisture, reservoir storage, and other data to assess drought conditions. The Impact Assessment Committee is comprised of agency staff with knowledge of the various economic sectors impacted by drought. This committee reviews and analyzes how drought impacts identified sectors in New Mexico and updates current drought plans to mitigate those impacts.
In early spring of 2013, Chairman Scott Verhines, at the direction of Governor Martinez, created subcommittees to address innovation and economic development, agricultural water conservation, watershed health and management, recoverable water, capital outlay criteria, and the State Water Plan.

Reference

[1] NM Annotated Statutes

[2] Office of the State Engineer and Interstate Stream Commission (NMOSE/NMISC), 2003. New Mexico State Water Plan, December 23, 2003. Available at: http://www.ose.state.nm.us/publications_state_water_plans.html

Rio Grande, August, 2013

Brazos Acequia near Chama, New Mexico, August 2013

Chapter 2

ACTIVE WATER RESOURCE MANAGEMENT

OVERVIEW

Adapting to changes in water supply is critically important to New Mexico. Our economy, environment, and citizens need water management mechanisms that accommodate highly variable hydrologically connected surface and groundwater supplies. The New Mexico Legislature recognized this need in 2003 when it enacted Senate Bill 551, which was codified as section 72-2-9.1, NMSA 1978. The legislation recognized that the water rights adjudication process is slow, the need for water administration is urgent, and interstate compact compliance is imperative. It also directed the State Engineer to adopt rules for priority administration of water rights and to promote expedited marketing and leasing of water in times of shortage.

In response to this legislative mandate, the State Engineer promulgated new rules to provide the framework for statewide implementation of Active Water Resource Management.

The Active Water Resource Management initiative includes a comprehensive set of tools that allow New Mexico to effectively manage water resources, protect senior water rights, and meet interstate delivery obligations.

These tools include metering and measuring diversions, creating water markets, and developing a management structure responsive to changing conditions that includes: the appointment of water masters by State Engineer defined district, and promulgation of district-specific rules and development of water master manuals to implement those rules. Use of these tools will promote fairness and maximize efficient use of available water supplies.

Active Water Resource Management also allows for water users in a region to work with the State Engineer, and to develop local mechanisms for alternative administration in times of shortage.

Agriculture in the Lower Rio Grande Valley, May 2012

Meter in the Lower Rio Grande Valley

NEW MEXICO STATUTES

72-14-3.1(C)(2)
[State water plan statute]:
Establish a clear vision and policy direction for active management of the state's waters.

72-2-9.1

A. The legislature recognizes that the adjudication process is slow, the need for water administration is urgent, compliance with interstate compacts is imperative and the state engineer has authority to administer water allocations in accordance with the water right priorities recorded with or declared or otherwise available to the State Engineer;

B. The State Engineer shall adopt rules for priority administration to ensure that authority is exercised:
(1) so as not to interfere with a future or pending adjudication;
(2) so as to create no impair ment of water rights, other than what is required to enforce priorities; and
(3) so as to create no increased depletions.

C. The State Engineer shall adopt rules based on the appropriate hydrologic models to promote expedited marketing and leasing of water in those areas affected by priority administration. The rules shall be consistent with the rights, remedies and criteria established by law for proceedings for water use leasing and for changes in point of diversion, place of use and purpose of use of water rights. The rules shall not apply to acequias or community ditches or to water rights served by an acequia or community ditch.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan sets out a variety of implementation strategies for active management of New Mexico's waters. Specifically, the 2003 plan directs the State Engineer to establish water master districts and appoint water masters to administer diversions and existing water rights as necessary. The plan also recommends adequate funding for the State Engineer to acquire the technical support necessary for efficient administration and management of the state's waters. This includes real time measuring and metering equipment, remote sensing technologies, GIS technologies, and surface and groundwater models.

Additionally, the 2003 State Water Plan directs the State Engineer to encourage voluntary agreements among water users to allocate water in times of shortage. At the same time, the plan cautions that despite the creation of shortage sharing agreements, the State Engineer must be prepared for priority administration of water rights where such agreements are not implemented.

The 2003 State Water Plan also acknowledges the need for the development of efficient local water markets and recommends that the State Engineer and local governments work together to promote improvements in local land-use decision making and in the permitting of domestic wells.

CURRENT STATUS

Significant progress has been made on Active Water Resource Management implementation. Water master districts have been created for seven priority basins across the state, and water masters have been hired for each district. The water masters have been installing meters and measurement devices and implementing metering orders. To date, metering orders are in place in the Capitan, Roswell Artesian, Lower Rio Grande, Hot Springs, Las Animas Creek, Gila-San Francisco, and Mimbres Underground Water Basins, the Carlsbad, Elephant Butte, and Fort Sumner Irrigation Districts, and on the MB Ditch on the Rio Chama.

In 2012, in response to a legal challenge filed in 2004, the New Mexico Supreme Court ruled that the Active Water Resource Management framework rules are constitutional. The Court specifically held that the rules do not violate the separation of powers, do not violate due process, and are not unconstitutionally vague. Since that ruling, the State Engineer has directed his staff to renew efforts to promulgate district-specific Active Water Resource Management rules for the seven priority basins.

Measuring the Acequia Madre in Las Vegas, New Mexico

Irrigated Agriculture in the Pecos Valley

The Lower Rio Grande Basin will be the first priority basin to have district-specific rules promulgated, likely followed by the Lower Pecos and San Juan Basins. In the Lower Rio Grande, the State Engineer staff is working with local groundwater irrigators to develop a set of district-specific rules that will protect the aquifer, help prevent and payback over-diversions, and incorporate alternative administration. The rules will also allow for water-banking; specifically, State Engineer staff have been working with the New Mexico Water Resources Research Institute and local Lower Rio Grande irrigator groups to develop a groundwater bank to provide a source of water for both economic transactions and for groundwater irrigators to either avoid or payback over-diversions.

In 2013, New Mexico experienced both successful shortage sharing and priority calls. The Rio Chama Acequia Association in northern New Mexico was able to develop and implement a rotation schedule for its irrigators to manage through the extreme drought conditions they experienced that summer. In contrast, in the same year, the Carlsbad Irrigation District in southeastern New Mexico made a priority call against junior water users upstream, which include the Pecos Valley Artesian Conservancy District and the cities of Roswell and Artesia, among others.

The State Engineer was in the process of responding to this priority call when September floods refilled upstream reservoirs on the Pecos and obviated the priority call. The Carlsbad Irrigation District priority call is an example of the need for priority administration in the absence of shortage sharing agreements or other alternative forms of administration.

Finally, the New Mexico Supreme Court addressed longstanding questions about the constitutionality of New Mexico's domestic well statute in a 2013 ruling. In that case, the plaintiff claimed that the domestic well statute created an exception to the prior appropriation doctrine. He argued that this exception impermissibly allowed for new appropriations in fully appropriated stream systems and consequently deprived him of his surface water right without due process.

After seven years of litigation, the Supreme Court ruled that the statute is constitutional on its face and does not violate either the doctrine of prior appropriation set forth in the New Mexico Constitution, or the guarantees of due process of law.

The State Engineer's 2006 domestic well regulations provide protections to surface water rights from impacts from domestic wells. Those regulations played a significant part in the Supreme Court's decision. The Supreme Court found that in addition to the State Engineer's regulatory efforts, the legislature has taken steps to protect senior water rights from impacts from domestic wells.

The Court favorably noted that the 2013 Legislature amended two acts governing county approval of subdivisions by placing limits on the use of domestic wells as the source of water for subdivisions.

Lake Nighthorse, storage for Animas La Plata Project near Durango, Colorado, 2013

Chapter 3

DEVELOPING WATER SOURCES

OVERVIEW

For a new use of water to begin an existing use must be retired, meaning that the existing use must permanently end.

New Mexico's surface water supplies are limited and highly variable. Most, if not all, of the surface water in New Mexico is dedicated to existing water uses and there is little to no "new" water available to meet future demands.

In fact, in most areas of the state, for a new use of water to begin an existing use must be retired, meaning that the existing use must permanently end.

In addition, while the state is fortunate to have large amounts of groundwater, groundwater supplies are often limited due to actual physical shortage, worsening water quality, or institutional constraints such as impairment of existing groundwater or surface water uses.

Eastern New Mexico drinking water supply, Ute Reservoir, November 2013

Construction on the intake structure, a key component to delivering drinking water to New Mexicans, Ute Reservoir, November 2013

NEW MEXICO STATUTES

72-14-3.1(C) (13)
[State water plan statute]:
Identify water-related infrastructure and management and investment needs and opportunities to leverage federal and other funding.

72-14-3.1(C) (14)
[State water plan statute]:
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.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan directs the Interstate Stream Commission and the State Engineer to continue the development of methodologies and tools to estimate the longevity of water supplies around the state. The 2003 State Water Plan also contains the directive of identifying water infrastructure, and management and investment needs.

CURRENT STATUS

The State of New Mexico is involved in programs, projects, and research to ensure the availability of water. New Mexico is in the process of developing several large scale projects to increase drinking water supply. These projects include the Ute Pipeline, Navajo-Gallup Water Supply Project, the Animas-La Plata Project and innovations in accessing and utilizing deep groundwater reserves. In addition, an ongoing planning process pursuant to the federal 2004 Arizona Water Settlements Act could result in increased water for the state via one or more water supply projects.

New Mexico has long recognized that groundwater supply supporting the eastern portion of the state will one day be unable to meet the needs of the region. In 1963, The New Mexico Interstate Stream Commission built Ute Reservoir to provide a renewable source of drinking water for a number of communities in eastern New Mexico. To date, construction of the intake structure for the Ute Pipeline is underway. Development of this water source for municipal uses in this region as groundwater continues to decline.

In northwestern New Mexico, drinking water supplies are being developed for use by the Navajo Nation, the city of Gallup and the Jicarilla Apache Nation. The core of the Navajo Indian Water Rights Settlement is the development of the Navajo-Gallup Water Supply Project which will provide reliable and renewable domestic water supply to households on the Navajo Nation, in and around the city of Gallup and on the Jicarilla Apache Nation. The construction of the Navajo-Gallup Water Supply Project brings construction jobs to the northwestern area of the state, increases gross receipts tax revenues, and provides drinking water to both Indian and non-Indian water users.

The Animas-La Plata Project will provide about 27,000 acre-feet of water for the communities of Farmington, Aztec, Bloomfield and Shiprock and others in northwest New Mexico. The project consists of a pumping plant and a 120,000 acre-foot off-channel reservoir, Lake Nighthorse near Durango, Colorado and a pipeline running between Farmington and Shiprock. All of the project's facilities have been built and will begin delivering water soon.

The 2004 Arizona Water Settlement Act allocates to New Mexico an annual average of 14,000 acre-feet of additional water from the Gila Basin and up to $128 million in non-reimbursable federal funding. The funds can be used only in the southwestern New Mexico region (Grant, Luna, Hidalgo and Catron counties). Planning for use of the water and funding has been under way for years. The Arizona Water Settlement Act requires that the New Mexico Interstate Stream Commission notify the Secretary of the United States Department of Interior by December 31, 2014 as to whether New Mexico will develop any of the additional water available to it under the Act.

New Mexico has significant water quantity and quality technical expertise at its state

Gila River, New Mexico

universities. The University of New Mexico, New Mexico Tech, and New Mexico State University, as well as Eastern, Western, and Highlands Universities, have departments and/or individual researchers with specialized expertise in aspects of water resource management. The expertise ranges from river and reservoir management to surface water hydrology and groundwater hydrogeology to agricultural and municipal water engineering and watershed management. Information regarding the research efforts at each university can be found by searching the internet by university name.

Beyond its individual research efforts, New Mexico State University is home to the Water Resources and Research Institute. The Water Resources and Research Institute was established in 1963, by the New Mexico legislature. The institute funds research conducted by faculty and students from universities across the state to address water problems critical to New Mexico and the Southwest. The institute also participates in joint efforts to solve water-related problems along the United States/Mexico border. The institute strives to alleviate water problems, working toward ensuring an ample supply of high quality water for future generations. In 2013, the Institute received a National Science Foundation grant of which a portion is set aside for the development of a state water budget. The Office of the State Engineer and the Interstate Stream Commission expect to collaborate with the institute on the $5 million project over the next five years.

In addition to our state universities, the United States Bureau of Reclamation's Brackish Groundwater National Desalination Research Facility, located in Alamogordo is a focal point for developing technologies for the desalination of brackish and impaired groundwater found in the inland states. The facility provides state-of-the-art facilities for desalination research, pilot-scale desalination projects and small demonstration projects. It brings together researchers from other federal agencies, universities, the private sector, research organizations, and state and local agencies to collaborate in partnership.

Finally, any update of a water plan, whether the state plan or a regional plan is a perfect opportunity to comply with the directive to continue the development of methodologies and tools to estimate the longevity of water supplies around the state.

Chama River intake area, Village of Chama, New Mexico, August 2013

Chapter 4

PRESERVING WATER QUALITY

OVERVIEW

The protection of New Mexico's ground water resources is mandated, and includes the clean-up of contaminated sites which pose significant risks to human health and the environment.

Ensuring water is available to provide safe and adequate supplies for all New Mexicans is a fundamental goal for the state and is critical to the current and future economic viability of our state and its citizens. New Mexico uses a variety of mechanisms, including state, federal, and local programs, to protect and restore the quality of its surface and ground waters.

New Mexico's Water Quality Standards for Interstate and Intrastate Surface Waters, codified at 20.6.4 NMAC, define water quality goals by designating uses for rivers, streams, lakes and other surface waters, setting criteria to protect those uses, and establishing anti-degradation provisions to preserve water quality. The Standards are adopted by the Water Quality Control Commission[1], and then approved by the United States Environmental Protection Agency under the federal Clean Water Act. The protection of New Mexico's ground water resources is mandated by the Water Quality Act and the Water Quality Control Commission regulations and ground water quality standards (20.6.2 NMAC), including the clean-up of contaminated sites which pose significant risks to human health and the environment[2].

Surface water quality sampling on Ponil Creek, Cimarron, New Mexico

Rio Nambe, an Outstanding National Resource Waters*–designated stream in the Pecos Wilderness*

NEW MEXICO STATUTES

72-14-3.1(C) (3)
[State water plan statute]:
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.

72-14-3.1(C) (8)
[State water plan statute]:
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.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan directives on water quality are focused on the continued coordination of the state's agencies. The plan provides directives for the continued collection of water quality and water quantity data, as well as the expansion of aquifer mapping projects.

CURRENT STATUS

The New Mexico Environment Department is the agency primarily responsible for water quality management and protection activities in the state.

For surface waters, designated uses include fish culture, public water supply, industrial water supply, domestic water supply, irrigation, primary contact (including cultural, religious or ceremonial purposes), secondary contact, livestock watering, wildlife habitat, and aquatic life. To protect these uses and fulfill the requirements set forth under the federal Clean Water Act and the state's Water Quality Act, numerous programs have been developed to monitor, assess, protect, and restore surface water quality throughout New Mexico.

The state conducts surface water quality planning on a statewide level. The New Mexico Environment Department' Surface Water Quality Bureau[3] uses an integrated planning and management strategy which protects water quality within a watershed by:

- Developing appropriate water quality standards for New Mexico's waters based on the best available scientific information;
- Identifying where water quality standards are not meet through an 8-year rotational survey schedule;
- Studying the causes of these water quality problems through the development of Total Maximum Daily Load (TMDL) and Watershed Based Plan (WBPs) documents;
- Developing approaches that include effluent water quality limits for permitted discharges to address point source pollution and the voluntary implementation of Best Management Practices to address non-point source pollution; and
- Follow-up monitoring to assess the effectiveness of the implemented solutions.

The New Mexico Environment Department's Ground Water Quality Bureau reviews and approves ground water Discharge Permits for discharges that have the potential to impact g round water quality and oversees ground water investigation and remediation activities.

The New Mexico Environment Department's Drinking Water Bureau is responsible for preserving, protecting, and improving New Mexico's drinking water quality for present and future generations and enforces standards for harmful contaminants such as pesticides, volatile organics, and radiological, chemical, and bacteriological contaminants.

The Drinking Water Bureau's Source Water Assessment and Protection Program works with public water systems to protect surface and ground water sources. This group conducts assessments of surface water sources' vulnerability to contamination for all public water systems utilizing surface water sources.

The New Mexico Department of Health also plays a vital role in preserving our water quality by examining the primary contaminants in drinking water supplies that can cause adverse health effects, primarily excess nitrates and biological contamination.

The Department of Health monitors reported diseases and organisms that are potentially water-related in an effort to help ensure the safety of New Mexico's public drinking water. When a Boil Water Advisory is issued by the Environment Department, the Department of Health provides educational materials for the public and advises district public health officials to be on alert for cases of gastrointestinal illness.

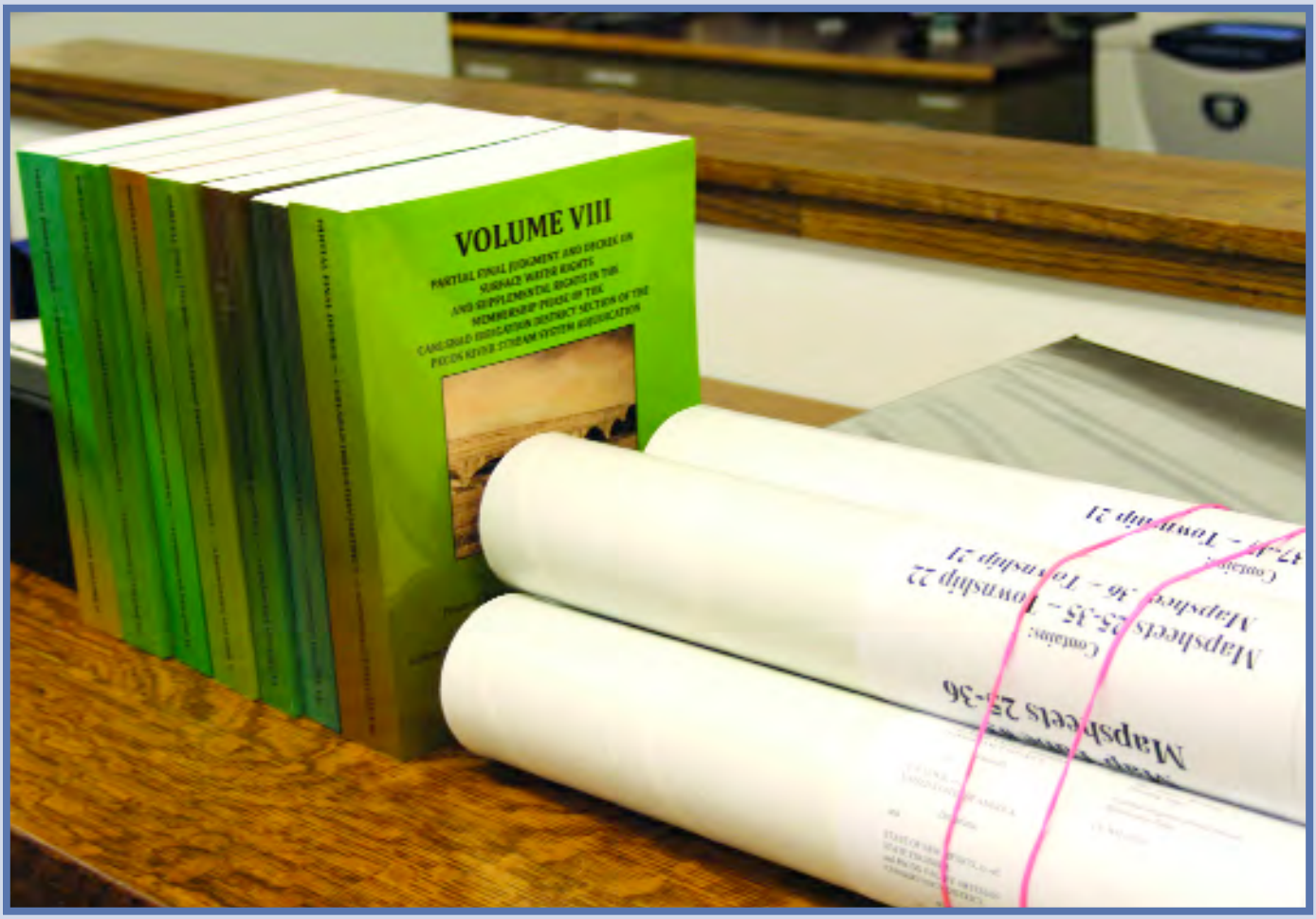
References

[1] New Mexico Water Quality Control Commission (NMWQCC). *2012-2014 State of New Mexico Clean Water Act (CWA) §303(d)/ §305(b) Integrated Report* (Integrated Report): ftp://ftp.nmenv.state.nm.us/www/swqb/303d-305b/2012-2014/2012-2014USEPA-ApprovedNMReport.pdf.

[2] New Mexico Water Quality Control Commission (NMWQCC). 2011. State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process. Santa Fe,New Mexico. ftp://ftp.nmenv.state.nm.us/www/swqb/WQMP-CPP/WQMP-CPP-December2011.pdf

[3] New Mexico Environment Department/ Surface Water Quality Bureau (NMED/SWQB). 2009. New Mexico Nonpoint Source Management Program. Available at: http://www.nmenv.state.nm.us/swqb/WPS/Plan/index.html

Acequia Madre in Las Vegas, New Mexico



Appendices to the Proposed Partial Final Judgement Decree for the Carlsbad Irrigation District Adjudication, Roswell Court House, 2012

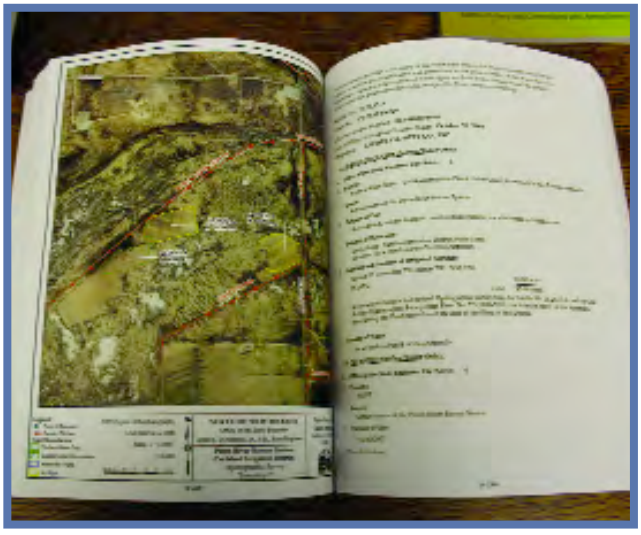
Chapter 5

WATER RIGHTS ADJUDICATIONS

OVERVIEW

Water rights adjudications are comprehensive court proceedings required by state law to determine all rights to the use of the state's waters in a particular stream system. Each water rights adjudication produces a single court decree that judicially determines the elements of all water rights, for both surface and groundwater, in the stream system. Adjudication decrees facilitate the State Engineer's ability to actively manage the state's waters to protect senior water rights and ensure that New Mexico meets its interstate stream obligations. The adjudication of water rights also provides certainty for water right owners and promotes the state's ability to maintain administrative authority over its waters.

In addition to the claims of non-Indians based on state water law, New Mexico's stream systems also are subject to the water right claims of Indian Pueblos, Tribes, and Nations. Indian water right claims are of critical significance because of their claimed early priorities and considerable size. Comprehensive stream system adjudications are necessary to fully determine and quantify these claims. Under the federal McCarran Amendment and related case law, the adjudication by a court of all water rights in a stream system is the only way to determine Indian water right claims so that they can be integrated into a uniform and efficient system of water rights administration.



An open volume from the Proposed Partial Final Judgement Decree for the Carlsbad Irrigation District Adjudication, showing map and description of an individual water right.

NEW MEXICO STATUTES

72-14-3.1 (D) (1)
[State water plan statute]:
Include work plans and strategies for completion of water rights adjudications, with required supporting documentation, including hydrographic surveys, aquifer mapping and aerial mapping of irrigated land.

72-4-13:
The State Engineer shall make hydrographic surveys and investigations of each stream system and source of water supply in the state, beginning with those most used for irrigation, and obtaining and recording all available data for the determination, development and adjudication of water supply of the state.

72-4-15:
Upon the completion of the hydrographic survey of any stream system, the State Engineer shall deliver a copy of so much thereof as may be necessary for the determination of all rights to the use of the waters of such system together with all other data in his possession necessary for such determination, to the attorney general of the state who shall, at the request of the State Engineer, enter suit on behalf of the state for the determination of all rights to the use of such water, in order that the amount of unappropriated water subject to disposition by the state under the terms of this chapter may become known, and shall diligently prosecute the same to a final adjudication.

72-4-17:
In any suit for the determination of a right to use the waters of any stream system, all those whose claim to the use of such waters are of record and all other claimants, so far as they can be ascertained, with reasonable diligence, shall be made parties.... The court in which any suit involving the adjudication of water rights may be properly brought shall have exclusive jurisdiction to hear and determine all questions necessary for the adjudication of all water rights within the stream system involved.

72-4-19:
Upon the adjudication of the rights to the use of the waters of a stream system, a certified copy of the decree shall be prepared and filed in the office of the State Engineer by the clerk of the court, at the cost of the parties. Such decree shall in every case declare, as to the water right adjudged to each party, the priority, amount, purpose, periods and place of use, and as to water used for irrigation, except as otherwise provided in this article, the specific tracts of land to which it shall be appurtenant, together with such other conditions as may be necessary to define the right and its priority.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

Completing water rights adjudications is one of the eleven common priorities, goals, and objectives identified in the 2003 State Water Plan. The 2003 plan also sets out four implementation strategies for the completion of New Mexico's twelve pending water rights adjudication suits. These implementation strategies call for the development of plans and the prioritization of resources for the completion of adjudications and periodic reporting to update the public on progress towards completion. In conjunction with the courts, the Office of the State Engineer and the Special Assistant Attorneys General representing the state in water rights adjudications have carried out these strategies over the course of the past ten years.

The courts, the Office of the State Engineer, and the state's adjudication attorneys have implemented numerous process and technical improvements to make the adjudication process more efficient and transparent and less adversarial for water right owners. These include:

- New state court procedural rules adopted specifically for adjudications;
- The designation of a single judge assisted by special masters for all state court adjudications;
- Use of geographic information systems, databases, field GPS units, and other computer-based technical tools to conduct hydrographic survey

Aamodt Settlement public meeting, 2012

work and prepare documentation to support final adjudication decrees;
- Use of field offices, individual field visits, and informal negotiation to address and resolve objections of water right owners before resorting to litigation;
- An ombudsman program at the Utton Center at the University of New Mexico School of Law to help water right owners better understand and navigate the adjudication process;
- Enhanced public notice through court web sites and electronic service of documents; and
- Use of mediators to resolve disputes short of trial.

Pursuant to one of the new procedural rules adopted by the New Mexico Supreme Court for adjudications, the attorneys representing the state in adjudications prepare a report each June identifying how the state's available adjudication personnel will be allocated across the twelve pending adjudication suits in the coming fiscal year. The report also identifies, for each adjudication, the matters those personnel will be working on and the matters that were completed in the previous fiscal year. The report is filed in the state adjudication courts and made available to all adjudication defendants. At the beginning of each fiscal year the state's attorneys present and discuss the report in a joint working session with the adjudication judges, special masters and interested parties.

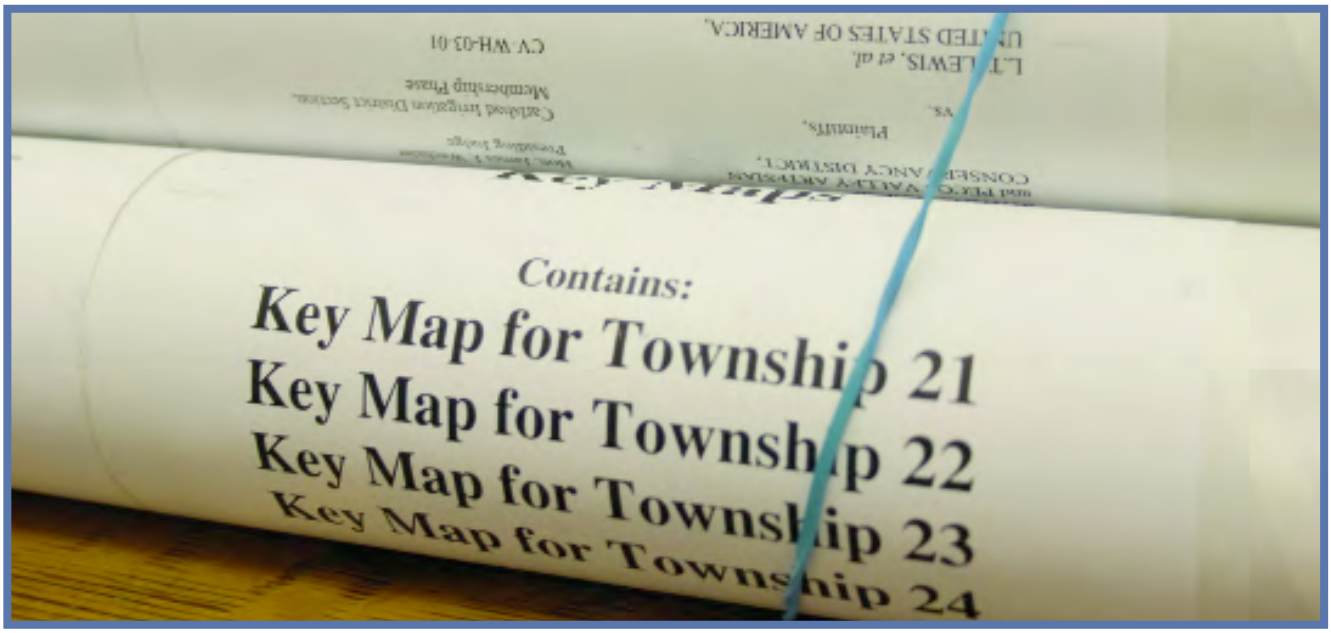
CURRENT STATUS

Before an adjudication law suit is filed, Office of the State Engineer hydrographic survey staff conduct a hydrographic survey to locate, map, quantify, and establish priority dates for all water rights within the geographic scope of the adjudication or within a section of the adjudication.

Upon completion of the hydrographic survey, the State Engineer transmits its findings to the New Mexico Attorney General to support the filing of a suit on behalf of the state for the judicial determination of each water right within the stream system.

In an adjudication suit, the legal basis and elements of each water right are described in a proposed consent order which the state serves on the defendant water right owner. Any objections raised by the defendant are addressed through informal meetings, additional field visits, negotiation, mediation, or litigation where necessary.

Once the defendant's objections have been resolved, the court enters a subfile order defining the elements of the water right. After the court has



Large scale hydrographic survey map appendix for the Proposed Partial Final Judgement Decree for the Carlsbad Irrigation District Adjudication

entered subfile orders for all water rights in the adjudication, defendants may challenge the water rights of other defendants during the inter se (literally "among themselves") phase of the adjudication. After inter se challenges have been resolved, the adjudication court issues a final decree that defines all water rights within the geographic scope of the adjudication.

Twelve adjudication suits are currently pending in New Mexico courts, involving water rights within the Rio Grande, Pecos, Upper Colorado River, and Lower Colorado River drainages.

Half of these suits are pending in state court, and half in federal court. These adjudications include the Pecos River stream system (from its headwaters east of Santa Fe to the Texas state line), initiated in 1956, seven adjudications on tributaries to the Rio Grande, filed between 1966 and 1983, the San Juan River stream system, filed in 1975, the Lower Rio Grande stream system, filed in 1986, and the Zuni River stream system, filed in 2001. These adjudications encompass the water right claims of an estimated 72,000 individual claimants, federal government agencies, irrigation districts, reclamation and conservancy projects, large municipalities, community ditches, and most of New Mexico's Indian Pueblos, Tribes, and Nations.

In the decade since 2003, New Mexico has made significant progress addressing all of these different types of water right claims in water rights adjudications. During that period, New Mexico's adjudication courts have entered approximately 10,000 subfile orders determining the elements of water rights held by individuals.

The courts also have conducted numerous, complex, multi-party proceedings to resolve the claims of irrigation districts, federal reclamation projects, acequias and community ditches, and municipalities.

During that same period, three New Mexico adjudications have addressed the water right claims of the Navajo Nation and five Indian Pueblos. These claims are the subject of three pending Indian water rights settlements: the Navajo Nation Water Rights Settlement in the San Juan River adjudication; the Settlement Agreement that resolves the water rights claims of the Pueblos of Nambé, Pojoaque, Tesuque, and San Ildefonso in the Aamodt adjudication; and, the Taos Pueblo Settlement that settles the water rights claims of Taos Pueblo in the Rio Pueblo de Taos/Rio Hondo Abeyta adjudication. For each of these three settlements, a settlement agreement was executed in 2005

Secretary of Interior Ken Salazar, speaks about Indian Water Rights Settlements, Albuquerque, New Mexico, 2012

Twelve adjudication suits are currently pending in New Mexico courts, involving water rights within the Rio Grande, Pecos, Upper Colorado River, and Lower Colorado River drainages.

or 2006 by the Tribe or Pueblos and the State of New Mexico.

After passage of federal legislation authorizing each of the settlements in 2009 and 2010, the Secretary of the U.S. Department of Interior signed all three settlement agreements on behalf of the United States. The San Juan adjudication court entered Partial Final Judgments and Decrees on the Navajo Nation's water rights in November, 2013. The Aamodt and Taos adjudication courts are currently conducting inter se proceedings to determine whether to enter the Partial Final Judgments and Decrees describing the water rights of the Pueblos pursuant to the Aamodt and Taos settlement agreements.

Each of the settlement agreements provides a final determination of the Nation or Pueblos' water rights and federal funding for the construction of water projects that benefit both the Tribe and Pueblos and non-Indian water right owners in the stream systems.

Construction of the Cutter Lateral, integral to the Navajo-Gallup Water Supply Project, a cornerstone of the Navajo Nation Water Rights Settlement, 2013

Chapter 6

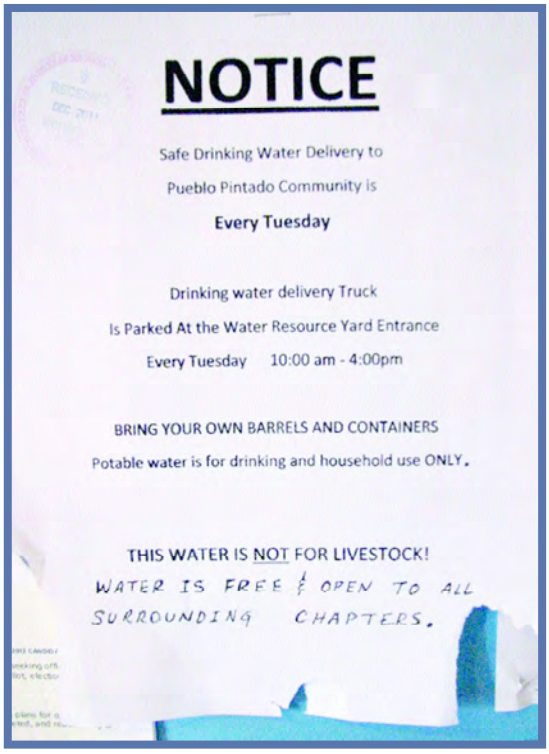
INDIAN WATER RIGHTS SETTLEMENTS

OVERVIEW

Fulfilling our commitments to the Tribes, Pueblos and Nations within New Mexico has been a major focus of both the Office of the State Engineer and the Interstate Stream Commission.

Fulfilling our commitments to the Tribes, Pueblos and Nations within New Mexico has been a major focus of both the Office of the State Engineer and the Interstate Stream Commission. To date, New Mexico has three Indian Water Rights settlements pending: the Navajo Nation Water Rights Settlement that resolves the water rights claims of the Navajo Nation in the San Juan River adjudication, the Settlement Agreement that resolves the water rights claims of the Pueblos of Nambe, Pojoaque, Tesuque and San Ildefonso in the Aamodt adjudication, and the Taos Pueblo Settlement that settles the water rights claims of Taos Pueblo Abeyta adjudication. For each of these three settlements, a settlement agreement was executed in 2005 or 2006 by the Tribe or Pueblos and the State of New Mexico.

Navajo Nation tribal members at the watering station near Gallup, New Mexico



Drinking water delivery bulletin, WhiteHorse Lake Chapter, Navajo Nation, New Mexico, April, 2012

NEW MEXICO STATUTES

72-14-3.1 (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.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan strongly emphasizes the value of resolving water conflicts and uncertainties with our Tribes, Pueblos and Indian Nations.

The 2003 plan encourages the state to initiate government-to-government talks with Pueblos or Tribes in an efficient way to identify areas where negotiated settlements to water disputes may be possible. Additionally, the 2003 plan directs the state to obtain and commit resources for negotiations, including hydrographic survey and legal staff. The plan also directs the state to make sustained contributions to an Indian Water Rights settlement trust fund or to a separate trust fund.

CURRENT STATUS

New Mexico has three Indian Water rights settlements pending: the Navajo Nation Water Rights Settlement in the San Juan River adjudication, the Settlement Agreement with the Pueblos of Nambe, Pojoaque, Tesuque and San Ildefonso in the Aamodt adjudication, and the Taos Pueblo Settlement in the Rio Pueblo de Taos/Rio Hondo Abeyta adjudication.

The Navajo Nation Water Rights Settlement

On April 19, 2005, the Navajo Nation and the state of New Mexico executed a settlement agreement to resolve the claims of the Navajo Nation for use of waters in the San Juan River Basin in northwestern New Mexico. On March 30, 2009 President Obama signed federal legislation that approved the settlement.

In exchange for a release of the Nation's potentially larger water right claims, the settlement provides for the funding and construction of the Navajo-Gallup Water Supply Project. This $1.041 billion project includes a pipeline to be constructed by the United States Bureau of Reclamation to bring a renewable surface water supply from Navajo Reservoir to both Navajo and non-Navajo communities in northwestern New Mexico, including the City of Gallup. Construction of the first phase of the Navajo-Gallup Water Supply Project began June of 2012.

On November 4, 2013, the adjudication court entered the Partial Final Judgment and Decrees of the Navajo Nation's water rights in the San Juan River Basin Adjudication, finally resolving the claims of the Nation to water rights in the San Juan Basin. The decrees are now being appealed to the Court of Appeals by non-settling parties in the adjudication.

The federal legislation authorizing the Navajo Settlement requires a $50 million contribution by the state toward non-Indian project construction costs of the Navajo-Gallup Water Supply Project. As a result of funds the state has already contributed that are determined to have reduced overall projects costs, combined with cash contributions totaling $13.6 million from the Indian Water Rights Settlement Fund (see below) New Mexico is within about $6 million of meeting its cost share obligation.

Aamodt Settlement with Pueblos of Nambe, Tesuque, Pojoaque and San Ildefonso

On May 3, 2006, the state of New Mexico, the Pueblos of Nambé, Tesuque, Pojoaque, and San Ildefonso, the County of Santa Fe and the City of Santa Fe executed a Settlement Agreement to resolve the claims of the four Pueblos to the use of waters in the Nambé Pojoaque-Tesuque stream system ("N-P-T"). Federal legislation approving the Settlement Agreement was enacted into law on December 8, 2010.

Cutter Lateral ground breaking, Navajo Nation, New Mexico, 2012

The Settlement Agreement determines the water rights of the four Pueblos in the ongoing adjudication of water rights in the N-P-T. While most of the Pueblos' water rights will be adjudicated with senior priorities, the Settlement Agreement also protects non-Pueblo junior water rights through four major provisions, including the construction of a regional water system by the United States to deliver water diverted from the Rio Grande to Pueblo and non-Pueblo users in the basin. The system is to be funded by the United States, the state, and Santa Fe County, and the Pueblos and the County will operate the system. The state's cost-share obligation for the system is $50 million.

On February 29, 2012, the Interstate Stream Commission allocated $5 million dollars to the Aamodt Settlement from the Indian Water Rights Settlement Fund, a fund created by state statute to provide the state's share of the implementation of federally-authorized Indian water rights settlements. 72-1-11. The state is currently within $45 million of meeting its total obligation under the settlement.

Taos Pueblo Settlement

On May 30, 2006, the Taos Pueblo, the state and several Taos-area water right owning parties executed a settlement agreement to resolve the claims of Taos Pueblo to the use of waters in the Rio Pueblo de Taos and Rio Hondo stream systems. Federal legislation approving the settlement was enacted into law on December 8, 2010.

The settlement, when fully implemented, will adjudicate Taos Pueblo's water rights claims and expedite the final adjudication of non-Pueblo claims to water rights in the ongoing Taos area water rights adjudication suit. In exchange for adjudication of the Pueblo's water rights with senior priorities, the Settlement Agreement provides funding for projects and mitigation mechanisms for offsetting surface water depletion effects of groundwater pumping, preserves existing acequia water uses and historic water sharing arrangements between Pueblo and non-Pueblo acequias, and authorizes the allocation of San Juan-Chama Project water to several of the settling parties.

According to the terms of the Taos Settlement Act, the total cost of the settlement is $124 million. Of that amount, the state's cost share contribution is $20.1 million. Respective allocations are to be made of $1.4 million and $5 million, from the Indian Water Rights Settlement Fund, and $915,000 from earlier appropriations. These allocations put the state within $12.7 million of satisfying its obligation.

Taos Pueblo Water Rights Settlement signing, Taos Pueblo, New Mexico, 2013

The New Mexico Interstate Stream Commission and the Office of the State Engineer have met with the Tribes, Pueblos and Nations in public meetings over the course of the past ten years to address water planning goals.

Consultation

The New Mexico Interstate Stream Commission and the Office of the State Engineer have met with the Tribes, Pueblos and Nations in public meetings over the course of the past ten years to address water planning goals. All the parties involved have a strong commitment to create a mutually agreeable statement of policy and process to guide coordination and integration of the water plan.

Indian Water Rights Settlement Fund

Other directives within the 2003 Plan have been more fully met. In 2005, the Indian Water Rights Settlement Fund statute was enacted to fund the state's portion of the implementation of federally-authorized settlements. 72-1-11. Since then, $35 million has been appropriated to the Fund and allocated to each of the three settlements as described, above.

Taos Pueblo

Los Lunas Silvery Minnow Refugium operated by the Interstate Stream Commission, Los Lunas, New Mexico

Chapter 7

THREATENED & ENDANGERED SPECIES IN NEW MEXICO

OVERVIEW

New Mexico is a leader in efforts that protect our water supply and improve water quality and protect endangered species.

New Mexico is a leader in implementing innovative approaches to protecting riparian and aquatic threatened and endangered species even in the face of extreme drought. New Mexico is working to integrate science and the harsh realities of our highly variable and limited river flows to develop partnerships and implement locally driven solutions for endangered species and water management issues. For example, New Mexico scientists have identified key water supply elements needed for the silvery minnow to spawn. This information has been used to design flexibility into reservoir operations that will better support a spawn, and simultaneously, deliver water and provide flood protection to people. This knowledge supports New Mexico's committed effort to protect endangered species and allows water managers to provide water to our farmers and cities.

Endangered Rio Grande silvery minnow

Silvery minnows at the Los Lunas Silvery Minnow Refugium

NEW MEXICO STATUES

72-14-3.1 (C) (8)
[State Water Plan Statute]:
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.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan directives include a strong emphasis on both coordination and leadership by state agencies to address watershed, river riparian, and Endangered Species Act compliance issues.

The plan directs state agencies to seek funding from the Water Trust Board to support and conduct watershed projects which have the potential to increase water supply; to conduct river riparian restoration and water acquisition activities to protect endangered species; and to do so in such a manner as to address the Endangered Species Act.

The plan directs the state to conduct and support basic research, to monitor and meter river flow conditions and to rescue and move endangered fish as necessary in recognition of both the Act and in the role active management plays in keeping the river whole. Further, the plan directs the state to provide water for endangered species efforts and to coordinate the oversight of daily river management activities.

CURRENT STATUS

New Mexico is a leader in efforts that protect our water supply and improve water quality and protect endangered species. These efforts include Endangered Species Act programs and specific riparian restoration and water quality improvement programs. The New Mexico Environment Department's Outstanding National Resource Waters Program and the New Mexico River Stewards Initiative provide specific examples of surface water quality protection and river riparian restoration efforts. In addition, the New Mexico Energy, Minerals, and Natural Resources Department's Forest and Watershed Health Plan provides a framework for meeting ecological, socio-cultural and economic objectives for forest and watershed health through a collaborative, landscape-scale approach.

The Interstate Stream Commission is working to develop and implement collaborative Endangered Species Act activities in order to ensure that water is not taken from New Mexico water users while, at the same time, maintaining compliance with interstate compact requirements, providing water deliveries to water users and providing flood protection and a healthy environment for future generations.

To that end, over the last 10 years, the Interstate Stream Commission has lead projects that include providing water for endangered species needs, restoring habitat, constructing and operating hatcheries for the endangered silvery minnow, modifying reservoir operations, conducting scientific studies and publishing peer-reviewed reports on study results.

Additionally, the Interstate Stream Commission has been the primary provider of non-federal cost share to federal Endangered Species Act programs affecting New Mexico rivers.

The New Mexico Strategic Water Reserve, (72-14-3.3)

The Strategic Water Reserve was established by the state legislature in 2005. It allows the Interstate Stream Commission to buy water and water rights on a willing buyer/seller basis to help the state comply with interstate stream compacts and court decrees, or to help the state and water users in water management efforts to benefit threatened or endangered species. The Interstate Stream Commission has completed Strategic Water Reserve acquisitions for threatened and endangered species purposes in both the Pecos and Middle Rio Grande Basins.

In the Pecos Basin, the Interstate Stream Commission purchased water rights and built and operates wells and a pipeline in the Fort Sumner area to provide over 1,500 acre-feet of water rights per year for river augmentation purposes immediately upstream of a reach of the Pecos River that is designated as critical habitat. In the Middle

Observing silvery minnows at the Refugium, Los Lunas, New Mexico

Rio Grande Basin, the Interstate Stream Commission has entered into lease agreements for approximately 980 acre-feet of water rights per year. The water rights are used for the silvery minnow refugium that the Interstate Stream Commission operates in Los Lunas, and to offset depletions resulting from habitat restoration projects and modified reservoir operations.

Collaborative Endangered Species Programs

The Interstate Stream Commission is actively involved in efforts to solve endangered species and water user issues throughout the state. Dedicated endangered species programs exist on the San Juan River, the Rio Grande, and the Pecos River.

The San Juan River Basin Recovery Implementation Program is a federal and multi-state, cross agency effort to conserve populations of Colorado Pikeminnow and Razorback sucker in the San Juan River basin. This program is intended to recover these two species, both of which are listed as endangered, while water development and use in the basin proceeds in compliance with interstate compacts and other applicable laws.

The Recovery Implementation Program began in 1992. The Interstate Stream Commission and New Mexico Department of Game and Fish staff represent the state of New Mexico on various committees that direct program activities and approve budgets.

The Middle Rio Grande Endangered Species Collaborative Program is a federally funded program with a congressionally-mandated non-federal cost share. The Collaborative Program consists of federal, state, Pueblo, and local water management agencies, water users, and regulatory agencies organized to protect and improve the status of endangered species along the Middle Rio Grande of New

Water features such as this ponded backwater create nursery and protected habitat for the silvery minnow

Mexico while allowing existing and future water uses to continue. The Rio Grande silvery minnow and the Southwestern willow flycatcher are the main focus of this program. The Interstate Stream Commission's work in support of the program has been instrumental to maintaining compliance with a 2003 Biological Opinion that provides protection from potential criminal violations of the Endangered Species Act for all New Mexico water users in the Rio Grande Basin from the state line with Colorado to Elephant Butte Reservoir.

The Pecos River Collaborative efforts are less formally organized, but no less effective, than those of the San Juan Recovery Implementation Program and Middle Rio Grande Collaborative Program. The Interstate Stream Commission works collaboratively with the United States Bureau of Reclamation, Army Corps of Engineers, and Fish and Wildlife Service to address Endangered Species Act issues on the Pecos River, including river and reservoir management activities.

In particular, the Vaughn Pipeline near Fort Sumner is used primarily to increase river flows directly above a stretch of the Pecos River that has been designated as critical habitat for the threatened Pecos bluntnose shiner pursuant to the Endangered Species Act. The two-mile long pipeline delivers up to 12 cubic feet per second of water acquired by the Interstate Stream Commission for the Strategic Water Reserve, and the United States Bureau of Reclamation pays the Commission for its delivery to the Pecos River. Additionally, the Interstate Stream Commission works with its partners on habitat restoration projects.

Butterfly dancers at the Grand Opening of the Interstate Stream Commission's Los Lunas Silvery Minnow Refugium in Los Lunas, New Mexico

Acequia Madre in Las Vegas, New Mexico, 2012

Chapter 8

WATER USE & CONSERVATION

New Mexico must be thoughtful and scientific when we use our water so that we can protect our communities, our environment and our economy.

OVERVIEW

New Mexico's limited water supply, fluctuating precipitation and increasing population have complicated water management. Formal investigations to inventory the state's waters first began in 1896. The New Mexico Office of the State Engineer began its regular quantitative estimates of water use for the state in 1975 and has since prepared reports every five years.

Between 2005 and 2010, New Mexico's population grew by 5 percent. Growth in New Mexico is expected to continue along with demand for water, especially in urban areas such as parts of the Rio Grande Basin. Water use in the commercial category has increased since 2005, partially due to a change in the methods used to estimate this data. Water use in the public supply, domestic, agriculture, livestock, industry and mining, power, and reservoir categories has decreased since 2005.

Water Use and Conservation Bureau outreach efforts

NEW MEXICO STATUTES

72-14-3.1 (C) (8)
[State water plan statute]:
Develop water conservation strategies and policies to maximize beneficial use, including reuse and recycling by conjunctive management of water resources and by doing so promote nonforfeiture of water rights.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan lists nearly one dozen directives centered on water conservation. Most of the directives are aimed towards outreach and education. Others are focused on the role that the Office of the State Engineer's Water Use and Conservation Bureau provide as a conduit to integrate and provide technical assistance for: subdivision review, 40-year water development planning, and, water conservation and regional water planning. These plans cover the spectrum of government from local to state and it is through this conduit funding can be leveraged to support development of public water supply projects.

CURRENT STATUS

The Office of the State Engineer developed an educational water conservation outreach program targeting a broad range of audiences focused on delivering technical assistance to water users. Water conservation in the state's municipalities provides a means to reduce water diversions, per capita use, and long term demand. In the agricultural sector, water conservation at both the farm and basin level can reduce non-consumptive losses, but can also increase on-farm consumptive use (or depletions).

Municipal Sector Water Conservation Research and Programming

The State Engineer has the statutory responsibility to approve only those applications for which approval would "not be contrary to the conservation of water within the state nor detrimental to the public welfare of the state." Related to this authority, in 1997 the State Engineer signed a policy specifying that conditions of approval for water right applications, where water conservation issues need to be addressed, include the following: Permittee shall "utilize the highest and best technology available to ensure conservation of water to the maximum extent practical." Subsequently, the Office of the State Engineer developed and published the Water Conservation Guide for Public Utilities (2001 Guide) in 2001 and the New Mexico Water Conservation Planning Guide for Public Water Suppliers (2013 Guide) in 2013. These guides are directly intended to assist conservation efforts. They also provide practical guidance for water conservation planning.

In addition to its various publications, over the last decade the Office of the State Engineer has maintained a program of technical assistance to support the development and implementation of water conservation programs by governments, water providers and other water users.

Water Conservation Education and Outreach

The Office of the State Engineer has also developed an educational water conservation outreach program. Production of water conservation brochures and kindergarten through high school (K-12) curriculums for statewide distribution began in the 1990s. Moreover, since 2003, the Office of the State Engineer has distributed about 600,000 educational materials. The Office of the State Engineer has also participated in countless water festivals, workshops, conferences, and other outreach opportunities. The inventory of outreach materials now includes K-12 curriculums, indoor and outdoor water use information, Spanish language materials, videos, and an interactive web site (www.ose.state.nm.us). These materials were developed in partnership with New Mexico cities, state agencies, universities, non-profits, national groups, and federal agencies. The most recent partnership is with the Environmental Protection Agency WaterSense® Program.

Agricultural Irrigation

The agricultural sector accounts for about 80 percent of all withdrawals of water in New Mexico. A common perception is that a small amount of conservation savings from this

Dry irrigation ditch, near Las Cruces, May 2012

The Office of the State Engineer has been working for decades to provide research, testing, and evaluation of existing and emerging methods and technologies in water conservation.

sector could make available proportionally large amounts of water supply to other sectors. However, the relationship between water supply and agricultural water use is more complex than in other sectors, and agricultural water conservation is complicated and not well understood by the general public.

Water Conservation Strategies

The Office of the State Engineer has been working for decades to provide research, testing, and evaluation of existing and emerging methods and technologies in water conservation specifically in the municipal and agricultural sectors. As part of the Office of the State Engineer's strategic goals to promote water conservation to the various water users throughout the state, it is necessary to continue to pursue sound education and outreach programs, demonstration projects, technical assistance, planning, and policy development.

San Acacia Diversion Dam along the Middle Rio Grande Conservancy Distict near Socorro, New Mexico

Chapter 9

WATER INFRASTRUCTURE INVESTMENT & MANAGEMENT

OVERVIEW

Building strong regional water plans will ultimately build our water infrastructure and maximize the efficiency through which New Mexico funds the projects that support the economy.

Water infrastructure investment and the management and administration of the state's water supplies are tightly connected. In fact, the Water Trust Board is a vehicle for implementing the State Water Plan goals. The goals and decisions within the state and regional water plans have a tremendous impact on how publicly-funded water infrastructure decisions are determined.

Strong regional water plans ultimately create the foundation upon which community water infrastructure services are provided. In time, the effort spent on planning will recoup its cost, many times over.

Cabresto Dam construction near Questa, New Mexico

Santa Rosa Water Tower, New Mexico

NEW MEXICO PLAN STATUTES

72-14-3.1 (C) (13) [State water plan statute]: Identify water-related infrastructure and management and investment needs, and opportunities to leverage federal and other funding.

REVIEW OF 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan provides several directives to help the state identify, prioritize and fund water related infrastructure and management projects that protect New Mexico water resources for New Mexico uses. These directives focus largely upon the role of the Water Trust Board and the Water Project Fund.

Specifically, the 2003 plan directs the state to prioritize and fund regionally significant projects, especially large infrastructure projects associated with development of new water supplies, Indian water rights settlements and regional water and wastewater systems that improve services, operations and economies of scale.

The 2003 Plan also directs the state to establish and fund a statewide program to assist municipalities and community water systems with water loss audits and leak detection and repair programs. Finally, the 2003 plan directs the Interstate Stream Commission to prioritize and seek funding from the Water Trust Board for water-related management projects which result in widespread and long-term public benefit.

CURRENT STATUS

By 2020, the predicted deficit for sustaining water delivery and wastewater treatment infrastructure will be $84 billion nationally. This may lead to $206 billion in increased costs for businesses and households between now and 2020. In a worst case scenario, the U.S. will lose nearly 700,000 jobs by 2020. And if the infrastructure deficit is not addressed by 2040, 1.4 million jobs could be at risk—an an even worse case scenario.

New Mexico is not immune to these challenges. In its 2012 Report Card on infrastructure, the American Society of Civil Engineers gave the state a C— with respect to water and a C with respect to wastewater infrastructure. The criteria used included capacity, condition, funding, operation and maintenance, planning and future needs, public safety, and resilience.

It is critical that New Mexico have cooperation between the planning and design community and the public entities applying for assistance, the opportunity to leverage local and federal resources where appropriate, together with an assessment of the local entity's willingness and ability to pay for both capital and life-cycle costs. In return, New Mexico will improve the process of infrastructure development and the effectiveness of the state's resources while ensuring the longevity of those investments.

New Mexico faces daunting challenges in maintaining and upgrading our existing water-related infrastructure in addition to funding new water infrastructure projects. These challenges include deferred maintenance, prioritization, combining different funding programs, taking a life-cycle cost approach, and ensuring that projects are appropriate to a community's needs.

Deferred maintenance refers to the lack of proper maintenance of assets and can cause early failure of systems and increased costs for public and private funds alike. Deferred maintenance is arguably the largest credit risk to the funding and financing of water system improvements.

New Mexico must prioritize limited fiscal resources at the state level to meet all the wants and needs of the state's public entities. For example, in 2013 the New Mexico Water Trust Board received over 120 applications for grant/loan assistance totaling almost $145 million in requests. It is projected that the Water Trust Board will have $30-34 million in assistance available in this cycle.

New Mexico has several funding and financing programs for water-related capital investment within the state and associated with other federal programs. These disconnected programs include the Water Project Fund, the Tribal Infrastructure Fund, the Colonias Infrastructure

Agriculture in the Middle Rio Grande

Fund, and state revolving loan funds. New Mexico must improve coordination between these programs in terms of timing, eligibility, applications, criteria, vetting and implementation. Improved communication would ease the burden on applicants and review agencies alike; thereby improving the distribution of funds, and increasing public confidence in the effectiveness and accountability of expenditures of public money.

New Mexico must also consider whether projects are meeting their respective goals. Infrastructure development should be appropriate for the public entity's ability to own, operate and maintain the facilities for the life-span of the project. Decision makers should be mindful that capital investment is only a part of the picture. Small systems particularly struggle to implement adequate rate and management structures, access technical support and maintain qualified system operators to keep up with capital infrastructure development and asset management.

Water Trust Board and Water Project Fund

In 2001, New Mexico recognized many of these challenges and passed the Water Project Finance Act, 72-4A-1 et seq. The Water Trust Board and Water Project Fund were both created then as a means of vetting and investing the state's resources in assisting public entities. The Act provides, in pertinent part:

Public confidence and support for water use efficiency and conservation is based on a reasonable balance of investments in water infrastructure and management. 72-4A-2.A(5).

The Board shall adopt rules governing terms and conditions of grants or loans recommended by the board for appropriation by the legislature from the water project fund, giving priority to projects that have urgent needs, that have been identified for implementation of a completed regional water plan that is accepted by the Interstate Stream Commission and that have matching contributions from federal or local funding sources. 72-4A-5.A.

The board in conformance with the state water plan…shall prioritize the planning and financing of water projects required to implement the plan. 72-4A-5.1.

Grants and loans shall be made only to state agencies or to political subdivisions that… agree to operate and maintain the water project so that it will function properly over the structural and material design life, which shall be not less than twenty years. 72-4A-7.A (1).

Debris from flooding in the Middle Rio Grande, near Socorro, New Mexico, October 2013

House Joint Memorial 86, adopted by the Legislature in 2005, also recognized that there are over 650 public water systems in New Mexico, stating: "These systems are aging, have limited capacity, have difficulty complying with federal clean water policies, lack adequate water rights, experience continuing management and technical problems, have an inadequate financial base and lack professional planning;" and, "The State Engineer [is] requested to collaborate with the department of environment and other agencies to develop criteria for water system planning, performance and conservation as a condition of state financing."

House Joint Memorial 86 led to creation of the following criteria for expenditure of public funds:

- A financial plan;
- An appropriate rate structure;
- An asset management plan;
- A water accounting system with full metering;
- Full compliance with Office of the State Engineer regulatory requirements;
- Full compliance with the Safe Drinking Water Act and the Clean Water Act, and New Mexico Environment Department regulations;
- A legal and adequate governance structure;
- Planning to support project development and operations;
- Participation in collaboration on regional efforts toward long-term solutions; and
- An energy efficiency strategy.

Improving Investment in Infrastructure Development.

The New Mexico Water Trust Board is currently engaged in developing policies, processes and procedures to implement many of the directives noted above, and there are numerous examples from other states struggling with similar challenges.

Current solutions to infrastructure challenges in the state include rewarding best practices. Rewarding best practices includes water conservation, providing state assistance in developing and implementing best practices, and implementing the **L.E.A.P** approach, where LEAP is an acronym for:
L – Long-term, life-cycle focused planning, design, construction, operation and maintenance
E – Ensure **Effective** use of public funding and financing.
A – ensure planning, design and implementation is **Appropriate** for the entity.
P – do the hard work of **Prioritizing** funding/financing.

Current solutions also include a mechanism to incorporate asset management into the language and process of infrastructure development, ensuring the state and its political subdivisions are taking the long view.

State Engineer Verhines inside Lake Nighthorse Dam, near Durango, Colorado

Current solutions to infrastructure challenges in the state include rewarding best practices. Rewarding best practices includes water conservation, providing state assistance in developing and implementing best practices, and implementing the **L.E.A.P** approach.

New Mexico will also incorporate into the analysis the language and process of infrastructure development, as appropriate, ensuring that we are making the best use of investment in meeting the function of the infrastructure at the lowest life-cycle cost.

The State will also engage technical assistance providers, such as New Mexico Rural Water Association, Rural Community Assistance Corporation, New Mexico Environment Department and others, particularly in support of small entities, in development of best practices over the long view.

New Mexico will improve coordination between local, state, regional planning and disparate funding/financing programs to make the best use of time, resources and capital. Finally, New Mexico will utilize the Water Trust Board as a model for processes and procedures.

In addition to the work of the Water Trust Board, New Mexico has responded to the directives of the 2003 Plan in various ways. For example, the Environment Department has developed programs tailored toward community water supply leak detection, and the Office of the State Engineer has implemented a public outreach campaign to encourage homeowners to identify plumbing leaks.

Chama River, New Mexico, 2013

Chapter 10

PLANNING FOR NEW MEXICO'S WATER DEMAND

OVERVIEW

A state-wide call for coordinated water planning was initiated by the New Mexico Legislature in 2003

The fifth largest of the 50 United States, New Mexico comprises six life zones from desert to alpine tundra and is characterized by extreme aridity that limits most human settlements to a half dozen river valleys and the drainages that feed into them. Early settlement patterns left their mark on the landscape. The population of slightly more than 2 million is principally concentrated along the Rio Grande, the Pecos and the San Juan Rivers.

With a land area of 121,298.15 square miles, the 2010 census calculates 17 people per square mile in New Mexico, compared to an average United States population density of 87.4 people per square mile. The United States. Department of Agriculture census, in its definition of "rural" classifies only seven of New Mexico's 33 counties as "urban."

In a state where water increasingly is either scarce due to drought, or abundantly available due to do flooding, planning for our water future is imperative at both the local and state levels.

Key to the Rio Grande Compact is the Otowi gage on the Rio Grande, March, 2013

Pecos River near Roswell, New Mexico, April 2013

NEW MEXICO STATUTES

72-14-3.1 (C) (1)
[State water plan statute]: Identify and reflect the common priorities, goals and objectives that will have a positive impact on the public welfare of the state.

72-14-3.1(C) (10)
[State water plan statute]: Promote strategies and mechanisms for achieving coordination with all levels of government.

72-14-3.1(C) (11)
[State water plan statute]: Integrate regional water plans into the state water plan appropriate and consistent with state water plan policies and strategies.

72-14-3.1(C) (12)
[State water plan statute]: 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.

72-14-3.1(F)
[State water plan statute]: The Interstate Stream Commission shall convene water planners and stakeholders from diverse constituencies to advise it and the Office of the State Engineer on the state water plan, including statewide policies, priorities, goals and objectives for the plan, issues of statewide concern and strategies for implementation of the plan.

72-14-43
[Regional water plan statute]: Legislative findings; state appropriation of unappropriated water (1987).

Based upon the findings and recommendations of the report from New Mexico State University and the University of New Mexico on state appropriation of unappropriated water, the legislature finds that:

A. The future water needs of New Mexico can best be met by allowing each region of the state to plan for its water future;

B. The state can assist the regions in planning future water use by implementing a state appropriation program to ensure an adequate supply of water for each region, as reflected in each region's water use plan; and

C. The interstate stream commission is the appropriate agency to implement such a program.

72-14-44
[Regional water plan statute]: Interstate stream commission; groundwater appropriation; water rights purchase; water planning funding.

A. The Interstate Stream Commission is authorized to appropriate groundwater or purchase water rights on behalf of any of the various regions of the state.

B. Nothing in this section shall be construed as permitting the condemnation of water rights or as determining, abridging or affecting in any way the water rights of Indian Tribes.

C. The Interstate Stream Commission is authorized to make grants or loans of funds for the purpose of regional water planning. Prior to approval of any proposal by a region for planning funds under this section, the commission shall develop criteria for evaluating such proposals.

These criteria at a minimum shall provide for:

(1) Identification of the region requesting planning funds and why it is hydrologically and politically an appropriate applicant;

(2) Use of an appropriate planning process including opportunities for participation by those Indian Tribes located within the various regions of the state;

(3) Reasonable proposed costs and time tables for completion of the planning process;

(4) Appropriate provisions for notice, review and comment where applicable;

(5) Adequate review of potential conflict with laws relating to impact on existing water rights;

State Water Plan public meeting, Bernalillo, New Mexico, 2009

(6) Adequate review of water conservation and the effect on the public welfare; and

(7) Identification of sources other than the interstate stream commission for funding of the proposed regional planning process.

D. A water planning region eligible for funding under this section is an area within the state that contains sufficient hydrological and political interests in common to make water planning feasible. The state as a whole shall not be considered a water planning region for purposes of this section.

E. No entity shall be made a part of a proposal for planning funds under this section without its consent.

F. No funds shall be granted under this act to any party or parties that are not within a water planning region. Whether a proposal for funding falls within a water planning region shall be determined on a case by case basis by the Interstate Stream Commission after consultation with the State Engineer and consideration of the following:

(1) Whether the source of water and the potential place of use of the water are located within the same hydrologic basin; and

(2) If there is more than one party and the parties are requesting funds on a joint basis, whether the parties have demonstrated political and economic interests in common by entering into a binding inter-governmental agreement for carrying out the planning process.

REVIEW OF THE 2003 STATE WATER PLAN DIRECTIVES

The 2003 State Water Plan statute and its subsequent directives encourage the state to identify the common priorities, goals and objectives that will have a positive impact on the public welfare of the state. The 2003 State Water Plan acknowledges that regional welfare is informed by reference to the 16 regional water plans. State welfare is then identified as the common water-related values that pertain to each one of us. These common values are woven through every local, state, and federal agency by statute and where authorities and responsibilities are vested in water matters.

The State Water Plan statute seeks to promote strategies and mechanisms for achieving coor-

dination at all levels of government, which is contemplated in the 2003 plan.

The statute also addresses the integration of the regional water plans of and those of water supply purveyors, including: local governments, privately owned public utilities, associations, cooperatives, irrigation districts, and acequias. Integration of the plans of Tribal entities is also included in the statute and emphasized in the 2003 plan.

Both the statute and the 2003 plan directives are designed to encourage government at all levels to build consistency into planning efforts. Taken together, they recognize that water is a shared public resource that underpins the health, safety, and welfare of the State.

CURRENT STATUS

The statute was not the first of its kind. Water planning in New Mexico began with a lawsuit filed by Texas against New Mexico. In 1983, El Paso applied to the Office of the State Engineer for a permit to take groundwater from a New Mexico aquifer. Relying on a statute prohibiting the transfer of water outside the boundaries of New Mexico, Steve Reynolds, then State Engineer, refused to issue the permit. The federal court, in City of El Paso v. Reynolds, found the statute to be unconstitutional under the federal Commerce Clause (giving federal government authority over commerce between states) and upon the United States Supreme Court case of Sporhase v. Nebraska. The Sporhase case held that although water is an article of commerce, a state can give limited preference to its own citizens for the purpose of protecting the health of its citizens —reasoning that this is at the core of the state's police power. [Water Matters, p. 7-2][1]

In 1985 the New Mexico Legislature set about and enacted a statute giving guidance to the Office of the State Engineer on the process for out-of-state uses of water, and this led to the 1987 law requiring regional water plans.

The 16 Regional planning areas, (*See map on page 51*) were based, not entirely on hydrologic reality, but on boundaries that seemingly follow political boundaries, but in some cases seem to also coincide with proposed water project boundaries and sometimes included hydrologic boundaries (surface and ground water basins). The regional planning process put in place prior to state water planning became the foundation and subsequently the culture in which water planning in our state evolved.

It was eleven years later that the first plans were accepted by the Interstate Stream Commission after enactment of the 1987 statute. By 2008, all 16 of the regional water plans had been accepted by the Commission.

On this planning continuum, milestones were accomplished. In 1994, the "Regional Water Planning Handbook" was published, then in 1999, the "Acceptance Criteria" was finalized and accepted by the Commission. Development of these useful planning guides were accomplished through collaborative efforts between the regions and the state.

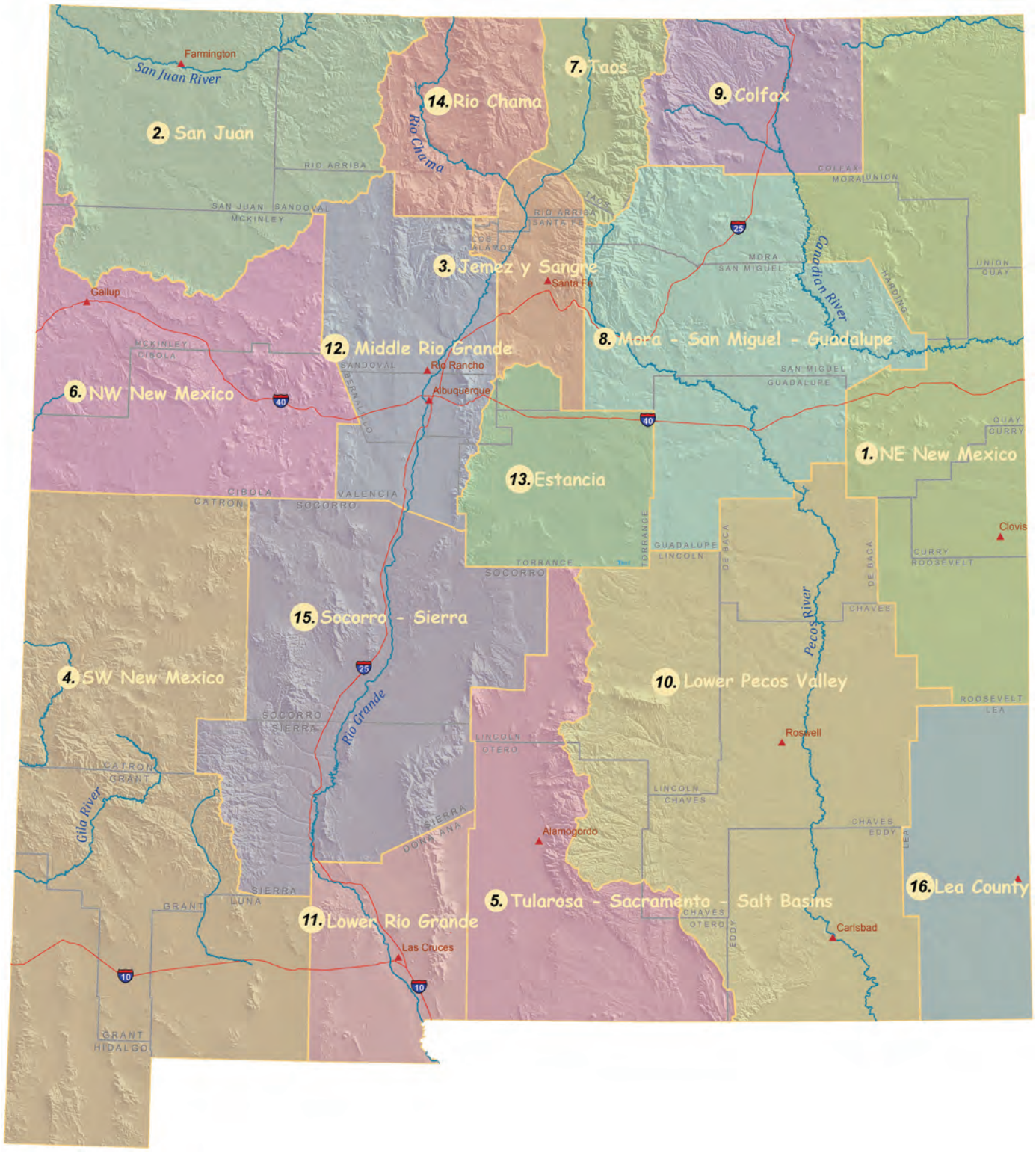
It wasn't until sixteen years later, following enactment of the 1987 regional planning law, that the 2003 State Water Plan Act, to steward New Mexico's waters was enacted.

State Water Planning Today

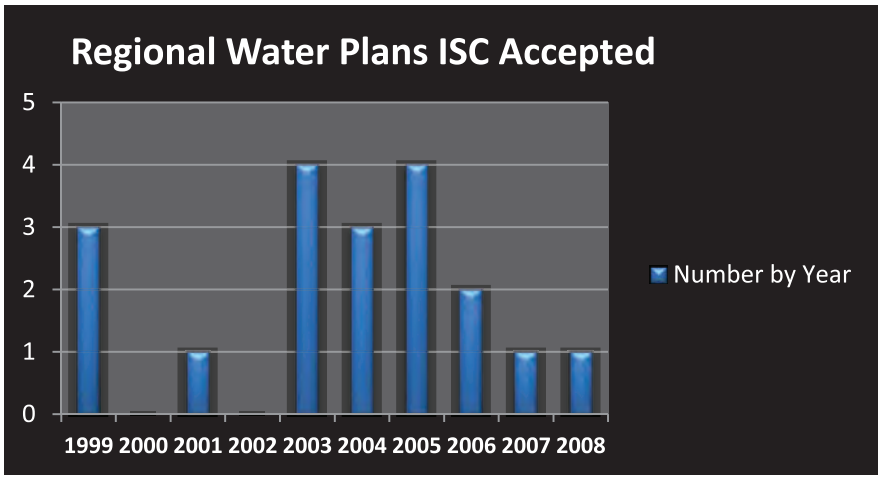
The statute, requires a periodic review of the State Water Plan, to be conducted at least every five years. The State Water Plan Act requires that the plan be reviewed, updated, and amended in response to changing conditions. At a minimum, a review should take place every five years. This, 2013 Review fulfills this requirement.

In 2008, the Interstate Stream Commission embarked on a review that identified several key areas to be improved in future water planning efforts. These included: technical studies that address water supplies, population projections, water demand, and the connection between groundwater and surface water; drought management; the need for relevant stakeholders to engage; and more emphasis on infrastructure needs, priorities and costs.

The review also concerned the implications of the change of use of water occurring in New



New Mexico Water Planning Regions by number and name



Regional Water Plans accepted by the Interstate Stream Commission

Mexico: water that was once used for rural/agricultural purposes is now being used in urban areas. The growth of urban areas and how they use water affects the future of the state. Urban planning of our cities needs to occur so that New Mexico can grow in sustainable ways without decimating its rural areas.

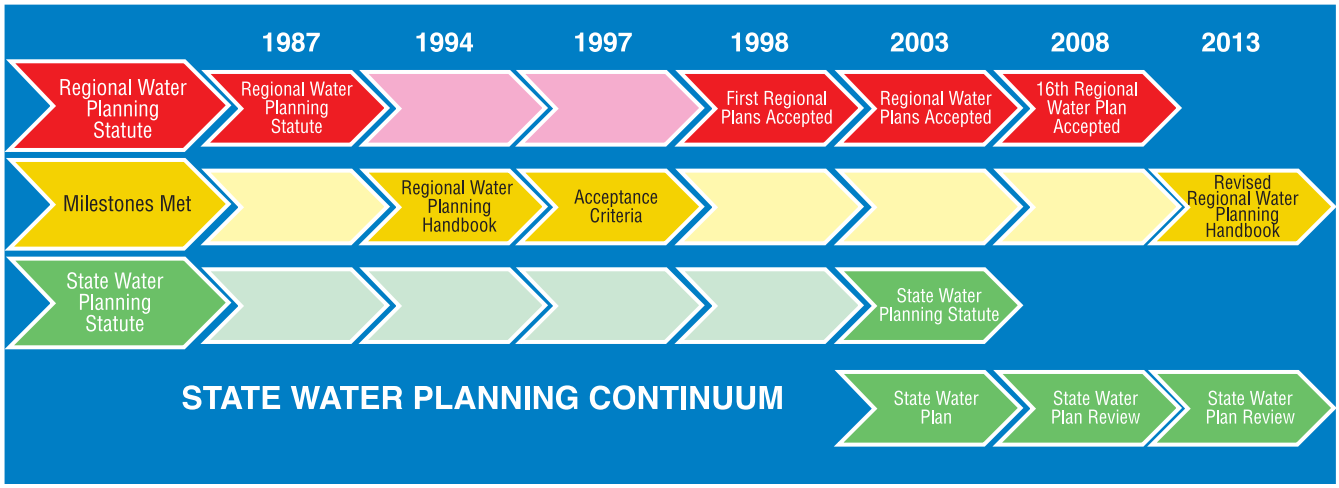
With the intent to update the plan for 2010, the Interstate Stream Commission held 22 public meetings throughout the New Mexico to solicit public comments about key water issues for the plan update. Common issues expressed at multiple meetings included: support for water conservation; water quality protection; better subdivision and land use regulations (to protect water supplies); watershed management; public education; better coordination between state and federal agencies; and protection of the agricultural sector.

These issues have been incorporated, as appropriate, into the 2013 Review. It also lays out the process to forge a cohesive water planning program for New Mexico for the updated state and regional plans in 2015. Due to a complex myriad of limited resources the 2010 State Water Plan update has yet to be completed.

This entire 2013 review, divided into management categories most pertinent to water, takes into account some of the recommendations published in the 2008 Review. It also lays out the process to forge a cohesive water planning program for New Mexico for state and regional plans in 2015.

Reference

[1] Utton Transboundary Resources Center, University of New Mexico, School of Law. 2013. *Water Matters!*. Available at: http://uttoncenter.unm.edu/pdfs/water-matters-2014/07-state-and-regional-water-planning.pdf



State Water Planning Continuum

Chapter 11

CONCLUSION

This streamlined approach allows updates to be developed cost-effectively using a common methodology to ensure consistency with state water law and policy.

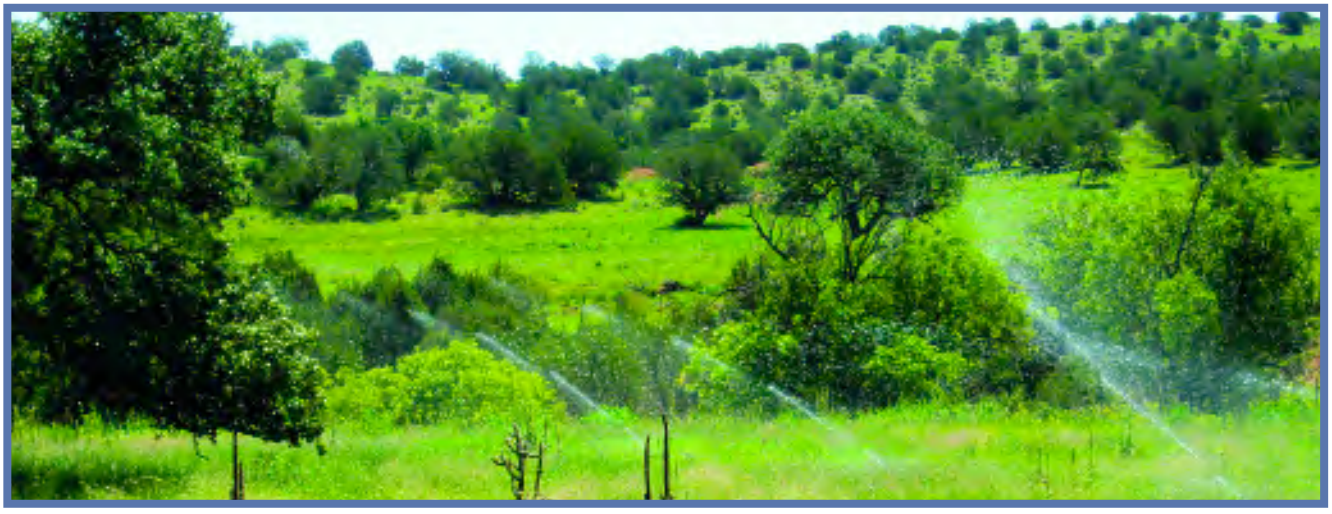
It is evident from this review of the 2003 State Water Plan, its directives, the activities undertaken to meet those directives and changed circumstances that it is time for the state to update the 2003 State Water Plan.

Accordingly, the Interstate Stream Commission has revised the 1994 Regional Water Planning Handbook to provide a common technical platform and process for updating the 16 regional plans.

This streamlined approach allows updates to be developed cost-effectively using a common methodology to ensure consistency with state water law and policy. The updated handbook provides a detailed approach for developing the technical data and updating the accepted plans, and also identifies the respective roles of the Interstate Stream Commission, Office of the State Engineer, and the regions in developing the necessary information.

Regions will be responsible for identifying water projects, programs, and policy priorities. Stakeholder involvement at all levels will provide the continuity between local, regional, state, and federal water planning efforts so that policies are informed throughout the planning process.

The State Water Plan "Update" will integrate the information from the updated regional water plans and be completed by December 2015.



Agriculture in the Middle Rio Grande Valley

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