



New Mexico State Water Plan 5-Year Review

New Mexico Office of the State Engineer
Interstate Stream Commission
NMSA § 72-14-3.1 (2003)

2023



New Mexico State Water Plan

5-Year Review

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Dear Reader,

Thank you for your interest in the New Mexico Interstate Stream Commission's water planning! Success for our statewide water planning program relies on the interest and cooperation of New Mexicans.

Thanks to all of the partners and collaborators that we rely on for sharing their expertise, experience and energy. Our program benefits from scientific support including from the NM Bureau of Geology & Mineral Resources and the NM Water Resources Research Institute, numerous state agencies, and federal partnerships including the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation. The engagement and support of water user and advocacy groups, including the New Mexico Acequia Commission, New Mexico Acequia Association, the Water Policy and Infrastructure Task Force, the Water Dialogue, and the Water Advocates, particularly is appreciated as these folks commit their personal time to issues that impact all of our communities.

The work of the statewide water planning program focuses on two areas: state water planning governed by the State Water Plan Act of 2003, and regional water planning governed by the Water Security Planning Act of 2023. This document is the 2023 New Mexico State Water Plan 5-Year Review, a continuation of statewide water planning that began in 2003 and was last updated in 2018. During 2024, we will initiate a new campaign, Main Stream New Mexico, to share information and collect input to establish new rules and guidelines to reinvigorate regional water planning.

Moving forward, our team will coordinate state and regional water planning processes where regional water planning entities identify and prioritize projects, with statewide planning that supports science and education, streamlines funding opportunities, and provides technical support. Check out our website at www.mainstreamnm.org for updates.

We look forward to making the journey with you.

Best,

-andrew

Andrew Erdmann
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Executive Summary

This 2023 New Mexico State Water Plan 5-Year Review is a product of the statewide water planning program at the New Mexico Interstate Stream Commission. Statewide water planning in New Mexico has been underway since 2003, at which point regional water planning – which had passed into law in 1987 – was ongoing. The most recent round of regional water planning was completed in 2017, and the most recent update to the state water plan followed in 2018.

One of the most notable changes since the last State Water Plan is the completion of **Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources**, aka the Leap Ahead report, in 2022. That report was compiled by a panel of New Mexico’s experts, including hydrologists and climatologists, and projects reductions in available surface water of 25% or more in the coming decades along with increasing flood severity, longer summers, earlier snowmelt, reduced recharge to aquifers and increasing aridification.

In response to the projected reductions in available water, the urgent needs of rural water systems, and the availability of new funding opportunities, the Water Security Planning Act was passed unanimously by the 2023 Legislature. The intent of the Water Security Planning Act is to reinvigorate regional water planning across New Mexico so that shared challenges and values can assist communities in identifying and prioritizing water project needs.

The goals of this 2023 State Water Plan 5-Year Review are to comply with the State Water Plan Act, to evaluate the status of state water planning relative to recent climate projections and statutory requirements, and to identify priorities for next steps that incorporate modern climate science and support the reinvigoration of regional water planning.

This 2023 Water Plan 5-Year Review has four central components:

- Overview of state water planning in New Mexico beginning with the State Water Plan Act, the structure of the NMISC and its planning program, a history of New Mexico’s water planning to date, and a summary of the 2018 State Water Plan;
- Recommendations for next steps based on a review of the statutory requirements of the State Water Plan Act and prioritization based on work of the Water Policy and Infrastructure Task Force convened by State Engineer Mike Hamman in 2022;
- Status evaluation of State Water Plan Act requirements in consideration of past work and anticipated needs based on water and climate projections; and
- Status evaluation of work plans and strategy requirements from the State Water Plan Act.

The priorities identified largely align with the outreach and engagement work currently being implemented. These priorities include re-determining the number and boundaries of planning regions, providing clear and consistent rules for regional planning that help projects receive funding and ensure that priorities – like interstate compacts and tribal sovereignty – are supported. Along with further implementation of the 2019 Water Data Act, additional priorities include promotion of Active Water Resource Management and providing status reports with strategies for completing adjudications and addressing the disposition of unused wells.

Table of Contents

1. Introduction.....	1
1.1. Purpose of the 2023 State Water Plan Review.....	1
1.2. Approach and Document Organization	1
2. Background.....	3
2.1. Overview of the State Water Plan Act.....	3
2.2. Structure of NMISC and State Planning.....	4
2.3. History of State Water Planning Under the NMISC.....	4
2.4. 2018 State Water Plan.....	6
3. Priorities Identified for 2023-2028.....	8
3.1. Assess the boundaries and number of water planning regions in New Mexico	10
3.2. Provide/secure initial funding for regional water planning.....	10
3.3. Provide clear guidelines for the regional water planning.....	11
3.4. Work with regional planning entities to ensure plans address regional needs and align with state priorities	11
3.5. Provide funding opportunity guidance.....	12
3.6. Provide technical assistance and promote dialogue to advance regional planning.....	13
3.7. Work with the New Mexico Water Data Initiative to be responsive to regional planning needs	14
3.8. Promote utilization of Active Water Resource Management to administer water by priority or by alternative administration, as determined through community input	15
3.9. Provide a status report and identify resource needs and strategies to advance a) water rights adjudications; and b) taking inventory of existing water wells and determining appropriate disposition of unused wells.....	15
4. State Water Plan Requirements NMSA § 72-14-3.1 (C).....	17
4.1. Identify Objectives for Positive Impact.....	17
4.2. Establish Vision and Policy Direction	18
4.3. Inventory Resources, Population, and Demand	19
4.4. Include Water Budgets	20
4.5. Develop Conservation Strategies	21
4.6. Include Drought Management Plan	22
4.7. Recognize Land Use	23
4.8. Promote River and Watershed Restoration	23
4.9. Consider Water Right Transfer Policies	24
4.10. Promote Coordination Within Government.....	25
4.11. Integrate Regional Plans.....	26
4.12. Integrate Water Supplier Plans	27
4.13. Identify Infrastructure Needs/Opportunities	28
4.14. Promote Collaboration with Research Institutions	29
5. State Water Plan Strategies	31
5.1. Adjudication	31
5.2. Databases of Resources and Rights	32
5.3. Measuring State Water Use	32
5.4. Inventory of Existing Wells	33
6. References	34



Figure

Figure 1. Milestones in NMISC State Water Planning

Table

Table 1. Priorities Identified for the Next Planning Period

Appendix

Appendix A. State Water Plan Act of 2003, NMSA § 72-14-3.1

Acronyms and Abbreviations

2023 Review	this 2023 Review to the State Water Plan
2018 Plan	2018 New Mexico State Water Plan
2013 Handbook	Updated Regional Water Planning Handbook
AWRM	Active Water Resource Management
The Leap Ahead	Climate Change in New Mexico over the Next 50 Years: Impacts on Water Resources report (NMBGMR, 2022)
NMISC	New Mexico Interstate Stream Commission
NMOSE	New Mexico Office of the State Engineer
NMSC	New Mexico State Supreme Court
NMWRRS	New Mexico Water Rights Reporting System (also known as WATERS)
POD	point of diversion
regional plans	Regional Water Plans
SWP	State Water Plan
SWPA	State Water Plan Act of 2003
Task Force Report	Facing New Mexico's 21st Century Water Challenges (Water Task Force, 2022)
WDI	Water Data Initiative
WRRRI	New Mexico Water Resources Research Institute

1. Introduction

1.1. Purpose of the 2023 State Water Plan Review

The New Mexico Interstate Stream Commission (NMISC) and Office of the State Engineer (NMOSE) present this 2023 *New Mexico State Water Plan 5-Year Review* (2023 Review) in compliance with NMSA §72-14-3.1(H), known as the State Water Plan Act (SWPA). The SWPA is provided as **Appendix A**. This 2023 Review identifies priorities for incorporating climate change projections into water planning at the NMISC and evaluates the status of NMISC state water planning efforts in view of the SWPA and the content of the previous State Water Plan (SWP).

The previous SWP was adopted in 2018 (2018 Plan). The 2018 Plan built upon prior state water planning work, some of which is summarized in Section 2. As was the case with the 2018 Plan and those that came before, this 2023 Review is intended to complement, but not replace, previous SWPs (e.g., 2018 Plan). Nothing in this 2023 Review shall be construed to determine, abridge, or affect the water rights of Indian pueblos, tribes, or nations. Nothing in this 2023 Review shall be construed to grant or recommend the condemnation of water rights.

New Mexicans are actively restoring and protecting water resources, as well as planning for future water use under changing climatic conditions. Supporting the culture and ecosystems within the state, protecting existing water availability, meeting future water use needs, and enhancing water system and watershed resilience in light of changing conditions are goals to guide management of the state's water resources. The actions required to achieve these goals are vast, complex, ambitious, and worthwhile. Many of the collaborations and strategies for meeting our water resource management goals are already in place, while others are taking shape through new initiatives, funding opportunities, and science.

1.2. Approach and Document Organization

This 2023 Review evaluates the status of NMISC state water planning efforts in view of the SWPA and the content of the 2018 Plan. Climate change projections and the prioritization of projects are based on work completed since the 2018 Plan, including:

- Climate change science summarized in the March 2022 *Climate Change in New Mexico over the Next 50 Years: Impacts on Water Resources* report (referred to as **The Leap Ahead**; NMBGMR, 2022);
- Prioritization of statutory objectives based on the December 2022 *Facing New Mexico's 21st Century Water Challenges* (referred to as the **Task Force Report**, prepared by New Mexico Water Policy and Infrastructure Task Force; Water Task Force, 2022); and
- Further prioritization based on New Mexico Senate Bill 337, known as the **Water Security Planning Act**, which passed unanimously by both chambers and quickly signed into law by the Governor in March 2023, was informed significantly by the work and members of the Water Task Force, and reinvigorates regional water planning in New Mexico.

The remainder of this 2023 Review is organized as follows:

- Section 2 provides background information, which includes summary information about the SWPA, the structure of the NMISC and state planning, the history of state water planning under the NMISC, and the 2018 Plan.
- Section 3 details key actions prioritized for the next planning period. The priorities are assessed relative to Parts B, C, and D of the SWPA. Summaries of how the Water Security Planning Act and the Task Force Report relate to these priorities are also included within this section.
- Section 4 summarizes the 2018 Plan relative to NMSA § 72-14-3.1 (C) of the SWPA. Part C of the SWPA provides statutes that define content requirements that must be addressed by the SWP as part of a multi-agency effort led by the NMISC. Additionally, Section 4 summarizes climate science from *The Leap Ahead*.
- Section 5 summarizes the 2018 Plan relative to NMSA § 72-14-3.1 (D) of the SWPA. Part D of the SWPA defines the inclusion of work plans and strategies into the SWP for the completion of actionable goals that are beyond the scope of a single SWP, such as water rights adjudications and the creation of statewide water resources databases. These strategies and work plans are developed by the NMISC. Section 5 also includes information from *The Leap Ahead* that is pertinent to the 2018 Plan and NMSA § 72-14-3.1 (D).
- Section 6 provides cited references.

2. Background

2.1. Overview of the State Water Plan Act

The SWPA, NMSA §72-14-3.1, was passed in 2003, and in response to the SWPA, the first SWP (2003 SWP) was developed. A copy of the SWPA is provided as **Appendix A**. NMSA §72-14-3.1(A) states, “It is the intent of the legislature that the interstate stream commission, in collaboration with the office of the state engineer and the water trust board, prepare and implement a comprehensive state water plan.”

NMSA §72-14-3.1 (B) details the purpose of the SWP, stating:

“The state water plan shall be a strategic management tool for the purposes of:

- Promoting stewardship of the state's water resources;
- Protecting and maintaining water rights and their priority status;
- Protecting the diverse customs, culture, environment, and economic stability of the state;
- Protecting both the water supply and water quality;
- Promoting cooperative strategies, based on concern for meeting the basic needs of all New Mexicans;
- Meeting the state's interstate compact obligations;
- Providing a basis for prioritizing infrastructure investment; and
- Providing statewide continuity of policy and management relative to our water resources.”

Part C of the SWPA defines content requirements for state water planning that the NMISC will work collaboratively with other state agencies to achieve. Part D of the SWPA defines objectives for work plans and strategies that are to be included into the SWP. Parts C and D of the SWPA are presented in Sections 4 and 5, respectively, of this 2023 Review.

Part E defines guidelines of the SWP relative to Indian pueblos, tribes, and nations. Related to Part E of the SWPA, the NMOSE issues a report each year, as required by the 2005 Indian Water Rights Settlement Fund Act, on the use of the Indian Water Right Settlement Fund, and information about all settlement agreements and proposed agreements is available on the Settlements page of the NMOSE website.

Parts F and G require public participation in preparing the SWP, with subsequent adoption by the NMISC. As detailed above in Section 1.1, Part H of the SWPA requires that plans must be reviewed every 5 years, Part I states that the SWP does not permit the granting or condemnation of water rights, and Part J states that the SWP shall not be construed to determine, abridge, or affect the water rights of Indian pueblos, tribes, or nations.

2.2. Structure of NMISC and State Planning

The NMISC has broad powers to investigate, protect, conserve, and develop New Mexico's waters including both interstate and intrastate stream systems. The eight unsalaried members of the NMISC are appointed by the Governor. The ninth member is the State Engineer, who under state law must serve as the secretary of the NMISC.

The NMISC's primary function is to support New Mexico in complying with interstate compacts and negotiating with other states to settle interstate stream controversies. New Mexico is a party to eight interstate stream compacts. To ensure basin compliance, NMISC staff analyze, review, and implement projects in New Mexico and analyze streamflow, reservoir, and other data on these stream systems.

The NMISC is also authorized by statute to investigate and develop the water supplies of the state and institute legal proceedings in the name of the state for planning, conservation, protection, and development of public waters.

2.3. History of State Water Planning Under the NMISC

The NMISC was created in 1935, with the initial purpose and authority to negotiate compacts with other states and oversee the development of interstate streams. As the need to provide for more active water administration in New Mexico has increased, so has the purpose and authority of the NMISC evolved.

The 2018 Plan "Part III: Legal Landmarks" provides a thorough history of water planning in New Mexico, going back to the 1907 Water Code when New Mexico was still the Territory of New Mexico. That code still forms the basis for much of New Mexico water laws, as it declared two fundamental principles in New Mexico water law: prior appropriation and beneficial use. Under New Mexico water law, all ground and surface waters belong to the public and are subject to appropriation under the Doctrine of Prior Appropriation, a constitutional provision that says earlier appropriations have priority over later appropriations. In a prior appropriation system, and in absence of any authorized alternative administration plan, shortages are addressed through curtailment of junior water rights holders by the NMOSE.

Regional water planning in New Mexico began in earnest in 1987 when the New Mexico legislature authorized the NMISC to provide loans and grants for regional water planning activities. In 1994 the first Regional Water Planning Handbook was completed. Jurisdictions seeking funding, whether a county, city, water board, or water commission, could define their planning region for their proposed planning study. Thus, through the process of seeking funding, the water planning boundaries began to emerge, originating from the ground up, and not through a statewide analysis or comprehensive approach.

Historically, several iterations of water planning regions have been developed due to changing needs, but since 1996 the current 16 regions have remained essentially the same (New Mexico Water Dialogue, 1996). Section 3.1 provides more information about the re-assessment of water planning region boundaries.

As described in Section 2.1, the SWPA was passed in 2003, and the first SWP was prepared at that time (**Figure 1**).

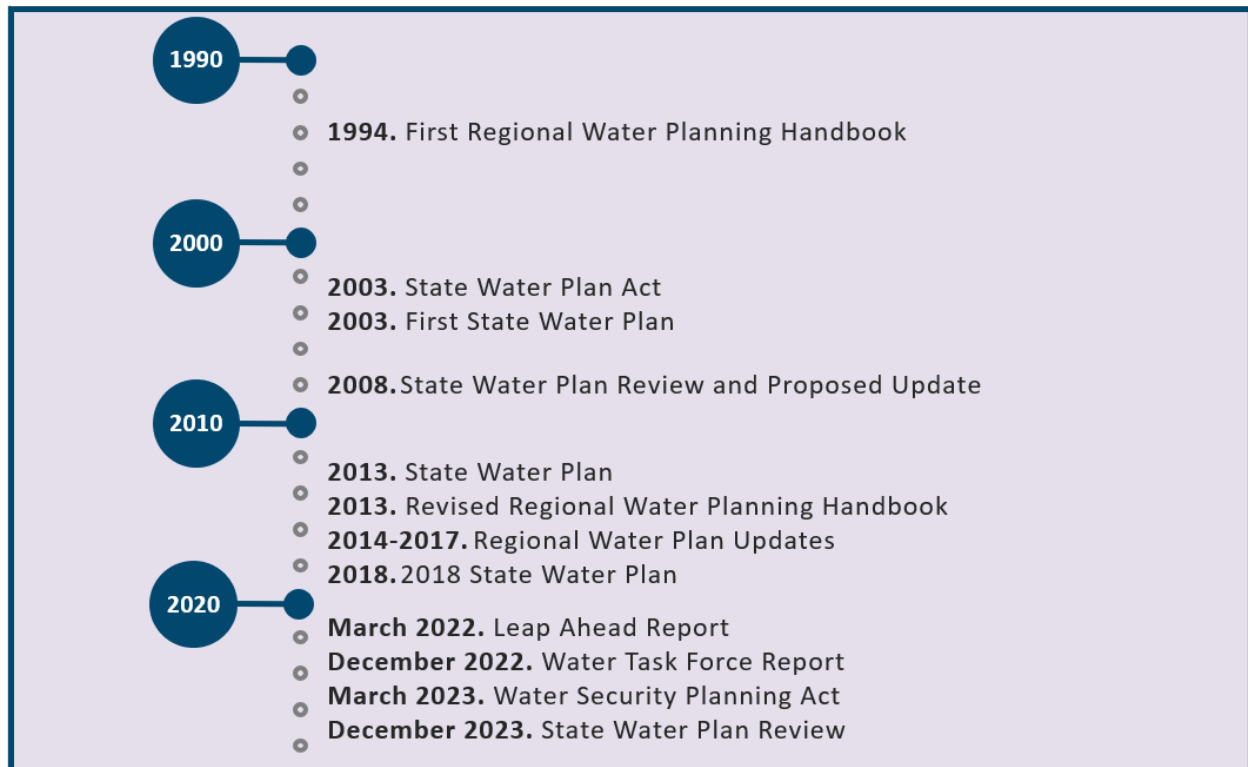


Figure 1. Milestones in NMISC State Water Planning.

The 2008 *Review and Proposed Update, New Mexico State Water Plan* (NMISC, 2008) identified the strengths and weaknesses of the 2003 SWP and recommended that water planning could be improved by including:

- Technical studies that address water supplies, population projections, water demand, the connection between groundwater and surface water, water conservation, drought management, brackish water and desalination, water availability and land use planning, and riparian restoration for protection of water supply and water quality;
- Increased emphasis on infrastructure needs, priorities, and costs;
- Identification of additional authorities and responsibilities of relevant agencies; and
- More emphasis on ecosystem and habitat protection and restoration issues.

The 2013 *Working Toward Solutions: Integrating Our Water and Our Economy, State Water Plan 2013 Review* (NMISC, 2013b) described the approach for updating regional water plans, including using the *Updated Regional Water Planning Handbook* (2013 Handbook; NMISC, 2013a). Another key recommendation of the 2013 Review was the preparation of a full update to the 2003 SWP rather than another 5-year review.

The 2013 Handbook made technical studies more useful to the state water planning effort by creating a common technical method of evaluating regional water supplies. This allowed the state to meet the statutory requirement that regional water plans (regional plans) be integrated into the State Water Plan (NMSA §72-14-3.1 [C][11]). With the 2013 Handbook, water supply, population, and demand data were provided in a consistent format for the 16 water planning regions. Following up on the 2013 SWP and in compliance with NMSA §72-14-3.1 (H), the 2018 Plan was completed by the NMISC.

2.4. 2018 State Water Plan

The 2018 Plan, which entailed extensive public outreach and community input, was a yearslong effort involving the development of regional plans for each of New Mexico's 16 water planning regions in 2016 and 2017. The 2013 Handbook stated that the regional plans should include a detailed list of the various projects, programs, and policies needed to address local and regional problems. This stakeholder effort served as a foundation for identifying statewide infrastructure needs and provided insight into the issues and problems facing each region. Much of the 2018 Plan evolved from the development of the regional plans that were completed in 2016 and 2017 using the common and defined technical platform. The 2018 Plan included three parts.

Part I: Policies presented a concise, big-picture view of the highest priority water issues in New Mexico and the policies, goals, and strategies needed to address them, as well as information about the agencies and resources available to assist with these issues.

The eight policy topics included:

1. Water Infrastructure
2. Data Collection, Accessibility, and Monitoring
3. Drought
4. Watershed Management
5. Water Supply and Demand
6. Water Conservation
7. Water Quality
8. Water Planning

Part II: Technical Report integrated water resource information from the regional plans completed in 2016-2017, including estimated water availability and use, projections of population, and strategies proposed by stakeholders to address key water issues. Climate change was not directly addressed, although prolonged drought estimates based on historical data were taken into account.

Part III: Legal Landmarks provided information about historical New Mexico water law decisions, events, and circumstances that shaped New Mexico's legal structures for water resource administration.

The 2018 Plan is a strategic management tool to assist and inform decision-makers at all levels, ranging from legislators to citizens, in addressing water resource issues. Additionally, the 2018 Plan was informed by the 2017 State Water Plan Town Hall event (SWP Town Hall), an important forum for public input on state water planning.

The 2018 Plan also built upon recommendations from the 2008 SWP Review and Proposed Update. In response to recommendations to provide more focus on ecosystem and habitat health, the 2018 Plan included a policy topic of watershed management. To identify additional authorities and responsibilities of relevant agencies, each of the policy topics in the 2018 Plan included a figure to illustrate the various agencies involved and a directory of the agencies and programs involved in protecting and managing our water resources.

This 2023 SWP Review focuses on both incorporating key information from subsequent climate change science and state water planning work and evaluating the 2018 Plan's progress toward meeting each section of the SWPA.

3. Priorities Identified for 2023-2028

Through this 2023 Review process, the NMISC identified priorities to advance state water planning through the next water planning period and beyond. These priorities were identified through the evaluation of state water planning efforts to date, including most recently the 2018 Plan, and through the climate change science review provided by *The Leap Ahead*.

The list of priorities was then refined based on alignment with the SWPA and the Water Security Planning Act (which is both the priority project of the Statewide Water Planning Team and a recommendation of the Water Task Force). The manner in which these priorities will be further defined and implemented, especially priorities 1 through 6, will be informed by New Mexico stakeholders during public outreach sessions that are scheduled to take place in 2024.

The nine priorities are listed below and are detailed in the following subsections. They are numbered for easier discussion, not in order of importance. Additionally, these nine priorities are not meant to be an exhaustive list of NMISC planned actions.

1. Assess the boundaries and number of water planning regions in New Mexico.
2. Provide/secure initial funding for regional water planning.
3. Provide clear guidelines for regional water planning.
4. Work with regional planning entities to ensure plans address regional needs, are inclusive of underserved communities, and align with state priorities.
5. Provide funding opportunity guidance.
6. Provide technical assistance and promote dialogue to advance regional planning.
7. Work with the New Mexico Water Data Initiative (WDI) to be responsive to regional planning needs.
8. Promote utilization of Active Water Resource Management (AWRM), which calls for community input in shaping water administration.
9. Provide a status report and identify resource needs and strategies to advance a) water rights adjudications; and b) taking inventory of existing water wells and determining appropriate disposition of unused wells.

Table 1 lists these priorities identified by the NMISC for the next planning period and names the corresponding SWPA sections that each priority helps to advance.

Table 1. Priorities Identified for the Next Planning Period.

Priority	Statutory Requirements (Abbreviated)																								
	B.1 Promoting stewardship of the state's water resources	B.2 Protecting and maintaining water rights and their priority status	B.3 Protecting the diverse customs, culture, environment and economic stability of the state	B.4 Protecting both the water supply and water quality	B.5 Promoting cooperative strategies for meeting the basic needs of all New Mexicans	B.6 Meeting the state's interstate compact obligations	B.7 Providing a basis for prioritizing infrastructure investment	B.8 Providing statewide continuity of policy and management relative to our water resources	C.1 Identify objectives for positive impact	C.2 Establish vision/policy direction	C.3 Inventory resources/population/demand	C.4 Include water budgets	C.5 Develop conservation strategies	C.6 Include drought management plan	C.7 Recognize land use	C.8 Promote river and watershed restoration	C.9 Consider water right transfer policies	C.10 Promote coordination within government	C.11 Integrate regional plans	C.12 Integrate water supplier plans	C.13 Identify infrastructure needs & opportunities	C.14 Promote collaboration with national labs and research institutions	D.1 Completing adjudication	D.2 Creating databases of resources and rights	D.3 Measuring state water use
1. Assess the boundaries and number of water planning regions in New Mexico.	X		X	X	X			X		X								X	X						
2. Provide/secure initial funding for regional water planning.	X		X	X	X			X		X								X	X						
3. Provide clear guidelines for regional water planning.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
4. Work with regional planning entities to ensure plans address regional needs and align with state priorities.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	
5. Provide funding opportunity guidance.	X		X	X	X	X	X	X		X						X		X	X		X	X			
6. Provide technical assistance and promote dialogue to advance regional planning.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
7. Work with the NM Water Data Initiative (WDI) to be responsive to regional planning needs.	X	X	X	X	X	X		X		X	X							X				X		X	X
8. Promote utilization of Active Water Resource Management (AWRM), which calls for community input in shaping water administration.	X	X	X	X	X	X		X	X	X			X	X			X	X					X		X
9. Provide a status report and identify resource needs and strategies to advance a) water rights adjudications; and b) taking inventory of existing water wells and determining appropriate disposition of unused wells.	X	X	X	X	X	X	X			X	X				X		X	X			X		X		X

3.1. Assess the boundaries and number of water planning regions in New Mexico

With public engagement, the boundaries and number of water planning regions in New Mexico will be reassessed. The current 16 water planning region boundaries originally stemmed from a 1987 regional water planning statute, which stated that “the future water needs of New Mexico can best be met by allowing each region of the state to plan for its water future” (NMSA § 72-14-43). As of the date of this 2023 Review, the current 16 water planning region boundaries are a hybrid of hydrologic and administrative boundaries.

Reassessing the boundaries and number of water planning regions within New Mexico aligns with the Water Security Planning Act, which states that the NMISC shall “establish the boundaries and number of water planning regions in the state” (Section 4 [C][1][a]). Community input will be collected in 2024 and will form the basis for new water planning regions with discussion and engagement around principles such as:

- climate change;
- watershed boundaries, which simplify water budget calculations and are relevant for interstate compacts;
- groundwater-based boundaries, which are relevant to nearly all water users and would facilitate aquifer management;
- governance-based boundaries, which facilitate leadership and fundability;
- culturally relevant boundaries, which unify shared values and ensure greater representation;
- optimizing boundaries for multiple benefits; and
- using appropriate boundaries for each region, even if the underlying principles vary.

3.2. Provide/secure initial funding for regional water planning

Securing and providing funding to initiate regional water planning is critical to address water resource challenges in New Mexico. An important objective of the NMISC is to advance regional water planning, consolidate the information gained from these plans, and be a conduit between water planning regions and decision-makers at the state level.

The Water Security Planning Act Sections 4 and 5 also formalize the need for funding for regional planning, in part by the NMISC. Section 4A. states that “[t]he commission may make grants or loans of funds for the purpose of regional water planning, as possible, using appropriations made for that purpose.” This is further detailed in Section 4C.(9)(d), in which provides that the NMISC shall support the regions in “identifying funding sources and supporting the acquisition of funds for implementation of approved regional water security plans.”

The regional entities also share responsibility for funding in Section 5C(4): “Each regional water planning entity shall assist in the funding, development and incorporation of plans for rural communities.”

The Task Force Report identifies some potential pathways to funding and the parties responsible for funding for water planning recommendations. Funding is one of the five key areas that need solutions as identified in the Task Force Report.

One such recommendation is to “[c]apitalize a new state fund needed to capture and leverage the bounty of federal funding currently available for needed state and local water infrastructure.”

Appendix B goes into further detail on strategies to improve water resources management and planning and offers suggestions for the kinds of legislative actions to assist with these actions. In addition to the NMISC and NMOSE, these actions may involve collaboration with the New Mexico Bureau of Geology and Mineral Resources, the New Mexico Environment Department; the New Mexico Energy, Minerals and Natural Resources Department; the New Mexico Department of Finance and Administration, and other agencies.

3.3. Provide clear guidelines for regional water planning

Providing clear guidelines for regional plans is imperative to successful water planning and to meeting all the statute items in NMSA §72-14-3.1 (B) and (C). The regional water planning guidelines will be determined collaboratively with the community during public events and through online opportunities in 2024.

The Water Security Planning Act defines the NMISC’s role in establishing guidelines for regional water plans and sets forth requirements for each water planning entity.

The Task Force Report makes several recommendations related to regional water planning. For example, recommendation 2.2 states, “Elevate regional planning in the face of increasing water scarcity to promote equity and build capacity to govern and manage water” (Task Force Report Appendix B). In addition, the Task Force Report provides detailed action and strategies to address recommendation 2.2, such as “[e]stablish water conservation, resilience and sustainability criteria for state funding and approval of regional water plans” (Task Force Report Appendix B).

3.4. Work with regional planning entities to ensure plans address regional needs and align with state priorities

The NMISC’s role in continuing to advance the completeness and integrity of regional water plans is needed to comply with the SWPA, which states that the SWP shall provide “statewide continuity of policy and management relative to our water resources” (NMSA §72-14-3.1 [B] [8]).

The NMISC strives to collect equivalent information from all regions for a more accurate state water planning process. Based on the regional water planning guidelines defined by the NMISC and the public during this next planning period (Priority 3), the NMISC will review regional water plans to ensure the plans meet regional needs, are inclusive of underserved communities, and align with state priorities. During this process, the NMISC will provide guidance and technical assistance to the water planning regions as needed.

Development of clear processes and standards at the outset will help ensure the creation of thorough regional plans that achieve regional priorities and align with state objectives. This process complies with the Water Security Planning Act, which directs NMISC to develop “criteria for commission approval of a regional water security plan” and procedures and guidelines for the completeness of regional plans (Sections 4[C][1] and [C][2]).

This priority is also suggested as a strategy to address Recommendation 2.2 in the Task Force Report, which suggests, “Amend the 1987 regional water planning statute section 72-14-44 to state goals, objectives, outcomes, and desired impacts for regional and community water planning process” (Task Force Report Appendix B).

3.5. Provide funding opportunity guidance

Guidelines for regional water planning will outline how funding opportunity guidance will be provided to water planning regions. The NMISC hopes to have the resources to assign a liaison to each water planning region to provide continued funding opportunity guidance.

The Water Security Planning Act includes provisions pertaining to the NMISC’s role in providing funding guidance to water planning regions. Some examples include:

- adopt guidelines that address “the requirements for a proposal for grants or loans for planning activities” (Section 4 [C] [2] [c]).
- adopt guidelines that address “the process for approval of grants or loans” (Section 4 [C] [2] [d]).
- adopt guidelines that address “the procedures to support implementation of a regional water security plan” (Section 4 [C] [2] [g]).
- support regional water planning entities by “identifying funding sources and supporting the acquisition of funds for implementation of approved regional water security plans” (Section 4 [C] [9] [d]).

Additionally, the Water Security Planning Act requires that regional water planning entities shall do the following for funding opportunities:

- “assist in the funding, development and incorporation of plans for rural communities;” (Section 5 [C] [4]).

The Task Force Report includes Recommendation 2.3, which states, “Increase water resilience by leveraging federal funds – particularly currently available federal funds – to ensure New Mexico’s water infrastructure is modernized for 21st century needs” (Task Force Report Appendix B). The Task Force Report provides detailed action and strategies to address Recommendation 2.3, such as “Expand and consolidate mechanisms to vet proposed projects and commit state-matching funds based on applications from political subdivisions of the state” (Task Force Report Appendix B).

3.6. Provide technical assistance and promote dialogue to advance regional planning

Providing technical assistance and promoting ongoing dialogue to advance regional water planning is a cornerstone to meeting the requirements of NMSA §72-14-3.1 (B) and (C) (**Table 1**). This work will support many of the NMISC priorities identified in this 2023 Review, such as providing clear guidelines for the regional plans and working with regional planning entities to ensure plans meet regional needs and align with state priorities. This priority will be supported by regional workshops and public outreach that is planned for 2024.

This priority is aligned with the following Water Security Planning Act requirements that the NMISC:

- “shall establish a procedure, in consultation with the Indian affairs department, to establish an advisory council for taking into account in the regional water security program tribal sovereignty, tribal water rights and the water needs of tribal communities” (Section 4 [B]).
- “provid[e] technical and local capacity development support, including commission staff and funding” (Section 4 [C][9][a]).
- “ensure, by using the integrated water data and information platform developed pursuant to the Water Data Act and collaborating with the bureau of geology and mineral resources of the New Mexico institute of mining and technology and the water resources research institute, that the best science, data and models relating to water resource planning are available to the regional water planning entities and are used with scientific integrity and adherence to principles of honesty, objectivity, transparency and professionalism in developing, vetting and prioritizing proposals” (Section 4 [C][7]).

The Task Force Report includes recommendations for technical assistance and dialogue. Some examples include:

- “New Mexico has a network of technical assistance providers, e.g., Regional Councils of Government, Southwest Environmental Finance Center, New Mexico Rural Water Association, New Mexico Rural Community Assistance Corporation, which help address gaps in local and Tribal capacity, including governance, planning, and certified operator training. Recurring appropriations are needed to bolster this system to ensure small, local communities have the help they need” (Task Force Report p. 27).
- “Develop community-based and science-informed sustainable groundwater management plans. Provide technical support and guidance preferentially to underserved tribal governments and disadvantaged communities” (Task Force Report Appendix B).
- “Implement a technical support program through the NMISC to: i. Build capacity for water resources management planning and implementation in Tribal, acequia, and rural communities. ii. Provide direct technical support for water project planning, funding, and implementation” (Task Force Report Appendix B).

3.7. Work with the New Mexico Water Data Initiative to be responsive to regional planning needs

The New Mexico WDI is an effort to share and integrate New Mexico water data as called for by the 2019 Water Data Act. The 2019 Water Data Act specifies that through collaboration of state, regional, local, and national data providers, integrated data shall include streamflow measurements, precipitation, reservoir and irrigation system operations, groundwater use and levels, municipal and industrial water and land uses, water rights, water diversions, water quality, fish, aquatic and riparian systems data, and ecological data. The 2019 Water Data Act also specifies that key data shall be identified and integrated in support of water management and planning for New Mexico.

The WDI is a collaborative group working to modernize New Mexico's water data as part of the Water Data Act. This effort is convened by the New Mexico Bureau of Geology and Mineral Resources in partnership with NMISC, NMOSE, New Mexico Environment Department, and New Mexico Energy, Minerals and Natural Resources Department. This multiyear effort will provide access to data on water quality, quantity, and usage in an open data framework to provide information critical to the responsible and responsive management of water in New Mexico.

This priority will involve continued collaboration with the WDI to explore how state planning efforts can use WDI data as a foundation for public outreach and education, and to support the regional planning process. Data collected by the WDI will be of great importance to continued planning efforts by streamlining the access to data relevant to these important water planning topic areas.

This priority aligns with the Water Security Planning Act, which directs NMISC to "ensure...that the best science, data and models relating to water resource planning are available to the regional water planning entities" by utilizing and building from the WDI data platform and collaborating with the New Mexico Bureau of Geology and Mineral Resources and the Water Resources Research Institute (WRRI) (Section 4[C][7]).

One of the Task Force Report's key recommendations is to "advance our scientific understanding of groundwater through measuring, monitoring, and models to protect the quantity and quality of groundwater resources" (Task Force Report p. 7). In furtherance of this key recommendation, the Report emphasizes the need to fully deploy existing tools to fulfill existing statutory mandates such as the Water Data Act.

Specifically, the Report recommends fully meeting the recurring and non-recurring funding needs of the WDI, enhancing the technical capacity of the WDI, and encouraging information-sharing with acequia communities and Indian Pueblos, Tribes, and Nations.

3.8. Promote utilization of Active Water Resource Management to administer water by priority or by alternative administration, as determined through community input

Implementation of AWRM allows for the administration of water rights in times of shortage in the absence of fully completed adjudications. Adjudications are costly and time consuming and although progress has been made in recent years, many are still underway or yet to be initiated (e.g., NMOSE, 2018). As water scarcity intensifies, utilization of AWRM will become increasingly important. In addition, AWRM allows communities to develop alternative administration plans that don't necessarily align with strict priority administration even when a basin or sub-basin is fully adjudicated. This tool has great potential for providing predictability and stability to water users in times of shortage.

This priority is particularly important to SWPA statute NMSA §72-14-3.1(B)(2), which refers to “protecting and maintaining water rights and their priority status,” and to SWPA statute NMSA §72-14-3.1(B)(5), which refers to “promoting cooperative strategies, based on concern for meeting the basic needs of all New Mexicans.”

The Water Security Planning Act also recognizes the value of potential integration of AWRM into regional planning (Section C [9][c]). Recognizing the benefits of more flexible administration schemes, such as are provided for under AWRM, *The Leap Ahead* highlights the need for “organizational infrastructure” alongside physical infrastructure to meet the needs of New Mexico’s changing hydrological future.

The Task Force Report promotes AWRM as a strategy to meet Recommendation 2.1, and states, “Protect water supplies in aquifer systems and river basin segments where demand exceeds the sustainable supply by implementing AWRM or other community-led/developed shortage-sharing agreements.”

The Task Force Report further promotes AWRM as a strategy to meet Recommendation 2.5, where it is recommended to “[i]nvite the participation of irrigation entities in the development of AWRM District Specific Regulations, including shortage sharing, offsets, transfers, banking, and marketing.” AWRM tools have the advantage of already being authorized by State law, NMSA § 72-2-9.1, 19.25.13 NMAC, and NMOSE rules; however, legislative appropriations or executive actions may be necessary to fully implement these activities.

3.9. Provide a status report and identify resource needs and strategies to advance a) water rights adjudications; and b) taking inventory of existing water wells and determining appropriate disposition of unused wells

Providing a status report and identifying resource needs and strategies to advance a) water rights adjudications; and b) taking inventory of existing water wells and determining appropriate

disposition of unused wells. Priorities 9(a) and 9(b) specifically address NMSA §72-14-3.1 (D)(1) and (D)(4), respectively.

Water rights adjudications determine who owns what water rights, in what amount, and at what priority date. The adjudication process is lengthy and provides certainty of the status of all individual water rights in a stream system or underground basin. Roughly 20% of New Mexico has been adjudicated and more than 50% of the state has adjudications in progress. Many adjudications are tied directly to the settlements of tribal water rights within the basin of interest. Understanding the status and trajectory of the State's ongoing and upcoming adjudications is important to providing confidence to the SWP process and to water right owners.

The Water Security Planning Act does not address adjudications specifically but does affirm the protection of existing water rights under priority administration. The Task Force Report identifies water rights adjudications and associated Indian water rights settlements as important for providing this certainty and as an existing administrative tool that does not require new legislative authorization. However, there are gaps in institutional capacity to complete statewide adjudications promptly.

The NMOSE maintains a record of water rights and points of diversion in the New Mexico Water Rights Reporting System (NMWRRS, also known as WATERS) database, including the water use type and status. This database includes the abstraction of water rights, which is complete for substantial areas of the State but incomplete or in progress for a significant number of basins. Areas in which the abstraction process has not been completed will have incomplete water right and point of diversion information. In the case of wells, the determination of how much water they are diverting or whether wells are unused or abandoned, and the disposition of such wells, is a question of water rights and falls under the matter of adjudication and priority administration. There is also a corollary water quality concern that abandoned or replaced wells that are not properly shut in creates a potential pathway for aquifer contamination.

4. State Water Plan Requirements NMSA § 72-14-3.1 (C)

Part C of the SWPA provides statutes that define content requirements of the SWP that must be addressed collaboratively by state agencies led by the NMISC. Specifically, this part of the statute states: “The interstate stream commission in collaboration with the office of the state engineer and in consultation with other government agencies as appropriate, shall develop a comprehensive, coordinated state water plan” (NMSA § 72-14-3.1 [C]), and then defines the 14 requirements for the SWP that are included in this section of the 2023 Review.

Each of the subsections below provides a summary of the 2018 Plan relative to each of the 14 statute items stated in Part C of the SWPA. Additionally, each subsection includes a summary of climate change information from *The Leap Ahead* that is pertinent to the 2018 Plan and the specific SWPA statute requirement defined under NMSA § 72-14-3.1 (C).

4.1. Identify Objectives for Positive Impact

C. (1) identify and reflect the common priorities, goals and objectives that will have a positive impact on the public welfare of the state;

Review of the 2018 State Water Plan

The 2018 Plan captures the common priorities, goals, and objectives that were identified by the 2016-2017 regional plan updates and during the SWP Town Hall. Each section of “Part I: Policies” of the 2018 Plan presents a consolidated review of the common goals that were identified as important to regional planning committees and public stakeholders. Additionally, the 2018 Plan “Part II: Technical Report” and its Appendix 2B further document the process used to identify common goals among regional planning and public outreach.

Some examples of common goals identified within “Part I: Policies” of the 2018 Plan included “reduce costs of infrastructure management” and “promote equitable investment in water infrastructure.” In addition to identifying goals, Part I also lists strategies that were identified in the regional planning process and discussed and ranked by public stakeholders in the SWP Town Hall. Strategies identified in the process included “seek state or local matching dollars to capitalize on federal funding for water infrastructure projects that require a match,” and “work with water users to develop strategies to manage earlier runoff.”

Appendix 2B of the 2018 Plan specifically documents the recommendations from regional steering committees and categorizes these recommendations into common themes. Efficiently prioritizing projects with public support is a goal of the NMISC’s Water Planning Program.

New Mexico Climate Review

The Leap Ahead presents some of the most up-to-date and relevant data related to climate change topics for New Mexico. New Mexico is forecasted to trend toward greater aridity. Over the next 50 years, *The Leap Ahead* projects a statewide increase in temperature of 5° to 7° F; increased drought severity; reductions in surface water flows (up to 25% less in the Rio Grande in the next 50 years);

declines in snowpack, runoff, and groundwater recharge; increases in wildfire frequency and intensity; and potential increases of extreme precipitation and flooding events.

Developing consensus around goals and strategies for adapting to the challenges that climate change will likely impose (e.g., hotter and drier conditions) is a primary goal of the Water Security Planning Act and its reinvigoration of regional water planning. Initial opportunities, including water loss reduction, asset management, and supporting technical expertise and regional planning, will tailor and prioritize projects based on regional needs and goals.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 6, and 8.

4.2. Establish Vision and Policy Direction

C. (2) establish a clear vision and policy direction for active management of the state's waters;

Review of the 2018 State Water Plan

The 2018 Plan built upon water planning work that began decades before to strive for comprehensive, coordinated state water planning under the NMISC. The 2018 Plan integrated the 2016-2017 regional plans according to the common approach defined in the revised 2013 Regional Water Planning Handbook. Additionally, the 2018 Plan presents results from the SWP Town Hall where stakeholders were asked about the topics most important to them.

The 2018 Plan synthesized regional planning efforts into policy topics, and for each policy topic collected the goals, or vision, related to each topic. For example, the chapter concerning drought in “Part I: Policies” names goals such as “Ensure sufficient water to meet basic needs for human health,” “Protect sensitive species and habitat during drought,” and “Protect the economy during drought.” These vision statements are then connected to the strategies or direction needed to work towards those goals. Connecting the vision to the direction represented a great amount of coordination among state planners and steering committees. The direction identified in the 2018 Plan for future improvement was to continue to clarify how identified needs can be addressed within existing institutional frameworks.

The 2018 Plan also presents a vision where more New Mexicans are informed and actively engaged in water planning. The introduction to “Part 1: Policies” states, “Going forward, the New Mexico Interstate Stream Commission Water Planning Program intends to initiate additional water planning outreach and education activities in 2019 and beyond... Future goals include convening a diverse range of participants and engaging in information-sharing, collaboration, and problem-solving to improve New Mexico water planning efforts.” Many of the priorities in this 2023 Review are designed to support this intention through the implementation of the Water Security Planning Act.

New Mexico Climate Review

The Leap Ahead is a compilation of relevant scientific information about climate change in New Mexico. The vision presented in *The Leap Ahead* for New Mexico with respect to climate change is that warmer temperatures will decrease water supply by roughly 5% per decade, increasing

competition and demand for scarce water resources. Effective water management necessitates recognizing the competing interests and values associated with water use, the needs and rights of future generations, the scientific evidence of increasing water scarcity, and the importance of consistent vision and policy.

Connection to Priorities: This SWPA statute item will be advanced by all priorities.

4.3. Inventory Resources, Population, and Demand

C. (3) include an inventory of the quantity and quality of the state's water resources, population projections and other water resource demands under a range of conditions;

Review of the 2018 State Water Plan

The 2018 Plan made considerable progress towards developing a consistent methodology for quantifying water availability and identifying and projecting water use among the 16 regional plans. Water quality was discussed as an issue facing New Mexico's water resources; however, water quality impacts were not quantified or considered in water balance calculations. Population baselines and projections were determined for the regions based on the 2010 Census and forecasts from the Bureau of Business and Economic Research at the University of New Mexico.

The range of conditions explored in the 2018 Plan was limited to the "near-normal to slightly-wetter-than-normal year" of 2010, with drought projections based on historical dry conditions for surface water supplies and surface water-connected groundwater supplies. Contemporary average conditions were expected to be the norm going forward, except for closed groundwater basins, for which persistent declines were projected. Impacts from climate change on future conditions (whether baseline or drought) were not considered. The 2018 Plan recognizes the limitations inherent in basing projections on historical average conditions (Part II, Section 3.5.3); however, future planning efforts will be developed around contemporary science, like *The Leap Ahead*, which projects a fundamentally altered hydrological system in New Mexico.

Water supply was determined by each of the regional plans according to a common technical approach (also referred to as a common technical platform [NMISC, 2013a]) to ensure that each region estimated its water availability using the same method. This method assumes that actual withdrawals in a year of average hydrologic conditions represent the amount of water that is both physically and legally available for use and account for other existing obligations such as interstate compacts, treaties, and environmental requirements (Morrison, 2015). The San Juan Basin water planning region is the exception and used different supply and demand calculations due to its unique circumstances, including substantial reservoir storage capacity and the ongoing development of federal water supply projects.

Water quality issues were identified as an issue in 14 out of 16 regions (2018 Plan Part II, Section 6.5) and were discussed in more detail in the regional plans than in the SWP. Part I, Section 7 of the 2018 Plan discusses water quality policies, goals, and strategies but does not characterize the specific current and future water quality issues facing New Mexico.

New Mexico Climate Review

The Leap Ahead projects a statewide increase in temperature of 5° to 7° F and reductions in available water of about 5% per decade, resulting in 25% less water in rivers over the course of the 50-year study period. A vital message of *The Leap Ahead* is that “[t]his is not the climate in which New Mexico water use and management developed, and status quo management is not an option.” This statement also applies to New Mexico’s water infrastructure.

The effects of climate change on water quality are understudied compared to the effects on the quantity of supply, according to *The Leap Ahead*. Surface water quality may be negatively affected by decreased surface water flow, increases in water temperature, *E. coli* concentration, post-wildfire runoff, and decreases in dissolved oxygen. These anticipated impacts will be driven by non-point sources, which make them more difficult to manage.

Groundwater quality impacts are even less understood. Potential effects include localized increases in total dissolved solids and salinity in shallow aquifers due to increased evaporation of surface sources of recharge. Increased temperatures may also increase microbial activity, leading to the leaching of metals into the aquifer; however, whether this effect will be seen in New Mexico is unknown.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 6, 7, and 9.

4.4. Include Water Budgets

C. (4) include water budgets for the state and for all major river basins and aquifer systems in the state;

Review of the 2018 State Water Plan

Water budgets were not created for the state, major river basins, or aquifer systems in the 2018 Plan. However, the New Mexico legislature did fund the New Mexico Dynamic Statewide Water Budget Model (Peterson et al., 2019), which is a statewide mass balance model that has been developed and periodically updated by WRRRI. Although the 2016-2017 regional plans did not attempt to develop water budgets, the regional plans did focus on the legally available water based on the historical precipitation year 2010.

New Mexico Climate Review

Development of a statewide model was identified as a knowledge gap in Chapter III of *The Leap Ahead*. Specifically, *The Leap Ahead* recommends “a thorough evaluation process in light of in-state capabilities, model suitability for management objectives, and availability of data to parameterize models, followed by a comprehensive projection of changes in the hydrologic system of New Mexico over the next 50 years, using the selected model or models.”

Development of a water model will assist in modeling the impacts of proposed actions and changes in watersheds, and in identifying data gaps that hinder water managers from understanding the use and status of water statewide. Proactive work to adapt to new conditions is not contingent on a

statewide water model – projections in *The Leap Ahead* for reductions in available water and changes to seasonality and storm severity are relevant statewide.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, and 6.

4.5. Develop Conservation Strategies

C. (5) develop water conservation strategies and policies; to maximize beneficial use, including reuse and recycling by conjunctive management of water resources and by doing so to promote nonforfeiture of water rights;

Review of the 2018 State Water Plan

Water conservation policies and strategies are presented throughout the 2018 Plan. Water conservation policy is presented in “Part I: Policies,” and conservation strategies are presented in “Part II: Technical Report” of the 2018 Plan. Many communities have made considerable progress implementing water conservation strategies, but greater and ongoing reductions will be needed to address the challenges that aridification of the southwest brings to water resource management.

Water conservation policy is mentioned throughout “Part I: Policies” of the 2018 Plan, and Section 6 of Part I is dedicated to water conservation policy. Within this section, the 2018 Plan summarizes what water conservation is, presents statutes and organizations related to water conservation, and provides several examples of potential mechanisms that could promote water conservation (e.g., encourage the use of incentives and enforcement strategies).

“Part II: Technical Report” of the 2018 Plan mentions that the 2016-2017 regional plans included a discussion of the approach used to incorporate water conservation strategies to assess potential future water demand. Additionally, “Part II: Technical Report” mentions the following in relation to water conservation:

- Regional steering committees identified and compiled lists of projects as strategies to address key water planning issues (e.g., fixing leaks, rebate programs, metering wells, changes in crop type) and identified the need to develop programs to pursue implementation of water conservation strategies.
- The steering committee members identified project leads and partners as well as possible funding sources in an effort to aid implementation. Table 7-1 summarizes key collaborative strategies by purpose from the 16 water planning regions, within which 21 strategies to reduce water use (i.e., water conservation) were identified in 12 water planning regions. Similarly, Table 7-2 summarizes key collaborative strategies by subject from the 16 water planning regions, within which 12 water conservation project strategies for the municipal sector and 8 for the agriculture sector were identified in 8 and 7 water planning regions, respectively. In total, 180 projects from the 16 water planning regions were identified in the 2018 Plan to reduce water use.

- The steering committee members also identified water augmentation issues that need to be addressed by a state agency, two of which were recommended under the conservation category.

Project lists from the 2016-2017 regional plans are detailed in Appendix 2C of the 2018 Plan.

New Mexico Climate Review

Referring to water conservation, *The Leap Ahead* recommends using the concept of “wet” water conservation rather than “dry” water conservation (Seckler, 1996). *The Leap Ahead* presents the lining of irrigation canals to reduce conveyance losses as an example of “dry” water conservation, which cuts off the groundwater recharge component of that system and does not reduce the net hydrologic depletion to the system. “Wet” water conservation, on the other hand, reduces net hydrologic depletion, an example of which would be switching to crops with lower water use.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 6, and 8.

4.6. Include Drought Management Plan

C. (6) include a drought management plan designed to address drought emergencies, promote strategies for prevention of drought-related emergencies in the future and coordinate drought planning statewide;

Review of the 2018 State Water Plan

With increased drought frequency and severity predicted, drought planning remains critical to meeting the water resource needs of New Mexicans in an equitable manner. The 2018 Plan states, “The state of New Mexico needs to continue to monitor and assess drought conditions, as well as promote and incentivize the development of drought mitigation and response plans by local, state, and tribal agencies in the state.” The 2018 Plan addresses drought policy in “Part I: Policies,” and drought scenarios are presented in “Part II: Technical Report.”

Within “Part I: Policies” of the 2018 Plan, the State of New Mexico Drought Task Force is identified as being dedicated to preparing and updating the state’s drought plan. Drought policy goals (e.g., forecast drought conditions; protect the economy during drought) and drought strategies (e.g., prepare for earlier snowmelt runoff; develop conjunctive use portfolios) are presented in “Part I: Policies” of the 2018 Plan.

Drought scenarios are presented in “Part II: Technical Report” of the 2018 Plan, which summarizes potential vulnerabilities of drought and the effects of climate change that are likely to occur in New Mexico. For example, water planning regions that rely primarily on surface water (e.g., Colfax, Mora-San Miguel-Guadalupe, Rio Chama, and San Juan Basin) were identified as being particularly vulnerable to drought. Proposed projects from the to reduce water demand for improving drought resilience are detailed in Appendix 2C of the 2018 Plan.

New Mexico Climate Review

The Leap Ahead identified that surface water flows in recent drought years have been lower than flows in earlier severe drought episodes and projects that this trend will increase. *The Leap Ahead* suggests that this trend indicates that some of the effects of climate change, such as declining snowpack and rising temperatures, are exacerbating the decline of surface water flow during severe droughts. Research included within *The Leap Ahead* indicates that New Mexico is trending toward increased aridity, which will amplify the impacts of future droughts.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 6, and 8.

4.7. Recognize Land Use

C. (7) recognize the relationship between water availability and land-use decisions;

Review of the 2018 State Water Plan

The 2018 Plan acknowledges the relationship between water availability and land use decisions. Within “Part I: Policies” of the 2018 Plan, the use of water availability information to inform land use decisions is identified as a water planning goal. Consideration of population and land use were required elements of the 2016-2017 regional plan updates, and these updates were incorporated into the 2018 Plan.

New Mexico Climate Review

Land use is discussed within *The Leap Ahead*, which mentions that land use changes can impact sediment pulses within arroyos and ephemeral channels. In addition, multiple sources were cited within *The Leap Ahead* that demonstrate that climate variability and human land use have quantifiable effects on forest ecosystems (e.g., Swetnam and Betancourt, 1998; Roos et al., 2021) and that forest ecosystems are the source of the vast majority of New Mexico’s surface water.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 6, and 9.

4.8. Promote River and Watershed Restoration

C. (8) promote river riparian and watershed restoration that focuses on protecting the water supply, improving water quality and complying with federal Endangered Species Act requirements;

Review of the 2018 State Water Plan

The 2018 Plan defines watershed management to include “activities such as restoration of degraded uplands to increase soil health, thinning dense forests to reduce the threat of catastrophic wildfire and subsequent debris flows, and improving the resilience of riparian areas to reduce erosion, store water, and improve habitat.” In addition to the Endangered Species Act of

1973, the Southwest Forest Health and Wildfire Prevention Act of 2004 (Public Law 108-317 108th Congress) demonstrates the importance of NMSA §72-14-3.1 (C)(8).

New Mexico's Soil and Water Conservation Districts have the authority to implement watershed restoration. Additionally, the United States Forest Service developed a Watershed Condition Framework (USFS, 2011) that can help to assess the condition of watersheds and prioritize restoration activities.

Within "Part I: Policies," the 2018 Plan states that since 2005, NMSA 1978 § 72-14-3.3 has given "the NMISC the authority to establish the strategic water reserve to purchase or lease water or water rights to comply with interstate stream compacts and court decrees, and also to assist the state and water users in water management efforts for the benefit of threatened or endangered species." The 2018 Plan provides watershed management goals and strategies in "Part I: Policies," for example, to "[i]mprove rangeland health and resilience through practices that increase soil organic matter, reduce erosion, and increase the resilience of the landscape during drought and flood events."

The 2018 Plan further promotes the need for watershed management and restoration in "Part II: Technical Report." Additionally, more information about the strategic water reserve is provided and a map of Critical Habitat for Endangered Species in New Mexico is shown in Figure 6-3 on page 64.

New Mexico Climate Review

Upland watersheds are especially vulnerable to the effects of a warming climate. Aridification increases the risk of catastrophic wildfire, which has detrimental impacts to both water quality and water quantity. Postfire runoff can deplete dissolved oxygen downstream of the burned watershed. One finding of *The Leap Ahead* is that loss of riparian vegetation exacerbates the rise of surface water temperature, which in turn can increase *E. Coli* concentrations. One of the data gaps identified in *The Leap Ahead* is the need to understand hydrologic responses to anticipated watershed vegetation changes and ecosystem disturbances.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 5, and 6.

4.9. Consider Water Right Transfer Policies

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

Review of the 2018 State Water Plan

The 2018 Plan addresses this requirement of the SWPA by raising the issue of water rights transfers as a management tool throughout the document; however, specific policies are not discussed or promoted. Water rights transfers were identified as the most common water management issue in the regional plans. Transfers were also commonly identified as a management strategy for balancing water use. This focus was primarily on intra-regional strategies such as water banking and

shortage-sharing agreements rather than interbasin transfers, identified in five regions, or inter-regional collaborative strategies, identified in a single region.

The State Engineer has issued administrative guidelines governing the review of transfer applications in a number of basins throughout the state. Going forward, regional planning groups may need to adhere to these guidelines, including proposing factors that the State Engineer may consider in determining whether proposed transfers would be detrimental to the public welfare of the state. In addition, AWRM regulations, above in Section 3.8, allow for tailored policies in each of the seven districts of the NMOSE, particularly in times of shortage, allowing District Managers to flexibly accommodate the variable circumstances within their districts.

New Mexico Climate Review

The Leap Ahead promotes the use of AWRM as a tool to avoid “the blunt instrument of strict priority administration.” Resolution of conflicts over priority dates has proven costly and time consuming for water rights holders and the state; AWRM shortage-sharing agreements and market-based water rights transfer agreements may be a path towards developing more flexible water rights administration practices to accommodate increasingly variable surface water supplies.

The Leap Ahead also warns against planned diversifications of supply that are not realistic under conditions of aridification. Intra-regional cooperative groups, such as the San Juan Water Commission, are highlighted as examples of water resources management that avoids the “default competitive, zero-sum-game approach.”

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 6, 8, and 9.

4.10. Promote Coordination Within Government

C. (10) promote strategies and mechanisms for achieving coordination with all levels of government;

Review of the 2018 State Water Plan

Throughout the development of the 2018 Plan, multiple government agencies were consulted and provided input. “Part II: Technical Report” integrated water resource information from the regional water plans completed in 2016-2017 (NMISC, 2016-2017), including estimated water availability and use, projections of population, and strategies proposed by stakeholders to address key water issues. The NMISC continued the work of identifying key water issues relevant to all regions and consolidating the long lists of project and policies suggested in the regional planning process. During the SWP Town Hall event, projects and policies were workshopped to categorize and prioritize those of importance to public stakeholders, and additional recommendations were developed.

New Mexico Climate Review

The Leap Ahead does not address recommendations directly to government agencies, it acknowledges that the recommended research would benefit State planners, and *The Leap Ahead*

Chapter IV describes its recommendations as “Strategic Areas Where New Mexico Might Want to Invest in Future Research.”

Strategies and mechanisms for achieving coordination with all levels of government are not discussed within the scope of *The Leap Ahead*, though the data collection needs in the recommendations would necessitate large-scale coordination within all levels of government.

For example, Chapter IV of *The Leap Ahead* concludes with the following recommendation:

Long-term ecological monitoring and research that is field-based in, and representative of, the diverse range of New Mexico landscapes is needed to adequately document, sufficiently understand, and effectively address: (1) current uncertainties and the expectation of many further tipping-point surprises over the rate, magnitude, patterns, and drivers of ecosystem reorganization in New Mexico relative to projected climate changes over the next 50 years; (2) associated ecohydrological responses; (3) modeling needs for better parameterization and validation of climate ecosystem process models; and (4) effective societal adaptations to anticipated climate change impacts to land and water resources.

Chapter XI Recommendations acknowledges the need for standards in data development and keeping data publicly available and does identify the New Mexico Water Data Act as a possible mechanism for that purpose:

Water levels in New Mexico’s aquifers must be more thoroughly studied, and in particular, water-level records from lightly pumped aquifers are needed to assess pumping-independent changes in recharge. The data developed for water levels must be made publicly available, using findable, accessible, interoperable, and reusable (FAIR) management principles; and this could be done through the New Mexico Water Data Act (NMSA 1978§ 72-4B) (Chapter 3).

Connection to Priorities: This SWPA statute item will be advanced by all priorities.

4.11. Integrate Regional Plans

C. (11) integrate regional water plans into the state water plan as appropriate and consistent with state water plan policies and strategies;

Review of the 2018 State Water Plan

The 2016-2017 regional plans were based on a common methodology established in the 2013 Updated Regional Water Planning Handbook. The common methodology was useful in developing plans that combined effectively in the 2018 Plan, although many regional entities felt the common methodology was a poor fit for local conditions. The reinvigoration of regional planning envisioned in the Water Security Planning Act seeks to develop regional planning entities that work in a manner appropriate to the needs and values of each region and are consistent with statewide management objectives.

The 2013 Handbook was also revised to provide a framework for capturing the infrastructure needs of the water planning regions; thus, the recent update of the regional plans included detailed lists of the projects and policies that are needed to address local and regional problems. A synopsis of the projects and policies is provided in “Part II: Technical Report” of the 2018 Plan.

New Mexico Climate Review

Regions presented in *The Leap Ahead* are divided within the State by climate conditions:

For the purposes of this report, we are dividing New Mexico into four physiographic regions, based on projected climate change and associated effects on hydrology (Fig. 10.2). These four regions, which are defined by a combination of latitude and topography are:

1. the High Mountains (Northern mountains, Gila/Mogollon–Datil, and Sacramento Mountains);
2. the Northwestern High Desert (Colorado Plateau, San Juan Basin, Zuni Mountain region);
3. the Rio Grande Valley and Southwestern Basins; and
4. the Eastern Plains.

These represent a simplification of the eight climate divisions defined by the National Oceanic and Atmospheric Administration.

Connection to Priorities: This SWPA statute item will be advanced by priorities 1, 2, 3, 4, 5, and 6.

4.12. Integrate Water Supplier Plans

C. (12) integrate plans of water supply purveyors, including those of local governments, 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;

Review of the 2018 State Water Plan

Potential water shortages for public water systems were identified as a key water issue within the 2018 Plan. Large water providers are already required to maintain water conservation and water development plans with the NMOSE, and some of these providers have developed water plans that exceed minimum requirements. The Water Security Planning Act explicitly establishes the necessity of incorporating existing water planning into future regional work.

New Mexico Climate Review

Future climate projections indicate that headwater streamflow into New Mexico is expected to decline and that evapotranspiration rates are expected to increase (e.g., *The Leap Ahead*). Integration of public water supply plans with other sectors and with state water plan policies and

strategies will be critical to help meet the challenges of water resource management in New Mexico.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, and 6.

4.13. Identify Infrastructure Needs/Opportunities

C. (13) identify water-related infrastructure and management investment needs and opportunities to leverage federal and other funding; and

Review of the 2018 State Water Plan

According to the 2018 Plan, water infrastructure is the backbone for storing and delivering water and providing flood protection. Existing infrastructure not only requires continued repairs, maintenance, and expansion for the storage, conveyance, and delivery of water to the end user, it also was developed at a time when changing water availability was poorly understood. Significant needs for infrastructure and opportunities that could leverage federal and other funding opportunities were identified in the 2018 Plan.

“Part I: Policies” of the 2018 Plan features infrastructure as the first topic chapter and reports that “[i]nfrastructure needs for existing and new public water and wastewater systems, agricultural water systems, reservoir management, levees, and stormwater comprised more than half of the projects detailed in the 2016-2017 regional plan updates.” Some strategies identified in the 2018 Plan are still in need of more connection between the need and the mechanism for funding.

“Part II: Technical Report” provides information about New Mexico dams and their hazard potential. The recommendation related to this need is to “[p]rovide funding to support dam repairs and maintenance, particularly for the dams identified in “Part II: Technical Report,” Section 6.6, with high or significant hazard potential in poor condition.” Table 1 in “Part I: Policies” provides a listing of agencies who support infrastructure in New Mexico. Another recommendation identified in “Part I: Policies” of the 2018 Plan states, “Seek state or local matching dollars to capitalize on federal funding for water infrastructure projects that require a match.”

Many recommendations for infrastructure policy in the 2018 Plan relate to ecological goals and long-term management of water systems. For example, “Communities in eastern New Mexico need to build the Ute Pipeline to reduce dependence on the declining High Plains aquifer and to supplement concurrent strategies for sustaining this aquifer.” Appendix 2B of the 2018 Plan includes more information about specific recommendations to the state, many of which are related to infrastructure needs and opportunities.

New Mexico Climate Review

The Leap Ahead also stresses the need for infrastructure investment and suggests different priority metrics to focus investments on infrastructure related to the risks posed to life and property:

...one should recognize that requiring stormwater management systems to provide protection from 100-year storms provides a level of protection rather than a measurable

reduction in risk. For example, a dam built to limit flooding from a 100-year storm in a watershed provides the same level of protection regardless of whether the downstream watershed consists of agricultural fields or high-density urban development with elementary schools and hospitals. There is increasing agreement within the stormwater management profession that infrastructure should be designed to reduce the risk posed to life and property rather than simply provide a specified level of protection.

Because finances and resources for infrastructure investment and repair are finite, policy direction such as that suggested by *The Leap Ahead* may assist with prioritizing projects.

Connection to Priorities: This SWPA statute item will be advanced by priorities 3, 4, 5, 6, and 9.

4.14. Promote Collaboration with Research Institutions

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

Review of the 2018 State Water Plan

Collaboration with research institutions has been, and remains, a necessary component to state water planning. The intent of the 2018 Plan "Part I: Policies" is to promote further collaboration between water planners and the agencies and institutions with resources related to each policy topic. One area with a need for continued collaboration is data collection.

Section 2 of the 2018 Plan "Part I: Policies" states,

Data collection of basic information for analysis of water supply, such as snowpack and precipitation, water diversions (including fresh, brackish, and saline water), return flow, irrigated acreage, aquifer thickness, extent and capacity, water levels, and water quality, are fundamental to managing New Mexico water resources. The recommendation from the regional water plans and other stakeholders is not only to develop a central clearing house for data access, but also to fill in the gaps where monitoring, water use metering, and hydrogeologic information are lacking.

A more centralized approach to data collection is a need identified in many places in the 2018 Plan. Working towards this goal relates to the statute's directive toward strategic focusing of efforts. The 2018 Plan Section 2 of "Part I: Policies" notes "to explore methods to create a clearing house for data is a significant undertaking and would require leadership and staff resources that may not be currently available. However, many agencies are collecting and making data more accessible at the rate possible." Projects such as the New Mexico WDI are an important step towards this goal.

The 2018 Plan also made it a priority to connect public stakeholders to research professionals. Appendix 1A of the 2018 Plan collects survey information from the 2017 SWP Town Hall about

desired workshops. Respondents showed high interest in this statement: “An important benefit of attending an event is the opportunity to speak with and listen to practitioners or professionals.”

New Mexico Climate Review

The Leap Ahead relies upon and promotes the work of research institutions in all chapters. Though a comprehensive statewide clearing house for data may be too ambitious or far in the future, efforts are still being made to bring together the work of researchers and professionals. *The Leap Ahead* is the result of collaboration among many professionals and researchers regarding state water challenges in the light of climate change factors. In each topic area regarding climate change and its effects, authors of *The Leap Ahead* compared a wide variety of sources to report on what is known and where there is less certainty.

In evaluating models of climate projection in Chapter II and land surface water budget models in Chapter III, less agreement or certainty was found between models, and readers are cautioned repeatedly that there are not enough New Mexico-specific models available. Most of their projections in their assessment of climate change projections were derived from global circulation models, “so the well-documented general limitations of current models apply to the region-specific results emphasized here.” The concerns for New Mexico may differ than those of global models, for example:

Can we narrow the range of uncertainty in projected runoff by selecting the simulations in which we should have the most confidence? Assessing similar projections for the upper Colorado River basin, Udall and Overpeck (2017) estimated that the temperature effect on diminished snowpack was likely to be so large and projected with so much more confidence than precipitation change, that policymakers should place more weight on projections of declining snowmelt runoff regardless of precipitation uncertainties.

The Leap Ahead recommends further collaboration within the state to fill this gap “[g]iven that New Mexico is one of the most water-short states in the union, and that the water supply is shrinking under climate change, development of a state-scale model should be a priority”.

Connection to Priorities: This SWPA statute item will be advanced by priorities 4, 5, 6, and 7.

5. State Water Plan Strategies

Part D of the SWPA defines objectives for which the planning deliverable is a strategy or work plan. It states, “Recognizing that complete water rights adjudication, measurement, well inventories and adequate databases are essential elements of an effective water management plan, and further recognizing that completion of these work elements will require substantial time and resources until such time as these elements are complete, the state water plan shall include work plans and strategies” (NMSA § 72-14-3.1 [D]) and, then, defines the four strategies for the SWP that are included in this section of the 2023 Review relative to the 2018 Plan. Additionally, each subsection includes a summary of information from *The Leap Ahead* that is pertinent to the 2018 Plan and the specific SWPA statute requirement defined under NMSA § 72-14-3.1 (D).

5.1. Adjudication

D.(1) completion of water rights adjudications, with required supporting documentation, including hydrographic surveys, aquifer mapping and aerial mapping of irrigated land;

Review of the 2018 State Water Plan

While Part I of the 2018 Plan identifies the completion of water rights adjudications as a planning goal and strategy, the Plan does not contain concrete work plans and strategies for the completion of water rights adjudications in the state. Though the SWPA calls for NMISC to develop these work plans and strategies, adjudication is a process that is managed through the NMOSE and the courts. Six of the 16 regional plans identified incomplete adjudications as an important issue affecting the management of water in their region, and all but two regions have pending adjudications in their boundaries. Indian water rights settlements play a pivotal role in completing and expediting adjudications within basins containing Pueblos, Nations or tribes’ lands and unresolved water rights claims. New Mexico has settled seven claims and has completed negotiations for five additional claims that await Congressional action. An additional 12-15 Indian water rights claims remain illustrating the need for continuing support for these critical agreements in order to expedite adjudications within these basins. Completed settlements also provide the opportunity to negotiate AWRM agreements that may allow for short-term use of senior tribal water rights to address regional shortages. The present pace of adjudications is too slow to be relevant for adapting to changing water availability, and significant efforts will be required to accelerate the pace to the point of relevance.

New Mexico Climate Review

At the present pace, adjudications take decades to complete, creating a climate of uncertainty surrounding water rights in a particular basin. Promoting AWRM by the NMOSE and regional cooperative agreements are recommended by *The Leap Ahead* as ways of avoiding the strict application of priority administration. AWRM is a voluntary process, so any strategy will have to ensure equitable treatment of senior water rights users.

Connection to Priorities: This SWPA statute item will be advanced by priority 9.

5.2. Databases of Resources and Rights

D.(2) creation and completion of a comprehensive database and an electronically accessible information system on the state's water resources and water rights, including file abstraction and imaging of paper files as well as information on pending adjudications;

Review of the 2018 State Water Plan

The 2018 Plan addresses this section of the SWPA by identifying data collection, accessibility, and monitoring policy as a key priority in Part I.2 and identifying many of the agencies responsible for data collection in Figure 2 and Table 2. The NMOSE continues to maintain publicly accessible electronic records of water rights through the NMWRRS online database. The abstraction of water rights records is proceeding across the state with large areas having been completed or in progress.

Coming after the completion of the 2018 Plan, the 2019 Water Data Act has provided funding and policy direction for the WDI clearinghouse at the New Mexico Institute of Mining and Technology with directives to several state agencies that mandate sharing and publication of water data through the WDI. The WDI is a significant step towards addressing recommendations from regional plans as well as the directive of NMSA §72-14-3.1 (D)(2) to centralize and standardize water data collection and dissemination in New Mexico.

New Mexico Climate Review

The Leap Ahead identifies several major data gaps in Chapter XI that are relevant to the ongoing project of water data collection. Groundwater level monitoring is critical to understanding how aquifers respond to pumping withdrawals and natural recharge through precipitation. Data from lightly pumped aquifers were identified as important to assessing both aquifer recharge response and changes in that response as aridification expands, independent of pumping pressures. Surface water discharge from springs and mapping of perennially wet reaches of streams were also indicated as being important for understanding groundwater-surface water interactions. Soil and vegetation studies are important to understanding the effects that aridification will have on water quality, recharge, evapotranspiration, watershed health and sediment transport, and related topics.

Connection to Priorities: This SWPA statute item will be advanced by priorities 7 and 8.

5.3. Measuring State Water Use

D.(3) measuring of surface and ground water uses in the state as necessary for management of the state's water resources; and

Review of the 2018 State Water Plan

The 2018 Plan quantifies surface and groundwater use based on withdrawals reported in the 2010 Water Use by Categories report (Longworth et al., 2013). Measuring actual water withdrawals is crucial to the ongoing understanding of water priorities in New Mexico, and the Water Use by Categories report continues to be produced at 5-year intervals by the NMOSE.

The 2018 Plan method of accounting for water use in the state assumes that withdrawals during an “average year” (identified as 2010 in the 2018 Plan) reflect the amount of water that is physically and legally available for use. However, climate change is expected to systemically reduce the amount of surface water for use and recharge, and no strategy is presently in place to adjust water use based on reducing availability.

New Mexico Climate Review

The Leap Ahead warns that “[w]ith an increase in average daily maximum temperature of 5 °F, as is likely over the next 50 years, Elephant Butte could experience an additional two feet of annual evaporative loss. This would constitute a stunning 30% increase in evaporative water loss over the present-day rate, reducing the available water that could be used below Elephant Butte Reservoir.” This exemplifies the problem: current and historical withdrawals are not an accurate guide for future water availability.

Connection to Priorities: This SWPA statute item will be advanced by priorities 4 and 7.

5.4. Inventory of Existing Wells

D.(4) taking inventory of existing water wells and determining appropriate disposition of unused wells.

Review of the 2018 State Water Plan

The 2018 Plan addresses this provision of the SWPA by emphasizing the importance of “expand[ing] the capacity of [the] NMWRRS database or other database systems” and identifying the need for improving the State’s understanding of water resources through data collection and data sharing.

Figure 4-3 in Part II of the 2018 Plan shows the number and distribution of groundwater points of diversion (PODs), which illustrates the magnitude of the task. However, there is not a discussion of the type of use or status of these wells. As PODs are a constituent part of a water right, fully addressing NMSA §72-14-3.1 (D)(2) (the database of water resources and water rights) will largely meet the requirements of this section.

New Mexico Climate Review

The Leap Ahead raises concerns about increasing reliance on groundwater as surface-water sources are diminished. Existing groundwater use both within and without of the state has already appreciably reduced the amount of groundwater available in New Mexico.

Connection to Priorities: This SWPA statute item will be advanced by priorities 7, 8, and 9.

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Appendix A

NMSA § 72-14-3.1 New Mexico State Water Plan Act

New Mexico Statutes

Chapter 72 - Water Law

Article 14 - Interstate Stream Commission; Protection of Interstate Streams

Section 72-14-3.1 - State water plan; purpose; contents.

Universal Citation: [NM Stat § 72-14-3.1 \(2021\)](#)

A. It is the intent of the legislature that the interstate stream commission, in collaboration with the office of the state engineer and the water trust board, prepare and implement a comprehensive state water plan.

B. The state water plan shall be a strategic management tool for the purposes of:

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

C. The interstate stream commission in collaboration with the office of the state engineer and in consultation with other government agencies as appropriate, shall develop a comprehensive, coordinated state water plan that shall:

- (1) identify and reflect the common priorities, goals and objectives that will have a positive impact on the public welfare of the state;
- (2) establish a clear vision and policy direction for active management of the state's waters;
- (3) include an inventory of the quantity and quality of the state's water resources, population projections and other water resource demands under a range of conditions;
- (4) include water budgets for the state and for all major river basins and aquifer systems in the state;
- (5) develop water conservation strategies and policies; to maximize beneficial use, including reuse and recycling by conjunctive management of water resources and by doing so to promote nonforfeiture of water rights;
- (6) include a drought management plan designed to address drought emergencies, promote strategies for prevention of drought-related emergencies in the future and coordinate drought planning statewide;
- (7) recognize the relationship between water availability and land-use decisions;
- (8) promote river riparian and watershed restoration that focuses on protecting the water supply, improving water quality and complying with federal Endangered Species Act of 1973 mandates;
- (9) consider water rights transfer policies that balance the need to protect the customs, culture, environment and economic health and stability of the state's diverse communities while

providing for timely and efficient transfers of water between uses to meet both short-term shortages and long-term economic development needs;

(10) promote strategies and mechanisms for achieving coordination with all levels of government;

(11) integrate regional water plans into the state water plan as appropriate and consistent with state water plan policies and strategies;

(12) integrate plans of water supply purveyors, including those of local governments, 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;

(13) identify water-related infrastructure and management investment needs and opportunities to leverage federal and other funding; and

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

D. Recognizing that complete water rights adjudication, measurement, well inventories and adequate databases are essential elements of an effective water management plan, and further recognizing that completion of these work elements will require substantial time and resources until such time as these elements are complete, the state water plan shall include work plans and strategies for:

(1) completion of water rights adjudications, with required supporting documentation, including hydrographic surveys, aquifer mapping and aerial mapping of irrigated land;

(2) creation and completion of a comprehensive database and an electronically accessible information system on the state's water resources and water rights, including file abstraction and imaging of paper files as well as information on pending adjudications;

(3) measuring of surface and ground water uses in the state as necessary for management of the state's water resources; and

(4) taking inventory of existing water wells and determining appropriate disposition of unused wells.

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.

F. The interstate stream commission shall ensure that public participation and public input are integrated throughout the planning process. 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. The interstate

stream commission shall also ensure that representatives of the stakeholder groups affected by various plan components will participate in the development of those plan components. Members of the interstate stream commission and water trust board shall be notified of and are welcome to participate in all aspects of the planning process.

G. After public review and comment, the state water plan developed in conformance with this section is subject to adoption by the interstate stream commission. Following its adoption, the state water plan shall be presented to the interim legislative committee that studies water and natural resources.

H. The state water plan shall be periodically reviewed, updated and amended in response to changing conditions. At a minimum a review shall be undertaken every five years.

I. Nothing in the state water plan shall be construed to permit the granting or the condemnation of water rights.

J. Nothing in the state water plan shall be construed to determine, abridge or affect the water rights of Indian nations, tribes or pueblos.

History: Laws 2003, ch. 131, § 1 and Laws 2003, ch. 137, § 1.

ANNOTATIONS

Duplicate laws. — Laws 2003, ch. 131, § 1 and Laws 2003, ch. 137, § 1, both effective June 20, 2003, enacted identical new sections.

Cross references. — For the federal Endangered Species Act of 1973, *see* 16 U.S.C. § 1531 et seq.

Pueblo rights doctrine unduly interferes with the state's regulation of water rights. *State ex rel. Martinez v. City of Las Vegas*, 2004-NMSC-009, 135 N.M. 375, 89 P.3d 47.