



## **1. Introduction**

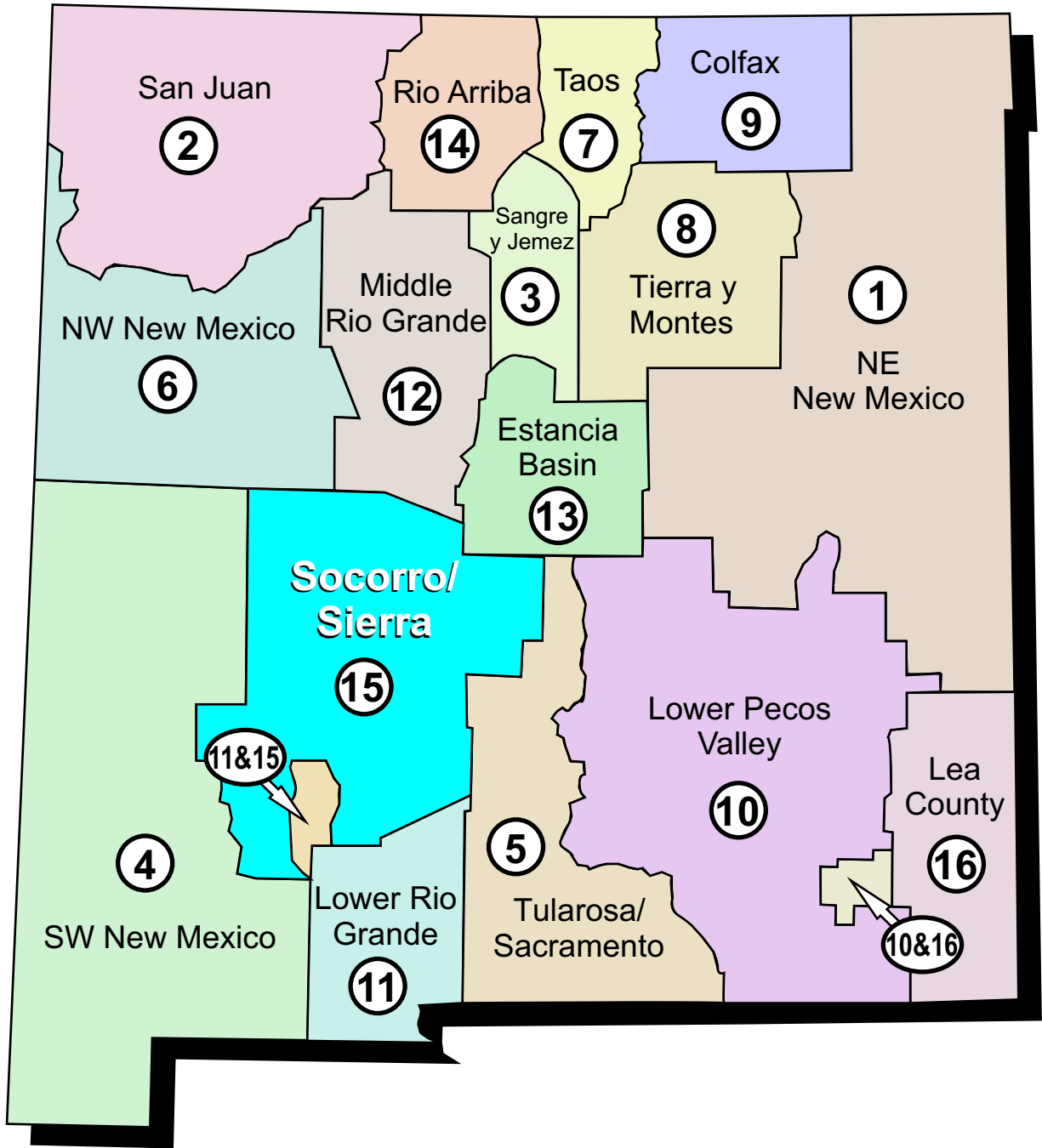
The Socorro-Sierra water planning region (planning region), which includes all of Socorro and Sierra Counties (Figure 1-1), is one of 16 water planning regions in the State of New Mexico that are in the process of developing a regional water plan. Regional water planning in New Mexico began with a 1987 federal court ruling that New Mexico could not prohibit the out-of-state transfer of its groundwater unless it actively and effectively planned for its water future. In response, the State of New Mexico initiated regional water planning, its primary purpose being to protect New Mexico water resources and to ensure that each region is prepared to meet future water demands. Regional water planning activities are funded through and overseen by the New Mexico Interstate Stream Commission (ISC). The Socorro-Sierra planning activities are also overseen by a Steering Committee that is made up of diverse professionals and public participants who represent a wide variety of water interests within Socorro and Sierra Counties. Additional information on the Steering Committee is provided in Section 2.

The designated fiscal agent for the Socorro-Sierra planning region is the Socorro Soil and Water Conservation District (SWCD). The Socorro-Sierra Steering Committee and the Socorro SWCD retained Daniel B. Stephens & Associates, Inc. (DBS&A), Hydrosphere Resource Consultants, Inc. (Hydrosphere), and Sites Southwest (collectively referred to as the project team) to complete this regional water plan. Regional water planning activities to develop the plan were initiated by DBS&A in 2000. In addition to these consultants retained by the region, the ISC funded S.S. Papadopoulos & Associates (SSPA) to evaluate the surface water supply and conduct analyses of the hydrologic impacts of alternatives, in conjunction with a larger surface water modeling effort on the Rio Grande.

### **1.1 Previous Water Planning Efforts in the Region**

Prior to the current regional water planning efforts, ISC funded a previous water planning study as well as a revision to that study:

- The initial study was prepared by Richard R. Ramsey and culminated in the development of a regional water plan in 1994. The main focus of the 1994 plan was to



**Explanation**

① ISC Planning Region





estimate the demand for public and domestic water supplies over a 40 year planning horizon which ended in 2031 compared to the water rights held at the time of the study (Ramsey, 1994). This plan was completed just prior to the development of the regional water planning template (NM ISC, 1994) and did not include all of the information required by the template.

- In 1999, the Socorro SWCD submitted a revision of the 1994 water plan to the ISC. The purpose of the revision was to develop and implement a public participation plan, compile an inventory of current water use, and revise population and water demands through the year 2040 (Socorro SWCD, 1999).

## **1.2 Information Sources**

Additional previous efforts outside of the ISC planning program were considered for their relevance to this regional water plan. Reference materials pertaining to the water supply and water quality in Socorro and Sierra Counties were compiled and reviewed; a bibliography of those reference materials is included in Appendix A, which also includes annotations for some of the key documents.

Much of the information used in the water supply and water quality assessment was derived from climate and hydrologic records available from state and federal agencies:

- Information on water rights and wells was obtained from the New Mexico Office of the State Engineer (OSE) WATERS database.
- Water level elevation and well completion data were obtained from the U.S. Geological Survey (USGS) Ground Water Site Inventory (GWSI) database.
- Information on National Pollutant Discharge Elimination System (NPDES) permits, underground storage tanks (USTs), and total maximum daily loads (TMDLs) was obtained from the New Mexico Environment Department web site (NMED, 2002a, 2002c, 2001).



- Land use, geology, and other reference maps were prepared by the New Mexico Water Resources Research Institute and are provided in Appendix B.
- Information on water rights and administrative decrees was provided by the OSE.
- Information on historical water use was obtained primarily from the OSE. Records regarding municipal water use were obtained directly from the municipalities, and records regarding agricultural and livestock water use were obtained from the New Mexico and U.S. Departments of Agriculture (NMDA and USDA, respectively).
- Information on agricultural practices and conservation measures was obtained from the Middle Rio Grande Conservancy District (MRGCD) and other agricultural water users in the region.

Additional information on the sources of data and information used in this plan is included in Sections 4, 5, and 6.

### **1.3 Organization of the Regional Water Plan**

Regional water planning in New Mexico is guided by the template outlined in the ISC *Regional Water Planning Handbook* (NM ISC, 1994), which defines the scope and content of regional water plans. According to the template, a regional water plan must address five key questions

1. What is the water supply available to the region?
2. What is the region's current and projected future demand for water?
3. What are the region's alternatives for using available supplies to meet projected future water demands (including, to the extent needed, reducing demand)?
4. What are the advantages and disadvantages of each alternative with respect to local values and criteria?
5. What are the best water supply alternatives and how will they be implemented?



This regional water plan is organized to be consistent with the regional water planning template (NM ISC, 1994) and to address the five water planning questions:

- Background information regarding the process used to develop the plan and the characteristics of the planning area is provided in Sections 2 and 3, respectively.
- To address the first question, this report discusses both the water rights and legal constraints that affect the availability of water (Section 4) and the physical availability of surface and groundwater, as well as water quality constraints (Section 5).
- To address the second question, historical and current water demand in the region was evaluated, and projected population and economic growth were analyzed. Based on the results, projections of future water demand were developed and are presented in Section 6. The ability of the supply to meet demand and the water budget of the region are discussed in Section 7.
- Water planning questions 3 through 5 are addressed in Section 8, Analysis of Alternatives for Meeting Future Demand.