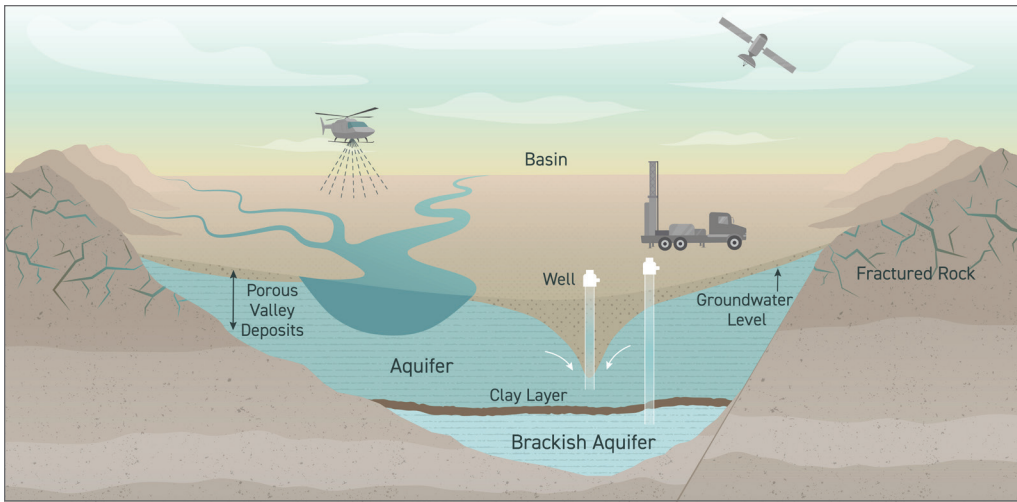


# NEW MEXICO BUREAU OF GEOLOGY AND MINERAL RESOURCES

# AQUIFER MAPPING AND MONITORING PROGRAM



Conceptual diagram of data collection necessary for aquifer characterization, including airborne geophysical surveys and monitoring wells.

The Aquifer Mapping and Monitoring Program (AMMP) at the New Mexico Bureau of Geology collects and interprets earth science data in order to map, characterize, and monitor the state's groundwater resources. By providing this information, AMMP empowers New Mexicans to make informed water management and planning decisions.

## Addressing New Mexico's Aquifer Characterization and Groundwater Monitoring Goals

We have been mapping aquifers and conducting regional hydrogeologic studies for over two decades. Now, our team is working to address the directives in New Mexico's 50-Year Water Action Plan, including characterizing all major and minor freshwater and brackish aquifers in the state by 2037 and installing 100 dedicated monitoring wells. Completing this work and achieving these goals will depend on receiving the necessary funding. Funding goals for FY27 include:

### FY27 recurring funding request: \$1M

- 6 new full-time equivalent staff (hydrogeologists, managers, field technicians, data managers) to fully staff our Aquifer Mapping and Monitoring Program

### FY27 nonrecurring funding request: \$22M for water programs

- Data collection, including airborne and land-based geophysical surveys
- Wells drilled for aquifer characterization and long-term groundwater monitoring
- Geologic and hydrologic mapping
- Geochemical sampling
- Water Data Initiative Grant Program

### Aquifer characterization steering committee guidance

A steering committee of subject matter experts helps advise and guide AMMP's efforts to characterize our aquifers and develop a monitoring program.

### Projects we have begun to meet these goals

- Defining the 2D extents of major aquifers across the state using existing data
- Creating regional groundwater summaries describing geologic controls, trends in water quantity and quality, and areas of data gaps
- Understanding brackish water distributions
- Collaborating with the Water Data Initiative to develop data visualization tools



Joseph Beman, AMMP field technician, measuring depth to water in a well.  
*Photo by Frank Sholedice*

## Regional Projects

Numerous AMMP projects are ongoing throughout the state.

**Healy Collaborative Groundwater Monitoring Network:** Launched in 2016, this network enhances groundwater monitoring in New Mexico by collaborating with local well owners. Our team measures water levels at over 300 wells annually. Funded by the Healy Foundation.

**Rio Arriba County Study:** This multiyear project aims to assess groundwater in regional aquifers, collecting data from over 100 wells to update maps of water quality and share findings with local communities. Funded by state appropriation.

**Rio Grande–San Acacia Reach Hydrology Study:** The Rio Grande and the irrigated valley are highly managed from San Acacia to Elephant Butte. Research and long-term data collection for this study will help inform decisions on land and water use in the face of climate change and reduced river flow. Funded by the New Mexico Office of the State Engineer Interstate Stream Commission.

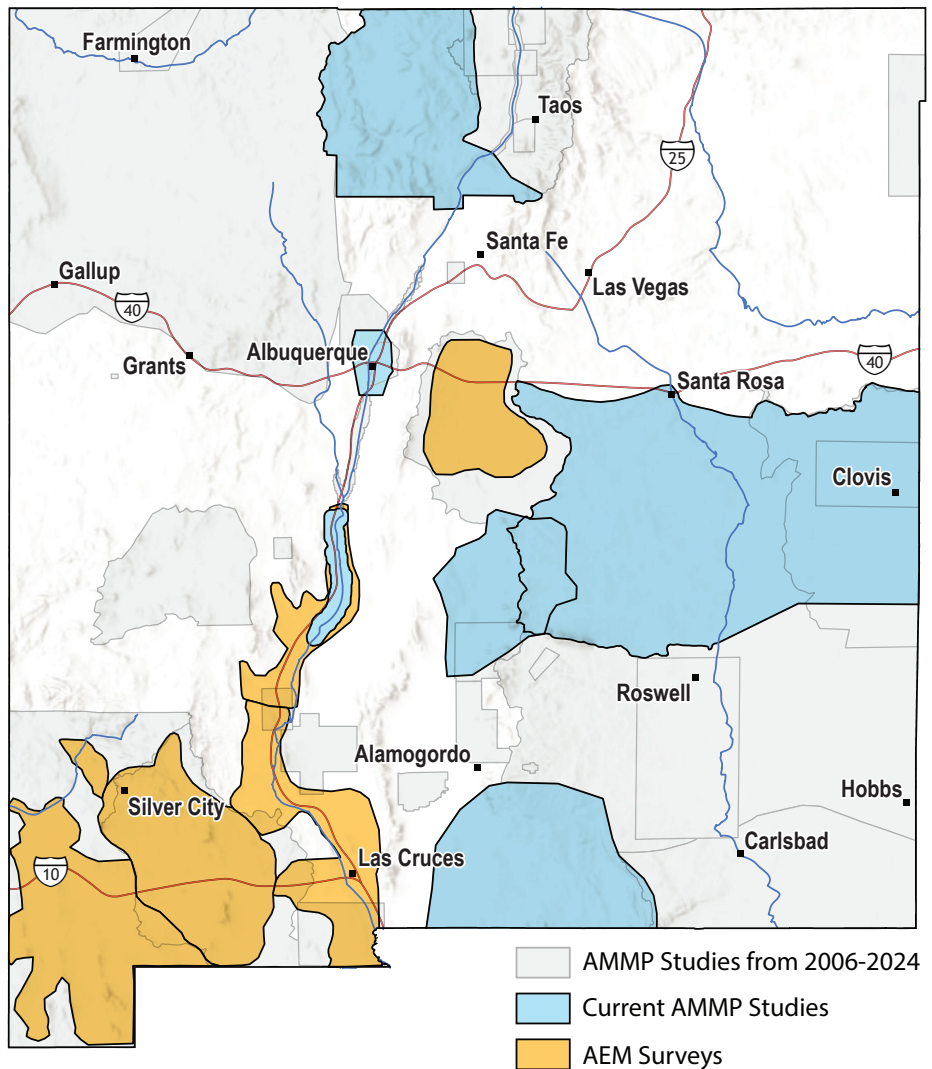
**Carrizozo Hydrogeology:** AMMP will soon publish the results of a study characterizing the hydrogeology of the Carrizozo region. This publication summarizes historically available data on the geology and geochemistry of the region, outlining data gaps and providing recommendations for future work in the area. Funded by the Carrizozo Soil and Water Conservation District.

**Airborne Electromagnetic (AEM) Surveys:** Contractors are conducting low-altitude helicopter-based aerial geophysical surveys in several regions across the state to measure the electromagnetic response of subsurface geologic materials, such as sand, gravel, and clay. When combined with water well and geologic data, the results will help create 3D maps of aquifer systems in the region. Funded by state appropriation.

**Albuquerque Groundwater Mapping:** This ongoing effort annually maps groundwater level changes in the Albuquerque area, providing essential tools and visuals for local water management. Funded by the Albuquerque Bernalillo County Water Utility Authority.

**Three-Dimensional Hydrogeologic Models:** We are creating 3D GIS models of the state's geology and hydrology, which support groundwater management and informed decision-making. Current projects include a large model of the Central High Plains in eastern New Mexico and the Salt Basin in the south. Funded by the U.S. Geological Survey and the Healy Foundation.

Overall, our Aquifer Mapping and Monitoring Program plays a crucial role in safeguarding New Mexico's vital water resources through comprehensive mapping and monitoring efforts.



Map showing active (blue) and historical (gray) regional AMMP research projects. New projects collecting AEM surveys (orange) are currently underway.



Learn more at  
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