



LOWER RIO GRANDE
Public Water Works Authority

WATER SYSTEM REGIONALIZATION PROJECT

December 2022

PROJECT SUMMARY

New Mexico's neighbor to the north, Colorado, is the birthplace of our Southwest's rivers. The rugged landscape reflects a timeless and unchanging geography with granite peaks and endless forests that have undoubtedly appeared this way for millennia. In the last ten years, however, reality has set in that the West is not an unchanging place, and change is truly upon us as our climate is impacting this area in ways unimaginable just a few decades ago. The Rio Grande, originating from its headwaters in the San Juan Mountains in southern Colorado, has been our traditional and main source of water throughout New Mexico, and this resource, which we have come to rely on as a stable and unending supply, is, in fact disappearing.

We need to recognize this and not assume this is a temporary dry spell. Research from Dr. Phil King from New Mexico State University underscores we must prepare for the long haul and plan for an extended drought. That means we must consider all options for finding, using, and conserving our water resources. The original extensive allocation of water rights was performed when New Mexico's population was significantly smaller and water was plentiful. As this no longer reflects our reality, as a state, New Mexico will need extensive planning to understand how we can supply our urban communities and our rural agricultural industries with enough water to not just survive but thrive. Further complicating considerations is the additional challenge posed by the pending court decision on surface water appropriation between New Mexico and Texas. The outcome of this case will have a major and immediate impact on water use in New Mexico.

One of the more acutely impacted areas from this court case will be the Mesilla Valley. This area is home to the Elephant Butte Irrigation District, which represents and services some of the most productive agricultural lands of the western United States. Helping to protect that industry is vital to New Mexico and the residents who own and work for a living on these lands.

The Lower Rio Grande Public Water Works Authority (Authority) was formed from several smaller water utilities and now operates as one larger entity providing water to over 15,000 people within the Mesilla Valley from Las Cruces to the Texas state line. The multiple groundwater wells constructed over the past 50 years to serve these community water systems draw upon the extensive and deep Mesilla Bolson Aquifer. Taking a proactive approach, the Authority initiated a water master planning effort. The primary purpose of a water master plan is to evaluate the entirety of the water utility system, determine immediate and long-term needs, quantify all cost impacts and phase those impacts to develop a detailed Infrastructure Capital Improvement Plan. The Authority's plan lays out a roadmap for the future on how to invest infrastructure funds to have the maximum effect on operating their water system more efficiently while shoring up water supplies to become more resilient in the years ahead.

This master plan's primary recommendations for the Authority and the communities it services are:

SUSTAINABILITY: Develop a new western groundwater wellfield. The proposed new wellfield would shift more water supply production outside the Mesilla Valley floor and the western mesa area to reduce the immediate local aquifer impacts of groundwater pumping within the valley area. This development of new groundwater aquifer resources that do not directly impact the Elephant Butte Irrigation District members and protects the senior surface water right holders while reducing the potential risks of groundwater pumping restrictions that may originate from the Texas litigation of river water transport

CONSERVATION: Establish infrastructure to leverage poorer quality source water. Beyond simply asking customers to reduce water use, this plan's larger effort is to conserve limited available local water resources by developing alternative groundwater sources which have historically not been viewed as having any substantial value. Infrastructure to capitalize on these alternative water resources that are not under competition by other entities must be adaptable and planned to handle poorer water quality that must be treated. Slightly or moderately brackish water that may be encountered will be readily placed into use with effective membrane treatment systems to produce quality drinking water for customers.

IMPROVED HYDRAULIC EFFICIENCY AND ENERGY REDUCTION: Eliminate barriers between the existing systems that merged to form the LRGPWWA. The conjoining of many smaller water systems (that were never intended to operate as one distribution system) requires a holistic look at how the hydraulics can take advantage of the Mesilla Valley's natural terrain to store water on the mesa while eliminating interior pipeline barriers of systems not interconnected on the valley floor. Eliminating these artificial barriers allows the most energy-efficient transport of water to the operating elevations needed and eliminates wasteful pumping.

RENEWABLE ENERGY: Moving groundwater pumping and membrane treatment to the desert mesa area allows the expansion of substantial solar arrays to be installed at these facilities. These solar arrays allow for a 100% offset of power consumed for this new groundwater production and treatment, with minimal environmental impacts or without loss of any arable land.

WATER QUALITY: Filtration of groundwater to physically remove metals such as arsenic and mineral salinity versus simply blending it down to tolerable levels will provide high-quality water for customers. Disinfection of water for bacteria and viruses over such an extensive service area (approximately 60 square miles) will be significantly improved through storage tank mixing to reduce over-chlorination at point sources and chlorine byproduct generation while ensuring a proper homogenous disinfectant level to the very last customer service.

SMART GROWTH: The system will be positioned to sustain reasonable growth, more effectively called smart growth, that does not outpace the available water. Smart growth will allow economic development that complements our agricultural legacy, providing economic opportunities for residents, but does not replace it with unrealistic housing developments.

SAFETY: As water transport is improved across the valley floor to both mesas, distribution pipelines will also be enhanced to allow customers more access to improved fire protection from county fire personnel. Water supply availability will match recommended national fire safety standards.

The vision is clear. We know what we must do to ensure our communities and citizens here in the Mesilla Valley continue to have access to high-quality drinking water in the decades ahead. The only question remaining is how we will acquire the tools we need to fulfill this goal and secure our water for future generations.