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A Community of Ditches: Acequias, Engineers, and Irrigators in Southern New Mexico

Steven C. Baker

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Water and community have always been linked in the southwestern United States. Historian Michael C. Meyer, in his study of water in the Southwest under the Spanish and the Mexican regimes, writes that water "actuate[s] and dominate[s] . . . social and economic relationships," and influences politics. He makes the point that humans and rivers are not independent of each other. They operate in an arrangement marked by reciprocity in which the application of technology changes nature but results in "unintended and unanticipated natural reactions [that] in turn influence the society which precipitated the original change."[1]

The Rio Grande in southern New Mexico reflects these same dynamics. As the river courses through the region, it traverses a landscape of its own making, one characterized by short canyons and broad, fertile valleys. The Mesilla Valley, which spans about fifty-five miles from Seldon Canyon near Radium Springs, New Mexico, to a gorge at Mount Cristo Rey near El Paso, Texas, is the most important of these valleys. For centuries, seasonal floods deposited rich sediment in wide swaths along valley floors, creating flat, fertile sections of land abutting the river and ranging from less than one to five miles wide. Benchlands and desert flank the nonriparian edges of the valley.

Fear of Apache attacks contributed to the Mesilla Valley not attracting permanent agricultural settlement until the 1840s, but once it did, the flows of the

Steven C. Baker is a Senior Historian with Intermountain Historical Services, LLC, a consulting firm based in Denver, Colorado. He also teaches courses in the History Department at the University of Colorado, Boulder. Dr. Baker earned his Ph.D. in history from the University of Colorado in 2013.

Rio Grande and the lives of valley denizens became intertwined. The use and manipulation of river water was central to the establishment and viability of all local communities. Over time, an interethnic community developed and local civic activity was shaped by the customary management of water, the region's most precious resource. This system was put to the test by both environmental forces and the reformist Progressive impulse of federal engineers. First, successive droughts in the late 1800s devastated farms. Second, the Reclamation Service (currently Bureau of Reclamation) began construction of the Rio Grande Project in 1905. The project was designed to rationalize the flow of the river and, in turn, preserve farming in the Mesilla Valley. Local water users simultaneously accepted, mediated, and resisted the efforts of Reclamation officials. Residents desired to manage water use to preserve local control of the irrigation ditches, the bedrock of community in the valley. Federal efforts to gain jurisdiction over the ditches were characterized by the collision of the interests and expectations of the community and reclamation engineers. This process was shaped by the interplay of customary practice based on Spanish and Mexican traditions and the modernizing reformist ambition of Progressive Era engineers.[2]

The ability of villagers to put the flows of the Rio Grande to use was pivotal to the establishment of permanent settlement. Mexican documents establishing the Doña Ana Bend Colony (Doña Ana) in 1840 specified that the colonists "contribute with their personal services in the construction of . . . [an] acequia [madre]" between two and two-and-a-half *varas*. Its depth was left to the discretion of the *mayordomo* (ditch overseer), Barnabé Montoya. The excavation of the *acequia madre* (mother ditch or community ditch) marked the beginning of active manipulation of the river's flow in the Mesilla Valley. Indeed, the settlement at Doña Ana did not exist in any real sense until its residents secured a dependable water source. Mexican regulations establishing the colony stated that the governor of Chihuahua would not distribute land to settlers until they completed the ditch.[3] Water conveyance literally came before land conveyance. The ditch begat community.

Successful construction of the Doña Ana acequia madre by the twenty-six founding settlers in 1843 represented the beginning of settlement in the Mesilla Valley. It also prompted new migrations to the valley. A year after the establishment of Doña Ana, the valley population had climbed to 261. Additional settlers arrived and established more farming communities over the next few decades. By the 1890s, Las Cruces and Mesilla, the two most notable towns in New Mexico's southern Rio Grande Valley, served as the region's social, political, and economic centers supporting mostly small-scale irrigated farms. There were several farming villages to the north and south along both sides of the river, and the valley held a total population of approximately 8,000. Each settlement was

Fig. 1. "Irrigated Farming in the Mesilla Valley," 1896. Note that the acequia is on the left side of the image. Image courtesy of Bureau of Reclamation, box 170 (Rio Grande Project, New Mexico), entry JX (Prints, Irrigation Projects, Rio Grande Project, New Mexico), RG 115, NARA, College Park, Maryland.

sustained by an acequia that took water out of the Rio Grande. The ditches served a valley population characterized by an interethnic mix of Hispanic and non-Hispanic residents, who cooperated in the management of water and in other political and social affairs.[4]

Beginning in the late 1880s, water development in Colorado's San Luis Valley undermined Mesilla Valley's irrigation and threatened the very existence of the communities along the river. In the 1880s and early 1890s, the valley in Colorado, bisected by the upper reaches of the Rio Grande, was subject to aggressive promotion and water development that fueled a dramatic rise in water use from just over 500,000 acre-feet per year in 1880 to 1,589,000 acre-feet per year in 1890.[5] This trend was unsustainable.

Three hundred and fifty miles downstream in the Mesilla Valley, the river began to run dry. Crop failures occurred with alarming consistency.[6] Conditions deteriorated to the point that there were insufficient harvests for six successive years between 1899 and 1904. Many farmers struggled to survive.[7] The resulting water famine was a stark reminder that the upstream manipulation of water had wide-ranging effects far downstream.[8]

Conditions along the Rio Grande eventually attracted the attention of the newly established U.S. Reclamation Service, an agency tasked with a mission to

Fig. 2. Alfalfa Farm and Dry Ditches near Old Mesilla, May 1904. Image courtesy of Bureau of Reclamation, box 177, entry JX, RG 115, NARA, College Park, Maryland.

make arid western lands productive through the development of modern irrigation, and led to congressional approval of the Rio Grande Project in 1905. This venture, the first federal reclamation project in New Mexico, promised to return productivity to the land through the construction and modification of dams, canals, acequias, and impoundments. Engle Dam was the centerpiece of the project. Located approximately one hundred miles upstream from the Mesilla Valley, the dam was designed to be 301 feet high and 1,674 feet long. The reservoir behind it would hold over two million acre-feet of water. Smaller diversion dams were planned and quickly constructed in the valley itself.

The Reclamation Service's objective was to rationalize the flow of the Rio Grande and provide industrious settlers and residents adequate flows of water.[9] The Engle Dam and the Elephant Butte Reservoir symbolized the engineering feats of the Rio Grande Project, but they were merely pieces in an elaborate network of community ditches and canals that delivered water to farms and drained sodden lands.

In its early years, the Reclamation Service planned and constructed most projects in anticipation of settlement on reclaimed land or applied them to areas with very recent settlement. The Mesilla Valley, with its long history of occupation and irrigation, proved challenging to the Reclamation Service. L. R. Fisk, a Reclamation Service engineer, wrote in 1924 that the development of the old

system of community ditches was evolutionary rather than planned. Communities constructed acequias along paths of least resistance, and expanded and extended them as settlement spread. The engineer concluded that the mission of the Reclamation Service in the Mesilla Valley was not to replace the old acequias but to "improve upon an established system and make it [meet] practical and local . . . conditions as they exist[ed]." Indeed, even if the Reclamation Service wanted to build a new network of ditches, it was hamstrung by topography and historical development. Reclamation engineers noted that the community ditches were already established in the best locations "proven by long continued trial and error."[10]

Eleven acequias madres served communities in the valley when the U.S. Congress authorized the Rio Grande Project in 1905. Four acequias irrigated the east side of the Rio Grande: the Doña Ana, Mesilla, Las Cruces, and Berino acequias. Seven ditches watered the west side of the river: the Picacho, San Miguel, Santo Tomas, La Mesa, Chamberino, Three Saints, and La Union acequias. East-side ditches accounted for two-thirds of the approximately 130 miles of community acequias in the Mesilla Valley.[11] Several smaller community ditches were also in use.

Reclamation engineers quickly realized they needed jurisdiction over the water flowing through the ditches in order to more efficiently manage the irrigation provided by the Rio Grande Project. Federal control of water in the Mesilla Valley required two things. First, the Reclamation Service had to acquire water rights from local users both in the valley and on the Rio Grande. A combination of congressional legislation and federal negotiation secured those rights for the service. Second, the Reclamation Service officials wanted to gain control of the community ditches, a difficult proposition at best. The service was injecting itself into local and regional water-management traditions, and although residents in the valley applauded the arrival of federal reclamation and generally supported the transfer of water rights, they were less sanguine about the extension of federal control over the community acequias. Federal engineers confronted unified resistance from communities when they tried to acquire the ditches, a centerpiece of community water management and local governance.

The significance of the acequias had been codified in early legislation. During the first two sessions of the New Mexico Territorial Legislature in 1851 and 1852, New Mexico legislators passed several laws recognizing traditional governance of acequias. These acts placed the customary management of the ditches into a legal framework ensuring that acequia control was vested in the community. The acts provided for the protection of existing acequias and for the right of citizens to construct *acequias de cumun* (communal ditches), and codified the responsibilities of water users in the management of the ditches. Legislators also used the acts

Fig. 3. "Seepage Lake Near La Mesa before Draining," 1918. Image courtesy of Bureau of Reclamation, box 177 (Rio Grande Project, New Mexico), entry JX, RG 115, NARA, College Park, Maryland.

to specify the roles of the mayordomo and spell out penalties for water users who did not commit their fair share of work to ditch maintenance.[12]

Mayordomos historically held considerable power in Mesilla Valley farming communities. Following centuries-old traditions, the mayordomo was responsible for enforcing the distribution of water through the careful management of irrigation rotations. He allocated and rationed water in such a way that farming could succeed and water resources could be preserved. The mayordomo also mediated conflict over water. It was expected that all water users would assist in the upkeep and repair of ditches and other irrigation structures under the direction of the mayordomo. Community water management was a serious business and the mayordomo could fine farmers who defied him, refused to contribute to acequia maintenance, or used more than their allocation of water. However, a mayordomo's power was not absolute. He served and prospered at the will of the irrigators. Every year, the local residents who relied on water from an acequia elected their mayordomo and set his salary.[13]

Territorial laws passed in the 1880s and in 1895 expanded the power of acequia governance. They required that three-member commissions, elected by the community, govern acequias madres in the common interest. The commissioners had broad administrative and corporate powers. The mayordomo was

retained under the new laws, but the breadth of his control over water management was reduced. Under the new laws, the commission set policy and the mayordomo implemented it.[14]

Even under the commissions, four decades after the initial settlement of Doña Ana, the management of acequias followed a predictable routine. Mayordomos, elected by their fellow community members, enforced the allocation and conservation of water, acted as mediators in times of conflict, and organized and directed the maintenance of the ditches. All water users were still expected to assist in the development, maintenance, and repair of the canals and other irrigation structures. If they had the means, they could hire workers to perform the task. Known as a *fatiga*, the amount of work required of each person correlated to the amount of land he or she owned fronting the acequia madre. Larger farms consumed more water, so their owners were expected to contribute more work than the owners of smaller tracts.

The Rio Grande Project brought the Mesilla Valley a new level of water governance that tapped into the organizational structure of the long-established water democracies. Section 6 of the Reclamation Act required water users to organize themselves into an association.[15] In essence, the water users' association was envisioned as a local intermediary between the Reclamation Service and the farmers. Support for the establishment of the association was widespread among local farmers. The ready acceptance of the water users' association was due to the fact that the Rio Grande Project promised to rejuvenate farming in the valley.

In 1905 Mesilla Valley residents established the Elephant Butte Water Users' Association (EBWUA), which divided the valley into ten precincts that corresponded with established communities.[16] Each precinct elected three council members and a director who formed the EBWUA leadership council and Board of Directors. The council and board selected other officers, including president, treasurer, and secretary. The first EBWUA council was composed of an interethnic mix of local residents.[17] About 20 percent were Hispanic. Almost all council members were long time Mesilla Valley residents and community leaders, including Albert J. Fountain Jr., O. C. Snow, Guadalupe Ascarate, and Theodore Rounalt. All the EBWUA officers and Board of Directors, however, were non-Hispanic, though most were established community members. Residents with experience as ditch commissioners and mayordomos were well represented among the councilmen.[18] These men farmed in the valley and understood the importance and necessity of community-based water management. They also recognized that the Mesilla Valley was not an island. Members of the Board of Directors acted as intermediaries between local, largely Hispanic farming communities and larger legal and bureaucratic entities outside the community, such

as the Reclamation Service and New Mexico State Engineer's Office, which were dominated by non-Hispanic leadership and staff.[19] For decades non-Hispanic residents who had integrated themselves into the larger Hispanic-dominated society often occupied positions that required the representation of their communities to and collaboration with noncommunity entities, such as institutions and offices in Santa Fe and Washington, D.C.

It is important to note that the EBWUA did not replace the ditch commissions or the mayordomos. Water users continued to elect Hispanic community members exclusively to fill the critical mayordomo position in the first years of the Rio Grande Project. Lino Sisneros, for example, was elected mayordomo of the Las Cruces Acequia in 1906. Las Cruces was the valley community with the largest non-Hispanic population, but its residents still chose a Hispanic mayordomo.[20]

Sisneros, born in 1860, was not a local elite. If anything, his family fortunes had declined over time. He was the son of a farmer who owned 150 acres in 1870, but his father, Anastacio, may have been a casualty of the drought. By 1900 Anastacio was a laborer living in Las Cruces. He still farmed, but it was not his primary means of support. Lino began his adult life as a laborer but gained skill as a stonemason and eventually became a self-employed contractor sometime between 1900 and 1910. Sisneros also cultivated his father's land for nearly twenty years, but he was not a farmer by trade when he was elected mayordomo. By the twentieth century, the mayordomo had become a political position in which popularity and respect across ethnic lines was pivotal. Lino Sisneros was a good fit in 1906. He had grown up on a farm, spoke English and Spanish, and had worked as a laborer. At the time of his election, he was improving his social status as a self-employed skilled worker.[21]

The ditch commission and mayordomo elections two years later reflected considerable continuity in the face of shifting land tenure, even as the reclamation project attracted new settlers from outside the region. All the mayordomos were Hispanic, but there was a slight change. The men came from a higher social class and were more politically connected than Sisneros. Andres Martinez, the San Miguel mayordomo, was described in local newspapers as a prominent member of the community. His public service included time as a county schoolboard member. Nicanor Guerra, the Mesilla mayordomo, was also a schoolboard member. In addition, he was a business partner with Albert Fountain Jr. and had invested in land in the Mesilla Valley in 1907. Guerra's other community and political activities included a previous stint as mayordomo and ditch commissioner, service as a member of the Grand Jury of the Third District Court of New Mexico, and involvement in local Republican Party politics. Manuel Lopez, who replaced Sisneros as the Las Cruces mayordomo in 1908, was also a local justice of the peace, a position that he had held since at

Fig. 4. Headgate on the Doña Ana Acequia, 1913. Image courtesy of U.S. Reclamation Service, "Project History: Rio Grande Project—Texas-New Mexico, from Inception to 31 December 1912," folder 461 (Rio Grande, vol. 1, 1913), box 461, entry 10, RG 115, NARA-Denver.

least 1889.[22] None of these men were considered common laborers at any time in their lives, but all, like Sisneros, were engaged in agriculture in some manner. While the range of social classes from which these men came to the office of mayordomo was narrowing to exclude nonelites, the duties and role of the mayordomo remained virtually unchanged from those fulfilled during the period before the approval of the Rio Grande Project.

However, a noticeable change occurred in 1911. It briefly became more likely that a mayordomo would be a non-Hispanic member of the community. For example, the newly elected mayordomo in Mesilla was William S. Gilliam; the Las Cruces mayordomo was James Queensberry; and the Doña Ana mayordomo was James Barncastle.[23] These positions had previously been held by Hispanic residents. The shift in representation was likely created by a rise of new non-Hispanic settlement in the Mesilla Valley that affected local demographics.

The 1911 increase of non-Hispanic mayordomos, however, was not the manifestation of a new non-Hispanic elite asserting control over the ditches. In fact, the 1911 election reflected the long-established social patterns that continued to play a role in ditch governance. Gilliam, Queensberry, and Barncastle were from Mesilla Valley families that had lived in the valley since at least the 1880s. Barncastle was married into a local Hispanic family and all three men interacted with the Hispanic community. Old Mesilla Valley residents regularly crossed ethnic lines to advance or preserve the interests of the community or to condemn insults against Hispanic citizens.

This well-established practice, born of a shared history of democratic water management, reinforced the importance of solidarity in the face of outside threats to community integrity. For example, in February 1885, an interethnic group of protesters posted a petition in the Plaza of San Eugenio, a farming community in the valley, condemning the manner in which water was distributed in favor of outsiders. Five years later, the city of Las Cruces released plans to consolidate two local precincts, threatening established political practices. This effort set off a mass demonstration on 22 February 1890. Racial insults against New Mexican Hispanics published in congressional and popular publications also triggered mass meetings in Las Cruces in 1902 and 1918. A cadre of local Hispanic and non-Hispanic leaders organized the protests.[24] At least one non-Hispanic resident played a role in the establishment of the Alianza Hispano Americana, a Hispanic fraternal and advocacy organization, in Las Cruces in the spring of 1906. Albert Fountain Jr. was listed as an officer with the organization, and he apparently served as the group's legal counsel.[25] In this context, the selection of Gilliam, Queensberry, and Barncastle as mayordomos was a manifestation of the tradition of engagement and interaction, not simply the result of non-Hispanics displacing Hispanics.[26] Such practices, part of a tradition of democratic water management, allowed for solidarity in the face of the changes triggered by the Rio Grande Project.

Still, the 1911 election cannot be dismissed as a mere anomaly. After 1905 changes in landholding threatened to undermine established acequia governance in the valley. Initially the results were not apparent. Most of the land sales in the first decade of the Rio Grande Project were dictated by choice and opportunity. Long-established Hispanics and non-Hispanics continued holding enough land to maintain interethnic community water management. Nonetheless, as land changed hands, new residents, often non-Hispanic, were less interested in the interethnic traditions and practices of the region. For several years, this demographic change had no dramatic effect on acequia governance, but by 1911 new settlement had reached a threshold that, when coupled with the reduction of traditional Hispanic landholding in the Mesilla Valley, resulted in the dilution of Hispanic voting power in the acequia elections. The new settlers were interested in selecting mayordomos and commissioners who were like them: non-Hispanic.

However, the shift to non-Hispanic mayordomos in 1911 was temporary. As the decade progressed, traditional practice reasserted itself, and Hispanic mayordomos again became ubiquitous in the last half of the 1910s. For example, in 1916 the Chamberino mayordomo was José Barrio, a local community leader who had lived in the town since 1870. Just upstream in Mesilla, Nicanor Guerra was again the mayordomo with Valentin Garcia serving as his assistant.[27] This

Fig. 5. Chamberino Acequia, 1914. Image courtesy of U.S. Reclamation Service, "Rio Grande Community Ditches 1914," folder (Rio Grande Community Ditches 1914), box 477, entry 10, RG 115, NARA-Denver.

Fig. 6. Reconstructed Chamberino Acequia and Headgate, 1919. Image courtesy of U.S. Reclamation Service, "Project History, Rio Grande Project Year 1919," folder (Rio Grande, vol. 10, 1919), box 463, entry 10, RG 115, NARA-Denver.

shift was likely the result of new settlers integrating themselves into the interethnic traditions of the Mesilla Valley as they became established in the local communities, a necessary task if they wanted their farm to succeed, regardless of how much land they owned. Hispanic residents held much of the farming and irrigation knowledge in the valley. Many farmers arriving in the Mesilla Valley from such distant and diverse places as Japan and Tennessee still looked to local Hispanic farmers for advice twenty years after the approval of the Rio Grande Project.[28]

Land settlement patterns prior to 1930 protected the established water-governance system. The size of farms remained relatively constant between 1900 and 1930, even with the influx of new settlers. The statistical analysis conducted by geographer Bärbel Hannelore Schönfeld La Mar and the records of the Reclamation Service illustrate no dramatic shift to large land holdings. New settlers generally purchased small tracts. In fact, according to Schönfeld La Mar, most owned fewer than sixty acres. The vast majority of farms were fewer than two-hundred acres in size in the first few decades of the project. She also found that Hispanics and non-Hispanics were evenly represented among established residents who sold their land between 1905 and 1930. On the other hand, among recent arrivals, non-Hispanics were more likely to sell their land than Hispanics. Indeed, although a greater number of non-Hispanic settlers came into the Mesilla Valley after 1910, these same settlers were quicker to leave the region than their Hispanic counterparts.[29]

Local ditch governance also mitigated the effects of new settlement and reinforced democratic practice. The rules of ditch-related elections prevented large landowners from dominating the management of the acequias through the selection of the ditch commissioners and mayordomos. Votes were allocated along a graduated scale in relation to the amount of land a farmer held. The largest landholders, residents with 52 acres or more, were granted 6 votes. Consequently, a farmer with 60 acres exercised the same number of votes as a farmer with 600 acres. All water users, even if they owned only a few acres, were granted at least 1 vote. Hispanic residents, who owned a majority of the land in the Mesilla Valley prior to 1905, were a significant, well-represented constituency in the traditional ditch elections.

Challenges to the traditional water democracies did not come from new settlers but from the Rio Grande Project. Federal irrigation development in the Mesilla Valley was initially designed to take advantage of the existing irrigation infrastructure. For example, the Leasburg diversion, the first component completed in the project, replaced a traditional weir (dam) at Leasburg, near the northern end of the Mesilla Valley. The Reclamation Service also constructed a six-mile concrete lateral designed to bring water to the community ditches and

Fig. 7. Leasburg Diversion Canal, 1913. Image courtesy of U.S. Reclamation Service, "Project History: Rio Grande Project—Texas-New Mexico, from Inception to 31 December 1912), folder (Rio Grande, vol. 1, 1913), box 461, entry 10, RG 115, NARA-Denver.

address one of the challenges facing the Mesilla Valley. Rio Grande waters carried a heavy silt load, which shaped local topography. The silt increased soil fertility and drainage, but communities continually needed to relocate the mouths of the ditches after they became blocked. Moreover, a new layer of soil was deposited each time water was released onto a field, which raised the ground around the ditches over time and made the construction of new ditches difficult.[30]

Engineers and local water users hoped the Leasburg lateral would decrease the silt load and increase farm productivity. The lateral began providing water to the Doña Ana, Las Cruces, and Mesilla community acequias in 1908. No additional laterals were completed in the Mesilla Valley until 1915, when two new federal laterals, the Westside Lateral and the Eastside Lateral were completed to link all the major acequias, either directly or indirectly, to Reclamation Service canals.[31] Local water users, who understood that they needed a more effective way to channel water from the river to their land, applauded the construction of the concrete laterals. The majority of residents, however, did not accept that the Reclamation Service should control the community ditches that residents had constructed and managed for decades prior to the arrival of federal reclamation in the Mesilla Valley. This became a point of contention.

Over a decade into the project, the Reclamation Service only exercised authority over the water flowing through the laterals. The communities, their elected ditch commissioners, and their mayordomos managed the water as it flowed through the acequias, even though the EBWUA and Reclamation Service held and administered the water rights. New Mexico water code separated the ownership of water and that of ditches. The water right resided in the individual and the ditch was held by the community. Reclamation Service engineers, who considered this legal distinction anathema, became determined to consolidate the community ditches and federal laterals under their control. In their view, "unified" management would make irrigation more cost effective and more efficient in the Mesilla Valley.[32]

Engineers saw the community ditches and the many water users, whom they held in low regard, as an impediment to the development of the Rio Grande Project. Officials complained about "inefficiency" both in the traditional ditch infrastructure and the farming practices. They described Mesilla Valley residents as less motivated and ambitious than what they considered the average farmer, noting that the majority of the residents were "Mexicans" who spoke only Spanish.[33] Oro McDermith, the superintendent of irrigation on the Rio Grande Project, groused that tradition and custom handicapped irrigation in the Mesilla Valley. The old ditches, he wrote, were too small to carry water efficiently and had to be continually and haphazardly cleared of debris by "Mexicans with shovels." He also stated that irrigation structures, such as turnouts and headgates in the acequias madres, were "crude to the utmost degree."[34]

Water use in the valley, largely the product of local history, was less rational than the engineers had hoped. Water supply had been unpredictable before the development of the Rio Grande Project, resulting in an irrigation regime shaped by the availability of water, rather than a standard irrigation schedule. When water flowed through the acequia, farmers simply opened their headgates and let water run until the ditch was drained, their tracts were flooded, or their allotted watering time expired. Normally, the volume of water used by a farmer was not measured. According to a Reclamation Service observer, each farmer had a *revalsario* (probably *rebalsario*) where he diverted water from the acequia to his fields. The engineer did not describe the revalsario, but it was likely a benchmark placed at the headgate to measure the elevation of water in the ditch. As water rose above the revalsario, the water user opened the check to release water onto his tract. When water dropped below the revalsario, he closed the check. These irrigation practices, which lacked scientific precision, continued on the community ditches after water flow in the river and acequias became more dependable with the development of the Rio Grande Project. Reclamation engineer L. M. Lawson lamented the fact that water turned out from the

government ditches into community ditches was wasted in the farm laterals. He considered local custom the root cause of the inefficiency.[35]

The Reclamation Service engineers were dismayed that the community ditches were neither enlarged nor extended by the water users after the completion of the government laterals. Engineers felt "obliged to rebuild and extend" most of the acequias. They also wanted to control the community ditches so they could manage the volume of water applied to the agricultural tracts. Service engineers calculated that most farmers applied two to three times the amount of water needed for effective cultivation.[36]

In an effort to address their concerns over waste, Reclamation Service officials began actively acquiring surface control rights to acequias serviced by the Rio Grande Project as early as 1914. Unlike in the Rincon Valley to the north and El Paso to the south, local sentiment in the Mesilla Valley was opposed to the Reclamation Service gaining control of the community ditches. P. W. Dent, the Service's district counsel, observed that "the people [in the Mesilla Valley] are pretty thoroughly wed to the antiquated community ditch system" and that it would take "considerable missionary work" to divorce them from the old system. As late as 1917, the Reclamation Service still had no control of community acequias.[37] Officials did not comprehend or appreciate that village autonomy resided in the management of the acequias in the valley.

The tide shifted less than a year later when residents transferred the San Miguel acequia to the Reclamation Service. The decision, however, was not a matter of "considerable missionary work" or the Reclamation Service imposing the federal will upon the community, but was instead triggered by intracommunity conflict. One ditch, the La Mesa community acequia, on the west side of the river, historically had no direct link to the Rio Grande, receiving water from the San Miguel acequia. This water-sharing practice had been in place since the 1850s and the completion of the Westside Lateral maintained the arrangement. The San Miguel ditch still got water from the government canal and conveyed it to the La Mesa ditch. La Mesa residents regularly complained that the San Miguel water users provided too little water. San Miguel residents, for their part, complained that the system was unworkable and that they were unable to guarantee water to La Mesa.[38]

In 1917 San Miguel residents turned to the Reclamation Service for a solution. Community water users, Hispanic and non-Hispanic, signed individual waivers authorizing their ditch commissioners to turn the San Miguel acequia over to the Reclamation Service. The waivers acted as a petition authorizing the transfer of the ditch to federal management. Indeed, state law prevented the Reclamation Service from taking control of community ditches unless at least eighty percent of the water users signed waivers requesting such action. The

San Miguel community ditch was the first Mesilla Valley acequia to come under Reclamation Service control.[39] The water users, by relinquishing their ditch, chose to surrender their community acequia after operating it independently of the Reclamation Service for over ten years. They solicited federal assistance only when community conflict rose to the point that it threatened to undermine social cohesion and effective management of the ditches. Residents of San Miguel handed their ditch to the federal government so residents in La Mesa might receive a dependable water supply.

The Reclamation Service quickly began overhauling the San Miguel community ditch. When it was acquired by the service, the acequia was eight feet wide, carried about two feet of water, and had no uniform grade. Turnout boxes and checks installed by individual water users were usually constructed of brush. When the work started on 1 January 1918, it included cleaning and widening the ditch, constructing wood checks and turnouts, and grading the bottom. The overhauled ditch was almost twice as wide and deep as its predecessor and was able to carry an adequate supply of water for both La Mesa and San Miguel. Even under the Reclamation Service, ditch construction borrowed from established community tradition: the work was done by "local men who were principally farmers." The service also entered into contracts with members of the community for materials needed in ditch maintenance.[40]

The relinquishment of the San Miguel community ditch foreshadowed a shift in the Mesilla Valley. Communities throughout the region that had steadfastly held their community ditches began turning operations over to the Reclamation Service in quick succession during the two years after the San Miguel ditch was ceded and upgraded. The Doña Ana, Las Cruces, Mesilla, La Mesa, Chamberino, and Three Saints ditches were turned over to the Reclamation Service in 1918. Similar improvements were made to those community ditches in late 1918 and early 1919. La Union ditch, the last major acequia still under community control, was given to the Reclamation Service in 1920. Decisions to give the government control over ditches were not without deliberations. Residents only agreed to place the Three Saints ditch under Reclamation Service jurisdiction after a lengthy meeting in which famers ultimately decided that they faced too many challenges to retain control of their acequia.[41]

Indeed, the shift in community sentiment was not merely a change of heart but arose from a new water crisis that appeared in the Mesilla Valley in 1916 and escalated in succeeding years: the waterlogging of vast portions of the Mesilla Valley. The combination of a high water table and the now-dependable water supply led to the overirrigation of fields, which turned sections of the valley into marshland. To make matters worse, the Reclamation Service was slow to construct drainage ditches for circulating water out of the agricultural fields.

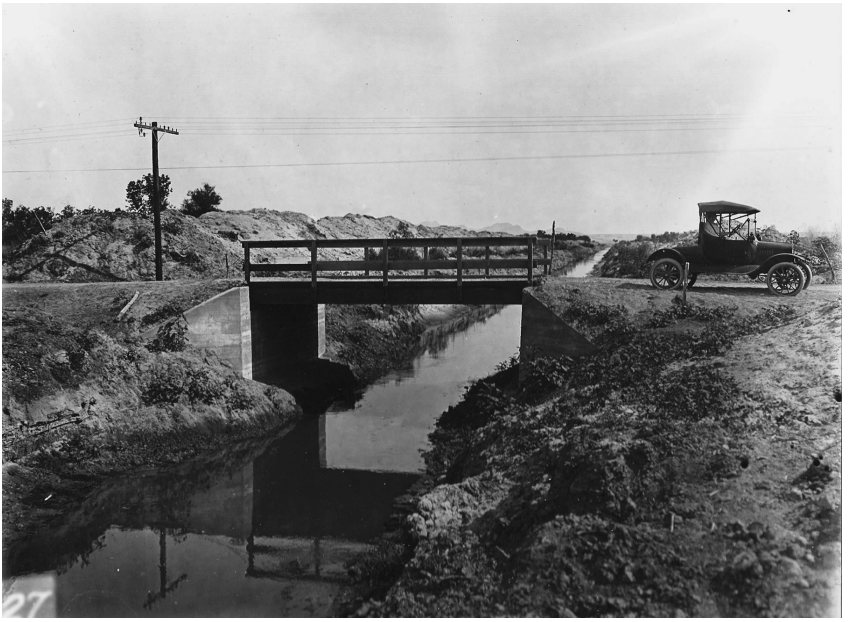

Fig. 7. Leasburg Diversion Canal, 1913. Image courtesy of U.S. Reclamation Service, "Project History: Rio Grande Project—Texas-New Mexico, from Inception to 31 December 1912), folder (Rio Grande, vol. 1, 1913), box 461, entry 10, RG 115, NARA-Denver.

The problem was dramatic enough that the EBWUA canceled its program promoting the Mesilla Valley to new settlers. Fields and homes throughout the valley flooded. Waterlogging was so severe in Mesilla Park that the basements of the local school flooded, malarial mosquitoes appeared in seepage swamps, and wells became inoperable. Observers noted that residents living in waterlogged homes throughout the valley were becoming ill. By 1918 water had inundated over two-thirds of the Mesilla Valley, rendering vast areas uncultivated, submerging alfalfa fields, and killing orchards.[42]

Seepage was not unexpected. The director of the EBWUA had told Reclamation engineers in 1915 that the valley lands would become waterlogged as the water supply in the Rio Grande became more dependable. A. P. Davis, the director of the Reclamation Service, warned water users in the spring of 1916 that the very survival of their communities was threatened by the seepage. Two years later, at the height of the debacle, he wrote that the Reclamation Service had known about potential drainage problems "for years."[43]

Local water users certainly contributed to the flooding, but federal engineers set the stage for the disaster. Curiously, Reclamation officials did not consider their actions as contributing factors in the flooding. Drainage work was not even contemplated in the original project plans. Engineers ignored their own

data which showed the water table was high and that sections of poor draining soil existed throughout the Mesilla Valley. In 1912 J. W. Nelson and L. C. Holmes conducted a soil survey, noting that many farms were underlain by clay and that low-lying areas were subject to such regular seepage that alkali soils had developed where water evaporated from waterlogged areas. Two years later, the Reclamation Service conducted a soil-reconnaissance survey that came to similar conclusions. A. T. Strahorn, the study's author, wrote that most of the Mesilla Valley soils drained well, but that some areas were susceptible to waterlogging due to poor soil texture and a high water table. Superintendent McDermith, on the other hand, inexplicably claimed in 1915 that the soil absorbed water freely. He was sure that the completion of the Elephant Butte Dam would make the situation even better because the water would have less suspended sediment and silt. The reality was the opposite. The silt improved water absorption by laying a thin new layer of soil down every time farmers applied water.[44]

McDermith's optimism was no match for reality. Mesilla Valley residents demanded that the Reclamation Service construct drainage canals. The majority of water users in several communities, including Mesilla, Las Cruces, and La Union, petitioned the Reclamation Service to construct drainage canals as early as the fall of 1916. The community ditch commissioners, not the EBWUA, facilitated the petitioning. In the meantime, the EBWUA financed dredging on its own.[45]

Director Davis travelled to the Mesilla Valley in June 1917 to address the seepage problem. He visited communities throughout the valley and met with water users in local stores and schoolhouses. The largest meeting Davis attended took place at the farming hamlet of Chamberino, where he and the water users from the west and southern portions of the valley had a "big basket picnic." Davis noted that "there was great anxiety" about the seepage, and that farmers were clamoring for a solution. He declared that the Reclamation Service must take over the community ditches before drainage could commence.[46] Residents were placed in an unenviable position. They could retain control of the ditches at the cost of their livelihoods and, probably, the viability of their villages, or they could turn over the ditches to the government and lose autonomy, but preserve some semblance of their traditional community.

While the San Miguel ditch was relinquished to the Reclamation Service for reasons unrelated to seepage, the other acequias madres were likely transferred to the service due to the stresses caused by over two years of waterlogging. Regrettably, there are no detailed sources recording or reflecting community deliberations, or any sentiments regarding the transfer of the community ditches. Some evidence suggests that the community ditch associations held out because they wanted assurances that the Reclamation Service's planned modifications to the ditches would serve the community water users' interests.[47] After

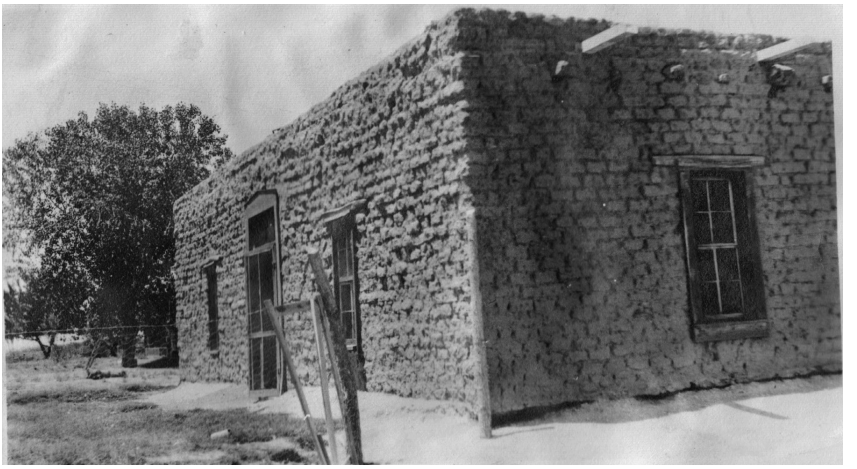

Fig. 9. Mesilla Valley Home Damaged by Seepage. The photographer noted: "seep water destroying the walls, making them soft and mushy at the bottom and cracked on top . . . floors begin[ning] to buckle." Image courtesy of Elephant Butte Irrigation District, Albert Eylar to A. P. Davis, 18 June 1917, folder (46-A Drainage April to 30 June 1917), box 795, entry 3, RG 115, NARA-Denver.

all, at least 80 percent of the water users had to agree to hand over the acequias to federal engineers. Like the water famine that brought the Reclamation Service to the Mesilla Valley, the seepage that compelled the communities' choices was a manifestation of manipulating the water flowing through the river. The transfer of the community ditches to Reclamation Service control marked a dramatic turning point in the history of the Mesilla Valley.

The adoption of the community ditches by the Reclamation Service severed the historical link between community, water, and democracy. Ditch commissions became obsolete. Their functions were transferred to the Reclamation Service and Elephant Butte Irrigation District, the successor to the EBWUA. The traditional position and role of the mayordomo was also altered. Reclamation Service engineers had no faith in the mayordomos to distribute water equitably and rationally, despite their seventy-year history managing irrigation in the Mesilla Valley.[48]

Ditchriders, patrolmen, and gatekeepers employed by the Reclamation Service replaced the mayordomos. The ditchriders inherited some of the tasks of the mayordomos. They acted as ditch-maintenance foremen, delivered water to water users, kept records of water used, patrolled the ditches, and assisted in minor repairs, including gopher damage, ditch breaks, collapsing banks, and clogged checks. During the irrigation period, the ditchrider measured the amount of water by gauging the flow in the ditch, recording the time when the water was turned onto the tract, and when it was turned off. Water users were

then assessed a charge for the amount of water they used. The patrolmen's primary responsibility was to perform the ditchrider's duties at night and enforce equitable water use. Gatekeepers operated the intake gates from the river and rode the ditch as needed. In 1920 the Reclamation Service hired fifteen ditchriders, eighteen patrolmen, two gatekeepers, and a seasonal repair crew for the Mesilla Valley. None of the ditchriders or patrolmen were Hispanic. Pedro Treviz, a gatekeeper at the Mesilla Dam, was the only Hispanic among the field staff. [49]

The replacement of trusted community members by ditchriders in the management of the ditches led to problems. Ditchriders, who were outsiders, lacked local trust and respect, and they had a difficult time convincing water users to follow the Reclamation Service schedule. It was common, long after they were placed under federal jurisdiction, for farmers to utilize water from the ditches even when it was not their allotted time. D. C. Caylor, associate engineer on the Rio Grande Project, noted in 1926 that traditional water-use patterns still prevailed even though the Reclamation Service had been imposing rational access, distribution, and conservation for over a decade. He described "considerable difficulty" in getting farmers to stop the traditional irrigation practice of simply taking water and turning it back into the canals "to suit the convenience of each individual." The engineer lamented the fact that farmers were only gradually realizing the "advantage of [the] more orderly system" put in place by the Reclamation Service.[50]

While the community ditches came under increased federal control, local water users still maintained and managed the secondary ditches that conveyed water to ever-smaller parcels of land. The communities through which these ditches flowed employed their own "ditch bosses," who performed some of the same duties as the ditchriders and mayordomos on the acequias madres. Toshi Nakayama, the daughter of a Japanese immigrant who learned local farming techniques from his Hispanic neighbors, grew up in the Chamberino area in the 1920s and 1930s. She remembered that other remnants of traditional water management remained. Every landowner in the Chamberino area was annually required to work on ditch maintenance. She stated that local ditches not under the control of the Reclamation Service were dug by hand and maintained by simple tools.[51] She did not discuss the existence of an elected mayordomo, but the community must have maintained some formal or informal system of organization for such work.

Nakayama lived in a small farm village that, like the rest of the Mesilla Valley, exemplified the interconnectedness of water and community in New Mexico and the unintended and unanticipated consequences of human manipulation of the natural environment. The water flowing in the Rio Grande enabled

settlement. Management and use of water shaped local political and social institutions, which evolved to protect the interests of the community. The water democracies that developed along the Rio Grande were resilient and flexible. Common interest often outweighed ethnic and racial divides as residents came together in defense of water, ditches, and self-determination. The system was put to the test and ultimately undermined in the early twentieth century. First, catastrophic drought caused by irrigation development in Colorado left fields dry and dying in the late 1800s. Mesilla Valley residents searched for solutions and eventually came together to welcome federal reclamation and the Rio Grande Project in 1905. They did not, however, give up control of their acequias, the foundation of their water democracies. This was a particular frustration for the federal engineers who came to the valley to modernize irrigation. The outsiders did not comprehend that water and autonomy were inseparable from community. The Reclamation Service gained control of the community ditches by 1920 not through the easy acquiescence of residents or the dominance of federal engineers, but through a second man-made environmental calamity, the inundation of fields and farms in seeping groundwater. The transfer of the ditches to federal control dissolved the water democracies that had thrived in the Mesilla Valley for almost a century. While customary practices continued on the margins, an increasingly regulated and rationalized irrigation regime shaped local water management in the Mesilla Valley after 1920. Community survival came at the cost of village autonomy. At its core, the history of early reclamation in the Mesilla Valley was shaped by the results of human manipulation of the river, not the power or influence of outside advocates, experts, or activists.

Notes

1. Meyer calls this condition "ecoculturation" (as opposed to acculturation). The concept of ecoculturation avoids the pitfalls of environmental determinism. Neither the river in this case nor the settlers are passive agents of history or helpless victims of nature. See Michael C. Meyer, *Water in the Hispanic Southwest: A Social and Legal History, 1550–1850* (Tucson: University of Arizona Press, 1996), 7–9. Meyer's work indirectly relates to the historiography of reclamation. The subject and period of his study predate the rise of modern irrigation, but the themes in his work apply to the region covered in this article. Historian Mark Fiege has adopted a concept similar to Meyer's model (although he does not call it ecoculturation) in his study of reclamation in Idaho's Snake River Valley. He notes that the interaction between humans and nature within the irrigated landscape has produced an environment shaped by the tension between human modification and natural processes. See Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 2000).

2. G. Emlen Hall explores similar themes in his study of water rights in the vicinity of Tularosa, New Mexico, between 1890 and 1920. Hall's analysis centers on the legal battles

over water rights and ditch governance. This article, however, is focused on the manner in which communities in the Mesilla Valley held and gave up control of the community ditches that conveyed their irrigation water. While Hall explores the history of litigation, an extremely important aspect of water history, I describe the resilient social structures that protected community control of the acequias and the challenges they faced under federal reclamation. See G. Emlen Hall, "Tularosa and the Dismantling of New Mexico Community Ditches," *New Mexico Historical Review* 75, no. 1 (January 2000): 77–106. Themes addressed were developed, in part, from my dissertation. See Steven C. Baker, "(Re)making the Valley" A Century of Community, Agriculture, and Irrigation in New Mexico's Mesilla Valley (Ph.D. diss., University of Colorado, 2013).

3. The regulations, dated 31 July 1840, are reproduced in U.S. Senate, *Report of the Surveyor General of New Mexico on the Private Land Claim No. 85 for the Tract Known as "The Doña Ana Bend,"* 20 April 1874, 43d Cong., 1st Sess., S. Ex. Doc. 43, ser. no. 1581, pp. 24–26, 65–67; and José Morales, Town of El Paso, 2 February 1843, ibid., 29, 70. A *vara* is equivalent to approximately 33 linear inches. This would make the measurement between 62 and 77.5 inches wide.

4. Antonio Rey and J. Dolores Madrid, "Padron de las vecinos estantes y habitantes que hay en esta nueva población," U.S. Senate, Report of the Surveyor General of New Mexico on the private land claim No. 85 for the tract known as "The Doña Ana Bend," 20 April 1874, 43rd Cong., 1st Sess., S. Ex. Doc 43, ser. no. 1581, pp. 38–40, 79–81; and U.S. Department of the Interior, Census Office, "Population of New Mexico by Minor Civil Divisions," Census Bulletin no. 129, 27 October 1891. Anthony P. Mora argues that, from the beginning, Hispanic residents of Las Cruces adopted an "American" identity and those who lived in Mesilla maintained a Mexican identity. See Anthony P. Mora, "Mesillaros and Gringo Mexicans: The Changing Meanings of Race, Nation, and Space in Southern New Mexico, 1848–1912" (Ph.D. diss., University of Notre Dame, 2002).

5. W. W. Follett, *A Study of the Use of Water for Irrigation on the Rio Grande del Norte above Fort Quitman, Texas* (Washington, D.C.: Government Printing Office, 1896), 26; James A. French, "Hydrographic Survey of the Rio Grande Drainage Basin and San Luis Valley Colorado," 1910, p. 124, folder 262-D13 (Report of the Central Board of Review on the Rio Grande Project), box 16, entry 4: General Records, Oversize Records, 1902–1919, Records of the Bureau of Reclamation, Record Group 115 [hereafter RG 115], National Archives at Denver [hereafter NARA-Denver]; [no title], *Denver (Colo.) Rocky Mountain News*, 1 July 1888; and "Topics for Farmers," *Denver (Colo.) Rocky Mountain News*, 9 March 1891. Archival research for this article was mostly conducted in the Rio Grande Historical Collections, Archives and Special Collections Department, New Mexico State University Library, Las Cruces, and the Records of the Bureau of Reclamation, National Archives and Records Administration, Denver, Colorado, and College Park, Maryland. I also consulted the records held at the Center for Southwest Research, University of New Mexico, and the records held by the New Mexico Office of the State Engineer, Albuquerque. An acre-foot is the volume of water that covers one acre at the depth of one foot.

6. The reduced flow in the river was a problem with international implications. Mexico's foreign minister began making official complaints to the U.S. State Department because farmers and residents in the Ciudad Juárez area were not receiving Rio Grande water supplies that had been guaranteed by international agreements. The diplomatic tensions brought the conditions in New Mexico and Mexico to the attention

of officials in Washington, D.C., who ordered irrigation and reclamation surveys in the region beginning in the 1880s. Private irrigation efforts were also promoted. Ultimately, the United States approved the federal Rio Grande Project in an effort to ensure adequate water to farmers along the river in the United States and Mexico. See Douglas Littlefield, *Conflict on the Rio Grande: Water and the Law, 1879–1939* (Norman: University of Oklahoma Press, 2008).

7. Follett, "Irrigation on the Rio Grande," 4–5, 7; and [no title], *Doña Ana County (N.Mex.) Republican*, 11 March 1897.

8. I use the term *water famine* to describe the conditions that predominated in the Mesilla Valley during an extended period of dryness and that resulted in the Rio Grande regularly running dry. I use *water famine* as opposed to just *drought* to emphasize that the lack of water in the Mesilla Valley was largely the product of man-made impoundments and development in the upper reaches of the Rio Grande watershed. There is little information about whether local residents perceived the drought as the result of development in Colorado or just another turn in the capriciousness of the river.

9. Several authors have addressed the interplay of local community and federal reclamation in New Mexico and other western states. See, for example, Robert Sauder, *The Yuma Reclamation Project: Irrigation, Indian Allotment, and Settlement along the Lower Colorado River* (Reno: University of Nevada Press, 2009); Stephen Bogener, *Ditches across the Desert: Irrigation in the Lower Pecos Valley* (Lubbock: Texas Tech University Press, 2003); Fiege, *Irrigated Eden*; Donald J. Pisani, *Water and American Government: The Reclamation Bureau, National Water Policy, and the West, 1902–1935* (Berkeley: University of California Press, 2002); Donald J. Pisani, *Water, Land, and Law in the West: The Limits of Public Policy, 1850–1920* (Lawrence: University Press of Kansas, 1996); Donald Worster, *Rivers of Empire: Water, Aridity, and Growth in the American West* (New York: Pantheon Books, 1985); Littlefield, *Conflict on the Rio Grande*; Bärbel Hannelore Schönfeld La Mar, "Water and Land in the Mesilla Valley, New Mexico: Reclamation and Its Effects on Property Ownership and Agricultural Land Use" (Ph.D. diss., University of Oregon, 1984); and Kenneth M. Orona, "River of Culture, River of Power: Identity, Modernism, and Contest in the Middle Rio Grande Valley, 1848–1947" (Ph.D. diss., Yale University, 1999).

10. Report by L. R. Fisk in U.S. Bureau of Reclamation, "Rio Grande 1924," pp. 19–20, folder (Rio Grande, Volume 15, 1924), box 465, entry 10: Project Histories 1902 to 1932, RG 115, NARA-Denver.

11. U.S. Reclamation Service, "Rio Grande Project—New Mexico-Texas. Project History Year—1914," pp. 25, 27, 90, 91, folder (Rio Grande, Volume 3, 1914), box 461, entry 10, RG 115, NARA-Denver; and U.S. Reclamation Service, "Rio Grande Project—New Mexico-Texas. Project History, 1915, Part I of II," p. 140, folder (Rio Grande, Volume 4, 1915), ibid.

12. "Un acto que arregla a aguas y asequias y a otros ramos de agricultura," 20 julio 1851 and "Un acto conserniente a asequias y corridos de agua," 7 enero 1852, in *Laws of the Territory of New Mexico, Passed by the First Legislative Assembly in the City of Santa Fe* (Santa Fe, N.Mex.: James L. Collins, 1852), 189–90, 278–81; and José A. Rivera, *Acequia Culture: Water, Land, and Community in the Southwest* (Albuquerque: University of New Mexico Press, 1998), 49–50.

13. Meyer, *Water in the Hispanic Southwest*, 65, 67; Rivera, *Acequia Culture*, 7, 30, 38, 57; Marc Simmons, "Water That Runs in Ditches," in *Spanish Pathways: Readings in the History of Hispanic New Mexico* (Albuquerque: University of New Mexico Press, 2001),

134; Marguerite Taylor Want, "The Crumbling Adobes of Chamberino," *New Mexico Historical Review* 39, no. 3 (July 1964): 175; and Juan E. Urquidi, Gobernador [of Chihuahua], "Reglamento para la organacion de las colonias civiles y demas poblaciones que se formen en el estado," 22 May 1851 Report of the Surveyor-General of New Mexico on Mesilla Colony Grant, No. 86, 43d Cong., 1st Sess., 8 June 1874, S. Ex. Doc. 56, ser. no. 1581, pp. 56, 6–11, 21–26.

14. Rivera, *Acequia Culture*, 51.

15. *National Reclamation Act of 1902*, Pub. L. No. 57–161, 32 Stat. 388 (1902) § 6. I use the term *water democracy* to emphasize the traditional cooperative management of water by all users and the connection between community interaction, local politics, and irrigation. I borrow the term from Rivera, *Acequia Culture*.

16. Elephant Butte Water Users' Association, "Information and Instructions Relative to the Elephant Butte Project," 1905, folder 262-D13 (Exhibits to Accompany Hearing Board Review-Rio Grande Project), box 16, entry 4: General Records, Oversize Records 1902–1919, RG 115, NARA-Denver.

17. "Aviso de Elección," *Las Cruces (N.Mex.) Labrador*, 30 March 1905, 2.

18. Elephant Butte Water Users' Association, "Information and Instructions," folder 262-D13, box 16, entry 4, RG 115, NARA-Denver.

19. In many ways, the EBWUA officers and council reflected a cross-section of the farmers in the Mesilla Valley. Nearly ten years into the Rio Grande Project, two-thirds of the council members cultivated less than 160 acres. Most were exclusively farmers, but about one-third split their time between farming and other businesses or occupations. About half the council members rented some of their land, usually small parcels, to other farmers, a practice that began in the 1880s as a strategy to confront the water famine. See Elephant Butte Water Users' Association, "Statement Relative to Officers of the Association," 3 November 1913, folder (Rio Grande 430–430A/430-A Rio Grande Joint Contract with Two Water Users Associations), box 818, entry 4: General Administrative and Project Records, 1902–1919, RG 115, NARA-Denver.

20. "Noticias Locales," *Las Cruces (N.Mex.) Labrador*, 12 January 1906, 3.

21. U.S. Census Bureau, "1870: Doña Ana County, New Mexico," sheet 193A, NARA microfilm publication T593, roll 893; U.S. Census Bureau, "1910: Doña Ana, New Mexico," sheet 3A, Enumeration District 64, NARA microfilm publication T624, roll 914; and U.S. Census Bureau, "1900: Doña Ana County, New Mexico," sheet 18A, Enumeration District 42, NARA microfilm publication T623, roll 1000.

22. "Noticias Locales," *Las Cruces (N.Mex.) Labrador*, 8 December 1907, 3; "Noticias Locales," *Las Cruces (N.Mex.) Labrador*, 5 August 1904, 3; "Los Jueces de Paz," *Las Cruces (N.Mex.) Tiempo*, 20 April 1901, 3; "Court Notes," *Doña Ana County (N.Mex.) Republican*, 6 October 1900, 4; "Republican Convention," *Doña Ana County (N.Mex.) Republican*, 27 October 1900, 1; [No title], *Las Cruces (N.Mex.) Labrador*, 8 March 1901, 3; "Primarias Republicanas," *Las Cruces (N.Mex.) Labrador*, 1 March 1912, 2; Noticias Locales," *Las Cruces (N.Mex.) Labrador*, 13 December 1901, 3; "La Convencion Republicana de Estado Estuva Muy Concurrida," *Las Cruces (N.Mex.) Labrador*, 11 September 1920, 1, "Noticias Locales," *Las Cruces (N.Mex.) Labrador*, 12 January 1906, 3; "Noticias Locales," *Las Cruces (N.Mex.) Labrador*, 10 December 1909, 2; "The News Directory," *Las Cruces (N.Mex.) Daily News*, 2 April 1889, 3; and "Married in Cruces," *El Paso (Tex.) Herald*, 19 April 1911, 4. Lopez was still a justice in 1911.

23. "Elecciones de Acequia," *Las Cruces (N.Mex.) Labrador*, 8 December 1911, 3.

24. "Protesta," *Las Cruces (N.Mex.) Tiempo*, 20 Februrary 1890, 2; "Junta Publica," *Las Cruces (N.Mex.) Tiempo*, 26 Februrary 1885, 2; and Phillip B. Gonzales, "La Junta Indignación: Hispano Repertoire of Collective Protest in New Mexico, 1884–1933," *Western Historical Quarterly* 31, no. 2 (Summer 2000): 162, 164.

25. "La Alianza Hispano Americana," *Las Cruces (N.Mex.) Labrador*, 25 May 1906, 3.

26. Although I am stressing interethnic solidarity, racial division certainly existed in the Mesilla Valley. However, such division was most often fomented by recent arrivals who brought Midwestern and Southern racial attitudes to the valley. Their attitudes are most dramatically represented by the racial politics of Albert B. Fall.

27. "Mesilla Ditch Ready to Turn over to USRS," *Organized Farming*, July 1918, in folder 6 (EBID Subject File 1906–1925 Misc Subjects and Correspondence, *Organized Farming* File 5.42), box 13, office files, 1906–1971, Subseries B, Executive-1906–1972, Series 2, Elephant Butte Irrigation District Records (1880–1981), Rio Grande Historical Collections, Archives and Special Collections Department, New Mexico State University Library, Las Cruces [hereafter EBIDR, NMSUL]; and "Nellie D. Sperry v. The Chamberino Ditch Company, et. al.," 31 March 1916, folder (Miscellaneous 1 January 1913 thru 30 June 1919), box 797, entry 3: General Administrative and Project Records 1902–1919, RG 115, NARA-Denver.

28. Virginia Newberry Taylor, interview by Ron Nelson, 7 December 1999 and 4 January 2000, Interview #126, transcript, New Mexico Farm and Ranch Heritage Museum Oral History Project, Archives and Special Collections Department, New Mexico State University Library, Las Cruces [hereafter NMFRHM, NMSUL]; and Toshi Nakayama, interview by Jane O'Cain, 14 and 27 March 1997, Interview #210, transcript, NMFRHM, NMSUL.

29. Schönfeld La Mar, "Water and Land in the Mesilla Valley, New Mexico," 118, 132, 133, 212. This balance did not last. Sigurd Johansen conducted a sociological study of Mesilla Valley villages in the late 1930s and found that, in general, the Hispanic population was geographically and culturally isolated from the larger non-Hispanic community outside the valley and suffering decline at the hands of the increased importance of commercial agriculture, which along with the ravages of the Great Depression, was contributing to an increase in Hispanic land loss. However, he also noted that Hispanic residents accommodated the increased power of non-Hispanics, while strengthening their own cultural identity. Johansen's study focuses on representative social and cultural institutions, such as the village, family, church, and school. He does not discuss the irrigation management in any depth. See Sigurd Johansen, *Rural Social Organization in a Spanish-American Culture Area* (Albuquerque: University of New Mexico Press, 1948); and Sigurd Johansen, "The Social Organization of Spanish-American Villages," *Southwestern Social Science Quarterly* 23, no. 2 (September 1942): 151–59. Schönfeld La Mar and Johansen do point out that Hispanic landholding and small parcel farms did decrease by the 1930s as large scale cotton cultivation took hold in the valley. This phenomenon, however, post-dates the transfer of the acequias to federal control, which is the focus of this article.

30. U.S. Reclamation Service, "Rio Grande Project—New Mexico-Texas. Project History Year—1914," p. 25, folder (Rio Grande, Volume 3, 1914), box 461, entry 10, RG 115, NARA-Denver.

31. U.S. Reclamation Service, "Project History: Rio Grande Project—Texas-New Mexico, From Inception to December 31, 1912," pp. 20, 49–50, folder (Rio Grande, Volume 1, 1913), box 461, entry 10, RG 115, NARA-Denver; U.S. Bureau of Reclamation, "Rio Grande 1924," pp. 219–20, folder (Rio Grande, Volume 15, 1924), box 465, entry 10, RG 115, NARA-Denver; and U.S. Reclamation Service, "Rio Grande Project—New Mexico-Texas. Project History, 1915, Part I of II," p. 139, folder (Rio Grande, Volume 4, 1915), box 461, entry 10, RG 115, NARA-Denver.

32. Bureau of Reclamation, "Rio Grande Irrigation Project New Mexico-Texas, Project History 1923," p. 4, folder (Rio Grande, Volume 14, 1924), box 465, entry 10, RG 115, NARA-Denver.

33. District Counsel, Judge P. W. Dent, to Chief Counsel, Judge Will R. King, 8 June 1916, folder (Rio Grande 330–330B/330 Rio Grande Corres re. Irrigation districts), box 816, entry 3, RG 115, NARA-Denver.

34. U.S. Reclamation Service, "Rio Grande Project—New Mexico-Texas. Project History, 1915, Part I of II," p. 141, folder (Rio Grande, Volume 4, 1915), box 461, entry 10, RG 115, NARA-Denver.

35. U.S. Reclamation Service, "Rio Grande Project New Mexico-Texas, History of the Project 1917," p. 51, folder (Rio Grande, Volume 8, 1917), box 462, entry 10, RG 115, NARA-Denver; U.S. Reclamation Service, "Annual Project History and Operation and Maintenance Report, Rio Grande Project, New Mexico-Texas, Year 1918," p. 266, folder (Rio Grande, Volume 9, 1918), box 463, entry 10, RG 115, NARA-Denver; and U.S. Reclamation Service, "Project History, Rio Grande Project Year 1919," p. 276, folder (Rio Grande, Volume 10, 1919), box 463, entry 10, RG 115, NARA-Denver. The term *revalsario* does not appear to have been used in other regions of New Mexico.

36. Director and Chief Engineer A. P. Davis to Franklin K. Lane, Secretary of the Interior, 18 July 1917, folder (Rio Grande 330–330B/330B Irri Dist Cont with Elephant Butte Irri Dist and Elephant Butte WUA for Drainage and other contr Work and repayment of the same to June 1917), box 816, entry 3, RG 115, NARA-Denver; "Organization of Irrigation District in the Rio Grande Valley," 1 June 1917, ibid.; and U.S. Reclamation Service, "Rio Grande Project—New Mexico-Texas. Project History Year—1914," p. 38, folder (Rio Grande, Volume 3, 1914), box 461, entry 10, RG 115, NARA-Denver.

37. District Counsel, Judge P. W. Dent, to Chief Counsel, Judge Will R. King, 23 May 1916, folder (Rio Grande 330–330B/330 Rio Grande Corres re. Irrigation districts), box 816, entry 3, RG 115, NARA-Denver; and U.S. Reclamation Service, "Rio Grande Project New Mexico-Texas, History of the Project 1917," p. 82, folder (Rio Grande, Volume 8, 1917), box 462, entry 10, RG 115, NARA-Denver.

38. U.S. Reclamation Service, "Annual Project History and Operation and Maintenance Report, Rio Grande Project, New Mexico-Texas, Year 1918," p. 115, folder (Rio Grande, Volume 9, 1918), box 463, entry 10, RG 115, NARA-Denver.

39. Commissioners of the La Mesa Ditch Company to Secretary of the Interior, Franklin K. Lane, 13 January 1917, and Secretary of the Interior, Franklin K. Lane, to Commissioners of the La Mesa Ditch Company, 27 January 1917, folder (Miscellaneous 1 January 1913 thru 30 June 1919), box 797, entry 3, RG 115, NARA-Denver; and U.S. Reclamation Service, "Annual Project History and Operation and Maintenance Report, Rio Grande Project, New Mexico-Texas, Year 1918," p. 115, folder (Rio Grande, Volume 9, 1918), box 463, entry 10, RG 115, NARA-Denver.

40. U.S. Reclamation Service, "Annual Project History and Operation and Maintenance Report, Rio Grande Project, New Mexico-Texas, Year 1918," pp. 116, 119, 122, folder (Rio Grande, Volume 9, 1918), box 463, entry 10, RG 115, NARA-Denver.

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