Water Litigation in the Lower Rio Grande

"Even with its record of successful regulation and mature infrastructure and diversion operations, water conveyed through the Rio Grande continues to exhibit significant, and sometimes very contentious, issues."

Challenges and Opportunities for Water of the Rio Grande
M. Edward Rister, Allen W. Sturdivant, Ronald D. Lacewell, and Ari M. Michelsen, 2011 Southern Agricultural Economics Ass'n.
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The Rio Grande winds down from the San Juan Mountains in Colorado to the Gulf of Mexico. It flows through the three States, Colorado, New Mexico, and Texas and forms the border between the two countries, the Republic of Mexico (Mexico) and the United States of America (United States). The land is arid or semi-arid, and the water is vital to the lives, economies, and environments within and along its banks. The Rio Grande Project (Project) was authorized and built by the United States Reclamation Service in the early 20th century to collect the waters of the Rio Grande and to serve farmers in New Mexico, west Texas, and Mexico with more regularized and fairly allocated flows for irrigated agriculture.[1] Later in the late 1920s and early 1930s, Colorado, New Mexico, and Texas negotiated the 1938 Compact that allocated the surface waters among themselves.[2]

The water allocation issues are hotly contested in south-central New Mexico and the surrounding area. The Doña Ana County economy is one of the fastest growing in the state.[3] Project water allows the area's economies based on agriculture, education, commerce, and defense/aerospace to develop and thrive. The population has been growing steadily, and in 2011, rose above 213,600.[4] The area is a prime agricultural center for the state, producing pecans, peppers, onions, alfalfa, hay, cotton and other row crops.[5] The tourism industry and the water-related recreation at the Elephant Butte Reservoir and the Caballo Reservoir are important to the entire state.[6] The New Mexico State University (NMSU) is one of the largest employers of the area, draws thousands of students to live and study, and serves as the home of teaching, comprehensive research, and public service—all of which fuel the local and state economy and the local quality of life.[7]

Today, the river and those who depend on it face more administrative challenges in the face of shrinking water supplies and increased population. These challenges have given rise to two ongoing lawsuits: the Lower Rio Grande Adjudication, *New Mexico v. EBID, et al.*, 96-CV-888 (1996) (*N.M. v. EBID*) in the New Mexico Third Judicial District Court (adjudication

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court) and the *New Mexico v. United States, et al.*, D.N.M. 11-CV-691 (2011) (*N.M. v. U.S.*) in United States District Court of New Mexico (U.S. District Court). A third possible suit was opened on January 8, 2013, when Texas filed a motion in the U.S. Supreme Court, suing New Mexico over alleged Rio Grande Compact violations. As of January 25, 2013, the U.S. Supreme Court had not agreed to hear the case.[8] This article lays out the history of the Project and issues and status of the two active cases.

The first case, *N.M. v. EBID*, is a state court adjudication being undertaken to identify and to formalize the scope and the description of valid water rights in the area between the Elephant Butte Dam and the state line with Texas. The adjudication is one of the largest in New Mexico and will determine water right claims in about 14,000 subfiles, each of which deals with one or more water rights, for about 18,000 claimants. The adjudication court and the parties are also working out the stream system issues: so-called because their resolution will affect many if not all of the claimants in the case. The court has or will determine the following stream system issues: 1) the farm delivery requirement (FDR) and the consumptive irrigation requirement (CIR) for all crops; 2) the groundwater rights of the Elephant Butte Irrigation District (EBID); 3) the status and description of domestic wells; 4) the rights and the nature of the rights of the United States in the Project; 5) the claims of those whose water rights predate those of the Project; and 6) the claims of the Nathan Boyd Estate.[9]

Adjudications are complex, expensive, and lengthy proceedings.[10] Some water right claimants worry that the case will cancel or reduce their water rights. EBID is concerned because its members' adjudicated water rights make up the district's entitlement from the Project and thereby protect its ability and responsibility to deliver water to the 90,640 acres within its boundaries.[11] The claimants hold a general suspicion about any government's interest in their rights, preferring to manage their water without governmental oversight.[12] The EBID, a political subdivision of the state, shares this suspicion of federal and/or state interest in the district's ability to manage the surface water of the Project and deliver it to their members. The adjudication of the water rights, however, is required under the 1907 New Mexico Water Code and gives the New Mexico State Engineer (State Engineer) the information necessary to meet his statutory obligations; that is, to administer the existing water uses, to preserve the aquifer, to make informed decisions about the future water development in the area, to be ready to administrate in times of shortage, and to meet New Mexico's Compact obligations.[13]

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The second case, *New Mexico v. United States,* was filed on August 8, 2012 in the New Mexico federal district court. The case concerns a 2008 Texas court settlement and an alleged violation of the calculation of New Mexico credit water under the Rio Grande Compact by the Bureau of Reclamation. The settlement, titled the "Operating Agreement for the Rio Grande Project," (Operating Agreement) was negotiated among EBID, El Paso County Water Improvement District No. 1 (EP No. 1) and the Bureau of Reclamation. The Operating Agreement Settlement ended a contract dispute, first raised in 1979, that was the subject of litigation in federal district court cases filed in Texas and New Mexico. The Operating Agreement describes a written procedure for dividing Project water between the two irrigation districts.[14] New Mexico is suing these settling parties. The issues include: 1) whether the 2008 Operating Agreement settlement violated NEPA and other state and federal water statutes; and, 2) whether Reclamation unlawfully released New Mexico Compact credit water in violation of the Rio Grande Compact.

With respect to the Operating Agreement, EBID believes that it negotiated a fair allocation of the Project surface water, which takes into consideration New Mexico groundwater pumping which captures surface water in the river as the water was being delivered to Texas. EBID's negotiations resulted in the groundwater pumping development in New Mexico from 1951 to 1978 being grandfathered in and deemed not to interfere with the delivery of water to Texas. EBID also believes negotiating the Operating Agreement settlement headed off a legal battle between Texas and New Mexico in the United States Supreme Court (U.S. Supreme Court).[15]

The State of New Mexico believes that New Mexico farmers are not getting a fair share of the Project surface water and, as a result, the farmers are pumping groundwater more heavily. It is concerned the effects of groundwater pumping on both sides of the state line are not being factored correctly in the Operating Agreement. The State believes that the Mesilla Valley aquifer is being depleted from the pumping and the reduced surface water flows in the ditches is lessening historic recharge. According to the State, the Agreement's carryover provision reallocates EBID's water to Texas so that the New Mexico farmers and municipalities receive less water than they should. Finally, New Mexico challenges Reclamation's 2011 release of water to Texas that New Mexico claims as Compact credit water. New Mexico did not authorize the release and asserts that the release has and will adversely affect the accounting of New Mexico's water under Project and Compact operations, thereby undermining its sustainable water future.[16]

The question faced today is how to share a shrinking and erratic source of water in agricultural and municipal settings located across many overlapping jurisdictions. The water of the Rio Grande has been divided through several agreements. The 1906 Convention for Equitable Distribution of the Waters of the Rio Grande (1906 Convention) between the United States and the Mexico defines each country's share of these waters.[17] The Rio Grande Compact allocates the United States' portion among the States of Colorado, New Mexico, and Texas. The Rio Grande Project divides Project water between EBID and EP No. 1 and provides for the delivery of Mexico's portion identified in the 1906 Convention. The reservoirs store both Compact and Project water. The adjudication will resolve claims and describe rights to use water both in and out of the EBID. These agreements and the adjudication provide the information and rules necessary for the State, the districts, the Compact Commissioners and the Bureau of Reclamation to manage available water, to protect the resource, and to administer shortages.

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History of the Region

In 1536 when the Spanish, led by Alvar Núñez Cabeza de Vaca, entered the Juarez, Mexico area, they found Indians irrigating nearly 30,000 acres of maize, beans, and squash. The Spanish first established their settlements in the early 1600s, and the European population and agriculture gradually increased over the next 150 years. In 1827, following Mexican independence from Spain, El Paso was founded on the north bank of the Rio Grande. By the end of the 19th century, 50,000 people lived on both sides of the river south of the New Mexico state line.[18]

When Spanish settlement began in New Mexico in 1598, eighty-one inhabited pueblos and their fields supported as many as 100, 000 people along the Rio Grande.[19] The European settlements grew slowly until entry of the Denver & Rio Grande Railroad in the San Luis Valley of southern Colorado in the late 19th century. By the last decade of

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the 1800's, Colorado settlers had developed thousands of acres of farmland in the San Luis Valley with extensive irrigation works.[20]

As water uses along the Rio Grande increased, shortages also increased, affecting farmers as far south as El Paso and Juarez. In 1888, the U.S. Geological Survey reported that the river went dry before it reached these border cities and, eight years later, the International Boundary Commission reported that the annual river flows at the border had decreased by 200,000 acre-feet. Mexico had long asserted a water right based on earlier settlement and irrigation that predates the uses by European communities in the United States. Responding to reduced water supplies at the border, Mexico pressured the U.S. State Department to take action so that it would receive the water necessary for its senior right. The United States placed an embargo on the development of water supplies on public lands in New Mexico and Colorado, to protect existing deliveries in the south.[21]

Possible storage projects had long been discussed among interested citizens, governments, and businesses in the area. Two projects were given serious consideration, one in each state. In 1893, Dr. Nathan Boyd of New Mexico formed a private enterprise, the Rio Grande Dam & Irrigation Company, to build a dam and reservoir to supply irrigation water to farm lands located in New Mexico's Mesilla Valley. He planned to store spring flood flows and release them throughout the drier summer.[22] The proposed works were not intended to serve Mexico or west Texas, and would have likely made international tensions worse. In 1895, the State Department approved the project and construction began. Shortly thereafter, the State Department changed its position on the project and otherwise stymied the project by bringing lawsuits and blocking construction permits, eventually causing the project to fail. Dr. Boyd's heirs continue to sue the federal government over the failed project and the government's role in that failure into the 21st century.[23]

About the same time, El Paso Valley residents developed a plan for an international dam to serve farmers in west Texas and Mexico. They opposed Dr. Boyd's plan because they feared it would capture the flood flows they needed for their reservoir. The New Mexico farmers resisted the El Paso Valley plan because they believed the proposed reservoir would flood a large area in southern New Mexico. As upstream diversions continued to decrease local water supplies, the pressure to find a resolution to the problems of water allocation between the States and Mexico grew more acute.[24]

Then in 1904, the 12th International Irrigation Congress, made up of engineers, government officials, and the U.S. Reclamation Service (Reclamation Service) personnel, endorsed the Service's plan addressing the problem. The plan envisioned the Reclamation Service constructing the Rio Grande Project, a federal reservoir and distribution system to provide irrigation water to lands in New Mexico and Texas. The plan also contemplated delivering 60,000 acre-feet to Mexico, provided a treaty with that country could be negotiated. That treaty, the 1906 Convention, was ratified in 1906.[25]

Rio Grande Project Facilities

When the Reclamation Service was created in 1902, one of its first priorities was to solve the New Mexico, Texas, and Mexico water problem. In 1905, Congress extended the Reclamation Act to El Paso Valley, thus allowing Texas residents to received Project water; authorized the construction of the Rio Grande Project, including Elephant Butte Dam; and directed that the apportionment of the Project water would be based on

irrigation surveys conducted by the Reclamation Service. Subsequently, the Elephant Butte Water Users' Association and El Paso Valley Water User's Association were formed. Later, the members of these associations reorganized into EBID in 1918 and EP No. 1 in 1917. These organizations were formed to work with the Reclamation Service on the operations and to pay for the costs of the construction, operation, and maintenance of their respective parts of the Project. Each district's payment was based on its irrigated acreage and the water apportionment to it.[26] In 1923, Congress changed the name of the Reclamation Service to the U.S. Bureau of Reclamation.[27]

The Project works include the reservoirs, the dams, the delivery system, and the drains. The geographic area involved runs from Elephant Butte Reservoir in New Mexico, past the state line to just above Fort Quitman in far west Texas. In 1906, the United States submitted Filing No. 8 with the New Mexico Territorial Engineer for an appropriation of 730,000 acre-feet per year and in 1908, submitted a second filing for all unappropriated water in the Rio Grande for the Project. The Bureau of Reclamation began building the Elephant Butte dam in 1908, completing it in 1916. When completed, Elephant Butte Reservoir had a capacity of 2,638,000 acre-feet. As irrigation increased in the New Mexico Mesilla Valley, seepage problems and a rising water table made construction of a drainage system imperative to keep the fields viable. Between 1917 and 1925, 457 miles of drains were constructed to resolve the problem.[28]

In 1938, Reclamation finished the Caballo Reservoir. The reservoir is located twenty-two miles south of Elephant Butte Reservoir and has a capacity of 343,990 acre-feet. Caballo is used to control flood flows, to store water released from the Butte in the winter for hydropower generation, and to store water Elephant Butte Reservoir can no longer accommodate because of silt buildup.[29]

Reclamation also completed American Diversion Dam near El Paso in 1938. This dam is used to divert the last of EP No. 1's project water from the river. Water for Mexico is diverted by the International Dam, which was built in 1918. This dam diverts Rio Grande water into the Acequia Madre in El Paso to be delivered to Mexico as required by the 1906 Convention. The American Dam and the 1918 International Dam are located just outside of the Project and operated by the International Boundary and Water Commission.

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Today, the facilities of the Rio Grande Project include two storage dams, six diversion dams, 141 miles of canals, 462 miles of lateral ditches, 457 miles of drains and a power plant. The power plant was built at the Elephant Butte dam in 1940 and was operated by the Project until it was sold to a private company in 1977. The Project's irrigation system regularized the water delivery that has been vital to the economic development and growth of the farming industry and municipalities within and around the Project.[30]

Water Availability

The amount of water stored in the Elephant Butte Reservoir has varied considerably over time. Wet years prevailed during construction, and by 1915, the Butte had filled sufficiently to begin storage and delivery operations. Reclamation began tracking water measurements within the Project in 1915 and continues today. Using the collected information, it is able to chart historic averages. For a long time, the reservoir levels remained above average. Then in 1936–1937 and again in 1940, they dropped to below average. In December 1940, the Butte was at a record low, but by June of 1941, it had refilled completely.

These swings continued throughout the 1940s and 1970s period, during which water levels rose to historic averages or above only five times. In the 1950s drought, the water supply in the Butte dropped to as low as 10,000 - 20,000 acre-feet. Through strict conservation, the planting of drought-tolerant crops, and the drilling of more than 700 individual wells, the farmers were able to maintain crop production. Full-supply conditions returned and, between 1978 and 2002, the farmers enjoyed full allocations each year. The water table, which dropped in periods of heavy groundwater pumping, returned to normal levels.[31]

The administration of the Project changed after the districts paid off their construction debts to the United States in 1979-1980, and it is now operated as two units.

By 2003, shortage conditions once again caused the Elephant Butte Reservoir to drop below full-supply levels. The Project delivered reduced amounts of surface water to the districts, and the farmers turned again to groundwater pumping to make up the difference. As happened historically, the increased groundwater pumping lowered the water table, but this time when full-supply conditions returned, the water table did not recover. There are different views on why this happened: perhaps the failure to recover was caused by the shortages, groundwater pumping, other mechanisms, or some combination of some or all of them.[32]

Administration

The surface water and the groundwater in the Rio Grande Project have a close geohydrological connection and their use requires careful conjunctive management. The Project surface water administration is a cooperative endeavor among the Bureau of Reclamation, EBID, and EP No. 1. From the time the Reclamation Service made the first deliveries to the farms in 1915 until 1978, the agency administered the stored surface and the drain water throughout the Project as one unit without regard to the state line. It released water from the reservoirs and delivered it to the farm headgates in the states and to the Acequia Madre for Mexico.[33]

The administration of the Project changed after the districts paid off their construction debts to the United States in 1979-1980, and it is now operated as two units. The Bureau of Reclamation retained the ownership and the control of the Elephant Butte and the Caballo dams, the two reservoirs, and the diversion dams. Under the 2008 Operating Agreement settlement, Reclamation notifies each district of its allocation of project supply. Each district informs its membership of the allocation and diverts its share at the diversion dams. The districts then deliver water to the members' farm headgates. The two districts request releases of water from Reclamation. This change gives the districts more control over the management and the distribution of their allocated water.[34]

The New Mexico State Engineer has administrative authority over the groundwater in the lower Rio Grande Basin. This authority arose by operation of state law when the Engineer "declared"[35] the several groundwater basins beneath the lower Rio Grande stream system between 1961 and 1982.[36] In December 2004, the State Engineer created the Lower Rio Grande Water Master District to provide for the "economical and satisfactory apportionment" and administration of groundwater in the lower Rio Grande stream system. The water master district includes the Hot Springs, Las Animas Creek, and Lower Rio Grande administrative groundwater basins. The State Engineer also embarked on a program to have all wells in the district metered except for those that serve only one household or livestock. As of the spring of 2010, about 2,500 wells had been metered.[37]

As a separate but related matter, the Compact Commission administers the Compact waters to ensure that each State

receives its equitable share of the Rio Grande waters. EBID management refers to the district as being "in Compact Texas for purposes of the Rio Grande Compact and surface water, but in geographic New Mexico for groundwater."[38]

Allocation

In 1905, Congress authorized the investigation and the construction of the Rio Grande Project and studies of irrigable lands located within it. Following the studies, the Reclamation Service determined that the appropriate apportionment would consist of sufficient water for 88,000 irrigated acres (later adjusted in 1937 to 90,640 irrigated acres) in southern New Mexico and 67,000 irrigated acres (later adjusted to 69,010 irrigated acres) in western Texas. Based on the ratio of irrigated acres, southern New Mexico would receive 57 percent and western Texas would receive 43 percent of the available Project water. The 1906 Convention allocated 60,000 acre-feet a year of Rio Grande flows to Mexico. This amount can be reduced in times of "extraordinary drought."[39]

The Elephant Butte Reservoir stores both Compact and Project water. The Project water is administered by the districts, and the Bureau of Reclamation and the Compact Commission have authority over the Compact water.[40] EBID is in Compact Texas for purposes of the Rio Grande Compact and surface water but in geographic New Mexico for groundwater.

The 1938 Compact: Eventually however, it became apparent that a water apportioning agreement between Colorado, New Mexico, and Texas was needed for the Rio Grande. The 1920s expansion of agriculture in the Middle Rio Grande and Colorado's San Luis Valley threatened to deprive the Project of the flows necessary to make its deliveries. Between 1895 and 1925, the United States had placed an embargo on the diversion of water from the Rio Grande to federal lands in Colorado and New Mexico to protect the river's water supply. By 1928, the States, through their appointed commissioners, had opened talks with the goal of negotiating a compact to allocate Rio Grande surface water between them. The commissioners first put in place a temporary agreement in 1929 that maintained the *status quo* and thereby avoided U.S. Supreme Court litigation while negotiations for a permanent compact were underway. Then the Great Depression tabled all activity until the end of 1933.[41]

Work on the Compact restarted in 1933 and finished in 1938 when the Compact was ratified. Key provisions include: 1) the creation of a Commission to oversee the operations of the Compact; 2) two gauging stations to monitor deliveries by Colorado for New Mexico and deliveries by New Mexico at Elephant Butte Reservoir for Texas; 3) development of a system of debits and credits to account for variations; and 4) a release for the Project of 790,000 acre-feet for accounting purposes. Believing that the Project operations divided the water for use with the Project, the commissioners did not develop a delivery schedule for the area between the Butte and the Texas state line.[42]

In a year when New Mexico's delivery to the Elephant Butte Reservoir exceeds that amount required by the Compact, the State builds up a credit that can be saved or relinquished to Texas. If Texas accepts that water, New Mexico can store more water in reservoirs upstream of the Butte in future years. This provision means that in dry years New Mexico can more easily meet its obligations to Texas and keep some water flowing to the New Mexico farmers.[43]

The Rio Grande Project: The Rio Grande Compact left Reclamation in charge of the allocation and delivery of "usable water" from the Butte to the districts and Mexico

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through the operations of the Project. Usable Water consists of all water in reservoir storage with the exception of the Rio Grande Compact credit waters belonging to Colorado or New Mexico, and water imported into the Rio Grande basin through the San Juan-Chama Project. The runoff within the Project and the water returned to the river through the drains are also important to the Project's supply.[44]

Until 1951, the Bureau of Reclamation delivered an equal amount of water per acre to the farmers, as it was ordered. If it were a water-short year, Reclamation would announce the water allotment per acre for that year. As the 1951–1975 drought cycle progressed, the surface water supply diminished and Reclamation needed to develop a method of determining the deliveries to the farmers and Mexico that accommodated the shortage conditions. A part of the analysis included determining how much of the water amounted to a full delivery to the lands in the United States. In the early 1950s, Reclamation analyzed data from the period 1946 to 1950, and determined that a full allocation for each acre was 3.0412 acre-feet. The allocation accounted for the system's losses and accretions.[45]

In 1979–1980, the districts paid off their construction debt to the United States and took over the operation and the maintenance of the irrigation and the drainage system, giving them more control over the administration of the surface water. At that time, each district entered into a contract with Reclamation. These contracts called for Reclamation to develop an allocation and operating plan that was later the subject of the 2008 Operating Agreement. The years of full supply and a lawsuit with the City of El Paso (over the New Mexico State Engineer's denial of 266 applications to drill wells in the Mesilla Bolson for water use in Texas) delayed action on the allocation agreement.[46]

From the mid-1980s until 2008, Reclamation operated the Project using allocation procedures that had not been approved by the districts. It allocated water using linear regression curves for the historic delivery (D1) and historic diversion (D2) of Project water. These curves are based on an analysis of the release, the delivery ratios, and efficiencies measured during the 1951–1978 period. When Reclamation proposed using the D1 and D2 curves as the basis of an operating agreement, the districts did not agree.[47]

During the full-supply years, Reclamation allocated 495,000 acre-feet to EBID, and 377,000 acre-feet to EP No. 1, thus maintaining the historic 57 percent–43 percent split. When Reclamation made these releases, the combination of the water released, return flows, tributary water, and drain water resulted in a total delivery throughout the Project, on average, of about 930,000 acre-feet.[48] If a district did not call for all its allotted water in a particular year, the remainder would be reclassified into the general pool in the reservoirs and reallocated between the districts the following year. This regime remained in place until 2008.[49]

The pressure to find a solution to the operating procedures mounted when in 1997 the United States filed a quiet title action in the U.S. District Court in New Mexico to determine the federal rights in the Project. EP No. 1 filed a counterclaim alleging an inequitable allocation of Project water since Reclamation failed to take into consideration the New Mexico groundwater pumping.[50] The 1997 case was sent to mediation, and the parties attempted to negotiate an operating agreement. The mediation failed. The U.S. District Court dismissed the United States' quiet title action and EP No. 1's counterclaim in 2001, deferring to the

state stream adjudication to determine the rights of the United States. However, it retained jurisdiction in the case if any of the parties believe their rights have not been adequately addressed in the adjudication.[51]

The 2008 Operating Agreement: When water-short conditions reappeared in 2003, the districts and Reclamation intensified their efforts to reach an agreement for managing the Project. For the first time, Reclamation had to administer water during a drought in a two-unit system. Adding to the problems, the operations data showed a pronounced deviation from the historic D2 curve. Reclamation tried different approaches to an equitable solution, but in 2007, EBID filed a lawsuit in federal district court in New Mexico, and shortly thereafter, EP No. 1 filed a lawsuit in a federal district court in Texas concerning the districts' objections to procedures that Reclamation had tried to implement.[52] The Texas rules of procedure mandated immediate mediation. EBID was aware that Texas had hired a well-known water right legal specialist to prepare a petition to the U.S. Supreme Court alleging a breach of the Rio Grande Compact and requesting an equitable apportionment of all waters between Elephant Butte Reservoir and Ft. Quitman, Texas. EBID came to the table because these cases tend to be resolved in favor of the downstream state.[53] The districts and Reclamation crafted and signed an operating agreement on February 14, 2008, which will remain in effect until December 31, 2050.[54]

The 2008 Operating Agreement describes how the Bureau of Reclamation will handle the accounting of usable water in the Reservoirs, as well as the releases and the distribution to the districts and to Mexico. The agreement bases the allocation to EP No. 1 and Mexico on the historic river performance reflected in the D1 and the D2 curves. EBID's water allocation is based on a new "D3" method, in which the district is allocated whatever deliverable water is left after Mexico's and EP No. 1's allocations are made. The D3 allocation method is intended to protect EP No. 1 from the effects of New Mexico groundwater pumping. EBID supported this allocation method to dissuade EP No. 1 from arguing for a groundwater depletions allowance based on groundwater pumping as of 1938, the date of the Compact. Instead, EBID negotiated the pumping baseline at the 1951–1978 shortage condition that grandfathered in thousands of acre-feet of New Mexico groundwater pumping. The Operating Agreement provides that any pumping depletions that exceed the 19511978 levels are to be offset by reducing EBID's Project surface water allocation.[55]

The Agreement also includes for the first time, carryover accounts for EBID and EP No. 1. Each district may carryover 60 percent of its full-supply allocation from one year to the next. Any carryover in excess of that amount is credited to the other district. The Agreement also provides for a detailed Operations Manual, which was completed and released in 2010. Non-operational benefits to the districts include the dismissal of lawsuits they had filed, a reduced threat of Texas filing the U.S. Supreme Court case, an internal review of the operations of the El Paso Field Office, codification of allocation and operational procedures, and a provision that allows procedures to be changed through a consensus process on an annual basis.[56] Most recently, changes have been made regarding calculations of river efficiency due to drought conditions and a credit to EBID for the City of El Paso Canutillo well field pumping impacts on EBID.[57]

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Adjudication

In 1980, the City of El Paso's filed applications with the New Mexico State Engineer to develop wells in the Mesilla Bolson groundwater basin. EBID protested the applications on the basis that the proposed uses would threaten senior water rights in New Mexico. In 1986, EBID filed a complaint to initiate a water rights adjudication in the New Mexico Third Judicial District Court in Doña Ana County. The district took these actions to protect New Mexico water rights by formally establishing their amounts and priorities, thereby providing a basis for showing the local demand upon the area's groundwater resources and for informed decision-making in the new-use application process and to stop the State Engineer from issuing any more permits until the adjudication was completed.[59]

Between 1986 and 1993, the adjudication case shifted between state and federal courts as the parties litigated issues about the proper court; whether the State Engineer was a proper party; and, whether under NMSA 1978 § 72-4-17 the stretch of the Rio Grande between the Elephant Butte Dam and the state line constituted a stream system for purposes of state law and the McCarran Amendment. The McCarran Amendment is a federal act that provides a waiver of United States sovereign immunity so that it can be joined in "adjudication of rights to the use of water of a stream system or other source" in state court.[60] The United States resisted being joined in the Lower Rio Grande adjudication, arguing that the stretch of the river involved in the case did not constitute a "stream system" for McCarran purposes. Without the United States, the adjudication was not feasible because of its interests in the Project. The New Mexico Court of Appeals held that the case could be heard in Doña Ana County, the State Engineer could be a party, and because of the way water is allocated between States in the 1938 Rio Grande Compact, the stretch of the Rio Grande from Elephant Butte to the New Mexico-Texas state line was properly considered a stream system for the purposes of state and federal law.[61]

Subfile Determination: In December of 1997, the State re-filed the adjudication suit in the state court in Las Cruces.[62] Since that time, the work of the court and parties has been divided into two general sections: 1) the individual water claims known as subfiles and 2) the stream system issues. Subfile orders resolve issues between the State and the water right claimant but are still subject to challenge from other water right holders in a subsequent part of the case known as *inter se*.[63]

As of October 1, 2012, the State has identified slightly fewer than 14,000 subfiles and over 18,000 claimants. The Office of the State Engineer (OSE) is responsible for the technical information about the claims and publishing it in a hydrographic survey.[64] The State's attorneys attached to the OSE join the claimants to the case, work the subfiles by preparing and sending out offers of judgment, informally negotiating with claimants who object to the offers, and, if necessary, participating in formal mediations and trials. Very few of the subfiles progress to mediation or trial. As of November 2012, the State has made legal service upon approximately half of the claimants in the case and around 5,500 subfiles have been fully adjudicated.[65]

Stream System Issues: In October 2007, the adjudication court entered an order describing the procedures for determining stream system issues and requiring the State to join all remaining claimants so that they would be bound by any future decisions.[66] Stream system issues affect all or a large

number of parties in the adjudication. Joinder was accomplished in a year and the parties proceeded to identify four stream system issues and one expedited *inter se* issue. The court and the parties have pursued these issues while the State continues, on a limited basis and as staffing permits, to address the adjudication of subfiles.[67]

The first stream system issue (commonly referred to as "issue 101") involved defining the consumptive irrigation requirements (CIR) and farm delivery requirements (FDR) for all crops. CIR is "the quantity of irrigation water exclusive of precipitation, stored soil moisture, or ground water that is required consumptively for crop production." [68] FDR is "the quantity of water, exclusive of effective rainfall, that is delivered to the farm headgate or is diverted from a source of water that originates on the farm itself, such as a well or spring, to satisfy the consumptive irrigation requirements of crops grown on a farm in one calendar year."[69] Determination of these factors occurs in all water right adjudications and is necessary to settle one of the statutory elements of an irrigation water right: the amount of water which can be applied to each irrigated acre. These requirements are usually based an averaged amount of water required to grow the types of crops, soil conditions, and elevation found in the area.[70]

This issue arose out of a settlement between the New Mexico Pecan Growers (NMPG) and numerous other parties regarding the irrigation requirements of mature pecan orchards and the conditions applying to the requirements. In 2008, the adjudication court entered an order approving the settlement. In 2009, the court entered an amended order that expanded the issue to include irrigation requirements for all crops in the lower Rio Grande basin. The main parties participating in consideration of this stream system issue included the state, EBID, the New Mexico Pecan Growers, and the Southern Rio Grande Diversified Crop Farmers Association who represent farmers growing row crops such as chiles and onions.[71]

Pecans are an important crop in the lower Rio Grande area and they require more water than most other crops to thrive. In 2006 acting under the general Active Water Resource Management Regulations (AWRM), the State Engineer issued proposed Lower Rio Grande AWRM regulations, which recommended a FDR of 4.0 acre-feet per acre. The pecan growers argued for a higher FDR, based on New Mexico State University studies showing that pecans require 4.5 to 7 acre-feet annually, depending on soil type. The Diversified Crop Growers wanted equal treatment, while the State recommended determining one FDR for pecans and a second for all other crops.[72]

The challenge was to find an equitable and crop-sufficient solution to the amount of water per acre that would not run afoul of the Rio Grande Compact and the Rio Grande Project operations. In June of 2011, the main parties advised the adjudication court that a settlement had been reached. On August 22, 2011, the adjudication court entered its Final Judgment setting forth FDR and CIR amounts for all crops in the New Mexico Lower Rio Grande Basin as well as the CIR amounts for irrigation rights transfers to irrigation or non-irrigation purposes. The Judgment also provided time for the parties to "prove up" an entitlement to an additional acre-foot for the FDR, based on historic beneficial use. The State's evaluation of the evidence submitted by claimants is under way.[73] Since the judgment was not appealed, the water right element concerning the amount of water to be applied to each irrigated acre has been established.[74]

The second stream system issue (commonly referred to as "issue 102") addressed EBID's claim to underground waters for 90,640

The challenge was to find an equitable and crop-sufficient solution to the amount of water per acre that would not run afoul of the Rio Grande Compact and the Rio Grande Project operations.

acres of its members' lands. Following successful negotiations between the State and EBID, the court entered a Stipulated Subfile Order on October 4, 2010, adjudicating EBID's groundwater rights associated with five deep wells drilled in 1973. EBID's total entitlement from the five wells is capped at 9,500 acre-feet. This water is intended to supplement members' surface rights in times of shortage.[75]

The third stream system issue (commonly referred to as "issue 103") is to determine the priority, transferability, and beneficial use elements of domestic well water rights. The court has deferred the scheduling in this matter.[76]

The fourth stream system issue (commonly referred to as "issue 104") is to determine the rights and interest of the United States in the Rio Grande Project. The United States' claims include rights: 1) to enough water to meet the needs of the Project; 2) to divert, store, and impound surface waters of the Rio Grande in an amount of 2,638,860 acre-feet for Elephant Butte Reservoir and 242,990 acre-feet for Caballo Reservoir; 3) to continuously fill and refill the reservoirs; 4) to release sufficient water from storage to meet the irrigation demands of the Project and Mexico; and 5) to the delivery of water at certain points within the Project system including return flows, surface water, or groundwater.[77]

For case management purposes, the adjudication court has segmented the United States' claim. When one segment is completed, the court and the parties decide what should be addressed next. In the first sub-issue, the United States claimed that as a matter of law, it is entitled to water from both surface and related groundwater for the Project. In 2012, the adjudication court denied that claim, holding that the United States has only established a surface right under New Mexico state law and stating that the issue of the status and quantity of return flows in the Project should be determined administratively.[78] Had the United States' claim prevailed, the federal government could have exercised more control over the water and conjunctive management of the water in the lower Rio Grande, to the detriment of the authority of the State Engineer.[79] In October of 2012, the adjudication court set the schedule for litigating the issues of amounts of water and priority dates for the United States' Project right.[80]

The Boyd Estate: On February 1, 2011, the adjudication court initiated an expedited *inter se* proceeding on the claims of the Estate of Nathan Boyd. The Boyd Estate made the following claims:

1. A right to divert 506,720 acre-feet of biannual recharge, with a priority date of 1894. This right was intended to serve farmers and other water users in the Rincon, the Hatch, the Mesilla, and El Paso Valley, and to provide for hydroelectricity generation and recreation.
2. Rights to the Elephant Butte and the Caballo Dams, which the Boyd Estate claims derived from the Secretary of the Interior's 1895 approval of its proposed project.
3. A right to deliver irrigation water to farmers with pre-existing water rights on the Doña Ana, the Mesilla, and the Las Cruces Community Ditches through the Fort Seldon/ Leasburg canal and diversion.
4. A right to deliver irrigation water to lands that were not yet served through the Fort Seldon /Leasburg canal and diversion, with a priority of 1987.
5. A right to deliver irrigation water to the farmers in the Rincon and the Hatch valleys in the Doña Ana and the Sierra counties through the West Side or the Percha diversion and canal, with a priority date of 1894.
6. A right to deliver irrigation water to the farmers in the Lower Mesilla Valley via the Santo Thomas Diversion, or the West Side Canal.[81]

In February 2012, the adjudication court entered an order granting several motions to dismiss these claims holding that it is bound

by prior decisions in other courts on these matters. Thus, "the Boyd Estate does not state a cognizable claim to water rights in this adjudication."[82] In April 2012, the Nathan Boyd Estate filed its notice of appeal with the New Mexico Court of Appeals.[83] As of November 9, 2012, no briefing or oral arguments have been scheduled.[84] Dr. Nathan Boyd's family has pursued its claims through many courts since the late 1890s. If the Boyd Estate were to win on those claims after many years of litigation, the ownership, operations, and management of the Project would be profoundly affected, and significant monetary damages may be owed.

Adjudication Progress: Significant progress has and is being made in the water rights adjudication. For example, in November of 2009, Reclamation and the State agreed to adjudicate the amount of acreage for individual claims according to EBID's assessment acreage records. This agreement resolved large numbers of objections by irrigators to the State's offers of judgment that proposed using actual irrigated acreage. The water rights of large users are being determined. Subfile orders have been entered for the majority of the City of Las Cruces' water rights and the remaining rights are being negotiated. Subfile orders have been entered for the majority of NMSU's water rights and the remaining rights are being negotiated. *Inter se* challenges from other water right holders, if any, remain to be heard in both instances. The City of El Paso's irrigation water rights in New Mexico are being negotiated.[85] Successful negotiations result in locally crafted solutions to issues that could have taken years to litigate and give the local players much more control over the resulting solutions.

Operating Agreements and Disagreements

Shortly after the announcement of the Operation Agreement in 2008, the State of New Mexico began to have concerns that revolved around EBID's Project allocation in full-supply years and related groundwater depletions. Under the Agreement, EBID's Project surface water allotment is calculated from the deliverable water remaining after the allotments for EP No. 1 and Mexico are identified. This method is intended to account for the groundwater depletions to the system caused by pumping in New Mexico. According to the State, the EBID farmers also unfairly absorb the losses from Texas pumping.[86] The district responded that the negotiated solution gave it a depletions baseline derived from the 1951–1978 condition rather than the 1938 condition and avoided U.S. Supreme Court litigation. EBID noted that, in addition to Texas depletions, the district is also carrying depletions by New Mexico pumpers located outside the district.[87]

Shortly after the announcement of the Operation Agreement in 2008, the State of New Mexico began to have concerns that revolved around EBID's Project allocation in full-supply years and related groundwater depletions.

Then, New Mexico and Texas could not reach an agreement about evaporation losses in Elephant Butte Reservoir that affected the calculation of a relinquishment of New Mexico's Compact credit water. Over New Mexico's objections, Reclamation made the evaporation calculation and subsequently released about 33,000 acre-feet of the Compact credit water to the Project.[88]

On August 8, 2011, the New Mexico Attorney General sued the Department of Interior and the U.S. Bureau of Reclamation in the U.S. District Court of New Mexico, in *New Mexico v. United States,* seeking to have the 2008 Operating Agreement invalidated and a permanent injunction issued preventing its use.[89] The districts have been joined and the City of Las Cruces has intervened on the side of the State of New Mexico to request the court to compel Reclamation to conduct the necessary studies to ensure that the area has sustainable water sources for the long term.[90] The federal court denied, without prejudice, the Middle

Rio Grande Conservancy District's (Conservancy) motion to intervene on the credit water issue. The Conservancy filed a motion to reconsider and awaits the court's decision.[91]

New Mexico alleges that the 2008 Operating Agreement constitutes a major change to the operations of the Project resulting in a reallocation of more than 150,000 acre-feet of water each year from New Mexico to Texas and Mexico, in violation of the Rio Grande Compact, the Reclamation Act, and the state water law; that Reclamation did not have the authority to unilaterally release or reduce the State's Compact credit water; and Reclamation did not fully address the environmental impacts during the NEPA process.

EBID has responded that it employs a strategy of using surface water when it is available and reserving groundwater for times when surface water is not available. Since 2008, the district has received about 100,000 acre-feet from EP No. 1's excess carryover water.

The State asserts that Reclamation now reallocates 170,000 acre-feet of EBID surface water supplies to EP No. 1 in full-supply years and that EBID's percentage of Project water has changed from the historic 57 percent to about 38 percent. It claims that EBID members now receive one third less water than they received historically. The State calculates the value of that reallocated water to be in the millions to billions of dollars.[92]

EBID responds that historically, Reclamation's allocation methods did not take into account groundwater pumping, and the 2008 Operating Agreement's allocation methods do. The district asserts that in spite of the State's claims of monetary losses, agricultural economic production has increased since the implementation of the Agreement. In addition, it claims that the apparent recent disparity in allotments is the result of EP No. 1 calling for its carryover water from the previous year. The State, according to EBID, is counting the same water multiple times. In addition, EP No. 1's allotment includes return flows from the City of El Paso treatment plants. Carryover water is allowed for the first time under the Agreement. In the past, that water would be put back into the general pool and reallocated to both districts the following year. This new operational rule is important to EP No. 1 because the district cannot turn to groundwater sources as EBID does in dry times. The carryover water in Elephant Butte Reservoir answers that need.[93]

The State claims that since EBID receives less surface water under the Operating Agreement, its farmers will increase their groundwater pumping to get 4.5 acre-feet per acre to their crops even in a full-supply year. Since less water is running through the ditches, less recharge is entering the aquifer. Under these conditions, the aquifer is taking a double hit: more water pumped out and less water percolates in. During a shortage condition, the effects are magnified. The State believes that EBID's current low allotments are produced by the Operating Agreement and exacerbated by the shortage condition. [94]

EBID has responded that it employs a strategy of using surface water when it is available and reserving groundwater for times when surface water is not available. Since 2008, the district has received about 100,000 acre-feet from EP No. 1's excess carryover water. This carryover has eased New Mexico pumping in the district. EBID believes that its current low allotments are a result primarily of the drought/shortage conditions.[95] EBID believes that the Operating Agreement benefits both districts. It gives the water management flexibility EBID needs and provides EP No. 1 with an incentive to conserve water that it needs. The district reports that the Agreement is a "living document," and it has and will be adjusted annually as problems arise. [96]

New Mexico alleges that Reclamation has reallocated the State's Compact credit water and that only the Rio Grande Compact Commission has the authority to take such an action. As a result, Reclamation's decision to release New Mexico's Compact credit water deprives the Middle Rio Grande users of the right to store water upstream, pursuant to storage limitations in the Compact.[97] Formal relinquishment of the water to Texas would have preserved that right. As a result of the release of the credit water, the Compact Commission and its advisors are unable to agree to the 2011 credit water accounting.[98]

New Mexico also alleges that the Bureau of Reclamation did not fully address the environmental impacts in the NEPA process and that an EIS analysis that looks at a five year horizon is inadequate in this case.[99]

In November 2013, the U.S. District Court heard argument on motions to dismiss all or part of the case before it. No decisions have been issued as yet. One of the motions requested a mediator, but the State has withdrawn that motion. All the parties were awaiting a decision on what is left to litigate when Texas elevated the controversy over the allocations of Rio Grande water between Texas and New Mexico to the U.S. Supreme Court. The Court has taken no action on Texas's motion to file its Complaint.

Conclusion

The debate in the case is about the shape of New Mexico's water future in the lower Rio Grande, who will manage the water, and what is the best way to do it. The issues around how to share water, a limited resource, are made more critical in the face of climate change and/or prolonged drought and growing populations.[100] The Compact allocates surface water between States but is silent on groundwater. The 2008 Operating Agreement is not acceptable to the State of New Mexico. It is, however, acceptable to Texas because it addresses the issue of groundwater.

Other questions have been asked about how New Mexico, the districts, and the Bureau of Reclamation will conjunctively manage the surface and groundwater over which they have authority; how will their decisions affect other residents in the three-state area and Mexico; and, do these parties with a long history of litigation need to continue along that course. The Project's irrigation season lasted only a few weeks this year, when in full-supply years it lasts for the full irrigation season. Farmers below the Butte have been increasing their groundwater pumping at a rapid rate. The aquifer has dropped since 2003 and did not show the expected rates of recovery in the following full-supply years.

Under these drought and shortage conditions, can the aquifer and the rest of the Rio Grande stream system be maintained at levels necessary to support agriculture, municipal, and other uses that make up the economy and lifestyles of south central New Mexico? How long will those uses be sustainable and what will happen in times of greater shortage? These kinds of complex questions are best resolved in negotiation rather than in litigation, and the opportunity is before us.[101]

By Darcy S. Bushnell, Esq. (2012)

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