

# Nueces River Project

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Bureau of Reclamation  
2009

Reformatted, reedited, reprinted by  
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2013

## Table of Contents

Table of Contents .....	i
Nueces River Project.....	1
Project Location .....	1
Historic Setting .....	2
Investigations .....	6
Project Authorization .....	10
Construction History.....	12
Preparatory Activities .....	12
Choke Canyon Dam and Reservoir.....	15
Post-Construction History.....	19
Uses of Project Water .....	20
Conclusion .....	21
Bibliography .....	23
Manuscript Collections .....	23
Reports and Government Documents .....	23
Other Sources.....	25

## **Nueces River Project**

In the post-World War II West, in response to changing public needs, the Bureau of Reclamation built several municipal and industrial (M&I) projects. These projects did not have an irrigation component—previously a hallmark of Reclamation projects—but rather provided water to cities and municipalities facing tremendous postwar growth. The Nueces River Project was a project designed to cater to pressing water needs in southern Texas. The principal feature of the project is Choke Canyon Dam, a rolled earthfill structure about three miles long located on the Frio River near Three Rivers, Texas. The dam's concrete spillway is on the left abutment of the dam and river outlet works. Choke Canyon Dam's purpose is to release water downstream via the Frio and Nueces rivers, where the water is stored in Lake Corpus Christi and used for M&I purposes in the Texas Coastal Bend.

### **Project Location**

The Nueces River Project is located on the Coastal Bend of South Texas midway between the cities of San Antonio and Corpus Christi. The Nueces River flows through three distinct geographic provinces. The river originates in the Texas Hill Country in Real County west of San Antonio, flows south and east through Brush Country and the Coastal Bend region before reaching its mouth in Corpus Christi Bay on the Gulf of Mexico. The geographic provinces roughly correspond to the region's three rich aquifers—Edwards Aquifer, Carrizo-Wilcox Aquifer, and Gulf Coast Aquifer, respectively. In the Hill Country, the soil is shallow and rangelands predominate; the Brush Country contains subtropical dry-land vegetation; the Coastal Bend is flat-lying marsh, salt, and grasslands.

Choke Canyon Dam is located on the Frio River about four miles west of the town of Three Rivers, named for the confluence of the Frio, Nueces, and Atascosa rivers. Half of the reservoir is situated in Live Oak County, the other half in McMullen County. The land in this area—primarily ranch and farm land—receives approximately twenty-four inches of rainfall annually. Summers are long and hot, and winters are mild.<sup>1</sup>

### **Historic Setting**

The human occupation of south-central Texas dates back at least 11,200 years. Relatively little is known of the Paleo-Indians, the earliest inhabitants, except that they hunted now extinct large mammals using short flint-like spears. Historians know more about the native peoples in Texas at the time of European contact in the sixteenth century. In fact, at the site of the Choke Canyon Dam and Reservoir is rich in archeological evidence from mostly the late prehistoric and historic periods.

The arrival of Europeans in Texas was the beginning of the end for native peoples' traditional lifestyle, but the shift in power was gradual. The Spanish established settlements and missions, and native peoples began to take on Hispanic cultural and linguistic traits. By the end of the eighteenth century the small, independent Coahuiltecan tribes inhabiting south Texas had been displaced by aggressive Plains tribes or assimilated into the Mexican population.<sup>2</sup>

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<sup>1</sup> U.S. Department of Agriculture, Natural Resource Conservation Service in cooperation with Texas Agricultural Experimental Station, *Soil Survey of Live Oak County, Texas* (no date), 1; "Live Oak County," The Texas Handbook On-line, <http://www.tshaonline.org/handbook/online.html>.

<sup>2</sup> Texas Historical Commission, and Texas Water Development Board, *Interim Report on the Archeological and Historical Resources of the Proposed Choke Canyon Reservoir, Live Oak and McMullen Counties, Texas*, by William M. Sorrow, Nancy O'Malley, and Daniel E. Fox, September 1974, in Record Group 115, Records of the Bureau of Reclamation, "Cultural Resources Report," Accession 8NS-115-95-122, Box 69, National Archives and Records Administration, Denver, Colorado; see also Thomas R. Hester, "Texas and Northeastern Mexico: An Overview," in *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands West*, edited by David Hurst Thomas (Washington, D.C.: Smithsonian Institution Press, 1989), 191-196.

Against the backdrop of European expansion and displacement of indigenous peoples is the history of water development in south Texas. The rivers of the Southwest flow through some of the most barren and water-depleted deserts and sustain life for the people who lived close to their banks. Prehistoric peoples probably began to practice agriculture sometime after 700 AD, particularly in the east Texas, Trans-Pecos, and Rio Grande areas. When in 1536 the Spaniard Alvar Núñez Cabeza de Vaca, a shipwreck victim wandering inland in search of a way to Mexico, led an expedition into the interior of the southwest, he found Indians irrigating and cultivating almost 30,000 acres of maize, beans and calabashes near the present-day site of Juarez, Mexico.<sup>3</sup>

For the Spanish, who found the geography of the Southwest ideal for cattle ranching, irrigated agriculture existed in pockets where there was a reliable water supply. Christian Pueblo Indians farmed in the towns of Ysleta and Socorro, New Mexico. The Spanish irrigated where they established missions in Texas such as Mission San Francisco de la Espada, Mission San José y San Miguel de Aguayo, Mission San Juan Capistrano, and Mission Santa Cruz de San Sabá. The construction of an aqueduct at the Mission San Francisco de la Espada in 1745 marked the first Spanish irrigation in the southwest. When Father Francisco Xavier Ortiz from Querétaro, Mexico, visited the Spanish mission at la Espada he noted the melons, pumpkins, corn, and cotton growing on irrigated farms. At the dawn of the seventeenth century, a mission established by fathers at El Paso del Norte on the Rio Grande began schooling the Indians in more

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<sup>3</sup> Texas Water Development Board, *Inventories of Irrigation in Texas, 1958, 1964, 1969, and 1974: based on inventories made cooperatively by the Soil Conservation Service, U.S. Department of Agriculture, the Texas State Soil and Water Conservation Board, and the Texas Water Development Board*, Report 196, October 1975, 1-2; "The Indians of Texas," <http://www.lsjunction.com/places/indians.htm> (accessed April 16, 2008).

advanced methods of growing crops, aided by water provided by the Acequia Madre, or Main Canal.<sup>4</sup>

Mexican and, later, Anglo settlers found suitable places to irrigate in south Texas in many of these same areas. Throughout the nineteenth century agriculture was an important industry in Texas. After Mexican independence in 1821, Mexican settlers dug modest canal and diversion structures and built a loose boulder dam near the site of modern-day El Paso. Farmers also irrigated extensively in the middle Rio Grande basin, the Pecos River basin, and the San Antonio area. Agriculture intensified with the development of water systems and the arrival of the railroad. For instance, in the 1880s James B. Newcomb, a local resident, reported 50,000 acres of irrigated land in Bexar County valued at up to \$300 per acre.<sup>5</sup>

In the Nueces River area, however, settlement and water development came slowly. The character of the land was the main reason for this. Vast and uninhabited, the large area within the triangle drawn between San Antonio, Corpus Christi, and Laredo was, unlike the coastal region, dry and barren. As the United States officer and surveyor of Texas William H. Emory wrote:

...west of the Nueces [River], and between that river and the Rio Bravo [Rio Grande], the want of rain makes agriculture a very uncertain business, and as we approach the last named river, this aridity becomes more marked, and the vegetation assumes a spinose stunted character indeed, so marked is the change, that when we get within a few miles of the river the vegetation is a complete chapparal.<sup>6</sup>

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<sup>4</sup> "San Francisco de la Espada Mission," *The Handbook of Texas Online*, <http://www.tshaonline.org/handbook/online>.

<sup>5</sup> *Inventories of Irrigation in Texas*, 2.

<sup>6</sup> The Lower Rio Grande Biological Profile, [http://www.fermatainc.com/nat\\_riogrande.html](http://www.fermatainc.com/nat_riogrande.html) (accessed Apr. 16, 2008). Quote from William H. Emory, *Report on the United States and Mexican Boundary Survey Made under the Direction of the Secretary of Interior*, 3 volumes (Austin: Texas State Historical Association, 1987 [original 1857]), 56.

By the time of the Mexican Revolution, the Spanish state of Coahuila had established Texas colonies on the coast, along the Colorado River, and near Nacogdoches. In the 1820s the new Mexican government encouraged settlement of south Texas by granting empresario contracts to qualified individuals who could bring 100 families to area within six years. Among the first Europeans to lay down roots in south-central Texas were John McMullen and James McGloin who received a large grant that included the all or part of present Atascosa, Bee, Frio, LaSalle, Live Oak, McMullen, Bexar, Medina, San Patricio, and Wilson counties. McMullen and McGloin attempted to recruit several hundred Irish settlers to migrate to and settle in Texas. In the end, fewer than 200 Irish settlers came, and even those who received land grant titles in the valleys of the Nueces, Frio and Atascosa rivers declined to occupy their grants. The soil was too poor, the climate too inhospitable, and the threat of Indian attack too severe. Instead, many decided to settle in San Patricio or Corpus Christi.<sup>7</sup>

Not until the 1850s did a handful of individuals and families begin to settle on the Nueces and Frio rivers, and their numbers rose slowly through the nineteenth century. At first, the settlers lived for protection against marauding bands of Comanche Indians. Tilden and Oakville, located near the project area, were two of the first frontier towns in McMullen and Live Oak counties. Settlers hunted, raised cattle, and farmed on small subsistence plots. The Texas cattle industry had its beginnings in the Brush Country where settlers built herds from wild cattle in the area. During the Civil War the cattle industry boomed in response to the need for meat for soldiers. After the war, ranching became the dominant industry in southern Texas. Livestock interests declined in the late

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<sup>7</sup> Cultural Resources Institute at Texas Tech University, Center for Archaeological Research at University of Texas at San Antonio, *Historic Resources of the Choke Canyon Reservoir Area in McMullen and Live Oak Counties, Texas*, by Dianna Everett, Choke Canyon Series, Volume 2, 1981, 5-8.

nineteenth century for a number of reasons, but ranches—particularly large ranches, some supported by foreign investments—remained important features of the Texas economy into the twentieth century.<sup>8</sup>

In the first three decades of the twentieth century, the two inland counties experienced a boom. The number of farms regularly increased, growing from 278 in 1900 to 487 in 1909 and 572 in 1920; by 1930 the county had more than 1,140 farms, many of them growing cotton. Oil and gas developments, many in the vicinity of the Frio River, also contributed to growth in the county. The first gas well was on the J. T. Brown Ranch, and the first oil well was opened on the J. T. Calliham Ranch. In the 1920s an oil and gas field expanded in the vicinity of the Calliham Ranch. In fact, the town of Calliham was a product of the oil and gas boom. Because of the economic growth, the county population grew exponentially, from 2,268 in 1900 to 8,956 in 1930.<sup>9</sup>

The boom ended with the Great Depression, and thereafter the population either flattened or slowly declined. At the time of construction of Choke Canyon Dam, the population of the inland county again rose, partly because of the recreation attraction of the lake, gas and oil production, and uranium and lignite mines.<sup>10</sup>

## **Investigations**

In the 1930s the United States began to consider construction of municipal and industrial (M&I) water projects as an important aspect of national water policy. Postwar urban growth in West had a hand in the shift as municipalities and cities clamored for better infrastructure and a larger share of the region's finite water resources. This new

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<sup>8</sup> "Late Nineteenth Century Texas," *The Handbook of Texas Online*; U.S. Department of the Interior, Bureau of Reclamation, "Nueces River Project, Texas," <http://www.usbr.gov/dataweb/html/nueces.html>; *Historic Resources of the Choke Canyon Reservoir Area in McMullen and Live Oak Counties, Texas*, 8-17.

<sup>9</sup> *Historic Resources of the Choke Canyon Reservoir Area in McMullen and Live Oak Counties, Texas*, 22; "Live Oak County," *The Handbook of Texas Online*.

<sup>10</sup> "Live Oak County," *The Handbook of Texas Online*.

effort to provide domestic water supplies entailed a major transition in Reclamation policy from primarily constructing irrigation projects to developing western water resources for multiple use—irrigation, flood control, and municipal water. As Commissioner Floyd Dominy stated before the House Irrigation and Reclamation Subcommittee in February 1959, Reclamation “would construct many of its present reservoirs on a different basis making maximum use of reservoir sites for multiple-purpose development.”<sup>11</sup>

In Texas, as in other western states, population growth put strains on the state’s water supply. In the twenty years since 1940 the state’s population ballooned from 6.4 to 9.6 million, and that number would increase with projected urban and industrial development.<sup>12</sup> Moreover, the Coastal Bend region faced severe droughts in the postwar years, and people believed that Lake Corpus Christi, which formed after completion of Wesley E. Seale Dam in 1958 and supplied the water to cities along the Texas Coastal bend, began silting up, placing greater strains on existing water supplies attempting to keep up with population increases.

In 1946 the Bureau of Reclamation released its first report on the development of the Nueces River basin and proposed six projects for irrigation development. The report considered power generation possibilities but determined that these were not feasible. In January 1951 Reclamation’s Project Planning Report again recommended construction of the irrigation projects, including the Lower Nueces River Project, to provide “an assured

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<sup>11</sup> House Committee on Interior and Insular Affairs, *Cheney Division, Wichita Project, Kansas: Hearing before the Subcommittee on Irrigation and Reclamation*, 86<sup>th</sup> Cong., 2<sup>nd</sup> sess. (June 3, 1960), 23.

<sup>12</sup> U.S. Department of the Interior, Bureau of Reclamation, *Plan of Development for the Nueces River Project, Texas*, February 1967, III-2, in Record Group 115, Records of the Bureau of Reclamation, “Project Reports, 1910-1955,” Accession 8NS-115-95-076, Box 40, National Archives and Records Administration, Denver, Colorado.

and ample water supply to the Corpus Christi Bay area, Texas, through construction of a dam and reservoir at the Oakville site [southeast of Three Rivers] on the Nueces River, and ... incidental flood control, recreation, and fishery benefits.” The report mentioned the possibility of producing hydroelectric but did not specifically mention power facilities at the proposed dam.<sup>13</sup>

For almost ten years federal, state, and local agencies proposed multiple plans to deal with area water shortages. In 1958 the Nueces River Conservation and Reclamation District adopted a “master plan” for the Nueces River basin, which called for an enlargement of Lake Corpus Christi and construction of the Whitsett Reservoir on the Atascosa River. In addition, the newly organized Texas Water Development Board released its state water plan in 1966.<sup>14</sup> Finally, in February 1967 Reclamation released the plan of development on the Nueces River Project, estimating a dam and reservoir to cost \$26,723,000 in July 1966 currency. The next step was to have city representatives ask the Texas legislature to establish a municipal water authority to obtain water rights, enter into a contract with the United States, and assume operation and maintenance (O&M) responsibilities.<sup>15</sup>

Still, debates on where to place the dam kept the project from moving forward. The two sites in the running included one on the Nueces River, twenty-two miles above the mouth of the river just below Lake Corpus Christi, and another in Choke Canyon on

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<sup>13</sup> U.S. Department of the Interior, Bureau of Reclamation, *Program Report, Power Potentialities: Nueces River Basin, Texas*, Austin, Texas, December 1951, 1, 2, 21, “Project Reports, 1910-1955,” Box 40.

<sup>14</sup> U.S. Department of the Interior, Bureau of Reclamation, “Annual Project History, Nueces River Project,” Volume I, 1977, 13, 14, in Record Group 115, Records of the Bureau of Reclamation, Accession 8NN-115-92-130, Box 101, National Archives and Records Administration, Denver, Colorado; hereafter cited as “Project History” followed by appropriate volume and page numbers; U.S. Department of the Interior, Bureau of Reclamation, *Plan of Development for the Nueces River Project, Texas*, February 1967, a, 2, II-1, II-3, “Project Reports, 1910-1955,” Box 40.

<sup>15</sup> U.S. Department of the Interior, Bureau of Reclamation, *Plan of Development for the Nueces River Project, Texas*, February 1967, d, 3, 4, “Project Reports, 1910-1955,” Box 40.

the Frio River. In 1967 the regional director of Reclamation approved the Choke Canyon site, but in 1970 Corpus Christi voters narrowly passed a referendum, by a vote of 13,234 to 10,381, opting for the site on the Nueces River—known as the R&M site.<sup>16</sup> Not long after the vote had been cast, however, water interests began once again to rethink the dam site. The decision to back the site on the Frio River came about as the result of the release of the first draft of the environmental statement in April 1972, and field hearings held by the Texas Water Rights Commission on August 28, 1972. The Texas Water Rights Commission issued a statement endorsing the Choke Canyon site “as the more feasible and more justifiable of the alternatives by reason of its engineering practicality.” The Coastal Bend Council of Governments concurred with this assessment when it presented Resolution No. 120, which listed thirteen reasons why the Choke Canyon site was the better site. Curiously, one of the points listed was “the Choke Canyon site will not inundate any historical sites, cemeteries, or archeological sites”—a wholly inaccurate statement. However, Resolution No. 120 did correctly note that the R&M site would have inundated the historic town of San Patricio, Fort Lipantitlan an early Indian village from the late seventeen century, and a Spanish fort built in 1734.<sup>17</sup>

The Choke Canyon site had problems of its own that needed resolution before any construction began. Despite earlier assertions, construction of Choke Canyon Dam and

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<sup>16</sup> Jack R. Blackmon, mayor, to Harry P. Burleigh, March 11, 1970 in U.S. Department of the Interior, Bureau of Outdoor Recreation, *Recreation Feasibility Report, R&M Reservoir, Nueces River Project, Texas*, Denver, Colorado, June 1971, in U.S. Department of the Interior, Bureau of Reclamation, *Feasibility Report, Nueces River Project, Texas*, July 1971, a, 2, 107, “Project Reports, 1910-1955,” Box 40.

<sup>17</sup> Preston Smith, Gov., to Ellis L. Armstrong, November 6, 1972, in U.S. Department of the Interior, Bureau of Reclamation, *Feasibility Report*; July 1971, “Project Reports, 1910-1955,” Box 40; U.S. Department of the Interior, Bureau of Reclamation, “Reevaluation Statement for the Nueces River Project, Texas: Choke Canyon Site,” Amarillo, Texas, April 1974, 1-2; U.S. Department of the Interior, Bureau of Reclamation, *Final Environmental Impact Statement: Nueces River Project: Choke Canyon Dam and Reservoir Site*, [1975], A-1, A-2.

Reservoir would inundate native artifacts and historic sites, necessitating the inventory of prehistoric and historic artifacts and sites. There was the issue converting private lands to public land within the proposed reservoir area. The project would reduce freshwater inflows into the Nueces-Corpus Christi Bay estuarine complex. Perhaps the largest problem was the presence of oil and gas fields on the reservoir site. From the records of the Texas Railroad Commission, Reclamation reported there were fifty producing wells on the site, yielding a total of 17,420 barrels in 1973. To address these issues Reclamation considered either plugging up the wells or constructing platforms to maintain the wells in operation after construction of the reservoir.<sup>18</sup>

Nevertheless, the general consensus was that the Choke Canyon dam site was the superior choice. Moreover, the city council of Corpus Christi issued a resolution expressing their willingness to front \$15 million of the \$65 million projected costs—cost sharing that reduced the cost and financial risk to the federal government.<sup>19</sup>

### **Project Authorization**

In 1974 Sen. John Tower of Texas introduced S. 3513 in the Senate for the purpose of providing a dependable domestic water supply to Corpus Christi, developing fish and wildlife resources, and expanding recreation benefits. The House Subcommittee on Water and Power Resources of the Committee on Interior and Insular Affairs held field hearings in Three Rivers, Texas, on November 10, 1973. The Senate Subcommittee on Water and Power Resources also held hearings in Washington D.C. on July 18, 1974.<sup>20</sup>

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<sup>18</sup> Senate Committee on Interior and Insular Affairs, *Nueces River Project, Texas: Hearings on S. 3513*, 93<sup>rd</sup> Cong., 2<sup>nd</sup> sess., July 18, 1974, 67.

<sup>19</sup> Senate Committee, *Nueces River Project*, 14, 23.

<sup>20</sup> Senate Committee, *Nueces River Project*, 6-7.

At the hearing in Washington D.C., proponents of the project addressed the problems associated with the project and the chosen site—rich in archaeological evidence, land acquisition, existing active gas and oil wells, reduction of freshwater inflows in the Nueces-Corpus Christi Bay estuarine complex—but assured the committee that the problems could be remedied. E. F. Sullivan, Reclamation’s assistant commissioner of resource management, testified to the ease of acquiring active wells from private owners. He noted that the reservoir affected only a small portion of the oil fields in the area, and there would be no need to build “individual or multiwell platforms” to keep the wells in operation. The Petroleum Superintendent of Corpus Christi, Harry L. Franklin, assured the committee that the active wells would be plugged and abandoned prior to inundation and that even if a few old wells could not be found the water leakage would be minimal. Moreover, the new reservoir would aid oil production. The Sigmor Oil Company planned to increase present capacity at its refinery at Three Rivers from 1,500 to 7,500 barrels per day, and the new production could only be possible with water made available from the reservoir.<sup>21</sup>

At the hearing, Texas state and local officials, Reclamation, the Texas Water Development Board, the Texas Water Conservation Association, the Coastal Bend Council of Governments, the San Patricio Municipal Water District, and other individuals and organizations endorsed the project. Besides arguing that the dam and reservoir at Choke Canyon was the best site to deliver the most water at the lowest price, proponents pointed to cost sharing as a reduction of federal risk in the undertaking. Having been convinced of the need and economic feasibility of the project, Congress swept the bill

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<sup>21</sup> Senate Committee, *Nueces River Project*, 33-34, 59-62, 67.

through the committee and authorized the Nueces River Project by Public Law 93-493 on October 27, 1974.<sup>22</sup>

### **Construction History**

The Nueces River Project construction office opened in Three Rivers on May 16, 1976. Reclamation appointed Allen C. Gates, who had previously worked on the San Juan-Chama Project in New Mexico, as construction engineer.<sup>23</sup> The principal task was to construct an earthfill dam with a concrete spillway near the left abutment to pass flood waters, and river outlet works. Construction activities on the dam lasted six years, and recreation facilities construction required several more years. The first years, however, were mostly dedicated to acquisition of land, relocation of existing structures, investigation of prehistoric and historic sites, and other preparatory activities.

### **Preparatory Activities**

The Bureau of Reclamation's first preconstruction tasks were to acquire land held in private ownership and to relocate existing structures in the reservoir site. Both of these projects fell under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646), which provided for the "uniform and equitable treatment of persons displaced from their homes, businesses, or farms by Federal and federally assisted programs" and established "uniform and equitable land acquisition policies for Federal and federally assisted programs." To determine land values, Reclamation consulted court and real estate records and compared land values in neighboring areas. With this information in hand, it then began the long process of

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<sup>22</sup> Senate Committee, *Nueces River Project*, 36, 40, 69.

<sup>23</sup> "Project History," Volume I, 1977, 12, Box 101.

acquiring private land. By 1978 Reclamation had acquired fifty-nine tracts. By the time the dam was completed the United States had acquired most of the project land.

Relocating existing structures in the project area was a major task. Eventually, the United States relocated about eighty-four families living in the reservoir area, more than half of these living in the town of Calliham. Some residents of Calliham acquired land south of the existing town, beyond the reservoir waters, and rebuilt their town. This effort even included relocating the old cemetery to the new site.<sup>24</sup> The United States also relocated State Highway 72 and Road 99, which ran north-south through the center of the reservoir site. The Texas State Department of Highways and Public Transportation received the contract for relocation of State Highway 72. E. E. Hood and Son Construction Company, Inc. became a subcontractor on the construction of the state highway, earning over \$3 million. E. E. Hood and Son Construction Company, Inc., and Acme Bridge Company, Inc., received the contracts to rebuild about 9.5 miles of Road 99 for \$4,318,016.89.<sup>25</sup>

The third extensive preconstruction activity at the Choke Canyon Reservoir site entailed inventorying the rich cultural resources in the project area. Earlier, in 1967, the Texas Archeological Salvage Project at the University of Texas at Austin did a limited survey of the archeological artifacts and evidence in the area. The Coastal Bend Archeological Society also did some field work in 1970. More detailed and exhaustive surveys and studies were later completed by the Texas Historical Commission in the mid-1970s. However, Reclamation initiated a series of additional studies. In 1977 it awarded

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<sup>24</sup> "Project History," Volume I, 1977, 16, Box 101; "Project History," Volume II, 1978, 15, Box 110; "Project History," Volume IV, 1980, 15, Box 118; U.S. Department of the Interior, Bureau of Reclamation, *Nueces River Project, Texas, Definite Plan Report*, Amarillo, Texas, April 1977, 5.

<sup>25</sup> "Project History," Volume II, 1978, 8, Box 110; "Project History," Volume III, 1979, 12, 14, Box 118.

several contracts to the Center for Archaeological Research at the University of Texas at San Antonio for the study and inventory of cultural resources in the project area, based on the Texas Historical Commission's earlier survey. It subcontracted out to individuals and groups at Texas A&M University, Texas Tech University, and the University of Texas at Austin for additional fieldwork, historical research, and consultation.<sup>26</sup>

Between 1977 and 1978, during Phase I, certain sites were located on private lands on which the owners refused to permit access to the sites for archaeological fieldwork. Since the land acquisition would likely take several years, the Center for Archaeological Research moved subcontractors away from those tracts. Inventory on those sites would be done after the federal government acquired the land. Reclamation modified the Phase I contract in January 1978 to include eleven newly discovered sites in the borrow area of the dam and along the relocated route of State Highway 72. Phase I culminated in a final survey of the project area by the Center for Archaeological Research. At the conclusion of Phase I, contractors had recorded a total of 170 prehistoric and historic sites.<sup>27</sup>

The Center for Archeological Research also headed Phase II of the cultural resource studies beginning in 1980. The findings of Phase I and II were eventually published in a series of reports. In all, the investigations located more than 500 archeological and historical sites in the reservoir area. Most sites were prehistoric Indian campgrounds, but some were homesteads and cemeteries dating from the 1850s. The

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<sup>26</sup> "Project History," Volume I, 1977, 8, Box 101; University of Texas at San Antonio, Center for Archaeological Research, *Archaeological Investigations at Choke Canyon Reservoir, South Texas: The Phase I Findings*, by G. D. Hall, S. L. Black, and C. Graves, Choke Canyon Series: Volume V, 1982, 1; University of Texas at San Antonio, Center for Archaeological Research, *Archaeological Investigations at Historic Sites in the Choke Canyon Reservoir, Southern Texas*, by Anne A. Fox, Choke Canyon Series: Volume XII, 1986, 1.

<sup>27</sup> *Archaeological Investigations at Choke Canyon Reservoir, South Texas*, 1-2.

Nichol's House, one of the first homesteads built in the area and which was used for a time as a stagecoach stop, had to be moved during construction. It was fully documented and determined eligible for inclusion on the National Register of Historic Places.<sup>28</sup>

Finally, there was the matter of dealing with the oil and gas fields in the project area. It was decided to plug or otherwise protect the wells to avoid water contamination.<sup>29</sup>

### **Choke Canyon Dam and Reservoir**

Reclamation awarded a contract to the W. T. Young Construction Company of Corpus Christi, Texas, for clearing and fencing of the dam site and borrow areas. Other contracts included work on aerial and ground surveys, as well as construction of project buildings and access roads.<sup>30</sup> Reclamation opened the principal bid for the construction of Choke Canyon Dam on May 11, 1978, and awarded the contract to the Holloway Construction Company and the Holloway Sand and Gravel Company, Inc., a joint venture, on August 8. The contractor had three and a half years to complete the dam.<sup>31</sup>

In its first year, to prepare for the actual construction of the dam, the Holloway companies moved equipment to the job site, constructed an office building and mechanics shop, and built the aggregate processing plant and the access road from the borrow pits to the dam site. The contractor then began working in the borrow area, at the processing plant, and the dam site. It made good progress on the excavation, completing

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<sup>28</sup> *Archaeological Investigations at Historic Sites in the Choke Canyon Reservoir, Southern Texas*, 2.

<sup>29</sup> "Project History," Volume III, 1979, 6, Box 118; *Definite Plan Report*, 5-7.

<sup>30</sup> "Project History," Volume I, 1977, 7, Box 101; "Project History," Volume II, 1978, 9, Box 110.

<sup>31</sup> "Project History," Volume I, 1977, 16, Box 101; "Project History," Volume II, 1978, 8, 17, Box 110.

work at the outlet works structure and the cutoff trench and nearly finishing the spillway structure at the close of 1979.<sup>32</sup>

The contractor prepared the dam foundation by wetting the site using previously installed infiltration wells in the area. The water helped to pack the soil and insure a sturdy foundation before the earthfill and other materials were placed on top, then began to haul and place the earthfill material. The contractor used Zone 1, 2, 3, and 4 materials, and produced at the processing plant the filter blanket material and aggregates. It used soil cement produced by a cement plant that had been bought from the Palmetto Bend Project near Edna, Texas. It stockpiled and placed 36-inch riprap obtained from the Parker Brothers and Company of New Braunfels, Texas.<sup>33</sup> Beyond the earthfill, the contractor also worked on the concrete structures, beginning with the first concrete placements in the spillway area in 1979 and followed by the placement of thousands of cubic meters of concrete in the spillway's gate structure, crest, piers, walls, and floor, and in the outlet works' intake structure, conduits, gate chamber, control structure, stilling basin, footbridge piers, and pipe supports. The construction company completed the spillway in 1981 and most of the rest of the concrete work by 1982.<sup>34</sup>

In general, construction at the dam proceeded smoothly. The one major setback came from Mother Nature. On August 11, 1980, Hurricane Allen ripped through the project area, dropping 11.13 inches of rain in the area within a three-day period. The

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<sup>32</sup> "Project History," Volume II, 1978, 20, Box 110; "Project History," Volume III, 1979, 13, Box 118; U.S. Department of the Interior, Bureau of Reclamation, "Nueces River Project, Texas," <http://www.usbr.gov/dataweb/html/nueces.html>; hereafter Project Data, Online.

<sup>33</sup> "Project History," Volume III, 1979, 13, Box 118; "Project History," Volume IV, 1980, 17, Box 118.

<sup>34</sup> "Project History," Volume III, 1979, 13, box 118; "Project History," Volume IV, 1980, 17, 18, Box 118.

hurricane delayed work on the dam for a week and caused minor damage to the slopes of the embankment and flooding in the spillway stilling basin.<sup>35</sup>

An official dedication ceremony marked completion of the dam. Reclamation, local water officials, and about 1,300 persons came together for the event at the dam site on June 8, 1982. The only work remaining on dam was placement of soil cement at the closure section and testing of the radial hoist and gate position indicators. Reclamation also oversaw miscellaneous installations, modifications, and repairs to the spillway and dam.<sup>36</sup>

Repairs to the spillway radial hoist and gate proved particularly troublesome. In February 1983 representatives from the Electric Construction Company and Leroy Consultants traveled to the project site to repair the malfunctioning equipment, determined that the problems “were inherent in the manufacture,” and recommended returning the equipment to the company that produced it, Astro System, Inc., in New York. The equipment was sent to the manufacturer and returned to the job site in April, but it operated no better than it had before. Astro Systems, Inc., agreed to send a technician to the site to test the equipment but no one showed up. Instead, the company sent the test equipment and instruments and the Electric Construction Company tested and worked on the faulty equipment. The Electric Construction Company eventually determined that “the Astro System electronics encoder was assembled with the incorrect circuit card,” and the problem was immediately remedied.<sup>37</sup>

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<sup>35</sup> “Project History,” Volume IV, 1980, 8, Box 118.

<sup>36</sup> “Project History,” Volume III, 1979, 13, Box 118; “Project History,” Volume IV, 1980, 18, Box 118; “Project History,” Volume V, 1981, 8, Box 118; “Project History,” Volume VI, 1982, 15-18, Box 119.

<sup>37</sup> “Project History,” Volume VII, 1983, 6-9; “Project History,” Volume VIII, 1984, 6-7, Box 119.

The last work completed in the Nueces River Project was construction of recreational facilities and other miscellaneous works in the reservoir area. In 1977 Phillip E. Flores developed a conceptual master plan and environmental assessment for recreation at the reservoir. Among the companies that received contracts for work on recreational facilities were Hogan Mechanical Inc. on Phase I for vegetation removal, manmade improvements, and fencing in the project area, and the Olmos Equipment Company and the Krempen/Crews Constructors for construction of concrete boat ramps, gravel parking areas, and access roads. For construction of the South Shore Unit, Reclamation awarded a major contract to CJB Construction, Inc. The contractor and eight subcontractors completed the work on the recreational facilities and maintenance building in 1985. For construction of the Calliham Recreational Facilities, Reclamation awarded the contract to CJB Construction, Inc., and Robert E. Jenkins, a joint venture. Project records dated November 1985 indicate a typical work month:

The prime contractor and eight subcontractors for Calliham Recreation Facilities continued placing base course on Roads No. 16 and 17, boat ramp parking lot, and parking lots 'A' and 'B'. Additional curbs, gutters, column piers, and slabs for picnic shelters, slabs for Buildings 'H' and 'E', the raw water intake structure, and laminated column piers were placed by concrete crews. All other installations of electrical, plumbing, masonry block, and HVAC were progressing even though some of the outdoor work was hampered by the wet conditions.<sup>38</sup>

By the end of 1986, work on the Nueces River Project had nearly come to an end.

The contractor working on the Calliham Recreation Facilities had nearly completed the

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<sup>38</sup> "Project History," Volume I, 1977, 8, Box 101; "Project History," Volume VI, 1982, 21, 23, 24, Box 119; "Project History," Volume VII, 1983, 7, 16, Box 119; "Project History," Volume IX, 1985, 6, 14, Box 119.

contract, and project personnel had been reduced to four temporary and four permanent employees.<sup>39</sup>

### **Post-Construction History**

In February 1981 Corpus Christi and the Nueces River Authority transferred operation and maintenance of project works related to the recreation, fish and wildlife and open space resources to the Texas Parks and Wildlife Department. Reclamation transferred responsibility for operation and maintenance of Choke Canyon Dam to the City of Corpus Christi and the Nueces River Authority on September 30, 1983.

The United States agreed to renegotiate the price of the contract and to transfer title to the Nueces River Project. Before construction of the dam and reservoir, Corpus Christi and the Nueces River Authority entered into a contract for M&I water supply until 2040. However, studies revealed that the water delivered by the Authority was less than expected and that an additional water supply would need to be found as early as 2003. Corpus Christi claimed to have not received the water for which it had contracted. Moreover, in the face of drought it became necessary to renegotiate the price of the contract to enable the city to provide sufficient water at affordable prices to M&I users. Congress held hearings on legislation introduced in June 1994 requiring the secretary of the interior to enter into negotiations with Corpus Christi concerning the Nueces River Project, but Congress did not act before the end of the session. In 1996 Congress passed the Texas Reclamation Projects Indebtedness Purchase Act, S. 1719, which required the secretary of the interior “to offer to sell to certain public agencies the indebtedness

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<sup>39</sup> “Project History,” Volume X, 1986, 12-13, Box 119.

representing the remaining repayment balance of certain Bureau of Reclamation projects in Texas.” Essentially, it transferred title to the Nueces River Project to local control.<sup>40</sup>

### **Uses of Project Water**

The principal purpose of Choke Canyon Dam and Reservoir was to provide municipal and industrial water to the City of Corpus Christi and the Nueces River Authority. The dam, operated in conjunction with Lake Corpus Christi, releases water from the reservoir down the Frio River about ten miles and the Nueces River about thirty miles to Lake Corpus Christi where the water is re-regulated. Currently, the dam and reservoir contribute about 139,000 acre feet of water annually to M&I uses.<sup>41</sup>

The project also conserves and develops fish and wildlife resources and provides outdoor recreation in south central Texas. The U.S. Study Commission-Texas had considered inclusion of flood control capacity in its plan for Choke Canyon Reservoir but concluded the cost to be prohibitive.

Reservoir facilities are only about an hour’s drive from the two closest cities—San Antonio and Corpus Christi—located only seventy miles away. The reservoir offers some of the best freshwater recreation in south Texas on its 26,000 acres and thirty-four river miles in Live Oak and McMullen counties. The major recreation development is on the south side of the reservoir in the areas known as the South Shore Unit and the Calliham Unit. The South Shore Unit opened in March 1986 and consists primarily of a day-use area on the reservoir and a camping area below the dam. The 1100-acre Calliham Unit, which opened in August 1987, is the largest recreation facility in the project area, with large camping and picnic areas, a swimming beach, boat ramp, and

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<sup>40</sup> S. 4517 104<sup>th</sup> Cong., 2<sup>nd</sup> sess., *Congressional Record* 142 (May 1, 1996).

<sup>41</sup> “Project History,” Volume VIII, 1984, 30, Box 119.

other recreation amenities. It also includes the original Calliham gymnasium, now renovated.<sup>42</sup>

About 640 vehicles visited the park on the opening day of the South Shore Unit, and over 30,000 individuals used the facilities during the first sixteen days alone. Choke Canyon State Park, which now also includes the North Shore Equestrian Area, remains a popular location to camp, picnic, and boat. In addition, people can hunt in the Daughtrey Wildlife Management Area, located in the upper section of the reservoir on the north side of State Highway 72 and named for James E. Daughtrey of Tilden, a State Game warden who died as a result of an automobile collision while pursuing game law violators. The Texas Parks and Wildlife Department manages the Choke Canyon State Park and the wildlife area.<sup>43</sup>

## **Conclusion**

The Nueces River Project was relatively simple in an engineering sense but complex in that it took years to complete the studies and receive authorization. Moreover, some time passed before selection of a suitable dam site and completion of planning and environmental impact studies.<sup>44</sup> However, aside from the fact that the project was financed based on cost sharing, it was a standard M&I project, constructed to provide a reliable domestic water supply to the Coastal Bend area of south Texas and recreation benefits to people living in south central Texas. The Nueces River Project has so far served its purposes well, though it is widely acknowledged that an additional

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<sup>42</sup> Project Data, Online.

<sup>43</sup> "Project History," Volume X, 1986, 8, box 119; Texas Parks and Wildlife, "Choke Canyon State Park," [http://www.tpwd.state.tx.us/spdest/findadest/parks/choke\\_canyon/](http://www.tpwd.state.tx.us/spdest/findadest/parks/choke_canyon/); Project Data, Online.

<sup>44</sup> This thought was expressed in the field hearings held in 1974, in Senate Committee, *Nueces River Project*, 36.

source of water will be needed to secure a reliable water supply to Corpus Christi and the area.

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