Riverton Unit

Pick-Sloan Missouri Basin Program

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In the late summer of 1928, George C. Kreutzer, the Bureau of Reclamation's director of economics left the Interior Department building in Washington, D.C. for the wilds of Wyoming. In his four years as economics director, Kreutzer visited every section of the irrigated West. Like most of his assignments, this one came directly from his friend and boss, Reclamation Commissioner Elwood Mead. In Wyoming, Kreutzer would canvass the scattering of settlers eking out a living off alfalfa and forage on the Riverton Project. Kreutzer approached his assignment with apprehension, as Riverton carried the reputation as one of Reclamation's trouble spots. Through the cutting wind, and over the hard ground of west-central Wyoming, the bureaucrat made his way in a Government Model T, speaking with all 16 project homesteaders. Back in Washington that November, Kreutzer presented his findings in a memo to Secretary Mead. He reported none of the structures on the project were "suitable to house a family," apologizing he could not further illustrate the hardships he found with photographs of barns as "there weren't any to take."[1]

An irrigation project without any farm buildings is one of many incongruities littered throughout the history of the Riverton Project. When first dreamed of at the turn-of-the-century, no one ever considered the difficulties of irrigating Riverton. Engineers working for the state of Wyoming, and later Reclamation, believed they could irrigate from 100,000 to 200,000 acres along the Wind River. The Federal Government assigned the United States Reclamation Service (USRS) the task of supplying water to a handful of irrigators in the early 1920s. For the USRS, the twenties were a decade of inertia sandwiched between the

1. U.S., Department of Interior, Bureau of Reclamation, *General Administrative and Project Records*, box 930, memo from Charles Kreutzer to Elwood Mead, November 1928.

classic dams built in the century's early years and the New Deal-post World War II construction bonanza of the 1930s to 1970s. The growth of the Riverton Project (as Reclamation called the Unit from 1918 to 1970), staggers across those eras. After decades of bad luck and wrong choices, by the 1990s, a little more than 70,000 acres received water. As years went by, the Project became more of a salvage operation than an efficient irrigation enterprise.

Project Location

If words could aptly describe what the elements have done to a physical landmark over countless centuries, it would be the Wind River. For millennia, gusts cut patches of rough sandstone and shale escarpments out of the gently sloping alluvial valleys formed by the river's tributaries. Various sized rocks jut along the banks, covered by clumps of sagebrush, while a few sturdy trees clustered around the only available source of water. The Wind River Basin is a crescent-shaped valley about 130 miles long and 70 miles wide. The Wind River Mountains form the project's west and southwest border, while the Owl Creek and Copper Mountains tower over the Project's northern edge. The headwaters of the Wind River rise on the northeastern slope of the Wind River Mountains. Flowing southeast to south of the town of Riverton, the stream unites with the Popo Agie (pronounced Poposia) River before creating the Big Horn River. Before a drought cycle in the mid-1970s, Wind River's estimated average annual runoff was 897,900 acre-feet. With an average elevation of 4,700 to 5,500 feet, the irrigable lands are mostly sandy. A few inches beneath the top soil, heavy clay underlaid by sandstone and shallow decomposed shale allows no drainage and waterlogs easily. Also working against growers is the high alkali content of the Wind

River. The sodium carried by the water prevents the maturation of many crops.[2]

In Western Wyoming, there is more value in what man takes from under the ground than what he plants above ground. This is oil and uranium country, and conditions favor certain sturdy crops. Months of inclement weather bookend a few weeks of summer warmth. Bright, cloud-free days that encourage rapid growth, characterize Wind River's summers. Farmers along the Wind River have an average of 140 days to work with between the last killing frosts of May and September's first cold snap. The average annual temperature is 44.5 F, but the thermometer can plummet as low as -42 F in the winter and top out 101 F in the summer. Precipitation totals a little more than nine inches annually.[3]

The Unit derives its water supply from the Wind River and its tributaries. The Bull Lake Dam can hold up to 152,000 acre-feet in Bull Lake Reservoir. Water released from Bull Lake Reservoir flows through Bull Lake Creek on to the Wind River, augmenting the flow of that stream. Pilot Butte Dam holds supplemental storage in the Pilot Butte Reservoir. The 31,600 acre feet capacity reservoir receives water diverted by the Wind River Diversion Dam. The 62.4-mile Wyoming Canal runs from the diversion dam, stops at the Pilot Butte Reservoir, and on to the Unit's distribution systems. The 38-mile long Pilot Canal flows easterly from Pilot Butte Reservoir to service acreage south of the Wyoming Canal. Pilot Butte Powerplant, once sat at the drop from the Wyoming Canal to Pilot Butte Reservoir, but high operation costs and penstock problems closed the plant in June 1973.[4]

Before its incorporation into the Pick-Sloan Missouri Basin program in 1970,

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2. U.S., Department of Interior, Bureau of Reclamation, *Financial Adjustment Report, Midvale Irrigation District, Riverton Project, Wyoming*, (Cody, Wyoming: 1950), 2.
3. U.S., Department of Interior, Water and Power Resources Service, *Project Data*, (Denver: United States Government Printing Office, 1981), 986.
4. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 67, 1984, 5.

Reclamation divided project lands into three segments, or divisions. The First Division reached from Wind River Diversion Dam to Pilot Butte Reservoir. The Second Division extended eastward seven miles from Pilot Butte Reservoir, and the Third Division, headed north and east for 46 miles. Much of the settlement of the First and Second Divisions occurred between 1926 and 1939, while the Federal Government bought back much of the Third Division during the 1960s. The Midvale Irrigation District currently operates and maintains the Riverton Unit.[5]

Historic Setting

Bands of Eastern Shoshone roamed western Wyoming since roughly 1500 A.D. Over the next two centuries, the Eastern Shoshone hunted buffalo and mountain sheep with little outside interference. Among other tribes in the Wind River Basin they developed a reputation as a "militaristic, buffalo-hunting people." The Shoshone quickly benefitted from later contacts with the Spanish, the mixture of French and native peoples known as Métis, and Anglo-Americans. Their success in spiriting away horses from each group bolstered the Shoshone's regional dominance.[6]

Two French fur trapping brothers claimed to be the first Europeans to see the Wind River Basin. In 1743, the Verendrye brothers got as far as the present location of Sheridan, Wyoming. More than a century passed before the United States established the region's first permanent outside presence. In 1863, the Government signed a "treaty of friendship" with the Shoshone that allowed for white commerce and settlement across 45 million acres of Shoshone territory. By July 1868, the Federal Government solidified their control over the

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5. U.S., Department of Interior, Bureau of Reclamation, *Financial Adjustment Report, Midvale Irrigation District, Riverton Project, Wyoming*, 9.
6. Demitri B. Shimkin, "Eastern Shoshone," in *Handbook of North American Indians: Great Basin, Vol. 11*, (Washington, D.C.: Smithsonian Institution, 1986), 308-9.

indigenous peoples of the region. A treaty between the United States and the Shoshone created a reservation later known as Wind River. In signing the agreement, the Shoshone gave up their nomadic nature to farm three million acres in west-central Wyoming. The following year, at Lander, the U.S. Army erected Camp Augur to protect the Shoshone and whites against Sioux, Cheyenne and Arapaho attack.[7]

The progress of irrigation followed separate paths once the Shoshone went on the reservation. A few white settlers commenced the earliest irrigation development in the 1860s as ranching developed along the Little Wind and Popo Agie Rivers. Indian irrigation began with the digging of the Crooked Creek ditch in 1871, and continued through the 1890s. Development was sporadic until 1905. That year, the United States Indian Service (USIS) supervised the construction of five irrigation units.[8]

Three revisions to the 1868 treaty sliced away at the Shoshone's three million acre home over the next four decades. On September 26, 1872, the tribe's leader, Washakie, agreed to relinquish 601,120 acres on the reservation's south end to the Federal Government. Despite the imposed limits of their new home, the Shoshone thrived in their confinement. They fished, gathered, and hunted buffalo until the animal disappeared in the late 1880s. Their dominion did not last, as the Government sought to reach a compromise with another tribe at the Shoshone's expense. Since the Sand Creek Massacre of 1864, the Northern Arapaho roamed northern Colorado, Nebraska, and Wyoming, attacking miners, settlers, and other tribes along the way. In 1878, the Indian Service transferred the Northern Arapahos

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7. U.S., Department of Interior, Bureau of Reclamation, *Special Report – Third Division – Riverton Project, Wyoming*, (Cody, Wyoming: September, 1952), 5-7; Virginia Cole Trenholm and Maurine Carley, *The Shoshonis: Sentinels of the Rockies*, (Norman, Oklahoma: University of Oklahoma Press, 1964), 221-2, 226.
8. U.S., Department of Interior, Bureau of Indian Affairs, Record Group 75, *Preliminary Inventory – Wind River*, 4. Records located at National Archives and Records Center, Denver, Colorado. (Record Group 75 hereafter known as RG 75).

by military escort to the Shoshone Reservation. The Government promised the Shoshone the arrangement was only "temporary." Once in Wyoming, the Northern Arapaho refused to move. Seeking a compromise, the Government awarded the Arapahos half the Shoshone domain. Over time, the Shoshone occupied allotments in the west and northwest sections of the reservation, while the Arapaho clustered in the east and southeast regions.[9]

In 1896, both tribes agreed to relinquish 64,000 acres from the reservation's northeast corner for $60,000 from the United States. On March 3, 1905, Congress took an additional slice with the ratification of the McLaughlin Agreement. Named for Indian Inspector Major James McLaughlin, the Agreement determined the reservation held "excess" lands of more than 1.4 million acres. The Federal government would offer this “excess” through sale to white settlers. The Government applied the proceeds to a per capita payment of $50 to each Indian that developed and extend the reservation's irrigation system. The money also created a school district and a welfare and improvement fund.[10]

Investigation of the reservation’s value for white settlement was in the works for nine months before ratification of the McLaughlin Agreement. In 1904, Goyne Drummond, a civil engineer and deputy U.S. mineral surveyor conducted a "reconnaissance" of the ceded lands. Drummond claimed the rolling land drained well, adding "very little of it will be injured by seepage water." Drummond surveyed a narrow strip of land from the Big Wind River to Muddy Creek, offering only an approximation of the total irrigable land on the reservation in his report. Two years later, Drummond was among the 1,600 people granted a

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9. Richard O. Clemme, and Omer C. Stewart, "Treaties, Reservations, and Claims," in *Handbook of North American Indians: Great Basin, Vol. 11*, ed., William C. Sturtevant, (Washington, D.C.: Smithsonian Institution, 1986), 530; Trenholm and Carley, *The Shoshonis: Sentinels of the Rockies*, 277, 283.

10. U.S., Department of Interior, Bureau of Reclamation, *Special Report on Third Division – Riverton Project – Wyoming*, 1-2; U.S., Department of Interior, Bureau of Indian Affairs, RG 75, *Preliminary Inventory – Wind River*, 4.

homestead in Riverton. Later settlement proved that Drummond overestimated the soil quality of irrigable lands, but he was not alone in his optimism. In 1906, the Wyoming State Engineers Office devised a complex irrigation plan to water 265,000 acres along the Wind River.[11]

To turn these concepts into reality, the Wind River Basin needed people. The Government scheduled one of the last big land-rushes in the history of the Wild West for August 15, 1906. A Denver newspaper opined, "Not since the Oklahoma rush has there been so much interest manifested in the opening of a reservation." Arriving by wagons, buckboards, horseback, and on foot, nearly ten thousand people gathered at the reservation's border. Rapidly, a collection of tents and shacks rose, housing newcomers set to claim every plot as quickly as it could be measured. Under the Homestead Laws, land sold at $1.50 an acre in the first two years after the Riverton opening, and for $1.25 per acre over the next three years. Five years after the land rush remaining unsold lands went at public auction for a $1 per acre. After eight years, the Secretary of the Interior had the right to sell any further remaining acreage to the highest bidder. The plots wanted by squatters were closest to where the Chicago and Northwestern Railroad announced they were extending their line after the opening. One entryman, Arwed Holmberg, desired such a plot, "because the railroad ran through it, and if I couldn't make a living off it, I could catch a freight out."[12]

During the first few weeks of life, the town of Riverton was in a place somewhere between civilization and anarchy. A few of the farsighted realized if the town was going to

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11. U.S., Department of Interior, United States Geological Survey, *Third Annual Report of the Reclamation Service, 1903-4*, (Washington, D.C.: Government Printing Office, 1905), 631; *Riverton Chronicle*, 12 February 1926, p. 7.

12. *Denver Republican*, 1 July 1906, p. 31; *Special Report – Third Division – Riverton Project, Wyoming*, 2-3; *Crossroads of the West: A Pictorial History of Fremont County*, (Riverton, Wyoming.: Crossroads of the West, 1966), no page number; *Riverton Chronicle*, 12 February 1926, p. 7.

survive, it would have to find water. On September 24, the state granted a permit allowing the Wyoming Central Irrigation Company, (WCIC), the opportunity to build a canal system in the ceded area. Years before the Government opened the reservation, the WCIC, (led by president and table salt magnate Joy Morton and Wyoming's Secretary of State, Fenimore Chatterton) planned to dig two large canals. From the Wind River, the ditches measured 35 and 40 miles long. The company intended to sell perpetual water rights at $20 to $38 an acre, the price varying with terms of payment. By early autumn, Riverton's land-rush slowed to a trot. In September, 300 more people filed homestead papers, with another 200 more arriving before winter sent in. These late comers held acreage without having to promise to take water from the WCIC. The situation forced the company to postpone building the two canals. Another private group took the initiative, and started excavation on a canal in October 1906. Work progressed through a mild winter, as a fine wind-blown dust, not snow, covered settlers' shacks and tents. The canal opened in time for the first spring planting the following year, serving 12,000 near town. The final cost of completing the town's first aqueduct totaled $75,000.[13]

Unable to convince enough settlers to sign repayment contracts, the WCIC gradually lost interest in building the two canals. In 1910, the state allowed the WCIC to conduct business under a new name. Company engineers resurveyed the area, reporting that much of the land was unirrigable. After the reading the new survey, the state canceled all rights held by the WCIC. Two years later, the WCIC's land rights returned to the state. By 1918, all rights and permits belonged to Reclamation.[14]

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13. Mary J. Allyn, *Twentieth Century Pioneering*, (by the author, 1956), 38-9; T. A. Larson, *History of Wyoming*, (Lincoln, Nebraska.: University of Nebraska Press, 1965), 351; *Riverton Chronicle*, 12 February 1926, p. 9.
14. *Special Report – Third Division – Riverton Project, Wyoming*, 3; Larson, *History of Wyoming*, 352.

Project Authorization

Prodded by the Wyoming delegation to Congress, the Federal Government went forward with developing Wind River. On May 18, 1916, Congress provided $5,000 for preliminary surveys and development. The Government earmarked almost half toward investigation of reservation lands. The examination included a topography study of two proposed canals, the Wyoming and Pilot, and a soil survey. The following year, an additional $5,000 supported a more detailed study led by Reclamation Engineer C.T. Pease.

Pease's report came out in 1918, refuting key points made by Drummond and the Wyoming Engineers Office. He saved his most damaging conclusions for the end of the document: "seepage may be expected to occur over a large part of the irrigable area" and "a comprehensive drainage system will be necessary to maintain the irrigability of the lands." The report estimated a cost of $15 an acre to complete the drainage system. Pease recommended Reclamation would be better off to avoid some 18,930 acres until they first built drainage facilities. Despite the risks identified in the Pease Report, on May 25, 1918, Congress provided $100,000 for continuation of investigations and to begin construction.[15]

Secretary of the Interior Franklin K. Lane authorized the project on June 19, 1918, under the terms of the Indian Appropriation Act for the fiscal year 1919. The Indian Appropriation Act guaranteed funding of $3,650,000 for construction and development from July 1918 to June 30, 1926. On September 27, 1918, Secretary Lane withdrew from public entry a large portion of the Wind River Reservation ceded by the Shoshones and Arapahos under the 1905 McLaughlin agreement. Reclamation made the withdrawal under laws reserving the lands for the Riverton project. Eventually, the Government claimed some

15. U.S., Department of Interior, United States Reclamation Service, *Seventeenth Annual Report of the Reclamation Service, 1917-18,* (Washington, D.C.: Government Printing Office, 1918), 403.

332,000 acres. The Act of June 5, 1920 placed the project under the jurisdiction of the United States Reclamation Service. The legislation fixed Reclamation with the responsibility for everything at Riverton, including project expenditures. A subsequent act passed by Congress on March 4, 1921, returned developed portions of the Project to Indian Service control, placing the undeveloped portions under the USRS's domain. The Government paid the tribes $1.50 an acre for some 100,000 acres.[16]

In the midst of this land trading, one certainty made his way to Riverton. In August 1918, the USRS selected Harold D. Comstock as project manager. In his first month on the job, Comstock proposed to Reclamation's Chief Engineer Franklin E. Weymouth naming the project, Fremont. The name highlighted the project's location in Fremont County and memorialized the man "intimately connected with the opening up of the arid West," John C. Frèmont. Commissioner Arthur P. Davis agreed to the suggestion a month later. A collection of Riverton residents got wind of the government's plans, and appealed to Davis to name the project after their town. In another month's time, the Commissioner reconsidered for the Riverton Project. Naming the project was a minor controversy compared to the dilemmas Comstock dealt with over the next 26 years. Years later, a Casper, Wyoming newspaper described Comstock as: "Practical, quick to make judgments, backed by years of similar experience, devoid of lack of faith in the reclamation service and its loyal men to do what must be done, Comstock is building his own monument." Leaving this kind of adoration behind must have been hard, but Comstock departed Riverton to become the first Director of Region 6 in Billings, Montana in 1944.[17]

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16. *Special Report – Third Division – Wyoming*, 4-5; U.S., Department of Interior, Bureau of Reclamation, *Repayment of Reclamation Projects*, (Washington, D.C.: United States Government Printing Office, 1972), 397.
17. U.S., Department of Interior, Bureau of Reclamation, Record Group 115, *General Correspondence File: Chief Engineering*, Box 1186. (Record Group 115 hereafter known as RG 115); *Riverton Chronicle*, February 12,

(continued...)

A small force of Federal surveyors and construction men assembled in Riverton in August 1918 to conduct surveys and begin preliminary construction. Early activity revolved around completion of a large warehouse at Riverton, establishing a Project office in the town's Masonic Temple, and hooking up 42 miles of telephone line. Simultaneously, the United States Bureau of Soils classified the quality of project lands. Work also started on the Pavillion laborers camp, some 30 miles from Riverton. Home base for the canal diggers, the Pavillion camp later included residences, office, warehouse, and a maintenance shop.[18]

In 1965, University of Wyoming professor T. A. Larson reflected on the Federal development of Riverton. He wrote, "Congress frowned on new reclamation starts," with the USRS' mission during the 1920s consisting of "salvaging old projects." Once in Wyoming, the Reclamation Service found that the deeper their involvement in Riverton, the harder it was to please anybody.[19]

Construction History

"The population (of Riverton) is mixed with Indians, half breeds and old timers, many of whom have little faith in the modern development of agricultural lands in this section," observed Miles Cannon, field Reclamation commissioner, in the summer of 1923.[20]

"A useless endeavor to reclaim sage-brush land that lies at an altitude of 5000' prohibiting the successful growing of almost everything but alfalfa hay," grumbled F. W. Smith, a Lenore, Wyoming general store owner in a 1924 letter to Interior Secretary Hubert

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17. (...continued)
1926, p. 13; *Casper Tribune*, August 10, 1924, p. 8.
18. *Riverton Chronicle*, 12 February 1926, p. 13.
19. T. A. Larson, "Wyoming, Home on the Range," in *The Reclamation Era*, (November 1965): 96.
20. RG 115, *General Correspondence: Chief Engineering*, Box 1186, letter from Miles Cannon to D. W. Davis, 14 July 1923.

Work.[21]

"If settlement is to be unaided . . . this development will be slow and the returns to the Government disappointing. The successful settlement and development of the land is therefore the most serious problem connected with this project," warned Reclamation Commissioner Elwood Mead in 1925.[22]

Buried under crescendo of criticism, it is hard to believe that Reclamation first tackled Riverton with guarded confidence. Seven men and two draglines made their way north from the Rio Grande Project in New Mexico to Wyoming in the last days of 1919. The last 37 miles of their journey from Riverton to the construction camp crossed snow-covered roads in temperatures of 40 below zero. Draglines first etched the Wyoming Canal out of the frozen ground on January 20, 1920. Unaccustomed to Wyoming winters, the machines' gasoline engines often did not start in the cold. Operators experimented with different methods of keeping the motors warm when not in use. Crews eventually settled on coal-burning laundry stoves as the safest, cheapest way to keep the engines warm and the machinery running.[23]

The draglines digging the Wyoming Canal had a 18-month head start on the Wind River Diversion Dam. Located 34 miles northwest of Riverton, work on the dam began in July 1921. The 37-foot high structure is the point of diversion for all Project water. The dam features a concrete gravity, ogee spillway section, 651 feet in length, with a capacity of 40,000 cubic feet per second (cfs). On Wind River's north end is a logway, sluiceway, and the 2,200 cfs diversion works. A rolled earth embankment, 1,656 feet long, sits beside the

21. RG 115, *General Correspondence: Project Reports*, Box 731.
22. Elwood Mead, "Development of Wyoming's Irrigation Resources," in *New Reclamation Era*, (July, 1925): 102.
23. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 2, 1919, 19.

southwest end of the concrete section.

Draglines removed 7 to 15 feet of sandy loam, cobblestones, gravel, and river sand. To reach the solid rock foundation, workers and machines tore through shale and soft brown sandstone along the headworks and a "tough bluish" sandstone under the spillway and sluiceway. The Project gathered its concrete aggregate from the river gravel at the site. Men and teams hauled cement from Riverton to a 3,000-sack capacity cement house overlooking the dam site. Half-yard side-dump steel cars and wheelbarrows delivered the concrete to form the lower headworks, sluiceway, logway and weir. Reclamation used oversized cobbles as plum rock to economize on concrete and reduce the dam's volume. In winter, placement of concrete seldom started earlier than 9:30 a.m. Laborers avoided pouring the weir's crest in the late afternoon. Approximately 63,000 cubic yards of excavated material and 18,000 cubic yards of plain and reinforced concrete formed the dam and diversion works. By agreement with the Wyoming Highway Commission, Reclamation constructed bridge piers as an integral part of the weir. Across these piers, state road crews paved an 8-span steel highway bridge. Two years of work at Wind River Diversion Dam concluded in May 1923 at a cost of less than $500,000.[24]

Pilot Butte Dam is 10 miles below Wind River Diversion Dam. Pilot Butte is a barrier across a natural depression to the right of the Wyoming Canal. Three embankments form the dam. The main earth and rockfill embankment is 51 feet high with a 1,300-foot long crest. The two supplemental earth and rockfill dikes stand 25 feet high and their combined crests span 4,600 feet. The dam's spillway is a concrete, overflow type with a crest

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24. "Construction of the Wind River Diversion Dam," in *Reclamation Record*, (January, 1924): 12; U.S., Department of Interior, Bureau of Reclamation, *Dams and Control Works*, (Washington, D.C.: United States Government Printing Office, 1929), 13.

length of 100 feet. The spillway converges into a 741-foot long trapezoidal chute, carrying a capacity of 500 cfs. The outlet works is a semicircular concrete conduit, 13.5 feet by 9 feet, near the center of the main embankment. Three slide gates, each 4.8 feet by 6 feet, control the flow through the dam. The conduit provides a maximum diversion of 1,000 cfs into Pilot Canal. About 204,000 cubic yards of fill formed the three embankments.

A wasteway from Pilot Canal regulates 31,600 acre-feet of water held by the Pilot Butte Reservoir. Found about 1,200 feet downstream from the dam, the wasteway features a control works at the canal and a short reach of earth channel. The channel discharges through a flume into the spillway chute, and water returns through the chute to the Wind River. After four years of construction, the reservoir first held water in December 1926.[25]

Work on the Pilot Butte Power Plant lasted from 1923 until 1925. Water from the Wyoming Canal to the Pilot Butte Reservoir dropped 105 feet in elevation, turning the plant's turbines. The plant ran two generating units with a total capacity of 1,600 kilowatts. First deliveries from the plant powered the electric draglines that cleared the canals and laterals. The plant later joined an interconnected system that included Reclamation's Shoshone and Kendrick Projects and other electric companies in southeast Wyoming, Nebraska, and northern Colorado. At its peak, transmission facilities consisted of 85.5 miles of 34.5 kilovolt line, three miles of 2.3 kilovolt line, and four substations.[26]

Often times a sidelight to construction of the other dams, work continued at its own pace on the Wyoming Canal. Crews completed the canal's first section, a 9.2-mile stretch from the diversion dam to the power plant, in 1924. The initial capacity of the first section

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25. *Special Report – Third Division – Riverton Project Wyoming*, 21.
26. "Pilot Butte Power Plant, Riverton Project," in *New Reclamation Era*, (April, 1925): 58; S. T. Larsen, "Power Development on the Riverton Project," in *The Reclamation Era*, (October, 1939): 279-80.

is 2,200 cfs. Water first flowed through a subsequent 7.5-mile leg in 1926. The second section's initial capacity is 1,750 cfs. Four inch reinforced concrete lined 16.7 miles of the first two sections. Besides excavating the canal, laborers dug 212 miles of various sized ditches, disrupting 6.6 million cubic yards of material in the process.[27]

There were many obstacles to vanquish during construction. Machinery continually skirmished with the hard soil to chisel out canals. In 1921, heavy spring run-off in June blocked transportation of men across the Wind River from the diversion dam camp. By the next year, a labor shortage during August and September slowed work on the Pilot Butte Dam and Reservoir. A cement shortage in October, bad roads, cold, and truck breakdowns in November, and delays in receiving canal diagrams, concluded a troubled year. In the summer of 1923, nature provided another roadblock. A prolonged rain storm, from July 21 to July 28, swept away a thousand cubic yards of material from the canal. On the afternoon of July 24, two inches of rain fell in thirty minutes at the Wind River Diversion Dam. The storm washed out rail lines and roads leading from Riverton and knocked out telephones.[28]

Reclamation employed force account labor to excavate the canal and construct the dams. The time of the year and availability of men determined the rate of pay. Wages ranged from a peak of $4.50 a day in January and February, to $3.60 a day after June 30. The Government struggled finding all kinds of workers, but required carpenters above any other type of laborer. Reclamation's willingness to pay carpenters $7.24 a day reflected their importance. Reclamation kept an average of 200 workers in the field during 1923, with as many as 330 men during September 1924. Reclamation engineer James Munn described the

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27. *Special Report – Third Division – Riverton Project, Wyoming*, 22; H. D. Comstock, "The Riverton Project, Present and Future," in *The Reclamation Era*, (November, 1932): 186.
28. RG 115, *General Correspondence: Chief Engineering*, Box 1186.

laborer's camp as "well constructed, but not expensive looking." Workers called their home "Shack Town." No doctor lived at the site, but the camp maintained good sanitary conditions. Workers hauled garbage daily, pumped their water from deep wells and disposed of sewage in septic tanks.[29]

From an engineering standpoint, Reclamation made great strides after six years in Riverton. Washington, however, decided the project fell short in other categories. On a 1925 tour of Reclamation ventures in the upper Great Plains, Interior Secretary Hubert Work and Reclamation Commissioner Elwood Mead halted further construction of the canal system. In Riverton on June 23, the pair concluded "it was folly" to proceed until the project attracted more settlers. They stated Riverton would never reach financial stability while private interests held 10,000 out of 15,000 acres of the First Division. Secretary Work chastised these absentee owners, "for whose benefit the Government had spent millions." Work claimed "there was no justification for spending still more millions in building other units where identical conditions prevail."[30]

Sporadic work on the Second Division lateral system was the only construction between 1925 and 1939. Persistent promotion of Riverton in federally-distributed literature, and the demoralizing effects of the Depression finally awakened interest in the First and Second Divisions. To provide for that day when settlers would come in great numbers, the project needed to extend the canal system, and create a supplemental storage facility above Wind River Diversion Dam. After a decade of construction inactivity, a 1935 Reclamation

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29. RG 115, *General Correspondence*, Box 1186, letter from James Munn to F. E. Weymouth, 8 July 1920; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 6, 1923, 17; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 8, 1925, 17; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 3, 1920, 24, 29.

30. U.S., Department of Interior, Bureau of Reclamation, *Studying Reclamation with Secretary Work and Doctor Mead*, (Washington, D.C.: 1926), 24.

investigation led to an appropriation of $1 million from the Emergency Relief Act to fund Bull Lake Dam. S.J. Groves and Sons Co. of Minneapolis won the contract to build the dam with a bid of $653,397.50. The firm went to work on March 28, 1936, agreeing to finish the job in 700 calendar days. Delays in receiving materials and the weather forced a 120-day contract extension. Driven by common laborers earning a dollar an hour, progress that first year started slowly. Work accelerated during the spring and summer months before a cold December halted construction for 1936.[31]

Bull Lake Dam straddles Bull Lake Creek, 2.5 miles above the creek's junction with the Wind River. According to Shoshone beliefs, Bull Lake is a "home of monsters," where spirits changed men into Water Buffalo. Reclamation reported no calamities or transformations during construction of Bull Lake Dam. The dam is in a glacial moraine at the outlet end of the lake, impounding water above the lake's original level. Three horizontal curves on the dam's axis take advantage of the surrounding rock formation, permitting maximum storage with a minimum of material. More than 648,000 cubic yards of rolled earth and 162,000 cubic yards of riprap and rockfill formed the dam. Standing 81 feet high, Bull Lake Dam is 3,456 feet long at a crest elevation of 5,813 feet.

Early in construction, workers selected rocks more than five inches in diameter for future use in the rockfill and riprap sections. Stones larger than five inches littered the site, so crews fashioned a 14-foot long trommel from steel rails to pick up the big rocks. The material traveled to the embankment in loading trucks and buggies. The vehicles dumped the rock at the dam site for bulldozers and a dragline to level its surface.[32]

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31. Tolliff R. Hance, "Construction of Bull Lake Dam, Riverton Project, Wyoming," in *The Reclamation Era*, (January, 1939): 10-1.
32. Hance, "Construction of Bull Lake Dam, Riverton Project, Wyoming," 12-3.

Bull Lake Dam's spillway is 100 feet wide and 470 feet long with a maximum capacity of 11,000 cfs. Three 11-foot by 29-foot automatic radial gates control the spillway's flow. The outlet works features two conduits, approximately eight feet in diameter, operated by two 5-foot by 5-foot slide gates. The outlet's maximum capacity is 4,500 cfs. First storage at the dam came in May 1938, and Reclamation completed construction by July 22 that year. Bull Lake cost a little more than a million dollars.[33]

To preserve Riverton's facilities, Reclamation asked the Civilian Conservation Corps (CCC) to help them tackle the greatest natural threat to the project's progress, erosion. Beginning in May 1941, enrollees on loan from the Alcova Project camp spent the next year planting 50,000 tree cuttings. The young trees, running along Five Mile Creek in the middle of the project, prevented rising silt. Besides rip-rapping and laying gravel and brush to fight erosion, CCC forces placed approximately a hundred abandoned cars filled with rock along the banks of the creek. Their efforts helped, as the 1940s brought settlers and stability to the First and Second Divisions. Now, Reclamation turned its attention to the lands they avoided for two decades – the 49,000 acre Third Division.[34]

Post-Construction History

The completion of the two delivery systems, Wyoming and Pilot Canals, concluded all construction on the Riverton Project. Wyoming Canal, first excavated in 1920, shut down in 1926, finally reached completion in 1951. Excavation resumed one mile northwest of Pavillion. Contractors Morrison-Knudsen, Inc. built a 13.6-mile reach, with an initial capacity of 995 cfs, in 1947-48. This section serves the North Portal, Cottonwood Bench,

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33. "Construction of Bull Lake Dam, Riverton Project, Wyoming," 10-4; Shimkin, "Eastern Shoshone," 325.
34. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, 1941, Vol. 24, 11.

and Muddy Ridge areas in the Third Division. June 1950 saw the completion of a 18-mile portion of the Wyoming Canal, including a 2,900-foot tunnel. Reclamation built laterals between 1946 and 1948 to water the Pilot Extensions and Lost Wells areas of the First and Second Divisions. In 1951, with the completion of the canal's remaining 14-miles, a 31-year, 62-mile struggle, hindered by seepage, bureaucratic strategy, and a lack of settlers, concluded.[35]

Work on the 38.2-mile long, 1,000-cfs Pilot Canal started in 1926, only to finish in 1947. The canal follows a course along the project's south side, terminating at the Pilot Extension area along the Big Horn River, northeast of Riverton. The lateral system runs a total of 300 miles, 104 lined, including six miles of pipeline. The drainage system extends 335 miles with 141 miles of closed pipelines. Cost of the Pilot Canal was just under a million dollars.[36]

Temperatures falling, and snow flying, provided the backdrop for a test of wills between man and the elements. On a nine-mile reach of the Wyoming Canal, crews armed with ice saws fought to keep the channel above the power plant free of a small, but treacherous opponent, slush ice. In the cold, moisture froze and formed around particles of silt carried downstream by the Wind River. Once slush ice passed the Wind River Diversion Dam, it piled against the gates of the Wyoming Canal. The slush slowed the canal's flow and threatened the power plant's operation. Floating mounds of slush raised the river as much as 15 feet. In 1948, melted slush flooded 600 acres of productive bottom land. Working exhausting 24-hour shifts, "ice fighters" toiled in temperatures as low as 45 degrees below

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35. *Special Report – Third Division – Riverton Project Wyoming*, 22.
36. U.S., Department of Interior, Bureau of Reclamation, *Report on Asphalt Undersealing a Portion of the Concrete Canal Lining – Wyoming Canal – Riverton Project*, (Denver: March 31, 1950), 4; U.S., Department of Interior, Water and Power Resources Service, *Project Data*, 984.

zero and faced winds strong enough to blow a man into the canal. Luckily, no one drowned or died of exposure. Just in time for the coldest winter in Project history, 1948, a local man countered with a new weapon. Karl Powers, irrigation manager for the Midvale Irrigation District, fit large outboard motors on an iron angle frame wide enough to span an open cut in the ice. Powers wired the outboards to an electric motor, and let the propellers churn away the slush. Powers' invention saved the Irrigation District $19,000 that winter and his neighbors a lot of backbreaking, dangerous hand labor.[37]

If slush ice made winter miserable, silt ruined summer. A no-man's land of silt was Five Mile Creek, running through the heart of the Project. Before irrigation, the creek was a small, dry ditch "which could have been stepped across." The Project used the creek as the principal drainageway to carry irrigation wastes. In the 1930s, Five Mile was 20 feet deep in some places, and nearly a quarter-mile wide before supplying the Big Horn River. From 1935 to 1950, erosion from the bed and banks of the creek stole 27,000 acre-feet of water from the Big Horn. The shifting sands threatened operation of Reclamation's other project on the Wind River, the Boysen Unit. From the twenties to the forties, draglines cleared stream beds of silt, but Reclamation sought a faster solution. In the summer of 1948, a few sticks of dynamite blasted cattails and silt out of a 1,300 foot section of drain north of Pavillion. As the sediment flew into the air, Reclamation recorded the results as "very satisfactory," but dynamite's unpredictability canceled future attempts. The Project triumphed against silt where they applied buried asphalt membrane lining in various reaches of the canals and laterals. Reclamation first tried lining in 1949 and continued into the

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37. "The Water Must Be Delivered," in *The Reclamation Era*, (January, 1948): 1; "Riverton's 'Slush Plow'," in *The Reclamation Era*, (December, 1952): 280-1.

1980s.[38]

Throughout its history, the Riverton Project went through a periods of self-examination. A 1950 financial report reads like a laundry list of Project afflictions. The study blamed inadequate maintenance, labor and equipment shortages during World War II, and difficulties with seepage from the canals and alkali. On New Year's Day 1951, Reclamation transferred operation and maintenance of the Riverton Project to the Midvale Irrigation District. Midvale now managed Bull Lake and Pilot Butte Reservoirs, Wind River Diversion Dam, and part of the Wyoming Canal and pertinent laterals in the First and Second Divisions. Reclamation ran the Pilot Butte Power Plant and the Third Division, waiting to develop the land for returning veterans.[39]

Reclamation shut down the Pilot Butte Power Plant on June 15, 1973, due to the deterioration of the penstock and mounting costs of wintertime operation. Scheduled improvements would doubled the cost of energy to consumers.[40]

Enacted in the early 1970s, Public Law 91-409 authorized $12 million in revenue from Missouri River Basin power sales to pay for the construction and rehabilitation of the Unit's aging facilities. After incorporation into the Pick-Sloan program, Reclamation built sediment excluders at the Wyoming Canal headworks, repaired the Wind River Diversion Dam, and lined and placed pipe in the laterals and drains. When the program was complete in 1986, the final cost totaled $45.6 million. According to Midvale Irrigation District Manager Jack Long, Riverton would have been "inoperable without the improvements."

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38. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Project History*, 1948, Vol. 31, 50; C.R. Miller and W. M. Borland, "Stabilization of Fivemile and Muddy Creeks," in *Journal of the Hydraulics Division*, (January, 1963): 68-9.
39. *Financial Adjustment Report, Midvale Irrigation District, Riverton Project, Wyoming*, 11; "Riverton Project Lands Transferred to Water Users," in *The Reclamation Era*, (April, 1951): 81.
40. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 66, 1983, 20.

Other facilities, like Bull Lake Dam, received improvements when necessary. Three years after its completion, the dam developed cracks below the downstream toe of the dam and along its crest. Installation of a toe drain in June 1951 controlled seepage. The Project added a new gate control system at the spillway in the Spring of 1965 to prevent unscheduled gate openings. For most of its history, Wind River provided enough water for all users, but drought during the mid-1970s depleted its resources. In the spring of 1994, Bull Lake Dam installed a computer that automatically adjusted the outlet gates to maintain desired flows from the Wind River. The new system conserved irrigation and fishery supplies from the reservoir and improved fishery flows in Bull Lake Creek. Depending on conditions, the computer will help conserve between 3,000 and 7,000 acre-feet during spring and summer each year.[41]

Settlement of Project

"Build it and they will come" is a catchphrase at odds with the 75-year-long struggle to lure people to the Riverton Project. At the turn of the century, the Office of the State Engineer of Wyoming estimated there were 265,000 irrigable acres along the Wind River. In 1923, Reclamation Field Commissioner, Miles Cannon, insisted: "To open up 120,000 acres at one time or even in two units probably would result in . . . problems being encountered by water users who financially and from a standpoint of experience would be unable to cope with the situation." Uncontrolled speculation would result in "a serious loss not only to the government but to the people as well."[42]

Irrigators from the First and Second Divisions formed the Midvale Irrigation District

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41. U.S., Department of Interior, Bureau of Reclamation, *SEED Report on Bull Lake Dam*, (Denver: 1986), sec. C-1, p. 6; Paul Davidson, "Automation Adjusts Bull Lake Reservoir Releases," in *Plains Talk*, (June, 1994): 6; High Country News, (ed.), *Western Water Made Simple*, (Washington, D.C.: Island Press, 1987), 148.
42. RG 115, *General Correspondence: Chief Engineering*, Box 1186.

in January 1921. In 1925, water flowed to 1,600 acres west of Pilot Butte Reservoir for the first time. Indians, or out-of-state landholders, held most of those 1,600 acres. Only one owner near the Morton townsite used the water to irrigate his 80 acres of oats. On March 3, 1926, twenty units of public lands, ranging from 35 to 108 acres, were the first units opened under Reclamation's authority. The original entrymen, or other family members, owned almost 60 per cent of the project's private land. Thirty-seven percent of the remaining irrigable acreage was vacant public land.[43]

Before July 1, 1926, qualified veterans of World War I could apply for Project property under the Homestead Laws. After that date, any qualified person could file to settle the units. Born of other project's experiences with settlement, Reclamation required Riverton's homesteaders to pass a review board examination. Interested parties also needed two years experience in farming, $2,000 in cash, or its equivalent in livestock and farm machinery. The Government set land and water rates at $1 an acre for two acre-feet of water with additional water 50 cents an acre foot. Unfortunately, for the Federal Government during the 1920s, there were few takers. As late as 1928, the Fremont County Independent took optimism over Riverton's prospects into uncharted waters of dementia. An editorial predicted, "If time lasts, the day is not so far distant when the Pavillion Valley will be raising feed for vast flocks of turkeys and other poultry with the golden stream of butter-fat flowing from a herd of dairy cows kept on every unit."[44]

A headline in the March 1930 *New Reclamation Era* responded with a jolt of reality: "Riverton Project Needs Settlers, a Railroad, and a Sugar Factory." Reclamation's Director

43. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, 1927, Vol. 10, 25.

44. "Land Opening on Riverton Project, Wyoming" in *New Reclamation Era*, (April, 1926): 63; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Project History*, Vol. 29, 1946, 50; *Fremont County Independent*, 3 May 1928, p. 1.

of Economics, H.A. Brown, longed for a railroad to serve 20,000 acres of irrigable land around Pavillion and the construction of a sugar factory. He also admitted the Project's "forbidding appearance" and lack of capital hurt Riverton's prospects. At the end of the 1929 harvest, Reclamation counted only 19 farmers watering 1,075 acres. Ironically, the effects of the Great Depression stirred the first interest in the Riverton Project. The dust and drought of South Dakota, Nebraska, and eastern Colorado brought settlers to Wind River. Beginning with their first harvest, many refugees from the elements hoarded their entire crop for "home consumption and had little to sell." Farm families developed outside sources of income until their land began to produce. Men and women breaking the rough soil for the first time found little help at the town bank. Charles Kreutzer in his memo to Commissioner Mead noted, the institution "consistently declined to loan money on the class of security possessed by farmers." Creation of Federal lending agencies like the Farm Home Administration in the late 1930s, gave farmers more opportunities to apply, and receive, a loan.[45]

From 1926 to 1930, 18 people qualified for units. Once the Depression struck, interest grew quickly. In 1931, the Project accepted 24 newcomers. Three years later, 1934, saw the peak year of settlement with the arrival of 71 new farmers. Irrigable lands grew from 3,723 acres in 1933 to 25,905 acres five years later. Crop values followed, ballooning from $10,308 in 1930 to $1.4 million by 1945. It took thirteen years – 1926 to 1939 – to fill all the 260 units opened on the First and Second Divisions.[46]

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45. H. A. Brown, "Riverton Project Needs Settlers, a Railroad, and a Sugar Factory," in *New Reclamation Era*, (March, 1930): 44; *General Administrative and Project Records*, Box 930, memo from Charles Kreutzer to Elwood Mead, November 1928.

46. Brown, "Riverton Project Needs Settlers, a Railroad, and a Sugar Factory," *New Reclamation Era*, 44; U.S., Department of Interior, Bureau of Reclamation, *They Subdued the Desert*, (August, 1947), 15; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History*, Vol. 18, 1935, 25.

In May 1942 a high security visit by the War Reclamation Authority and the War Department might have spoiled the project's growth. Teams from both agencies reviewed Riverton's chances as a government internment camp for Japanese-Americans. Euphemistically called a "reception center," both agencies sought 8,000 acres of project land where evacuees would build laterals and clear and level the land. Comstock guided officials of both groups, explaining to them that most of the local population would not support the plan, if word got out. In a letter to Commissioner John C. Page, Comstock wrote: "My faith in the Riverton Project is such that I am confident that it can take this misfortune as it has others and still survive and prosper." In a short time, the same War Department responsible for marshaling the armed forces in North Africa and the Pacific, found Riverton's climate too hostile. They subsequently informed Reclamation they planned to build a camp elsewhere.[47]

Prosperity rewarded the persistent during World War II. Those who hung on during hard times liquidated their debts and built their bank balances from profitable wartime harvests. The legacy of these homesteaders stands in the structures they built during the 1930s and 1940s. The scarcity of traditional building material forced homesteaders to fashion their houses out of tarpaper, second hand logs, or hire Mexican laborers to fabricate and lay adobe bricks. The growth shown on the first two divisions meant the government was ready to authorize a Third Division under the Flood Control Act (58 Stat. 887) of 1944.[48]

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47. RG 115, *General Correspondence: Chief Engineering*, Box 1191.
48. U.S., Department of Interior, Bureau of Reclamation, *Riverton Project Photos*, Box 225151. Located in National Archives and Records Center, Denver; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 17, 1934, 26-7; *Annual Project History, Riverton Project*, Vol. 29, 1946, 50.

After V-J Day, Reclamation, the Midvale Irrigation District, and residents of the Wind River Basin believed new settlers would sustain the momentum of the war years. Letters of inquiry poured in from veterans from across the nation, and hundreds came out to look at the project farms for themselves. The Project tasted anticipation for the first time since the 1906 land rush. In 1947, the Government opened 7,000 acres in the Lost Wells and Pilot Extension sections of the Second Division. The following year, the Second Division expanded by 6,000 acres in the North Pavillion area. In 1950, settlers could farm 7,000 untouched acres in North Portal. Before the Government awarded any units, they put prospective settlers through a lottery qualification. Those people lucky to draw a low number won the right to their own piece of land.[49]

As newcomers colonized the First and Second Divisions in greater numbers, Reclamation heard some bad news about the Third Division. The Third Division, a foundation of promise for post-war homesteaders had a false bottom. A 1951 soil survey reclassified large areas of shallow, apparently irrigable soil in the Third Division as Class 6 – unirrigable. This acreage drained poorly, was susceptible to waterlogging, and clogged with enough alkali to prevent crop cultivation. Congress passed Public Law 258 in 1953 permitting homesteaders on inadequate farms to amend their existing properties with vacant lands on the same project. Public Law 258 also allowed farmers to exchange their units for land on other reclamation projects. Every landowner in the West could file a claim under P.L. 258, but the law specifically helped farmers on the Riverton Project stuck with

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49. *Financial Adjustment Report, Midvale Irrigation District, Riverton Project, Wyoming*, 28; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 67, 1984, 5.

unproductive acreage.[50]

Public Law 258 convinced many farmers to leave the Wyoming. Those who took the Government up on their offer settled the Columbia Basin Project in Washington, the Minidoka Project in Idaho, and the Gila Project in Arizona. Those staying in Riverton added vacated land to their existing acreage. Public Law 258 stabilized the Riverton Project, as remaining homesteaders increased the size of their units and subsequently improved themselves financially. Those determined to farm the Third Division formed an irrigation district in August 1957. By the dawn of the sixties, a Bureau Project History lamented their decision: "The ratio of operating expenses to prices received for crops and livestock continued unfavorable."[51]

With the decade's turn, the situation on the Third Division required the Government to make a hard decision. Reclamation proposed to buy out the homesteaders and write off most of the $20.5 million on the Federal books. A congressional delegation came to Riverton in October 1961 to hear local grievances. The testimonials the delegation heard "were adverse and favored abolishing the project." Reclamation responded by threatening to shut off water to the Third Division if growers refused to sign a repayment contract. One farmer, Marvin H. West, stated to a Denver newspaper in 1962, "10 to 12 years should prove the feasibility of these places. We have not made a living or showed any repayment ability in that time."[52]

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50. *Riverton Ranger*, 15 August 1956, p. 52; *Financial Adjustment Report, Midvale Irrigation District, Riverton Project, Wyoming*, 31.
51. *Riverton Ranger*, 15 August 1956, p. 52; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 56, 1973, 19.
52. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 44, 1961, 12-3; *Rocky Mountain News*, 5 February 1962, p. 11.

The growers' anger was enough to persuade the government in 1964 to pass Public Law 88-278 authorizing Federal purchase of Third Division lands. The Bureau bought back 78 units totaling about 22,000 acres. Farmers from the Midvale Irrigation District leased certain sections of the land over the next six years. In September 1970, Public Law 91-409 consolidated the three divisions of the Riverton Project. Besides employing power sales to pay rehabilitation costs on Project works, the bill restored 8,900 irrigable acres of the Third Division to private ownership. In January 1971, the Third Division Irrigation District ceased operations. The following month, the Government auctioned 43 units to farmers of the Midvale Irrigation District. By spring, the farmers petitioned the 43 units into Midvale. In December, the Government executed a new amendatory repayment contract with Midvale.[53]

Uses of Project Water

The ingenuity of one farmer in the late 1930s illustrates how some played the cards Riverton dealt them. Ocean Lake, a 6,428 acre body of water, 15 miles northwest of Riverton, born of drainage and irrigation wastes, inundated the land of a Dust Bowl escapee. The man put up a few cabins, offered meals, announcing his waters were running with minnows. A decade later, the farmer sold his property for a profit, not because of its value as farmland, but for its recreational appeal.[54]

Recreation is a successful page in the Riverton story. The Wyoming Game and Fish Commission, under contract with the Bureau, administers 28,000 acres along Muddy and Five Mile Creeks, Ocean Lake, Cottonwood Drain, and Cottonwood Bench. The largest

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53. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 56, 1973, 19; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Riverton Project*, Vol. 53, 1970, 7.
54. H. P. Vogt, "Ling Fishing," in *The Reclamation Era*, (March, 1948): 52.

living glacier in the continental United States, Dinwoody Glacier is a short distance from the high water line of the Bull Lake Reservoir. Run-off from the glacier feeds Bull Lake Creek falls. The falls are unique in that the waters plunge over a wall diagonally cut back upstream, instead of following a right angle to the stream's course.[55]

Farmers grew forage and cereal grains after the completion of Pilot Butte Dam. By the mid-1930s, growers planted more row crops, like dry beans and sugar beets. During the 1940s and 1950s, the First and Second Divisions shipped most of its dry bean crop to Cuba. For years, the town of Riverton sought a sugar beet factory, but their efforts went unanswered. Growers must ship their beets to the plant in Worland, 90 miles to the north. By the early 1990s, beans and beets grew on a total of 4,471 acres.

In the 1990s, forage and cereals still occupy most of the irrigated acreage. Cattle and fat lambs feed on the grains and forage before they are sent to market in Omaha and Sioux City, Iowa. In 1991, all crops produced on the Unit totaled $18.1 million. The greatest amount of land was in alfalfa hay with 31,308 acres, followed by irrigated pasture and barley. The Unit houses a farming population of 1,162, living on 555 full-time farms. By the early 1990s, the total irrigable area grew to 72,929, with 67,147 acres cropped.[56]

The Federal Government created the Riverton Project to allow access to the Wind River to whites and Indians. Three-quarters of a century later, the demands of both groups threatened the Unit's stability. The debate began in the mid-1970s when a dry cycle forced the Arapahos and Shoshones to exercise their priority over the river. A 1908 U.S. Supreme

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55. *Annual Project History, Riverton Project*, Vol. 67, 1984, 1; Goldie L. Bezold, "Riverton Scene Cover Page Material," in *The Reclamation Era*, (July, 1939): 171.
56. U.S., Department of Interior, Bureau of Reclamation, *1991 Summary Statistics: Water, Land and Related Data*, (Denver: 1991), 288.

Court decision, known as the Winters Doctrine, gave the tribes the prerogative to shut out non-Indian irrigators downstream in low flow years. In 1975, nearly 4,500 out of 6,000 living on the reservation were unemployed. Both tribes believed they could create jobs through development of a 58-mile Blue Ribbon fishery and tourist center. Fourteen years of flip-flop decisions up the appeals' ladder cost the state and the tribes more than $10 million each. In June 1992, the Wyoming Supreme Court ruled on behalf of the white irrigators, momentarily ending the two tribes plans. As of 1996, threats of further legal action by the Arapaho and Shoshone still fill the Wyoming air. To satisfy all parties, Wyoming has studied building a storage project jointly funded by State, Federal, and tribal governments. Other options include leasing water to non-Indians on a guaranteed annual basis, tapping the groundwater beneath the basin, or another Federal buy out of non-Indian farmers. The agreements made by whites and Indians over a century ago continue to drive the lives of those now living in the Wind River Basin.[57]

Conclusion

The Federal Government mastered the wildest parts of the state of Wyoming during the 20th Century. On Wyoming's 75th anniversary of statehood in 1965, Dr. T. A. Larson in his *History of Wyoming*, insisted one attempt fell short. In analyzing the Riverton Project, Larson wrote the Federal Government wasted $26 million to water nearly 53,000 acres. Larson added that citizens of Wyoming remember Riverton as "a perennial object lesson in the formidable difficulties inherent in large-scale reclamation projects in the West."[58]

On the banks of the Wind River in Wyoming, state officials, Reclamation, and eager

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57. *Rocky Mountain News*, 27 May 1990, p. 42;
58. Larson, *History of Wyoming*, 353.

developers dreamed of duplicating Arizona's Salt River Project or the nearby North Platte Project. The struggle to water almost 70,000 acres took the better part of a century to reach. Their intent was the first of many inaccuracies on a project more notable for its failed ambitions than its triumphs.

Suggested Readings: H. D. Comstock, "The Riverton Project, Present and Future," *The Reclamation Era*, (November 1932): 186-7; T. A. Larson, *History of Wyoming*, Lincoln, Nebraska: University of Nebraska Press, 1965.

About the Author

Robert Autobee holds a Masters' degree in History from the University of Northern Colorado. The Colorado Historical Society published his thesis, *If You Stick With Barnum: A History of a Denver Neighborhood*, as part of their *Essays and Monographs in Colorado History* series in 1993. He has edited and reported for several different Colorado newspapers, and *Western Resources Wrap-Up*, based in Washington, D.C.

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