

# **Minot Extension Project Pick-Sloan Missouri Basin Program**

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## Introduction

In 1944 Congress passed the Flood Control Act authorizing what later became known as the Pick-Sloan Missouri Basin Program (PSMBP); a water resources development program for the entire Missouri River basin. It was a melding of competing plans put forward by the U.S. Army Corps of Engineers and the Bureau of Reclamation. The act split agency responsibilities for basin development giving the Corps primary responsibility for flood control, navigation, and hydropower along the main stem of the Missouri River, while Reclamation directed development of irrigation and hydropower on the river's main tributaries. Over time the PSMBP became one of the largest and most ambitious federal multipurpose river basin programs ever established that included not only flood control, irrigation, and hydroelectric power production, but expanded benefits by providing water for municipal and industrial (M&I) purposes, fish and wildlife enhancement, and recreation.<sup>1</sup>

One such multipurpose unit of the PSMBP was Garrison Dam in North Dakota constructed by the Corps of Engineers. Completed in 1956 the dam was one of the first structures built after passage of the 1944 Flood Control Act providing flood control, navigational benefits, and power production on the Missouri River. The Bureau of Reclamation [Reclamation] incorporated Garrison Dam as the primary storage feature of the proposed Missouri-Souris Project to divert Missouri River water into the Souris River basin in northwestern North Dakota. Plans called for supplying water for irrigation to over one million acres and providing municipal and industrial water to area communities, along with fish and wildlife conservation plans and recreation enhancements. The scheme was later renamed the

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<sup>1</sup> For more information on the Pick-Sloan Missouri Basin Program, see Toni Rae Linenberger, "Overview: Pick-Sloan Missouri Basin Program," Denver: Bureau of Reclamation History Program, 1998, [www.usbr.gov/history/projhist.html](http://www.usbr.gov/history/projhist.html); see also "Pick-Sloan Missouri Basin Program," in U.S. Department of the Interior, Water and Power Resource Services, *Project Data* (Denver: United States Government Printing Office, 1981), 777-8.

Garrison Diversion Unit, and Congress authorized construction in 1965. One of the communities that sought to benefit from the project's M&I development was the city of Minot, North Dakota, which was seeking to gain a much-needed reliable municipal water supply.<sup>2</sup>

The Minot Extension Project became a feature of the Garrison Diversion Unit to develop M&I water for Minot. Located in northwestern North Dakota near the Souris River, the project was to provide 25,890 acre feet of water and included both groundwater development and water diversions from the Missouri River into the Souris River basin. Reclamation planned to construct the project in two phases: Phase 1 was construction of pumping and conveyance facilities to draw groundwater from the Sundre and Minot aquifers to the city's water treatment plant; Phase 2 consisted of a diversion from the Missouri River to a water storage reservoir on Livingston Creek just east of the city and pumping facilities to transport water from the reservoir to the city.

International, environmental, and fiscal issues arose concerning the implementation of Phase 2, and the Bureau of Reclamation was compelled to alter the project to address these concerns. The first major impediment to moving forward with the project came in 1973, when the Canadian Government issued formal protests through the International Boundary Commission over the trans-basin diversion. It raised concerns that irrigation runoff and the introduction of invasive species from the Missouri River could possibly contaminate the Hudson Bay drainage area.<sup>3</sup> The second major obstacle occurred in 1977 when the Garrison Unit was

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<sup>2</sup> "Pick-Sloan Missouri Basin Program, Garrison Diversion Unit," in *Project Data*, 869-76; "Long-Awaited Garrison Diversion Act Is Signed," *Reclamation Era*, 51 (November 1965): 115; "Know How to Switch to Irrigation," *Reclamation Era*, 54 (February 1968): 9-12.

<sup>3</sup> U.S. Department of the Interior, Bureau of Reclamation, *Project History, Minot Extension, Garrison Diversion Unit, Pick-Sloan Missouri Basin Program*, Volume I, 1970-1972, 1-2, in RG 115, Records of the Bureau of Reclamation, Project Histories, National Archives and Records Administration, Rocky Mountain Region, Denver, Colorado, hereafter cited as *Project History* and volume number; see also "Pick-Sloan Missouri Basin Program, Minot Extension, Garrison Diversion Unit," in *Project Data*, 941-44.

named in the so-called Carter “hit list,” forcing Reclamation to drastically scale down development. The irrigation pieces of the project were essentially removed but providing municipal water for Minot remained an imperative. By the turn of the 20<sup>th</sup> Century, only a portion of the Minot Project had been completed as larger area water needs expanded the project’s aims and introduced new issues. Protracted legal battles delayed efforts to complete the now-called Northwest Area Water Supply Project [NAWS] to improve municipal water supplies and quality throughout northwestern North Dakota.

### **Project Location**

The state of North Dakota nearly sits at the geographic center of the North American continent and is equally divided by the 100<sup>th</sup> meridian that separates the arid section of the United States with the humid areas. Its eastern half is part of Central Lowlands region, which consists of a rolling plain covered by glacial drift and drained by the Red and Souris rivers. North Dakota’s western half is part of the Great Plains region, divided into the Drift Prairie and Missouri Escarpment within the Missouri and James rivers watershed. It is a land of extremes where winter temperatures can range well below zero degrees in the northeast to the low 20s in the southwest. Summer temperatures average in the low 80s but can surge to a high of 120. Statewide the average rainfall is 17 inches, but this also varies to 13 inches in the southwest to more than 20 inches in the southeast. Much of the land in North Dakota is extremely fertile and well-suited for agriculture, where the farming season ranges from 134 days in the northwest to 104 days in the northeast.<sup>4</sup>

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<sup>4</sup> “North Dakota,” Britannica Online Encyclopedia, <http://www.britannica.com/place/North-Dakota> (Accessed December 2015).

## Historic Setting

Humans have inhabited the area that North Dakota encompasses for centuries.

Archaeological evidence suggests that human occupation of the region dates back to the Paleoindian tradition, roughly from 11,000 B.P. [Before the Present] to 7,500 B.P. These early inhabitants were followed by what archeologists refer to as the Plains Archaic tradition that spans roughly from 7,500 B.P. to 2,000 B.P. According to one source, “Compared to the Paleoindian tradition, subsistence practices [during the Plains Archaic tradition] . . . are thought to be more divided, in terms of the range of resources utilized, and more focused, with smaller geographical ranges for individual groups.” Over time some groups, such as the Mandan, Hidatsa, and Arikara, became more sedentary forming villages that developed agriculture along riverine floodplains supplemented by periodic bison hunts. By 1730 the introduction of the horse into native cultures had transformed life on the Plains. New groups migrated on to the prairie from eastern woodland areas who, with this new-found mobility, adopted nomadic lifestyles centered on following the movements of large bison herds. It was also during this period when Europeans entered the region in greater numbers, which led to altering native cultures through the “introduction of European trade goods and devastating diseases.”<sup>5</sup>

First European exploration of North Dakota occurred in 1738 when French explorer Pierre Gaultier de Verennes, sieur de la Vérendrye arrived at a Mandan village, searching for a rumored water route west across the continent. Vérendrye was disappointed in his quest observing that all the rivers were running east. Nevertheless, he provided the first descriptions of present-day North Dakota and the people who inhabited it. French fur trappers followed,

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<sup>5</sup> *Northwest Area Water Supply Project–NAWS: Draft Environmental Assessment, DK-600-97-03*, prepared for North Dakota Water Commission, North Dakota Garrison Diversion Conservancy District, U.S. Bureau of Reclamation, June 1997, 86-9.

entering the region as early as the 1770s and opening trade routes and establishing relationships with native peoples. Other governments staked their claims to the region when, for example, James Mackay and John Evans, working for the Spanish Government, explored the Missouri River between 1794 and 1796. With the Louisiana Purchase in 1803, the United States took possession of the area that would one day become North Dakota. The federal government first began to exert its influence and dominion of the northern plains when the Lewis and Clark Expedition wintered with the Mandan in 1805.<sup>6</sup>

For much of the first half of the nineteenth century, the fur trade dominated interactions between Native Americans and Euro-Americans. Although North Dakota contributed relatively little in the production of valuable furs, the Missouri River was a main conduit through which the trade flowed. According to one report, “Manuel Lisa established the Missouri Fur Company, operating in St. Louis, and sent parties up the Missouri in 1809.” These efforts were followed by representatives of John Jacob Astor’s American Fur Company and the Columbian Fur Company. To help keep these trade routes along the Missouri and Yellowstone rivers open, the American Fur Company established Fort Union in North Dakota in 1827. With the decline in the fur trade in the 1830s, Euro-American settlement into the northern plains remained sparse, but the Missouri River remained an active commercial thoroughfare.

Initially the federal government relegated its presence in the northern plains to maintaining open trade and immigration routes and keeping hostilities between competing tribes and Euro-Americans to a minimum. In 1851 the federal government negotiated the Fort Laramie Treaty in an attempt to establish peace among warring tribes and to designate particular territories to each tribe. This treaty opened the door to further treaties throughout the rest of the

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<sup>6</sup> *Northwest Area Water Supply Project*, 90-1.

nineteenth century that drastically reduced Indian territories on the northern plains. After the Civil War, hostilities between Native American groups and the federal government intensified as a result increasing white incursion into the region that culminated in confining tribes into even smaller areas. By 1890 Native Americans in North Dakota were sequestered into four reservations, including two Sioux reservations at Standing Rock and Fort Totten; Chippewa Reservation at Turtle Mountain; Three Affiliated Tribes—Mandan, Hidatsa, and Arikara—at Fort Berthold.<sup>7</sup>

Euro-American settlement of North Dakota began in earnest with the expansion of western railroads into the northern plains during the late nineteenth century. This growth sparked what became known as the “Great Dakota Boom,” which coincided with new milling processes for spring wheat that opened new markets for North Dakota farmers. Increased railroad mileage was a boon to the city of Minot, which became a major railroad hub when the Great Northern Railroad arrived in 1887, followed by the Minneapolis, St. Paul, and Sault Ste. Marie (Soo Line) in 1893. In North Dakota dry-land farming predominated, while some irrigated agriculture developed along the Red and Souris rivers and along the Yellowstone River out west near the Montana border. Ranching also became prevalent in the southwestern portion of the state. Cattle drives that began in Texas drove herds into Dickinson and Medora, North Dakota, bringing more than 500,000 cattle into the area between the Black Hills and the Little Missouri River. North Dakota experienced a second “boom,” between 1898 and 1915, taking in “more than 250,000 persons into the state, hoping to make their fortunes from the last of the free homesteads or cheap railroad lands.”<sup>8</sup>

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<sup>7</sup> *Ibid.*, 91; “North Dakota,” Britannica Online Encyclopedia.

<sup>8</sup> *Northwest Area Water Supply Project*, 91-2; Robert P. Wilkens and Wynona Huchette Wilkens, *North Dakota: A Bicentennial History* (New York: W. W. Norton & Company, Inc.; Nashville: American Association for State and Local History, 1977), 52-5.



The Bureau of Reclamation had a relatively small presence in North Dakota prior to the passage of the Flood Control Act of 1944. In 1902-1903 the Reclamation Service (now the Bureau of Reclamation) conducted project surveys in the Heart River basin finding proposed projects at the time economically unfeasible. A more fruitful enterprise for the Reclamation Service took place along the Yellowstone River near the Montana border, and in 1904 Reclamation began construction of the Lower Yellowstone Project that served over 17,000 acres in North Dakota.<sup>9</sup> Reclamation personnel performed further studies during the 1920s, 1930s, and early 1940s primarily looking into flood control issues. With authorization of the PSMBP, Reclamation activity in the state increased dramatically. Congress authorized construction of the Dickinson Unit of the Heart Diversion on the Heart River in southwestern North Dakota (1949-1952); Jamestown Dam and Reservoir on the James River in Central North Dakota (1952-1953); the Heart Butte Unit also on the Heart River (1948-1949).

Irrigation development was not a major component associated with any of these projects. Instead, the benefits provided were principally flood control, M&I water, and recreational uses. Indeed, long-term water development projects, such as PSMBP, reveal a transformation in Reclamation's mission, as the bureau examined all the possibilities and accrued benefits in developing entire river basins. These projects represent the Bureau of Reclamation's efforts in expanding and redefining water resources development in the American West.<sup>10</sup>

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<sup>9</sup> For more information on the Lower Yellowstone Project, see Timothy A. Dick, "Lower Yellowstone Project," Denver: Bureau of Reclamation History Program, 1993, <https://www.usbr.gov/projects/pdf.php?id=131>.

<sup>10</sup> For more information about these PSMBP projects, see Wm. Joe Simonds, "The Heart Butte Unit, Heart Division, Pick-Sloan Missouri Basin Program," Denver: Bureau of Reclamation History Program, 1996, <https://www.usbr.gov/projects/pdf.php?id=163>; Toni Rae Linenberger, "The Dickinson Unit, Heart Division, Pick-Sloan Missouri Basin Program," Denver: Bureau of Reclamation History Program, 1996, <https://www.usbr.gov/projects/pdf.php?id=158>; Wm. Joe Simonds, "Jamestown Dam and Reservoir Unit, Garrison Diversion Unit, Pick-Sloan Missouri Basin Program," Denver: Bureau of Reclamation History Program, 1996, <https://www.usbr.gov/projects/pdf.php?id=165>.

## **Project Authorization**

Early on the Bureau of Reclamation studied the Missouri-Souris Project, an original unit of the 1944 Flood Control Act to divert water from the Missouri River to supplement water resources in the Souris River basin. The city of Minot became an advocate of the project looking for relief from its constant struggle to maintain a reliable municipal water supply. In 1959 the city hired an engineering firm to study its water problems looking at means to transport water from the Missouri River and develop groundwater supplies. While the subsequent report stated that groundwater development was an option, it determined that pumping Missouri River water would better serve the city's long-term needs.<sup>11</sup> These proposals were well beyond the means of the city, which in turn looked to the federal project for relief.

Water shortages and water quality had been longstanding issues, forcing the city to attempt different methods to obtain a reliable water supply. Since 1915 Minot instituted periodic water rationing, made attempts to recharge the underground aquifer, and purchased water from Lake Darling, a U.S. Fish and Wildlife facility. In addition, two Canadian dams that diverted water from the Souris River had a profound impact on the city's water supply and quality. A Reclamation report stated, "Water taken from the Souris River has an average TDS [total dissolved solids] content of about 780 ppm [parts per million] but it may rise above 1,500 ppm during low flows." These contaminants limited the Souris River's ability to supply Minot with clean water, making the city more reliant upon shrinking groundwater sources.<sup>12</sup>

In 1965 the Corps of Engineers conducted a flood control survey of the Souris River and concluded, "That potential reservoir sites of the Souris River and its tributaries would adequately serve a flood control function but the city's requirements for municipal and industrial water

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<sup>11</sup> *Project History*, Vol I, 1-2.

<sup>12</sup> *Ibid.*

could best be met by importing water from the Missouri River.” With the 1965 congressional authorization of the Garrison Diversion Unit, the city of Minot proposed that its water needs become part of the larger federal project. Under the Public Works Act of 1967, the city obtained funding to conduct a reconnaissance survey to study its water needs. Working with the state, city leaders looked into the possibility of developing groundwater resources from a newly discovered aquifer, the Sunde Buried-Channel Aquifer. After the completion of these studies, state and city official reported that the aquifer would meet Minot’s immediate needs. Because of the projected twenty-five years to complete the Garrison Diversion Unit, both the city and the state requested that groundwater development become part of the unit.<sup>13</sup>

At the same time, the Bureau of Reclamation was conducting its own surveys for the Minot Extension Project and submitted a report “on facilities needed to make water available from the Garrison Diversion Unit.” Reclamation studies echoed those of state and local governments and the Corps of Engineers that groundwater resources existed, but the only satisfactory solution to Minot’s water needs was water transfers from the Missouri River. All of these studies expressed a sense of urgency by pointing out the city’s chronic needs to obtain increased and higher quality water supplies. The Minot Extension Project, according to Reclamation, would achieve both by providing the community a stable and cleaner water supply well into the next century.<sup>14</sup>

In 1968 the Bureau of Reclamation received authorization to perform a feasibility study and completed designs and estimates for the Sunde Pipeline and pumping plant and other

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<sup>13</sup> *Project History*, Vol I, 1-2; United States Department of the Interior, Bureau of Reclamation, Region 6, “Report on Minot Extension Garrison Diversion Unit, North Dakota, Garrison Diversion Missouri Basin Project,” Missouri-Souris Project Office, Bismarck, North Dakota, March 1970, 2-4.

<sup>14</sup> “Report on Minot Extension Garrison Diversion Unit, North Dakota, Garrison Diversion Missouri Basin Project,” July 1969, 1.

project features to provide 25,890 acre feet of water to the city of Minot. Reclamation reported that water for the community would come from two sources: groundwater development of the Sundre Aquifer, and a diversion of Missouri River water from facilities of the Garrison Diversion Unit. Studies estimated that the groundwater had “a sustained capability of at least 6.0 m.g.d. [million gallons per day], indefinitely;” water deliveries to be provided by two pipelines and a pumping plant. Proposed project facilities for the second phase included two pumping stations: one on the Garrison Diversion Unit’s Velva Canal, the other 3.7 miles from the canal on the Livingston Pipeline. Other features included a 9.4-mile Livingston Pipeline, Livingston Dam and Reservoir, and a 4.7-mile Minot Pipeline from the reservoir to Minot. Plans anticipated pumping water from the Velva Canal to Livingston Reservoir then conveyed via the Minot Pipeline to the city’s water treatment plant. Reclamation also noted that the diversion portion of the project was dependent upon completion of the Velva Canal, a feature of the Garrison Diversion Unit which was still awaiting construction.<sup>15</sup>

In September of 1970, the President Richard Nixon signed legislation authorizing construction of the Minot Extension Project. The act encompassed all of the Bureau of Reclamation’s proposals, calling for both Missouri River diversions and groundwater development. In addition, Congress authorized the Secretary of the Interior to develop fish and wildlife conservation plans and recreation enhancement. Finally, the law also maintained that operation of the project was to ensure that return flows into the Souris River did not violate water quality standards “pursuant to the Water Quality Act of 1965.”<sup>16</sup>

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<sup>15</sup> *Ibid.*, 2-3.

<sup>16</sup> Minot Extension Project,” in United States Department of the Interior, Bureau of Reclamation, *Federal Reclamation and Related Laws Annotated*, Richard K. Pelz, editor, Volume IV of Four Volumes, 1967-1982 (Denver: United States Government Printing Office, 1989), 2539-4.

Before construction began there were slight changes to the original plan when the city opted to use its groundwater pumps adjacent to the Sundre Aquifer. This alteration meant eliminating the construction of the Sundre Pumping Plant. Instead, the city's pumps would transfer water into a surge tank built to be built by Reclamation, and that tank marked where the federal project began.<sup>17</sup>

### **Construction**

Based on the city's immediate needs and the fact that Garrison Diversion Unit components to facilitate Missouri River water transfers were not constructed, it was determined to begin construction of Phase 1. This portion of the project consisted of two pipelines to transport groundwater to the city's water treatment plant. Overall, the water would flow from the city's pumping plant into a 24,000-gallon forebay regulating tank constructed by Reclamation; from there, transported 0.4 miles through the first section of the Sundre Pipeline to a 21,000-gallon concrete afterbay tank. From the afterbay tank, water would flow by gravity 3.3 miles through the second section of the Sundre Pipeline and tie into the Minot Pipeline, which was then planned to transport water from Dickenson Reservoir. The Minot Pipeline would then direct water 3.7 miles to the city's water treatment plant.<sup>18</sup>

Reclamation signed the construction contracts on November 17, 1982; Abbott, Arne, Schwindt, Inc. and Geo E. Haggart, Inc. received the contract for the Sundre Pipeline at \$586,665, while Sornsins Construction Company was to build the Minot Pipeline at \$1,757,542. Construction for the Sundre Pipeline began in April 1973, and Sornsins started on the Minot Pipeline in May. In general, neither contractor ran into any major difficulties or issues, although

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<sup>17</sup>; *Project History*, Vol. 1, 2-3; "Report on Minot Extension Garrison Diversion Unit, North Dakota, Garrison Diversion Missouri Basin Project," March 1970, 7, 10.

<sup>18</sup> "Report on Minot Extension Garrison Diversion Unit, North Dakota, Garrison Diversion Missouri Basin Project," March 1970, 7; *Project History*, Vol. I, 1-2.

the Minot Pipeline was a little more complicating due to its crossing of the Souris River and a railroad line. Construction of the Sundre Pipeline was complete in September 1974, and the Minot Pipeline essentially finished in October 1975.<sup>19</sup>

Although major construction was complete, Reclamation did not call all aspects of Phase 1 of the Minot Extension Project complete until 1976. The Minot Pipeline contractor ran into problems while pressure testing the pipeline for leaks. This issue, along with a pipe failure, took most of the year to correct, and it was not until December that pipe tests were well within tolerance levels and this portion of the project was accepted as complete.<sup>20</sup> Completion of the groundwater facilities eased the city of Minot's water supply problems. Reclamation's next step was construction of Phase 2 and the diversion of Missouri River water, and that was contingent upon completion of major portions of the Garrison Diversion Unit.

### **Post Construction—Phase 2 Delayed**

The urgency presented to justify construction of Minot Extension Project led to the construction of Phase 1 to meet the city's immediate needs. But all interests considered the groundwater development portion of the project as an expedient measure to supply supplemental water once the water delivery system from the Missouri River was complete. According to one report, "Missouri River water delivered from the Minot Extension of the Garrison Diversion Unit would completely replace the present municipal and industrial supplies for Minot. Souris River water and well water would only be used on a standby basis . . ." All that was required was

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<sup>19</sup> *Project History*, Vol. II, 51; *Project History*, Vol. III, 9; *Project History*, Vol IV, 9; see also Water and Power Resource Services, *Project Data*, 943.

<sup>20</sup> *Project History*, Vol. V, 7.

completion of major components of the Garrison Diversion Unit to achieve the end results for the city of Minot.<sup>21</sup>

Completion of the Garrison Diversion Unit ran into barriers even before construction of the Minot Extension's Phase 1 began. In 1973 the Canadian Government "requested a moratorium on all further construction of the Garrison Diversion Unit until a mutually acceptable solution for the protection of Canadian interests, under the Boundary Waters Treaty of 1909, was achieved." As mentioned above, Canadian concerns stemmed from the possibility of contamination from invasive species and irrigation runoff entering the Hudson Bay basin. In 1975 the matter was referred to the International Joint Committee, which created the International Garrison Diversion Study Board to investigate the issue. In its report the board "concluded that the Garrison Diversion would have adverse impacts of water use in Canada."<sup>22</sup>

Two years later, in 1977, construction efforts for the Garrison Diversion Unit received another setback when the administration of President Jimmy Carter released what became known as the "hit list." Carter had entered the White House promising to cut federal spending and balance the federal budget. One area in which he and his advisors looked to cut spending was in federal water projects. In all, the president's proposal sought to eliminate fourteen Corps of Engineer projects, and seven Bureau of Reclamation projects, including the Garrison Division, saving the American taxpayer an estimated \$4 billion. Carter based these cuts on what he considered dubious benefit/cost analysis, safety concerns, and "environmental values . . . to

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<sup>21</sup> "Report on Minot Extension Garrison Diversion Unit, North Dakota, Garrison Diversion Missouri Basin Project," March 1970, 3-4.

<sup>22</sup> North Dakota Legislative Council, "Garrison Diversion Issues—Background Memorandum," October 1997, 1-2.

ensure that irreplaceable natural resources are protected from needless degradation or destruction.”<sup>23</sup>

Carter’s so-called “hit list” called for drastic reductions in construction plans for the Garrison Diversion Unit. Crucial for the completion of the Minot Extension Project was the proposal to eliminate the Velva Canal. Completion of the canal was an important feature in the development and ultimate delivery of water to the Minot Extension Project. As mentioned earlier, the Reclamation plans called for the canal to be the jumping off point of transporting Missouri River water to the city of Minot. According to the report removal of the Velva Canal from the project would eliminate “the international concerns associated with the Souris River” and “impacts on three National Wildlife Refuges.” It also noted that cancelling construction of the Missouri River diversion portions of the project would have harmful effects on the water supply problems for the city of Minot and that “[a]n additional source of water would be needed.” The problem the federal government faced was that Minot had signed contracts for delivery of M&I water, and the obligation of the federal government to fulfill the commitment.<sup>24</sup>

In the end, construction of those structures to divert water from the Missouri River was cancelled from the project, and the Garrison Diversion Unit completely remodified. Those cancellations, however, did not end discussions on finding ways to supply Minot with a stable water supply. By the mid-1980s municipal water supplies throughout northwestern North Dakota continued to attract attention and study. These communities suffered from similar water

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<sup>23</sup> “Carter Hit List,” Binder of Carter Administration Primary Source Documents—Memorandums, Reports, Press Releases—Covering Proposals to Scale Back or Eliminate Bureau of Reclamation Water Projects, Bureau of Reclamation History Program, Denver, Colorado, hereafter cited “Carter Hit List;” Andrew H. Gahan and William D. Rowley, *The Bureau of Reclamation: From Developing to Managing Water, 1945-2000* (Denver, Colorado: Bureau of Reclamation, Department of the Interior, 2012), 834.

<sup>24</sup> Secretary of the Interior to Director, Office of Management and Budget, Memorandum, Subject: Recommendation to the President of the Garrison Diversion Unit, Pick-Sloan Missouri Basin Program; U.S. Department of the Interior Water Projects Review, Garrison Diversion Unit, North Dakota, April 1977, 31-33, in “Carter Hit List.”



problems as Minot: insufficient or poor groundwater quality, inability “to take advantage of surface water supplies,” and the lack of economic resources to improve their water situation. In 1986 Congress sought to address these issues by passing the Garrison Diversion Unit Reformation Act that “authorized the appropriation of \$200 million of federal funds for planning and construction of water supply facilities throughout North Dakota.” The plan called for an extensive construction regimen to provide MR&I [Municipal, Rural, and Industrial] water in ten counties throughout north central North Dakota. Project facilities include an intake at either Lake Sakakawea or Lake Audubon on the Missouri River, a pretreatment facility, eight storage reservoirs, thirteen pumping plants, 304 miles of distribution piping, and an upgraded water treatment plant at Minot.<sup>25</sup>

### **Northwest Area Water Supply Project**

Plans to move forward with implementing the Garrison Diversion Unit Reformation Act began by renaming the project the Northwest Area Water Supply Project (NAWS) but soon stalled. Renewed concerns of the Canadian government emerged from the possible introduction of invasive species in the Hudson Bay basin, challenging the conclusions presented in a series of Reclamation environmental reports, reviews, and studies. In 2001 Reclamation released a “Finding of No Significant Impact for the Northwest Area Water supply Project in North Dakota” [FONSI] claiming that Reclamation’s plans would have no meaningful effects on water quality within the Hudson Bay watershed. Reclamation proposed an integrated system

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<sup>25</sup> North Dakota Legislative Council, “Garrison Diversion Issues—Background Memorandum,” October 1997, 2-5; for information on the Garrison Diversion Unit Reformation Act, see “Garrison Diversion Unit Reformation Act of 1986,” in United States Department of the Interior, Bureau of Reclamation, *Federal Reclamation and Related Laws Annotated (Preliminary)*, Donald J. Walker, editor, Volume V of Five Volumes, 1983-1998 (Denver: United States Government Printing Office, 2001), 3464-74; *Northwest Area Water Supply Project—NAWS: Draft Environmental Assessment, DK-600-97-03*, prepared for North Dakota Water Commission, North Dakota Garrison Diversion Conservancy District, U.S. Bureau of Reclamation, June 1997, 1-5; Bureau of Reclamation, Great Plains Regional Office, Dakota Area Office, *Finding of No Significant Impact for the Northwest Area Water Supply Project in North Dakota*, FONSI No. DK-600-97-03, Revised and Reissued: September 10, 2001, 2.

consisting of “one intake at either Lake Sakakawea or Lake Audubon on the Missouri River; a pretreatment facility at the intake or the Max booster pump station; an upgraded, centralized, final treatment plant at Minot; eight storage reservoirs; 13 pumping plants; and 304 miles of distribution pipelines.” Final reviews determined that Lake Sakakawea would be the source of water, and pipeline construction from the reservoir to the city of Minot Began in 2002.<sup>26</sup>

By the turn of the century, the municipal water situation in northwest North Dakota had grown even more dire. The city of Minot was not only using groundwater from the Minot and Sindre aquifers, but also delivering water to surrounding communities, as an expediency “to alleviate some of the area’s most severe water quality problems.” This added responsible put even more pressure on the aquifers, further stretching limited water supplies. But even this measure had a short lifetime as studies indicate that both aquifers are “being withdrawn at an unsustainable rate.”<sup>27</sup> According to one report,

Historically, these aquifers were both recharge from and discharge to the Souris River: when river flows were high, these aquifers were recharged by the river; when river flows were low, the river was recharged by the aquifers. This two-way relationship has changed for two reasons: A) two water storage reservoirs have been built in Canada which are reducing flows on the Souris River in the United States, and B) the increased use of water out of the Minot and Sindre Aquifers to supply Minot and surrounding areas has reduced discharge from the aquifers to the river.”<sup>28</sup>

The proposed diversion from the Missouri River at Lake Sakakawea still looked to be the best method to alleviate an almost untenable position.

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<sup>26</sup> Bureau of Reclamation, Great Plains Regional Office, Dakota Area Office, *Finding of No Significant Impact for the Northwest Area Water Supply Project in North Dakota*, FONSI No. DK-600-97-03, Revised and Reissued: September 10, 2001, 2; U.S. Department of the Interior, Bureau of Reclamation, Great Plains Region, *Executive Summary Northwest Area Water Supply Project Draft Supplemental Environmental Impact Statement*, June 2014, 1.

<sup>27</sup> Bureau of Reclamation, “Northwest Area Water Supply Project final Supplemental Environmental Impact Statement, Executive Summary,” April 2015, 1-6.

<sup>28</sup> Houston Engineering, Inc., American Engineering P.C., Montgomery Watson, and Bluestem Incorporated, *Northwest area Water Supply Project: Final Environmental Assessment*, DK-600-97-03, prepared for North Dakota Water Commission, North Dakota Garrison Diversion Conservancy District, U.S. Bureau of Reclamation, April 2001, 16.

As work on the pipeline continued, the Province of Manitoba in Canada filed a suit in the U.S. District Court challenging the conclusion of the FONSI. In 2005 the court ordered Reclamation “to complete additional analysis related to water treatment for potential biological organisms.” Shortly thereafter, a second court order allowed construction to continue on those features that would have no impact on water treatment aspect of the project. This meant that work could only be the pipeline pieces of the project.<sup>29</sup> In 2008 Reclamation released an environmental impact statement in response to the court’s 2005 injunction. Almost immediately afterwards, Manitoba Province filed a supplemental complaint “contending that the Final EIS was insufficient.” This action was soon followed by suit filed by the State of Missouri on the grounds that the EIS did not adequately “examine the cumulative impacts of water withdrawals on Lake Sakakawea on the Missouri River.” In March 2010, the court remanded the case to Reclamation and the 2005 injunctions remained in effect. “The court found that the EIS inadequately examined the cumulative impacts of water withdrawals on Lake Sakakawea and the Missouri River and the consequences of transferring potentially invasive species into the Hudson Bay Basin.” By that time 45 miles of the pipeline between Minot and Lake Sakakawea had been built.<sup>30</sup>

Court proceedings regarding the fate of the NAWWS continued for the next seven years in the U.S. District Court. In 2014 Reclamation released a *Draft Supplemental Environmental Impact Statement* proposing multiple alternatives for completing the project, including a “No Action” alternative. Reclamation maintained that the best option would be what was referred to

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<sup>29</sup> North Dakota Water Resources and the City of Minot, “North Dakota’s January 2023 NORTHWEST AREA WATER SUPPLY PROJECT,” *naws\_brochure.pdf* (nd.gov) (Accessed February 2023).

<sup>30</sup> “Northwest Area Water Supply Project final Supplemental Environmental Impact Statement, Executive Summary,” 1-2; Cardno ENTRIX for the U.S. Department of the Interior, Bureau of Reclamation, *Summary of Public Comments Northwest Area Water Supply Project*, August 12, 2011, 3.

as the “Missouri River with Groundwater Alternative.” It claimed, “This alternative . . . would not impact the Souris River or the J. Clark Salyer National Wildlife Refuge, and [*sic*] would have minimal effects on the Missouri River and related resources.” Other benefits included reducing groundwater withdrawals and no potential impacts from the transfer of aquatic invasive species. Reclamation estimated that the project would cost \$244 million with an annual operation maintenance, and renewal cost of \$10.7 million. Project costs to date had come to \$110.4 million, leaving “the estimated cost to complete construction is \$133.6 million.”<sup>31</sup>

### **Conclusion**

In 2017 the U.S. District Court ruled in favor of the project, and the decision was upheld by the Appellate Court in 2019. Project construction resumed with upgrades to the Minot Water Treatment Plant. Phase I of the Biota Treatment Plant in Max, North Dakota, is under construction with an estimated completion in 2024. Phases II and III concerning upgrades to the Minot Treatment Plant and Biota Treatment Plant are in the planning stages and “will be designed and constructed as funding and water availability allow and as water demands dictate.” Project construction is expected to end in 2029<sup>32</sup>

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<sup>31</sup> U.S. Department of the Interior, Bureau of Reclamation, Great Plains Region, *Executive Summary Northwest Area Water Supply Project Draft Supplemental Environmental Impact Statement*, June 2014, 16; U.S. Bureau of Reclamation, “Record of Decision for the Northwest Area Water Supply Project Final Supplemental Environmental Impact Statement,” August 21, 2015, 6-7.

<sup>32</sup> “North Dakota’s January 2023 NORTHWEST AREA WATER SUPPLY PROJECT.

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