

Responses to the National Wildlife Federation

Comments on the Draft Report on the Red River Valley Water Supply Project Needs and Options

GARY L. PEARSON, D.V.M.
1305 Business Loop East
Jamestown, North Dakota 58401
Telephone (701) 252-6036
Facsimile (701) 251-6160
Email: gepearson@daktel.com

October 3, 2005

Red River Valley Water Supply Project
U. S. Department of the Interior
Bureau of Reclamation
Dakotas Area Office
P. O. Box 1017
Bismarck, North Dakota 58502-1017

Dear Sir or Madam:

Enclosed are my comments on the U. S. Bureau of Reclamation's *Draft Report on Red River Valley Water Needs and Options* submitted on behalf of the National Wildlife Federation.

I would request that these comments be incorporated in the Bureau's official record of public review of the *Draft Report on Red River Valley Water Needs and Options*, and that they, and other comments received in the public review process, be included in or appended to the *Final Report on Red River Valley Water Needs and Options* prepared by the Secretary of the Interior and transmitted to the Congress as provided under Paragraph 8(b)(3) of the Dakota Water Resources Act of 2000.

Sincerely,

Gary L. Pearson, D.V.M.

Responses to the National Wildlife Federation

Response to Comment 1 (cover letter)

Your cover letter and attached comments have been included in the official administrative record that documents review of the “Draft Report on the Red River Valley Water Needs and Options.” All of the comment letters have been posted for public viewing on our web site at www.usbr.gov/gp/dkao. Congress has been notified of the location of these comments. Reclamation’s responses to these comments are posted on that same web site.

**NORTH DAKOTA'S PLAN
FOR HIJACKING
THE MISSOURI RIVER**

**A REVIEW OF THE
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
DAKOTAS AREA OFFICE**

**DRAFT REPORT
ON
RED RIVER VALLEY
WATER NEEDS AND OPTIONS**

By

Gary L. Pearson

National Wildlife Federation Representative
on the
Red River Valley Water Supply Study
Technical Team

October 1, 2005

Table of Contents

Introduction.....	3
The Dakota Water Resources Act and the Red River Valley Water Supply Project.....	3
The Dakota Water Resources Act and the Garrison Diversion Project	7
History of Missouri River Diversion in North Dakota	11
The Pursuit of Missouri River Diversion.....	11
The Missouri-Souris Diversion Unit.....	11
The Garrison Diversion Unit	12
Plans and Authorization.....	12
Development of Opposition to the Project.....	13
Canadian Concerns and the International Joint Commission	14
The Carter Administration.....	16
Lack of Support for the Project in North Dakota.....	16
The Congress	16
The Reagan Administration and the Garrison Diversion Unit Commission.....	16
The Garrison Diversion Unit Reformulation Act of 1986	17
The 1990 Department of the Interior Inspector General's Report.....	18
The 1990 Garrison Diversion Unit Task Group Report.....	19
North Dakota Reneges on Agreements – Devils Lake Inlet.....	19
North Dakota Reneges on Agreements – Mid-Dakota Reservoir.....	20
The 1992 North Dakota Water Projects Tax Initiative	21
The 1993 North Dakota Water Management Collaborative Process.....	21
North Dakota Reneges on the 1986 Statement of Principles	22
The Garrison Diversion Project Completion Act of 1996	23
The Northwest Area Water Supply Project	24
The Debt Owed to North Dakota.....	27
The Bill Entitled The Dakota Water Resources Act of 1997	28
The Bill Entitled The Dakota Water Resources Act of 1998.....	28
The Bill Entitled The Dakota Water Resources Act of 1999.....	31
The Dakota Water Resources Act of 2000	32
Lessons from History.....	35
The Red River Valley Water MR&I Water Needs Assessment	36
The Red River Valley Water Supply Study.....	40
The Draft Report on Red River Valley Water Needs and Options.....	44
Red River Valley Water Needs.....	44
Planning Horizon.....	45
Population Projections	48
Per Capita Water Use.....	49
Water Conservation	50
Industrial Water Needs	56
Future Red River Valley MR&I Water Shortages.....	57
The Specter of Drought.....	57

Current Conditions.....	57
Future Conditions	59
The Probability of Drought.....	59
Red River Valley Water Supply Options.....	61
Options.....	61
Operation	62
The Missouri River as a Water Source for the Red River Valley.....	63
North Dakota's Preferred Option.....	64
Bias in the Draft Report on Red River Valley Water Needs and Options and Violation of the Dakota Water Resources Act of 2000.....	67
Funding and Reimbursement for the Red River Valley Water Supply Project	71
The Garrison Diversion Unit Reformulation Act of 1986.....	71
The Dakota Water Resources Act of 2000	72
Funding and Reimbursement Scenarios Under the Dakota Water Resources Act of 2000	75
Implications for the Draft Report on Red River Valley Water Needs and Options.....	83
References.....	85

INTRODUCTION

The Dakota Water Resources Act of 2000 and the Red River Valley Water Supply Project

Subsection 8(a) of the Dakota Water Resources Act of 2000 (DWRA) deals with a RED RIVER VALLEY WATER SUPPLY PROJECT, and Paragraph 8(a)(1) states:

“IN GENERAL – Subject to the requirements of this section, the Secretary [of the Interior] shall construct a feature or features to provide water to the Sheyenne River water supply and release facility or such other features as are selected under subsection (d).”

The Sheyenne River Water Supply and Release Facility is addressed in Paragraph 8(e), SHEYENNE RIVER WATER SUPPLY AND RELEASE OR ALTERNATE FEATURTES, which states:

“The Secretary shall construct, operate, and maintain a Sheyenne River water supply and release feature (including a water treatment plant) capable of delivering 100 cubic feet per second of water or any other amount determined in the reports under this section, for the cities of Fargo and Grand Forks and surrounding communities, or such other feature or features as may be selected under subsection (d).”

The Sheyenne River Water Supply and Release Facility would deliver Missouri River water to the Sheyenne River, which is in the Red River Basin within the Hudson Bay Drainage Basin, through the Bureau of Reclamation’s uncompleted Garrison Diversion Unit principal supply works. Subsection 8(d) of the DWRA deals with the PROCESS FOR SELECTION of a Red River Valley Water Supply alternative and Paragraph 8(d)(1) states:

“IN GENERAL – After reviewing the final report required by subsection (b)(1) and complying with subsection (c), the Secretary, in consultation and coordination with the State of North Dakota in coordination with affected local communities, shall select 1 or more project features described in subsection (a) that will meet the comprehensive water quality and quantity needs of the Red River Valley. . . .”

Paragraph 8(b)(1) deals with the REPORT ON RED RIVER VALLEY WATER NEEDS AND OPTIONS, and states:

“IN GENERAL – The Secretary of the Interior shall conduct a comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs.” (Emphasis added)

Paragraph 8(b)(2) on NEEDS states:

“The needs addressed in the report shall include such needs as –

- (A) municipal, rural, and industrial water supplies;**
- (B) water quality;**
- (C) aquatic environment;**
- (D) recreation; and**
- (E) water conservation measures.”**

Responses to the National Wildlife Federation

Response to Comment 2

Thank you for your personal account of the history of the GDU (Garrison Diversion Unit). We have no comment.

Paragraph 8(b)(3) defines the PROCESS by which the Secretary is to conduct the comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs directed in Paragraph 8(b)(1), and specifies that:

“In conducting the study, the Secretary through an open and public process shall solicit input from gubernatorial designees from states that may be affected by possible options to meet such needs as well as designees from other federal agencies with relevant expertise. For any option that includes an out-of-basin solution, the Secretary shall consider the effect of the option on other states that may be affected by such option, as well as other appropriate considerations. Upon completion, a draft of the study shall be provided by the Secretary to such states and federal agencies. Such states and agencies shall be given not less than 120 days to review and comment on the study method, findings and conclusions leading to any alternative that may have an impact on such states or on resources subject to such federal agencies’ jurisdiction. The Secretary shall receive and take into consideration any such comments and produce a final report and transmit the final report to Congress.” (Emphasis added)

The significance of the language of DWRA Paragraph 8(b)(1) explicitly directing the Secretary of the Interior to conduct the study for the REPORT ON RED RIVER VALLEY WATER NEEDS AND OPTIONS is further confirmed in the statement of North Dakota Senator Byron Dorgan following passage of the Act in the Senate on October 13, 2000, on an unanimous consent agreement without debate, where he explained that the bill laid out a process for meeting the water needs of the Red River Valley and emphasized that:

“First, the Secretary of the Interior will identify these water needs and evaluate options for meeting them.” (See Congressional Record – Senate, S10534, October 12, 2000)

The Bureau of Reclamation’s *DRAFT REPORT ON RED RIVER VALLEY WATER NEEDS AND OPTIONS (Draft Report)* was prepared pursuant to DWRA Paragraph 8(b)(3) (Draft Report, p. 5-19).

DWRA Subsection 8(b) dealing with the REPORT ON RED RIVER VALLEY WATER NEEDS AND OPTIONS does not identify specific options to be considered in the Secretary’s study, but Subparagraph 8(a)(3)(A) provides that:

“If the Secretary selects a project feature under this section that would provide water from the Missouri River or its tributaries to the Sheyenne River water supply and release facility or from the Missouri River or its tributaries to such other conveyance facility as the Secretary selects under this section, no later than 90 days after the completion of the final environmental impact statement, the Secretary shall transmit to Congress a comprehensive report which provides –

- (i) a detailed description of the project feature;
- (ii) a summary of major issues addressed in the environmental impact statement;
- (iii) likely effects, if any, on other States bordering the Missouri River and on the State of Minnesota; and
- (iv) a description of how the project feature complies with the requirements of section 1(h)(1) of this Act (relating to the Boundary Waters Treaty of 1909).”

Subparagraph 8(a)(3)(B) then goes on to specify that:

“No project feature or features that would provide water from the Missouri River or its tributaries to the Sheyenne River water supply and release facility or from the Missouri River or its tributaries to such other conveyance facility as the Secretary selects under this section shall be constructed unless such feature is specifically authorized by an Act of Congress approved subsequent to the Secretary’s transmittal of the report required in subparagraph (A). If, after complying with subsections (b) through (d) of this section, the Secretary selects a feature or features using only in-basin sources of water to meet the needs of the Red River Valley identified in subsection (b), such features are authorized without further Act of Congress. The Act of Congress referred to in this subparagraph must be an authorization bill, and shall not be a bill making appropriations.”

Thus, the DWRA, which was enacted as an amendment to the \$450 billion Fiscal Year 2001 Health and Human Services Appropriations Act, authorizes a Red River Valley in-basin water supply alternative through the appropriations process, but specifies that an out-of-basin alternative cannot be authorized in an appropriations bill and would have to be approved by the Congress in an authorization bill.

Although DWRA Subsection 8(b) dealing with the Report on Red River Valley Water Needs and Options does not identify specific options to be considered, Subsection 8(c) dealing with the draft environmental impact statement specifies in Subparagraph 8(c)(2)(A) that:

“**DEADLINE** – Pursuant to an agreement between the Secretary and the State of North Dakota as authorized under section 1(g), not later than 1 year after the date of enactment of the Dakota Water Resources Act of 2000, the Secretary and the State of North Dakota shall jointly prepare and complete a draft environmental impact statement concerning all feasible options to meet the comprehensive water quality and quantity needs of the Red River Valley and options for meeting those needs, **including the delivery of Missouri River water to the Red River Valley.**” (Emphasis added)

Section 8 of the Dakota Water Resources Act of 2000 deals principally with the selection of a Red River Valley Water Supply Project, but the Act also:

- Authorizes \$200,000,000 million in appropriations for the construction of a Red River Valley Water Supply Project (Subparagraph 10[a][1][B]).
- Authorizes an additional \$200,000,000 for the statewide municipal, rural and industrial (MR&I) water supply program that was authorized by the 1986 Garrison Diversion Unit Reformulation Act (Subparagraph 10[b][1][B]) and makes the Red River Valley Water Supply Project, as well as North Dakota’s Southwest Pipeline Project and the Northwest Area Water Supply project, eligible for funding under the program (Paragraph 7[a][3]).
- Authorizes an additional \$200,000,000 for Indian MR&I projects (Subparagraph 10[b][2][b]).
- Authorizes 57,900 acres of irrigation development based on the Garrison Diversion Unit’s principal supply works, the Missouri River, and the James River (Paragraphs 5[a][1] and 5[a][3]).

- Authorizes 17,580 acres of irrigation on Indian reservations based on the Missouri River (Subsection 5[c]).
- Requires the Secretary of the Interior to maintain the Snake Creek Pumping Plant, the McClusky Canal and the New Rockford Canal features of the Garrison Diversion Unit's principal supply works (Paragraph 5[a][5]).
- Deauthorizes the Taayer Reservoir (Paragraph 2[j][4]) and the Lonetree Reservoir (Paragraph 2[j][5]).
- Delays the decision on the transfer of the title to the Oakes Irrigation Test Area on the James River (which was to receive Missouri River water from the Garrison Diversion Unit's New Rockford Canal) to the State of North Dakota until two years after execution of the record of decision on the Red River Valley Water Supply Project (Subsection 9[a]).
- Changes the Wetlands Trust authorized by the 1986 Garrison Diversion Unit Reformulation Act to the Natural Resources Trust (Subsection 11[b]) and utilizes appropriations for the Trust for the operation and maintenance of lands developed for mitigation of the adverse impacts of other projects authorized under the Act (Paragraph 10[c][5]).

Because the development of other projects authorized by the Dakota Water Resources Act—particularly irrigation based on the McClusky and New Rockford canals (and potentially on the James River)—will be substantially influenced by the Red River Valley Water Supply Project option that is selected and whether it utilizes features of the Garrison Diversion Unit's principal supply works, it is necessary to consider Section 8 of the DWRA in the context of the entire Act.

The Dakota Water Resources Act and the Garrison Diversion Project

On August 28, 1997, the Associated Press reported that North Dakota Senator Kent Conrad was proposing that the title of the draft "Garrison Diversion Project Completion Act of 1996" be changed to the "North Dakota Water Supply Project," and that:

"Conrad said the name change is important if the state is to begin a new push to get Congress to approve money for to complete this project." (Emphasis added)
(Associated Press, 1997)

Less than three months later, on November 10, 1997, North Dakota Senators Kent Conrad and Byron Dorgan introduced Senate Bill 1515, the "Dakota Water Resources Act 1997," to amend the 1965 Act which authorized the 250,000-acre Garrison Diversion Unit irrigation project in North Dakota. Three years later, the Associated Press reported on October 14, 2000 that:

"The Senate passed compromise Garrison diversion legislation Friday..."

The bill, the Dakota Water Resources Act, authorizes \$631 million for North Dakota water projects." (Associated Press, 2000)

Subsequently, officials of the Garrison Diversion Conservancy District confirmed that:

“The Dakota Water Resources Act (DWRA), a revised Garrison Project which amends the 1986 Garrison Diversion Reformulation Act, was initially introduced into Congress in 1997. . . .” (Jamison, et al., 2001).

A Garrison Diversion Conservancy District news release issued on December 15, 2000, the day the Dakota Water Resources Act of 2000 was passed, proclaimed:

“Passage of the Dakota Water Resources Act (DWRA) is a major chapter in a very long history book, but it is **not the final chapter needed to meet North Dakota’s highest priority water needs,**’ said Warren Jamison, manager of the Garrison Diversion Conservancy District. **‘We see this as the beginning of an important first phase,** ending in a solution that addresses North Dakota’s current and future water needs.’

...

‘North Dakota has received many benefits from the Garrison Diversion program, and this legislation will make it possible to continue providing opportunities in the future,’ state[d] Jamison.” (Emphasis added)

In a December 16, 2000, story headlined, “GARRISON DIVERSION: Project tucked into health bill,” *The Grand Forks Herald* reported:

“The giant health and human services bill passed by Congress Friday night had a plumb tucked in for North Dakota – the long-awaited Dakota Water Resources Act.

The act is a reformulation of the Garrison Diversion project promised to North Dakota 50 years ago...” (DeLage, 2000)

The Grand Forks Herald then published an editorial on December 19, 2000, titled, “Getting to ‘yes’ on Garrison,” which stated:

“Don’t pop the champagne just yet. The massive Dakota Water Resources Act, which passed Congress Friday night, is an authorization as opposed to an appropriations bill...

But go ahead and put the bottle on ice. Supporters of the Garrison Diversion water project may not be at the point where they can fire up the bulldozers and start moving dirt. But they’re closer to that point than ever before – and in this project’s decades-long history, that’s a real accomplishment.”

In an editorial opinion that appeared in North Dakota newspapers five days after the DWRA was passed under the heading, “Garrison: keeping the promise,” North Dakota Senator Kent Conrad boasted that:

“When Congress wrapped up its session Dec. 15, North Dakota got an early Christmas present. **The Dakota Water Resources Act, the final, successful version of the Garrison Diversion Project, passed** as part of the last legislative package of the year 2000.” (Emphasis added) (Conrad, 2000)

Then in an article published in the January 2001 issue of *North Dakota Water*, Senator Conrad said:

“We spent a long time drafting the original bill during 1996 and 1997, but that original investment paid off. The DWRA was the first Garrison plan written by North Dakotans for North Dakotans and it is a realistic plan to complete this project.” (Emphasis added) (Conrad, 2001)

Echoing Senator Conrad’s assessment, Garrison Diversion Conservancy District Manager Warren Jamison was quoted in another story in the same January 2001 *North Dakota Water*:

“Jamison says the DWRA was successful because it was written by North Dakotans. This was the first time in history that state leaders had such a direct involvement in putting this type of legislation together.” (Collin, 2001)

However, in view of the explicit language of Paragraph 8(b)(1) of the DWRA directing the Secretary to conduct the study of Red River Valley water needs and options, which was confirmed by Senator Dorgan in his October 13, 2000, *Congressional Record* statement, it is important to note the statement in this same story from the January 2001 *North Dakota Water* that:

“This study to determine the best way to meet the needs of the Red River Valley is a joint process between Garrison Diversion, U. S. Bureau of Reclamation and the North Dakota State Water Commission.” (Emphasis added) (Collin, 2001).

It is instructive to note in this context that the Dakota Water Resources Act of 1999 provided that:

“...the Secretary and the State of North Dakota shall jointly submit to the Congress a report on the comprehensive water quality and quantity needs of the Red River Valley and the options for meeting those needs. . .”

However, following floor amendments introduced by Senator Conrad, this language was changed in the Dakota Water Resources Act of 2000 to:

“The Secretary of the Interior shall conduct a comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs.”

This intentional change in the language clearly demonstrates that the Congress did not envision, nor desire, that the Red River Valley Water Supply Study was to be performed jointly by the Department of the Interior and the State of North Dakota. Therefore, it is significant that even after passage of the DWRA, the Garrison Diversion Conservancy District continued to consider the Red River Valley water needs and options study to be a joint process involving the Conservancy District, the Bureau of Reclamation (Bureau) and the State.

It should also be noted that, although the DWRA was not passed until December 2000:

“Jamison says the agreement to begin the study was signed in April 2000, and planning has already begun.” (Collin, 2001)

Because the State of North Dakota and the Garrison Diversion Conservancy District clearly and unabashedly see a Red River Valley Water Supply Project as the central element in the completion of the Garrison Diversion Unit and regard the Dakota Water Resources Act of 2000 as simply the “first phase” of even more grandiose water development plans, and because the

Garrison Diversion Conservancy District has a statutory mandate under North Dakota Century Code 61-24-01 to promote the construction of the Garrison Diversion Unit explicitly:

1. To provide for the future economic welfare and prosperity of the people of this state, and particularly of the people residing in the area embraced within the boundaries of the conservancy district created by this chapter.
2. To provide for the irrigation of lands within the sections of such districts periodically afflicted with drought, and to stabilize the production of crops thereon.
3. To replenish and restore the depleted waters of lakes, **the Red, Sheyenne, James and other rivers**, and streams in the district, and to stabilize the flow of these streams.” (Emphasis added)
4. To replenish the waters, and to restore the level of Devils Lake, Stump Lake, Lake Williams, and Turtle Lake.
5. To make available within the district, waters diverted from the Missouri River for irrigation, domestic, municipal, and industrial needs, and for hydroelectric power, recreation, fish, wildlife, and other beneficial public uses.” (Emphasis added)

it is both appropriate and necessary to consider the *Draft Report on Red River Valley Water Needs and Options* in the broader context of the long, convoluted, and controversial history of the Garrison Diversion Unit.

It is the sordid and unsavory 116-year history of broken agreements and raw political chicanery in the North Dakota political/water development establishment’s obdurate and monomaniacal pursuit of Missouri River diversion, despite the absence of legitimate need or economic rationality, with cavalier disregard for its devastating social and environmental impacts, and in defiance of national and international objections and the lack of support of the State’s own citizens (Robinson, 1966; Doemel and Caldwell, 1980; Pearson, 1998; Lambrecht, 2005). It is a shameful legacy of distortion, deceit and greed that is perpetuated today through the Dakota Water Resources Act of 2000 and the Red River Valley Water Supply Project.

HISTORY OF MISSOURI RIVER DIVERSION IN NORTH DAKOTA

The Pursuit of Missouri River Diversion

The 1889 North Dakota Constitutional Convention did two things that have continued to influence the direction of the State into the 21st century. First, of course, the Convention framed the North Dakota Constitution, which included a provision declaring that:

“All flowing streams and natural water courses shall forever remain the property of the state for mining, irrigating and manufacturing purposes.”

Second, the Convention adopted a request to the United States Congress to consider a plan to construct a canal from the Missouri River in Montana to divert water, across North Dakota to the Red River of the North, for irrigation. However, after reviewing North Dakota's 1889 plan, the U. S. Geological Survey declared it infeasible in 1891.

In 1903, an irrigation congress met in Bismarck to develop strategies for getting North Dakota's "fair share" of benefits from the recently passed 1902 Federal Reclamation Act. In 1924, declining water levels in Devils Lake fostered a dream of restoring the lake and provided the impetus for the formation of the Missouri River Diversion Association. Then in 1927, Elwyn F. Chandler, Dean of the College of Engineering at the University of North Dakota, proposed a plan to divert water from the Missouri River, through a 30-mile-long, concrete-lined tunnel crossing the continental divide, into the Souris River Basin and then to Devils Lake and the Sheyenne and James river basins (Doemel and Caldwell, 1980)

Then came the Dust Bowl of the 1930s, and by 1933 the North Dakota State Engineer was considering four plans for diverting water from the Missouri River. In 1937, the North Dakota Legislative Assembly again petitioned the Congress for funds for a Missouri River diversion project. By 1935, the U. S. Army Corps of Engineers already had been considering the construction of a dam on the Missouri River near Garrison, North Dakota, and in 1937 the Corps added a \$57,000,000 diversion plan. Then in 1942, U. S. Bureau of Reclamation Commissioner W. G. Sloan proposed a plan for 4,700,000 acres of irrigation in the Missouri Basin, including irrigation of a million acres in North Dakota to be supplied with water diverted from near Fort Peck Dam on the Missouri River in Montana. In response to serious flooding on the Lower Missouri River in the early 1940s, Colonel Lewis A. Pick of the Corps of Engineers proposed a plan for six great dams on the main stream of the Missouri River and 99 additional dams for its tributaries. (Doemel and Caldwell, 1980; McDonald, 1997)

The Missouri-Souris Diversion Unit

Commissioner Sloan's plan for irrigation was supported by the Upper Missouri Basin states, and Colonel Pick's plan for flood control was supported by the Lower Basin states. However, as Missouri Valley Authority bills gained support in the Congress, the Corps of Engineers and the Bureau of Reclamation merged their proposals into what became known as the Pick-Sloan Plan. This Plan was authorized by the Congress as the Flood Control Act of 1944. It included 137 dams with a hydroelectric generation capacity of 3,200,000 kilowatts and irrigation of over 4,700,000 acres. Both the Garrison Dam, to be built by the Corps of Engineers for flood control, and the Missouri-Souris Diversion Unit, with 1,166,600 acres of irrigation located in the Crosby-

Mohall area of the Souris River Basin in northwestern North Dakota, 66,000 acres along the Missouri River and another 162,300 acres located in the James River Basin, to be developed by the Bureau of Reclamation, were included in the Plan. In addition, Missouri River water was to be delivered to restore Devils Lake and to the Sheyenne River to supply 19 municipalities on the Sheyenne and Red rivers, including Fargo and Grand Forks in North Dakota and Moorhead and East Grand Forks in Minnesota. (U. S. Department of the Interior, 1944; Robinson, 1966; Doemel and Caldwell, 1980; McDonald, 1997) However, the water diverted to the Sheyenne River was not for municipal water supplies but simply was to “be sufficient in volume to dilute the sewage originating in all of these towns” (U. S. Department of the Interior, 1944).

With authorization of the Missouri-Souris Diversion Unit, the long-sought dream of Missouri River diversion was on the brink of reality. Or so it seemed. In 1949 the North Dakota Legislative Assembly created a 15-county Missouri-Souris Conservancy and Reclamation District to serve as the local sponsor, with the duty of “promoting the establishment and construction of the Missouri-Souris unit of the Missouri Basin project” (North Dakota Legislative Assembly, 1949). However, by 1947 soils studies already had revealed that virtually all of the 1,000,000 acres in the Crosby-Mohall area were unsuitable for irrigation (Bureau of Reclamation, 1957; Robinson, 1966) and by 1953 the Missouri-Souris Diversion Unit had been abandoned (Fredrickson, 1953).

Rather than viewing the infeasibility of the Missouri-Souris Diversion Unit as an opportunity to make a comprehensive and objective assessment of North Dakota’s economic and water development needs, proponents of Missouri River diversion simply looked for other lands in central and eastern North Dakota that could be irrigated with water from the Missouri River (Cooper, 1955), disregarding the fact that many of the lands proposed for irrigation in this less arid portion of the State already were producing dryland crops. In 1955, the North Dakota Legislative Assembly created a 24-county Garrison Diversion Conservancy District to replace the Missouri-Souris Conservancy and Reclamation District and to “promot[e] the construction, maintenance and operation of the Garrison Diversion Unit, or any part thereof” (North Dakota Century Code 61-24-08). Like the Missouri-Souris Conservancy and Reclamation District, the Garrison Diversion Conservancy District was authorized to levy up to a one mill tax throughout the District to carry out its activities, to promote the project, and to finance the District’s local share of the project’s construction, operation and maintenance costs (North Dakota Century Code 61-24-08).

The Garrison Diversion Unit

Plans and Authorization

In 1957, the Bureau of Reclamation unveiled its plans for a 1,007,000- acre Garrison Diversion Unit project. The project would divert water from the Missouri River behind Garrison Dam, through 6,773 miles of canals and laterals, eight reservoirs and 656 pumping plants to irrigate 1,007,000 acres of land having 9,300 miles of drains (Bureau of Reclamation, 1957). In addition, it would restore Devils Lake and provide water to 41 municipalities (Bureau of Reclamation, 1957). The estimated cost of the project was \$529,379,000 (Bureau of Reclamation, 1957)—a cost equivalent to 35 percent of the 1954 value (\$1,500,000,000) of all of the farmland and buildings in North Dakota (Robinson, 1966). Because of the time required to build the entire project, the Bureau proposed that it be constructed in two stages, with a 407,000-acre initial stage (Bureau of Reclamation, 1957).

North Dakota Congressman Otto Kruger introduced a bill in 1957 to authorize the Garrison Diversion Unit and hearings were held in October of that year, but the Secretary of the Interior did not forward the plan to the President until 1959 (Doemel and Caldwell, 1980). Bills to authorize the Garrison Diversion Unit project were introduced in 1960, 1963 and 1964, but failed. Finally in 1965, a 250,000-acre initial stage Garrison Diversion Unit was authorized at an estimated cost of \$212,000,000. In addition to the irrigation development, the project was to deliver Missouri River water to restore Devils Lake, provide recreation and fish and wildlife benefits, and supply water to 14 municipalities and four industrial areas (Bureau of Reclamation, 1962). The largest cities identified to receive water from the Garrison Diversion project were Minot and Jamestown and the four industrial areas were located at Minot, Devils lake, Jamestown, and Towner (Bureau of Reclamation, 1962). There was no mention of delivery of water to Fargo or Grand Forks or any other cities in the Red River Valley

Serious questions were raised about the economic benefits of the Garrison Diversion project more than a decade before it was authorized; however, Robinson explains:

“Although Schaffner’s analysis raised serious questions about irrigation in a region that received adequate rainfall in at least three years out of every four, it was given little attention. No one in North Dakota publicly questioned the benefits of diversion, any more he would motherhood, virtue, or patriotism. Any doubters remained silent. North Dakota’s leaders seemed to see the plan as the solution to the state’s problems, the cherished dream of escape from pressing difficulties. Moreover, they felt the state had sacrificed some 550,000 acres to the Garrison and Oahe reservoirs. Cheap electricity had not brought industry to North Dakota, although in 1960 three-fourths of the power from Garrison generators was sold to North Dakota companies and cooperatives.” (Robinson, 1966)

Development of Opposition to the Project

Construction of the McClusky Canal, which would carry water from Lake Audubon, a sub-impoundment on the Missouri River, to the proposed Lonetree Reservoir on the headwaters of the Sheyenne River, began in 1970. However, the reality of the 73.7-mile canal, with cuts up to 114 feet deep and a right-of-way up to half a mile wide (Bureau of Reclamation, 1974), soon ignited rapidly escalating opposition among landowners in its path (Anonymous, 1972). It also resulted in a request from the Government of Canada in April 1970 for specific information regarding the project’s impacts on the Souris River in Manitoba, and a year later a diplomatic note from the Government of Canada informing the U. S. Department of State that the anticipated impacts were unacceptable (Committee on Government Operations, 1976).

The National Environmental Policy Act (NEPA) had been passed in 1969 and in 1972, the Committee to Save North Dakota, a newly-formed grass-roots organization of landowners along the route of the McClusky Canal, filed suit against the Bureau of Reclamation in U. S. District Court in Bismarck alleging violation of Section 102(2)(C) of the Act, which requires the preparation of an Environmental Impact Statement (EIS) on federal actions having a significant impact on the environment. The Bureau responded with a Draft Environmental Statement on the Garrison Diversion project in 1973 (Bureau of Reclamation, 1973) and a Final Environmental Statement in 1974 (Bureau of Reclamation, 1974). The Final Environmental Statement provided final environmental impact evaluation only for the principal supply works (Snake Creek Pumping Plant, Lake Audubon, McClusky Canal and Lonetree Reservoir), with supplemental statements to be prepared for other project features (Bureau of Reclamation, 1974). Nevertheless, these environmental statements provided other agencies and the public for the first time with

comprehensive information on the Garrison Diversion project (Bureau of Reclamation, 1974). It is instructive to note, for example, that neither Fargo nor Grand Forks was listed among the 14 "Potential Municipal Water Users" identified in the Final Environmental Statement (Bureau of Reclamation, 1974).

A review of the Final Environmental Statement by a team of experts assembled by the Institute of Ecology concluded that the Garrison Diversion project had no economic justification, the irrigation subsidy amounted to \$470,000 per farm, the project would take more land out of production than it would bring into production, the social impacts resulting from the destruction of family farms and concentration of land ownership would be severe, and the fish and wildlife and recreation benefits were grossly exaggerated (Environmental Impact Assessment Project, 1975). Subsequently, a re-evaluation of the project by the U. S. Fish and Wildlife Service disclosed that the project would destroy 60,000 acres of prairie wetlands and 2,000 acres of fluvial wetlands and degrade another 13,000 acres of wetlands, it would eliminate 62,000 acres of grasslands, including 43,000 acres of native prairie, and 4,000 acres of woodlands, and it would adversely impact 12 National Wildlife Refuges and eight unique habitat areas (Fish and Wildlife Service, 1978).

In 1976, the National Audubon Society filed suit against the Department of the Interior in Federal District Court in Washington, D. C., alleging that the Final Environmental Statement for the Garrison Diversion Unit unduly segmented and postponed evaluation of the environmental impacts of the project, thus precluding the very evaluation of alternatives mandated by NEPA. Settlement of the suit was reached when the Department of the Interior agreed to prepare a comprehensive Environmental Impact Statement which considered other alternatives.

The new Final Comprehensive Environmental Statement listed Fargo, but not Grand Forks, West Fargo, North Dakota, or Moorhead, Minnesota, among the 250,000-acre Garrison Diversion alternative's "Potential Municipal Water Users" (U. S. Department of the Interior, 1979), and it noted specifically that:

"... The system capacity would be adequate to provide the additional 30,000 acre-feet per year [for municipal supplies] **during off-peak irrigation periods.**" (Emphasis added) (U. S. Department of the Interior, 1979).

In other words, the project would not be able to provide water for MR&I use at the very times it would be most needed.

Canadian Concerns

Following a formal request in 1973 from the Government of Canada for a moratorium on construction until concerns about the Garrison Diversion project's impacts in Manitoba were resolved (Canadian Embassy, 1973), the issue was referred to the International Joint Commission (IJC) in 1975 (International Joint Commission, 1977). The Commission's Study Board and a team of 50 scientists from both countries, including 13 from North Dakota (Anonymous, 1976), examined a number of issues related to water quality, water quantity, biology, engineering and water uses and found that adverse impacts potentially could accrue to Canada as a result of increased total dissolved solids and nitrogen from the project's irrigation return flows, and from the transfer of foreign biota from the Missouri River Basin to the Hudson Bay Basin (International Joint Commission, 1977). In its report, the Commission noted:

“In fact, overriding everything else, as it turns out, has been the necessity that such introduction be prevented at all costs. . .”

The Board’s conclusion was that implementation of their proposal should virtually eliminate any direct transfer by GDU of fish, fish eggs, fish larvae and fish parasites and would reduce the risk of transfer of fish diseases to the Hudson Bay Drainage Basin . . .

There is no question in the Commission’s mind that the Board’s recommendations **greatly reduce the risk of unintentional transfer . . .** At the same time, the Commission must weigh the consequences to Canada if the Board is wrong. **Were the potential consequences ones that could be mitigated or corrected after the fact,** the Commission would accept the Board’s advice. **Were the biological consequences to the Hudson Bay drainage ecosystem predictable in manner and extent,** the Commission might accept the Board’s approach. **The Board has reduced the risk of a ‘biological time bomb’, but not eliminated it.** The Commission is concerned that even with the best engineering talent available, and with the best operating practices possible, the very complexity of the scheme, the immensity of the physical features, the large numbers of human beings involved in carrying out the responsibility, and the possible mechanical failures, what cannot happen, will happen . . .” (Emphasis added) (International Joint Commission, 1977)

Consequently, the International Joint Commission recommended that:

“ . . . those portions of the Garrison Diversion Unit which could affect waters flowing into Canada not be built at this time.” (International Joint Commission, 1977)

With 216,990 acres of Garrison’s 250,000 acres of irrigation (87%) located in the Hudson Bay Basin portion of North Dakota (Bureau of Reclamation, 1974), the International Joint Commission’s recommendation was a devastating blow to the project. However, rather than accepting the International Joint Commission’s conclusions and recommendations as an indication of the need for a new approach to water development, the State of North Dakota simply proposed to build the 250,000-acre Garrison Diversion project in two phases, with irrigation return flows from the first 85,000 acres draining to the James River (Bureau of Reclamation, 1983).

It is instructive to note that when it became evident in 1975 that referral of the Garrison issue to the International Joint Commission was necessary to preserve appropriations for the project, North Dakota Congressman Mark Andrews said he was glad that environmentalists had encouraged turning the project over to the IJC so that questions about it could finally be resolved (Associated Press, 1975). According to Andrews:

“This kind of study is a very exact science. It will take the project out of the realm of emotional charges and reduce it to a scientific fact finding basis. The charges against Garrison Diversion have strayed so far from the fact that we need a study like this. . .” (Associated Press, 1975)

However, when the IJC’s Garrison report was released in 1977 and the facts did not suit the North Dakota political/water development establishment’s agenda, Andrews declared that it was:

“far fetched and phony as a \$3 bill.” (Tribune News Service, 1977)

This has been the State's recurring strategy whenever the Garrison Diversion project has been in jeopardy: agree to whatever is necessary to save the project from the immediate threat, but as soon as that is accomplished, renege on the agreement.

The Carter Administration

On February 18, 1977, the Carter Administration announced that it was cutting funding for the Garrison Diversion project (Associated Press, 1977a) as one of 19 water projects slated for termination (Meyer, 1977). As a result of the ensuing protest from Western States, the Administration announced that it would conduct further reviews of the projects (Associated Press, 1977b), and a hearing on the Garrison Diversion project was conducted by the Secretary of the Interior in Jamestown, North Dakota, on March 22, 1977 (Baenen, 1977a, 1977 b). As a result of its review of Garrison, the Administration recommended that the project be reduced from 250,000 acres to 96,000 acres, eliminating all irrigation return flows to streams ultimately flowing into Canada (U. S. Department of the Interior, 1979).

Lack of Support for the Project in North Dakota

Although North Dakota politicians and water development proponents had long claimed solid support for the Garrison Diversion project among the citizens of the State, a poll conducted by the University of North Dakota's Bureau of Governmental Affairs in 1980 showed that only 31.1 percent of North Dakotans supported completion of the project. Even more revealing, the poll disclosed that less than half (44%) of the people in the State had ever supported it (Anonymous, 1980).

The Congress

Although the Reagan Administration initially supported funding for Garrison, opposition to the project continued to build in the Congress, where appropriations for the project failed in the House of Representatives in 1982 and 1983. North Dakota Senator Quentin Burdick explained the strategy used by the North Dakota Congressional Delegation to salvage the Garrison appropriations:

"Hell, if it wasn't for the Senate, it would have died years ago.

We pass it by a good margin in the Senate every time and then we go to conference committee. They generally have zero (support for Garrison) from the House and we have whatever we have in the Senate. We just shoulder the damn conferees around until we can make them agree with us.

That's how we've been doing it and that's how we'll have to do it again." (Gerbert, 1983)

The Reagan Administration and the Garrison Diversion Unit Commission

Despite the initial success of the North Dakota Congressional Delegation's strategy, funding for Garrison continued to grow more tenuous, and in May 1984 the Reagan Administration announced that it planned to ask the Congress to defer spending for the project and might withdraw its support for the Fiscal Year 1985 appropriation (Associated Press, 1984). With Garrison in serious jeopardy, on June 6, 1984, North Dakota Senator Mark Andrews struck a deal with the National Audubon Society that secured a \$53,000,000 Fiscal Year 1985 appropriation

for the project while a special Garrison Diversion Unit Commission appointed by the Secretary of the Interior reviewed the project (Flagstad, 1984a, 1984b, 1984c, 1984d; Russakoff, 1984; Pates, 1984). The principal recommendations of the Garrison Diversion Unit Commission Final Report issued in late 1984 included reducing the irrigation development to 130,940 acres located outside the Hudson Bay Basin, expanding municipal, rural, and industrial (MR&I) water components of the project to serve up to 130 towns and rural areas, treating MR&I water to be delivered to the Hudson Bay Basin to prevent biota transfer, and replacing the Lonetree Reservoir with a Sykeston Canal to connect the McClusky and New Rockford canals (Garrison Diversion Unit Commission, 1984).

Although Senator Andrews had defended his agreement for a review of the project, again declaring that Garrison could withstand independent scrutiny (Flagstad, 1984d), when the Commission released its recommendation to replace the Lonetree Reservoir with the Sykeston Canal, Andrews immediately announced that he would introduce an amendment in the Senate to restore the reservoir, which was viewed by project proponents as the key to any future irrigation development in the Souris River Basin and eastern North Dakota (Whalen, 1984), and at its quarterly meeting the following month, the Garrison Diversion Conservancy District adopted a policy statement urging the Secretary of the Interior to reinstate the Lonetree Reservoir (Garrison Diversion Conservancy District, 1985). However, by agreeing to the review by the Garrison Diversion Unit Commission, Andrews had not only avoided the possible loss of funding for the project in 1984, but he had secured a record \$53,000,000 Fiscal Year 1985 appropriation. But of course, once that crisis had been averted, Andrews immediately reneged on his agreement.

The Garrison Diversion Unit Reformulation Act of 1986

The Garrison Diversion Unit Reformulation Act implementing the principal recommendations of the Final Report of the Garrison Diversion Unit Commission was passed in 1986. The Act authorized 90,360 acres of irrigation based on the Garrison principal supply works and the James River, and another 28,000 acres of irrigation based on the Missouri River, for a total of 118,360 acres, plus an additional 17,580 acres of irrigation on Indian reservations, it replaced the Lonetree Reservoir with the Sykeston Canal, it authorized a Sheyenne River water supply and release feature and biota treatment plant to deliver 100 cubic feet per second (cfs) of Missouri River water for the cities of Fargo and Grand Forks and surrounding communities, and it authorized \$200,000,000 for a statewide MR&I water systems program and made the State's Southwest Pipeline Project eligible for funding under the program.

As inducement to conservation organizations to support the legislation, a Wetlands Trust was included, to be funded by three percent of the Garrison appropriations from Fiscal Year 1987 through Fiscal Year 1990, and then five percent thereafter until a total of \$12,000,000 was reached. After Fiscal Year 1990, the State of North Dakota was to provide matching contributions of 10 percent of the Federal funds (Public Law 99-294).

“The corporate purposes of the Trust are to preserve, enhance, restore, and manage wetland and associated wildlife habitat in the State of North Dakota.” (Public Law 99-294, Section 9).

As an additional incentive to the conservation organizations to support the legislation, a “Statement of Principles to Support the Agreement for Reformulation of the Garrison Diversion Unit” was drafted by the State and signed by the Governor, the Chairman of the Garrison Diversion Conservancy District, the President of the North Dakota Water Users Association, the President of the National Audubon Society, the Executive Vice-President of the National Wildlife

Federation, and the Presidents of the North Dakota Chapter of The Wildlife Society and the North Dakota Wildlife Federation. Under the Statement of Principles, all of the parties agreed to support the reformulation legislation and the appropriations necessary for implementing the purposes of the project, to end conflicts over wetland acquisition and management programs, to develop 'no net loss of wetlands' policies and guidelines for the State, and to enforce and improve the State's wetland drainage laws.

In early 1987, within a year after the Reformulation Act was passed, the State and the Garrison Diversion Conservancy District already were advocating the reinstatement of a 'Mid-Dakota Reservoir' at the Lonetree Reservoir site (Murry, 1987; Garrison Diversion Conservancy District, 1987). That same year, the North Dakota Legislative Assembly passed a so-called 'no net loss' wetlands statute. However, rather than being an improvement of the existing State drainage law, its wetland drainage permit provisions were based on the same unenforced and unenforceable wetland drainage permit provisions that had routinely been ignored and circumvented for decades. Then to compound matters, the State Engineer did not develop regulations to implement the statute until a year after it was supposed to go into effect. Consequently, after the rampant wetland drainage that occurred in North Dakota in 1986 and 1987 as farmers scurried to eliminate wetlands before they could be inventoried under the 'Swampbuster' provisions of the 1985 Farm Bill (Anonymous, 1988), in 1991 the North Dakota 'Wetlands Bank' showed a total of only 330 acres of wetlands having been drained since January 1987. In addition, wetland drainers were required under the State statute to pay only 10 percent of the average costs of replacement wetlands, while the remaining 90 percent of the costs were to be paid by "federal, state or private interests." Thus, conservation interests ended up subsidizing wetland drainage while their own wetland restoration efforts were nullified by being credited against additional wetland drainage in the 'Wetlands Bank' (Pearson, 1996).

The 1990 Department of the Interior Inspector General's Report

Although the Reagan Administration included only \$2,500,000 for Garrison in its Fiscal Year 1988 budget (Associated Press, 1987a), the North Dakota Congressional Delegation was successful in securing a \$33,000,000 appropriation (Associated Press, 1987b). Nevertheless, the waning support of the Reagan Administration did not bode well for Garrison. Then in February 1990, the U. S. Department of the Interior's Office of Inspector General issued an audit report on Garrison containing two disclosures having major ramifications for the project:

1. "... few, if any municipal, rural, and industrial systems would receive water from Garrison facilities. Most of the proposed municipal, rural and industrial water systems were physically located so that obtaining water from Garrison was impractical or too costly." (Office of Inspector General, 1990)
2. "An adjusted cost allocation based on the findings and recommendations [of the report] will increase the irrigators' annual share of project operating costs by approximately \$1 million beyond their determined ability to pay." (Office of Inspector General, 1990)

With irrigators being unable to afford to utilize the project and with project water being too costly and/or unavailable for most potential MR&I users, the justification for the \$1,500,000,000 Garrison Diversion Unit was in serious question. In fact, the George H. W. Bush Administration already had recommended terminating the project in its Fiscal Year 1991 budget (Brasher, 1990a).

The 1990 Garrison Diversion Unit Task Group Report

In an attempt to save the project, the North Dakota Congressional Delegation requested that the Secretary of the Interior reconsider the Administration's decision to terminate funding for Garrison (Brasher, 1990b). The Secretary responded by establishing a Task Group to consider under what conditions, if any, further funding for Garrison could be supported by the Administration (Garrison Diversion Unit Task Group, 1990).

The Task Group concluded that completing Garrison's principal supply works and irrigation development would cost \$6,500 per acre, in addition to the \$324,000,000 that already had been expended on the project, but would increase the value of the irrigated land by only \$1,000 per acre (Garrison Diversion Unit Task Group, 1990). Consequently, the Task Group recommended terminating construction funding for the principal supply works, water delivery to the James River, and all non-Indian irrigation development, and it recommended that the Administration support funding for the statewide grant and Indian MR&I water supply programs, irrigation development on 17,589 acres on the Fort Berthold and Standing Rock Indian reservations, continued operation of the Oakes Irrigation Test Area through 1995 but with no capital expenditures after Fiscal Year 1991 to increase the water supply, and recreation and wildlife features of the project (Garrison Diversion Unit Commission, 1990). The Congress approved a Fiscal Year 1991 appropriation of \$35,000,000 for Garrison (Anonymous, 1990), but a Department of the Interior task force again recommended reinforcing the "administration policy to not support federal funding for completion of irrigation facilities or related principal supply works" (Wetzel, 1990).

North Dakota Reneges on Agreements – Devils Lake Inlet

After agreeing in 1984 to the establishment of the Garrison Diversion Unit Commission to resolve the Garrison controversy, after agreeing to the Garrison Diversion Unit Reformulation Act in 1986, after requesting the Secretary of the Interior in 1990 to consider what conditions, if any, funding for Garrison could be restored, and despite the fact that the Garrison Diversion Unit Commission did not endorse the delivery of Missouri River water to Devils Lake, the Garrison Diversion Unit Reformulation Act of 1986 did not authorize it, and the Garrison Diversion Unit Task Force had just recommended that construction funding for the Garrison principal supply works be terminated, in April 1990 the State of North Dakota and the Garrison Diversion Conservancy District released a Devils Lake Stabilization Report which stated that:

"... keeping water levels [in Devils Lake] above 1424 msl will require importation of Missouri River water to supplement runoff from the watershed. Building an inlet for Missouri River water may ultimately require an outlet to be provided to prevent flooding during climatic wet cycles..."

The only logical water source is **the Missouri River using the Garrison Diversion Project...** (Emphasis added) (North Dakota State Water Commission and State Engineer, et al., 1990)

The State and the Conservancy District's preferred alternative included a pipeline to deliver treated Missouri River water from Garrison's New Rockford Canal to the Sheyenne River where a 22-mile, 72 inch diameter, 200 cfs pipeline would deliver up to 72,000 acre-feet of water annually to Devils Lake (North Dakota State Water Commission and State Engineer, 1990). According to the plan:

“The same pipeline would serve as an outlet to the Sheyenne River.” (North Dakota State Water Commission and State Engineer, 1990)

When the North Dakota Congressional Delegation agreed in September 1997 to language in the Fiscal Year 1998 Energy and Water Development Appropriations Act prohibiting the Secretary of the Army from using funds to study an inlet to deliver Missouri River water to the lake in order to preserve funding for the U. S. Army Corps of Engineers’ investigation of an outlet from Devils Lake to the Sheyenne River, (Davis, 1997c), the Governor and the North Dakota House and Senate majority leaders sent letters to the Congressional Delegation on September 26, 1997, protesting that:

“A ban on an inlet is an extremely high price to pay for the outlet language. An inlet is important to ensure the long-term economic stability of the Devils Lake region and is a significant component of our state’s water-development plan. . .

The concession on prohibiting an inlet sets a precedent that threatens traditional Western water law and states’ rights to establish internal water policy.

...
Everything possible must be done to keep the inlet viable in Congress as a long-term option. . .” (Emphasis added) (Schafer, et al., 1997)

That same day, North Dakota Senator Byron Dorgan was quoted in *The Forum* (Fargo, North Dakota) as stating that he would bring back the inlet debate in future sessions of the Congress, but for now, the outlet is what is needed (Condon, 1997), thus renegeing on the agreement even before the FY 1998 Energy and Water Development Appropriations Act was passed.

Consequently six years later, the Special Edition 2003 Irrigation Issue of *North Dakota Water* featured a map of “North Dakota Water Resources” prepared by the North Dakota State Water Commission showing among proposed water facilities a “Sheyenne River Pipeline” leading from the end of the Garrison Diversion Unit’s New Rockford Canal to the Sheyenne River and a “Devils Lake Inlet/Outlet” leading from the Sheyenne River to West Bay of Devils Lake (North Dakota Water Education Foundation, 2003).

North Dakota Reneges on Agreements – Mid-Dakota Reservoir

Although the 1984 Garrison Diversion Unit Commission had recommended against it, the 1986 Garrison Diversion Unit Reformulation Act had authorized the Sykeston Canal to replace it, and the 1990 Garrison Diversion Unit Task Force had recommended termination of construction funding for all of the Garrison principal supply works, in January 1992 the State of North Dakota and the Garrison Diversion Conservancy District released a formal proposal for reinstating a reservoir at the Garrison Diversion project’s Lonetree Reservoir site to complete the Garrison Diversion Unit’s principal supply works in order to supply water for irrigation, stabilization of Devils Lake, and municipal use (Garrison Diversion Conservancy District, 1992) The rationale for the plan, which was referred to synonymously as “Mid Dakota/Sheyenne Lake (Lonetree Reservoir),” was explained by the Conservancy District’s consulting engineer:

“Nature’s gift to North Dakota – an ideal reservoir site in the headwaters of the Sheyenne River. Constructed at this site, a major re-regulating reservoir has the potential to

distribute Missouri River water by gravity flow to the Sheyenne, James and Souris River basins and Devils Lake.” (Hoetzer, 1992)

In 1982, the Fish and Wildlife Service had described the Lonetree Valley in somewhat different terms:

“The habitats proposed by inundation by the Lonetree Reservoir are among the most unique and diverse in North Dakota...

The Sheyenne River is an international resource because it is a tributary of the Red River of the North which flows into Canada. The study area was at the headwaters of the river, one of the largest and most important prairie streams in the state...” (Fannes, 1982).

In a May 26, 1992, letter, the Assistant Secretary of the Interior for Water and Power informed North Dakota Governor George Sinner that:

“A proposal to construct a reservoir in lieu of the Sykeston Canal cannot be supported by the Administration without clear and documented support from those who concurred in the 1986 Act.” (Watson, 1992)

After an extensive review of the Mid-Dakota Reservoir proposal (See Pearson, 1992), the National Audubon Society and the National Wildlife Federation rejected the plan (Springer, 1992a)

The 1992 North Dakota Water Projects Tax Initiative

With the State’s plans for completing the Garrison Diversion project stalled, in 1991, North Dakota Governor George Sinner established a Water Strategy Task Force to persuade North Dakotans to accept a tax increase to support water development, including irrigation and Devils Lake stabilization (Associated Press, 1991a). The Task Force, comprised of water development interests and led by Lieutenant Governor Lloyd Omdahl, recommended increasing the State sales tax by 0.25 percent, the State income tax by 1 percent and corporate income taxes by 5 percent to raise \$22,000,000 a year (Associated Press, 1991b). Among the projects proposed to receive funding from the taxes were the Mid-Dakota Reservoir, Devils Lake stabilization, the Oakes Test Area and other irrigation development (Sprynczynatyk, et al., 1991). However, the proposal was rejected by the North Dakota Legislative Assembly, so the Task Force, the North Dakota Water Users Association and the North Dakota Water Resource Districts Association, with the support of the Garrison Diversion Conservancy District, decided to push for an initiated measure to increase the State sales tax by 0.5 percent to raise the \$22,000,000 for water projects (Associated Press, 1991c; Springer, 1992b). The Garrison Diversion project, with the Mid-Dakota Reservoir to supply water to Devils Lake and eastern North Dakota, was cited as the top priority to receive funds (Associated Press, 1991c; Springer, 1992b), and the measure was widely recognized as a referendum on the Garrison Diversion project (Springer, 1992b). In fact, the measure was the first time in the half-century of controversy over Missouri River diversion and the Garrison Diversion project that citizens across the State had an opportunity to express their views on the issues. Therefore, it is significant to note that the water projects tax initiative was defeated in the November 1992 election by a margin of 67 percent to 33 percent (Anonymous, 1992)—a resounding rebuke of the North Dakota political/water development establishment’s agenda.

The 1993 North Dakota Water Management Collaborative Process

Rather than accepting the overwhelming defeat of the water projects tax as a mandate from the citizens of the State for a new direction in water development, in 1993 Governor Edward Schafer and the North Dakota Congressional Delegation sent a letter to the Secretary of the Interior inviting "appropriate officials from the Department of the Interior to formally discuss with us the future of the Garrison Project" (Schafer, et al., 1993). They specifically wanted to discuss a proposal by the Garrison Diversion Conservancy District for completing the Garrison project using a pipeline to link the McClusky and New Rockford canals (Schafer, et al., 1993)

The Secretary responded by sending Bureau of Reclamation Commissioner Daniel P. Beard to North Dakota on December 17, 1993, for a meeting with all North Dakota water resources stakeholders to discuss North Dakota water needs. At the conclusion of the meeting, Commissioner Beard proposed a North Dakota Water Management Collaborative Process to identify the contemporary water needs in the State, to determine how those needs relate to the Garrison Diversion Unit, and to identify an ultimate project or projects to meet those needs (Anonymous, 1994). The Governor, the North Dakota Congressional Delegation, the North Dakota State Water Commission, the North Dakota Department of Agriculture, the North Dakota Department of Health, the Garrison Diversion Conservancy District, the North Dakota Water Users Association, the cities of Fargo and Grand Forks, the Spirit Lake Sioux Tribe, the Standing Rock Sioux Tribe, the Three Affiliated Tribes of the Fort Berthold Reservation, the National Audubon Society, the National Wildlife Federation, the North Dakota Wildlife Federation and the North Dakota Chapter of The Wildlife Society all agreed to the process outlined by Commissioner Beard (Whittington, 1994). However, instead of seizing this Federally supported opportunity to "objectively identify and meet North Dakota's water resource needs" (Schafer, 1994) through "a Paradigm shift in terms of meeting contemporary water needs in the State, and not just a remodeling of the [Garrison Diversion] project" (Anonymous, 1994), when it became evident in the spring of 1994 that the Collaborative Process was not going to endorse completion of the Garrison Diversion project, the North Dakota Congressional Delegation promptly and predictably reneged on their agreement and withdrew from the process, stating:

"We need to agree on proposed changes to the current authorized Garrison Diversion Project in North Dakota. . .

. . . we intend to make a fresh start to collaborate in a way that produces concurrence among all of the interests in North Dakota. We intend to produce consensus legislation that we will introduce in Congress to modify the Garrison Diversion Unit Reformulation Act." (Dorgan, et al., 1994)

North Dakota Reneges on the 1986 Statement of Principles

As noted above, within less than a year after the Garrison Diversion Unit Reformulation Act of 1986 was passed with the support of several major conservation organizations, the Garrison Diversion Conservancy District already was advocating reinstatement of a reservoir at the Lonetree site (Murry, 1987; Garrison Diversion Conservancy District, 1987), and three years later, the State and the Conservancy District were proposing a plan to reinstate Devils Lake stabilization using Missouri River water as a feature of the reformulated project (North Dakota State Water Commission and State Engineer, et al., 1990).

Then in 1993, the North Dakota Legislative Assembly passed, and the Governor signed, a statute severely restricting the operations of the North Dakota Wetlands Trust that had been established under the 1986 Garrison Diversion Unit Reformulation Act. The statute limits land acquisitions by non-profit corporations to 12,000 acres and prohibits the transfer of any land they

acquire to the Federal Government (Dryer, 1993). In addition, the statute requires that any proposal by a non-profit corporation to purchase land "for the purpose of conserving natural areas and habitats" must be submitted to the State Commissioner of Agriculture for review by a committee composed of the Commissioner of Agriculture, the State Engineer, the directors of the State Game and Fish Department and the State Parks Department, the manager of the Garrison Diversion Conservancy District, and the presidents of the North Dakota Farm Bureau and the North Dakota Farmers Union, who then are to hold a hearing with the Board of County Commissioners for the county in which the land is located and make a recommendation to the governor to approve or disapprove the purchase (Dryer, 1993). Thus, the State has turned control of land acquisition by the Wetlands Trust over to the very entities which historically have opposed wetland preservation in the State. As a result of these actions by the State Legislature and the dominant influence of the State's three representatives on its six-member Board of Directors, after 11 years of operation and the expenditure of \$2,815,123, by the end of 1997 the North Dakota Wetlands Trust had permanently preserved "approximately 460 wetland acres" (Dryer, 1998).

The conservation organizations had continued to support the appropriations for the reformulated project, as they had agreed in the 1986 Statement of Principles, despite these blatant breeches by the State of North Dakota and the Garrison Diversion Conservancy District. Nevertheless, in 1995 the North Dakota Legislative Assembly passed, and the Governor again signed, a statute repealing the so-called 'no net loss' wetlands statute, which had been passed in 1987 in response to the commitment by the State in the 1986 Statement of Principles to develop a no-net-loss wetlands policy (Wetzel, 1995).

The Bill Entitled "The Garrison Diversion Project Completion Act of 1996"

Final repudiation of the 1986 Garrison Diversion Unit Reformulation Act by the State of North Dakota and the Garrison Diversion Conservancy District came with the drafting of the "Garrison Diversion Project Completion Act of 1996," a bill which would "[h]ave the State of North Dakota implement the Garrison Diversion project" with another \$1,000,000,000 in new Federal appropriations, plus forgiveness of \$400,000,000 in repayment obligations owed by the State for money already expended on the project (Anonymous, 1996). The bill included provisions authorizing a 450 cfs "Lonetree Pipeline" to connect Garrison's McClusky Canal with the New Rockford Canal, a 200 cfs pipeline from the Sheyenne River to Devils Lake, and "an inlet/outlet facility to the Devils Lake Basin." The bill also provided for the delivery of Missouri River water to the 5,000-acre Oakes Irrigation Test Area on the James River and establishment of a James River Operations Advisory Committee to develop an operating plan for the James River, including "implementation of operation regimens at State and Federal facilities to increase flow releases." The bill also would authorize \$100,000,000 for projects benefiting the Fort Berthold Indian Reservation. In addition, the bill would authorize a \$600,000,000 Garrison Economic Recovery Fund, to be funded by 25 percent of the deposits to the U. S. Treasury from the programs of the Eastern Division of the Pick-Sloan Missouri River Basin Project. Tucked into the Recovery Fund were authorizations to construct the Northwest North Dakota Water Supply Project and the Red River Valley Water Supply Project.

At a December 19, 1996, hearing on the bill, National Audubon Society Senior Vice President and former Commissioner of the Bureau of Reclamation Daniel P. Beard characterized the State's proposal as:

“... an astounding array of debt forgiveness and Federal funding provisions in a package that is devoid of fiscal controls, and which the Federal taxpayers and power users would pay for.” (Davis, 1996)

However, by this time, the State had received another \$300,000,000 in appropriations for the Garrison project in the 10 years since the 1986 Garrison Diversion Unit Reformulation Act had been passed, doubling the amount that had been appropriated in the previous two decades since the project was authorized.

The Northwest Area Water Supply Project

The \$145,000,000 Northwest Area Water Supply (NAWS) project is designed to deliver up to 26 million gallons of water per day through a 45-mile-long pipeline from the Missouri River to Minot to supply Minot, the Minot Air Force Base and 10 other communities and four rural water systems in the Hudson Bay Basin of North Dakota with Missouri River water (Houston Engineering, et al., 2001). In addition, the water treatment systems for three communities in the Missouri River Basin would be replaced or upgraded (Houston Engineering et al., 2001).

Although NAWS would make the first—and precedent-setting—diversion of Missouri River water into the Hudson Bay Basin since the Wisconsin Glacier retreated 10,000 years ago, and although the International Joint Commission had warned in its 1977 report on the Garrison Diversion Unit of the potentially catastrophic consequences of interbasin transfer of biota from the Missouri River Basin into the Hudson Bay Basin (International Joint Commission, 1977), instead of addressing those risks in a full Environmental Impact Statement under the National Environmental Policy Act, the Bureau of Reclamation dismissed them in a cursory Environmental Assessment (Houston Engineering, et al., 2001) and Finding of No Significant Impact (Bureau of Reclamation, 2001).

On July 13, 2001, Manitoba Conservation (an agency of the Province of Manitoba) and Environment Canada (an agency of the Canadian Federal Government) filed an administrative appeal of the Bureau's Environmental Assessment and Finding of No Significant Impact for the NAWS project, and a hearing on their appeal was held before Bureau Regional Director Maryanne Bach on August 20, 2001. However, a week before the hearing, the Bureau already had drafted a letter denying the appeal for signature by the Regional Director which concluded that there is “no new information which would call into question the conclusions reached in the Final EA and FONSI.”

On October 22, 2002, the Province of Manitoba, subsequently supported by amici Government of Canada and State of Missouri, filed suit against the Bureau of Reclamation in Federal District Court in Washington, D. C., alleging that the environmental assessment for the NAWS project failed to consider adequately alternatives for the treatment of Missouri River water delivered into the Hudson Bay Basin and the potential impacts of biota transfer into the Hudson Bay Basin.

In her February 3, 2005, Opinion, U. S. District Court Judge Rosemary M. Collyer noted that:

- “While BOR [Bureau of Reclamation] and EPA [Environmental Protection Agency] debated the credibility of the draft CRA [Comparative Risk Analysis], Defendant Maryanne Bach, the BOR Great Plains Regional Director, prepared an October 20, 2000, Briefing for the Secretary of the Interior. The Briefing noted the intense interest of North Dakota's Senators in NAWS and anticipated their urging the Secretary to make a decision on NAWS during his term in office, *i.e.*, before a new President was inaugurated

on January 20, 2001. Regional Director Bach predicted that approval of NAWS **'would likely set a precedent in North Dakota for any other interbasin transfers into the Hudson Bay drainage of Canada.'** [Citation omitted] She suggested that **'whatever level of treatment is deemed necessary for biota transfer control purposes will likely establish a benchmark for all other international (irrigation or MR&I) interbasin transfers.** [Citation omitted] She concluded that the **'Boundary Waters Treaty has proven to be a major obstacle for the State of North Dakota to develop water resources. . . . It is unlikely that Canada will formally endorse or otherwise accept any version of NAWS, regardless of the level of water treatment provided.'** [Citation omitted] The Briefing did not mention the ongoing discussion between BOR and EPA on the same topics." (Emphasis added) (pp. 29-30)

It is instructive to note that while the Bureau of Reclamation had told the Secretary in October 2000 that the NAWS project "would likely set a precedent in North Dakota for other interbasin transfers into the Hudson Bay Drainage," the Bureau of Reclamation assured the public in its September 2001 Finding of No Significant Impact for the NAWS project that:

"The proposed Project does not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about future considerations. The decisions related to the proposed Project are specific and limited to the Project, as clearly stated in the guiding principle included in the January 19, 2001 determination by the Secretary of the Interior that the Project meets the requirements of the 1909 Boundary Waters Treaty." (Bureau of Reclamation, 2001, p. 25)

Judge Collyer went on to note that:

"BOR [Bureau of Reclamation] and North Dakota are joint proponents of the NAWS project. Years ago in a document totally lacking in analysis, North Dakota rejected treatment of the water at the Missouri River source, preferring to maintain the water treatment plant in Minot. [Citation omitted] That decision has never been seriously revisited. Instead, BOR and North Dakota have dedicated themselves to reducing the likelihood of pipeline releases and have refused – despite EPA's warnings, despite Canada's position, despite Manitoba's TetrES report, and, most, critically, despite acknowledging that chloramination will not prevent *Cryptosporidium*, WD, and other pathogens from crossing the divide – to change their position. Whether this is the wisest action is not for litigation to decide. What has resulted from this obduracy, however, is a twofold problem: there has been no study of the *consequences* of leakage from the pipeline (whether slow leakage from joints or a major break) and, therefore, no evaluation of the consequences of failure compared to more complete treatment at the source." (pp. 34-35)

"Federal Defendants argue that the risks of leakage are low and, therefore, that no further study is necessary. They repeatedly provide varied estimates that more than ninety-nine percent of biota will be disinfected under NAWS. While facially compelling, the argument ignores the fact that certain biota have been identified that may be impervious or highly resistant to the planned treatment measures. Therefore, even a low risk of leakage may be offset by the possibility of catastrophic consequences should leakage occur. Without some reasonable attempt to measure these consequences instead of bypassing the issue out of indifference, fatigue, or through administrative legerdemain, the Court cannot conclude that BOR took a hard look at the problem." (Emphasis added) (pp. 37-38)

Judge Collyer's opinion has direct relevance to Red River Valley Water Supply Project options involving the transfer of Missouri River water to the Red River Valley.

Not only did the NAWS Environmental Assessment fail adequately to consider treatment alternatives for Missouri River water, it also failed adequately to consider alternatives to the delivery of Missouri River water to Minot and the other area communities within the Hudson Bay Basin. The Environmental Assessment cites the 1998 *Final Report, Northwest Area Water Supply Study* prepared by Houston Engineering, Inc., American Engineering, P.C., and James M. Montgomery, Consulting Engineers, Inc., for the North Dakota Water Commission and the Garrison Diversion Conservancy District, and states that the report "outlined ten alternatives for supplying Missouri River water to the area" (Emphasis added) (Bureau of Reclamation, 2001) but does not mention consideration of any alternatives to supplying Missouri River water to the area. Review of the alternatives considered in the 1988 *Final Report, Northwest Area Water Supply Study* listed in Appendix A of the Environmental Assessment reveals that seven of the ten alternatives were based on utilizing water from the Missouri River. One of the three alternatives based on groundwater would supply three communities not included in the NAWS project and the two others would supply only three of the communities included in the NAWS project, plus two to four not included in the project. Thus, the 1988 *Final Report, Northwest Area Water Supply Study* does not provide a serious evaluation of alternatives to the proposed action, which involves supplying Missouri River water to 10 communities and five rural water systems in the Hudson Bay Basin portion of the NAWS project area.

The Environmental Assessment acknowledges that groundwater sources are sufficient in quantity to meet the needs of the communities and rural water systems and that water quality is adequate to meet the primary public health standards of the Safe Drinking Water Act, but it claims that the \$145,000,000 NAWS project is necessary to meet secondary esthetic drinking water standards for color, taste and odor. Yet, the Environmental Assessment considered only one alternative to supplying Missouri River water to the communities and rural water systems in the NAWS project area based on groundwater sources— Upgrading of Existing Systems (Houston Engineering, et al., 2001). However, this alternative considered only upgrading the water system of each individual community and rural water system separately, with new wells for six communities and 18 separate reverse osmosis systems, one for each of 13 communities and five rural water systems in the NAWS project area (Houston Engineering, et al., 2001).

Certainly, constructing 18 individual reverse osmosis systems to serve communities as small as Columbus (pop. 223), Noonan (pop. 231) and Souris (pop. 97) would be among the least feasible groundwater alternatives that could be designed. Even so, this alternative was estimated to cost only 28 percent more than the preferred NAWS Missouri River pipeline project (Houston Engineering, et al., 2001). However, neither the Environmental Assessment nor the reports it cites considered alternative configurations utilizing integrated groundwater sources, treatment facilities and distribution systems. For example, the projected 2010 combined 47,095 population of Minot and the Minot Air Force Base is 82 percent of the total population of the communities and rural water systems located in the Hudson Bay Basin to be served with Missouri River water under the NAWS project (Houston Engineering, et al., 2001). Therefore, one obvious alternative would have been to increase the supply from the Sindre Aquifer and the capacity of the Minot water treatment plant by 18 percent to provide water to the additional 10,114 people in small rural water systems in the Hudson Bay Basin through the same 304 miles of pipelines that would be used to distribute Missouri River water from Minot to those communities and rural water systems under the NAWS project. The saving from not having to build and operate a biota treatment plant

and the 45-mile pipeline from the Missouri River could instead have been used to expand the capacity of the Minot water treatment facility.

The fact that the State started with the assumption that the \$145,000,000 NAWS project would utilize Missouri River water simply to meet secondary drinking water standards and did not make a serious attempt to evaluate in-basin alternatives demonstrates that, rather than designing the project to meet legitimate water needs in the most economical and environmentally sound manner, the primary purpose of the NAWS project is to bolster North Dakota's claim to Missouri River water and establish a precedent for future transfers of Missouri River water into the Hudson Bay Basin

The Debt Owed to North Dakota

Lacking a plan for using Missouri River water in a responsible manner to meet legitimate needs, whenever their schemes for Missouri River diversion are questioned, North Dakota's political leadership invariably resorts to the specious claim that, "inequity, the Congress owe[s] North Dakota the Garrison Diversion Unit, for the state had sacrificed some 550,000 acres to the Garrison and Oahe reservoirs" (Robinson, 1966). For example, at the September 29, 1998, hearing on the Dakota Water Resources Act before the Subcommittee on Water and Power of the House Committee on Resources, the Governor and the North Dakota Congressional Delegation all cited the State's loss of 550,000 acres of valuable Missouri River bottomland to the Oahe and Garrison reservoirs as justification for the bill. For example, Senator Byron Dorgan testified that:

"When the Garrison Dam and Reservoir were built to provide downstream protection and to safeguard navigation, the state lost 500,000 acres of prime farm land, a major part of its overall economic base." (Dorgan, 1998)

Because this alleged 'debt' owed to North Dakota by the Nation is central to the State's justification for the Dakota Water Resources Act, it is appropriate to examine its elements in greater detail.

Of the 551,706 acres of land **acquired** in North Dakota for the Garrison (470,708 acres) and Oahe (80,998 acres) reservoirs, 333,035 acres were in private ownership, 174,708 acres were Indian lands, 11,298 acres were Federal land, and only 33,286 acres belonged to the State and its subdivisions (Gorton, 1984). The private landowners were paid the current market value for their land. Thus, rather than losing 550,000 acres to the Missouri River reservoirs, the State of North Dakota actually lost only six percent of that acreage. The impact on North Dakota's economic base is put into perspective by considering that the entire 551,706 acres acquired for the reservoirs is only 1.2 percent of the total land base of the State.

The Three Affiliated Tribes of the Fort Berthold Reservation, on the other hand, gave up 31.5 percent of the land acquired for the reservoirs. The Congress initially proposed in 1947 (Public Law 296) to pay the Three Affiliated Tribes a lump sum of \$5,105,625 for the:

"... acquisition of the land and rights therein within the taking of Garrison Reservoir ... including all improvements, severance damages, and reestablishment and relocation costs." (VanDevelder, 2004)

For the Tribes' land, which alone had been appraised at \$21,000,000 (\$120 per acre), the Congress proposed to pay less than \$15 per acre (VanDevelder, 2004). In 1949, the Congress finally passed Public Law 427 providing \$12,500,000, or slightly more than half the value of the

land alone, as settlement for all of the Tribes' claims, including the loss of their land and the costs of moving thousands of graves, relocating and replacing homes, and constructing roads, schools and other infrastructure to support new communities outside of the river valley (VanDevelder, 2004).

Of the 462,600 acres of land in North Dakota actually **inundated** by the Garrison and Oahe reservoirs, 109,000 acres were Missouri bottomland forest, 71,000 acres were water (river channel), 5,300 acres were marsh, 169,000 acres were native grasslands, and 108,300 acres were cropland (Fish and Wildlife Service, 1952; Bureau of Sport Fisheries and Wildlife, 1960). Thus, contrary to the claim of North Dakota's politicians that 500,000 acres of "prime farm land" were lost to the Garrison and Oahe reservoirs, the actual acreage of cropland inundated by the reservoirs was only one-fifth (21.6%) of that amount. The 108,300 acres of cropland inundated was 0.5 percent of the cropland in the State at that time (Robinson, 1966). Nevertheless, it is on such patently fallacious claims that the Dakota Water Resources Act is based.

In order to put North Dakota's 'sacrifice' into perspective, it also is necessary to consider that the State already receives **\$130,200,000 annually** in flood control (\$1,400,000), hydropower (\$80,000,000), water supply (\$28,500,000), and recreation (\$20,000,000) benefits from the Pick-Sloan Missouri River Basin Program under which the Garrison Diversion Unit was authorized (Bureau of Reclamation, 1996). This is an average of over **\$1,200 per acre per year** for the 108,300 acres of "prime farm land" inundated in North Dakota by the Garrison and Oahe dams. That is 29 percent more than the current average market value of the State's best agricultural land in the Red River Valley (Associated Press. 2005).

The Bill Entitled "The Dakota Water Resources Act of 1997"

When the Garrison Diversion Project Completion Act of 1996 failed to gain the support of the conservation community (Davis, 1996), Governor Edward Schafer and the North Dakota Congressional Delegation held two meetings in Washington, D. C., with the major stakeholders, including conservation organizations, in February 1997 (Davis, 1997a, 1997b). The second meeting on February 24th produced 12 "areas of potential agreement" upon which revisions of the Garrison Diversion Project Completion Act were to be based (Anonymous, 1997).

In August 1997, Senator Conrad proposed changing the name of the Garrison Diversion project to the North Dakota Water Supply Project "to broaden the appeal of the project" in order "to get Congress to approve money for its completion" (Associated Press, 1997). The North Dakota Congressional Delegation introduced a bill entitled "The Dakota Water Resources Act of 1997" in the Congress in November 1997 (Brasher, 1997) and held a 'field hearing' on the bill in Fargo on February 19, 1998 (Crawford, 1998). However, a March 31st hearing on the bill before the Senate Committee on Energy and Natural Resources was postponed when a Bureau of Reclamation analysis showed that, instead of costing another \$770,000,000 and being cheaper than the 1986 reformulated Garrison Diversion Unit as the Congressional Delegation claimed, the Dakota Water Resources Act actually would cost nearly a half billion dollars more and would have a total cost of \$1,946,000,000 (Brasher, 1998a; Bureau of Reclamation, 1997). After several amendments were made hearings were held on the bill before the Subcommittee on Water and Power of the Senate Committee on Energy and Natural Resources on July 14, 1998 (Brasher, 1998b), and before the Subcommittee on Water and Power of the House Committee on Resources on September 29, 1998 (Brasher, 1998c), but no further action was taken by the Congress on the bill.

The Bill Entitled "The Dakota Water Resources Act of 1998"

The first five of seven stated purposes of the bill introduced as “The Dakota Water Resources Act of 1998” dealt specifically with the Garrison Diversion Unit and implementing the recommendations of the 1984 Garrison Diversion Unit Commission Report, the sixth was to preserve North Dakota’s rights to use water from the Missouri River, and the seventh was to offset the loss of farmland in North Dakota resulting from construction of the Missouri River main stream dams through construction of a multi-purpose Federally-assisted water development project. These were the same purposes that were listed for the Garrison Diversion Reformulation Act of 1986. The principal elements of the Dakota Water Resources Act of 1998 included:

- 57,900 acres of irrigation development in the Oakes Test Area (5,000 acres), Turtle Lake Area (13,700 acres), the McClusky Canal Area (10,000 acres), the New Rockford Canal Area (1,200 acres) (Subsection 5[a]), and an unspecified 28,000 acres in other areas outside of the Hudson Bay Basin, plus 17,580 acres of irrigation on the Fort Berthold and Standing Rock Indian reservations (Subsection 5[c]), for a total of 75,480 acres of irrigation development.
- Authorization of appropriations of \$300,000,000, in addition to the \$200,000,000 authorized by the 1986 Reformulation Act, for MR&I water projects throughout the State (Paragraphs 7[a][1] and 10[b][1]), including the Southwest Pipeline Project, the Northwest Area Water Supply project, and a Red River Valley Water Supply Project, as well as of \$200,000,000 of appropriations for Indian MR&I water projects (Paragraph 10[b][2]).
- Delivery of Missouri River Water to the Sheyenne River and construction of a Sheyenne River water supply and release facility “capable of delivering 100 cubic feet per second of water. . . for the cities of Fargo and Grand Forks and surrounding communities” (Paragraph 8[a][5]).
- A directive that “the Secretary of the Interior shall select one or more project features. . . that will meet the comprehensive water quality and quantity needs of the Red River Valley” (Paragraph 8[a][4]).
- Authorization of appropriations of \$200,000,000 for the construction of the system to deliver Missouri River water to the Sheyenne River (essentially, completing the link between the McClusky Canal and the New Rockford Canal) (Paragraph 10[a][1]) and \$40,500,000 for the Sheyenne River water supply and release facility (Paragraph 10[b][2]).
- Construction of the Four Bears Bridge across Lake Sakakawea within the Fort Berthold Indian Reservation.
- Conversion of the North Dakota Wetlands Trust to a Natural Resources Trust and expansion of its authorized purposes in the 1986 Garrison Diversion Reformulation Act of preservation, enhancement, restoration and management of wetlands and associated wildlife habitats to include grassland conservation and riparian areas (Paragraph 11[c][1]).

At the February 24, 1997, meeting with the conservation organizations, “potential agreement” had been reached on retaining the 13,700-acre Turtle Lake Irrigation Area on the McClusky

Canal, and adding another 10,000 acres of irrigation along the McClusky Canal and 1,200 acres along the New Rockford Canal, but it was specifically noted that no Federal funding would be provided for the 5,000-acre Oakes Irrigation Area (Anonymous, 1997). However, disregarding even that "potential agreement," the bill introduced as the Dakota Water Resources Act of 1998 increased the amount of irrigation by another 133 percent above that to which the conservation organizations had potentially agreed, and it included the 5,000-acre Oakes Area.

The bill also specifically exempted nearly half (48%) of the proposed non-Indian irrigation development from standard economic analysis. As the Commissioner of the Bureau of Reclamation told the Senate Subcommittee on Energy and Power at its July 14, 1998, hearing on the bill:

"Section 5 of the substitute amendment would authorize the development of 28,000 acres of undesigned irrigation 'not located in the Hudson's Bay, Devils Lake or James River drainage basins.' While it requires a report to Congress, the report is limited to engineering feasibility and financial feasibility. By limiting this report to engineering feasibility and local financial feasibility, it does not require the project to pass the test for economic feasibility, with respect [to] national economic development (NED) benefits as is required under the Principles and Guidelines for developing Federal water resources projects – thereby holding this project to a lesser standard than other Federal projects. . . (Martinez, 1998)

It should also be noted that the development of 23,700 acres of irrigation in the Turtle Lake (13,700 acres) and McClusky Canal (10,000 acres) areas located along the McClusky Canal would require operation of the first three components of the Garrison Diversion project's principal supply works – the Snake Creek Pumping Plant, Lake Audubon and the McClusky Canal – to convey Missouri River water to these two irrigation areas. Then, development of 1,200 acres of irrigation along the New Rockford Canal would require connecting the McClusky Canal with the New Rockford Canal, thus essentially completing the Garrison principal supply works. With no restrictions in the Act on the volume of Missouri River water that could be delivered to the 1,600 cfs New Rockford Canal, the potential would exist for non-Federal interests to develop another 52,000 acres of irrigation in the New Rockford Area (*See Bureau of Reclamation, 1987*). Also, once Missouri River water was diverted to the New Rockford Canal, it would be a simple matter for the State to dig the three-mile-long James River Feeder Canal to bring Missouri River water to the James River (*See Bureau of Reclamation, 1974*), opening the potential for developing another 13,350 acres of irrigation in the LaMoure Area and expanding the Oakes Irrigation Area by another 18,660 acres (*See Bureau of Reclamation, 1987*).

Consequently, by authorizing just 57,900 acres of strategically placed irrigation that would require completion of the Garrison Diversion project's principal supply works, the bill introduced as the Dakota Water Resources Act of 1998 would have opened the door for the development of another 84,000 acres of irrigation by non-Federal interests. In fact, at the July 14, 1998, Senate Subcommittee on Water and Power hearing on the bill, Garrison Diversion Conservancy District Chairman Norman Haak testified that:

"Irrigation remains an authorized function of the project. Irrigation development, however, is changing rapidly. High-value crops, such as sugar beets, potatoes, onions and other vegetables are emerging fast and are being grown throughout the State under new irrigation development. . . This recent expansion of irrigation has occurred with funding from several different sources, **including state financing**, bonds, local grants, etc. Although the cost of development of federal irrigation acreage may not be feasible,

we want to preserve the public power relationship with relationship to future irrigation development.” (Emphasis added) (Haak, 1998)

Thus, rather than reducing non-Indian irrigation development from the 85,360 acres authorized in the 1986 Garrison Diversion Unit Reformulation Act as Senator Dorgan testified on September 29, 1998, before the House Subcommittee on Water and Power (Dorgan, 1998), the bill introduced as the Dakota Water Resources Act of 1998 would actually have set the stage for expansion of Garrison-based non-Indian irrigation development to at least 142,000 acres, with the attendant environmental impacts of at least 84,000 of those acres not covered by Federal requirements for mitigation of those impacts – 5.7 times the irrigation development potentially agreed to at the February 24, 1997, meeting in Washington, D. C.

The Bill Entitled “The Dakota Water Resources Act of 1999”

No action was taken by the Congress on the bill introduced as Dakota Water Resources Act of 1998, so the North Dakota Congressional Delegation re-introduced it again the next year, referring to it as the Dakota Water Resources Act of 1999, with the Four Bears Bridge eliminated, the \$300,000,000 million in appropriations authorized for the statewide MR&I water projects grant program reduced to \$200,000,000, and several other minor wording changes.

In his May 27, 1999, testimony before the Senate Committee on Energy and Natural Resources, Subcommittee on Water and Power, Garrison Diversion Conservancy District Chairman Norman Haak said that the Conservancy District’s Board of Directors “. . . has accepted the idea of relieving the federal government of its promise to build the remaining irrigation features,” and he attempted to explain the Conservancy District’s support for the Bill’s authorization of 57,900 acres or irrigation development and its directive that “The Secretary shall complete and maintain the principal supply works” by stating:

“The DWRA’s primary purpose is to update the 1986 legislation ceilings and, by so doing, will meet the most critical needs identified in 1986. It also provides a means for **resolving the awkward existence of nearly 120 miles of canal cutting across the middle of the State with no current function.**

...

We have already constructed the major canals, pumping plants and a small irrigation area. We are now seeking to make some limited use of them, **rather than let them stand as monuments that waste taxpayers’ dollars.**”

...

If, for some unforeseen reason, Congress decides to do nothing, the existing facilities will remain, **cutting a path across the midsection of the State, serving as a reminder of our inability to deal realistically with the situation.**” (Emphasis added) (Haak, 1999)

Mr. Haak neglected to mention the Garrison Diversion Conservancy District’s adamant refusal to consider the repeated calls for postponement of construction of those canals until the numerous serious issues associated with the Garrison Diversion project were resolved, starting with landowners along the McClusky in 1972 and the Government of Canada in 1973 and continuing through completion of the New Rockford Canal two decades later. He did not tell the Subcommittee that it was the Conservancy District’s own inability to deal realistically with the

situation that was responsible for the monument to the waste of taxpayers' dollars represented by the existence of nearly 120 miles of canals cutting across the middle of the State with no legitimate function.

Mr. Haak also did not tell the Subcommittee that earlier that year, the North Dakota Legislative Assembly had approved bills authorizing the State Water Commission to guarantee bonds to finance irrigation districts and to provide interest subsidies for irrigation projects (Bohrer, 1999) and allocating 45 percent (\$360,000,000) of the State's anticipated \$800,000,000 portion of the tobacco lawsuit settlement to the State's Water Development Trust Fund (Wetzel, 1999) where it could be used to develop non-Federal irrigation supplied from the Garrison Diversion project's principal supply works.

Former Bureau of Reclamation Commissioner Daniel P. Beard, testifying for the National Audubon Society, told the Subcommittee:

"We believe this proposal is premised on a faulty assumption. The major premise of the legislation seems to be that a 'debt' is owed to North Dakota as a result of the construction of the mainstem Pick-Sloan reservoirs. The *quid pro quo* for these facilities is the often-cited 'commitment' that North Dakota would receive 1 million acres of irrigation.

Rather than revisit the historical accuracy of this supposed 'commitment,' let me point out that the Congress in 1986 expressly said that whatever commitment may have existed was fulfilled by the 1986 legislation. Subsequent Congresses and Administrations – both Democratic and Republican, with the support of the environmental community – have met this commitment by making available over \$400 million to the State of North Dakota for the construction of rural water systems, Indian water projects and other project facilities. Over 80,000 North Dakotans have directly benefited from these expenditures. In addition, according to data developed by the Corps of Engineers, the State also receives approximately \$130 million *each year* in benefits from mainstream Missouri River facilities.

Thus, the state already has received well over a billion dollars in benefits and direct Federal appropriations since 1986. In our view, S. 632 fails to present a forceful and compelling case why the taxpayers should make available an additional \$900 in Federal funds and debt forgiveness." (Beard, 1999)

As in the previous three years, the Congress took no action on the Dakota Water Resources Act of 1999.

The Dakota Water Resources Act of 2000

Having failed in three successive attempts (four including the Garrison Diversion Project Completion Act of 1996) to move the Dakota Water Resources Act through the Congress following established procedures for project authorization, the North Dakota Congressional Delegation resorted to a new stratagem in 2000 that not only avoided committee hearings and floor debate where the Congress would hear testimony exposing the flaws and fallacies of the bill, but also prevented any consideration at all by the House.

On October 13, 2000, the Dakota Water Resources Act of 2000 passed the Senate as Senate Bill 623 on an 'Unanimous Consent Agreement' (Congressional Record – Senate, S10530, October 13, 2000). Bill Lambrecht describes the circumstances:

“Of course the public knew nothing about the North Dakota maneuvering because parties on all sides had been sworn to secrecy. . . The schedule in Congress that day was light because of the funeral in St. Paul, Minnesota, of Representative Bruce Vento. Many members had left after being assured that little would happen.

My cell phone rang in the cabin of a dream boat at the Annapolis Boat Show. It was a Canadian diplomat calling to say that the Dakota Water Resources Act passed the Senate. With no debate.

Even so, the House of Representatives wanted nothing to do with the notorious Garrison Diversion. ‘Bad policy’ and ‘an end run’ by North Dakota was how California Republican representative John Doolittle described the legislation in a letter to House Speaker Dennis Hastert. A House analysis concluded that Senate Bill 623 canceled repayment of \$600 million in the state’s debt to the federal government in connection with the project, raising the ultimate cost of the bill to \$1.5 billion.” (Lambrecht, 2005).

Consequently, the Dakota Water Resources Act of 2000 was never introduced in the House. In fact, other members of Congress, Canadian officials, officials of conservation organizations and the public including the citizens of North Dakota were unable to obtain any information regarding the contents of the Act or when or if congressional action on it might occur. As Bill Lambrecht further relates:

“By Oct. 12, information on 623 became hard to come by. Nothing was yet available in print on details of the compromise. Dorgan’s office did not return a phone call from a [St. Louis] Post-Dispatch reporter with questions about the senator’s plans. Officials in [Missouri Governor] Carnahan’s administration who had worried about 623 said they had no comment on the legislation.

Dorgan would offer no apologies about the tactics to pass 623.

‘That’s the way it works around here,’ he said.

On Friday the 13th, the schedule in Congress was light because of the funeral in St. Paul of Rep. Bruce Vento, D-Minn. Those who remained in Washington may or may not have noticed the Dakota Water Resources Act passing during the Senate with no debate.” (Lambrecht, 2001).

Instead, the North Dakota Congressional Delegation inserted the Dakota Water Resources Act of 2000 as a rider on the massive \$450 billion Health and Human Services Appropriations Bill that was passed late in the night of December 15, 2000, literally in the closing minutes of the 106th Congress. According to *The Grand Forks Herald*:

“House approval was more difficult, [North Dakota Congressman] Pomeroy said, so he maneuvered it onto the Health and Human Services appropriations bill.” (DeLage, 2000)

Few members of the Congress were aware that it was even there, and only those privy to the North Dakota Congressional Delegation's ruse knew what it contained. Bill Lambrecht again describes the circumstances:

“ . . . On the night of December 15, the North Dakotans watched both the Senate and House approve catch-all spending legislation that was as close as it comes to the proverbial Christmas Tree Bill with something for everyone. Among the goodies: \$1.5 million for sunflower research and \$176,000 for the Reindeer Herders Association. Tucked into the legislation, the last bill passed on the final day of the 106th Congress, was the Dakota Water Resources Act.” (Lambrecht, 2005)

Although Senator Conrad claimed that the Dakota Water Resources Act of 2000 was “written by North Dakotans for North Dakotans” (Conrad, 2001), the citizens of North Dakota had no input into the bill and they were not able to find out what it contained until after it was passed.

The Dakota Water Resources Act of 2000 includes all of the major elements of the 1998 bill outlined above, except the Four Bears Bridge, and including the addition of the State's Northwest Area Water Supply project for eligibility for funding under the now-\$400,000,000 statewide water systems grant program. Like the 1998 and 1999 versions, the Dakota Water Resources Act of 2000 delays the decision on the transfer of the Oakes Irrigation Test Area on the James River to the State of North Dakota until up to two years after the record of decision on a Red River Valley Water Supply Project.

The 57,900 acres of irrigation development authorized under the Dakota Water Resources Act of 2000 has the same potential for expansion with another 84,000 acres of non-Federal irrigation to a total of 142,000 acres of irrigation development as with the 1998 Act. In fact, former Garrison Diversion Conservancy District Manager the late Warren Jamison told members of the National Wildlife Federation's Water Quality Committee on September 9, 2001, in a “Garrison Diversion Briefing and Dakota Water Resources Act Overview” in Bismarck, North Dakota, that it was the Conservancy District's intention to use the Warren Act, which provides for the use of Federal water supply facilities to deliver water for non-Federal purposes, to expand irrigation development beyond that authorized in the Dakota Water Resources Act using the Garrison principal supply works. And in 2002, the North Dakota Water Users Association and the North Dakota Water Resources Districts Associations, two groups closely allied with the Garrison Diversion Conservancy District and the State Water Commission and which frequently front for their common agendas, adopted a resolution stating:

“GARRISON DIVERSION UNIT. To develop and complete the Garrison Diversion Unit. The Garrison Diversion will deliver Missouri River water to water-short areas for municipal, rural, industrial, irrigation, fish and wildlife and recreational purposes, thereby benefiting the entire state of North Dakota, the surrounding region, and the nation.”

Therefore, it is both instructive and prophetic to note in the context of the Red River Valley Water Supply Project that on the same day that the \$1,500,000,000 Dakota Water Resources Act of 2000 authorizing a Red River Valley Water Supply Project and purportedly “written by North Dakotans for North Dakotans” passed the Congress, the Manager of the Garrison Diversion Conservancy District openly declared:

“Passage of the Dakota Water Resources Act (DWRA) is a major chapter in a very long history book, but it is not the final chapter needed to meet highest priority water needs. We see this as the beginning of an important first phase, ending in a solution

that addresses North Dakota's current and future water needs." (Emphasis added)
(Garrison Diversion Conservancy District, 2000)

Lessons from History

A number of lessons can be gleaned from the history of Missouri River diversion in North Dakota, but four of the most important and relevant to the Red River Valley Water Supply Project are:

- Agreements on North Dakota water project that do not incorporate what the North Dakota political/water development establishment considers to be the State's full future entitlement to water from the Missouri River, including the delivery of Missouri River water to the Red River Valley and Devils Lake, are never final.
- Agreements are made on water projects by the North Dakota political/water development establishment, not to resolve issues, but to preserve and advance their agenda for Missouri River diversion.
- Anything that justifies maintenance and use of Garrison Diversion Unit principal supply works features will be exploited by the North Dakota political/water development to expand the diversion of water from the Missouri River.
- Agreements with the North Dakota political/water development establishment that rely on the integrity of the parties are vacant.

THE RED RIVER VALLEY MR&I WATER NEEDS ASSESSMENT

When the North Dakota Congressional Delegation reneged in the spring of 1994 on their December 1993 commitment to support the North Dakota Water Management Collaborative Process (Dorgan, et al., 1994), the Collaborative Process collapsed, but the Bureau of Reclamation continued the Red River Valley MR&I Water Needs Assessment and the statewide MR&I water needs assessment that had been initiated by the Collaborative Process' Executive Steering Committee.

In November 1994 a Technical Steering Team consisting of one representative each from the Bureau of Reclamation, the North Dakota Department of Health, the North Dakota State Water Commission, and the National Wildlife Federation (representing the conservation community), was appointed to oversee the appraisal level study of municipal, rural and industrial water needs in the Red River Valley. In order to avoid any perception of bias, the Technical Steering Team recommended that the study be conducted by the Bureau's Technical Service Center in Denver, with participation from North Dakota local, state and Federal interests limited to providing data and information. The Technical Steering Team decided to divide the study of Red River Valley MR&I water needs into two phases, with Phase I identifying needs and Phase II identifying alternatives for meeting those needs.

The Phase I study recognized the impossibility of reliably predicting water needs 50 years into the future, but it determined that significant municipal water shortages would be expected to occur in the Red River Valley only if another major drought of the severity and duration of the 1930s 'Dust Bowl' were to occur again under year 2050 water use conditions when the population of Fargo was projected to double to 192,000 (Bureau of Reclamation, 1998). The study also determined that the peak annual municipal water shortages during another 1930s style drought under year 2050 use conditions would range between about 10,000 and 30,000 acre-feet and would average less than 20,000 acre-feet over an eight year drought period (Bureau of Reclamation, 1998). Rural water shortages in the Red River Valley totaling 8,000 acre-feet per year were expected to occur by the year 2050 independent of drought conditions as the result of limitations of the groundwater supplies upon which they are based (Bureau of Reclamation, 1998).

At that point, as the Phase I study was about to end, the North Dakota Congressional Delegation intervened and persuaded the Bureau to include municipal population projections (participant projections) developed by several major cities that potentially could benefit substantially from a Federally-subsidized Red River Valley Water Supply Project, plus four hypothetical high-volume water use agricultural processing plants similar to the Cargill Pro-Gold corn syrup plant at Wahpeton, North Dakota, (where operations were temporarily suspended in January 2001 because of low profitability) arbitrarily placed at different locations in the valley. The addition of these four new hypothetical high-volume water use agricultural processing plants increased the projected year 2050 industrial water shortages during a 'worst year' 1930s drought from 5,680 acre-feet per year with the Pro-Gold plant and other existing industries, to 22,160 acre-feet with the Pro-Gold plant and these four additional hypothetical agricultural processing plants (Bureau of Reclamation, 2000a).

It is primarily the projected municipal and industrial water shortages which drive the analysis of alternatives for meeting future water needs in the Red River Valley, and the study determined that

Responses to the National Wildlife Federation

Response to Comment 3

We particularly disagree with your conclusion in paragraph 2 (page 38) that states, “simply implementing currently available water conservation and drought contingency measures in the major municipalities would eliminate the year 2050 shortages under 1930’s drought conditions with over 7,000 acre-feet to spare.” Your entire discussion is taken out of context. The purpose of an “appraisal report” is to ascertain if there are reasonably viable means to “meet” projected demands. Eliminating water use for all but essential health and safety-related uses for a year or more is not “eliminating shortages.” It is forcing municipalities to live with such a dire situation. In fact, hydrology modeling of surface water predicts a serious water shortage if a 1930s drought occurred today, and if a 1930s drought occurred in 2050, the worst monthly shortage could be as high as 89%.

The findings of the Phase I and Phase II efforts have been updated by the analyses conducted for the Needs and Options Report. We have used the best available technical information to evaluate needs as directed by DWRA (Dakota Water Resources Act).

Reclamation did include municipal water projections (participant projections) in the analysis. These numbers, combined with Reclamation’s estimates, provide a range of needs for consideration. Reclamation maintains that it is within the realm of good planning to work with project beneficiaries and customers to address needs.

the most significant municipal shortages in another 1930s-type drought under year 2050 water use conditions would be in the Fargo-Moorhead area, where they would peak at 31,210 acre-feet (including other existing industries) in 'worst year' conditions (Bureau of Reclamation, 1998). However, adding these four hypothetical agricultural processing plants to the projected 31,210 acre-feet 'worst year' municipal water shortage and the 5,500 acre-feet Pro-Gold shortage (assuming that enough corn would be available in a 1930s-type drought to make operation feasible) increased the combined municipal and industrial water shortage by 16,480 acre-feet or by 45 percent. Thus, the inclusion of these speculative additional agricultural processing plants significantly inflated the projected future water needs of the Red River Valley and substantially influenced the alternatives to meet those needs.

The Phase I needs study determined that some municipal and industrial water shortages (<5,000 acre-feet per year) would occur at 1994 water use levels if a 1930s-type drought would occur (Bureau of Reclamation, 1998). However, the most significant finding of the study was that even with the addition of the four hypothetical high-volume water use agricultural processing plants, significant municipal and industrial water shortages (>5,000 acre-feet per year) would not occur unless the population of Fargo doubled by the year 2050 **and** a 1930s-type drought were to occur at that time (Bureau of Reclamation, 1998).

Without a convincing need for a Red River Valley Water Supply Project having been established by the Phase I needs study even with the participant municipalities' inflated population projections and the addition of four hypothetical agricultural processing plants in the Red River Valley, the North Dakota Congressional Delegation pressured the Bureau to expand the Technical Steering Team for the Phase II alternatives study to include representatives from the cities of Fargo (represented by Houston Engineering) and Grand Forks, North Dakota, and Moorhead, Minnesota, a private engineering consultant for other communities and rural water systems in eastern North Dakota, and the Garrison Diversion Conservancy District—all with vested interests in the outcome of the study. Also, the manager of the Bureau's Bismarck office at the time the North Dakota Water Management Collaborative Process was initiated transferred to the Regional Office and the Bismarck office staff, who are more vulnerable to influence by the North Dakota Congressional Delegation and the Conservancy District, became more actively involved in directing and conducting the alternatives study. Consequently, the original Technical Steering Team's determination to avoid bias—and the perception of bias—in the study was abandoned.

The Red River Valley Water Needs Assessment Phase II: Appraisal of Alternatives to Meet Projected Shortages Draft Report was completed in January 2000 (Bureau of Reclamation, 2000a) and the Addendum: Responses to Comments on the Draft Report was released in August 2000 (Bureau of Reclamation, 2000b). The Phase II *Alternatives Report* identified eight potential alternatives for meeting year 2050 projected Red River Valley MR&I water needs, including a 'no action' alternative, three Red River Basin in-basin alternatives (Kindred Reservoir, Enlarged Lake Ashtabula, and Groundwater), two Missouri River import pipeline alternatives (Bismarck to Fargo and Lake Oahe to Wahpeton), a Garrison Diversion Missouri River water import to the Upper Sheyenne River (with four variations), and a Garrison Diversion Missouri River water import to the Red River Valley alternative (Bureau of Reclamation, 2000a).

The Phase II report estimated that year 2050 water use could be reduced by 15 percent through planned water conservation programs, but assumed those savings would be offset by increased use during droughts. The report also estimated that the implementation of drought contingency measures could reduce water use by 5-10 percent with Level I measures (public education and voluntary measures), 10-20 percent with Level II measures (mandatory lawn watering schedule and restrictions on non-essential uses), 20-30 percent with Level III measures (assessing fines to

water wasters, requesting industries and noncommercial users to eliminate certain uses, and prohibiting all outdoor water use), and 30 percent and up with Level IV measures (water rationing, curtailing industrial and some commercial uses, and reserving supplies for essential health- and safety-related uses) (Bureau of Reclamation, 2000a). But, rather than considering how the implementation of drought contingency measures could reduce shortages, the Phase II report reserved them for use in the event that a drought even more severe than the 1930s were to occur. Nevertheless, it is instructive to consider how the implementation of water conservation and drought contingency measures would affect the year 2050 Red River valley water shortages identified in the Phase II report.

The Phase II report projected the year 2050 total Red River Valley municipal raw water use to be 85,420 acre-feet per year (Bureau of Reclamation, 2000a). A 15% water conservation saving plus a 30% drought contingency saving, for a total reduction of water use by 45 percent, would reduce the year 2050 water use by 38,439 acre-feet per year, or 7,409 acre-feet more than the 31,030 acre-feet "1934 worst year" municipal water shortage projected for that period (Bureau of Reclamation, 2000a). Thus, according to the Phase II report, simply implementing currently available water conservation and drought contingency measures in the major municipalities would eliminate the year 2050 municipal water shortages under 1930s drought conditions with over 7,000 acre-feet to spare.

The Phase II report did not discuss the potential for reducing rural water shortages through water conservation and drought contingency measures, and it might be difficult to realize the same levels of reduction achievable in municipalities. Nevertheless, it is relevant to note that a 45 percent reduction in rural water use would eliminate the projected year 2050 Red River Valley rural water shortage of 8,045 acre-feet. The Phase II report also does not discuss specific reductions in the highly speculative projected industrial water use achievable with water conservation and drought contingency measures, but these presumably also could be significant.

Although the five-year Red River Valley MR&I Water Needs Assessment conducted under the North Dakota Water Management Collaborative Process had not demonstrated a compelling need for a Red River Valley water supply project, in May 2000, without informing the conservation organizations who had been participating in the Collaborative Process since 1993, the Bureau of Reclamation, the Garrison Diversion Conservancy District and the North Dakota State Water Commission developed a Memorandum of Understanding to:

"... provide an organization and a process for cooperation among State, Federal, and local interests in the completion of a special study to evaluate the feasibility of alternatives to meet future municipal, rural, and industrial water needs in eastern North Dakota."

The Memorandum of Understanding was to be administered through a Study Management Team composed of one appointed official from each the Bureau of Reclamation, the North Dakota State Water Commission, and the Garrison Diversion Conservancy District, and it vested the Study Management Team with the responsibility and authority to "meet periodically to review progress and provide general direction for the studies," to provide "overall guidance, scheduling, report concurrences, financial issues, and major decision making activities on difficult issues," to "approve products, including the Plan of Study," and to "approve[] a final product." Consequently, the 2000 Memorandum of Understanding established a three-member team dominated by the State and the Garrison Diversion Conservancy District to continue to pursue a Red River Valley water supply project.

In addition to the Study Management Team, the May 2000 Memorandum of Understanding provided for the establishment a Technical Team consisting of representatives of the Bureau of Reclamation, the North Dakota State Water Commission, Department of Health, and Game and Fish Department, the Garrison Diversion Conservancy District, the U. S. Fish and Wildlife Service and Geological Survey, the States of Minnesota and Missouri and the U. S. Army Corps of Engineers. The Memorandum of Understanding also provided of a Study Review Team consisting of representatives of the Eastern Dakota Water Users Association, the cities of Fargo, West Fargo, Grand Forks, Drayton, Pembina, Grafton, Valley City and Wahpeton, North Dakota and Moorhead, Breckenridge and East Grand Forks, Minnesota, the North Dakota Water Users Association, the North Dakota Wildlife Federation, the North Dakota Chapter of The Wildlife Society and the National Audubon Society. The Technical Team was to be responsible for technical evaluations, drafting portions of the report and other day-to-day activities. The Study Review Team was to review draft products and periodically meet with the Technical Team to provide input into the processes and products of the study.

Seven months later, still without a need having been demonstrated, the Dakota Water Resources Act of 2000 was passed authorizing a Red River Valley Water Supply Project.

THE RED RIVER VALLEY WATER SUPPLY STUDY

The Dakota Water Resources Act of 2000 states explicitly at Paragraph 8(b)(1) that:

“The Secretary of the Interior shall conduct a comprehensive study of the water quality and quantity needs of the Red River Valley and possible options for meeting those needs.” (Emphasis added)

Immediately following passage of the Dakota Water Resources Act in the Senate on October 13, 2000, on an Unanimous Consent Agreement without debate, North Dakota Senator Byron Dorgan explained that:

“The bill lays out the process for meeting the water needs for the Red River Valley in eastern North Dakota. First, the Secretary of the Interior will identify these water needs and evaluate options for meeting them. The Department must submit a report on the needs and suggest possible solutions to the Congress. The Secretary is also is required to complete an environmental impact statement, EIS, on the Red River Valley project and select the best option. . .” (Emphasis added) (Congressional Record – Senate, S10530, October 13, 2000),

Consequently, it is clear that the Red River Valley Water Supply Study authorized by the Dakota Water Resources Act of 2000 was to be completed by the Secretary of the Interior and that the Department of the Interior was to prepare the Red River Valley Water Needs and Options Report. Nevertheless, on December 21, 2000, six days after the Dakota Water Resources Act of 2000 was passed, the same Study Management Team that was established by the May 2000 Memorandum of Understanding and consisting of the Dakotas Office Manager of the Bureau of Reclamation, the Manager of the Garrison Diversion Conservancy District and the North Dakota State Engineer met to launch the Red River Valley Water Supply Study and preparation of the environmental impact statement for a Red River Valley Water Supply Project that had just been authorized by the Act (Anonymous, 2001a).

At the December 21, 2000, meeting of the Study Management Team, Bureau of Reclamation Dakotas Office Manager Dennis Britzman said he anticipated it would take 5 to 6 years to complete the studies, and, according to the minutes, he pointed out that:

“Credibility is a big issue if we hand the Technical Team a detailed plan of study prepared without their input.” (Anonymous, 2001a)

and:

“We must avoid being heavy handed with the Technical Team and that we all need to be in technical agreement and that the studies are adequate. All the rest of it is political.” (Anonymous, 2001a)

However:

“[Garrison Diversion Conservancy District Manager] Warren Jaimson, said the date when the President signs the bill is when the clock starts ticking on the deadline for the

Responses to the National Wildlife Federation

Response to Comment 4

Because of concerns raised by you and others, Reclamation developed new agreements with the State of North Dakota in accordance with the Dakota Water Resources Act (DWRA). As a result of internal review we also developed a new memorandum of understanding with the State, which was specific to the requirements in DWRA and made the State a co-lead on the environmental impact statement. (Per Section 8 (b) (1), which directs the Secretary of the Interior to “conduct a comprehensive study,” Reclamation had the sole lead on preparing the Report on Red River Valley Water Needs and Options. Although a number of agencies and contractors assisted Reclamation in completing studies used in the report, Reclamation was responsible for the content and conclusions of the report.)

EIS. He needs good Red River Study reports quickly so he can sell the concept to Congress in 2004 and 2005.” (Emphasis added) (Anonymous, 2001a)

Finally:

“[Bureau of Reclamation Dakotas Officer Manager] Denny Britzman stated that a cooperative agreement will be needed to transfer funds from the federal budget to the state. DWRA makes Reclamation responsible for the technical studies. Since Reclamation is responsible, it follows that Reclamation should pay for all the studies. It is assumed that Reclamation and the C-District will have contractors working on products. C-Districts [sic] will pay their bills and then bill Reclamation for reimbursement of expenses.” (Emphasis added) (Anonymous, 2001a)

Consequently, despite the clear language of the Dakota Water Resources Act of 2000 specifying that the Secretary was to conduct the Red River Valley Water Supply Study, less than a week after the Act was passed, the study was being launched by a Study Management Team dominated by the State and the Garrison Diversion Conservancy District, and plans were being made for the Garrison Diversion Conservancy District to develop information for the study through its own contractors and then to be reimbursed for the costs by the Bureau of Reclamation.

Dakota Water Resources Act Paragraph 8(b)(3) also states explicitly that:

“In conducting the study, the Secretary through an open and public process shall solicit input from gubernatorial designees from states that may be affected by possible options to meet such needs as well as from other federal agencies with relevant expertise.” (Emphasis added)

Consequently, the Act also is very clear in requiring the Secretary to conduct the Red River Valley Water Supply Study in “an open and public process” and to solicit input from other states and from federal agencies with relevant expertise, and it says nothing about the Garrison Diversion Conservancy District having greater input into the study than the representatives of other states and Federal agencies. It is instructive, therefore to note Garrison Diversion Conservancy District Manager Warren Jamison’s statements reported in the minutes of the March 23, 2001, Study Management Team meeting:

“Warren Jamison raised a question about the role and authority of the Technical Team. He was concerned that a minority of Technical Team members would disagree with an issue and the team could not arrive at a consensus on an issue, thereby preventing the Technical Team from progressing on certain items of work or alternatives. The Management Team agreed that the role of the Technical Team was advisory, and that the Management Team had final decision making authority on all aspects of the study. Warren Jamison requested that this issue be discussed at the next Technical Team meeting to assure the team didn’t have false expectations related to their authority.” (Emphasis added) (Anonymous, 2001b)

According to the January 2001 issue of *North Dakota Water*, when the Dakota Water Resources Act of 2000 was passed on December 15, 2000:

“[Garrison Diversion Conservancy District Manager Warren] Jamison says the DWRA was successful because it was written by North Dakotans. ‘This was the first time in

history that state leaders had such a direct involvement in putting this type of legislation together.” (Collin, 2001)

But, no sooner had the Act, which the Conservancy District had supported and helped to draft, passed than the Conservancy District set out on a concerted campaign to violate some of its most fundamental provisions. Thus, despite the clear language of the Act providing no authority for the State or the Conservancy District even to have a role in the Red River Valley Water Supply Study—the Bureau’s August 9, 2002, *Operating Principles* document for the Red River Valley Water Supply Study identifies the ‘potentially affected states’ as Minnesota and Missouri—the Conservancy District was assuring that they would have final decision-making authority on all aspects of the study while the Technical Team from whom the Act requires the Secretary to solicit input would be limited to an advisory capacity.

The Study Management Team’s total disregard for the explicit language of Paragraph 8(b)(1) of the Dakota Water Resources Act requiring the Secretary of the Interior to conduct the Red River Water Supply Study was again demonstrated by the notation in the minutes of the March 23, 2001, Study Management Team meeting that:

“The Management Team also discussed the difference between the C-District’s involvement in the feasibility study (Report on Red River Valley Water Needs and Options) and the draft Environmental Impact Statement (EIS). **Reclamation’s position is that while the C-District should be fully involved in the feasibility study**, their involvement in the EIS has to be limited in accordance with the National Environmental Protection [sic] Act (NEPA) regulations. . .” (Emphasis added) (Anonymous, 2001b)

The Study Management Team’s open defiance of the explicit language of Paragraph 8(b)(3) of the Dakota Water Resources Act requiring the Secretary to conduct the Red River Valley Water Supply Project through “an open and public process” was documented in a January 5, 2002, letter to the Bureau of Reclamation representative on the Study Management Team from the National Wildlife Federation representative on the Study Review Team pointing out Reclamation’s failure to respond substantively to requests for information regarding discussions and agreements with the Conservancy District relating to the Red River Valley Water Supply Study and the environmental impact statement for the Red River Valley Water Supply Project, the availability of task orders issued to the Conservancy District’s consultants, and the Bureau’s biota Risk Assessment for the Northwest Area Water Supply project (Pearson, 2002). In the letter, the National Wildlife Federation representative specifically pointed out:

“You will recall that, at the conclusion of the April 19, 2001, Study Review Team meeting in Fargo, you, Signe Snortland from your office, Genevieve Thompson from the National Audubon Society, and I discussed the matter of other stakeholders not being informed of meetings of the Study Management Team. Ms. Thompson and I were told that meetings of the Study Management Team are not closed and we could attend if we wanted to, but the meetings are not announced. We were not told how we are supposed to attend the meetings if we cannot find out when and where they are being held. It is interesting to note, therefore, that the minutes of the March 23, 2001, Study Management Team meeting, which were not provided until after April 19, 2001, state:

‘The Management Team also suggested that the next Management Team meeting be held right after the Review Team. Therefore, the next Management Team meeting will be right after the Review Team meeting and start at approximately 2:30 pm.’

'Next Meeting – The next SMT meeting will be on April 19, 2001, at 2:30 P.M., in Fargo following the Review Team meeting.'

The agenda for the April 19, 2001, Study Review Team meeting shows the meeting scheduled to start at 9:00 AM and to end at 2:00 PM. Therefore, it appears that following our discussion at the conclusion of the April 19, 2001, Study Review Team meeting about the inability of other stakeholders to attend the ostensibly 'open' Study Management Team meetings, you and Ms. Snortland promptly walked out of the room to attend a Study Management Team meeting at 2:30 PM without bothering to mention that a Study Management Team meeting that had been scheduled nearly a month earlier was about to convene in the same building."

As a result of repeated protests to the Regional Director and the Commissioner of the Bureau of Reclamation by other stakeholders, the Study Management Team finally was abolished in early 2002 and a new Memorandum of Understanding was signed by the Regional Director of the Bureau of Reclamation and the Governor of North Dakota voiding the May 2000 Memorandum of Understanding and dealing only with the Red River Valley Water Supply Project EIS and specifying that the Bureau of Reclamation is the lead agency for the Red River Valley Water Supply Project. However, the Garrison Diversion Conservancy District and the State continued to exert undue influence over the Red River Valley Water Supply Study in clear violation of Paragraph 8(b)(1) and Paragraph 8(b)(3) of the Dakota Water Resources Act of 2000.

Under Subparagraph 8(c)(2)(A) of the Dakota Water Resources Act of 2000, the Secretary and the State of North Dakota are to "jointly prepare and complete a draft environmental impact statement" for the Red River Valley Water Supply Project. However, in the new Memorandum of Understanding, the Governor designated the Garrison Diversion Conservancy District to represent the interests of the State of North Dakota in the agreement. Although it has repeatedly been pointed out to the Bureau of Reclamation that the Conservancy District lacks the statutory authority to represent the interests of the State and that no statutory authority exists for the Governor to designate the Conservancy District to represent the interests of the State in the preparation of the environmental impact statement for the Red River Valley Water Supply Project (Pearson, 2002b, 2003, 2005), rather than requiring the Governor to designate an eligible entity to represent the State, the Bureau has continued to allow the Conservancy District to assume that role in violation of the Dakota Water Resources Act of 2000 and, consequently, in violation of the National Environmental Policy Act of 1969, as well.

Responses to the National Wildlife Federation

Response to Comment 5

The Governor of North Dakota has the authority to designate the Garrison Diversion Conservancy District to represent the state in this study. The North Dakota Office of Attorney General clarified this in Letter Opinion 1004-L-56 dated August 31, 2004.

THE DRAFT REPORT ON RED RIVER VALLEY WATER NEEDS AND OPTIONS

Four and a half years and undisclosed millions of dollars after the Dakota Water Resources Act of 2000 was passed in December 2000, at the end of May 2005, the Bureau of Reclamation released its *Draft Report on Red River Valley Water Needs and Options (Draft Report)* authorized under Paragraph 8(b)(1) and Paragraph 8(b)(3) of the Act (Brietzman, Undated). The *Draft Report* contains substantial useful information on surface water and groundwater hydrology and potential water sources in the Red River Valley, but because the 'needs' assessment is based on flawed data, highly questionable assumptions and unconventional and unrealistic water management principles, and because the options are designed to meet those speculative and exaggerated 'needs,' the *Draft Report* lacks scientific validity or credibility and is of little value in making sound decisions regarding future Red River Valley water needs and options for meeting those needs.

Red River Valley Water Needs

The *Draft Report* purports to examine future municipal, rural, industrial, recreational and other Red River Valley Water needs, but the future needs are driven primarily by projected population growth in the Red River Valley and secondarily by projected growth in industrial water use.

Planning Horizon

According to the *Draft Report*:

"The planning horizon for the project is the year 2050. Population and water demands were projected to 2050. Designing a water supply system for the year 2050 is consistent with the typical service life, without major rehabilitation, of project features such as water treatment plants, pumping plants, and storage reservoirs. Although the expected service life of pipelines is approximately 100 years, project planning horizons are based typically on the service life of nonpipeline components." (Draft Report, p. 1-3)

The *Draft Report* summarily dismisses the fact that, as was recognized in the Red River Valley MR&I Water Needs Assessment and was again repeatedly noted in the Red River Valley Water Supply Study, population and water 'demands' cannot be reliably projected 45 years into the future. And although the design of specific project features may be based on their typical service life, it is highly unconventional to **design and size an entire water supply system** on such unreliable speculation. In the 'real world,' water system components may be based on their typical service life but they are sized to meet reasonably foreseeable future needs, and they are designed to be supplemented with additional features as future needs actually materialize.

The facts that (1) the *Draft Report* acknowledges that pipelines have expected service lives of approximately 100 years, but (2) ALL of the options identified in the Draft Report for meeting future Red River Valley water needs include pipelines designed to meet year 2050 projected needs as major components further demonstrates the irrelevance of the Bureau's rationalization for selecting a year 2050 planning horizon for the Red River Valley Water Supply Study.

Responses to the National Wildlife Federation

Response to Comment 6

We disagree with your opinion that the needs assessment is based on flawed data. As required by the authorizing legislation, Reclamation quantified the water needs of the Red River Valley that were specified in the DWRA. These are MR&I (municipal, rural, and industrial water); aquatic environment; water quality; recreation; and water conservation measures. The comprehensive need of the Red River Valley was quantified in the Needs and Options Report as a water demand ranging from a maximum of 113,702 – 142,380 acre-feet annually. The water demand was not “inflated.” The water demand incorporated water conservation measures, as explained in the Final Needs and Options Report, section 2.5.

In addition to quantifying water demand, Reclamation used a surface water hydrology model to quantify the difference between water demand and available water during a reasonably foreseeable drought. That difference was the predicted water shortage. Potential water savings, reduction in costs of alternatives, and economic impacts of implementing drought contingency measures were analyzed in the DEIS (draft environmental impact statement) as described on pages 45 - 47.

Response to Comment 7

There is uncertainty in predicting future populations, but that admission does not equate to “unrealistic speculation” as stated in your comment. The population projections conducted by Reclamation and Northwest Economic Associates were based on the cohort component method, which is generally regarded as the most comprehensive and reliable method to estimate population change over time. Thus, Reclamation maintains that these population projections are the best available information.

Reclamation revised the *Report on Red River Valley Water Supply Project Needs and Options, Current and Future Population of the Red River Valley Region 2000 through 2050, Final Report* to provide additional clarification on population projections and identified where populations would reside in the future. Reclamation used the “optimistic” population projection of 417,600 (table 9) in the 13 eastern counties in North Dakota, but this was only 15,100 more than the results with migration, as shown in table 8, or a 3.8% increase. The difference was 27,079 or 6.9% higher than the projections provided by Northwest Economics Associates.

It should also be noted that the Minnesota Department of Natural Resource comment letter included comments from the Minnesota State Demographic Center. Their concluding comment is as follows: “Despite my various criticisms, I should note that the “best estimate” projection is only about 26,000 more than the more conventional “trend migration” projection after 50 years, a difference of less than 5 percent. This is not a huge difference in the world of population projections.”

Two water demand scenarios used in the report provide adequate data to understand the relationship between option costs and water demands. Additional water demand sensitivity analyses may be done for the FEIS (Final Environmental Impact Statement).

In attempting to justify the selection of water needs 50 years in the future as the basis for the Red River Valley Water Supply Study, the Bureau explained in its March 5, 2003, draft *Needs Assessment Project Mobilization and Study Approach* that:

“Planning period through 2050 – A planning period through 2050 was used because it coincides with the expected useful life of most of the proposed major Red River Project components such as pipelines and treatment plants.” (p. 5)

However, this rationale is fatally flawed on several counts. First, according to the *Draft Report* pipelines have expected service lives of 100 years (Draft Report, p. 1-3). Second, it presupposed the selection of a Red River Valley water supply alternative that includes pipelines and treatment plants before other alternatives had been evaluated. Third, the Bureau’s own March 5, 2003, draft *Needs Assessment Project Mobilization and Study Approach* acknowledged that population and economic development “are difficult to forecast out 5 or 10 years much less 50, but 2050 is the design life of the Red River Project.” Fourth, by considering only Red River Valley water needs 45 years from now, the 2050 planning period automatically excludes from consideration water supply alternatives that could be implemented incrementally as demands materialize through the next 45 years. Fifth, it fails to recognize that the selection of a planning period through 2050 based on the useful life of major project components does not automatically preclude consideration of different planning periods based on other criteria, such as cost and need. Finally, the limitation of the Red River Valley Water Supply Study to a single 50-year planning period disregards the clear directives of Section 8(b)(1) of the Dakota Water Resources Act of 2000 that:

“The Secretary of the Interior shall conduct a **comprehensive study** of the water quality and quantity needs of the Red River Valley in North Dakota and **possible options** for meeting those needs.” (Emphasis added)

and of Section 8(c)(2)(A) of the Act that:

“...the Secretary and the State of North Dakota shall jointly prepare and complete a draft environmental statement considering **all feasible options** to meet the comprehensive water quality and quantity needs of the Red River Valley and **the options** for meeting those needs...” (Emphasis added)

It is important to note that no statutory mandate exists to support the Bureau’s selection of a 50-year planning period for the Red River Valley Water Supply Study, and even if such authority did exist, it still would not preclude consideration of other more reliable and realistic planning periods. In fact, the Bureau has a responsibility to inform the Congress of the unreliability of water use projections based on such an unrealistically long planning period. Indeed, to argue otherwise would be to argue congressionally mandated ignorance. Consequently, the Bureau has no defensible alternative except to consider other more reliable and realistic planning periods for the Red River Valley Water Supply Study

Population Projections

Population is the factor having the greatest influence on future water needs in the Red River Valley. The *Red River Valley MR&I Water Needs Assessment Phase I* report showed the 1994 Red River Valley municipal population to be 219,195, with Fargo, the largest city in the valley, having a population of 79,715 (Bureau of Reclamation, 1998). The Bureau projected in the Phase I report that the Red River Valley municipal population would increase to 395,870 by 2050, with the population of Fargo doubling to 192,600 (Bureau of Reclamation, 1998). The Phase I report also included projections by the municipalities themselves (participant projections) showing the Red River Valley municipal population increasing to 453,440 by 2050 and the population of

Responses to the National Wildlife Federation

Response to Comment 8

Your comments provided justifications for both shorter and longer planning horizons, which supports our determination that a 50 year planning period is reasonable. Discussion of phasing alternatives is included in the Final Needs and Options Report, chapter four, pages 4-35 through 4-36.

Response to Comment 9

The comment that Phase I population projections have been superseded by projections in this report is true, and Reclamation stands by the decision to update population projections. Your proposed projection using 1960 to 1990 trends would result in an increase of only 14% out to 2050. Fargo's population (the main municipality with shortages) was 79,700 in 1994 and grew to 90,600 by 2000. This alone is an increase of 14% in just 7 years.

Reclamation used standard demographic methods for projecting future population in the Red River Valley (see response to comment 7).

Fargo increasing to 243,072 (Bureau of Reclamation, 1998). The Phase I report also shows that the Bureau's population projection and the participant population projection both assume dramatic increases above historic trends in the population growth rate in the Red River Valley beginning in 1990 (Bureau of Reclamation, 1998). For example, based on the historic trend from 1960 to 1990, the municipal population of the valley would be expected to increase from 219,000 in 1994 to about 250,000 in 2050, an increase of 31,000 or 14 percent (Bureau of Reclamation, 1998). However, the Bureau projected the municipal population of the Red River Valley would increase by 176,675 (80.6 percent) and the participants projected it would increase by 234,235 (107 percent), while the downward trend in the population of the State as a whole was expected to continue (Bureau of Reclamation, 1998)

The Phase I report noted that:

"Outmigration rates from North Dakota were high from 1980 to 1990... The assumption that outmigration will decrease in the future is based on the belief that the downturn in the agricultural and energy sectors during the 1980s was an extreme condition, and recovery of the North Dakota economy will reduce outmigration in the near future. However, if the North Dakota economy were to take another downturn, the population projections prepared by the North Dakota Census Data Center could be overestimates." (Bureau of Reclamation, 1998)

The Associated Press reported in 2003 that, according to Richard Rathge, the Director of the North Dakota Population Data Center at North Dakota State University:

"Cass County [including Fargo] remained the most populous county with 125,117 people, but Rathge said growth in that county continues to be slowed by the downturn in new immigrants and refugees since the terrorist attacks of Sept. 11, 2001.

'That spigot has turned off,' Rathge said. **'When you look at the net migration in Cass County, what's holding that migration has been the foreign-born population.'** (Emphasis added) (Associated Press, 2003).

According to the Associated Press, Jessica Thomasson, a Fargo city planner said in 2003 that:

"I think our international migration numbers are at about 11 per year right now. It used to be 300 to 500 per year." (Kolpack, 2003)

It is evident, therefore, that even at its height, migration into the State was not a significant factor in Fargo's increased population growth rate in the 1980s and 1990s, and it cannot be expected to be a significant factor over the next 50 years.

North Dakota's population actually did increase by 966 people (0.15 percent) in 2004 but this was not sufficient to offset the 4,122 lost the previous two years (Associated Press, 2004). And although the Fargo-Moorhead Metropolitan Council of Governments, a local planning organization, proclaimed in 2005 that the Fargo-Moorhead area was growing much faster than expected, North Dakota State Demographer Richard Rathge disputed the claim, pointing out that the Council may have underestimated how many new residences were occupied by people living alone, and:

“Rathge also said the MetroCOG estimates may not accurately reflect the declining and aging population in eastern North Dakota, from which Fargo-Moorhead traditionally draws many of its new residents.” (Emphasis added) (Knutson, 2005)

What the Phase I report did not consider is that, because the population of the State as a whole has continued a gradual decline, the increased population growth rate experienced in Red River Valley municipalities, particularly the Fargo-Moorhead area, during the 1980s and 1990s (Fargo and West Fargo grew by 22 percent in the 1990s [Associated Press, 2003]) clearly was primarily the result of a rural-to-urban shift within the State associated with a declining agricultural economy, rather than an absolute increase in population. And because the rural population pool that contributed to the increased population growth rates in Red River Valley municipal areas in the 1980s and 1990s is relatively small and finite, that rural-to-urban shift will not be sustained over the long term. In fact, although the population of West Fargo increased by 517 people from 2001 to 2002, the population of Fargo actually declined by 268 (0.3 percent) and the population of Grand Forks dropped by 243 (0.5 percent), for a net gain of only 6 people from 2001 to 2002 in the three largest North Dakota cities in the Red River Valley (Kolpack, 2003).

Instead of basing its projections of future Red River Valley populations on established demographic principles, realistic assumptions and objective analysis of data, the Bureau's *Draft Report* continues to utilize statistical sophistry to inflate even further the exaggerated population projections of its previous *Red River Valley MR&I Water Needs Assessment*. For example, the Bureau's *Needs Assessment Phase I* report projected a 2050 population of 395,870 for the 10 largest municipalities in the Red River Valley, including 192,600 for Fargo (Bureau of Reclamation, 1998), but in the *Draft Report* the 2050 population projections are increased to 401,570 (an increase of 1.4%) for those same 10 Red River Valley municipalities, including an increase to 204,300 for Fargo (an increase of 6%) (Draft Report, p. 2-25). The year 2050 participant/municipalities population projections in the *Needs Assessment Phase I* report of 453,440 for the 10 largest municipalities in the Red River Valley, including 243,072 for Fargo, (Bureau of Reclamation, 1998), are increased to 469,854 (an increase of 3.6%) for the same 10 largest municipalities, including 243,073 (no change) for Fargo (Draft Report, p. 2-25).

Rather than recognizing the causes of the rapid growth in the populations of some Red River Valley municipalities in the 1980s and 1990s and that it has declined significantly over the last five years, the Bureau's *Current and Future Population, Red River Valley Region 2000 through 2050*, upon which the *Draft Report's* population projections are based simply concludes with the statement that:

“The growth rate for the entire study area to the year 2050 is projected to be a little over 0.6% annually, compared to a historic growth rate of about 0.47% annually from 1960 to 2000.” (Bureau of Reclamation, 2003)

The Bureau's disregard for established demographic principles, realistic assumptions and objective analysis of data is documented by the *Draft Report* itself. For example, based on U. S. Census Bureau data, the population of the Red River Valley region of North Dakota and Minnesota would be projected to grow from 446,235 in 2000 to 502,792 in 2050, an increase of 56,557 or 12.7 percent. The Bureau of Reclamation contracted with Northwest Economic Associates “to conduct an independent population projection analysis for the Red River Valley” (Draft Report, p. 2-24). The Northwest Economic Associates' report projected the Red River Valley population would grow from 445,235 in 2000 to 569,867 in 2050, an increase of 123,632 or 27.7 percent (Draft Report, p. 2-24). However, the Bureau rejected the projections of both of these independent entities having recognized expertise in demographic analysis and instead based

its *Draft Report on Red River Valley Water Needs and Options* on its own inflated projection of the population of the Red River Valley increasing by 192,365 (43.2 percent) to 538,600 in 2050 (Scenario One), and the even more exaggerated municipalities' projections showing the municipal populations of the Red River Valley increasing by 258,496, from 248,687 in 2000 to 507,093 in 2050 (Scenario Two)—an astonishing 104 percent! (Draft Report, p. 2-25).

Although:

“Reclamation acknowledges a level of uncertainty when projecting populations through 2050 and in projecting water demands in general.” (Draft Report, p. 2-26)

the *Draft Report* ignores the recommendation from the Technical Team that population projections be displayed at 10-year intervals throughout the 50-year planning period, showing the potential range of error at each 10-year increment. This would not only allow decision-makers, water facility planners and the public to make more informed decisions regarding options for meeting future Red River Valley water needs and the scheduling of their implementation, but it would enable them to understand the increasing uncertainty and risks associated with making commitments now for meeting water needs at progressively longer times in the future.

Instead:

“Therefore, recognizing these uncertainties, Reclamation developed **two water demand scenarios to use as a range** in hydrology modeling and in developing alternatives.

. . . Reclamation projections were used in the first water demand scenario (Scenario One). Population projections provided by the municipalities were approximately 17% higher than Reclamation's estimates. These projections were used in the second water demand scenario (Scenario Two). . .” (Emphasis added) (Draft Report, p. 2-26)

Of course, neither of the two scenarios upon which the *Draft Report* is based provides any indication of their extreme unreliability or of how the uncertainties regarding population and water need projections escalate over the 50-year period. Instead, the *Draft Report* simply presents two figures, Scenario One and Scenario Two, as representing the only choices for making decisions today regarding water needs 45 years in the future.

By using an already unrealistically long 50-year planning period and then inflating population growth over that period by 150 to 340 percent for its Scenario One projection, the *Draft Report* grossly overestimates future water needs in the Red River Valley.

Per Capita Water Use

Although the *Draft Report* does not hesitate to embrace the most giddily optimistic populations projections for estimating water use 45 years into the future, it can foresee no technologic innovations or public policy changes (such as tiered water rates to discourage excessive use) being implemented that would increase the efficiency of water use in the face of declining supplies over the next half century. Consequently:

“The water demand analysis assumes that historic water use represents future water demand on a per capita basis. Per capita use rates could increase over time due to the increased popularity of existing or new water use devices, such as high volume whirlpool baths. Per capita water use could also decrease in the future due to the improvement of

Responses to the National Wildlife Federation

Response to Comment 10

Reclamation used historic per capita water use, as agreed to by members of the Technical Team, to develop future water demands. However, Reclamation also reduced these historic data based on the results from the *Water Conservation Potential Assessment, Final Report* (WCPA) (Reclamation 2004b). This assessment also investigated tiered water rates.

water conserving devices. The water demand analysis assumes that both situations are equally likely to happen and therefore neutralize each other.” (Draft Report, p. 2-29)

Unlike other water-short areas of the country where reducing per capita use is an integral part of sound, professionally-developed water management programs, the *Draft Report* proposes to encourage and subsidize continued profligate water consumption with half-billion-to-billion dollar Federally-financed water projects. (Who really needs to take high volume whirlpool baths—which the *Draft Report* has the audacity to pass off as “demand”!—during a drought?) Of course, reducing per capita water use would help to preserve existing supplies and reduce future water needs, which would reduce shortages, which would make it more difficult to justify half-billion-to-billion-dollar Federally subsidized water projects.

Water Conservation

The *Draft Report* states that, based on its *Water Conservation Potential Assessment Final Report*:

“Per capita water savings range from 6.54 to 9.02 gallons per person. This is a savings of 6.1% to 8.6%. Water conservation measure cost implementation ranged from \$0.51 to \$0.68 per 1000 gallons saved for community water systems.” (Draft Report, p. 2-40)

However, when the Bureau submitted its draft *Water Conservation Potential Assessment Report* to its own independent consultant for review, the consultant, “... put the total savings, or conservation potential, in the range of 15 percent or more, a large portion of which would be due to the plumbing code” (Maddaus, 2004). However, the *Draft Report* uses water conservation savings of half that—and does not mention the report of its independent consultant or even list it in the Literature Cited.

The Bureau’s *Water Conservation Potential Assessment Final Report* acknowledges that:

“Very few water systems in the Red River Valley have a formal water conservation program in place.” (Bureau of Reclamation, 2004a)

and it:

“... defines ‘economically reasonable’ water conservation measures as those measures that reduce water use at a cost equal to or less than the cost of alternative water supplies. Basic economics dictate that water systems will pursue the least costly sources of new water supply whether they are new sources or water conservation. The WCPA only recommends the implementation of those water conservation measures estimated to cost less than or equal to the cost of alternative water supply. **The alternative water supply cost used as a basis of comparison was the least costly (per 1000 gallons) alternative estimated in the Phase II Report.** Alternative 3 (In Basin, Enlarged Lake Ashtabula) at an estimated cost of \$1.25 per 1000 gallons had the lowest total allocated cost per 1000 gallons. Therefore, a water conservation measure was considered reasonable and recommended for implementation if it had a cost of \$1.25 per 1000 gallons or less.” (Emphasis added) (Bureau of Reclamation, 2004)

However, the Phase II report estimated the construction cost of the Enlarged Lake Ashtabula alternative at \$273,995,000 and the annualized cost at \$25,930,000, compared with construction costs of \$504,888,000 and annualized costs of \$32,662,000 for the least costly Garrison Diversion Unit Import to Sheyenne River option identified in the *Draft Report* (p. 4-39). Thus, the *Draft*

Responses to the National Wildlife Federation

Response to Comment 11

Water conservation is included in all Project options as a feature (see chapter four). Water conservation water savings used in the Needs and Options Report are based on results of the WCPA. The WCPA evaluates potential water conservation measures and identifies reasonable and achievable water reduction activities for the Project. The draft WCPA report was reviewed by members of the Technical Team, was peer reviewed, and was modified in response to comments. The only major peer review comment that was not incorporated related to washing machines that are under development. We felt that was too speculative to include in the water savings estimate.

The water systems in the Red River Valley already have made significant progress on water conservation in the last 10 to 15 years. This is due to the direct actions of the water systems in terms of metering service connections, monitoring water use, repairing and replacing pipelines, and providing effective management of their water systems. There are also regulatory requirements that resulted in the installation of water efficient plumbing fixtures that have significantly saved water. Water savings in the last 10 to 15 years are estimated between 5.0 gpc/d and 37.3 gpc/d or 4.3% to 33.2%, depending on the water system. These existing water conservation savings are the foundation that the WCPA builds upon in identifying reasonable water conservation measures to pursue through 2050.

Report bases its evaluation of water conservation measures on comparisons with an alternative water supply costing half (54%) of, and with annualized costs 20 percent less than, the least costly alternative identified in the *Draft Report*.

On one hand, the *Draft Report* dismisses water conservation measures as not having the potential to reduce water use “due to the increased popularity of existing new water use devices, such as high volume whirlpool baths” (Draft Report, p. 2-29), but the Bureau’s *Water Conservation Potential Assessment* dismisses water conservation pricing because “water systems in the Red River Valley charge higher rates than their national regional counterparts, **particularly rural water systems**” (Emphasis added) (Bureau of Reclamation, 2004a), ignoring the fact that it is not in rural areas where new water devices such as high volume whirlpool baths are the most popular.

Industrial Water Needs

Industrial water use is the factor having the second greatest influence on future Red River Valley water needs. According to the *Draft Report*:

“Two types of industrial water demands were evaluated in this study in compliance with the Act: (1) water demands for existing industrial facilities and (2) water demands for future industrial facilities. Water demands of existing facilities were relatively easy to evaluate based on historic use data, but **predicting the future was more challenging.**”

... Water demands for future industries were estimated by three industrial development reports. Reclamation prepared two of these – *Report on Red River Valley Water Needs and Options, Assessment of Commercial Needs, Future Business and Industrial Activity in the Red River Valley, Final Report* (citation omitted) and *Report on Red River Valley Water Needs and Options, Industrial Needs Assessment: Future Red River Valley Commercial Water Demands, Final Report* (citation omitted). Bangsund and Leistriz (2004), Department of Agribusiness and Applied Economics, North Dakota State University, documented in its study the third report – *Industrial Water Needs Assessment for the Red River Valley Water Supply Project.*” (Emphasis added) (Draft Report, p. 2-61)

However, despite the facts that the Dakota Water Resources Act states explicitly at Paragraph 8(b)(1) that:

“**The Secretary of the Interior shall conduct a comprehensive study of water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs.**”

and that North Dakota Senator Byron Dorgan had assured the Congress after the Dakota Water Resources Act was passed by the Senate on October 13, 2000, that:

“**First, the Secretary will identify these needs and evaluate options for meeting them.**” (Emphasis added) (Congressional Record – Senate, S105301, October 13, 2000)]

the *Draft Report* dismisses the Bureau’s own analyses of future Red River Valley industrial water needs and bases its evaluation of future industrial water needs on the Bangsund and Leistriz report:

Responses to the National Wildlife Federation

Response to Comment 12

The Bangsund and Leistritz report shows that historically value-added food processing has taken place in the Red River Valley, and this trend and the need for water would continue. The Scenario One water demand used the intermediate industrial water demand. This water demand is consistent with historic trends. We agree that the high industrial water demand is more optimistic, but both scenarios are evaluated in the Needs and Options Report. This allows reviewers to understand the sensitivity of industrial demand in comparison to shortages and costs. The results of Reclamation's estimates of future industrial demand were used in the low industrial water demand, which was not used in the option analysis, because it was lower than historic trends.

“... **Reclamation is using the Bangsund and Leistritz (2004) intermediate water demand** results from Bangsund and Leistritz (2004) intermediate water assessment both for agricultural processing and for nonagricultural manufacturing for **Scenario One**.”

The Scenario Two water demand includes the high industrial water estimates from Bangsund and Leistritz (2004), as requested by the water users ...” (Emphasis added) (Draft Report, p. 2-66)

The *Draft Report* does not mention, and it is disclosed only if the reader happens to check the Literature Cited section, that the report by Bangsund and Leistritz on future Red River Valley industrial water needs was prepared, not by or under the auspices of the Secretary as specified by the Dakota Water Resources Act and as promised by Senator Dorgan, but under contract with the Garrison Diversion Conservancy District. Thus, the analyses of future Red River Valley industrial water needs upon which the *Draft Report* is based are not those of the Secretary, but rather those of the Garrison Diversion Conservancy District and Red River Valley water users, both of which have obvious vested interests in the outcome of the Red River Valley Water Supply Study and the *Draft Report on Red River Valley Water Needs and Options*.

It is important to note in this context that the Bureau of Reclamation’s August 9, 2002, draft *Red River Valley Water Supply Project Report on Red River Valley Water Needs and Options Operating Principles* states in the Introduction that:

“The Dakota Water Resources Act (DWRA) of 2000 authorized the Secretary of the Interior to conduct a comprehensive study of the water quality and quantity needs of the Red River Valley in North in North Dakota and possible options for meeting those needs (Sections 5 and 8b). DWRA entitled the study ‘Report on Red River Valley Water Needs and Options’ (Needs and Options Report). **The Bureau of Reclamation (Reclamation), acting for the Secretary of the Interior, will oversee the necessary analysis and write the Needs and Options Report.**” (Emphasis added)

The Bureau’s August 9, 2002, draft *Operating Principles* document goes on to state under Purpose of The Operating Principles that:

“Section 8(b)(3) of DWRA identifies the process for the Needs and Options Report and states, ‘In conducting the study, **the Secretary through an open and public process shall solicit input from gubernatorial designees from states that may be affected by possible options to meet such needs as well as designees from federal agencies with relevant expertise.**’ The *Operating Principles for the Needs and Options Report* describes how **this ‘open and public’ process will be conducted during the course of the study...**” (Emphasis added)

Under Organization, the Bureau’s August 9, 2002, draft *Operating Principles* document then states that:

“Reclamation will continue to seek **input from Technical and Study Review Teams as per Section 8(b)(3) of DWRA...**” (Emphasis added)

and it goes on to explain that:

“The Technical Team is composed of representatives from the State of North Dakota, Federal agencies, **potentially affected states (Minnesota and Missouri)**, Tribes, Canada, environmental groups, water users with specific technical expertise in hydrology, ecology, engineering and other fields. **The role of the Technical Team is to**

provide Reclamation with objective, scientifically valid input that will be used to develop plans of study and study products... (Emphasis added)

The Bureau's August 13, 2002, *Draft Red River Valley Water Supply Project Needs Assessment Specific Plan of Study* states, regarding **Future Industrial and Large Commercial Water Demands**, that:

"This task will develop realistic industrial and large commercial water demand estimates based on a range of potential economic development scenarios for the Red River Valley to establish peak daily, monthly and annual water use rate estimates. The task will utilize specialized expertise forecasting economic development trends for typical Red River Valley industrial development categories (e.g., food processing likely vs. steel production unlikely). Various levels of potential development may be evaluated to estimate a range of potential industrial water demands..." (Emphasis added)

The Bureau's draft March 5, 2003, *Needs Assessment Project Mobilization and Study Approach* (written in the past tense for future inclusion in the Needs and Options Report) states that:

"Development of accurate water use information is a key element of any water supply planning study. The Red River Valley Water Supply Project (Red River Project) study provides a comprehensive and detailed assessment of current and future water needs of the Red River Valley..." (Emphasis added)

Under **Future economic development and growth used to determine industrial water needs**, the Bureau's March 5, 2003, draft *Needs Assessment* document states that:

"An analysis on projected economic development and industrial growth was conducted to assess future water needs in the service area."

and it notes that both population and economic development "are difficult to forecast out 5 or 10 years much less 50, but 2050 is the design life of the Red River Project," so, **"A range of potential economic development scenarios was developed, each incorporating different economic assumptions"** (Emphasis added).

It should be noted in this context that neither the Bureau's August 13, 2000, *Draft Red River Valley Water Supply Project Needs Assessment Specific Plan of Study* nor its March 5, 2003, *Needs Assessment Project Mobilization and Study Approach* makes any mention of the Garrison Diversion Conservancy District contracting with the North Dakota State University Department of Agribusiness and Applied Economics to prepare an analysis of future agricultural and non-agricultural industrial water needs for the Red River Valley Water Supply Study. Moreover, except for those from the State of North Dakota and the Garrison Diversion Conservancy District, members of the Technical Team for the Red River Valley Water Supply Study were not consulted regarding the preparation of the analysis of future industrial water needs in the Red River Valley, nor were they advised of the Conservancy District's contract with the NDSU Department of Agribusiness and Applied Economics to prepare the analysis until the draft report was released in June 2004.

The Bureau's failure to involve the Technical Team in a substantive and meaningful way in decisions regarding the preparation of the analysis of future industrial water needs in the Red River Valley—or even to inform the Technical Team of the decisions that were being made—was simply the latest of numerous failures, dating back to the passage of the Dakota Water Resources Act of 2000, to comply in good faith with the Act's explicit directive to the Secretary to conduct the Red River Valley Water Supply Study "through an open and public process."

The *Draft Report* fails to mention that the *Industrial Water Needs Assessment for the Red River Valley Water Supply Project* prepared for the Garrison Diversion Conservancy District points out itself that:

“Forecasts of trade policy, farm production, per capita incomes, and other factors affecting demand and supply of agricultural products rarely are made beyond a 10-year period. Given the complexity of most forecasting methods associated with those studies, it is impossible, given the limitations of this study, to easily extend those forecasts out another 40 years.” (Emphasis added) (p. 24)

Therefore:

“To accomplish the goals of this study, a methodology needed to be created to link the past developments in agricultural processing activities in the region in a manner that allow [sic] future processing levels to be projected within a reasonable range.” (Emphasis added) (p. 25)

and:

“In order to guide efforts in providing a range of potential water use in 2050, three scenarios were developed.” (Emphasis added) (p. 34)

The *Industrial Water Needs Assessment* presents three scenarios for both agricultural processing water demand and non-agricultural manufacturing water demand in 2050, which appear in “Table 2.8.4 – Bangsund and Leistriz (2004) North Dakota 2050 Projected Industrial Water Demand” on page 2-64 of the *Draft Report*. These show the increased annual agricultural processing water “demand” in the Red River Valley in 2050 to range from 4,590 acre-feet in the Low Future Scenario, to 11,096 acre-feet in the Intermediate Future Scenario, to 18,828 acre-feet in the High Future Scenario (Draft Report, p. 2-64). The increased annual non-agricultural manufacturing water demand ranges from 3,078 acre-feet in the Low, to 6,662 acre-feet in the Intermediate, to 12,284 acre-feet in the High Future Scenario (Draft Report, p. 2-64). Total Industrial and Commercial Water Demand is projected to increase in 2050 by 7,668 acre-feet in the Low, 17,758 acre-feet in the Intermediate, and 31,112 acre-feet in the High Future Scenario.

Consequently, because of the admitted impossibility of accurately projecting future Red River Valley industrial water needs 50 years into the future, rather than providing an objective analysis of those needs, the *Draft Report* simply presents three hypothetical scenarios that were developed under contract with the Garrison Diversion Conservancy District of what might—or might not—occur.

The Bureau of Reclamation’s own 2004 *Industrial Needs Assessment: Future Red River Valley Commercial Water Demands* states that:

“The total additional future commercial and industrial water demand is projected to be at 2,619 ac-ft per year under the high demand scenario and 1,836 ac-ft under the low demand scenario. Under the high demand scenario this includes 1,215 ac-ft for manufacturing, 589 ac-ft for retail, 621 ac-ft for services, and 194 ac-ft for wholesale water demands. Under the low demand scenario, this includes 1,215 ac-ft for manufacturing and 621 ac-ft for services. These projections do not include water demand projections for agricultural processing in the Red River Valley.” (Emphasis added) (Bureau of Reclamation, 2004b)

The projections in Bureau’s *Industrial Needs Assessment: Future Red River Valley Commercial Water Demands* of additional annual future non-agricultural manufacturing water demands of 1,215 acre feet under its low demand scenario and 2,619 acre feet under its high demand scenario (Bureau of Reclamation, 2004b) are significantly lower than the projections in the Conservancy

District's *Industrial Water Needs Assessment* of 3,078 acre-feet under its Low Estimate to 12,284 acre-feet under its High Estimate, so at least a basis for comparison with the Conservancy District's projections is available. However, by failing to analyze future agricultural industry water needs, the Bureau provides no independent analysis for comparison with the Conservancy District's projections of 4,590 to 18,828 acre-feet per year for additional agricultural processing water needs in the Red River Valley in 2050. Instead, in violation of the directive of the Dakota Water Resources Act of 2000 that the Secretary is to conduct the Red River Valley Water Supply Study, the Bureau simply acquiesced to the Conservancy District—the local sponsor of the Garrison Diversion Unit and avowed advocate of delivering Missouri River water to the Red River Valley—to provide information for the *Draft Report on Red River Valley Water Needs and Options* on the most significant future industrial water needs in the Red River Valley.

Although the *Industrial Water Needs Assessment* prepared for the Garrison Diversion Conservancy District does not comply with the explicit requirement of the Dakota Water Resources Act for the Secretary to conduct the Red River Valley Water Supply in an open and public manner, or with the Bureau's stated commitment to seek input from the Technical Team as a means of assuring that the study is conducted in an open and public manner as required by the Act, the report does provide relevant insights regarding future industrial water needs in the Red River Valley. For example, the statements in the Conservancy District's *Industrial Water Needs Assessment* that:

- “The wide range of future water use reflects uncertainty in predicting future industrial activity within the region.” (Bangsund and Liestritz, 2004, p. ix)
- “One of the primary goals of the study is to project future water use from agricultural processing out to year 2050. The time frame for the projections creates several concerns. Those concerns include the development of new technologies, changes in Federal farm and trade policies, changes in state and local policies, limited usefulness of existing governmental forecasts, and the possibility of unforeseen/unpredictable factors affecting agricultural processing during the period.” (Bangsund and Leistriz, 2004, p. 23)
- “Forecasts of trade policy, farm production, per capita incomes, and other factors affecting demand and supply of agricultural products rarely are made beyond a 10-year period. Given the complexity of most forecasting methods associated with those studies, **it is impossible, given the limitations of this study, to easily extend those forecasts out another 40 years.**” (Emphasis added) (Bangsund and Leistriz, 2004, p. 24)
- “**Given the scope of this study, future predictions out to 2050** for all of the factors that might affect non-food based products associated with agricultural processing **is not possible.**” (Emphasis added) (Bangsund and Leistriz, 2004, p. 25)
- “If the forecasts for future agricultural processing activities were limited to the next decade, a high degree of confidence could be placed on those estimates. However, in a 50-year time horizon, the chance increases that unforeseen factors could influence the level of agricultural processing... These potential ‘influences’ to agricultural processing can not be forecasted or predicted.” (Bangsund and Leistriz, 2004, p. 25)
- “Even if future domestic and international demand for domestic food processors could be estimated, it would be difficult to predict from what regions of the country those increases would come from [sic].” (Bangsund and Leistriz, 2004, p. 31)
- “... no clear prediction, given the scope of this study, can be made for specific changes in future demand (i.e., next 50 years) for food manufacturers in the Red River Valley...” (Bangsund and Leistriz, 2004, p. 32)

- "... a precise prediction of how the future will unfold with respect to all the factors influencing agricultural processing activities over a 50-year planning period is impossible..." (Emphasis added) (Bangsund and Leistriz, 2004, p. 35)
- "There is inherent risk in blindly accepting past changes as a predictor of future change." (Bangsund and Leistriz, 2004, p. 60)

serve primarily to confirm, not simply the inappropriateness, but the impossibility of attempting to predict industrial water needs in the Red River Valley as a basis for designing and building a half-billion-to-billion dollar water project to meet needs 50 years in the future.

However, despite this recognition of the impossibility of predicting agricultural processing activity in the Red River Valley more than a decade into the future with confidence, the *Draft Report* eschews the inclusion, even for perspective, of a reliable 10-year water needs assessment. The explanation offered by the Conservancy District' *Industrial Water Needs Assessment* is that:

"The time frame for projections in this study was based on a 50-year period (i.e., year 2050). Projections developed in this study are designed to be point of estimates for year 2050. Inter-modal distributions of water use projections between 2002 (most recent year for which data was [sic] available in this study) to year 2050 were not included." (Bangsund and Leistriz, 2004, p. 2)

Thus, despite the citation of compelling evidence that an inter-modal distribution of Red River Valley industrial water use projections between 2002 and 2050 (perhaps at 10-year intervals with notations of their decreasing reliability) would be more realistic and more useful in designing a Red River Valley Water Supply Project, the *Draft Report* limits its assessment to point estimates for the year 2050.

As noted above, the *Draft Report's* Low, Intermediate and High annual additional industrial water use scenarios presented in Table 2.8.4 on page 2-64 show the following increases in projected future agricultural processing and non-agricultural manufacturing water uses in the Red River Valley in 2050 under the three scenarios:

Future Scenarios	Projected Increase in Water Use over 2002 Levels		
	Agricultural Processing	Non-Agricultural Manufacturing	Total
	-----acre-feet per year-----		
Low Estimate	4,590	3,078	7,688
Intermediate Estimate	11,096	6,662	17,758
High Estimate	18,828	12,284	31,112

The 400 percent variations from the Low to the High Red River Valley industrial water use scenarios again demonstrate the irrationality of attempting to design a water project to meet water needs 50 years in the future. However, it is important also to recognize that these are not actual projections of future water needs, but simply hypothetical scenarios displaying what water use might be based on different sets of assumptions, the validity of which cannot be verified. And because the validity of those assumptions cannot be verified, the validity of the scenarios themselves cannot be verified.

What these 400 percent variations from the low to high water use scenarios do show, however, is that designing a water project to meet anything other than the low water use scenario would pose the real and unwarranted risk of committing hundreds of millions of dollars to a water supply

project that would never be used at a capacity necessary to justify its cost. Consequently, IF the scenario approach employed in the Garrison Diversion Conservancy District's *Industrial Water Needs Assessment* were to be used as a basis for designing a Red River Valley water supply project, common sense would dictate that the Low Future Scenario figure of 7,688 acre-feet per year be used as the year 2050 increased industrial water need. Instead, the *Draft Report* uses the Intermediate and High Future Scenario figures of 17,758 and 31,112 acre-feet.

The Bureau's *Industrial Needs Assessment: Future Red River Valley Commercial Water Demands* indicates, however, that even the Low Future Scenario increased future water use for non-agricultural manufacturing in the Conservancy District's *Industrial Water Needs Assessment* over-estimates those needs by 17.5 to 67.6 percent (Bureau of Reclamation, 2004b). Because the Bureau's figures of 1,836 (low demand scenario) to 2,619 (high demand scenario) acre-feet of increased non-agricultural manufacturing water use in 2050 are based on projections rather than hypothetical scenarios, their validity can more readily be evaluated. This demonstrates the necessity for developing a realistic projection of future agricultural processing water needs in the Red River Valley, rather than adopting the Conservancy District's hypothetical scenario approach. When that is done, it may then be possible to begin making informed decisions regarding future industrial water use in the Red River Valley.

Future Red River Valley MR&I Water Shortages

According to the *Draft Report*:

"West Fargo is the only municipality that has a shortage for both scenarios when compared to their permitted allocation in an average water use year." (Draft Report, p. 3-47)

"For Scenario Two only, East Grand Forks also has a shortage when compared to its permitted allocation in an average water year." (Draft Report, p. 4.48)

"Municipal Water Demand Conclusions Of the 16 municipal water systems, **13 have adequate annual permitted allocations to meet their annual maximum month water demands through 2050 for both scenarios.** West Fargo exceeds their annual permitted allocation for both average and annual maximum water demands through 2050. East Grand Forks, under Scenario Two water demands, exceeds their annual permitted allocation under average or annual maximum month demands through 2050.

Fourteen of the 16 water systems have adequate permitted daily withdrawal rates to meet their maximum peak daily water demands through 2050, under both scenarios. Moorhead and West Fargo do not have sufficient daily withdrawal capacity. West Fargo also shows an inadequate permitted withdrawal rate, but more importantly NDSWC [North Dakota State Water Commission] (2000) has determined that the West Fargo Aquifer is not a reliable source for the city through 2050." (Emphasis added) (Draft Report, pp. 3-52, 3-53)

Under Scenario One, the combined 2050 annual water shortage for Gwinner, West Fargo and East Grand Forks would be 2,055 acre-feet (Draft Report, p., 3-49). Under Scenario Two, their combined 2050 annual water shortage would be 3,122 acre-feet (Draft Report, p. 3-50). Adding annual maximum industrial water shortages of 556 acre-feet (Draft Report, p. 3-66) increases these shortages to 2,611 acre-feet and 3,678 acre-feet, respectively.

In other words, even after doing everything possible to inflate future water use, including employing an unrealistically long 50-year planning period compounded with grossly exaggerated population projections, and allowing profligate water use to nullify water conservation measures,

Responses to the National Wildlife Federation

Response to Comment 12a

Using a surface hydrology model and a naturalized flow database that covered a 71 year period of record, Reclamation investigated when the valley would be vulnerable to water supply shortages. Hydrologic modeling revealed that the critical period of prolonged low flows was from 1931 – 1940. A similar event occurring today or in the future would be very detrimental to water supplies in the Red River Valley. This conclusion was based on the best available information and is reasonably foreseeable.

the *Draft Report* still shows that significant water shortages would not be expected to occur in the Red River Valley over the next 45 years. Of course, this is the same conclusion that was reached by the Bureau's 1998 *Red River Valley MR&I Water Needs Assessment Phase I* report (Bureau of Reclamation, 1998).

There was only one thing left to do.

The Specter of Drought

Current Conditions

On the cover of the *Draft Report on Red River Valley Water Needs and Options* is an August 28, 1910, photograph of seven men working on a temporary intake pipe into the Red Lake River for Grand Forks, North Dakota. The first page of the Introduction of the *Draft Report* shows an undated picture of a low Red River near Fargo and opens with the ominous warning that:

“... the Red River Valley would face critical water shortages in the near future if a 1930s drought started today.” (Draft Report, p. 1-1)

The statement provides revealing insight into the tenor and objectivity of the *Draft Report*. It also is seriously misleading.

The *Draft Report* ends on a similar ominous note, with a picture of a man standing, hat in hand, on a board propped on a piece of pipe in the nearly dry bed of a river. The photograph is captioned: “1936 photo of the Red River near Fargo, North Dakota.” The Conclusions solemnly explain:

“The photo at the right shows the Red River in 1936 at the height of the 1930s drought. The city of Fargo relies totally on surface water for their water supply. The vulnerability of surface water sources during a severe drought would result in water shortages for Fargo and other water systems in the Red River Valley. Analysis of the current (2005) water demands in the Red River Valley shows that the Fargo-Moorhead area would have serious water shortage problems in the midst of a recurrence of a 1930s-type drought. In fact, hydrology modeling of 2005 water demand forecasts that the worst single monthly shortage would be a 46% deficit in February seven years into the drought.

... Both 2005 and 2050 modeling simulations reveal a very serious shortage problem would occur during the winter when typical drought measures such as eliminating lawn watering are not applicable. In such an event, water users in the valley would have to dramatically cut their commercial and indoor water use.

The impacts of a 1930s-type drought would be even worse in the Red River Valley if it were not for construction of Baldhill Dam and Lake Ashtabula by the Corps of Engineers in the 1950s. Water stored in Lake Ashtabula serves the water needs of a portion of the Red River Valley in the early years of a 1930s-type drought. Unfortunately, Lake Ashtabula's ability to store water is limited because runoff above the lake is reduced significantly in a severe drought. About five years into a drought, water in Lake Ashtabula is depleted. Surface water hydrology modeling shows that it takes another four years of normal precipitation for the reservoir to recover. So while better management of water use during the early years of a 1930s-type drought would be advisable, it would just delay major shortages a year or two at best.” (Draft Report, p. 5-1).

The *Draft Report* does not define nor distinguish between water “demand,” water “use,” and water “need, but According to the *Draft Report*:

Responses to the National Wildlife Federation

Response to Comment 13

Although it is not possible to accurately predict when future droughts will occur, previous research has shown that droughts tend to be cyclical rather than strictly random events. Thus, as stated in the Meridian report, "...the lack of a drought of the intensity of the 1930's drought suggests that there is a greater likelihood of such an extreme drought with time. Recent research indicates a strong probability of an extreme drought event occurring before 2050 AD."

Based on precipitation deficits across climate zones in the Red River Basin, recurrence intervals ranging from less than 25 years to greater than 100 years were computed for the 1930's drought by Meridian Environmental Technology, Inc. Based on historic streamflows, Williams-Sether et al. (1994) computed recurrence intervals for the 1930's to early 1940's drought from 25 to 74 years for streams in North Dakota.

Designing a water supply project to address hydrologic conditions of a historically recorded drought such as the 1930's is a reasonable assumption even though there are limits to scientific estimates for the recurrence interval of a 1930's drought. Additional analysis of the 1930s hydrologic drought recurrence will be presented in the FEIS.

Drought contingency analysis was added to the Final Needs and Options Report on pages 4-36 – 4-41. The analysis concluded that drought water demand reductions lower than 7.5% would result in economic impacts higher than the cost of options to alleviate the predicted water shortage.

“The average annual water demand represents the amount of water needed in a typical year, while the maximum annual water demands represent the highest level of water use expected.” (Draft Report, p. 2-83)

The 2005 maximum Red River Valley annual MR&I water ‘demand’ is 65,664 acre-feet (Draft Report, p. 2-90). If a 1930s-type were to occur today, the “worst year” shortage of 7,000 acre-feet (Draft Report, p. B-84) would occur in 2010 (Draft Report, p. 3-103), and the total shortage for the duration of the drought would be 42,000 acre-feet (Draft Report, p. B-84). The 7,000 acre-feet “worst year” shortage is equivalent to 10.6 percent of the 65,644 acre-feet maximum annual water use.

What the *Draft Report* neglects to mention is that **these shortages would occur only if no drought contingency measures were implemented to reduce water use during a 10-year, 1930s-type drought.** As is noted above in the section on the Red River Valley MR&I Water Needs Assessment, the implementation of a Level II drought contingency response to moderate drought conditions, including such measures as implementation of a mandatory lawn-watering schedule, prohibiting certain non-essential uses (e.g., ornamental fountains, washing down buildings, parking lots and driveways), and mandatory restrictions on other types of non-essential use, would be expected to reduce water use by 10 to 20 percent, or 6,500 to 13,000 acre-feet per year, or 65,000 to 130,000 acre-feet over the 10-year course of the drought. Consequently, the Red River Valley MR&I water shortage that could develop if a 1930s-type were to occur today could readily be eliminated simply by implementing a few reasonable and common sense measures to reduce non-essential water use.

The *Draft Report* attempts to dismiss drought contingency measures to reduce the shortage by arguing that:

“Although. . . the service area encounters an averaged 16% yearly shortage of their 2005 need during the worst drought year of a 1930s drought, the real concern is the range of shortages on a monthly time step. In February, the MR&I shortage in the service area is 46% of demand. The lower percentages during the late spring and early summer months are the result of spring runoff and storage in the valley. The percent short grows in the fall and continues to increase over the winter in direct relation to the depletion of storage.

It becomes increasingly difficult to reduce these shortages through water conservation and drought contingency measures because they occur during times of the year when reductions to outdoor use and curtailing of lawn watering is difficult at best, given the northern climate in which the service area is located.” (Draft Report, p. B-85)

According to the *Draft Report*:

“[Drought contingency] measures can be used to reduce summer outdoor water use and seasonal commercial or industrial use. Winter water use is an annual baseline water need that would be reduced by water conservation but not by drought contingency measures. Drought contingency measures would be applied during peak summer water use events to reduce overall water use if an alternative could not meet the water demand during a severe drought.” (Draft Report, p. 2-13)

Therefore, drought contingency measures would be applied primarily during the summer, not during the winter, and they would be on-going throughout the drought period in order to reduce the depletion of storage, so the 6,500 to 13,000 acre-feet annual reduction in use would be cumulative and would provide an additional 32,500 to 65,000 acre-feet of water in storage going into the worst year of the drought and which would be available for use during the winter at times of greater shortage.

The Bureau's *Water Conservation Potential Assessment* states that:

"The WCPA resulted in lower per capita water saving than might be expected because of the historic water use in the Red River Valley. The largest single residential water use in the United States is outdoor landscape irrigation. The national average outdoor landscape irrigation water use is approximately 100 gpc/d [citation omitted], while such use in the Red River Valley ranges from 10 to 17 gpc/d. This demonstrates that Red River Valley residents are very conservative in their outdoor water use and eliminates an opportunity to save a significant amount of water through water conservation." (Bureau of Reclamation, 2004)

However, neither the *Water Conservation Potential Assessment* nor the *Draft Report* actually considers what water savings might be realized through the implementation of drought contingency measures. For example, the 33.2 gallon per capita per day difference between Fargo's average winter water use (98.7 gpc/d) and its average summer use (128.9 gpc/d) (Bureau of Reclamation, 2004) represents a 33.6 percent increase above baseline needs to which drought contingency measures could be applied.

It should also be noted, as pointed out above in the section on Water Conservation, that the *Draft Report* dismisses potential savings from the implementation of water conservation measures by claiming that they will be nullified by increased water use, despite the fact that the Bureau's own consultant who reviewed the water conservation measures upon which the *Draft Report* is based concluded that they could be twice what the Bureau had estimated (Maddaus, 2004).

Future Conditions

The *Draft Report* estimates the maximum annual Red River Valley water "demand" would be 104,007 acre-feet under Scenario One and 131,259 acre-feet under Scenario Two, and that the maximum annual shortages (in the event of a 1930s-type drought) would be 36,424 acre-feet (35 percent) under Scenario One and 52,015 acre-feet (39.6 percent) under Scenario Two (Draft Report, pp. 5-8, 5-9).

"However, given the uncertainty of estimating future water needs and future water supplies, drought contingency measures are an important safety factor that must be reserved for unforeseen events." (Draft Report, p. 2-13)

Nevertheless, it is instructive to consider how effective implementation of water conservation and drought contingency measures might affect year 2050 Red River Valley water shortages during a 1930s-type drought under the *Draft Report's* Scenario One and Scenario Two projections. If it were assumed, for example, that the effective implementation of water conservation measures were to reduce baseline water use by 10 percent and the implementation of a Level III response to severe drought (continuation of Level II measures, plus assessing fines to water wasters, requesting industries and non-municipal water users to eliminate certain uses, and prohibiting all outdoor water use) would reduce water use by another 20-30 percent (Bureau of Reclamation, 2000), the total reduction in water use of 30-40 percent would eliminate even the Scenario One and Scenario Two shortages if a 1930s type drought were to occur by 2050.

The Probability of Drought

The *Draft Report* authoritatively states that:

"A drought frequency investigation by Meridain Environmental Technology, Inc. (2004) predicts a strong probability of an extreme drought event occurring before the year 2050." (Draft Report, p. 1-1)

The statement is not only seriously misleading, but it is refuted by the data contained in the *Meridian Environmental Technology* report.

The *Meridian* report does state in the Executive Summary and Conclusions that:

“Recent research indicates a strong probability of an extreme drought event occurring before 2050 AD.” (Meridian Environmental Technology, 2004)

but nowhere does the report identify that “recent research” or cite scientific data to support the statement. The only specific information provided regarding the likelihood of another 1930s-type drought occurring before 2050 is the statement that:

“Recurrence intervals ranging from less than 25 years to greater than 100 years were computed for the 1930’s drought.” (Meridian Environmental Technology, 2004)

The report cites data showing a 95 percent confidence that the true probability for a drought as severe as the 1988 drought occurring by 2030 is between 29.5 and 54.0 percent, but:

“Probably more significant was their statistical conclusion that a very extreme drought event falling within the 95th percentile or greater had an 11.1% chance of occurring by 2030.” (Meridian Environmental Technology, 2004)

Of course, an 11.1 percent chance of a very extreme drought occurring by 2030 does not constitute a prediction of “a strong probability of an extreme drought event occurring before the year 2050.” Instead, the prediction apparently is based simply on the premise that:

“... the lack of a drought of the intensity of the 1930’s drought suggests that there is a greater likelihood of such an extreme drought with time.” (Meridian Environmental Technology, 2004).

In fact, however, the *Meridian* report itself admits that:

“The complex nature of droughts does not permit reliable forecasting of their occurrence, duration or intensity.” (Emphasis added) (Meridian Environmental Technology, 2004)

Therefore, the *Meridian* report simply concludes that:

“Results of the study indicate that a drought of the magnitude of the 1930’s drought is a realistic and statistically significant representation of an extreme drought in that it typifies the most extreme event anticipated until at least 2050.” (Meridian Environmental Technology, 2004).

Nevertheless, the *Draft Report* continues to misinterpret the information contained in the *Meridian* report by erroneously claiming that it concludes that the 1930s drought “is a climatic event likely to be repeated before 2050” (Draft Report, p. 5-2). However, the *Draft Report* states that:

“Based on this conclusion, Reclamation selected the period of 1931-2001 for modeling hydrologic flow conditions.” (Draft Report, p. 5-1)

and the Bureau has acknowledged to the Technical Team that the 1930s drought was selected simply to model the impacts of drought on water shortages in the *Draft Report*.

It is important to note that, although the *Draft Report* claims that there is a strong probability of an extreme drought event occurring sometime **before** the year 2050, it only considers such an event occurring **immediately** before 2050 when water use for the 50-year study period would be at its greatest, thus further exaggerating the projected water shortage to be met with a Red River Valley Water Supply project. For example, the *Draft Report* disregards the 11.1 percent probability of an extreme drought event occurring before 2030 when water shortages could even more readily be avoided by implementing water conservation and drought contingency measures.

After exploiting every opportunity to inflate water use and to exacerbate potential shortages, the failure of the *Draft Report* to consider seriously such traditional approaches to addressing, or at least reducing, future Red River Valley water shortages reveals a lack of objectivity that only further undermines the already tenuous credibility of the entire report. To promote half-billion-to-billion-dollar water projects based solely on the speculative occurrence of drought without even considering the implementation of drought contingency measures can most charitably be described as unprofessional and irresponsible.

Finally, it is necessary to note in the context of Paragraph 8(b)(1) of the Dakota Water Resources Act of 2000, which explicitly directs the Secretary of the Interior to conduct the study of Red River Valley water needs and options, and Paragraph 8(b)(3) that requires the Secretary to conduct the study through an “open and public process,” that the *Meridian Environmental Technology* report on “Drought Frequency Investigations of the Red River of the North Basin” was prepared by Dr. Leon Osborne, who developed the novel “wet future scenario” (where the high precipitation level that occurred in the Devils Lake Basin from 1993 to 2000 would continue for another 21 years, but where precipitation has been at or below average since 2001) upon which the State of North Dakota justified its irrational and ineffective outlet from Devils Lake to the Sheyenne River (U. S. Army Corps of Engineers, 2003, Appendix A, pp. A-126, A-137; Frink, 2005). However, despite Dr. Osborne’s history of contractual relationships with North Dakota water development interests, the Technical Team was not consulted on, advised of, nor permitted to review the contract with Meridian Environmental Technologies for the *Drought Frequency Investigation of the Red River of the North Basin* before it was awarded.

Red River Valley Water Supply Options

According to the *Draft Report*:

“In 60 of the 71 years of analysis . . . , there is adequate water to meet most of the current and future MR&I water demands; however, during a 1930s-type drought there would be severe shortages even with current water demands. Options developed in this study are more about addressing shortages associated with drought than they are about projected increases in water demand, although demands would be met...”
(Draft Report, p. 5-2)

However, as we have already seen, the occurrence of drought in the Red River Valley within the next 45 years is highly speculative, and even if it should occur, significant water shortages could be avoided by implementing standard water conservation and drought contingency measures.

Options

The *Draft Report* presents seven options for meeting year 2050 Red River Valley projected MR&I water needs under 1930s drought conditions. Three of the options (North Dakota In-Basin, Red River Basin, and Lake of the Woods) would use water sources available within the Red River Valley (Draft Report, pp. 4-22 to 4-27). Four of the options (Garrison Diversion Unit Import to Sheyenne River, Garrison Diversion Unit Import Pipeline, Missouri River to Red River Valley Import, and Garrison Diversion Unit Water Supply Replacement Pipeline) would involve the interbasin transfer of Missouri River water to the Red River Basin (Draft Report, pp. 4-28 to 4-35). Three of the options (Garrison Diversion Unit Import to Sheyenne River, Garrison Diversion Unit Import Pipeline, and Garrison Diversion Unit Water Supply Replacement Pipeline) would utilize the Snake Creek Pumping plant, Lake Audubon, and 58 miles of the McClusky Canal features of the Garrison Diversion Unit’s principal supply works (Draft Report, pp. 4-6 to 4-8).

Despite being designed to address water shortages associated with drought, none of the options includes a drought contingency plan (Draft Report, p. 2-13).

Responses to the National Wildlife Federation

Response to Comment 13a

Reclamation investigated the possibility of constructing the options in phases in the Final Needs and Options Report on pages 4-36 through 4-36.

All of the options involve various combinations of pipelines, pumping plants and other structural features designed to create large water supply projects ranging in cost from \$504,888,000 to \$2,518,023,000 (Draft Report, pp. 4.39, 4-40). The Lake of the Woods option and all of the Missouri River import options are based on large pipelines costing from \$395,296,000 (Scenario One Garrison Diversion Import to Sheyenne River) to \$2,109,952,999 (Scenario Two Garrison Diversion Unit Water Supply Replacement Pipeline) as their principal water supply features (Draft Report, pp. 4-26 to 4-35), so they cannot be implemented in increments. Despite being designed to meet speculative water needs projected 45 years in the future, none of the options is designed to be implemented in increments as water needs actually materialize (Draft Report, pp. 4-22 to 4-35), but the North Dakota In-Basin and the Red River Basin options are based on independent water supply features that could be implemented separately (Draft Report, pp. 4-22 to 4-25).

In any event, because the future water needs upon which the *Draft Report* is based are highly speculative, and because the costs of the options identified for meeting those needs are so great, the only options that can realistically and responsibly be considered are the North Dakota In-Basin and the Red River Basin options that could be implemented in increments as water needs actually materialize.

Operation

The Garrison Diversion Unit Import Pipeline and the Garrison Diversion Unit Water Supply Replacement options would operate continuously to supply MR&I water to the Red River Valley (Draft Report, pp.4-7, 4-9). The North Dakota In-Basin, the Red River Basin, the Lake of the Woods, the Garrison Diversion Unit Import to the Sheyenne River and the Missouri River to Red River Valley Import options would operate only as needed to meet water needs during droughts (Draft Report, pp. 4-4, 4-6, 4-8, 4-11, 4-14).

It is important to note again that the complex nature of droughts does not permit reliable forecasting of their occurrence, severity or duration (Meridian Environmental Technology, 2004) and that there is only an 11.1 percent chance that a very extreme drought will occur by 2030 (Meridian Environmental Technology, 2004). Therefore, this means that the *Draft Report* is proposing two Red River Valley water supply options costing from \$1,202,248,000 (Scenario One Garrison Diversion Import Pipeline) to \$2,518,023,000 (Scenario Two Garrison Diversion Unit Water Supply Replacement) that may never be needed, and four more ranging in cost from \$504,888,000 (Scenario One Garrison Diversion Unit Import to Sheyenne River) to \$1,112,579,000 (Scenario Two Lake of the Woods) (Draft Report, pp. 4-39, 4-40) that may never be used.

The level of rationality involved in the *Draft Report's* consideration of options for meeting future Red River Valley water needs is reflected in all of the options presented, but nowhere is it more evident than in the North Dakota In-Basin option, the primary feature of which is a 53-71 cfs pipeline (Draft Report, pp. 4-11, 4-22) costing from \$261,892,000 (Scenario One) to \$291,815,000 (Scenario Two), designed to take water from the Red River downstream of Grand Forks and transport it 80-miles (Draft Report, p. C-53), back to the Sheyenne River so it can flow back into the Red River again upstream at Fargo to supply future water needs in that area (Draft Report, p. 4-22). But:

“This feature would be operated continuously during a 1930s type drought when there would be more water in the lower Red River than in the upper portion of the river. It could be used intermittently during short-term drought events.” (Emphasis added) (Draft Report, p. 4-11)

Rather than considering the obvious alternative of allowing water supplies and costs to shift population and industrial growth from Fargo to the Grand Forks area where water supplies would be adequate even in the event of a severe drought, the *Draft Report* proposes instead to subsidize continued growth in the Fargo area with a \$261,000,000 pipeline—that would only be needed in the event of a severe drought—to re-circulate Red River water back to the area. Indeed, one might ask why tax dollars from Grand Forks and other areas of North Dakota and the nation should be used to subsidize growth in Fargo.

The Missouri River as a Water Source for the Red River Valley

The entire *Draft Report on Red River Valley Water Needs and Options* is predicated on the presumption of a 1930s-type drought occurring from 2040 to 2050 (Draft Report, pp. 1-1, 4-4, 4-6, 4-7, 4-8, 4-9, 4-11, 4-14, 5-1, 5-2, B-84 to B-89), so:

“Options developed in this study are more about addressing shortages associated with drought than they are about projected increases in water demand. . .” (Draft Report, p. 5-2)

and four of the seven options identified in the *Draft Report* for meeting future Red River Valley MR&I water needs in the event of a 1930s type drought involve delivering Missouri River water to the Red River Valley (Draft Report, pp. 4-20 to 4-35),

It is important to note, therefore, that the *Drought Frequency Investigations of the Red River of the North Basin* (Meridian Environmental Technology, 2004) upon which the modeling of water shortages in the *Draft Report* is based (Draft Report, p. 5-2) points out that:

“Of particular importance in the projection of future drought conditions for the Upper Missouri River Basin is the estimation of mountain snowpack across the Montana Rocky Mountains. As data presented in this report indicates [sic], the occurrence of both drought conditions and areal coverage of drought are highly variable. Hence, the presence of extreme drought conditions across the Montana Rocky Mountain region will dramatically reduce snowpack levels. **Since snowmelt is the primary water source for the Missouri River and since any future availability of Missouri River water for the Red River will depend upon having adequate mountain snowpack, understanding the relationship of large-scale drought to mountain snow amounts will be important in future planning for water resources management within both the Upper Missouri River Basin and the Red River Basin.**” (Emphasis added) (Meridian Environmental Technology, 2004)

However, despite the fact that the water level in Lake Sakakawea behind Garrison Dam has dropped 42 feet since 1997 and is 30 feet below its long-term average level (Springer, 2005), and despite the on-going controversy over the availability of Missouri River water for other established uses within the basin (Lembrecht, 2005), the *Draft Report* provides no analysis of the probability that sufficient Missouri River water would be available to cover the projected year 2050 Red River Valley Scenario One or Scenario Two shortages.

Chapter Three of the *Draft Report*, titled “*Hydrology*,” provides 128 pages of discussion of surface water and groundwater in the Red River Basin and Appendix B provides another 182 pages of discussion of Red River Basin hydrology. But nowhere in the *Draft Report* is any information presented on Missouri River hydrology, despite the fact that four of the seven options identified in the *Draft Report* are based on delivering Missouri River water to the Red River Valley.

The importance of such an analysis to the evaluation of options for meeting future Red River Valley water needs was pointed out in the December 16, 2002, letter to the Regional Director of

Responses to the National Wildlife Federation

Response to Comment 14

Reclamation with the assistance of the Corps of Engineers is further evaluating depletions of the Missouri River in the FEIS. This issue is evaluated in the DEIS.

the Bureau of Reclamation from the Minnesota Center for Environmental Advocacy, the Minnesota Conservation Federation, the National Audubon Society, and the National Wildlife Federation providing Comments on the Scope of Issues for the EIS regarding Alternatives for Meeting Water Needs in the Red River Valley:

“For alternatives involving the delivery of Missouri River water to the Red River Valley, the EIS should discuss the impacts of the withdrawals not simply in relation to average total Missouri River flows, but it should identify and discuss the cumulative impacts in terms of current, authorized and proposed or anticipated future withdrawals from the river under a full range of flow conditions. This is a particularly high imperative since this study could potentially be considering water withdrawals from an already heavily taxed and potentially over-committed river basin to meet projections for demands of a completely separate basin.”

It is relevant to note here that Richard Bad Moccasin, Executive Director of the Mni Sose Intertribal Water Rights Coalition, Inc., has tabulated a total of about 21.5 million acre-feet of water rights for ‘Tribes Along the Missouri.’ This quantity represents an ‘Annual Diversion’ from the system and is stated by Director Bad Moccasin to be the equivalent of nearly 11 million acre-feet of ‘Annual Depletion.’

It should also be noted that Reclamation’s Great Plains Regional Director Maryanne Bach reported in a letter dated September 6, 2001, that her office has 11 Missouri River water withdrawal projects in Montana and South Dakota which are in the planning, pre-construction, or construction phase. These projects are in addition to the dozens of Reclamation projects and hundreds of other projects that already are in existence and contributing to the depletion of the water supply of the Missouri River at this time.” (Emphasis added) (Beard, et al. 2002)

However, despite the fact that four of the seven options identified in the *Draft Report* for meeting projected future Red River Valley MR&I water needs are based on delivering Missouri River water to the Red River Valley, the *Draft Report* provides no information or analysis regarding the availability of Missouri River water to meet future Red River Valley water needs. The *Draft Report* simply assumes the water will be there.

North Dakota’s Preferred Option

Three weeks before the *Draft Report* was released and four months before comments from the public and other government agencies were due, the Garrison Diversion Conservancy District and its local front group, the Lake Agassiz Water Authority formed in 2003 and with the Manager of the Garrison Diversion Conservancy District as its Secretary-Treasurer (Weckerly, 2005), already were endorsing the Garrison Diversion Unit Import to Sheyenne River option. According to a story in the May 11, 2005 issue of *The Forum*:

“Representatives of cities and rural water systems in the Red River Valley on Tuesday endorsed the idea of diverting Missouri River water to the Sheyenne River as the best option for meeting future water needs.”

The board of the Lake Agassiz Water Authority voted unanimously to support the alternative, but left the option of changing its mind as more information becomes available.

Tuesday’s vote was a preliminary step toward the state of North Dakota declaring its preference for meeting the future water needs of the Red River Valley. This fall, after further review, the Red River Valley water authority will make a formal recommendation.

'I think it's an important step to indicate our intentions based on what we know so far,' said Mayor Bruce Furness, chairman of the water authority.

The U. S. Bureau of Reclamation and North Dakota's Garrison Diversion [Conservancy District] are studying up to eight alternatives for meeting the Red River Valley's water needs through the year 2050, when the region's population is expected to be roughly twice what it is today.

The bureau is expected to release its engineering analysis of the options at the end of the month. In December, the bureau and Garrison Diversion [Conservancy District] will issue the draft environmental impact statement of the alternatives.

The option endorsed unanimously by the water authority's board would import water from the Missouri River using a canal built for Garrison and proposed pipelines.

The water would be routed to Lake Ashtabula, north of Valley City, where an existing dam would regulate pool levels and release water into the Sheyenne River, which flows into the Red River. The water would be treated to prevent biological organisms from crossing into the Red River water shed [sic], a move to try to satisfy Canadian environmental concerns.

Engineers for Garrison, which also provides staff support for Lake Agassiz Water Authority, said that option appears to be the best alternative on technical merits.

'It appears the Sheyenne River alternative could be the best solution,' said David Johnson, Garrison's district engineer.' (Emphasis added) (Springer, 2005a)

Aside from its remarkable candor in reporting the Garrison Diversion Conservancy District's inappropriate and unlawful role in the Red River Valley Water Supply Study in direct violation of the explicit language of Paragraph 8(b)(1) of the Dakota Water Resources Act directing the Secretary of the Interior to conduct the study, the story raises the question of why, when the Garrison Diversion Conservancy District purports already to be concerned about "the awkward existence of nearly 120 miles of canal cutting across the middle of the of the State with no current function" (Haak, 1999), it would endorse an option that would add another 223 miles of pipeline (Draft Report, p. 4-29) that would also have no function, except in the unlikely event of a severe drought sometime in the next 45 years, when it then might be used for only 10 years or less (Draft Report, p. 4-7).

It is instructive to note, therefore, that:

"While irrigation is not identified as one of the water needs to be met in DWRA, irrigation shortages are integral to the results of this study. Irrigation water use is in direct competition with other water uses." (Draft Report, p. 3-105)

and:

"Shortages. . . also [include] irrigators along the Sheyenne River. Although they are not served as part of this project, these irrigators could potentially draw water from the river before it gets to its intended MR&I destination. *Project waters* are the flows that are above the natural flow in the river and are intended for a permit holder downstream with a more senior water right. Though monitored and controlled through permitting by NDSWC, **inappropriate withdrawals of project water upstream that was intended for MR&I use downstream would be difficult to document or to prevent.** Upstream withdrawals of water beyond permitted amounts would lead to shortages downstream, which in turn would lead to reductions in storage. For this reason,

Responses to the National Wildlife Federation

Response to Comment 15

No Project water is provided for irrigation in the Final Needs and Option Report options. However, all surface water users, under North Dakota and Minnesota state water law, have a right to draw permitted natural flows (non-project flows) depending on the seniority of their water permits. This was taken into account in surface hydrology modeling.

Reclamation included shortages for irrigators on the Sheyenne River as shortages to the system.” (Emphasis added) (Draft Report, p. 3-103)

Of course, the inclusion of shortages for irrigators on the Sheyenne River as shortages to the system amounts to the *de facto* supplying of Missouri River water for unauthorized irrigation in the Hudson Bay Basin of North Dakota.

It also is relevant to consider former Garrison Diversion Conservancy District Manager Warren Jamison’s statements in his March 1, 2000, presentation to the Dakota Chapter of the American Fisheries Society:

“It is no secret that we would prefer an option that ties together the existing distribution system of the McClusky and New Rockford Canals, thus providing an economical use of the idle canals. Preliminary studies show that connecting the two existing canals with a pipeline and releasing treated water into the Sheyenne River is the least costly and most practical alternative. **It is this possibility of releasing a new water supply to the Sheyenne River that I want to call to your particular attention.**”

Before a Federal decision is made to introduce additional water into the Sheyenne River, the current legislation directs extensive studies and an Environmental Impact Statement

...

... **It is our intent that if any irrigation is ever developed, it will be as a state initiative**, which would not require the large canals and drainage systems typical of federal irrigation projects. Federal power would still be available for irrigation development...” (Emphasis added) (Jamison, 2000)

Therefore, there is no question that, once a Garrison Diversion Unit Import to Sheyenne River were built, the Garrison Diversion Conservancy District and others of the North Dakota political/water development establishment would soon begin lobbying to put the “idle” McClusky Canal and 223 miles of pipeline, which would have no use except in a severe drought, to ‘economical use’ to deliver Missouri River to the Sheyenne River where it would be available for irrigation development under State initiative.

It also is important to recognize that the Garrison Diversion Unit Import to the Sheyenne River—which is capable of supplying from 52,553 to 80,976 acre-feet of Missouri River water annually (Draft Report, p. 5-13)—is the only option utilizing Garrison Diversion Unit principal supply works features that is not designed for continuous operation to supply Red River Valley MR&I needs. This means that the full capacity of the pipeline could be made available for irrigation development except in the unlikely event of an extreme drought. And, because the pipeline also crosses the James River, it would be simple and relatively inexpensive for the State to install a release feature in the pipeline to permit the delivery of Missouri River to the James River for development of irrigation in the LaMoure and Oakes areas. With Jamestown Reservoir on the James River and Lake Ashtabula on the Sheyenne River, ample storage would be available for the delivery of Missouri River water throughout the year for use during the irrigation season.

It is particularly significant to note that Subsection 9(a) of the Dakota Water Resources Act of 2000 explicitly delays the decision on the transfer of the title to the Oakes Irrigation Test Area on the James River to the State until up to two years after the record on the decision on a Red River Valley Water Supply Project.

It also is important to recall again the statement of the Manager of the Garrison Diversion Conservancy District on December 15, 2000, when the Dakota Water Resources Act was passed:

“Passage of the Dakota Water Resources Act (DWRA) is a major chapter in a very long history book, but **is not the final chapter** needed to meet North Dakota’s **highest**

priority water needs. We see this as the beginning of an important first phase, ending in a solution that addresses North Dakota's current and future water needs.” (Emphasis added) (Garrison Diversion Conservancy District, 2000)

The Dakota Water Resources Act of 2000 authorizes a Red River Valley Water Supply Project, but it is clear that the Garrison Diversion Conservancy District does not consider supplying MR&I water to the Red River Valley “to meet North Dakota highest priority water needs.”

Any lingering doubt about the State of North Dakota's plan to accomplish diversion of Missouri River water to the Red River Valley under the guise of a Red River Valley Water Supply Project, was removed by the recent reaction of the North Dakota Congressional Delegation to a draft agreement on the controversy over the State's Devils Lake outlet that included a provision calling for an automatic referral to the International Joint Commission if a Red River Valley Water Supply Project option is chosen that involves the transfer of Missouri River water to the Red River Valley:

“Governor John Hoeven struck a deal with Canadian governments over the operation of the Devils Lake outlet. Then he had to smooth political waters closer to home.

North Dakota's congressional delegation bristled that language contained in a draft agreement over the outlet could have given Canadians veto power over transferring Missouri River water to eastern North Dakota.

...
North Dakota's Democratic delegation – Sens. Kent Conrad and Byron Dorgan, and Rep. Earl Pomeroy – issued a joint statement expressing their concern that the agreement over the Devils Lake outlet could create an obstacle in diverting water from the Missouri to augment the Red River Valley's water supply.” (Emphasis added) (Springer, 2005b)

Bias in the Draft Report on Red River Valley Water Needs and Options and Violation of the Dakota Water Resources Act of 2000

As has been pointed out a number of times above, the Dakota Water Resources Act of 2000 is explicit in directing that:

“**The Secretary of the Interior shall conduct a comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and options for meeting those needs.”** (Emphasis added) (Paragraph 8(b)(1))

and:

“**In conducting the study, the Secretary through an open and public process shall solicit input from gubernatorial designees from states that may be affected by possible options to meet such needs as well as designees from other federal agencies with relevant expertise.”** (Emphasis added) (Paragraph 8(b)(3))

Nowhere does the Act authorize the State of North Dakota, the Garrison Diversion Conservancy District or any other entity having a vested interest in the outcome of the study to have a greater role in the Red River Valley Water Needs and Options study than the designees of other states and Federal agencies, and nowhere does the Act authorize the Bureau to give them access to information not provided to other members of the Technical Team. It is relevant, therefore, to consider the degree to which bias has entered into the preparation of the *Draft Report on Red River Valley Water Needs and Options* in direct violation of the Dakota Water Resources Act of 2000:

- Seven months before the Dakota Water Resources Act of 2000 was passed, the Bureau of Reclamation, the North Dakota State Water Commission and the Garrison Diversion Conservancy District had secretly signed a Memorandum of Understanding establishing a Study Management Team composed of their own representatives to direct the Red River Valley Water Supply Study.
- Within a week after the Dakota Water Resources Act specifying that the Secretary of the Interior was to conduct the study in an open and public process was passed on December 15, 2000, the Study Management Team consisting of the Dakotas Office Manager of the Bureau, the State Engineer and the Manager of the Conservancy District met secretly with members of their staffs to initiate the Red River Valley Water Supply Study.
- The Study Management Team deliberately withheld from other members of the Technical Team and the Study Review Team information regarding the time and location of Study Management Team meetings.
- The minutes of the second meeting of the Study Management Team on January 23, 2001, following passage of the Dakota Water Resources Act on December 15, 2000, report that:
 - “Lawrence Woodbury [of Houston Engineering] handed out five task orders relating to RRV Study Activities Houston Engineering would like to begin. **Houston Engineering has an existing contract with the C-district, and these task orders outline the scope of specific work activities under that contract.**” (Emphasis added)
- Houston Engineering has a long contractual history with the Garrison Diversion Conservancy District, the North Dakota State Water Commission, the City of Fargo, and others with vested interests in the Red River Valley Water Supply Study.
- The minutes of the December 21, 2000, meeting of the Study Management Team disclose that payment of the expenses for the participation of Garrison Diversion Conservancy District staff at Technical Team meetings had been discussed. However, when later asked by other members of the Technical Team if the Conservancy District was being reimbursed by the Bureau for those expenses, neither the representative of the Bureau nor the Manager of the Conservancy District would answer the question.
- The Garrison Diversion Conservancy District contracted with its own private consultants to develop information for the Red River Valley Water Supply Study and was reimbursed by the Bureau for those consulting costs. Other stakeholders had no voice in the selection of the contractors or in the development of the contracts.
- Houston Engineering performed five of nine engineering tasks for the Red River Valley Water Supply Study.
- Houston Engineering developed the design criteria for the options considered in the *Draft Report on Red River Valley Water Needs and Options* (Draft Report, p. 4-1, 4-2)
- Houston Engineering prepared the option drawings for the *Draft Report on Red River Water Needs and Options* (Draft Report, Appendix C, Attachment 4).
- The industrial water needs projections used in the *Draft Report on Red River Valley Water Needs and Options* was prepared by the North Dakota State University

Responses to the National Wildlife Federation

Response to Comment 15a

See the response to Comment 4.

Response to Comment 15b

The 1998 Federal Activities Inventory Reform Act and the Office of Management and Budget Circular No. A-76 (Performance of Commercial Activities) stipulates that federal agencies must rely on the private sector for commercial-type services unless the government can provide them more economically. In addition, DWRA Section 1(g) directs the Secretary of the Interior to “enter into 1 or more agreements with the State of North Dakota to carry out this Act, including operation and maintenance of the completed unit facilities and the design and construction of authorized new unit facilities by the State.” In response to this Congressional directive, Reclamation, representing the Secretary, entered into a cooperative agreement with the state of North Dakota, represented by Garrison Diversion Conservancy District. All work completed by Houston Engineering, Inc., through the agreement with Garrison Diversion Conservancy District, was done under federal oversight in response to task orders issued by Reclamation. The task orders were for engineering design work authorized by DWRA.

Response to Comment 15c

The design criteria developed by Houston Engineering, Inc., were reviewed by Reclamation and found to be adequate. We have not received technical comments about the inadequacy of the design document.

Response to Comment 15d

The North Dakota State University report written by Bangsund and Leistritz shows that historically value-added food processing has taken place in the Red River Valley and that this trend and the need for water would continue. The Scenario One water demand used the intermediate industrial water demand result, which follows historic trends. The high industrial water demand is more optimistic, but both scenarios are evaluated in the Needs and Options Report so reviewers can understand the sensitivity of the industrial demand, as compared to water shortages and costs.

Department of Agribusiness and Applied Economics under contract with the Garrison Diversion Conservancy District.

- The Scenario Two population projections used in the *Draft Report on Red River Valley Water Needs and Options* were developed by Red River Valley municipalities having a vested interest in the outcome of the Red River Valley Water Supply Study.
- The Drought Frequency Investigation of the Red River of the North Basin utilized in the *Draft Report on Red River Valley Water Needs and Options* was prepared by Leon Osborne of Meridian Environmental Technologies, who has a history of contractual relationships with North Dakota water development interests.

These and other examples clearly demonstrate that the *Draft Report on Red River Valley Water Needs and Options* was not prepared by, or under the auspices of, the Secretary of the Interior in an open and public process as explicitly directed by the Dakota Water Resources Act of 2000. They also clearly demonstrate that every aspect of the Red River Valley Water Supply Study having a significant influence on future water needs and options was systematically and fundamentally biased to inflate those needs to make options involving the delivery of Missouri River water to the Red River Valley utilizing the Garrison Diversion project appear to be more feasible. For example:

- The *Draft Report* is based on an unrealistically long 50-year planning horizon utilized to inflate future water needs, despite wide recognition of the unreliability of population and water use projections that far into the future.
- The *Draft Report* is based on single point Scenario One and Scenario Two year 2050 population and water use projections, rather than on a series of projections at shorter intervals that would show the diminishing reliability of those projections and allow the public, decision makers and water facility managers to make informed evaluations about realistic needs.
- Population estimates by independent entities with demographic expertise were rejected for the *Draft Report's* Scenario One population projection.
- The participant municipalities' inflated population projections were incorporated for the *Draft Report's* Scenario Two population projection.
- Because future industrial water needs cannot be reliably estimated more than 10 years in the future, the *Draft Report* is not based on an objective, scientific analysis of those needs, but simply on hypothetical scenarios and speculation.
- The potential contributions of water conservation to reducing future shortages were minimized in the *Draft Report*.
- Significant MR&I water shortages would not be expected to occur in the Red River Valley by 2050 even with the inflated and speculative demands generated for the *Draft Report*, so the development of options was based on the assumption that another 1930s-type drought will occur in the decade preceding 2050.
- Although all of the options identified in the *Draft Report* for meeting future Red River Valley MR&I water needs are based on the presumption that a 1930s-type drought will occur in the decade preceding 2050, nowhere in the *Draft Report* is there any consideration of how the implementation of drought contingency measures could reduce shortages during droughts.

Responses to the National Wildlife Federation

Response to Comment 15e

Reclamation included the Scenario Two water demands in the Needs and Options Report at the request of water users. Reclamation believes that it is appropriate to disclose more information to the public about potential option costs.

Response to Comment 15f

Reclamation disagrees with your contention that Dr. Osborne's work on the drought frequency investigation for the Red River Valley studies should be questioned just because he worked on the Devils Lake Outlet studies that had results with which you disagree.

Response to 15g

The Needs and Options Report was prepared by Reclamation using an open and public process. Two teams of stakeholders (Technical Team and Study Review Team) were formed to incorporate public involvement in study planning. Gubernatorial designees from states that could be affected by the Project and other representatives of federal, state, local agencies, tribes, and environmental groups were invited to serve on the teams. In 2003, the Study Review Team was combined with the Technical Team. Technical Team members reviewed and commented on plans of study and draft reports. Organizations and agencies whose representatives attended Technical Team meetings are listed in table 1.3.1. of the Final Needs and Options Report. The Draft Needs and Options Report was distributed to the Technical Team, the public, federal agencies, and potentially affected States for a 120-day review. Comments received from reviewers were given serious consideration and were used in preparing the Final Needs and Options Report.

Public involvement extended beyond the Technical and Study Review Teams. Reclamation, with the assistance of the North Dakota State Water Commission, conducted water users meetings in eight communities in the Red River Valley during October 2002. The purpose of these meetings was to present information about the studies being conducted for the Needs and Options Report and solicit the assistance of local communities in these efforts. This also gave the water users an opportunity to learn about previous Reclamation Red River Valley studies and to provide comments. Comments received during these meetings and during public scoping of the DEIS were taken into consideration and assisted Reclamation in developing the options described in the Final Needs and Options Report.

- Although the drought frequency report upon which the *Draft Report* is based concludes that a drought of the magnitude of the 1930s drought is a realistic and statistically significant representation of the most extreme drought anticipated until 2050, and although the *Draft Report* states that it utilized a period including the 1930s drought for modeling purposes, it dismisses consideration of drought contingency measures by claiming that they “must be reserved for unforeseen events.”
- Rather than considering that a 1930s-type drought could occur any time before—or after—2050, the *Draft Report* assumed that it would occur in the decade preceding 2050, when the inflated Scenario One and Scenario Two water needs would be the greatest, in order to maximize the shortages.
- None of the options identified in the *Draft Report* for meeting future Red River Valley water needs is designed to be implemented in increments as water needs do—or do not—materialize.

However, as a representative of the Lake Agassiz Water Authority said at the July 5-6, 2005, Red River Valley Water Supply Project Technical Team meeting, they see this as the State’s last chance to get Missouri River water to the Red River Valley.

FUNDING AND REIMBURSEMENT FOR THE RED RIVER VALLEY WATER SUPPLY PROJECT

The Dakota Water Resources Act of 2000 directed the Secretary of the Interior to conduct a comprehensive study of water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs. The U. S. Bureau of Reclamation released its *Draft Report on Red River Valley Water Needs and Options* prepared under the Dakota Water Resources Act in May 2005.

Because decisions regarding a Red River Valley Water Supply Project will be heavily influenced by costs, it is necessary to consider not only the total cost of construction of the various water supply options identified in the *Draft Report on Red River Valley Water Needs and Options* but also how those total costs are allocated between reimbursable costs (repaid by local users of the water projects) and non-reimbursable costs (paid by U. S. taxpayers from the Federal Treasury).

The Garrison Diversion Unit Reformulation Act of 1986

The original 250,000-acre Garrison Diversion Unit irrigation project authorized in 1965 included provisions for delivering water to 14 towns and four industrial areas, none of which was located in the Red River Valley. In 1986, the project was re-authorized under the Garrison Diversion Unit Reformulation Act of 1986. Section 5 of the 1986 Act amended Section 7 of the 1965 Garrison Diversion Unit authorization act dealing with Municipal, Rural, and Industrial Water (MR&I) Water Service. The amended Subsection 7(a) in the 1986 Act authorized what became commonly known as the statewide MR&I grant program which provided Federal funds for upgrading MR&I systems in smaller communities across North Dakota, with 25 percent repayment by those local communities.

Section 8 of the 1986 Act amended Paragraph 10(b)(1) of the 1965 Act to authorize appropriations of \$200 million to carry out the statewide MR&I grant program authorized in Subsection 7(a), and Paragraph 7(a)(3) directed the Secretary of the Interior "to convey to the State of North Dakota, on a non-reimbursable basis, the funds authorized in Section 10(b)(1) of this Act." This created a partially revolving, Federally-funded \$200 million statewide MR&I water supply grant program where the 25 percent repayment by local sponsors was returned to the State to fund additional grants, but none of the \$200 million was reimbursable to the Federal Government. The 25 percent repayment by communities receiving the MR&I grants increased the total amount ultimately available for MR&I grants under the program to \$267 million.

Section 5 of the 1986 Act also amended Subsection 7(b) of the 1965 Act to direct the Secretary of the Interior to construct a Sheyenne River Water Supply and Release Feature to deliver 100 cfs of Missouri River from the Garrison Diversion project's principal supply works to the Sheyenne River for Fargo, Grand Forks and surrounding communities in the Red River Valley. Section 8 of the 1986 Act then amended Paragraph 10(b)(2) of the 1965 Act to authorize appropriations totaling \$61 million to carry out Subsections 7(b) through 7(d) of the 1986 Act (Sheyenne River Water Supply and Release Feature, Indian MR&I projects, and Boundary Waters Treaty of 1909 compliance of MR&I projects delivering Missouri River water into the Hudson Bay Basin). Under the 1986 Act, the costs of the Sheyenne River Water Supply and Release Feature allocated to achieving compliance with the Boundary Waters Treaty of 1909 (i.e., a biota treatment plant) were non-reimbursable Federal costs, but the rest of the costs for the feature were reimbursable.

Consequently, two MR&I water programs were authorized by the 1986 Act. The first, authorized in Subsection 7(a) of the Act was a \$200 million statewide MR&I grant program to fund upgrading of water systems in smaller communities, with 25% repayment of the costs by the local communities to the State but no reimbursement to the Federal Government. Under the 1986 Act, the State's Southwest Pipeline Project was made eligible for funding under the statewide MR&I grant program.

The second MR&I water program authorized under Subsection 7(b) of the 1986 Act was a Sheyenne River Water Supply and Release Feature to deliver 100 cfs of Missouri River water to the Sheyenne River for use by Fargo, Grand Forks and other communities in the Red River Valley, with only the biota treatment plant costs (estimated in the May 2005 *Draft Report on Red River Valley Water Needs and Options* at \$7-12 million) being non-reimbursable. However, the 1986 Act included no further provisions for MR&I water supplies for cities in the Red River Valley, other than providing for the delivery of 100 cfs of Missouri River water from the Garrison Diversion project's principal supply works to the Sheyenne River, and it was left up to the communities in the Red River Valley to develop and finance their own water supply projects to utilize that water.

The Dakota Water Resources Act of 2000

With passage of the Dakota Water Resources Act of 2000, Subsection 7(b) of the 1986 Act authorizing a Sheyenne River Water Supply and Release Feature was moved to a new Paragraph 8(a)(1) dealing with a "Red River Valley Water Supply Project." In addition, under Paragraph 7(a)(3) of the DWRA the non-Federal share of the cost of construction of **ALL** MR&I water systems funded under Section 7 "shall be 25 percent." However, as in the 1986 Act, that 25% non-Federal cost share continues to be reimbursed to the North Dakota MR&I program and not to the Federal Treasury, so the funds appropriated under Paragraph 7(a)(3) are non-reimbursable to the Federal Government.

Section 8 of the Dakota Water Resources Act then expanded Subsection 7(b) of the 1986 Act from simply authorizing a Sheyenne River Water Supply and Release Feature in Paragraph 8(a)(1) to requiring in Paragraph 8(a)(2) that the feature be designed and constructed to meet municipal, rural, and industrial water supply needs, groundwater recharge, and streamflow augmentation, i.e., a Red River Valley Water Supply Project to meet all MR&I water needs of the Red River Valley.

Paragraph 7(a)(3) of the Dakota Water Resources Act explicitly provides that, in addition to the Southwest Pipeline Project, the Red River Valley Water Supply Project and the State's Northwest Area Water Supply project "shall be eligible for funding under the terms of this section." As in Paragraph 7(a)(3) of the 1986 Act, Paragraph 7(a)(3) of the DWRA also provides that the \$200 million MR&I appropriation authorized under Paragraph 10(b)(1) to carry out that section of the Act shall be conveyed to the State of North Dakota "on a nonreimbursable basis."

Paragraph 10(a)(1) of the Dakota Water Resources Act then authorizes the appropriation of \$200 million specifically to carry out Paragraph 8(a)(1) of the Act, i.e., a Sheyenne River Water Supply and Release Facility or "such other feature or features as are selected under subsection (d)." Subsection (d) deals with the selection of a Red River Valley Water Supply Project, so Paragraph 10(a)(1) authorizes the appropriation of another \$200 million specifically for the Red River Valley Water Supply Project. However, the DWRA is silent regarding the reimbursability of this second \$200 million appropriation authorized under Paragraph 10(a)(1), so it is not clear whether these funds are, as is the case with funds appropriated under Paragraph 7(a)(3), non-reimbursable

Responses to the National Wildlife Federation

Response to Comment 16

The \$200 million described under DWRA Section 10(a) (1) is reimbursable to the federal government with interest.

to the Federal Government, or if they are, as has been standard agency policy for municipal and industrial water supplies from other Reclamation projects, 100 percent reimbursable.

The Dakota Water Resources Act of 2000 contains two additional provisions that affect the reimbursability of the costs for a Red River Valley Water Supply Project. First, Paragraph 1(f)(3) of the DWRA provides:

“OPERATION AND MAINTENANCE COSTS. – Except as otherwise provided in this Act or Reclamation law –

(i) **The Secretary shall be responsible for the costs of operation and maintenance of the proportionate share of unit facilities** in existence on the date of enactment of the Dakota Water Resources Act of 2000 attributable to the capacity of the facilities... **that remain unused.**

(ii) **The State of North Dakota shall be responsible for costs of operation and maintenance of the proportionate share of existing facilities that are used...**”
(Emphasis added)

This means that, although the 1,950 cfs McClusky Canal would have to be operated and maintained for Red River Valley Water Supply Project options utilizing Garrison Diversion Unit facilities, Red River Valley cities would be required to pay operation and maintenance costs based on only the portion of the full 1,950 cfs capacity actually required to meet Red River Valley water needs. For example, under the Garrison Diversion Unit Import to Sheyenne River Import option, in the case of a severe drought, up to 78 cfs could be delivered from the McClusky Canal under the Bureau of Reclamation’s Scenario One needs and up to 120 cfs could be delivered under Red River Valley municipalities’ Scenario Two needs, so the cities would be required to pay only 4 to 6 percent of the operation and maintenance costs for the 1,950 cfs McClusky Canal.

Second, and most significantly, under Paragraph 1(f)(2) of the DWRA:

“REPAYMENT CONTRACT. – **An appropriate repayment contract** shall be negotiated that provides for the making of a payment for each payment period in an amount that is commensurate **with the percentage of the total capacity of the project that is in actual use during the payment period.**” (Emphasis added)

This means that, regardless of the ultimate capacity and total cost of the Red River Valley Water Supply Project option that is selected, the cities’ repayment will be based only on the percentage of that ultimate capacity that actually is used during that payment period. Therefore, if the project is designed with a capacity to supply 24,000 acre-feet of Missouri River water annually to MR&I water users in the Red River Valley under the \$1.4 billion Scenario Two Garrison Diversion Unit Import Pipeline option, but 2,400 acre-feet actually are used, the repayment would be based on project costs of only \$140 million. In fact, because the MR&I water supply options identified in the *Draft Report on Red River Valley Water Needs and Options* are designed to meet projected shortages based on a 10-year, 1930s-style drought occurring from 2040 to 2050 with populations in the Red River Valley 50 to 100 percent larger than today, it is evident that the full capacity of a Red River Valley Water Supply Project would not be used for decades, if ever.

Of course, for those options designed to be used only in the event of a severe drought (North Dakota In-Basin, Red River Basin, Lake of the Woods, Garrison Diversion Unit Import to

Responses to the National Wildlife Federation

Response to Comment 17

This paragraph is in error. The repayment of a “proportionate share” of used facilities is just for the GDU Principal Supply Works. Any new features, beyond the supply works, are reimbursable with interest based on funding from DWRA Section 10(a), which amounts to \$250 million indexed to October 2006 levels. Without a change in the cost ceiling any additional costs would have to be financed by the cities or partially through the GDU MR&I grant funds.

Response to Comment 18

Your conclusion that the project would not have to be repaid unless used under drought conditions is incorrect. See response to comment 14.

Sheyenne River, and Missouri River to Red River Import), there would be no repayment whatsoever of the \$504,888,000 (Scenario One Garrison Diversion Unit Import to Sheyenne River) to \$1,112,579,000 (Scenario Two Lake of the Woods) (Draft Report, pp. 4-39, 4-40) costs unless a severe drought were to occur. And, even if a severe drought were to occur, the repayment would be limited to the relatively few years the project would actually be used. What this means is that the U. S. Government very likely could end up spending \$504,888,000 to \$1,112,579,000 for a Red River Valley Water Supply Project for which North Dakota would repay virtually nothing.

Thus, rather than promoting, and indeed requiring, realistic and responsible analyses of future MR&I water needs in the Red River Valley and options for meeting those needs, the Dakota Water Resources Act instead establishes a powerful incentive—confirmed by the Scenario Two population and industrial growth projections developed for the *Draft Report on Red River Valley Water Needs and Options* by the Red River Valley municipalities and the Garrison Diversion Conservancy District—for the State, the Conservancy District, and allied water development groups such as the Lake Agassiz Water Authority, to seek the most extravagant Red River Valley Water Supply Project possible, because they will not have to pay for it unless or until it is used—and then only for the proportion that is actually used. But, of course, that is what was to be expected with “the first Garrison plan written by North Dakotans for North Dakotans” (Conrad, 2001).

Consequently, under the Dakota Water Resources Act of 2000:

- The separate \$200 million statewide MR&I grant program designed to upgrade water supplies for small communities authorized by Paragraph 7(a)(1) of the 1986 Act is incorporated into a single, potentially open-ended, multi-billion dollar North Dakota MR&I water program that includes the Southwest Pipeline project listed in the 1986 Act, plus the Northwest Area Water Supply project and a Red River Valley Water Supply Project.
- The costs of a Red River Valley Water Supply Project allocated to achieving compliance with the Boundary Waters Treaty of 1909 are non-reimbursable Federal costs.
- The \$200 million in appropriations authorized in DWRA Paragraph 10(b)(1) for MR&I projects, including the Southwest Pipeline project, the Northwest Area Water Supply project, and a Red River Valley Water Supply Project, are non-reimbursable Federal costs under Paragraph 7(a)(3). However, because they are 25 percent reimbursable to the State by the local sponsors, \$267 million actually will be available.
- The net effect for the State of North Dakota of making \$267 million in non-reimbursable Federal funds available for all MR&I projects under the Dakota Water Resources Act (in addition to the \$200 million previously authorized in the 1986 Act) is the equivalent of making \$267 million in non-reimbursable funds available for paying the costs of a Red River Valley Water Supply Project, because the DWRA deals principally with a Red River Valley Water Supply Project and it is simply a matter of accounting as to how the funds are allocated, i.e., whether they are allocated directly to the Red River Valley Water Supply Project or to other projects, such as the Northwest Area Water Supply project, thereby indirectly making

Responses to the National Wildlife Federation

Response to Comment 19

This paragraph is incorrect. Reclamation's best estimate as to how the options would be financed, along with the end cost to households, is on page 4-45 through 4-47 of the Final Needs and Options Report. The full financial analysis is in Appendix C, Attachment 11, of the final report.

Response to Comment 20

We disagree with your conclusion that there is a "potentially open-ended multi-billion dollar North Dakota MR&I water program." The state MR&I program has a federal ceiling of \$450 million. An additional \$240 million (35% cost share) is estimated as the non-federal share.

Response to Comment 21

The conclusion stated in this bullet is incorrect. The minimum non-federal cost share is 25% for the GDU grant program. Currently the state of North Dakota's policy is for 35% or greater cost share. The Southwest Pipeline is estimated to have a 48.5% local cost share through 2005, while NAWS (Northwest Area Water Supply Project) is estimated at 40% local cost share.

Response to Comment 22

The conclusion stated in this bullet is incorrect. Given the commitments that the state of North Dakota has made already to other MR&I projects such as NAWS, little funding will be available for the Project from the GDU MR&I grant program.

corresponding State funds available for paying the reimbursable costs of a Red River Valley Water Supply Project.

- The \$200,000,000 appropriations specifically authorized for a Red River Valley Water Supply Project in Paragraph 10(a)(1) of the Dakota Water Resources Act and the additional \$200,000,000 appropriations authorized for the statewide water grant program in Paragraph 10(b)(1) and which directly or indirectly could be used for a Red River Valley Water Supply Project will have to be increased to cover the costs—which range from \$500,000,000 to \$2,200,000,000—of any of the Red River Valley Water Supply Project options identified in the *Draft Report on Red River Valley Water Needs and Options*. This would involve increasing the appropriation authorization ceiling in future congressional appropriation authorization bills, as was done to increase the \$200 million MR&I water supply grant appropriation in Paragraph 10(b)(1) the 1986 Garrison Diversion Unit Reformulation Act by another \$200 million to a total of \$400 million in Paragraph 10(b)(1) of the Dakota Water Resources Act.
- Operation and maintenance costs for the McClusky Canal for Red River Valley Water Supply Project options utilizing Garrison Diversion Unit features are based on the percentage of the full capacity of the canal used, rather than on the actual operation and maintenance costs required to deliver the water.
- Repayment of the Red River Valley Water Supply Project that is selected is not based on the actual capacity and cost of the project, but only on the proportional cost for the amount of water actually used.

Because it is uncertain at this time how much of the \$200 million in non-reimbursable statewide MR&I water supply grant appropriations authorized in Paragraphs 7(a)(3) and 10(b)(1) of the Dakota Water Resources Act, or that may be authorized in future appropriation authorization bills, will be utilized for the costs of a Red River Valley Water Supply Project, it is not possible to determine exactly what the reimbursable and non-reimbursable costs will be. However, it is important to recognize that the amount of current and future non-reimbursable general MR&I water supply grant appropriation authorizations under Paragraph 10(b)(1) that are allocated to the Red River Valley Water Supply Project, and the reimbursability of the current and future specific appropriations authorized for the project under Paragraph 10(a)(1), could dramatically alter the non-reimbursable Federal costs and the reimbursable State costs of any Red River Valley Water Supply Project option that is selected.

Funding and Reimbursement Scenarios under the Dakota Water Resources Act of 2000

With the virtually unlimited number of potential funding and reimbursement scenarios for a Red River Valley Water Supply Project possible under the Dakota Water Resources Act, compounded by reimbursement being based on the occurrence drought and the project capacity actually used, it is not possible to attempt to consider all of them. However, it is useful for purposes of illustration to consider three potential reimbursement scenarios that might bracket the range **IF** the projects were used to full capacity. Mid-Range Reimbursement Scenarios show what ‘average’ reimbursement costs might be under certain ‘moderate’ assumptions. Then because it is important to the communities that will repay the costs for the various water supply features developed under the Red River Valley Water Supply Project to know what the highest repayment costs might be, it is useful to consider High Range Reimbursement Scenarios. Because of the precedent established by the Dakota Water Resources Act of 2000 for extravagant congressional

Responses to the National Wildlife Federation

Response to Comment 23

The conclusion stated in this bullet is incorrect. Costs that exceed the currently authorized federal ceiling likely will be financed locally. The remaining federal ceiling for Red River Valley supply works, biota treatment, and for the GDU MR&I grant program is \$240 million, \$50 million, and \$255 million, respectively. Assuming a 35% non-federal cost share for the grant program provides another \$137 million. Therefore, there would be about \$680 available in the current ceiling should the State choose to use it all to fund the Project.

Response to Comment 24

The conclusion stated in this bullet is incorrect. The Project is responsible for all annual OM&R (operation, maintenance, and replacement) except for biota treatment to meet requirements of the Boundary Waters Treaty and the portion of unused capacity OM&R (currently ongoing) of the Principal Supply Works. See the financial analysis included in Appendix C, Attachment 11, of the Final Needs and Options Report for additional information.

Response to Comment 25

The conclusion stated in this bullet is incorrect. See the previous responses on the financial analysis and the information provided in Appendix C, Attachment 11, of the Final Needs and Options Report.

Response to Comment 26

Reclamation's best estimate of reimbursable and non-reimbursable costs are in the financial analysis in Appendix C, Attachment 11 of the Final Needs and Options Report.

largesse in the reimbursement provisions for the Red River Valley Water Supply Project, it is important to U. S. taxpayers to know what Low Range Reimbursement Scenarios could involve.

Mid-Range Reimbursement Scenarios
Under the Dakota Water Resources Act of 2000
For Red River Valley Water Supply Project Options Identified in
The Draft Report on Red River Valley Water Needs and Options

For this scenario, it is assumed that:

- (1) A Red River Valley Water Supply Project will be based on the *Draft Report on Red River Valley Water Needs and Options* Scenario One 2050 population and industrial growth projections.
- (2) All of the \$200 million non-reimbursable statewide MR&I water supply grant appropriations authorized in Dakota Water Resources Act Paragraph 10(b)(1) (Federal non-reimbursable) are allocated to the Red River Valley Water Supply Project, but the additional \$67 million generated by the 25 percent repayment to the State are used to fund other MR&I projects.
- (3) The \$200 million appropriation specifically for the Red River Valley Water Supply Project authorized in Dakota Water Resources Act Paragraph 10(a)(1) (State reimbursable) is 100 percent reimbursable.
- (4) Costs allocated to achieving compliance with the Boundary Waters Treaty of 1909 (i.e., biota treatment plants) are non-reimbursable and are paid from the \$200 million reimbursable appropriation authorized in Dakota Water Resources Act Paragraph 10(a)(1), rather than from the already non-reimbursable appropriation authorized under Paragraph 10(b)(1).
- (5) Future appropriation authorizations required to complete the project are equally divided between Dakota Water Resources Act Paragraph 10(b)(1) non-reimbursable funds and Paragraph 10(a)(1) 100% reimbursable funds.
- (6) The project is operated continuously at full capacity and not just during periods of drought.

Under these Mid-Range Reimbursement Scenarios, the costs of the Scenario One Red River Valley Water Supply Project options identified in the *Draft Report on Red River Valley Water Needs and Options* would be allocated approximately as follows:

Red River Valley Water Supply Project Option	Total Costs ¹	Federal Non-reimbursable	State Reimbursable
North Dakota In-Basin Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
Future	157,859,000	78,929,000	78,929,000
Total	\$557,859,000	\$278,929,000	\$278,929,000

Responses to the National Wildlife Federation

Response to Comment 27

Although all costs and data are not included in your financing scenarios, your high range scenario most closely approximates Reclamation's estimates regarding cost reimbursement. For more information, please see the financial analysis information provided Appendix C, Attachment 11 of the Final Needs and Options Report.

		(50%)	(50%)
Red River Basin			
Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
Future	149,166,000	74,583,000	74,583,000
Total	\$549,166,000	\$274,000,000	\$274,000,000
		(50%)	(50%)
Lake of the Woods			
Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
Future	537,228,000	268,614,000	268,614,000
Total	\$937,228,000	\$468,614,000	\$468,614,000
		(50%)	(50%)
GDU Import to Sheyenne River			
Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
BWT ²		+12,464,472	-12,464,472
Future	104,888,000	52,444,000	52,444,000
Total	\$504,888,000	\$264,908,472	\$239,979,528
		(52.5%)	(47.5%)
GDU Import Pipeline			
Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
BWT ^{2,3}		+25,304,742	-25,304,742
Future	802,248,000	401,124,000	401,124,000
Total	\$1,202,248,000	\$626,428,742	\$575,811,258
		(52.1%)	(47.9%)
Missouri River to Red River Valley Import			
Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
BWT ²		+7,209,501	-7,209,501
Future	475,378,000	237,689,000	237,689,000
Total	\$875,378,000	\$444,449,501	\$ 430,479,499
		(50.8%)	(49.2%)
GDU Water Supply Replacement Pipeline			
Appropriation Authorizations			

DWRA	\$ 400,000,000	\$ 200,000,000	\$200,000,000
BWT ^{2,4}		+121,352,143	-122,352,143
Future	1,826,667,000	913,333,500	913,333,500
Total	\$2,226,667,000	\$,1,234,685,643 (55.4%)	\$991,981,000 (44.6%)

¹Cost figures for Scenario One Red River Valley Water Supply Project options are from the *Draft Report on Red River Valley Water Needs and Options*, Appendix C.

²Non-reimbursable costs of features allocated to achieving compliance with the Boundary Waters Treaty of 1909 are paid from reimbursable appropriation authorizations under DWRA Paragraph 10(a)(1) and become non-reimbursable.

³The GDU Import Pipeline requires two biota treatment plants.

⁴The biota treatment plant for the GDU Water Supply Replacement Pipeline option is a \$121 million treatment plant designed to deliver water meeting Safe Drinking Water Act standards by pipeline directly to MR&I water systems in the Red River Valley. Because the costs of the treatment plant would be allocated to achieving compliance with the Boundary Waters Treaty, they would be non-reimbursable.

High Range Reimbursement Scenarios
Under the Dakota Water Resources Act of 2000
For Red River Valley Water Supply Project Options Identified in
The Draft Report on Red River Valley Water Needs and Options

For this scenario, it is assumed that:

- (1) The Red River Valley Water Supply Project will be based on the *Draft Report on Red River Valley Water Needs and Options* Scenario One 2050 population and industrial growth projections.
- (2) Half of the \$200 million non-reimbursable MR&I water project appropriations authorized in Dakota Water Resources Act Paragraph 10(b)(1) (Federal non-reimbursable) are allocated to the Red River Valley Water Supply Project, and half, plus the \$67 million generated by the 25 percent repayment to the State, are allocated to other MR&I projects.
- (3) The \$200 million appropriation specifically for the Red River Valley Water Supply Project authorized in Dakota Water Resources Act Paragraph 10(a)(1) (State reimbursable) is 100 percent reimbursable.
- (4) Costs allocated to achieving compliance with the Boundary Waters Treaty of 1909 (i.e., biota treatment plants) are non-reimbursable and are paid from the \$200 million reimbursable appropriation authorization in Dakota Water Resources Act Paragraph 10(a)(1), rather than from the already non-reimbursable \$200 million appropriation authorized in Paragraph 10(b)(1).
- (5) The project is operated continuously at full capacity and not just during periods of drought.

Under these High Range Reimbursement Scenarios, the costs of the Scenario One Red River Valley Water Supply Project options identified in the *Draft Report on Red River Valley Water Needs and Options* would be allocated approximately as follows:

Red River Valley Water Supply Project Option	Total Costs ¹	Federal Non-reimbursable	State Reimbursable
North Dakota In-Basin Appropriation Authorizations			
DWRA	\$300,000,000	\$100,000,000	\$200,000,000
Future	257,859,000	0	257,859,000
Total	\$557,859,000	\$100,000,000 (17.9%)	\$457,859,000 (82.1%)
Red River Basin Appropriation Authorizations			
DWRA	\$300,000,000	\$100,000,000	\$200,000,000
Future	249,166,000	0	249,166,000
Total	\$549,166,000	\$100,000,000 (18.2%)	\$449,166,000 (81.8%)
Lake of the Woods Appropriation Authorizations			
DWRA	\$300,000,000	\$100,000,000	\$200,000,000
Future	637,228,999	0	637,228,000
Total	\$937,228,000	\$100,000,000 (10.7%)	\$837,228,000 (89.3%)
GDU Import to Sheyenne River Appropriation Authorizations			
DWRA	\$300,000,000	\$100,000,000	\$200,000,000
BWT ²		+12,464,472	-12,464,472
Future	204,888,000	0	204,888,000
Total	\$504,888,000	\$112,464,472 (22.3%)	\$392,423,528 (77.7%)
GDU Import Pipeline Appropriation Authorizations			
DWRA	\$ 300,000,000	\$100,000,000	\$ 200,000,000
BWT ^{2,3}		+25,304,742	-25,304,742
Future	902,248,000	0	902,248,000
Total	\$1,202,248,000	\$125,304,742 (10.4%)	\$1,076,943,258 (89.6%)

Missouri River to Red

River Valley Import			
Appropriation			
Authorizations			
DWRA	\$300,000,000	\$100,000,000	\$200,000,000
BWT ²		+7,209,501	-7,209,501
Future	575,378,000	0	575,378,000
Total	\$875,378,000	\$107,209,000	\$768,168,499
		(12.2%)	(87.8%)

GDU Water Supply			
Replacement Pipeline			
Appropriation			
Authorizations			
DWRA	\$ 300,000,000	\$100,000,000	\$200,000,000
BWT ^{2,4}		+121,352,143	-121,352,143
Future	1,926,667,000	0	1,926,667,000
Total	\$2,226,667,000	\$221,352,143	\$2,005,531,857
		(9.9%)	(90.1%)

¹Cost figures for Scenario One Red River Valley Water Supply Project options are from the *Draft Report on Red River Valley Water Needs Options*, Appendix C.

²Non-reimbursable costs of features allocated to achieving compliance with the Boundary Waters Treaty of 1909 are paid from reimbursable appropriation authorizations under Dakota Water Resources Act Paragraph 10(a)(1) and become non-reimbursable.

³The GDU Import Pipeline option requires two pumping plants.

⁴The biota treatment plant for the GDU Water Supply Replacement Pipeline option is a \$121 million treatment plant designed to deliver water meeting Safe Drinking Water Act standards directly by pipeline to MR&I water systems in the Red River Valley. Because the costs of the treatment plant would be allocated to achieving compliance with the Boundary Waters Treaty of 1909, they would be non-reimbursable.

Low Range Reimbursement Scenarios
Under the Dakota Water Resources Act of 2000
For Red River Valley Water Supply Project Options Identified in
The Draft Report on Red River Valley Water Needs and Options

For this scenario, it is assumed that:

- (1) A Red River Valley Water Supply Project will be based on the *Draft Report on Red River Valley Water Needs and Options* Scenario One 2050 population and industrial growth projections.
- (2) All of the \$200 million non-reimbursable statewide MR&I water project grant appropriations authorized in Dakota Water Resources Act Paragraph 10(b)(1) (Federal non-reimbursable) are allocated to the Red River Valley Water Supply Project, but the additional \$67 million generated by the 25 percent repayment to the State are used to fund other water projects.

- (3) The \$200 million appropriation specifically for the Red River Valley Water Supply Project authorized in Dakota Water Resources Act Paragraph 10(a)(1) (State reimbursable) is 100 percent reimbursable.
- (4) Costs allocated to achieving compliance with the Boundary Waters Treaty of 1909 (i.e., biota treatment plants) are non-reimbursable and are paid from the \$200 million reimbursable appropriation authorized under Dakota Water Resources Act Paragraph 10(a)(1), rather than from the already non-reimbursable \$200 million appropriation authorized under Paragraph 10(b)(1).
- (5) Future appropriation authorizations required to complete the project are entirely from increased appropriation ceilings for non-reimbursable appropriations under Dakota Water Resources Act Paragraph 10(b)(1).
- (6) The project is operated continuously at full capacity and not just during periods of drought.

Under this Low Range Reimbursement Scenario, the costs of the Scenario One Red River Valley Water Supply Project Options identified in the *Draft Report on Red River Valley Water Needs and Options* would be allocated approximately as follows:

Red River Valley Water Supply Project Options	Total Cost ¹	Federal Non-reimbursable	State Reimbursable
North Dakota In-Basin Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
Future	157,859,000	157,859,000	0
Total	\$557,859,000	\$357,859,000 (64.1%)	\$200,000,000 (35.9%)
Red River Basin Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
Future	157,859,000	157,859,000	0
Total	\$557,859,000	\$357,859,000 (64.1%)	\$200,000,000 (35.9%)
Lake of the Woods Appropriation Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
Future	537,228,000	537,228,000	0
Total	\$937,228,000	\$737,228,000 (78.7%)	\$200,000,000 (21.3%)
GDU Import to Sheyenne River Appropriation			

Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
BWT ²		+12,464,472	-12,464,472
Future	104,999,000	104,999,000	0
Total	\$504,999,000	\$317,463,462	\$187,535,538
		(62.9%)	(37.1%)

GDU Import Pipeline			
Appropriation			
Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
BWT ^{2,3}		+25,304,742	-25,304,742
Future	802,248,000	802,248,000	0
Total	\$1,202,248,000	\$1,027,555,742	\$174,695,258
		(85.5%)	(14.5%)

Missouri River to			
Red River Valley Import			
Appropriation			
Authorizations			
DWRA	\$400,000,000	\$200,000,000	\$200,000,000
BWT ²		+7,209,501	-7,209,501
Future	475,378,000	475,378,000	0
Total	\$875,378,000	\$682,587,501	\$192,790,499
		(78.0%)	(22.0%)

GDU Water Supply			
Replacement Pipeline			
Appropriation			
Authorizations			
DWRA	\$ 400,000,000	\$ 200,000,000	\$200,000,000
BWT ^{2,4}		+121,352,143	-121,352,143
Future	1,826,667,000	1,826,667,000	0
Total	\$2,226,667,000	\$2,148,019,143	\$ 78,657,857
		(96.5%)	(3.5%)

¹Cost figures for Scenario One Red River Valley Water Supply Project options are from the *Draft Report on Red River Valley Water Needs and Option*.

²Non-reimbursable costs of features allocated to achieving compliance with the Boundary Waters Treaty of 1909 are paid from reimbursable appropriation authorizations under Dakota Water Resources Act Paragraph 10(a)(1).

³The GDU Import Pipeline requires two biota treatment plants.

⁴The biota treatment plant for the GDU Water Supply Replacement Pipeline option is a \$121 million treatment plant designed to supply water meeting Safe Drinking Water Act standards for deliver by pipeline directly to MR&I water systems in the Red River Valley. Because the costs of the treatment plant would be allocated to achieving compliance with the Boundary Water Treaty of 1909, they would be non-reimbursable.

Implications for the Draft Report on Red River Water Needs and Options

It is relevant to note in the context of this analysis that Paragraph 8(d)(1) of the Dakota Water Resources Act provides:

“IN GENERAL. – After reviewing the final report required by subsection (b)(1) [the Red River Valley Water Needs and Options Report] and complying with subsection (c) [the Environmental Impact Statement for the Red River Valley Water Supply Project], the Secretary, in consultation and coordination with the State of North Dakota, shall select 1 or more project features described in subsection (a) [dealing with a Red River Valley Water Supply Project] that will meet the comprehensive water quality and quantity needs of the Red River Valley. The Secretary’s selection of an alternative shall be subject to judicial review.”

Although this analysis is not able to identify the actual non-reimbursable Federal and reimbursable State costs of the Red River Valley Water Supply Project options identified in the *Draft Report Red River Valley Water Needs and Options*, it does disclose something equally important. With reimbursement under the provisions of the Dakota Water Resources Act of 2000 potentially ranging from 3.5 percent to 90 percent on projects costing from \$550 million to \$2.2 billion—or a fraction of that depending on the capacity actually used, it will be impossible for the Secretary of the Interior, the State of North Dakota, the U. S. Congress or the citizens of the Red River Valley to make objective and informed decisions regarding Red River Valley Water Supply Project options until the funding and reimbursement provisions of the Dakota Water Resources Act are clearly and explicitly defined for all of the options.

The problem created by the ambiguity of the repayment provisions of the Dakota Water Resources Act of 2000 is illustrated by the fact that it would be possible for the State to be required to repay from \$187,535,538 (37.1%) (Low Range Reimbursement Scenario) to \$392,433,528 (77.7%) (High Range Reimbursement Scenario) of the costs of the least expensive \$504 million GDU Import to Sheyenne River option, or it could to be required to repay as little as \$78,647,857 (3.5%) (Low Range Reimbursement Scenario) to as much as \$2,005,531,187 (90.1%) (High Range Reimbursement Scenario) of the costs of the most expensive \$2.2 billion GDU Water Supply Replacement Pipeline option. Of course, for those options that are used, the State would be required to repay only for the portion of the total capacity utilized during the time they actually are used, and for options that are not used, the State would be required to repay nothing at all. Clearly, neither the State nor the Secretary nor the Congress can make informed decision on Red River Valley Water Supply Project options under those circumstances.

It also is relevant to note that Subparagraph 8(a)(3)(B) of the Dakota Water Resources Act specifies that:

“No project feature or features that would provide water from the Missouri River or its tributaries to the Sheyenne River water supply and release facility or from the Missouri River or its tributaries to such other conveyance facility as the Secretary selects under this section shall be constructed unless such feature is specifically authorized by an Act of Congress approved subsequent to the Secretary’s transmittal of the report required in subparagraph (A). If, after complying with subsections (b) through (d) of this section [dealing with the Red River Valley Water Supply Study, the Environmental Impact Statement for the Red River Valley Water Supply Project, and the process for selection of an alternative by the Secretary], the Secretary selects a feature or features using only in-basin sources of water to meet the water needs of the Red River Valley identified in

Responses to the National Wildlife Federation

Response to Comment 28

Reclamation disagrees with the statement about the ambiguity of the repayment provisions of the DWRA. The financial analysis in Appendix C, Attachment 11 clarifies the repayment provisions based on Reclamation's interpretation of DWRA.

subsection (b), such features are authorized without further Act of Congress. The Act of Congress referred to in this subparagraph must be an authorization bill, and shall not be a bill making appropriations.” (Emphasis added)

Although Subparagraph 8(a)(3)(B) states that construction of an in-basin Red River Valley Water Supply Project would be “authorized without further Act of Congress,” because the costs of all of the Red River Valley Water Supply Project options identified in the *Draft Report on Red River Valley Water Needs and Options* exceed the appropriations authorized by the Dakota Water Resources Act for such a project, additional appropriations to cover the full costs would have to be authorized, and under Subparagraph 8(a)(3)(B), that authorization would have to be in an authorization bill and not in an appropriations bill.

Because project costs will be a major consideration for the Secretary, the State and the affected local communities in the selection of a Red River Water Supply Project option, and because the funding and reimbursement provisions for a Red River Valley Water Supply Project under the Dakota Water Resources Act of 2000 are so uncertain, the Bureau of Reclamation has a clear and inescapable obligation to include in the Final Red River Valley Water Needs and Options Report to be prepared by the Secretary and transmitted to the Congress under Dakota Water Resources Act Paragraph 8(b)(3) a comprehensive and detailed analysis of the funding and reimbursement requirements of each option identified in the report. A formal request for such an analysis is hereby incorporated in this review.

Responses to the National Wildlife Federation

Response to Comment 29

This is incorrect. Nearly \$680 million could be made available from the various programs under GDU (see response to comment 23). If the State seeks an increase in the cost ceiling for an in-basin option, it could be through an appropriations or authorization bill. Furthermore, if federal funding would fall short for the proposed Project, the Lake Agassiz Water Authority or the state could finance an in-basin option without further federal legislation.

Our financial analysis assumes that the Project sponsors would use the \$250 million in reimbursable GDU funds with the remainder locally financed. The only non-reimbursable cost would be for biota treatment.

Response to Comment 30

A comprehensive and detailed analysis of the funding and reimbursement requirements for each option is in the Final Needs and Options Report, Appendix C, Attachment 11.

REFERENCES

- Anonymous. 1972. Rumbblings on the Ditch. North Dakota Union Farmer, Vol. 18, No. 10, pp. 4-18. Farmers Educational and Cooperative of America, North Dakota, Division, Jamestown, North Dakota.
- Anonymous. 1976. 50 Canadian, U. S. Scientists on Garrison Joint Commission. The Jamestown Sun. Jamestown, North Dakota. February 7.
- Anonymous. 1980. More favor halting Garrison. The Jamestown Sun. Jamestown, North Dakota. February 7.
- Anonymous. 1988. Swampbuster Controversy Erupts in N. Dak. Land Letter. The Conservation Fund, Arlington, Virginia. Vol. 7, No. 1, January 1.
- Anonymous. 1990. Burdick happy about funding. The Jamestown Sun. Jamestown, North Dakota. October 13.
- Anonymous. 1992. Initiated Measures Results. The Bismarck Tribune. Bismarck, North Dakota. November 4.
- Anonymous. 1996. Garrison Diversion Project Completion Act of 1996. Working Draft, August 26.
- Anonymous. 1997. Summary of Garrison Discussions, Feb. 24, 1997, Washington, D. C. 1 p.
- Anonymous. 2001a. Red River Study Management Team Minutes. January 30. 4 pp.
- Anonymous. 2001b. Red River Study Management Team Minutes. March 23. 8 pp.
- Associated Press. 1975. IJC to Study Garrison Issue. The Forum. Fargo, North Dakota. September 5.
- Associated Press. 1977a. Carter Cuts Garrison Funds From Budget. The Jamestown Sun. Jamestown, North Dakota. February 19.
- Associated Press. 1977b. Administration Plans Water Project Review. The Jamestown Sun. Jamestown, North Dakota. March 25.
- Associated Press. 1984. Congress Asked to Defer Spending. The Jamestown Sun. Jamestown, North Dakota. May 15.
- Associated Press. 1987a. Major water projects targeted for delay. The Jamestown Sun. Jamestown, North Dakota. January 30.
- Associated Press. 1987b. WEB, Garrison benefit from Congress' victory. Aberdeen American News. Aberdeen, South Dakota. December 23.

- Associated Press. 1997. Name change urged. Conrad wants new title for Garrison Diversion Project. The Bismarck Tribune. Bismarck, North Dakota. August 28.
- Associated Press. 1991a. Sinner forms water group. The Jamestown Sun. Jamestown, North Dakota. April 27.
- Associated Press. 1991b. Water task force proposes taxation for state projects. The Jamestown Sun. Jamestown, North Dakota. August 16.
- Associated Press. 1991c. Group pushes for sales tax for water projects. The Jamestown Sun. Jamestown, North Dakota. December 6.
- Associated Press. 2000. Senate passes compromise Garrison bill. The Jamestown Sun. Jamestown, North Dakota. October 14.
- Associated Press. 2003. State's population decline maybe bottoming out, expert says. The Jamestown Sun. Jamestown, North Dakota. April 17.
- Associated Press. 2004. North Dakota gains population. The Jamestown Sun. Jamestown, North Dakota. December 22.
- Associated Press. 2005. Cropland values show biggest increase in nearly 30 years. The Jamestown Sun. Jamestown, North Dakota. April 9.
- Baenen, Jeff. 1977a. State Officials Rally Support for Garrison. The Jamestown Sun. Jamestown, North Dakota. March 22.
- Baenen, Jeff. 1977b. Oppositions' Arguments Heard in Garrison Session. The Jamestown Sun. Jamestown, North Dakota. March 23.
- Bangsund, D. A. and F. L. Leistritz. 2004. Industrial Water Needs Assessment for the Red River Valley Water Supply Project. Final Contract Report. Prepared for Garrison Diversion Conservancy District, Carrington, North Dakota. Department of Agribusiness and Applied Economics, North Dakota State University. Fargo, North Dakota.
- Bohrer, Becky. 1999. Legislators target irrigation districts to help dry farmland. The Forum. Fargo, North Dakota. February 7.
- Beard, Daniel P. 1999. Testimony of Daniel P. Beard, National Audubon Society, Before the Subcommittee on Water and Power, U. S. Senate, Committee on Energy and Natural Resources, S. 632 – "Dakota Water Resources Act of 1999." May 27. 4 pp.
- Beard, Daniel P., David R. Conrad, Dave Morgan and Mark Ten Eyke. 2002. Letter to Regional Director, Bureau of Reclamation, Great Plains Region, Billings, Montana, from Chief Operating Officer, National Audubon Society, Water Resources Specialist, National Wildlife Federation, Executive Board Member, Minnesota Conservation Federation, and Senior Attorney, Minnesota Center for Environmental Advocacy, Re: Comments on Scope of Issues for EIS regarding Alternatives for Meeting Water Needs in the Red River Valley. December 16. 7 pp.
- Brasher, Phillip. 1990a. State leaders say budget a 'bomb.' The Jamestown Sun. Jamestown,

North Dakota. January 30.

- Brasher, Phillip. 1990b. Garrison outlook improves. *The Forum*. Fargo, North Dakota. March 29.
- Brasher, Phillip. 1997. Lawmakers introduce Garrison overhaul after making concessions. *The Jamestown Sun*. Jamestown, North Dakota. November 11.
- Brasher, Phillip. 1998a. Cost estimates force delay in Garrison hearing. *The Jamestown Sun*. Jamestown, North Dakota. March 30.
- Brasher, Phillip. 1998b. Administration softens Garrison stance. *The Forum*. Fargo, North Dakota. September 30.
- Brasher, Phillip. 1998c. Officials pressed to cut Garrison plan. New project would focus on supplying drinking water to eastern N. D. *The Forum*. Fargo, North Dakota. September 30.
- Brietzman, Dennis E. Undated. Subject: Public Review of the *Report on Red River Valley Water Needs and Options*. United States Department of the Interior, Bureau of Reclamation, Dakotas Area Office, Bismarck, North Dakota.
- Bureau of Reclamation. 1957. Report on Garrison Diversion Unit, Garrison Diversion, North Dakota, South Dakota, Missouri Basin Project. U. S. Department of the Interior, Bureau of Reclamation Region 6, Missouri-Souris Projects Office, Bismarck, North Dakota. 88 pp.
- Bureau of Reclamation. 1962 (Revised 1965). Supplemental Report on Garrison Diversion Unit (Initial Stage – 250,000 Acres), Garrison Diversion, North Dakota – South Dakota, Missouri River Basin Project. U. S. Department of the Interior, Missouri-Souris Projects Office, Bismarck, North Dakota. 48 pp.
- Bureau of Reclamation. 1973. Draft Environmental Statement, Initial Stage, Garrison Diversion Unit, Pick-Sloan Missouri Basin Program, North Dakota. Department of the Interior.
- Bureau of Reclamation. 1974. Final Environmental Statement, Initial Stage, Garrison Diversion Unit, Pick-Sloan Missouri Basin Program, North Dakota. U. S. Department of the Interior, INT FES 74-3.
- Bureau of Reclamation. 1983. Draft Supplemental Environmental Statement on Features of the Garrison Diversion Unit for Initial Development of 85,000 acres, Garrison Diversion, Pick-Sloan Missouri Basin Program – North Dakota. Department of the Interior DES 83-14.
- Bureau of Reclamation. 1987. Draft Supplement to the Supplemental Environmental Statement, Garrison Diversion Unit, Pick-Sloan Missouri Basin Program – North Dakota. Department of the Interior. DES 86-51.
- Bureau of Reclamation. 1996. Overview of Pick-Sloan Missouri Basin Program (P-SMBP) Benefits. Summary of information contained in the Crops of Engineers' Missouri River Draft Environmental Impact Statement, July, 1994.

- Bureau of Reclamation. 1997. Review of GDU Legislation, USBR Technical Team. 11 pp.
- Bureau of Reclamation. 1998. Red River Valley Water Needs Assessment, Phase I, Part A; MR&I Appraisal Report. United States Department of the Interior. 138 pp. w/Attach.
- Bureau of Reclamation. 2000a. Red River Valley Water Needs Assessment Phase II: Appraisal of Alternatives to Meet Projected Shortages Draft Report. United States Department of the Interior.
- Bureau of Reclamation. 2000b. Red River Valley Water Needs Assessment, Phase II: Appraisal of Alternatives to Meet Projected Shortages, Addendum: Responses to Comments on the Draft Report. United States Department of the Interior.
- Bureau of Reclamation. 2001. Finding of No Significant Impact for the Northwest Area Water Supply Project in North Dakota. Great Plains Regional Office, Dakota Areas Office, Bismarck, North Dakota. FONSI No. DK-600-97-03.
- Bureau of Reclamation. 2003. Current and Future Population, Red River Valley Region 2000 Through 2050. Final Report. Red River Valley Water Supply Project. 19 pp.
- Bureau of Reclamation. 2004a. Water Conservation Potential Assessment. Final Report. Red River Valley Water Supply Project Needs and Options. U. S. Department of the Interior, Dakotas Area Office.
- Bureau of Reclamation. 2004b. Assessment of Commercial Needs, Future Business and Industrial Activity in the Red River Valley. Final Report. Report on Red River Valley Water Supply Project Needs and Options. U. S. Department of the Interior, Dakotas Area Office.
- Bureau of Sport Fisheries and Wildlife. 1960. A Plan for Fish and Wildlife Resources of the Oahe Reservoir, North Dakota and South Dakota. Report Prepared by the Bureau of Sport Fisheries and Wildlife, Missouri Basin Studies, Billings, Montana, in Cooperation with the North Dakota Game and Fish Department and the South Dakota Department of Game, Fish and Parks. U. S. Department of the interior, Fish and Wildlife Service, Minneapolis, Minnesota.
- Canadian Embassy. 1973. Diplomatic Note No. 432. October 23. 3 pp.
- Collin, Andrea W. 2001. Congressional authorization of DWRA a significant chapter for North Dakota water. North Dakota Water. North Dakota Water Education Foundation, Bismarck, North Dakota. Vol. 9, Issue 1, January, p. 4.
- Committee on Government Operations. 1976. A Review of the Environmental, Economic, and International Aspects of the Garrison Diversion Unit, North Dakota. House of Representatives, 94th Congress, 2nd Session, Report No. 94-1335. 161 pp.
- Condon, Patrick. 1997. Panel approves \$5 million for Devils Lake outlet. The Forum. Fargo, North Dakota. September 26.
- Cooper, Vernon S. 1955. Statement to Senate Committee on Natural Resources, 34th Legislative

- Assembly, State of North Dakota, by Secretary, Missouri-Souris Conservancy and Reclamation Committee. 4 pp.
- Conrad, Kent. 2000. Garrison: keeping the promise. The Jamestown Sun. Jamestown, North Dakota. December 20.
- Conrad, Kent. 2001. "Victory." North Dakota Water. North Dakota Water Education Foundation, Bismarck, North Dakota. Vol. 9, Issue 1, January, pp. 5-7.
- Crawford, Ellen. 1998. Valley leaders line up to tap Missouri. The Forum. Fargo, North Dakota. February 20.
- Davis, Don. 1996. Hearing emphasizes Garrison hurdles. The Bismarck Tribune. Bismarck, North Dakota. December 20.
- Davis, Don. 1997a. Pipe dream? Garrison talks reveal divisions. The Bismarck Tribune, Bismarck, North Dakota. February 4.
- Davis, Don. 1997b. Garrison talks bring 'progress.' The Bismarck Tribune. Bismarck, North Dakota. February 25.
- Davis, Don. 1997 c. N.D. Senators push for emergency inlet. The Bismarck Tribune. Bismarck, North Dakota. September 11.
- DeLage, Jamie. 2000. GARRISON DIVERSION: Project tucked into health bill. The Grand Forks Herald. Grand Forks, North Dakota. December 16.
- Doemel, Nancy J. and Lynton K. Caldwell. 1980. The Garrison Diversion Unit: Science, Technology, politics, and values. Advanced Studies in Science, Technology and Public Policy. Indiana University, Bloomington, Indiana. 238 pp.
- Dorgan, Byron L. 1998. Testimony of Senator Byron L. Dorgan, House Resources Committee, Subcommittee on Water and Power. September 29. 5 pp.
- Dorgan, Byron L., Kent Conrad and Earl Pomeroy. 1994. Letter to Michael Whittington, Area Manager, Bureau of Reclamation, Bismarck, North Dakota. May 12. 2 pp.
- Dryer, Pam. 1993. Memorandum to Interested Parties regarding Wetlands Trust Corporate Farm Law Change. February 9. 1 p. w/Attach.
- Dryer, Pam. 1998. Letter from Executive Director, North Dakota Wetlands Trust, Bismarck, North Dakota, to Gary Pearson, Jamestown, North Dakota. May 14. 1 p.
- Environmental Impact Assessment Project. 1975. A Scientific and Policy Review of the Final Environmental Statement for the Initial Stage, Garrison Diversion Unit [North Dakota]. Gary L. Pearson, Walter L. Pomeroy, Glen A. Sherwood and John S. Winder, Editors. The Institute of Ecology, Washington, D. C. 97 pp.
- Faanes, Craig. 1982. Avian Use of Sheyenne Lake and Associated Habitats in Central North Dakota. U. S. Department of the Interior, Fish and Wildlife Service, Resource Publication 144. Washington, D. C. 97 pp.

Fish and Wildlife Service. 1952. A Report on Development of Wildlife and Fishery Resources for Garrison Reservoir, North Dakota. U. S. Department of the Interior, Billings, Montana.

Fish and Wildlife Service. 1978. Analysis of Effects and Methods of Compensation for the Impacts of the Garrison Diversion Unit Alternatives on Wildlife. U. S. Department of the Interior. 280 pp.

Flagstad, Carl. 1984a. Garrison Study To Delay Funds, Audubon, Senators Seek Compromise. The Minot Daily News. Minot, North Dakota. June 7.

Flagstad, Carl. 1984b. Andrews Says Project Can Stand Scrutiny. The Minot Daily News. Minot, North Dakota. June 7.

Flagstad, Carl. 1984c. Commission To Study Overall Water Needs. The Minot Daily News. Minot, North Dakota. June 8.

Flagstad, Carl. 1984c. Burdick, Conservancy District Kept in Dark on Agreement? The Minot Daily News. Minot, North Dakota. June 11.

Fredrickson, Fred J. 1953. Notes of the meeting with the Missouri-Souris Group in Minot, North Dakota, October 9, 1953. North Dakota Resources Board (Affiliated with the Greater North Dakota Association). 3 pp.

Frink, Dale L. 2005. Letter from North Dakota State Engineer to Gary L. Pearson. September 19. 2 pp. w/Attach.

Garrison Diversion Conservancy District. 1985. Lonetree Reservoir urged by district. Diversion Digest Vol. 12, No. 8, pp. 1-3. Garrison Diversion Conservancy District, Carrington, North Dakota.

Garrison Diversion Conservancy District. 1987. Mid-Dakota Reservoir Development Plan. Diversion Digest Vol. 16, No. 1, p. 6. Garrison Diversion Conservancy District, Carrington, North Dakota.

Garrison Diversion Conservancy District. 1992. Mid Dakota/Sheyenne Lake Development Plan. Proposed by the State of North Dakota and the Garrison Diversion Conservancy District. 21 pp.

Garrison Diversion Unit Commission. 1984. Final Report to the Secretary of the Interior, Senate Committee on Energy and Natural Resources, Senate Committee on Appropriations, House Committee on Interior and Insular Affairs, House Committee on Appropriations In Accordance with Public Law 98-360, Section 207. 59 pp.

Garrison Diversion Unit Task Group. 1990. Garrison Diversion Unit Task Group Report. 42 pp.

Gerbert, Chet. 1983. Garrison Diversion Project to face its stiffest test in 1984. The Forum. Fargo, North Dakota. November 27.

- Gorton, Richard D. 1984. Letter from Chief, Environmental Analysis Branch, Planning Division, Department of the Army, Corps of Engineers, Omaha, Nebraska, to Gary Pearson, Jamestown, North Dakota. October 15. 1 p. w/Attach.
- Haak, Norman. 1998. Testimony of Norman Haak, Chairman, Garrison Diversion Conservancy District, Submitted to the United States Senate Committee on Natural Resources, Subcommittee on Water and Power on Senate Bill 1515, Dakota Water Resources Act of 1998.
- Haak, Norman. 1999. Testimony of Norma Haak, Chairman, Garrison Diversion Conservancy District, U. S. Senate Committee on Energy and Natural Resources, Subcommittee on Water and Power, S. 623 – “Dakota Water Resources Act of 1999.” May 27. 5 pp.
- Hoetzer, Steve. 1992. Mid-Dakota: “The Missing Link.” *The Oxbow* Vol. 12, No. 1, pp. 20-23. North Dakota State Water Commission, Bismarck, North Dakota.
- Houston Engineering, Inc., American Engineering, P.C., Montgomery Watson, and Bluestem Incorporated. 2001. NAWS 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. 154 pp.
- International Joint Commission. 1977. Transboundary Implications of the Garrison Diversion Unit. An IJC Report to the Governments of Canada and the United States. 153 pp.
- Jamison, Warren. 2000. Garrison Diversion Project Update and Aquatic Resources Opportunities. Dakota Chapter of the American Fisheries Society. March 1. 4 pp.
- Jamison, Warren, Richard McCabe and Jerry Schaack. 2001. Transbasin Aspects of the Garrison Diversion Project. 12 pp.
- Knutson, Jonathan. 2005. F-M area breaking forecasts. *The Forum*. Fargo, North Dakota. February 20.
- Kolpack, Dave. 2003. Census shows growth only in four larger N.D. cities. *The Jamestown Sun*. Jamestown, North Dakota. July 10.
- Lambrecht, Bill. 2001. Missouri compromisers forced diversion project into meandering route. *St. Louis Post-Dispatch*, Washington Bureau. June 3.
- Lambrecht, Bill. 2005. *Big Muddy Blues – True Tales and Twisted Politics Along Lewis and Clark’s Missouri River*. Thomas Dunne Books, St. Martin’s Press, New York. 324 pp.
- Maddaus, William O. 2004. Letter to Bureau of Reclamation, Attn. Dean Karsky, P. O. Box 1017, Bismarck, North Dakota. Comments on Red River Water Conservation Potential Assessment. Maddaus Water Management, Alamo, California. March 23. 6 pp.
- Martinez, Eulid L. 1998. Statement of Eulid L. Martinez, Commissioner, U. S. Bureau of Reclamation, Department of the Interior, before the Subcommittee on Water and Power, Committee on Energy and Natural Resources, U. S. Senate. July 14, 1998. 12 pp.

- McDonald, J. William. 1997. The Upper Basins' political conundrum: A deal is not a deal. Prepared for the Western Water Policy Review Advisory Commission. 40 pp.
- Meridian Environmental Technology Inc. 2004. Drought Frequency Investigations of the Red River of the North Basin. Red River Valley Climate Study, Presented to the United States Bureau of Reclamation, Bismarck, North Dakota. Meridian Environmental Technology Inc., Grand Forks, North Dakota. 66 pp.
- Meyer, Richard E. 1977. President Flip-Flops Water Project Strategy. The Jamestown Sun. March 23.
- Murry, C. Emerson. 1987. Commentary. Diversion Digest Vol. 17, No. 7, pp. 4-5. Garrison Diversion Conservancy District, Carrington, North Dakota.
- North Dakota Legislative Assembly. 1949. Missouri-Souris Conservancy and Reclamation District. Senate Bill No. 238.
- North Dakota State Water Commission and State Engineer, North Dakota Game and Fish Department, Garrison Diversion Conservancy District and North Dakota State Health and Consolidated Laboratories Department. 1990. Summary, Devils Lake Briefing Report. 18 pp.
- North Dakota Water Education Foundation. 2003. North Dakota Water Resources. Map Prepared by North Dakota Water Commission. North Dakota Water, Vol. 11, Special Issue 2003, Irrigation Issue. Pp. 10-11.
- Pates, Mikkil. 1984. Compromise on Garrison hailed as 'breakthrough.' The Forum. Fargo, North Dakota. June 8.
- Pearson, Gary L. 1992. A Review of the Mid Dakota/Sheyenne Lake Development Plan Proposed by the State of North Dakota and the Garrison Diversion Conservancy District. Prepared for the National Audubon Society and the National Wildlife Federation. 95 pp.
- Pearson, Gary L. 1996. Water Resource Issues in North Dakota: Lessons from History. Presented at the North Dakota Chapter of The Wildlife Society Annual Meeting, Grand Forks, North Dakota. February 7.
- Pearson, Gary L. 1998. The Dakota Water Resources Act of 1998: Retrofitting a 19th Century Dream to 21st Century Reality. North Dakota Water Issues: Big Decisions and Big Impacts, Debate: Dakota Water Resources Act (Missouri River Diversion). North Dakota Chapter of the Soil and Water Conservation Society Annual Meeting, Jamestown, North Dakota. December 3.
- Pearson, Gary L. 2002a. Letter to Dennis E. Britzman, Dakotas Area Office, U. S. Bureau of Reclamation, Bismarck, North Dakota. January 5. 9 pp.
- Pearson, Gary L. 2000b. Letter (via email) to Karl Wirkus, Deputy Regional Director, Great Plains Region, U. S. Bureau of Reclamation, Billings, Montana. October 7. 5 p.

- Pearson, Gary L. 2003. Letter (via email) to Maryanne C. Bach, Regional Director, Great Plains Region, U. S. Bureau of Reclamation, Billings, Montana. February 6. 5 pp.
- Pearson, Gary L. 2005. Letter to Michael J. Ryan, Regional Director, Great Plains Region, U. S. Bureau of Reclamation, Billings, Montana. July 26. 5 pp.
- Robinson, Elwyn B. 1966. History of North Dakota. University of Nebraska Press, Lincoln, Nebraska. 599 pp.
- Russakoff, Dale. 1984. Compromise to Allow Action on \$1.2 Billion Federal Water Project. The Washington Post. Washington, D. C. June 7.
- Schafer, Edward T. 1994. Letter from the Governor of the State of North Dakota to Mike Whittington, Area Manager, U. S. Bureau of Reclamation, Bismarck, North Dakota. January 18. 3 pp.
- Schafer, Edward T., Kent Conrad, Byron Dorgan and Earl Pomeroy. 1993. Letter to Bruce Babbitt, Secretary, U. S. Department of the Interior. November 12. 2 pp.
- Shafer, Edward T., Gary J. Nelson and John Dorso. 1997. Letters to Byron L. Dorgan, United States Senate, Kent Conrad, United States Senate, and Earl Pomeroy, United States House of Representatives. September 26.
- Springer, Patrick. 1992a. Mid-Dakota Reservoir rejected. The Forum. Fargo, North Dakota. June 20.
- Springer, Patrick. 1992b. 'What's in it for me?' key to water tax. Voters must decide if Garrison benefits will trickle down. The Forum. Fargo, North Dakota. October 25.
- Springer, Patrick. 2005a. 2050 water bill: \$500M to \$2.5B. The Forum. Fargo, North Dakota. May 11.
- Springer, Patrick. 2005b. Team effort springs a leak. The Forum. Fargo, North Dakota. August 8.
- Springer, Patrick. 2005c. Reservoir shrinks as drought drags on. The Forum. Fargo, North Dakota. June 27.
- Sprynczynatyk, David A., Vernon Fahy, C. Emerson Murry and Dale Frink. 1991. Governor's Water Strategy Task Force Subcommittee on Program Costs. 8 pp.
- Tribune News Service. 1977. Joint panel: Delay parts of Garrison. The Minneapolis Tribune. Minneapolis, Minnesota. September 17.
- U. S. Army Corps of Engineers. 2003. Final Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement. St. Paul District.
- U. S. Department of the Interior. 1944. Missouri River Basin, Conservation, Control and Use of Water Resources of the Missouri River Basin in Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Iowa, and Missouri. Report by Secretary of the Interior Harold L. Ickes on the Bureau of Reclamation's Plan for Basin Development.

78th Congress, 2nd Session, Senate Document No. 191. United States Government Printing Office. Washington, D. C. 211 pp.

- U. S. Department of the Interior. 1979. Final Comprehensive Supplementary Environmental Statement. Garrison Diversion Unit, Pick-Sloan Missouri Basin Program, North Dakota. Department of the Interior INT FES 79-7.
- VanDevelder, Paul. 2004. Coyote Warrior. Little, Brown and Company, New York and Boston. 321 pp.
- Wecklerly, Tessa. 2005. Lake Agassiz Water Authority: Planning for Tomorrow's Water. North Dakota Water, Vol. 13, Issue 7, September, pp. 25-28
- Wetzel, Dale. 1990. Bush hits Garrison with 'stealth.' The Jamestown Sun. Jamestown, North Dakota. November 14.
- Wetzel, Dale. 1995. Senate junks wetlands law. The Bismarck Tribune. Bismarck, North Dakota. March 25.
- Wetzel, Dale. 1999. Agreement near on water projects. The Forum. Fargo, North Dakota. April 11.
- Whalen, Kevin. 1984. Andrews: I will try to get Lonetree back. The Bismarck Tribune. Bismarck, North Dakota. December 6.
- Whittington, Mike. 1993. Letter from Area Manager, U. S. Department of the Interior, Bureau of Reclamation, to Gary Pearson, Jamestown, North Dakota. 2 pp. w/Attach.