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MISSOURI RIVER ISSUES STUDY - BACKGROUND MEMORANDUM

Senate Concurrent Resolution No. 4027 (attached as an appendix) directs the Legislative Council to study issues related to the Missouri River in North Dakota. The resolution essentially identifies four areas of study, i.e., Missouri River streambank erosion and bank stabilization; the Pick-Sloan Missouri Basin program; the United States Army Corps of Engineers' master manual; and land and natural resource issues, water management, land use, and development of a long-range vision for the Missouri River in North Dakota. The resolution also directs that the Legislative Council in conducting this study seek input from the Missouri River Coordinated Resource Management Program and the United States Army Corps of Engineers. The legislative history of Senate Concurrent Resolution No. 4027 reveals that the primary concern of the proponents of the resolution is Missouri River streambank erosion and bank stabilization.

The 1999 state water management plan developed by the State Water Commission notes that nearly 96 percent of North Dakota's surface water is located in the Missouri River and its reservoirs. Lake Sakakawea and Lake Oahe account for approximately 97 percent of all available water storage. Following the Garrison Diversion Reformulation Act of 1986, the state was assigned 1.9 million acre-feet of the original 3.1 million acre-feet permitted for the Garrison Diversion project. The state's permit is based on 1986 estimations of approximately 1.5 million acre-feet for potential irrigation, 36,000 acre-feet for municipal, rural, and industrial water uses, 200,000 acre-feet for recreation, and 231,000 acre-feet in other requirements. The plan notes that the greatest opportunities for the development of Missouri River water are irrigation and municipal, industrial, and rural water supply.

MISSOURI RIVER STREAMBANK EROSION AND BANK STABILIZATION

In a March 1988 General Accounting Office briefing report entitled *Evaluation of Erosion Problems on Upper Missouri River*, the General Accounting Office discusses streambank erosion problems concerning the Corps of Engineers' six dams and lakes located on the Upper Missouri River in Montana, North Dakota, South Dakota, and Nebraska. This report notes that the Corps of Engineers built and operates six dams and lakes on the Upper Missouri River in Montana, North Dakota, South Dakota, and Nebraska. Congress authorized the Fort Peck Dam and lake under provisions of the Public Works

Administration Act of 1933, and this dam was completed under the Rivers and Harbors Act of 1935. The Garrison, Oahe, Big Bend, Fort Randall, and Gavins Point projects were authorized by the Flood Control Act of 1944. The authorized purposes of these dams and lakes include flood control, hydro-power, irrigation, and navigation. These projects also provide municipal and industrial water supply, sanitation, fish and wildlife conservation, and recreation.

The report notes that construction of the six dams and lakes on the Upper Missouri River began in 1933 with the Fort Peck project and ended in 1965 with the completion of the Big Bend project. The Garrison Dam project was started in 1947, and the dam was completed in 1954. The six dams and lakes were designated the Pick-Sloan Missouri Basin program in 1970.

The report notes that in 1982 the corps estimated that since completion, its projects have prevented more than \$1.7 billion in flood damage. In addition, the Department of the Interior estimated that the projects have produced more than \$1.4 billion from sales of hydroelectric power, allow for a steady increase in barge traffic, and provide recreation for millions of people. Irrigation benefits, however, were considerably less than planned. Over 3.5 million acres were planned for irrigation development, but only about 394,000 acres have been irrigated.

Concerning erosion problems, the report notes that bank erosion occurs to some extent on practically all streams in the Missouri River Basin. According to corps studies, the predominate factors causing bank erosion are channel meander, varied streamflow rates, channel restriction, and wave action. Other general causes are high sand content of the soil, saturated banks, and the freeze-thaw winter periods.

The report notes that before construction of the dams and lakes, the Upper Missouri River had a wide variation of seasonal flows. Typically, a spring rise in flow began in late March or early April when snow cover melted and spring rains came. Flows were low in the summer and through early autumn. From December to February, ice may cover the river as far south as Kansas City, Missouri. The dams regulate releases to meet system requirements such as flood control and navigation.

The report notes that since completion of the dams and lakes on the Missouri River, the corps has evaluated the streambank problems below the dams. In 1987 the corps identified a total of 192 erosion sites on the 375-mile stretch that would require an

estimated \$103.6 million to protect. Finally, this report notes the corps has reported that out of nearly 3.5 million miles of rivers and streams nationwide, approximately 142,000 bank-miles have severe erosion problems and need protection. The corps estimated the cost to protect these banks from erosion in 1981 at \$1 billion annually. The corps has reported that the cost of bank protection structures generally exceed by a large margin the benefits to be derived.

In a report entitled *Upper Missouri River Bank Erosion Montana and North Dakota* prepared in April 1991, it is noted that since the completion of the Missouri River main stem reservoirs, the net loss of highly valued lands along the river in the upper basin states has increased substantially. The loss of these lands has adversely impacted landowners, local and state governments, Indian reservations, recreation, wildlife, and the environment. This report notes that in addition to streambank erosion, delta formation is an increasing problem. As soil eroded from the riverbanks settles out of the water in the upstream reaches of the reservoirs, deltas are formed. These deltas reduce storage areas in the reservoirs, raise the water table of adjacent land, and can cause ice jams and flooding during the fall freeze and the spring thaw. Currently, deltas are being formed south of Bismarck where the Missouri River drops sediment as it enters Lake Oahe and near Williston where the Missouri River drops sediment as it enters Lake Sakakawea. This report concludes that the states in the upper basin of the Missouri River have and are continuing to experience a net loss of land due to bank erosion along the river and identifies the reservoirs built and operated by the Corps of Engineers as the primary cause of the erosion due to the discharge of clear water, fluctuations of flow rate, and the elimination of the rebuilding of high valley lands.

A report entitled *Missouri River Bank Erosion Garrison Dam to Lake Oahe*, prepared by the State Water Commission in December 1997, provides a rated listing of Missouri River bank erosion sites and documentation of the process used to create the list as well as cost estimates and justification to protect the erosion sites. This report states that bank erosion along the Missouri River has been a continuing problem since closure of the main stem reservoirs. Since completion of the Missouri River main stem reservoirs, the building process of high floodwater of the past is now nonexistent, halting the rebuilding of bottom lands. Only low sandbars reaching the upper levels of the currently fluctuating river are formed. Therefore, the report notes, the present bank erosion results in the permanent destruction of bottom lands, widening of the riverbed, and a continuing net loss of land. This report also notes that soil eroded from the banks settles out of the water in the upstream regions of the reservoirs forming deltas. Reducing the erosion

rates would reduce delta formation. Finally, this report notes that bank erosion along the Missouri River continues to cause problems. This report quotes the Corps of Engineers as stating that bank erosion, unless halted, will gradually transform the present river into a wide area of sandbars, channels, and islands occupying most of the valley floor between bluffs, and will make boating, fishing, and withdrawal of water for off-river uses almost impossible.

This report concludes that the total estimated cost for reinforced revetment for all sites is \$13,640,000 and notes that bank erosion along the Missouri River continues to cause personal and business income losses, property tax revenue losses, irrigation pump site losses, natural hardwood forest losses, delta formation, and associated impacts to adjacent land. The report concludes by noting that these losses will continue to mount until the Corps of Engineers mitigates the impacts being caused by the operation of Garrison Dam as directed in Section 33 of the Water Resources Development Act of 1988. Section 33 of the Water Resources Development Act of 1988 provides that "the Secretary of the Army is directed to undertake such measures, including maintenance and rehabilitation of existing structures, which the Secretary determines are needed to alleviate bank erosion and related problems associated with reservoir releases along the Missouri River between Fort Peck Dam, Montana, and a point 58 miles downstream of Gavins Point Dam, South Dakota, and Nebraska. The cost of such measures may not exceed \$3,000,000 per fiscal year. Notwithstanding any other provisions of law, the costs of these measures, including the costs of necessary real estate interests and structural features, shall be apportioned among project proposes (sic) as a joint-use operation and maintenance expense. In lieu of structural measures, the Secretary may acquire interests in affected areas, as the Secretary deems appropriate, from willing sellers."

EXAMINATION OF THE PICK-SLOAN MISSOURI BASIN PROGRAM

The Garrison Diversion Unit is one of the principal developments of the Pick-Sloan Missouri River Basin program, a multipurpose program authorized by the federal Flood Control Act of 1944 (Pub. L. 78-534; 57 Stat. 887). The Pick-Sloan plan provided for construction of a series of dams on the Missouri River to control flooding, provide power generation, and maintain a dependable water supply for irrigation, municipalities, industry, recreation, wildlife habitat, and navigation. Approximately 550,000 acres of land in the state were inundated by reservoirs on the Missouri River under the Pick-Sloan plan.

One feature of the Pick-Sloan plan was the Missouri-Souris Unit, which was the forerunner of the

Garrison Diversion Unit. Under the plan for the Missouri-Souris Unit, water was to be diverted below the Fort Peck Dam in Montana and transported by canal for irrigating 1,275,000 acres; supplying municipalities in North Dakota, South Dakota, and Minnesota; restoring Devils Lake; conserving wildlife; and augmenting the Red River. The building of Garrison Dam changed the diversion point of the Missouri-Souris Unit from Fort Peck Dam to Garrison Reservoir (Lake Sakakawea). After considerable study and review of the Missouri-Souris Unit, Congress reauthorized the project as the initial stage, Garrison Diversion Unit, in August 1965 (Pub. L. 89-108; 83 Stat. 852).

Garrison Diversion Unit

The first detailed investigations of the Garrison Diversion Unit were completed in 1957 and involved a proposed development of 1,007,000 acres. The initial stage of the Garrison Diversion Unit provided for irrigation service to 250,000 acres in the state. This plan involved the construction of major supply works to transfer water from the Missouri River to the Souris, James, and Sheyenne Rivers and the Devils Lake Basin. The plan also anticipated water service to 14 cities, provided for several recreation areas, and provided for a 146,530-acre wildlife plan to mitigate wildlife habitat losses resulting from project construction and to enhance other wetland and waterfowl production areas.

Under the 1965 authorization, the Snake Creek Pumping Plant would lift Missouri River water from Lake Sakakawea into Lake Audubon, an impoundment adjacent to Lake Sakakawea. From Lake Audubon the water would flow by gravity through the 73.6-mile McClusky Canal into Lonetree Reservoir, situated on the headwaters of the Sheyenne River. The Lonetree Reservoir would be created by construction of Lonetree Dam on the upper Sheyenne River, Wintering Dam on the headwaters of the Wintering River, and the James River dikes on the headwaters of the James River. Lonetree Reservoir would be situated so that water could be diverted by gravity into the Souris, Red, and James River Basins and the Devils Lake Basin.

The Velva Canal would convey project water from the Lonetree Reservoir to irrigate two areas totaling approximately 116,000 acres. The New Rockford Canal would convey project water for irrigation of approximately 21,000 acres near New Rockford and to deliver water into the James River Feeder Canal for use in the Oakes-LaMoure area. The Warwick Canal, an extension of the New Rockford Canal, would provide water for irrigation in the Warwick-McVille area and provide water for the restoration of the Devils Lake chain.

The United States Bureau of Reclamation has overall responsibility for operation and maintenance of the Garrison Diversion Unit and will operate and maintain all project works during the initial period following completion of construction.

A number of concerns have slowed or halted construction on the project in recent years, including:

1. Canadian concerns that the Garrison Diversion Unit would allow transfer of foreign species of fish and other biota to the detriment of Canadian waters in violation of the Boundary Waters Treaty of 1909.
2. Numerous problems concerning wildlife mitigation and enhancement lands.
3. Legal suits brought by groups, such as the National Audubon Society, seeking to halt construction of the Garrison Diversion Unit by claiming the project violates the National Environmental Policy Act and to enforce a stipulation between the United States and Audubon to suspend construction until Congress reauthorizes the Garrison Diversion Unit.

Canadian Concerns

Canadian interest in the Garrison Diversion Unit has centered on concerns that because the Garrison Diversion Unit involves a transfer of water from the Missouri River to the drainage basins of the Souris and Red Rivers, the return flows entering Canada through the Souris and Red Rivers would cause problems with regard to water quality and quantity.

In 1973 the Canadian government requested a moratorium on all further construction of the Garrison Diversion Unit until a mutually acceptable solution for the protection of Canadian interests under the Boundary Waters Treaty of 1909 was achieved. The United States government responded by stating its recognition of its obligations under the Boundary Waters Treaty and by adopting a policy that no construction affecting Canada would be undertaken until it was clear these obligations would be met.

During 1974 several binational meetings of officials were held to discuss and clarify Canadian concerns over potential degradation of water quality. An agreement was reached in 1975 between the governments of Canada and the United States to refer to the International Joint Commission the matter of potential pollution of boundary waters by the Garrison Diversion Unit.

The International Joint Commission created the International Garrison Diversion Study Board. The board concluded the Garrison Diversion Unit would have adverse impacts on water uses in Canada, including adverse effects on flooding and water quality. The board recommended that any direct transfer by the Garrison Diversion Unit of fish, fish

eggs, fish larvae, and fish parasites be eliminated by adopting a closed-system concept and the installation and use of a fish screen structure.

In August 1984 representatives of Canada and the United States announced a general agreement between the two governments that Phase I of the initial stage of the Garrison Diversion Unit could be constructed. Canada, however, remained firmly opposed to the construction of any features that could affect waters flowing into Canada.

Garrison Diversion Unit Commission

The water and energy appropriations bill signed on July 16, 1984, contained an agreement to establish a commission to review the Garrison Diversion Unit.

The Secretary of the Interior appointed a 12-member Garrison Diversion Unit Commission to review the Garrison Diversion Unit in North Dakota. The commission was directed to examine, review, evaluate, and make recommendations regarding the existing water needs of the state and to propose modifications to the Garrison Diversion Unit before December 31, 1984. Construction on the project was suspended from October 1 through December 31, 1984.

The commission worked under the restriction that any recommendation of the commission must be approved by at least eight of the 12 members and that should the commission fail to make recommendations as required by law, the Secretary of the Interior was authorized to proceed with construction of the Garrison Diversion Unit as designed.

Congress directed the commission to consider 11 specific areas:

1. The costs and benefits to North Dakota as a result of the Pick-Sloan Missouri Basin program.
2. The possibility for North Dakota to use Missouri River water.
3. The need to construct additional facilities to use Missouri River water.
4. Municipal and industrial water needs and the possibility for development, including quality of water and related problems.
5. The possibility of recharging ground water systems for cities and industries, as well as for irrigation.
6. The current North Dakota water plan to see if parts of the plan should be recommended for federal funding.
7. Whether the Garrison Diversion Unit can be redesigned and reformulated.
8. The institutional and tax equity issues as they relate to the authorized project and alternative proposals.
9. The financial and economic impacts of the Garrison Diversion Unit, when compared with

alternative proposals for irrigation and municipal and industrial water supply.

10. The environmental impacts of water development alternatives, compared with those of the Garrison Diversion Unit.
11. The international impacts of the water development alternatives, compared with those of the Garrison Diversion Unit.

The commission released its final report and recommendations on December 20, 1984. The commission affirmed the existence of a federal obligation to the state for its contribution to the Pick-Sloan Missouri Basin program but recommended that an alternative plan be implemented in place of the 250,000-acre initial stage of the Garrison Diversion Unit. The commission recommended the Sykeston Canal be constructed as the functional replacement for the Lonetree Dam. While the Lonetree Dam and Reservoir would remain an authorized feature of the plan, construction of that dam would be deferred pending appropriation of funds by Congress and a determination by the Secretary of the Interior that consultations with Canada were satisfactorily concluded. The commission recommended the Garrison Diversion Unit be configured to provide irrigation service to 130,940 acres in the Missouri and James River Basins instead of the initial stage 250,000-acre project. The commission also recommended the first phase of the Glover Reservoir be included as a feature of the plan in lieu of Taayer Reservoir for regulation of flows in the James River.

The commission further recommended the establishment of a municipal, rural, and industrial system for treatment and delivery of quality water to approximately 130 communities in North Dakota. A municipal and industrial water treatment plant with a capacity of 130 cubic feet per second was recommended to provide filtration and disinfection of water releases to the Sheyenne River for use in the Fargo and Grand Forks areas.

An alternate state plan for municipal water development was submitted to the Garrison Diversion Unit Commission by then Governor Olson and Governor-elect Sinner, proposing that the state would design and construct the water systems and pay 25 percent of their costs. In return, the federal government would provide up to \$200 million in nonreimbursable funds for municipal water development projects. The federal government would pay 75 percent of the construction costs of the systems with only the operation and maintenance costs borne by the cities benefited.

Garrison Diversion Unit Reformulation

Following the issuance of the commission's final report, Congress enacted the Garrison Diversion Unit Reformulation Act of 1986 (Pub. L. 99-294; 100 Stat. 433). This legislation was supported by

representatives of the state, the Garrison Diversion Conservancy District, the National Audubon Society, and the National Wildlife Federation.

The legislation addressed the James River by directing a comprehensive study of effects over the next two years during which time construction of the James River Feeder Canal, the Sykeston Canal, and any James River improvements could not be undertaken. Of the 32,000-acre New Rockford Extension included in the Garrison Diversion Unit Commission final report, 4,000 acres were transferred to the West Oakes area and 28,000 acres were authorized for development within the Missouri River Basin.

The legislation also provided for:

1. 130,940 acres of irrigation.
2. Deauthorization of the 1944 Flood Control Act and the 1965 Garrison authorization.
3. Preservation of the state's water rights claims to the Missouri River.
4. Nonreimbursement of features constructed before enactment which will no longer be employed to full capacity, to the extent of the unused capacity.
5. Acre-for-acre mitigation based on ecological equivalency rather than the 1982 mitigation plan.
6. Deauthorization of the Taayer Reservoir and purchase of the Kraft Slough for waterfowl habitat.
7. Continued authorization, but no construction, of the Lonetree Reservoir. The Sykeston Canal was mandated for construction following required engineering, operational, biological, and economic studies. The Lonetree Reservoir could be built if:
 - a. The Secretary of the Interior determines a need for the dam and reservoir;
 - b. Consultations with Canada are satisfactorily completed; and
 - c. The Secretaries of State and the Interior certify determinations to Congress and 90 days have elapsed.
8. No construction of irrigation acreage other than on the Indian reservations or the 5,000-acre Oakes Test Area until after September 30, 1990.
9. A \$200 million grant for construction of municipal and industrial water delivery systems. A \$40.5 million nonreimbursable water treatment facility to deliver 100 cubic feet per second of water to Fargo and Grand Forks was authorized. All water entering the Hudson Bay drainage system must be treated and must comply with the Boundary Waters Treaty of 1909.
10. Municipal and industrial water delivery systems for the Fort Berthold, Fort Totten, and Standing Rock Reservations.
11. Irrigation soil surveys that must include investigations for toxic or hazardous elements.
12. Federal participation in a wetlands trust to preserve, enhance, restore, and manage wetland habitat in North Dakota.

Garrison Municipal, Rural, and Industrial Water Supply Program

Included within the Garrison Diversion Unit Reformulation Act of 1986 is an authorization enabling Congress to appropriate \$200 million for the Garrison municipal, rural, and industrial water supply program. These funds are for the planning and construction of water supply facilities for municipal, rural, and industrial use throughout the state.

On July 18, 1986, the Garrison Diversion Conservancy District and the State Water Commission entered an agreement for the joint exercise of governmental powers. The agreement allows the district to use the expertise of the commission in developing and implementing the water supply program. In addition, the district was to enter an agreement with the Secretary of the Interior which designates the district as the fiscal agent for the state concerning money received and payments made to the United States for the water supply program.

On November 19, 1986, the United States and the Garrison Diversion Conservancy District entered an agreement that designates the district to act on behalf of the state in the planning and construction, as well as the operation and maintenance, of the water systems constructed pursuant to the Garrison Diversion Reformulation Act of 1986. The agreement defines the responsibilities of the United States and the district under the agreement and contains provisions concerning the work to be undertaken by the district, stipulations concerning the transfer of funds, and the procedure for reporting, accounting, and reviewing the planning and construction programs. The agreement also provides that the Southwest Pipeline Project is eligible to receive funding under this program.

Dakota Water Resources Act of 1999

The Dakota Water Resources Act of 1999 would amend the Garrison Diversion Unit Reformulation Act of 1986. The Act outlines a program to meet the water needs of North Dakota including irrigation; municipal, rural, and industrial water supply projects; fish and wildlife; recreation; flood control; augmented streamflows; and ground water recharge. The bill, as summarized on the web site of the Garrison Diversion

Conservancy District, maintains a multipurpose water project to meet the water needs of North Dakota and to compensate the state for the loss of 550,000 acres to the Garrison and Oahe reservoirs, but changes the focus of water development from large-scale irrigation to the delivery of municipal, rural, and industrial water to communities and the four Indian reservations located in North Dakota. The bill would complete the Garrison Diversion project, while enhancing wildlife habitat and water conservation in North Dakota.

Section 2 of the bill establishes the purposes of the Act to meet the water needs of North Dakota and the four Indian reservations located within the state by development of a multipurpose water project. The project would develop irrigation and municipal, rural, and industrial water systems; enhance fish and wildlife habitat; promote recreation, ground water recharge, and augmented streamflows; and assure appropriate repayment of federal funds and compliance with environmental laws and the Boundary Waters Treaty of 1909.

Section 2 of the bill also makes fish and wildlife enhancement a specific project purpose. It deletes language from the 1986 Reformulation Act directing construction of the 450 cubic feet per second James River Feeder Canal and the Sykeston Canal. It also requires the state to repay the federal government for the proportionate share of the cost of features constructed prior to the Dakota Water Resources Act that actually get used. This section also specifies that the Secretary of the Interior is responsible for the proportionate share of operation and maintenance costs attributable to unused capacity of project features. It authorizes the Secretary of the Interior to enter into necessary agreements with the state to carry out the Act. Finally, this section specifies that water may be diverted from the Missouri River drainage basin into the Hudson Bay drainage basin only after the Secretary of the Interior, after consulting the Secretary of State and the administrator of the Environmental Protection Agency, determines that the Boundary Waters Treaty of 1909 will not be violated. The assigned costs of water treatment and related facilities attributable to meeting the requirements of the Boundary Waters Treaty of 1909 continue to be nonreimbursable.

Section 3 of the bill recognizes wildlife enhancement as a project purpose and identifies those features considered enhancement features which continue to be a federal responsibility. Further, the bill requires the Secretary of the Interior to consult with the state before approving recreation areas and adds "services in kind" as a form of repayment for recreation areas consistent with current Bureau of Reclamation practice.

Existing language from Section 8 of an earlier version of the bill that deauthorized the Taayer

Reservoir and authorized the Kraft and Pickell Slough as a component of the National Wildlife Refuge System is moved to this section. This section also clarifies that the Bureau of Reclamation is authorized to acquire land in the Kraft and Pickell Slough areas through donation or exchange of land. Finally, this section deauthorizes the Lonetree Dam and Reservoir, and designates the lands as a wildlife conservation area to provide additional wildlife habitat. The intent of the term "wildlife conservation area" is that the area would not become part of the National Wildlife Refuge System but that the state would continue to manage the area as a state wildlife management area, the costs of which would be paid by the Secretary of the Interior. If the feature selected under Section 8 includes a buried pipeline between the McClusky Canal and New Rockford Canal, the bill authorizes the use of the wildlife conservation area and Sheyenne Lake National Wildlife Refuge for a route for the pipeline.

Section 4 of the bill provides that interest on repayable capital costs may only be calculated until such time as the feature is substantially complete.

Section 5 of the bill deauthorizes 60,460 acres of irrigation service areas authorized in 1986 (6,515 acres at Lincoln Valley, 2,000 acres at Harvey Pumping, 20,935 acres at New Rockford, 13,350 acres at LaMoure, 4,000 acres at West Oakes Extension, and 19,600 acres at West Oakes.) The bill retains authorization for the existing 5,000-acre Oakes Test Area, 13,700 acres at Turtle Lake, 10,000 acres at McClusky Canal, 1,200 acres of canal-side irrigation along the New Rockford Canal provided the full investment costs are repaid by the users at New Rockford without "aid-to-irrigation," and 28,000 acres in the Missouri River Basin. Prior to development of any projects in the undesignated 28,000 acres, the Secretary of the Interior must report to Congress on the costs and benefits of the proposed irrigation and the financial and engineering feasibility of the proposed unit. Compliance with the National Environmental Policy Act is also required before developing any projects. This section specifically prohibits any irrigation development authorized under the bill in the Hudson Bay-Devils Lake drainage basin. The bill also retains irrigation authorization on the Fort Berthold Indian Reservation (7,700 acres at Lucky Mound and 7,500 acres at Upper Six Mile Creek, but allows for other areas of equal acreage if approved by the tribe and Secretary of the Interior) and on the Standing Rock Sioux Reservation (2,380 acres).

Section 6 of the bill harmonizes the repayment required by power users of power from the Garrison Dam with how other power users repay capital costs for other power-generating facilities. Additionally, this section specifically prohibits any increase in power rates for Pick-Sloan program customers that would

result from any provisions in the Dakota Water Resources Act.

Section 7 of the bill maintains the 25 percent nonfederal cost-share for the municipal, rural, and industrial water supply projects developed under this section and allows the state to credit amounts that exceed the 25 percent minimum toward future cost-shares for municipal, rural, and industrial water development projects. This section also permits the state to make loans in addition to grants and requires that proceeds from repaid loans be recycled back only into the municipal, rural, and industrial water supply grant or loan program. The Southwest Pipeline Project, Northwest Area Water Supply Project, Red River Valley Water Supply Project, and other municipal, rural, and industrial water supply systems in the state are eligible.

This section also authorizes the state to develop a water conservation program and calls on the Secretary of the Interior and the state to establish water conservation goals. If the state meets the goals of the program, the 25 percent nonfederal cost-share for municipal, rural, and industrial water supply systems is reduced to 24.5 percent. This section also makes the cost of features previously constructed on the Missouri River by the Army Corps of Engineers nonreimbursable. Finally, this section maintains the authority for the Secretary of the Interior to develop municipal, rural, and industrial water supply systems on the four Indian reservations located in the state and adds adjacent areas to that authorization to permit water systems to serve tribal members living outside the reservation boundaries.

Section 8 of the bill deletes the existing authority to construct the Sykeston Canal which was to be a connecting link between the existing McClusky and New Rockford Canals, to deliver water from the Missouri River to the Red River Valley. Instead, the Dakota Water Resources Act authorizes a Red River Valley Water Supply Project and establishes a formal process of evaluating the water quantity and quality needs of the Red River Valley and the options for meeting those needs. The Secretary of the Interior and the state are to be partners in developing these studies.

The Secretary of the Interior, with the state as a partner, must complete a draft environmental impact statement within one year of the date of enactment of the Dakota Water Resources Act or report to Congress on the status of the draft environmental impact statement. The Secretary of the Interior and the state are required to submit a final environmental impact statement within one year of filing the draft environmental impact statement or report to Congress on the status of the final environmental impact statement. The Secretary of the Interior is then authorized to select a feature or features to meet the

comprehensive water development needs of the Red River Valley, after reviewing the water needs report, the report on options for meeting those needs, and the environmental impact statement, and after consulting with the state, which will coordinate with affected local communities. Within 180 days of the Secretary of the Interior signing the record of decision, the bill requires the Secretary of the Interior to enter an agreement with the state to construct the feature or features selected. If one of the features selected is delivery of Missouri River water to the Red River Valley, the Sheyenne River water supply and release feature remains authorized to deliver 100 cubic feet per second of water, or another amount determined by the reports, to the cities of Fargo and Grand Forks.

Section 9 of the bill relates to the Oakes Test Area and deletes existing language relating to "surplus crop production charges" because changes to the farm program contained in the 1996 farm bill made the existing language obsolete. The new language in the bill authorizes the Secretary of the Interior to transfer the Oakes Test Area to the state not later than two years after signing the record of decision required under Section 8, relating to meeting the needs of the Red River Valley, under terms that the Secretary of the Interior believes would protect the public interest. If the Secretary of the Interior and the state cannot reach an agreement for a transfer by the time limit, the Secretary of the Interior is directed to dispose of the Oakes Test Area under the Federal Property and Administrative Services Act of 1949.

Section 10 of the bill reduces the authorization ceiling for irrigation and related facilities from \$270,395,000 to \$164,000,000. The remaining funds authorized are intended to be used to repair and complete the McClusky and New Rockford Canals and complete mitigation requirements at the Audubon and Arrowwood National Wildlife Refuges. The bill authorizes \$200 million for the Red River Valley Water Supply Project, to be used for the project feature or features selected by the Secretary of the Interior pursuant to Section 8. This project is reimbursable. Section 10 authorizes an additional \$300 million for statewide municipal, rural, and industrial water supply systems authorized under Section 7 and an additional \$200 million for municipal, rural, and industrial water supply systems on the four Indian reservations located within North Dakota. These funds are allocated as follows: \$30 million for Fort Totten Reservation, \$70 million for Fort Berthold, \$80 million for Standing Rock, and \$20 million for Turtle Mountain. Additionally, the existing authorization of \$61 million is broken into its component parts of \$40.5 million for the Sheyenne treatment and release facility and the initial \$20.5 million provided for Indian municipal, rural, and industrial water supply studies and systems.

Section 10 authorizes an additional \$6.5 million for recreation projects, and permits up to \$1.5 million of this amount to be used to develop a Wetlands Interpretive Center in North Dakota. This section also authorizes an additional \$25 million for the Natural Resources Trust. This section also authorizes creation of a separate account, after the features selected under Section 8 are operational, within the trust for operation and maintenance costs of mitigation and enhancement lands, but does not authorize appropriations for that account. This section also authorizes \$40 million for demolition of the existing structure and construction of a new Four Bears Bridge across Lake Sakakawea.

Section 10 also includes a provision to index certain costs for inflation from the date of enactment of the Dakota Water Resources Act to reflect normal fluctuations in construction costs consistent with current Bureau of Reclamation practices. This section also includes a provision that prohibits counting funds spent since 1986 on operation and maintenance against the construction authorization ceilings in this section.

Section 11 of the bill changes the name of the current Wetlands Trust to the Natural Resources Trust and provides that the trust is to be operated to preserve, enhance, restore, and manage wetlands and associated wildlife habitat, grassland conservation, and riparian areas in the state. This section also authorizes the trust, aside from its existing authority, to fund incentives for conservation practices by landowners.

Section 11 of the bill also caps the authorized appropriations to the Natural Resources Trust at \$10 million until the features authorized to meet the comprehensive water needs of the Red River Valley are operational. The annual appropriations for the trust are determined by a formula of five percent of the annual funds appropriated for the statewide municipal, rural, and industrial water supply program and the Red River Valley Water Supply Project. Once the Secretary of the Interior and the state determine that the project is operational and meeting the objectives of Section 8, the remaining \$15 million authorized by Section 10 may be appropriated.

Subsequent to the introduction of the Dakota Water Resources Act of 1999 and before the hearing on the bill before the Senate Subcommittee on Water and Power held on May 27, 1999, agreement was reached which permitted the administration to testify in support of the Act, subject to incorporation of the following agreements:

- Additional funding to address the state's municipal, rural, and industrial water supply needs was reduced by \$100 million. The requested ceiling will now be an additional

\$200 million rather than the \$300 million currently in the bill.

- The funding and authorization for the replacement of the Four Bears Bridge across an arm of Lake Sakakawea on the Fort Berthold Indian Reservation will be removed from the Dakota Water Resources Act. The agreement includes assurances that the bridge will be included under a different program yet to be determined.
- The principal supply works, which the Secretary of the Interior is directed to maintain and complete, is defined as including the Snake Creek Pumping Plant, McClusky Canal, and the New Rockford Canal. This is a clarification of wording in the bill.
- Prior to construction of any water system to deliver Missouri River water into the Hudson Bay Basin, the Secretary of the Interior, in consultation with the Secretary of State and the administrator of the Environmental Protection Agency, must determine that adequate treatment can be provided to meet the requirements of the Boundary Waters Treaty of 1909 between Canada and the United States.
- Agreement was reached on additional concerns relating to the determination of the appropriate share of costs for operation and maintenance on the existing facilities, if used. Mutual understanding was also reached on concerns relating to the operation of an optional loan program within the municipal, rural, and industrial water supply projects grant program and the removal of language that made full funding of the Natural Resources Trust fund conditional upon completion of a Red River Valley Water Supply Project.

UNITED STATES ARMY CORPS OF ENGINEERS' MASTER MANUAL

The United States Army Corps of Engineers manages the six main stem dams and reservoirs on the Missouri River pursuant to the Missouri River Master Water Control Manual (master manual). The master manual was developed in 1960, and with only slight revisions, the last of which occurred in 1979, is used to manage the river today. However, in response to a lawsuit filed by the Upper Missouri River Basin states against the United States Army Corps of Engineers, the corps has undertaken a process to revise the master manual. The master manual has been under review by the corps since 1989. The first proposed revisions to the master manual were released in 1994 but were not supported by the Upper Missouri River Basin states. The corps asked the Missouri River Basin Association to identify

new recommendations for river management. As a result of this process, the Missouri River Basin Association submitted a list of recommendations to the corps. On January 13, 2000, the corps released a fact sheet that summarizes the key points of the north-western division preferred alternative for the Missouri River Master Water Control Manual. The fact sheet on the revised draft environmental impact statement for the preferred alternative for the Missouri River Master Water Control Manual provides:

Flood Control: The base of the annual flood control and multiuse zone will remain at 57.1 million acre feet (MAF). This is the target storage for the reservoir system on March 1 each year.

Navigation Support Triggers: These are the storage levels that trigger releases for navigation service flows and season length. Lower levels trigger reduced releases for navigation earlier in droughts. During a drought, navigation target flows will be reduced by 3,000 cubic feet per second (cfs) if total system storage is less than 54.5 MAF on March 15. Target flows will be reduced by 3,000 cfs and the season shortened to 7.1 months if storage is less than 59 MAF on July 1. In a severe drought, target flows will be reduced by 6,000 cfs from July 1 to August 20 of the following year. A severe drought is defined as a year in which there is no gain in total storage between March 15 and July 1.

Minimum Storage: This establishes the minimum total storage in the reservoirs during droughts. The new minimum will be 43 MAF in a drought like the 1980s. The low point during that event was 40.9 MAF in January 1989.

Navigation Preclude: This is the minimum storage level on March 15 for navigation support that year. If total storage is less than 31 MAF, there will be no releases from the reservoirs to support navigation.

Flow Enhancement at Fort Peck: This will be an increase in cold water flows from the powerhouse in May and June and a warm water release from the spillway from May through August. These flows are expected to benefit warm water river fish such as the endangered pallid sturgeon.

Flow Enhancement at Gavins Point: The current schedule of flat releases will be maintained to benefit nesting interior least terns and piping plover, two protected shorebird species.

Split Navigation Season: The preferred alternative does not include a split navigation season.

Intrasystem Unbalancing: This is a 3-year cycle of rotating variable water storage in the

three largest reservoirs. This will encourage growth of vegetation around the shorelines to provide fish spawning habitat and hiding places for young fish. Lake levels will drop 3 to 5 feet and not affect access.

Mississippi River Navigation Target: This establishes a target flow of 90,000 cfs at St. Louis to benefit Mississippi River navigation during years of excess water in the Missouri River system. A maximum additional 5,000 cfs would be released.

Comparison of the Economic and Environmental Benefits of the Preferred Alternative (% Change From the Current Water Control Plan)	
Economic Use/Environmental Resource	Preferred Alternative
Flood control economics	-1
Missouri River navigation economics	-1
Hydropower economics	1
Water supply economics	0
Recreation economics	4
Total national economics	0
Cold river fish temperature habitat	2
Cold reservoir fish temperature habitat	3
Warm river fish temperature habitat	-8
Warm river fish depth/velocity habitat	0
Young-of-year fish production	2
Tern and Plover Island habitat	43
Wetland habitat	1
Riparian habitat	-2
Historic properties erosion potential	-3
Mississippi River navigation economics	0

However, the United States Army Corps of Engineers has placed the master manual preferred alternative on hold pending the outcome of formal consultations on the operations of the Missouri River under the current water control plan, the Bank Stabilization and Navigation Project, and the Kansas River Project under provisions of the Endangered Species Act with the United States Fish and Wildlife Service. The United States Fish and Wildlife Service has notified the United States Army Corps of Engineers that the current water control plan does not contain several elements necessary to avoid jeopardizing the continued existence of three protected species--the interior least tern, piping plover, and pallid sturgeon. The Endangered Species Act requires all federal agencies to work to conserve endangered and threatened species. Section 7 of the Endangered Species Act requires federal agencies to ensure that their actions do not jeopardize the existence of any listed species. The consultation period between the United States Army Corps of Engineers and the United States Fish and Wildlife Service may last up to 90 days, after which the service has 45 days in which to prepare a biological opinion on whether the corps action will jeopardize the continued existence of a listed species. Under the Endangered Species Act, jeopardy occurs when an action is reasonably

expected to diminish a species' numbers, reproduction, or distribution so that the likelihood of survival and recovery in the wild is appreciably reduced. When the United States Fish and Wildlife Service makes a jeopardy determination, it also provides the consulting agency with reasonable and prudent alternatives to its proposed action. A reasonable and prudent alternative must be consistent with the purposes of the project, be consistent with the agency's legal authority and jurisdiction, be economically and technically feasible, and avoid jeopardy in the opinion of the United States Fish and Wildlife Service. Once the United States Fish and Wildlife Service has issued the biological opinion, the corps may then decide how to proceed. The United States Army Corps of Engineers could implement the actions identified in the reasonable and prudent alternatives, modify the project actions and consult again, or apply for an exemption.

The revised timeline for the revision of the master manual anticipates that the final biological opinion from the United States Fish and Wildlife Service will be issued on June 30, 2000. The revised draft environmental impact statement is scheduled to be published in September 2000, the public and tribal comment period ends in March 2001, and the final environmental impact statement is scheduled to be published in December 2001. The Washington, D.C., level review and final environmental impact statement is scheduled to be released in June 2002, and the record of decision issued in August 2002. The revised master manual is scheduled to be released in August 2002, the final annual operating plan issued in January 2003, and the final annual operating plan implemented in March 2003.

LAND AND NATURAL RESOURCE ISSUES, WATER MANAGEMENT, LAND USE, AND DEVELOPMENT OF A LONG-RANGE VISION FOR THE MISSOURI RIVER IN NORTH DAKOTA

The Burleigh, Oliver, Morton, Mercer, and McLean Counties Joint Water Resource Board or BOMMM Joint Water Resource Board has established the Missouri River coordinated resource management program. This program is designed to coordinate the efforts of groups with interests in the reach of the Missouri River between Garrison Dam and Lake Oahe

to address natural, cultural, recreational, agricultural, and economic resources of the Missouri River in North Dakota. The program is composed of representatives from state and federal agencies and agriculture, industry, landowner, environmental, and other private organizations. The program includes two groups--the Missouri assessment program technical group and the Missouri River vision group. The Missouri assessment program technical group is composed of several state and federal agencies that were brought together in an attempt to reach an agreement on the data and assessment needs necessary to aid the United States Army Corps of Engineers in completing its *Cumulative Impact Statement* for the reach of the Missouri River from the Garrison Dam to the headwaters of the Oahe Reservoir. This group is also charged with providing technical information to the vision group. The technical group is working to secure technical data on sediment, river channel conditions, impacts based on certain river flows, land use patterns, and other related issues. It is also developing a geographic information system for the river. The Missouri River vision group is composed of several state and federal agencies as well as a variety of groups and organizations associated with or having concerns regarding the Missouri River. The vision group is working to develop a long-range strategic plan for the Garrison reach of the Missouri River. Issues that the Missouri River coordinated resource management program will attempt to reach a consensus on include floodplain development; setbacks, development, and buffer zones; bank stabilization; and the resolution of public-private land use conflicts.

POSSIBLE STUDY APPROACH

In carrying out its study of issues related to the Missouri River in North Dakota, the committee may wish to monitor development and implementation of the revised Missouri River master manual and monitor the work of the Missouri River coordinated resource management program. In conducting this study, the committee could solicit testimony from a number of sources. These include the State Engineer and representatives of the United States Army Corps of Engineers and the Missouri River coordinated resource management program.

ATTACH:1

Fifty-sixth Legislative Assembly, State of North Dakota, begun in the Capitol in the City of Bismarck, on Tuesday, the fifth day of January, one thousand nine hundred and ninety-nine

**SENATE CONCURRENT RESOLUTION NO. 4027
(Senators Tomac, Christmann, Freborg, Kilzer)
(Representatives Grosz, Mahoney)**

A concurrent resolution directing the Legislative Council to study issues related to the Missouri River in North Dakota.

WHEREAS, the Flood Control Act of 1944, as amended, assured benefits to all 10 states within the Missouri River basin under a control and management program that came to be commonly known as the Pick-Sloan Project; and

WHEREAS, the Congress has directed the United States Army Corps of Engineers to build, operate, and maintain all the features of the Pick-Sloan Project; and

WHEREAS, the United States Army Corps of Engineers stated in its final report to Congress dated December 1981 concerning the Missouri River streambank erosion that "bank erosion in this reach results in a permanent net loss of high value lands. This process, unless halted, would eventually transform the present river into a wide area of sandbars and channels, occupying an increasing proportion of the valley width between the bluffs"; and

WHEREAS, the lands adjacent to the Missouri River have been and will continue to be seriously eroded and permanently lost to the local landowners and the State of North Dakota because of reservoir management that releases highly fluctuating amounts of clear water capable of eroding and transporting large amounts of soil; and

WHEREAS, soil eroded from the banks of the Missouri River is being deposited as a delta in the headwaters of the Oahe Reservoir and Lake Sakakawea thereby causing the water table to rise under the adjacent land, and is increasing the frequency and severity of ice jam hazards and has, according to recent United States Army Corps of Engineers' pronouncements, endangered 6,000 acres of land containing 150 homes, industrial development, and valuable farmland around Lake Oahe; and in the headwaters area of Lake Sakakawea, the delta is endangering the Buford-Trenton irrigation district, the water intake for the city of Williston, and many acres of valuable farmland; and

WHEREAS, a similar bank erosion problem exists for a 58-mile reach on the South Dakota-Nebraska border downstream from the Gavins Point Dam and also between the Fort Peck Dam in Montana and Lake Sakakawea; and

WHEREAS, the Missouri River will continue to change without additional bank stabilization; and

WHEREAS, destructive bank erosion continues when high winter water releases for power generation occur;

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF NORTH DAKOTA, THE HOUSE OF REPRESENTATIVES CONCURRING THEREIN:

That the Legislative Council study issues related to the Missouri River in North Dakota; and

BE IT FURTHER RESOLVED, that the study include an examination of the Pick-Sloan Missouri Basin program, the United States Army Corps of Engineers' master plan, land and natural resource issues, water management, bank stabilization, land use, and development of a long-range vision for the Missouri River in North Dakota; and

BE IT FURTHER RESOLVED, that the Legislative Council in conducting the study seek input from the Missouri River Coordinated Resource Management Program and the Corps of Engineers; and

BE IT FURTHER RESOLVED, that the Legislative Council report its findings and recommendations, together with any legislation required to implement the recommendations, to the Fifty-seventh Legislative Assembly.

Filed March 31, 1999