MINUTES

North Dakota State Water Commission
Williston, North Dakota

May 24, 1994

The North Dakota State Water Commission held a meeting in the Williston Community Library, Williston, North Dakota, on May 24, 1994. Governor-Chairman, Edward T. Schafer, called the meeting to order at 1:30 PM, and requested State Engineer and Chief Engineer-Secretary, David A. Sprynczynatyk, to call the roll. The Chairman declared a quorum was present.

The State Water Commission meeting was preceded by a tour of the Buford-Trenton Irrigation District and the East Valley Mutual Aid Cooperative. The tour and a luncheon was hosted by the Buford-Trenton Irrigation District and the Williston Chamber of Commerce. Larry Hanson, Mayor, welcomed the State Water Commission to Williston.

MEMBERS PRESENT:
Governor Edward T. Schafer, Chairman
Sarah Vogel, Commissioner, Department of Agriculture, Bismarck
Mike Ames, Member from Williston
Florenz Bjornson, Member from West Fargo
Judith DeWitz, Member from Tappen
Elmer Hillesland, Member from Grand Forks
Jack Olin, Member from Dickinson
Robert Thompson, Member from Page
David Sprynczynatyk, State Engineer and Chief Engineer-Secretary, North Dakota State Water Commission, Bismarck

MEMBERS ABSENT:
Harley Swenson, Member from Bismarck

OTHERS PRESENT:
State Water Commission Staff Members
Approximately 25 people interested in agenda items
(The attendance register is on file with the official minutes.)

The meeting was recorded to assist in compilation of the minutes.

CONSIDERATION OF AGENDA There being no additional items for the agenda, the Chairman declared the agenda approved and requested Secretary Sprynczynatyk to present the agenda.

CONSIDERATION OF MINUTES OF MARCH 9, 1994, MEETING - APPROVED

The minutes of the March 9, 1994, State Water Commission meeting were approved by the following motion:

It was moved by Commissioner Olin, seconded by Commissioner Ames, and unanimously carried, that the minutes of the March 9, 1994, State Water Commission meeting be approved as circulated.

CONSIDERATION OF MINUTES OF APRIL 7, 1994, TELEPHONE CONFERENCE CALL MEETING - APPROVED

The minutes of the April 7, 1994, State Water Commission telephone conference call meeting were approved by the following motion:

It was moved by Commissioner Olin, seconded by Commissioner Ames, and unanimously carried, that the minutes of the April 7, 1994, State Water Commission telephone conference call meeting be approved as circulated.

FINANCIAL STATEMENT - AGENCY OPERATIONS

Secretary Sprynczynatyk presented and discussed the Program Budget Expenditures, dated May 12, 1994, reflecting 41.7 percent of the 1993-1995 biennium. ***SEE APPENDIX "A".***

FINANCIAL STATEMENT - CONTRACT FUND; AND RESOURCES TRUST FUND REVENUE UPDATE

Dale Frink, State Water Commission's Water Development Division, reviewed and discussed the Contract Fund expenditures for the 1993-1995 biennium. ***SEE APPENDIX "B".***

The last revenue forecast by the Office of Management and Budget was made January 24, 1994, and the next forecast is scheduled for July, 1994. Mr. Frink indicated the revenues into the Resources Trust Fund since January 1, 1994, have decreased significantly below projections due to declining oil production and prices. The January forecast predicted a $972,000 shortfall, but this shortfall will likely increase once the July, 1994, forecast is announced. Approximately $1.3 million remains unallocated from the Resources Trust Fund, but this will likely be lost due to reduced revenues.

Mr. Frink expressed concern regarding the Resources Trust Fund revenue situation. He said there are several high priority projects in various stages of development, which include Grand Forks Riverside Park Dam erosion control ($100,000); Mauvais Coulee bridge cost share ($50,000); McHough Slough area projects ($100,000); and Section 22 funding for Fiscal Years 1994 and 1995 ($40,000). Mr. Frink indicated that the State Water Commission traditionally holds about $250,000 as unallocated through the spring snowmelt period of the second year of the biennium for emergency repair projects.

It was the recommendation of the State Engineer that the State Water Commission delay approving cost share requests from the Contract Fund until such time as revenue forecasts show that adequate funds will be available.

The State Water Commission's cost sharing policy for projects was discussed. Secretary Sprynczynatyk indicated that additional information would be provided to the Commission members.

FINANCIAL STATEMENT - 1995-1997 BUDGET UPDATE

Secretary Sprynczynatyk briefed the Commission members on the 1995-1997 biennium budget process. The deadline for presentation of the budget to the Office of Management and Budget is July 15, 1994. The budget guidelines require the agency to prepare a 95 percent general fund budget, which represents a State Water Commission reduction of approximately $277,000. Secretary Sprynczynatyk indicated staff is reviewing agency programs and services to meet the budget guidelines.

The Legislature authorized a three percent salary increase for state employees for the second year of the current biennium if the money is available from within the agency. Secretary Sprynczynatyk indicated it appears that there are cost savings from within the agency to provide for the three percent salary increases this biennium, but the difficulty will be in carrying it over into the next biennium. The cost to do so would be about $125,000. Building this salary increase into the budget would further reduce programs.

BUFORD-TRENTON IRRIGATION DISTRICT RECONNAISSANCE REPORT, DECEMBER, 1993 (SWC Project No. 222)

The Corps of Engineers has completed a Reconnaissance Study of the Missouri River Buford-Trenton Irrigation District, dated December, 1993. The purpose of the study was to re-assess the aggradation-related problems in the Buford-Trenton Irrigation District at the upstream

end of Lake Sakakawea on the Missouri River and to evaluate potential solutions to the problems. Aggradation has contributed to a rising ground-water table and has caused difficulty in farming operations. It is the feeling of the farmers and landowners within the District that the higher ground-water table has adversely affected crop yields. Aggradation has also decreased channel capacity and increased stages, thereby increasing the frequency of open-flow and ice-jam flooding.

The summary report of the study states, in part:

> The study concludes that the high ground water and increased flooding problems in the District have been caused by construction and operation of the Garrison Dam-Lake Sakakawea project.
>
> Numerous ground water and flood control measures were evaluated. Most of these measures were either economically infeasible, would not have an acceptable level of dependability, or would not provide permanent solutions to the problems.
>
> The selected plan would include acquisition of the lands in the District on a willing seller basis. Willing seller landowners would have two options: (1) fee title acquisition within a 10-year period; or (2) a two-phase buyout consisting of a flowage easement within a 10-year period and fee title acquisition of the remaining value during the following 15-year period. Acquisition is the only alternative that would provide a permanent solution to the problems in the District.
>
> The report recommends approval as a basis for requesting congressional authority to acquire the lands within the District, in accordance with the conditions outlined in the selected plan of the report, and for requesting appropriations of funds to prepare a Real Estate Design Memorandum and acquire the lands.

Commissioner Ames commented on the Corps's reconnaissance report. He said that the Buford-Trenton Irrigation District Board of Directors and the landowners of the District basically support the study, but they are opposed to the idea of a fee title acquisition as the only solution to the problems. The District and the landowners are proposing an acquisition of a perpetual flowage easement by the Corps of Engineers for the Buford-Trenton Irrigation District. He said the irrigation project provides a strong economic base to Williston and the surrounding communities and that base needs to be preserved for as long as possible.

Secretary Sprynczynatyk stated that the Governor, the Commissioner of Agriculture and the State Engineer responded to an earlier draft of the study made by the Corps of Engineers when it first began to re-assess the aggradation-related problems in the area. At that time, the state objected to the removal of lands in the private sector because it would cause a severe economic impact to the area. He said the state also felt there was not sufficient hydrogeologic and other studies to support one plan to the exclusion of all others, the Corps report did not adequately address all structural measures that could be implemented, and that the Corps should consider all other alternatives.

Secretary Sprynczynatyk indicated that the State Water Commission staff has completed its review of the Corps's reconnaissance report. The staff memorandum is attached hereto as ***APPENDIX "C"***.

Following completion of the staff review of the reconnaissance report, Secretary Sprynczynatyk forwarded a letter to Colonel Meuleners, District Engineer for the Omaha District Corps of Engineers, reiterating his previous opposition to the removal of lands, especially irrigated lands, from the private sector because of the severe economic impact to the area, and that the state felt there was not sufficient hydrogeologic and other studies to support one plan to the exclusion of all others. He did express support for a flood easement acquisition plan similar to that proposed by the Buford-Trenton Irrigation District and proposed several points to be included in an easement acquisition plan. The State Engineer's letter to Colonel Meuleners is attached hereto as ***APPENDIX "D"***.

PRESENTATION BY BUFORD-TRENTON IRRIGATION DISTRICT (SWC Project No. 222)

David Hoffman, Buford-Trenton Irrigation District Director, made a presentation to the State Water Commission, which included the history of the Buford-Trenton Irrigation District, a video of the flooding and aggradation problems the District is experiencing, and potential solutions to the problems. Comments on the project were also provided by Robert Gannaway, Chairman, Steve Mortenson, Vice President, and Arthur Anderson, landowner.

In summary, Mr. Hoffman expressed strong local support for the flood easement acquisition plan by the Corps of Engineers. He stated the following advantages of a flowage easement:

* Gives landowners total management of lands
* Allows title to stay with landowners
* Allows renters to stay presently farming
* Provides equity relief to devaluation land

* Provides economic base to surrounding communities
* Allows real estate taxes to be collected
* Provides a continued economic base for the schools
* Solves the liability concerns to the Corps of Engineers
* Reduces operation and management costs to the Corps
* Eliminates the need of an environmental study
* Allows development of mineral acres
* Lowers cost of acquisition to the Federal Government
* Flowage easement is compensated for prior damage and production
* Flowage easement allows for economic base to area until land is no longer productive
* Possible to implement a plan to enhance wildlife habitat

Mr. Hoffman stated the Buford-Trenton Irrigation District is proposing the following conditions for a flowage easement:

1) Purchase lands in the District at ninety percent (90%) of negotiated unaffected land values;
2) Provide relocation assistance to all farmsteads and residents (Public Law 91-646);
3) Remove all buildings from lower land units;
4) Agree to purchase remaining ten percent (10%) of lands when no longer productive, remaining ten percent (10%) bought at original negotiated appraised value with no other landowner recourse;
5) Continue to provide power to run drain pumps; and
6) Provide severance pay for landowners and renters.

It was the recommendation of the State Engineer that the State Water Commission consider a resolution of support for the flood easement acquisition plan as outlined in the State Engineer's letter to Colonel Meuleners, dated May 11, 1994.

It was moved by Commissioner Ames and seconded by Commissioner Vogel that the State Water Commission approve Resolution No. 94-5-465, Buford-Trenton Irrigation District, and that the resolution be forwarded to the Corps of Engineers and the Congressional Delegation. SEE APPENDIX "E".

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

PRESENTATION BY UPPER MISSOURI LAKE SAKAKAWEA PLANNING COMMITTEE (SWC Project Nos. 222 & 1858)

In August, 1991, the Williams County Water Resource District requested that the State Water Commission conduct a study to determine the feasibility of creating new irrigation districts in Williams County. In December, 1991, the Commission entered into an agreement with the District to conduct a reconnaissance investigation of irrigation in Williams County. At the March 9, 1994, meeting, the Commission members were provided with copies of the Williams County Irrigation Reconnaissance Report, dated March, 1994.

Larry Hanson, Williston City Mayor, addressed the State Water Commission on behalf of the Upper Missouri Lake Sakakawea Planning Committee. The committee was formed in 1989 to address the concerns and problems they were experiencing in the areas of siltation, destruction of the area's economic base, water intake problems, possible channel change due to ice jams, recreation and mosquitoes. Mayor Hanson's presentation is attached hereto as ***APPENDIX "F"***.

Willard Burk, Member of the Upper Missouri Lake Sakakawea Planning Committee, made a presentation to the State Water Commission, which is attached hereto as ***APPENDIX "G"***.

SOUTHWEST PIPELINE PROJECT - PROJECT UPDATE AND CONTRACT/CONSTRUCTION STATUS (SWC Project No. 1736)

Tim Fay, Manager of the Southwest Pipeline Project, provided a status report on the following projects:

Contracts 2-3E and 2-3F - Transmission Lines from Dickinson to Highway 21: These transmission line contracts are in the final stages of cleanup and closeout.

Contract 2-6A - Transmission Line from Highway 22 to Mott: This transmission line contract was delayed by materials problems last year. The problems have been resolved and the contractor began work in April and has made good progress since then.

Contract 2-7B - Transmission Line from Davis Buttes to Richardton: This transmission line contract received its prefinal inspection on May 4, 1994. The contractor was given a list of items to be completed before final acceptance. Some discrepancies were noted in the prefabricated pressure reducing valve and metering vaults.

Contract 2-7C - Transmission line from Taylor to Serve the Cities of Dunn Center, Halliday, Dodge and Golden Valley: The contractor for this transmission line contract has established a field office in Halliday and has begun installing piping at Taylor working north. Progress has been good to date.

Contracts 3-1B, 5-3 and 5-13 - Second Zap Reservoir, Davis Buttes Reservoir, and New England Reservoir, respectively: These reservoir contracts are essentially complete with paint touch-up and site work recently completed. Hydrostatic testing of contracts 5-3 and 5-13 remains and will be coordinated with the pump tests at the Dickinson pump station.

Contract 4-3 - Dickinson Pump Station: Work on this contract includes enclosure of the building and the electrical switch gear, overhead bridge crane, standby generator, pumps, and the majority of the piping is installed. The surge tank is on-site, but not yet installed pending installation of a tap for an air valve. Piping installation has been delayed due to a misalignment problem which has been corrected. Once the surge tank, piping and remaining wiring are complete, painting, disinfecting and testing remains to be completed. The testing will be coordinated with the hydrostatic testing of the Davis Buttes and New England reservoirs and pressure testing of some of the transmission and distribution piping being installed under other contracts.

Contract 7-1B - Rural Distribution System in New Hradec, Davis Buttes and Taylor Areas: The contractor has established a field office in Dickinson and has begun piping installation. Two installation crews are active, in addition to several other support crews. Additional installation crews will soon be in the field as well.

Tim Fay briefed the Commission members on future construction contracts. Contract 2-5A, the transmission piping to Belfield, and Contract 7-2, the rural distribution contract for the New England and Belfield service areas, will soon be submitted to the Bureau of Reclamation and the State Health Department for approval. Both contracts will be ready for bidding in early October, and whether one or both is bid will depend on Fiscal Year 1995 Garrison MR&I funding.

SOUTHWEST PIPELINE PROJECT - DICKINSON WATER TREATMENT PLANT EXPANSION (SWC Project No. 1736)

Tim Fay reported that responsibility for construction management of the Dickinson water treatment plant expansion is with the City of Dickinson. The city awarded the contract for Phase I to Moorhead Construction.

SOUTHWEST PIPELINE PROJECT - APPROVAL OF CHANGE ORDER NO. 3 TO CONTRACT 6, TELEMETRY SYSTEM (SWC Project No. 1736)

Tim Fay stated that in the past the State Water Commission established the policy that contract change orders for the Southwest Pipeline Project be brought before the Commission if the change order amounted to more than $250,000, or 25 percent of the contract price.

Contract 6 covers the project's telemetry system. Mr. Fay said this contract is still active and it was intended to include control components in the contract by change order when they were needed. Mr. Fay presented Change Order No. 3 for the Commission's consideration. The cost of the change order is $337,805. This change will increase the contract cost from $525,640 to $863,445, for an increase of 64 percent.

Mr. Fay said this is not a typical construction contract, since it covers installation of the telemetry system for the Southwest Pipeline Project. This system includes a network of radios which transmit information from remote site instruments to a central control station where decisions are made about pump starts and stops and other operating actions. The information is also recorded so that an operating record is available for planning and evaluation. The system relies heavily on computer hardware and software built and written specifically for this type of system.

Since this system is very proprietary, a common feature in the field, Contract No. 6 was awarded not on a low-bid process, but on a combination of price and technical merit. (This selection process was described to bidders in the advertisement.) This was done because of the variety of technical approaches to building a successful telemetry system for the project. It was decided that each potential contractor should be permitted to propose the type of system with which they were most familiar.

It was recognized at that time that some of the facilities would not yet be built and that the telemetry system would eventually have to be expanded. We realized, however, the necessity of having one contractor responsible for the entire system, since if different parties were involved, neither could take responsibility for how the system

functioned as a whole. Since the original system was installed, reservoirs have been added at New England and Davis Buttes, one pump station with three independent pumping units, and the Dickinson pump station. Future construction includes two reservoirs at Halliday and New Hradec, and two booster pump stations at New Hradec and Knife River, which will be built as part of Contracts 7-1B and 2-7C. In addition, a control link needs to be added to the water treatment plant. All of these units will be added by this change order.

In negotiating this change order with the original provider, it was determined by our engineer that the prices quoted are reasonable. The contractor is willing to add the new features and continue maintenance of the existing system.

It was the recommendation of the State Engineer that the State Water Commission approve Change Order No. 3 to Southwest Pipeline Contract 6.

It was moved by Commissioner Vogel and seconded by Commissioner Olin that the State Water Commission approve Change Order No. 3 for Southwest Pipeline Contract 6 as recommended by the State Engineer.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

SOUTHWEST PIPELINE PROJECT - APPROVAL OF AWARD OF CONTRACT 8-1 TO ENGINEERING AMERICA (SWC Project No. 1736)

On May 10, 1994, bids were opened for Southwest Pipeline Project Contract 8-1. This contract includes two steel reservoirs, one near Halliday and the other near New Hradec.

Tim Fay stated the apparent low bid was from Engineering America, Inc., White Bear Lake, Minnesota, for $318,274. The engineer's estimate was $381,000.

It was the recommendation of the State Engineer that the State Water Commission award Southwest Pipeline Project Contract 8-1 to Engineering America, Inc.

It was moved by Commissioner Olin and seconded by Commissioner Hillesland that the State Water Commission award Southwest Pipeline Project Contract 8-1 to Engineering America, Inc., White Bear Lake, Minnesota.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

SOUTHWEST PIPELINE PROJECT - APPROVAL OF WATER SERVICE AGREEMENT WITH CITY OF MANNING FOR SOLE-SOURCE AND DEMAND SERVICE (SWC Project No. 1736)

Tim Fay presented a request from the City of Manning for a water service agreement for sole-source and demand service from the Southwest Pipeline Project. Capacity to meet this request is available in Contract 7-1B.

Mr. Fay explained that under sole-source service, a user agrees to use pipeline water for all its needs. In exchange, the provisions in the water service agreement requires purchase of a minimum amount of water each month. The user is billed for the amount used. With demand service, the piping is cited to meet the user's daily demands. Without demand service, the user is supplied with a constant flow and peak demands are met from the user's storage.

It was the recommendation of the State Engineer that the State Water Commission approve a water service agreement with the City of Manning for sole-source and demand service.

It was moved by Commissioner Olin and seconded by Commissioner Bjornson that the State Water Commission approve a water service agreement with the City of Manning for sole-source and demand service from the Southwest Pipeline Project.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

SOUTHWEST PIPELINE PROJECT - APPROVAL TO ENTER INTO PROJECT AGREEMENT AND OPERATION AND MAINTENANCE AGREEMENT WITH SOIL CONSERVATION SERVICE FOR TAYLOR WATERSHED PROJECT (SWC Project No. 1736)

On January 11, 1994, the State Water Commission entered into a planning agreement with the Soil Conservation Service to proceed with development of the Taylor Watershed Project.

Tim Fay reported that the project has been advanced to the point that an announcement of bid opening has been made by the Soil Conservation Service. It is necessary for the State Water Commission to enter into a commitment to fund the project. The total project is estimated at $1.7 million, of which the Soil Conservation Service will fund approximately $600,000, and the remainder of approximately $975,000 will be funded by a combination of Resources Trust Fund and MR&I funds.

The funding commitment is made through the Project Agreement, which includes provisions under which the State Water Commission can prevent award of the contract if the bid is too high, so Mr. Fay said there is a limit on the commitment made at this time. This feature and other features of the Project Agreement have been reviewed by the State Water Commission staff and the Attorney General's office and were found acceptable.

The Operation and Maintenance Agreement for the Taylor Watershed Project was presented for the Commission's consideration. Mr. Fay explained this agreement assures the Soil Conservation Service that the project features will be operated and maintained in an appropriate manner. This agreement will be transferred to the Southwest Water Authority when that portion of the project becomes operational. This agreement has been reviewed by the State Water Commission staff, the Attorney General's office, and the Southwest Water Authority and were found acceptable.

It was the recommendation of the State Engineer that the State Water Commission enter into the Project Agreement and the Operation and Maintenance Agreement with the Soil Conservation Service for the Taylor Watershed Project.

It was moved by Commissioner Vogel and seconded by Commissioner Ames that the State Water Commission enter into the Project Agreement and the Operation and Maintenance Agreement with the Soil Conservation Service for the Taylor Watershed Project. Agreements are attached hereto as APPENDIX "H".

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

SOUTHWEST PIPELINE PROJECT - DEDICATION OF DICKINSON PUMP STATION (SWC Project No. 1736)

Commissioner Olin extended an invitation to the State Water Commission to meet in Dickinson this fall in conjunction with the dedication of the Dickinson pump station.

CONSIDERATION OF REQUEST FROM RICHLAND COUNTY WATER RESOURCE DISTRICT FOR COST SHARING FOR RECONSTRUCTION OF RICHLAND COUNTY DRAIN NO. 12 (SWC Project No. 1182)

A request from the Richland County Water Resource District was presented for the Commission's consideration for cost sharing in the reconstruction of Richland County Drain No. 12.

Secretary Sprynczynatyk presented the request. The total estimated cost of the project is $623,383, with eligible costs of $464,261. At 40 percent cost sharing of eligible costs, the cost to the State Water Commission would be $185,704.

It was the recommendation of the State Engineer that due to the revenue situation for the Resources Trust Fund that the State Water Commission defer action on the request for cost sharing for the reconstruction of Richland County Drain No. 12.

It was moved by Commissioner Olin and seconded by Commissioner Vogel that the State Water Commission defer action on the request for cost sharing for the reconstruction of Richland County Drain No. 12.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

CONSIDERATION OF REQUEST FROM BOTTINEAU COUNTY WATER RESOURCE DISTRICT FOR COST SHARING ON LAPORTE COULEE DAM (SWC Project No. 1267)

A request was presented from the Bottineau County Water Resource District for the Commission's consideration to cost share on the LaPorte Coulee Dam.

Secretary Sprynczynatyk presented the request and stated that the total estimated cost of the dam and recreation area is $64,240, of which $61,223 is

eligible under present State Water Commission policy and guidelines for one-third cost sharing as a recreational project. One-third of the eligible costs amount to $20,520.

It was the recommendation of the State Engineer that due to the revenue situation for the Resources Trust Fund that the State Water Commission defer action on the request for cost sharing for the LaPorte Coulee Dam.

It was moved by Commissioner Olin and seconded by Commissioner Vogel that the State Water Commission defer action on the request for cost sharing for LaPorte Coulee Dam in Bottineau County.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

CONSIDERATION OF REQUEST FROM ROLETTE AND TOWNER COUNTIES JOINT WATER RESOURCE BOARD FOR REAUTHORIZATION OF COST SHARING ON HIDDEN ISLAND COULEE FLOOD RELIEF PROJECT (SWC Project No. 1702)

A request was received from the Rolette and Towner Counties Joint Water Resource Board and presented to the State Water Commission for cost sharing consideration on the Hidden Island Coulee Flood Relief Project.

Secretary Sprynczynatyk stated the total estimated cost of the project is $180,000, excluding land rights and administration, with approximately $152,000 eligible for 40 percent cost sharing. On December 3, 1990, the State Water Commission approved $61,000 for the project.

On January 12, 1993, the Joint Board requested cost share payment of $84,101.75 for project costs incurred to date, of which 40 percent was $33,641. This payment was made in April, 1993.

Secretary Sprynczynatyk stated that this project was approved in the 1989-1991 biennium and carried over into the 1991-1993 biennium. The project was stalled due to a US Fish and Wildlife easement, wetland mitigation and concerns, all of which have now been resolved.

Updated cost estimates were provided of $193,259, of which $185,711 is considered eligible for 40 percent cost sharing, or $74,284. Deducting the previous

payment of $33,641 leaves a balance of $40,643 from the Contract Fund requiring reauthorization by the State Water Commission.

It was the recommendation of the State Engineer that due to the revenue situation for the Resources Trust Fund that the State Water Commission defer action on reauthorization of the cost sharing request for the Hidden Island Coulee Flood Relief Project in Rolette and Towner Counties.

It was moved by Commissioner Olin and seconded by Commissioner Vogel that the State Water Commission defer action on the request for reauthorization for cost sharing for the Hidden Island Coulee Flood Relief Project in Rolette and Towner Counties.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

CONSIDERATION OF REQUEST FROM WALSH COUNTY WATER RESOURCE DISTRICT FOR COST SHARING REAUTHORIZATION AND ADDITIONAL FUNDING FOR PARK RIVER SNAGGING AND CLEARING PROJECT (SWC Project No. 662)

A request was presented from the Walsh County Water Resource Board for the Commission's consideration for reauthorization and additional cost sharing for the Park River Snagging and Clearing Project.

Secretary Sprynczynatyk presented the request and indicated the scope of the project has changed since the initial cost participation request was received. The actual construction costs are $152,887, with all costs being eligible for 25 percent cost sharing, or $38,222. The State Water Commission approved the expenditure of $4,841, which was paid in August, 1992, as partial payment on Phase I. The Commission had previously reauthorized $14,742, leaving $18,639 of additional funding requiring the Commission's authorization.

It was the recommendation of the State Engineer that due to the revenue situation for the Resources Trust Fund that the State Water Commission defer action on the request for reauthorization and additional cost sharing for the Park River Snagging and Clearing Project.

It was moved by Commissioner Olin and seconded by Commissioner Vogel that the State Water Commission defer action on the request for reauthorization and additional cost sharing for the Park River Snagging and Clearing Project in Walsh County.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

GARRISON DIVERSION PROJECT - PROJECT UPDATE (SWC Project No. 237)

Warren Jamison, Manager of the Garrison Diversion Conservancy District, provided a status report on the Garrison Diversion Project.

The North Dakota water management collaborative process efforts to refocus the direction of the Garrison Diversion Unit were discussed. Mr. Jamison stated the collaborative process is guided by an Executive Steering Committee consisting of the Governor, the Congressional Delegation, the three Indian Governments, the Bureau of Reclamation, and one member representing the conservation community. The process is intended to result in a consensus on what is doable for the Garrison Diversion Unit as a means of meeting the state's water needs.

The Governor's Water Policy team in the collaborative process consists of the State Engineer, the Executive Director of the North Dakota Water Users Association, the Director of the Game and Fish Department, the Chief of the Environmental Health Section, and the Manager of the Garrison Diversion Conservancy District. Mr. Jamison indicated that the Governor's Water Policy team has been trying to get as much of the water needs of the state met and yet reach a consensus with the other parties involved in the collaborative process.

On April 29, 1994, the Governor's Water Policy team distributed a strawman, which was an outline of North Dakota's Proposed Plan of the Garrison Diversion Collaborative Process. Mr. Jamison said the delegation staff were aware of the plan, but had not had a chance to review it in detail, so it was represented as the Governor's strawman. The reaction to the strawman by the Executive Steering Committee was mixed, and the committee decided that the interested parties should submit their comments on the strawman to the Bureau of Reclamation by May 6, 1994.

As a result of comments received on the strawman, Mr. Jamison said there are several key issues that indicate the apparent need for more in-depth review of critical areas of concern. Areas for possible further review include:

1) An objective review of alternative sources of water to meet future water needs in the Sheyenne/Red River Valley.

2) A technical review of the feasibility of using a pipeline connection between the McClusky Canal and the New Rockford Canal as a disinfection chamber when used in conjunction with the operation of the existing fish screen as a pretreatment facility.

3) Further review of the actual cost of facilities needed to meet the Indian water needs in the most cost effective manner.

4) A review of the capacity of the potential irrigators in the Oakes Test Area to assume the expenses of operating and maintaining the facilities in the Oakes area.

5) Further review of the cost and operation of the James River ring dike as an effective means to: a) protect the Dakota Lake and Sand Lake Refuges; and b) deliver the needed irrigation waters to the test area with full consideration for potential losses in the James River channel.

6) A more detailed explanation of the green belting proposal for bank stabilization along the James River.

7) Completion of the feasibility grade studies for the Turtle Lake Area Plan, including value added opportunities.

8) An assessment of the economic potential and technical feasibility of the Turtle Lake concept being applied in the New Rockford and Warwick area (Indian project).

9) Continued review of the inlet/outlet objectives and design alternatives for Devils Lake, along with an assessment of the potential for watershed management programs to meet the same need.

10) A subcollaborative group to discuss the impact of a re-visioned project on the Pick-Sloan rates and possible non-federal funding options.

Mr. Jamison said that as a result of the collaborative process, there is a clearer understanding of the sensitivity and concerns that exists. A comprehensive list of the state's water needs, including those of the Indians as well as the non-Indian has been developed. The list includes many needs that were not addressed in the formulation of the 1986 Reformulation Act intended to address the contemporary water needs of the state. Mr. Jamison said the collaborative process is apparently at a crossroads wherein North Dakota interests must either take severe cuts in its objectives and expected benefits through this process, or yield to a series of studies that may lead to scientific-based decisions which will support its goals.

Secretary Sprynczynatyk commented that although the effort to revision the Garrison Diversion Project is a most difficult one, and not without hurdles, he remains cautiously optimistic that the state will be successful. He said North Dakota cannot afford to give up the vision of distributing Missouri River water to its people and to provide safe reliable drinking water for those people. A water infrastructure for the state is vitally important to our future and must be developed.

GARRISON DIVERSION PROJECT - MR&I WATER SUPPLY PROGRAM UPDATE (SWC Project No. 237-3)

Secretary Sprynczynatyk provided the following MR&I Water Supply Program status report:

Dickey Rural Water Project: This project provides for water service to Dickey County and the southern portion of LaMoure County. Sign-ups include the communities of Ellendale, Edgeley, Fullerton, Kulm, Monango, and 429 rural users. Total estimated project cost is $16,980,000. The sponsor has asked the Rural Development Association for a loan on the 35 percent non-federal portion. The project could be built in two phases. Funding has been approved for Phase I construction and will consist of a new well field, main transmission pipeline, and a water treatment plant. Phase II would be the pipeline distribution system from the main transmission pipeline.

Fargo Water Supply Project: The project consists of the construction of a new high service pump and a raw water intake. The high service pump contractor has completed the foundation, main piping, and most of the building. The raw water intake contractor started construction in April, 1994.

Garrison Rural Water Project: A new water supply system will supply water to 270 users in the Garrison area, including Fort Stevenson State Park. The City of Garrison provides bulk water service to the rural system, and the project will be completed by early summer.

Grand Forks Water Treatment Project: The project's purpose is to achieve compliance with disinfection requirements of the Surface Water Treatment Rule at the Grand Forks water treatment plant. The city will use a chlorine/chloramine disinfection system that requires construction of an additional seven million gallons in clearwell storage. The city is working on upgrading their water treatment plant control system that may help to reduce the size of the new clearwell.

Langdon Water Treatment: The project's purpose is to achieve compliance with disinfection requirements of the Surface Water Treatment Rule at the Langdon water treatment plant. The city will use a chlorine/chloramine disinfection system that requires construction of an additional 250,000 gallons in clearwell storage. The project plans are being reviewed and bidding is expected in June, 1994.

Missouri West Rural Water Project: A new water supply system will supply water to New Salem, Crown Butte subdivision, Riverview Heights subdivision, Captain's Landing township, and 357 rural users in northern Morton County. Pre-final inspection was completed on the two water storage reservoirs and Captain's Landing. The community of Almont has requested bulk water service from the Missouri West project. The cost to add Almont may be in the existing contingency budget. The contractor still needs to install some pipeline through a rocky area in western Morton County which may impact the budget.

Ramsey County Rural Water Project: The system will serve Churchs Ferry, Penn, Tolna, Grahams Island State Park, Shelvers Grove State Park, and 740 rural users. The system's new well field and raw water transmission pipeline have been completed. The contractor has started to work on the foundation of the water treatment plant.

Secretary Sprynczynatyk stated a preliminary engineering report has been received from the Oliver, Mercer and northern Dunn Counties area, serving nine cities and approximately 560 rural users, with a source of water supply possibly from the Southwest Pipeline Project.

GARRISON DIVERSION PROJECT - APPROVAL OF FISCAL YEAR 1994 MR&I BUDGET (SWC Project No. 237-5)

The Bureau of Reclamation has indicated that the federal funding available for the Fiscal Year 1994 MR&I Program is being reduced from $14.55 million to $12.0 million. Secretary Sprynczynatyk stated that a $2.55 million reduction could be made with the following results:

The Southwest Pipeline Project ($1,495,518) would not be able to complete the Belfield service area, along with the surrounding rural water segment.

The City of Fargo ($908,232) would not be funded for the raw water intake segment of their project, which is currently funded with interim financing.

Unallocated funding ($146,250)

When federal funds become available, Fargo would be reimbursed for the balance of eligible costs for the raw water intake and pump station.

It was the recommendation of the State Engineer that the State Water Commission approve the following proposed Fiscal Year 1994 MR&I budget to account for the reduction of $2.55 million in the Fiscal Year 1994 funding. The Garrison Diversion Conservancy District board of directors approved the proposed budget at its April 8, 1994, meeting:

	Approved	Proposed	Change
Ramsey Rural Water	$ 197,518	$ 197,518	$ 0
Langdon Water Treatment	265,533	265,533	0
Grand Forks Treatment	944,611	944,611	0
Southwest Pipeline	7,072,518	5,577,000	(1,495,518)
Dickey Rural Water	3,380,000	3,380,000	0
Fargo Water Supply	2,352,070	1,443,838	(908,232)
Feasibility Studies	25,000	25,000	0
Administration	166,500	166,500	0
Unallocated Funding	146,250	0	(146,250)
Total	$14,550,000	$12,000,000	$2,550,000

It was moved by Commissioner Ames and seconded by Commissioner Hillesland that the State Water Commission approve the Fiscal Year 1994 MR&I budget to account for the reduction of $2.55 million in the Fiscal Year 1994 funding as recommended by the State Engineer. This motion is contingent upon the availability of funds.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

GARRISON DIVERSION PROJECT - MR&I PROGRAM FUNDING FOR FISCAL YEAR 1995 (SWC Project No. 237-5)

Secretary Sprynczynatyk indicated the administration has proposed a Fiscal Year 1995 federal appropriation of $30 million for the Garrison Diversion Unit Project. This includes funding for the MR&I Water Supply Program. The Bureau of Reclamation has indicated two possible MR&I funding levels, $12.5 million or $15 million, based on a $30 million Garrison budget. The State has requested federal funding for Garrison of $34.2 million, which includes $17.5 million or $20 million for possible MR&I funding.

APPROVAL OF RELEASE OF EASEMENT AND DEDICATION FOR SPARLAND DAM IN SLOPE COUNTY (SWC Project No. 1306)

A request was received from the Slope County Water Resource District and presented for the Commission's consideration to release the easement and dedication concerning the Sparland Dam, located in the NW1/4 of Section 24, Township 136 North, Range 100 West. The dam was constructed by the Works Progress Administration (WPA) in 1937. This action would be pursuant to North Dakota Century Code section 61-02-14.1 relating to the procedure for release of the easements.

Secretary Sprynczynatyk indicated comments have been solicited from state agencies and the landowner. As a result of the comments that have been received and from the State Water Commission's staff, it does not appear that the dam has been or will provide public benefits.

In the spring of 1992, the State Water Commission engineers inspected the dam in response to a request from the Slope County Water Resource District and found that the spillway pipes were rusted through and were in a condition that would be a hazard to the embankment during a heavy runoff. The estimated cost to make the necessary repairs was approximately $19,000. The dam holds water only after a heavy rainfall and has not been used by the public for a number of years.

The Slope County Water Resource District indicated they would like to install a multiplate culvert through the roadway dam at the original channel flow line. Because of last summer's heavy rain, the roadway dam was inspected by the North Dakota Department of Transportation bridge inspection

team and found the overflow structure had seriously deteriorated and was in immediate need of repair or replacement. Slope County has developed plans for replacing the structure at the channel flow line and construction is planned for this construction season.

It was the recommendation of the State Engineer that the State Water Commission approve the release of easement and dedication for the Sparland Dam in Slope County.

It was moved by Commissioner Vogel and seconded by Commissioner Thompson that the State Water Commission approve the release of easement and dedication for the Sparland Dam in Slope County.

Commissioner Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

APPROVAL OF RELEASE OF LIMITATION OR RESERVATION ON PARCEL OF LAND FOR IRRIGATION RESEARCH PURPOSES IN SW1/4 OF SECTION 27, TOWNSHIP 138 NORTH, RANGE 80 WEST (SWC Project No. 326)

A request received from the North Dakota Department of Corrections and Rehabilitation was presented for the Commission's consideration concerning limitations or reservations on a parcel of land for irrigation research purposes. The parcel of land is located in the SW1/4 of Section 27, Township 138 North, Range 80 West and was obtained by the State Water Commission in 1940 and transferred to the state by Quit Claim Deed in 1959. The limitation or reservation on the 1959 deed grants the State Water Commission the right to use 15 acres of tillable land for irrigation research purposes.

Secretary Sprynczynatyk indicated that the staff has researched this matter and determined that there is no longer a need for the limitation or reservation described in the 1959 deed.

It was the recommendation of the State Engineer that the State Water Commission authorize the release of the current limitation or reservation as described on the 1959 deed, pursuant to North Dakota Century Code section 54-01-05.1.

It was moved by Commissioner Bjornson and seconded by Commissioner Olin that the State Water Commission authorize the release of the current limitation or reservation as described on the 1959 deed, pursuant to North Dakota Century Code section 54-01-05.1, on the parcel of land located in the SW1/4 of Section 27, Township 138 North, Range 80 West.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

NORTH DAKOTA COMPREHENSIVE WETLANDS CONSERVATION PLAN - PROJECT UPDATE (SWC Project No. 1489-5)

Secretary Sprynczynatyk provided the Commission members with a status report on the grants the US Environmental Protection Agency has awarded to the State Water Commission to aid in the development of the North Dakota Comprehensive Wetlands Conservation Plan.

The efforts that were proposed under the Fiscal Year 1992 Wetlands Conservation Grant essentially have been completed.

The Fiscal Year 1993 Wetlands Conservation Grant was approved in July, 1993, totalling $253,334 with a requirement for a 75 percent federal/25 percent non-federal cost share. Cost share is provided by the State Water Commission, North Dakota Water Education Foundation, Department of Health and Consolidated Laboratories, and the North Dakota Game and Fish Department for their respective portions of the grant.

Work supported by the Fiscal Year 1993 grant will:

* expand North Dakota's wetlands education program development;
* enhance geographic information system and further develop capabilities to administer state wetlands management programs aimed at conserving these resources;
* establish and field test North Dakota's wetlands water quality standards;
* advance North Dakota's private lands initiative program; and
* advance prioritization of existing Conservation Reserve Program tracts to identify those most critical to wetlands watershed protection and migratory birds.

At the March 9, 1994, meeting, the Commission members were informed that a grant proposal had been submitted to the Environmental Protection Agency for continued funding in 1994 to develop a State Comprehensive Wetlands Conservation Plan. The work tasks were identified and the expenditures required to carryout those tasks. The Commission passed a motion authorizing receipt of the pending Fiscal Year 1994 grant award from EPA. Secretary Sprynczynatyk indicated that final approval has not been received from EPA for the Fiscal Year 1994 grant.

NORTHWEST AREA WATER SUPPLY PROJECT UPDATE (SWC Project No. 237-4)

The draft Executive Summary of the Northwest Area Water Supply Prefinal Design Report from the NAWS engineering team was provided to the Commission members. The draft report is attached hereto as ***APPENDIX "I"***. Secretary Sprynczynatyk stated that the Executive Summary contains a cost estimate of the NAWS project if it were developed to provide service to all communities and rural water associations which signed agreements of intent with the State Water Commission. The estimates also include capacity to supply rural areas and for some growth. The cost estimate for the entire project totals $167.4 million, which can be broken down into $117.1 million for the East system, $42.8 million for the West system, and $7.5 million for the Parshall system.

The cost estimates in the draft Executive Summary will be used to estimate project water user costs and for developing water service agreements between the State Water Commission and potential users. The final report for the prefinal design incorporating the Executive Summary is due from the NAWS engineering team in August.

At the March 9, 1994, meeting, the Commission passed a motion approving the addition of a specific authorization, not to exceed $48,000 from the MR&I Water Supply Program interest account, to the NAWS agreement for engineering services for the work item of providing information on features being considered to prevent a transfer of biota to the Garrison Joint Technical Committee Engineering/Biology Task Group relating to development of the Minot treatment option for the East NAWS system.

The preferred option selected by the State Water Commission to deliver water to the eastern portion of the project area was an upgraded and expanded water treatment plant at Minot. The primary components of this option would include a new intake at Lake Audubon and expansion of the existing Minot water treatment plant. Some additional facilities are included along the pipeline and at the water treatment plant to address the biota transfer concerns.

Secretary Sprynczynatyk indicated the preferred option has been technically approved by the United States/Canada Joint Technical Committee. The committee is drafting an agreement on the NAWS project which will be forwarded to the United States and Canadian governments. Execution of the agreement by the two governments will allow the project to move forward.

SHEYENNE RIVER FLOOD CONTROL - BALDHILL DAM FLOOD POOL RAISE (SWC Project No. 300)

In January, 1994, the State Water Commission sent a letter to several cities, water resource boards, and interested groups requesting their views on the proposed Baldhill Dam five-foot flood pool raise and their preference for a local sponsor. Dale Frink reported the response was extremely positive for the project and several groups expressed interest in becoming the local sponsor.

Mr. Frink indicated that after considerable discussion, representatives of various local entities determined that a new joint water resource board would be the best choice to serve as a local sponsor. On April 13, 1994, the Sheyenne River Joint Water Resource District was formed for the purpose of identifying and constructing flood control projects. On April 21, 1994, the Joint Board notified the Corps of Engineers that they were willing to act as the local project sponsor.

It was the recommendation of the State Engineer that the State Water Commission pass a motion of project support and concurrence with the actions for a local project sponsor.

It was moved by Commissioner Olin and seconded by Commissioner Hillesland that the State Water Commission supports the proposed Baldhill Dam five-foot flood pool raise, and concurs that the local sponsor for the project will be the Sheyenne River Joint Water Resource District.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

DEVILS LAKE STABILIZATION PROJECT
(SWC Project No. 1712)

Dale Frink reported that the agreement between the State Water Commission and the Corps of Engineers was executed on October 6, 1993, for Phase I of the Devils Lake Feasibility Study. The $273,000 study is scheduled for completion by November, 1994, with the main purpose to determine whether there is adequate federal interest for the Corps to do a feasibility study. Of this amount, approximately $62,500 will be required from the allocation from the Contract Fund. Mr. Frink indicated study is progressing on schedule.

The US Geological Survey in Bismarck is developing the lake elevation frequency analysis for the study under contract with the State Water Commission. This will be part of the State Water Commission's contribution towards the overall study. The US Geological Survey began the study November 1, 1993, and the analysis will be completed by May, 1994. This input will be used to evaluate the frequency of damage that may result from high lake levels.

Mr. Frink stated that the President's budget request for 1995 includes funding for the continuation of the feasibility study for the Devils Lake Stabilization Project.

Mr. Frink reported on lake levels in the Devils Lake Basin.

MISSOURI RIVER UPDATE
(SWC Project No. 1392)

Secretary Sprynczynatyk reported the Corps of Engineers has released its preferred alternative for future operations of the Missouri River system, which is attached hereto as ***APPENDIX "J"***. He said the technical data to support the plan will not be available until July, 1994, but it appears the preferred alternative will favor the interests of the upper basin states. The Corps supports shortening the navigation season by one month and supports a slower drawdown of the reservoir during drought years. He said, on the other hand, the Corps supports greater releases in the spring to mimic pre-dam conditions and has not changed the maximum drawdown of the system. In a mild drought period, such as was experienced the past several years, the drawdown of Lake Sakakawea would have been about nine feet less under the new plan compared to what was actually experienced under the existing plan.

After the Corps releases more details in July, 1994, there will be a series of public meetings in each of the Missouri basin states. Secretary Sprynczynatyk emphasized the fact that at those meetings it will be very important for the people to be heard on the upper basin's needs for the Missouri River operations.

CANNONBALL RIVER BASIN COOPERATIVE STUDY (SWC Project No. 322-1)

Secretary Sprynczynatyk provided the Commission members a status report on the Cannonball River Basin Study. The information is attached hereto as ***APPENDIX "K"***.

GRAND FORKS RIVERSIDE PARK DAM - APPROVAL OF LETTER OF INTENT FOR SWC TO SERVE AS PROJECT SPONSOR FOR REPAIRS TO DAM (SWC Project No. 520)

The Grand Forks Riverside Park Dam was constructed in 1987-1988 and serves as a pumping pool and water storage for the City of Grand Forks. The dam has developed a serious downstream erosion problem. The Corps of Engineers inspected the dam and suggested installing rock riprap downstream for a distance of 300 feet, at an estimated cost of $700,000.

Secretary Sprynczynatyk indicated that the Corps has a Section 14 program that would allow them to do the work and fund 75 percent of the costs. The Corps will not be allowed any new project starts in Fiscal Year 1995 without a specific Congressional mandate. Secretary Sprynczynatyk said it would be extremely difficult to get this project underway by September 30, 1994.

It was the recommendation of the State Engineer that the State Water Commission pass a motion of intent to support the emergency bank protection project for the Grand Forks Riverside Park Dam and to serve either as the local sponsor or to secure a local sponsor for the project. He said the State Water Commission will be asked to cost share in the project. We would attempt to secure the funding through an agreement with the City of Grand Forks so that the project can move forward.

It was moved by Commissioner Hillesland and seconded by Commissioner Vogel that the State Water Commission authorize the State Engineer to forward a letter of intent to the Corps of Engineers expressing the State Water Commission's support for the emergency bank protection project for the Grand Forks Riverside Park Dam; and, that the State Water Commission will serve either as the local sponsor or secure a local sponsor for the project.

Commissioners Ames, Bjornson, DeWitz, Hillesland, Olin, Thompson, Vogel, and Chairman Schafer voted aye. There were no nay votes. The Chairman declared the motion unanimously carried.

NEXT STATE WATER COMMISSION MEETING

Arrangements are being attempted for the State Water Commission to meet jointly with the Garrison Diversion Conservancy District Board of Directors in July at Oakes, ND.

There being no further business to come before the State Water Commission, it was moved by Commissioner Hillesland, seconded by Commissioner DeWitz, and unanimously carried, that the State Water Commission meeting adjourn at 4:45 PM.

Edward T. Schafer
Governor-Chairman

SEAL

David A. Sprynczynatyk
State Engineer and
Chief Engineer-Secretary

North Dakota State Water Commission

900 EAST BOULEVARD · BISMARCK, ND 58505-0850 · 701-224-2750 · FAX 701-224-3696

Meeting To Be Held At
Williston Community Library
1302 Davidson Drive
Williston, North Dakota

May 24, 1994
1:30 PM, Central Daylight Time

AGENDA

A. Roll Call

B. Consideration of Agenda

C. *Consideration of Minutes of Following Meetings:*
   1) *State Water Commission Meeting of March 9, 1994* **
   2) *State Water Commission Telephone Conference Call Meeting of April 7, 1994* **

D. Financial Statement:
   1) Agency Operations **
   2) Resources Trust Fund Revenue Update **
   3) 1995-1997 Budget Update

E. Presentations by Local Organizations:
   1) Buford-Trenton Irrigation District **
   2) Upper Missouri-Lake Sakakawea Planning Committee

F. Southwest Pipeline Project:
   1) Status Report **
   2) *Change Orders* **
   3) *Consideration of Contract 8-1* **
   4) *Water Service Agreements - Manning* **
   5) *SCS PL-566 Taylor Watershed Project* **

G. *Consideration of Following Requests for Cost Sharing:*
   1) *Drain No. 12 - Richland County* **
   2) *LaPorte Coulee Dam - Bottineau County* **
   3) *Hidden Island Coulee - Towner County* **
   4) *Park River Snagging and Clearing - Walsh County* **

H. Garrison Diversion Project:
   1) Project Update: Collaborative Process **
   2) MR&I Water Supply Program Update **
   3) *Fiscal Year 1994 Funding Approval* **
   4) Fiscal Year 1995 Funding **

(Over)

I. ***Release of Easement and Dedication:***
   1) ***Sparland Dam - Slope County*** **
   2) ***ND Department of Corrections and Rehabilitation*** ***

J. Comprehensive State Wetlands Conservation Plan Update

K. Northwest Area Water Supply Project Update **

L. Sheyenne River Flood Control:
   1) ***Baldhill Dam Flood Pool Raise Update*** **
   2) Baldhill Dam Safety Project Update **

M. Devils Lake Stabilization Update

N. Missouri River Update **

O. Cannonball River Study Update **

P. Other Business

Q. Adjournment

* *

** MATERIAL PROVIDED IN BRIEFING BINDER

*** ***MATERIAL PROVIDED IN TODAY'S FOLDER***

** ***ITALICIZED, BOLD-FACED ITEMS REQUIRE SWC ACTION***

If auxiliary aids or services such as readers, signers, or Braille material are required, please contact the North Dakota State Water Commission, 900 East Boulevard, Bismarck, North Dakota 58505; or call (701) 224-4940 at least seven (7) working days prior to the meeting. TDD telephone number is (701) 224-3696.

NORTH DAKOTA STATE WATER COMMISSION

REGISTER

ATTENDANCE AT State Water Commission Meeting

DATE May 24, 1994 PLACE Williston, ND

PROJECT NO. ________

Your Name	Your Address	Who do you Represent? (Or Occupation)
Terry Carlson	2418 N. 7th St. Bismarck	Soil Conservation Service
Steve Mortenson	RR #2 Box 98A Williston ND	Buford-Trenton Irrg. District
Monte Kluninger	RT 3 Box 11 C Williston	" " " "
Robert Gannaway	Rt 3 Box 44 Williston N.D	Buford Trenton Irr. Dist
Roger Bearce	RR3 Box 16 Williston ND.	" " — —
John Andrist	Box E Crosby	Dist 2 State Senate
Harry Hanson	1302 4th Ave E. City	City of Williston
Willard Burke	Rt 1 Box 170 Williston	U.M.L.S.P.C.
Loren Myran	Taylor	SWA
Ray Olson	Williston	Williams County
Bryan Beggs	1901 Sioux St. Williston	Webster, Foster & Weston.
[illegible]	P.O. Box 140 Cummington	Garrison Diversion Conserv. D.
Nancy Bakewell	P.O. Box G Williston	Chamber of Commerce
Alan Strinden	RR4 Box 78D Williston	U M L S P C
Monte Meiers	601 15th Ave E Williston	City of Williston

SWC Form No. 83

(500/9-84)

NORTH DAKOTA STATE WATER COMMISSION

REGISTER

ATTENDANCE AT _____

DATE _____ PLACE _____

_____ PROJECT NO. _____

Your Name	Your Address	Who do you Represent? (Or Occupation)
Arthur Anderson	RT3 Williston	Buford-Trenton Irr.
Bruce Engelhardt	Bismarck	NDSWC
Tim Fay	Bismarck	NDSWC

SWC Form No. 83

(500/9-84)

STATE WATER COMMISSION
PROGRAM BUDGET EXPENDITURES APRIL 30, 1994
BIENNIUM TIME 41.7%

FINANCIAL STATEMENT
SWC File ACT/FIN
05-12-1994

AGENCY PROGRAM	SALARIES & WAGES	INFORMATION SERVICES	OPERATING EXPENSE	EQUIPMENT	CONTRACTS	PROGRAM TOTAL
Administration						
Budget	$633,590	$75,792	$293,465	$3,000	$0	$1,005,847
Expended	$247,847	$28,384	$99,216	$0	$0	$375,447
Percent	39	37	34	0	0	37
Water Education						
Budget	$624,858	$0	$142,264	$12,750	$25,000	$804,872
Expended	$227,983	$0	$36,238	$8,841	$0	$273,062
Percent	36	0	25	69	0	34
Water Appropriation						
Budget	$2,178,891	$3,955	$408,500	$33,000	$660,000	$3,284,346
Expended	$894,358	$300	$117,570	$1,541	$104,998	$1,118,767
Percent	41	8	29	5	16	34
Water Development						
Budget	$2,486,884	$2,500	$316,700	$57,100	$8,612,509	$11,475,693
Expended	$1,032,775	$0	$98,092	$8,544	$1,998,826	$3,138,238
Percent	42	0	31	15	23	27
Atmospheric Resources						
Budget	$393,452	$2,500	$1,700,701	$10,500	$3,050,000	$5,157,153
Expended	$149,559	$1,038	$288,960	$2,359	$542,879	$984,796
Percent	38	42	17	22	18	19
Southwest Pipeline						
Budget	$727,047	$9,000	$4,617,020	$110,000	$26,600,000	$32,063,067
Expended	$255,044	$3,518	$1,225,456	$8,444	$3,898,726	$5,391,188
Percent	35	39	27	8	15	17
Contract Carryover						
Budget	$0	$0	$0	$0	$500,000	$500,000
Expended	$0	$0	$0	$0	$500,000	$500,000
Percent	0	0	0	0	100	100
Agency Totals						
Budget	$7,044,722	$93,747	$7,478,650	$226,350	$39,447,509	$54,290,978
Expended	$2,807,566	$33,241	$1,865,532	$29,729	$7,045,429	$11,781,497
Percent	40	35	25	13	18	22

FUNDING SOURCE:	APPROPRIATION	EXPENDITURES	BALANCE
General Fund	$5,532,084	$1,970,232	$3,561,852
Federal Fund	$32,775,404	$5,827,049	$26,948,355
Special Fund	$15,983,490	$3,984,216	$11,999,274
TOTAL	$54,290,978	$11,781,498	$42,509,481

FEDERAL FUND REVENUE:	$4,334,180
SPECIAL FUND REVENUE:	$4,087,282
GENERAL FUND REVENUE:	$6,983
TOTAL:	$8,428,445

STATE WATER COMMISSION
1993 - 1995 Grants/Contract Fund

FUNDING SOURCES

	RTF	General Funds	Federal Funds	Other Funds	Carryover	Totals
Inter Basin Transfer	$0	$25,000				$25,000
Hyrologic Investigation	$600,000			$60,000		$660,000
MR&I Program	$3,106,110				$500,000	$3,606,110
EPA Wetlands Grant	$0		$288,360			$288,360
NAWS	$50,000					$50,000
Devils Lake	$500,000					$500,000
Maple River Dam	$326,610					$326,610
Southwest Pipeline	$1,525,678					$1,525,678
General Projects	$2,693,750	$0	$26,000	$56,000		$2,815,750
SWC Grants Totals	$8,802,148	$25,000	$314,360	$116,000	$500,000	$9,797,508

PROGRAM COMMITTMENTS

APPROVD BY	SWC No.	NAME	Date Approved	Amount Approved	Payments	Balance
SWC	1828	Inter Basin Transfer		$25,000	$18,876	$6,124
SWC	1395	Hydrologic Investigations		$656,000	$172,409	$483,591
		USGS Data Collections: FY '94 & FY '95				
SWC	1389	High Value Irrigated Crop Development		$4,000	$2,000	$2,000
			HYDRO SUBTOTAL	$660,000	$174,409	$485,591
		MR&I Program				
SWC	237-5	Ramsey Co Rural Water	9-15-92	$1,094,239	$527,435	$566,824
SWC	237-27	Missouri West	9-15-92	$1,438,549	$984,370	$454,179
SWC	237-36	Stanley	10-21-91	$548,672	$230,370	$318,302
SWC	237-42	Garrison Rural Water	9-15-92	$824,230	$460,845	$363,385
			MR&I SUBTOTAL	$3,906,110	$2,203,020	$1,703,090
		EPA WETLANDS GRANT				
SWC	1489-5	Wetlands Education	9-15-92	$65,824	$65,821	$3
		Technical Services		$8,873	$8,873	$0
		Water Quality Analysis		$14,325	$14,325	$0
		Grand Harbor		$69,723	$44,984	$24,739
		Private Lands		$26,955	$25,137	$1,818
		Devils Lake Basin (Conservation Plan)		$27,660	$22,738	$4,922
		Adopt-A-Pothole		$25,000	$25,000	$0
		Devils Lake Basin (Midwest Flood)		$50,000	$21,103	$28,897
			EPA SUBTOTAL	$288,360	$227,981	$60,379
SWC	237-4	NAWS	2-06-92	$50,000	$0	$50,000

APPROVD BY	SWC No.	NAME	Date Approved	Amount Approved	Payments	Balance
SWC	416	Devils Lake Flood Control	2-04-92	$428,000	$20,400	$427,600
SWC	1712	Frequency Analysis Devils Lake	10-26-93	$62,000	$32,250	$49,750
		DEVILS LAKE SUBTOTAL		$500,000	$22,650	$477,350
SWC	1344	Maple River Flood Control	2-04-92	$326,610	$10,761	$315,849
SWC	1736	Southwest Pipeline Project	2-04-92	$1,525,678	$0	$1,525,678
		GENERAL PROJECTS				
		Shortfall		$691,815	$0	$691,815
SWC	237	Garrison Consultant (91-93)	8-22-91	$7,842	$7,842	$0
SWC	1803	Belfield Flood Control (Stark)	12-20-91	$38,800	$0	$38,800
SWC	1346	Mount Carmel (Cavalier)	4-02-92	$4,395	$0	$4,395
SWC	662	Park River Snagging & Clearing (Walsh)	4-02-92	$10,117	$0	$10,117
SWC	662	Park River #2 Snagging & Clearing (Walsh)	5-23-92	$4,625	$0	$4,625
SWC	1496	Lake Elsie (Richland) (F)	8-05-92	$11,500	$2,811	$8,689
SWC	1292	Willow Road Floodway (Morton)	8-26-93	$32,641	$32,641	$0
SWC	300	Baldhill Dam (Barnes)	9-15-92	$184,000	$35,000	$149,000
SE	1311	Bingham CAT (Traill)	9-15-92	$4,900	$0	$4,900
SE	1311	Elm CAT (Traill) (F)	9-15-92	$5,590	$5,590	$0
SWC	237	Garrison Coalition	12-09-92	$10,000	$0	$10,000
SWC	1815-4	Sheyenne River Snagging & Clearing (Ransom)	12-09-92	$4,836	$0	$4,836
SWC	1842-4	Wild Rice Snagging & Clearing (Richland)	12-09-92	$725	$0	$725
SE	1751-H	Lower Forest River FP (Walsh)	1-26-93	$5,200	$0	$5,200
SE	1751-C	Williston Floodplain (Williston)	2-24-93	$1,000	$1,000	$0
C	1804	Grand Harbor #1 (Ramsey)	4-06-93	$20,640	$0	$20,640
SWC	237	Garrison Consultant (92-95)	7-02-93	$40,000	$19,106	$20,894
SWC	1832	Hammer - Sullivan (Ramsey)	7-02-93	$21,231	$0	$21,231
SWC	1840	North Loma (Cavalier)	7-09-93	$7,960	$0	$7,960
SE	543	North Lemmon Lake Dam (Adams)	7-08-93	$9,933	$9,933	$0
SE	263	Patterson Lake Management (Stark)	8-24-93	$500	$500	$0
SE	266	Tolna Dam (Nelson)	9-28-93	$2,000	$0	$2,000
SWC	1588-1	International Coalition	10-26-93	$10,000	$7,500	$2,500
SE	1352	Missouri River Master Manual Review	10-20-93	$1,413	$1,413	$0
SWC	1865	Belfield Dam (Stark)	11-19-93	$62,000	$29,796	$32,204
SE	1577	Langdon Floodplain Management Study (Cavalier)	12-20-93	$4,100	$0	$4,100
SWC	1245	Nelson Drain (Traill)	12-08-93	$37,627	$0	$37,627
SWC	1826	Wetlands Trust	12-08-93	$3,230	$3,230	$0
SWC	1545	Drain #72 (Richland)	12-08-93	$10,017	$0	$10,017
SE	1816-5	Sheyenne River Snagging & Clearing (Barnes)	01-19-94	$8,500	$0	$8,500
SE	1868-4	Wild Rice Snagging & Clearing (Cass)	01-25-94	$5,875	$0	$5,875
SWC	1346	Mt Carmel Dam (Cavalier)	02-09-94	$250,000	$0	$250,000
SWC	222	Buford-Trenton Irrigation (Williams)	04-07-94	$39,240	$0	$39,240
SE	1270	Haycreek Watershed (Burleigh)	04-22-94	$9,750	$0	$9,750
SE	1875	Castle Rock (Hettinger)	05-03-94	$4,579	$0	$4,579
		APPROVED GENERAL PROJECTS SUBTOTAL		$974,866	$212,523	$718,404
		Unallocated Balance (Total-Approved-Shortfall)		$1,339,069		
C GRANTS TOTALS				$3,797,508	$2,870,220	$6,927,288

M E M O R A N D U M

TO: David A. Sprynczynatyk, State Engineer
Dale L. Frink, Director of Water Development
TS Todd Sando, Chief, Investigations Section
FROM: Bruce Engelhardt, Water Resource Engineer BE
SUBJECT: Buford-Trenton Irrigation District
DATE: April 15, 1994

I have reviewed the Corps of Engineers' December 1993, Reconnaissance Report; Missouri River Buford-Trenton Irrigation District. The Corps acknowledges in the report that they are responsible for the damages to the District by the statement, "The study concludes that the high ground water and increased flooding problems in the District have been caused by construction and operation of the Garrison Dam-Lake Sakakawea project."

The conclusions and recommendations section are not included in the report. However, the syllabus states that the report recommends acquiring land from willing sellers. The willing sellers would have two options, a fee title acquisition within a 10-year period or a two-phase buy-out consisting of a flowage easement within a 10-year period and fee title acquisition of the remaining value during the following 15-year period. Either plan would allow the Corps to acquire a substantial portion of the District's land. The land acquired by the Corps would be managed for wildlife and development of wetlands. There would not be any provisions for continued leasing of lands acquired in fee.

The Corps investigated other possible solutions to the flooding and high ground water problems in the District. All the alternatives except acquisition were eliminated from further consideration by the Corps. Some of these alternatives,

particularly the levy to control flooding, the groundwater control plan using drains and canal lining, and the conversion to center pivots deserve further study. However, the District and the landowners strongly support the easement acquisition plan. Due to the economic burden that the landowners have been under for many years because of the problems, they would like the Corps to take action rather than continue to study the problem. The Corps appears to support the easement plan. Given the Corps history of delaying or halting projects to which they are opposed, even in defiance of explicit Congressional directives, any attempt to get the Corps to consider other alternatives would be a long and difficult, if not impossible, task. Therefore, the state should support the acquisition of flood easements by the Corps while opposing the removal of land from private ownership and irrigated production.

The acquisition plan as presented in the report would give the landowner the option of selling their land in fee title or a flood easement to the Corps. Both options would have a 10-year limit attached to them. The federal government's offer to acquire land would expire 10 years from the time Congress first appropriated funds for this purpose. The Corps intends to negotiate the value of the flowage easement on any parcel of land on a case-by-case basis using the amount of damage suffered as a guideline for the payment. Land on which a flood easement is acquired during this 10-year period would be purchased in fee by the Corps at the request of the landowner. If requested, the Corps would pay the

difference between the amount paid for the easement and the market value of the land if it had not been damaged until 25 years after Congress first appropriated funds. Bill Miller, Omaha District Corps, has said that all the landowners should sell the Corps an easement within the 10-year period, even if the land has not been damaged, to ensure that they have the option of selling the land within the 25-year period. The selling of undamaged land could become necessary if a large flood would occur or if the Irrigation District ceased operating. The need for a time limit on this or any specific program is obvious. However, it should not be necessary for owners of land which has not been damaged to sell the Corps an easement for little or nothing to ensure that future damages are addressed.

An effort should be made to prevent the Corps from acquiring land in fee title unless the land has been damaged to the point that it is no longer suitable for any type of agricultural production, an estimated 1,000 acres have sustained that level of damage. The land which the Corps acquires title to will be removed from production. The Corps should be required to mitigate the economic effects of this loss by assisting in the development of new irrigation on the upper bench. Replacing the areas that are no longer irrigated will also help ensure the continued operation of the Irrigation District.

Every possible effort must be made to preserve the economic viability of the Irrigation District. The District provides water to approximately 10,000 acres of irrigated land. NDSU estimated

that converting this irrigated land to dry land would result in a decline of over $10 million in total business activity and 130 fewer jobs in North Dakota. If the Corps purchases land and removes it from production and does not mitigate the loss of irrigated land, the remaining irrigators will have to pay more taxes to the Irrigation District. Although the exact figures are not known, at some point, probably less than half the land removed from production, it will become economically impossible for the remaining individuals to bear the cost of operating the District and all the land will be sold to the Corps. There are approximately 2,000 acres that purchase water from the District that are not included in the Corps' proposed acquisition area. If the District ceases operation, the Corps should be required to compensate these irrigators for their loss or, preferably, provide them an alternative source of water.

The state should support a flood easement program similar to that proposed by the Buford-Trenton Irrigation District. The following items should be included in the acquisition plan:

1. The Corps will not acquire land in fee title unless it is determined that the land has been damaged to the extent that it will not support any agricultural production.

2. In order to determine the market for severely damaged land with a flood easement attached, the Corps will not acquire any land in fee title for the first 5 years of the program, but will be limited to flood easements. At the end of the 5 years, the Corps will be allowed to purchase the remaining value of the land at the request of the seller.

3. Any land acquired in fee title will be mitigated by the Corps assisting in the development of new irrigation distribution works on the upper bench.

4. Land which has not suffered significant damages will not in any way loose the right to have future damages addressed if the landowner elects not to participate in this program.

5. Irrigators receiving water from the District who are not included in the Corps' proposed acquisition area be guaranteed a source of water if the District ceases operations due to Corps of Engineers actions.

A proposed draft letter to the Corps of Engineers updating the comments made on the draft report is attached. Also attached is a draft letter to the congressional delegation covering the points in this memo.

BE:dm/222

Office of the State Engineer
May 11, 1994

Colonel Michael S. Meuleners
District Engineer
US Army Corps of Engineers, Omaha District
215 North 17th Street
Omaha, NE 68102-4978

Dear Colonel Meuleners:

I recently had the opportunity to review an advance copy of the Reconnaissance Report on the Missouri River Buford-Trenton Irrigation District, North Dakota; December 1993. I wish to update and clarify my October 8, 1993, comments on the August 1993 draft reconnaissance report.

I continue to oppose the removal of lands, especially irrigated lands, from the private sector because of the severe economic impact to the area. As stated in the October 8th letter, I do not believe sufficient study has been done to support one plan to the exclusion of others. However, I do support a flood easement plan similar to that proposed by the Buford-Trenton Irrigation District for the following reasons:

1. The landowners in the district are under a great economic burden that must be resolved quickly.

2. The landowners deserve compensation for damages suffered in the past and for the continuing damages caused by the operation of Garrison Dam.

3. There is strong local support for the flood easement plan.

To reduce the economic impact on the region and the state and to ensure that the Buford-Trenton Irrigation District remains a viable irrigation district, I propose that the following points be included in an easement acquisition plan:

1. No fee title land acquisition unless it is determined that the land has been damaged to the extent that it will not support any agricultural production, irrigated or dryland.

2. Acquisition be limited to easements for the first five years of the program. At the end of five years fee title could be acquired for the remaining value of the land.

3. Any land purchased in fee title be mitigated by developing irrigation on the upper bench lands. As part of the acquisition program, the Corps should provide funds for the development of distribution works to serve these lands. Enclosed is a copy of a reconnaissance report by this office which include information on possible irrigation development on the upper bench near the Buford-Trenton Irrigation District.

4. Land which has not suffered significant damages will not in any way lose the right to have future damages addressed if the landowner elects not to participate in this program.

5. Irrigators receiving water from the District who are not included in the proposed acquisition area be guaranteed a source of water if the District ceases operations due to Corps of Engineers' actions.

Thank you for the opportunity to review the reconnaissance report. If you have any questions, please call me.

Sincerely,

David A. Sprynczynatyk, P.E.
State Engineer

DAS:BE:dm/222
Encl.
Copy to: State Water Commission Members
Williams County WRD
Monte Hininger

North Dakota State Water Commission
900 EAST BOULEVARD · BISMARCK, ND 58505-0850 · 701-224-2750 · FAX 701-224-3696

RESOLUTION NO. 94-5-465

Buford-Trenton Irrigation District

WHEREAS, the Buford-Trenton Irrigation District is an essential part of the economy of the Williston area and the State of North Dakota, producing over $4 million in crops annually and generating annual economic activity in excess of $11 million; and

WHEREAS, the East Bottoms of the Buford-Trenton Irrigation District and the Lewis and Clark Irrigation District have already been acquired by the Corps of Engineers for Lake Sakakawea causing substantial negative economic impacts for the State of North Dakota and the Williston area; and

WHEREAS, the construction and operation of the Garrison Dam-Lake Sakakawea project has caused high ground water and increased flooding problems in the District; and

WHEREAS, these high ground water and increased flooding problems have placed the landowners in the District under a great economic burden; and

WHEREAS, the landowners deserve compensation for damages suffered in the past and for the continuing damages caused by the operation of the Garrison Dam; and

WHEREAS, the Corps of Engineers has evaluated numerous flood control measures and asserts that these measures would be either economically infeasible, would not have an acceptable level of dependability, or would not provide permanent solution to the problems; and

WHEREAS, there is strong local support for the flood easement plan.

NOW, THEREFORE, BE IT RESOLVED by the North Dakota State Water Commission, at a meeting held in Williston, North Dakota, on May 24, 1994, that to reduce the economic impact on the region and the state, and to ensure that the Buford-Trenton Irrigation District remains a viable irrigation district, the Corps of Engineers initiate a program of obtaining flood easements from willing sellers in the Buford-Trenton Irrigation District; and

BE IT FURTHER RESOLVED that for the purpose of acquisition the value of the land be based on the present value of similar unaffected lands within the area; and

BE IT FURTHER RESOLVED that the Corps of Engineers refrain from acquiring land in fee title unless the land has been damaged to the extent that it will not support any agricultural production, irrigated or dryland; and

BE IT FURTHER RESOLVED that any land purchased in fee title be mitigated by developing irrigation on the upper bench lands. As part of the acquisition program, the Corps should provide funds for the development of distribution works to serve these lands; and

BE IT FURTHER RESOLVED that land which has not suffered significant damages will not in any way loose the right to have future damages addressed if the landowner elects not to participate in this program at this time; and

BE IT FURTHER RESOLVED that irrigators receiving water from the District who are not included in the proposed acquisition area be guaranteed a source of water if the District ceases operations due to Corps of Engineers' actions; and

BE IT FURTHER RESOLVED that the North Dakota State Water Commission strongly supports federal funding of an easement acquisition program.

FOR THE NORTH DAKOTA STATE WATER COMMISSION:

Edward T. Schafer
Governor-Chairman

SEAL

David A. Sprynczynatyk
State Engineer and
Chief Engineer-Secretary

Upper Missouri Lake Sakakawea Planning Committee

1302 Davidson Drive
Williston, North Dakota 58801
1-701-774-8805
Fax 1-701-572-1186

October 10, 1991

TO WHOM IT MAY CONCERN:

Congress through the Corps of Engineers inflicted an ecological disaster on the Upper Missouri Region in North Dakota with the construction of Garrison Dam and the flooding of Lake Sakakawea. Time has proven the fears of the residents of this area to be true. It is now the time for Congress and the Corps of Engineers to act. The economy and environment of this region and the future of North Dakota is threatened.

The following white paper summarizes the information gathered by this committee through several years of research, interviews and meetings. For the sake of brevity documentation of these facts are not included but can be provided where needed.

This should be considered a living document that will be updated periodically to reflect new information, actions taken and future planning.

We invite you to review this document, ask questions and become involved in the future of this region.

Sincerely,

Monte Meiers, Co-Chairman

Gene Emery, Co-Chairman

UPPER MISSOURI-LAKE SAKAKAWEA PLANNING COMMITTEE
WHITE PAPER
OCTOBER 10, 1991

I. HISTORY:

When the Upper Missouri-Lake Sakakawea Planning Committee was formed, a large number of concerns were expressed about the problems we were experiencing in the area of siltation, destruction of our economic base, water intake problems, possible channel change due to ice jam, recreation and mosquitoes. People representing these areas of concern were invited to be a part of a working committee to address all of these concerns.

Our community was involved and concerned about the loss of valuable river bottom land to the reservoir under the Pick-Sloan plan for river control. While the 1830' operating level was a concern, the inevitability of the plan was accepted.

When the pool level of 1850' was proposed and being considered, our community concern was expressed by our numerous trips to Washington to testify in opposition to the 1850' operating level. In North Dakota, we stood alone in our opposition to the 1850' levels. Our Governor and all of the major North Dakota communities supported the 1850' level if the Williston area was assured of adequate protection. Our concerns then and our problems now were very similar. In 1954 our mayor testified and these are his exact words, "However the problem we fear the most is that of excessive silt deposits which will be left at our front door." In testimony in 1955, 1956, 1957 with the support of Senator Milton Young our testimony was the potential harm to the Buford-Trenton irrigation project and the destruction of the Lewis and Clark irrigation project.

When the 1850' level was approved, special congressional help was needed to give us an adequate water intake system that was different than the COE proposal. Again, in the middle 1970's, we again went to Washington and with Senator Burdick's help secured an appropriation for a new water intake structure for our city water supply; we had lost our original structure when the dam was first filled. The intake constructed to replace that one had multi-levels of intakes and was being silted in very rapidly. At the present, we are again in danger of the new intake which is in the middle of the main river channel being silted in We also have a risk of the river changing channels because of the large silt deposits. This would involve a new intake and a longer water supply line.

The mosquito problem has been with us for a long time. The siltation that is occurring is making thousands of acres of cattails, willow bars and marsh ground that are prime breeding ground for mosquitoes. This problem will continue until the siltation problem is addressed. In the meantime, we must have in place procedures for larviciding and funding for this effort. This year Senator Burdick for the first time put in a line item appropriation for mosquito control in the corps budget. The amount isn't adequate for proper control but it's a real first step.

II. PROMISES:

When the Congress approved the 1850' level for the Garrison reservoir, it conditioned that approval with this statement. This is in a letter from acting Interior Secretary Ralph A. Tudor to Major General Samuel D. Sturgis the chief of engineers. This is a direct quote from his letter. "This agreement is made with the understanding that the Corps of Engineers will fully protect the Bureau's Buford-Trenton project, The State of North Dakota's Lewis and Clark project and the City of Williston from any adverse effects due to the reservoir". In our conversation with the Corps, we have no indication that this statement has been modified or changed by Congress. There also were promises made to the Lewis and Clark and East Valley Buford-Trenton landowners that they would be able to lease their lands back and these promises haven't been kept. We expect these commitments to be honored and this is the purpose and goal of an active working Upper Missouri-Lake Sakakawea Planning Committee. We have a proposed program of work to be done. We will, if we have to, go to Congress to seek help to see that these commitments are kept and our goals are accomplished.

III. PROBLEMS:

1. AGGRADATION:

A. Buford-Trenton Irrigation District.

The Buford-Trenton irrigation project was constructed in the early 1940's. The main crops that have historically been grown there are small grains, sugar beets, corn, alfalfa, and dry beans. The project is entirely family farm units and a major contribution to the economy of the Williston area.

There were 12,000 acres in the project before the east bottom area was lost to the reservoir of Garrison Dam when the pool level was raised to 1850'. Some new land has been developed and the project is back to 10,000 acres now.

Today the siltation of the river channel between the confluence of the Missouri and the Yellowstone rivers and Tobacco Gardens east of Williston has jeopardized the rest of the project to rising water tables, loss of drainage and to increased risk to ice jam causing flood damage in the spring. Immediate action is needed to maintain the productive life of this irrigation project.

1. 8-mile Creek needs to be diverted into Trenton Lake.
2. The middle bottom drain pumps should be moved to the Larson Bridge
3. Tile should be placed under the drain ditches from the middle of the valley to the drain pumps in both the middle and west bottoms and the drain pumps should be lowered.
4. The dike should be raised to help insure against ice jam damage.

5. A definite policy whereby the government takes responsibility for and establishes reimbursement procedures for ice damage by jams on the Missouri River.

6. Develop the bench area above the valley to replace the land lost to water problems in the valley.

7. Establish a phased flowage easement for these lands lost due to aggradation in Buford-Trenton Irrigation District.

B. City of Williston Water Intake.

The City of Williston relocated its water intake on the Missouri River at the Lewis and Clark Bridge west of Williston in 1960. This relocation was due to the protective dikes that the Corps of Engineers placed south of Williston for flood control.

Two (2) intakes were installed. One intake on each of the two (2) bridge piers of the Lewis and Clark Bridge.

Soon after we started using these intakes, the river shifted its channel to the south bank causing siltation problems and blockage of our intakes. In 1982, through Congressional action, the Corps of Engineers helped us construct our third intake south into the main channel. The two (2) intakes that were constructed in 1962 are under sand and are not operable at this time.

The concerns that the city has are two-fold. As the bottom of the river rises due to sedimentation, we feel the river may start shifting away from our remaining water intake. This may happen during spring breakup. The second concern we have is upstream from the water intake where the river bends to the south approximately two (2) miles and then bends back to the west. We feel there is a possibility that during spring breakup and a possible ice jam, that the river may go over its banks cutting a new channel to the south of the present water intake, leaving us without a water supply.

C. Mosquitoes:

The Corps has maintained that the present aggradation of the Missouri River is a naturally occurring event, and that the flooding of area lowlands would have occurred whether or not the dam had been built. However, the Corps own records contradict this position.

A study conducted in 1977 by the Army Corps of Engineers concluded that major sediment deposition and increased river stages in the backwater reach of Lake Sakakawea occur in the Williston area, and both are due to the construction and operation of the Garrison Dam Project.

Corps' thalweg charts of the Missouri River in the Williston reach show that up to 20 feet of silt deposit has occurred in the river channel directly south of the city from 1957-1988. The Corps' thalweg charts also show that up to 35 feet of silt has deposited in the river channel 13-23 miles downstream of Williston.

Corps cross section plots for Missouri River silt in the Williston area show that the 20-35 feet of aggradation has resulted in reduced river capacity, and in some ranges of the river, no channel remains.

The horrible pest mosquito Aedes vexans lays its eggs in the soil next to bodies of water. Each time that the water level of the Missouri River fluctuates, mosquito eggs become wet and hatch. Because the Missouri River channel in the Williston area has been greatly reduced or doesn't exist in some areas, increased river stages (confirmed by the Corps' own 1977 study) result in increased flooding of low lands in the Williston area. The increased flooding of area low lands causes increased hatching of mosquitoes-in numbers which far exceed those of an endemic, normally situated Missouri River.

In the 1977 Corps' study of the Buford-Trenton area, the Corps accepted responsibility for the aggradation created by the development and operation of the Garrison Reservoir, yet the Corps has refused to accept responsibility for the mosquito breeding sites created by the aggradation. In addition, the Corps constructed two additional projects in the Williston area in connection with the development and operation of the Garrison Reservoir but the Corps has not accepted responsibility for the mosquito breeding sites which resulted from these projects-the Highway 85 ditches and the Buford-Trenton oxbow lake.

2. LEWIS AND CLARK IRRIGATION DISTRICT:

The U.S. Army Corps of Engineers with the help of their licensee-the North Dakota Game and Fish Department does not honor the governments commitment to lease the land on the Lewis and Clark Project to the farmers who comprise the Lewis and Clark Mutual Aid Corporation. The result is much of the land is not being utilized at all or at a reduced capacity. The government, area, county political entities and farmers all suffer varying degrees of economic loss.

3. ECONOMICS:

Since the aggradation problem is a threat to several of the existing irrigation districts, the economic impact of the loss of income in these areas will be significant to the economy of Northwestern North Dakota and Northeastern Montana.

Farm income on these irrigated acres is much greater than on the surrounding dryland acreage. Additionally, the loss of substantial acreage will affect the efficiency of continued operation of existing processing facilities unless replacement acres are found.

No formal economic analysis has been conducted to date to determine the impact on acreage losses to the local economy. Contact has been made with NDSU to identify key staff that could adequately prepare such a report.

4. OLD WILLISTON LANDFILL:

The City of Williston is concerned about the Old Williston Landfill located just east of the Little Muddy and west of the Flying J refinery. The landfill was operated from approximately 1958 to 1970.

The landfill was sited at this location after the Garrison Dam was built and the lake elevation started to flood the original landfill site. The Corps of Engineers re-located the landfill to the site in question and owns the property. This site was discontinued after the groundwater at the site became so high that it was impractical to operate. The high ground water came from the elevated lake level created by the Garrison Dam.

An allegation of possibly 200 barrels of arsenic being disposed of at the site was investigated by the ND State Health Dept. in the 1970's but the allegation wasn't resolved at the time. When Superfund Law became effective, this site was listed as a potential site by this allegation.

The site is under investigation for National Priority Listing by EPA as a Superfund clean-up site. The cost of clean-up is potentially the city's responsibility even though they are not aware of the arsenic disposal or any other disposal that was illegal. In fact the preliminary investigations do not substantiate 200 barrels of arsenic disposal.

Irregardless of these facts, EPA and the Corps of Engineers have indicated the majority of the cost of the clean-up, will be the City of Williston's expense.

The City of Williston can ill afford a major clean-up effort and do not feel it should be at their expense. They did not operate the landfill improperly, the arsenic disposal allegation is unfounded, the land is owned by the Corps of Engineers, relocated to the site by the Corps of Engineers, and subsequently sub-surface flooded by the Corps of Engineers. The Corps of Engineers should work with the City and EPA to come up with a fair equitable solution to this site investigation.

WILLISTON SEWAGE TREATMENT SYSTEMS:

The City of Williston's sewage treatment system was constructed by the Corps of Engineers in 1959 on Corps of Engineers' land, with an easement back to the city. This was due to a settlement reached by the Corps of Engineers and the City on relocation of the sewage system because of the protective dikes placed around Williston for flood control. The placement of the new Sewage Treatment System was just north of the dikes in a low area and south of the old river channel. At the time of construction, the Corps of Engineers provided in their plans additional acres for future expansion.

During the 1960's or early 1970's, this low lying land was designated a Wetlands III Area. When we started planning expansion to our facility in the early 1970's, we experienced all kinds of environmental problems with the Federal Bureau of Sports and Fisheries, EPA and the Corps of Engineers. After about seven (7) years of study and working with these agencies, the City was able to construct additional lagoons. At some future time, as the City grows, we are going to have to expand our treatment system. This will entail building a third lagoon cell to the west of our present cells. The City's concern is, "Will the Corps of Engineers and other agencies allow us to expand our sewage treatment system in this same general area?" If not, will the Corps participate in relocating this facility?

IV. FUTURE:

NEGATIVE ALTERNATIVE:

The construction of Garrison Dam and the subsequent flooding of Lake Sakakawea has already created an environmental and economic disaster in the Upper Missouri Valley in North Dakota. The COE failed to predict, or at least to make known these catastrophic effects and have no known plan for dealing with them. Much has already been sacrificed by this region and the demands will continue, for decades.

The aggradation problem will continue to work its way up the Missouri and Yellowstone rivers and threaten each subsequent irrigation district along the channel.

While mathematical models can be helpful in anticipating alternative scenarios, the timetables for destruction of each district are impossible to predict since much of the flood threat is from water levels, stream flows, ice jams, etc. that vary with mother nature.

Certainly uncontrolled aggradation will inevitably lead to the continued destruction of existing irrigation districts.

Downstream the delta will continue to grow at the rate of 45,000 acre-feet per year. By the year 2055, the COE predicts 35 feet of silt at Tobacco Gardens which will leave that area a willow and cattail choked mosquito infested swamp essentially the same as the area immediately south of Williston is today. As the delta moves downstream, water intakes will be isolated and plugged. Recreation capability will be destroyed. Access to the water will be impossible. The water supplies for municipalities, irrigation and industry will be cut-off. Eventually North Dakota will be left with a flat bottomed, vertical sided swamp of little value with its main water source, the Missouri River, split into unstable shallow channels throughout.

The lack of development of the water resource in the Missouri River will stymie development of our agricultural industry and greatly limit the potential of our soil and plant resources to be used to improve the economic welfare of western North Dakota.

POSITIVE ALTERNATIVE:

Ninety-six percent of the available surface water in North Dakota flows into North Dakota in the Missouri River. This is the largest unclaimed water supply in the United States, however reservations on this water are being made at increasingly rapid rates as the understanding of the value of this clean fresh supply increases.

For a limited time this region has the opportunity to claim a portion of this resource to develop the potential of the surrounding area for agricultural and industrial development with an economy not possible anywhere else. The growing delta in upper Lake Sakakawea can also be developed to return sacrificed lands to productive use. The combined efforts of local, state and national entities provide a complete revitalization of the region which mitigates the damage done and sacrifices made due to the construction of the Garrison Dam. Following is an outline of this potential.

DEVELOPMENT PLAN:

GOAL: To create a plan for the development of the resources of Missouri River in a two county area for the economic and environmental benefit of the residents and governmental agencies.

OBJECTIVES:

1. Create a local entity to control and manage the development and implementation of the plan.

2. Develop and implement a plan to control and manage the silt load of the river. The Army Corps has indicated that there are various methods and techniques that can be implemented to mitigate the aggradation issue. Since several of the districts are threatened by flooding, mitigation would have to be implemented in the near future. Obviously this would save and/or reduce the impact of flooding on the area. Possible results of implementing these goals and objectives would be:

   a. Create new lands

   b. Clean river channel

   c. Control mosquitoes

   d. Protect city's water intake

   e. Reduce water table on Buford-Trenton by improving hydraulic capacity of the Channel

   f. Maintain a navigable channel with sufficient capacity to pass average flood flows without flooding

   g. Extend the life of the Garrison Reservoir

3. Maintain, enhance and expand the agricultural resources in the river valley. There has been significant interest shown in developing additional irrigation in areas along the Missouri. Any new irrigation would have a positive impact upon the local economy, since irrigation is a much more intensive form of farming and its impact upon the local economy is significant. It may also provide the stimulus for additional food processing facilities in the area.

The State Water Commission has indicated that they will be conducting a reconnaissance level study of potential irrigation districts to determine a planning framework upon which to develop these districts.

Additionally, NDSU is being approached to prepare an economic impact analysis of the potential districts.

There is presently discussion at the local level regarding the need to create an overall planning and development authority to oversee the future of irrigation in the area.

Economic benefits would accrue from continued irrigation of the Buford-Trenton Project and the development of irrigation projects in McKenzie and Williams Counties adjacent to the Missouri River and Lake Sakakawea. This would add stability to our agricultural industry, provide jobs and opportunities for young people.

Potential to use the Missouri River water for the irrigation of:

High value speciality crops - vegetables, flowers, nursery stock, seed potatoes

Forage crops - to enhance the livestock industry by providing a stable, high quality feed supply to supplement and more efficiently use the grass and range resources in this area

Field crops - such as potatoes, dry beans, safflower, peas & lentils

The production of crops under irrigation in this area would provide a stable supply of commodities which could be processed or "value added" in the area. The safflower crop, for example, which is unique to this area, could be greatly enhanced by a stable supply of both oleic and linoleic oil type seeds for crushing at the plant in Culbertson, MT.

Livestock enterprises could be expanded with the assurance of adequate feed supplies to maintain animal numbers during periods of drought. Hog and sheep operation would add value to feed grain produced on dryland. The grass resource, along with crop residues and supplemental feed, could support greatly increased cattle numbers for cow-calf operations. Western North Dakota could be very competitive in sale of top quality calves and feeders to the southern livestock markets. Possible irrigation districts are:

a. Buford-Trenton project

b. East Valley, and Lewis and Clark

c. Little Muddy Valley

d. Nesson Flats

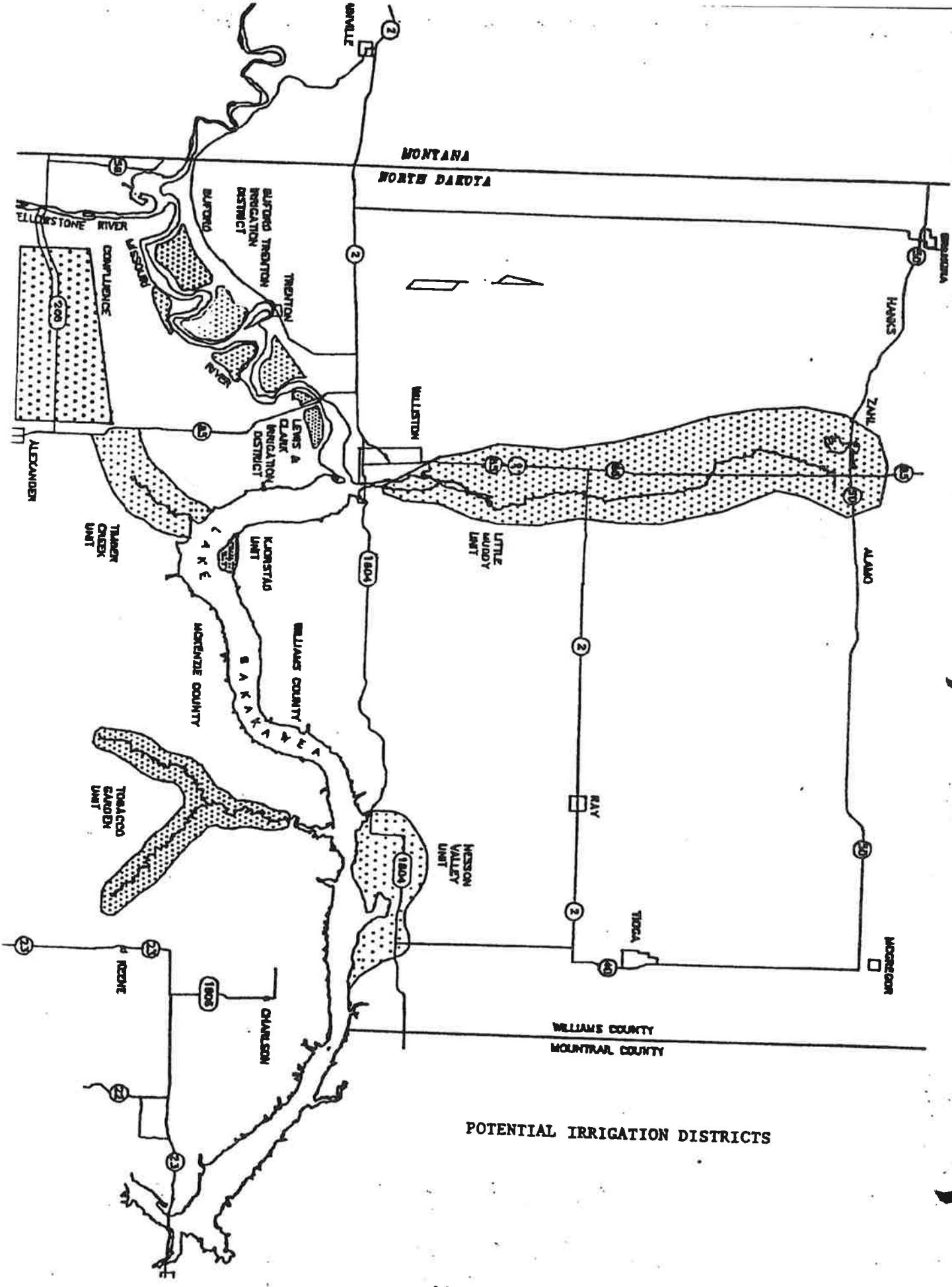
e. Tobacco Gardens

f. Timber Creek

g. Highland Unit

h. Cherry Creek

i. Other areas



POTENTIAL IRRIGATION DISTRICTS

4. Maintain, enhance and expand recreational opportunities at:

   a. Confluence area

   b. Trenton Lake

   c. Lewis and Clark bridge recreation area

   d. Little Muddy recreation area

   e. Lewis and Clark Park

   f. Whitetail Bay -has the only concessionaire on the lake in Williams County outside of the State Park. Low water severely limits lake access. Current plan being explored to excavate to ramp in bay.

   g. Tobacco Gardens

   h. Little Egypt - Now a county park with the finest sand beaches in North Dakota, limited facilities have been established in the park. Low water levels have made access difficult.

   i. Little Beaver Bay - on the shores of Lake Sakakawea in a very scenic valley. Current problem is siting a boat ramp and access road due to cultural resource sites.

   j. Others

5. Maintain and enhance environment of River Valley.

   a. Improve living conditions

   b. Eliminate existing mosquito habitat

   c. Remove silt from river water to improve water quality in river and lake

6. Investigate, evaluate and develop alternate industries.

   a. Cannery

   b. Power generation

   c. Timber

   d. Fish hatchery

   e. Fish farming

   f. Encourage oil and mineral development - current COE and ND Game and Fish Dept. policies discourage oil exploration with cost prohibitive requirements.

   g. Others

7. Maintain, expand and enhance wildlife resources.

   a. Create water fowl production areas

   b. Develop comprehensive wildlife plan for area

8. Plan for irrigation development.

   a. Hold meetings with key landowners and operators in each of the areas designated for potential irrigation development to determine interest, needs, and feasibility of development.

   b. Request assistance from State Water Commission to organize irrigation districts; to work with NDSU Agricultural Economists in making economic feasibility and impact studies; and to assist in preliminary engineering and soil studies.

   c. Work with landowners and operators in the Buford-Trenton Project to develop irrigation of the bench land around the project. Potential for 2000-3000 more irrigable acres.

   d. Work with organized irrigation districts to secure water rights, detailed engineering and soil studies and financing for project construction and farm irrigation equipment.

   e. Actively work to promote irrigation development in areas not adjacent to the river or lake but where pumping and pipelines could supply water to lands suitable for irrigation.

VI. WHAT DO WE WANT FROM OUR CONGRESSIONAL DELEGATION?

A. Mandate to the Corps to fulfill the promises made to Williston by Congress

B. Funding for C.O.E. maintenance and mitigation projects on river

C. Enabling legislation to establish local rights on government land and management council

D. A mechanism and in place funding to mitigate losses suffered by farmers due to the adverse impacts created by the Garrison Dam. i.e. dramatic water table increases caused by siltation, ice jams, channel reduction which increases flood area, etc.

E. General support in dealing with Corps of Engineers

F. Form a coalition with Montana delegation

VII. WHAT WE WANT FROM THE STATE OF NORTH DAKOTA?

A. Support in dealing with the Corps of Engineers, State Agencies and Congressional Delegation.

B. Assistance in establishing water rights for agricultural, industrial and domestic uses.

C. Assistance in creating and financing irrigation districts.

D. Assistance with other economic development projects to use water rights.

E. Support in the completion of the Whitetail Bay excavation project.

VIII. WHAT WE WANT FROM THE CORPS?

A. Carry out instructions given them by Congress when the 1850' operating level was authorized.

B. General responsiveness and responsibility for problems created in this area by the construction of the Garrison Dam.

C. Option for members of the Buford-Trenton Irrigation District to sell damaged land to U.S. Government with permanent lease back rights.

D. Design, construction and financial assistance to place water intakes in the Yellowstone and Missouri River and Lake Sakakawea for new irrigation districts.

E. Guarantees from the Corps that water intakes located in the Missouri or Lake Sakakawea will be protected and flows maintained.

F. Acreage being created by the delta subject to intermittent flooding be opened for agricultural purposes whenever usable. Access to be provided by C.O.E.

G. Establish a local management group made up of C.O.E., ND Game and Fish, Williston City Commissioner, Vector Control Board Member, County Commissioner from Williams and McKenzie County, State Water Commission, Economic Development director and two area residents to administer operations on government land.

H. The Corps accepted responsibility for the aggradation in 1977 and now needs to accept responsibility for the decreased river channel capacity and the excessive flooding which has resulted and finally accept the responsibility for the large number of mosquitoes which are hatching because of the flooding.

I. The Corps needs to conduct ANNUAL larviciding in the areas they created as part of the development and operation of the Garrison Reservoir.

IRRIGATION BASED ECONOMIC DEVELOPMENT IN NORTHWESTERN NORTH DAKOTA

A Progress Report of Local Efforts

Presented to State Water Commission
May 24, 1994

By Willard Burk

Upper Missouri Lake Sakakawea
Planning Committee

HISTORY OF IRRIGATION IN NORTHWESTERN NORTH DAKOTA

The first known attempts to produce irrigated crops in northwestern North Dakota occurred in the middle 1880's approximately 110 years ago. A dam was built by the Mathews brothers, who owned the trading post at Little Muddy, across Stoney Creek southeast of Williston to flood adjacent lands. The next springs runoff took the dam out and their effort was unsuccessful.

In the early 1900's two small areas - a portion of the Little Muddy Valley and a small area southwest of Buford were irrigated for a time by a pump located on a barge and moved back and forth between the two areas. Needless to say, this also was not successful.

The first project in this area that was completed and is very productive today was the Lower Yellowstone Project in McKenzie County, North Dakota and Richland County, Montana completed in the 1920's.

The State Water Commission, with financial help from the North Dakota Rural Rehabilitation constructed the Lewis & Clark Project south of Williston in McKenzie County in the late 1930's. This 5,000 acre project operated until the late 1960's.

The Bureau of Reclamation built the Buford-Trenton Irrigation Project in the very early 1940's.

In 1957 the entire Lewis and Clark Project, 8,168 acres of which 5,000 were irrigated and the East Valley of the Buford-Trenton Project 8,622 acres of which 5,300 were irrigated, was sold to the United States in a negotiated sale as part of the Garrison project. This sale brought to approximately 60,000 acres the amount of rich Missouri River bottom land that Williams and McKenzie County gave up for the Garrison Project.

The amount of silt being deposited in this area as a result of the Garrison project now threatens the last irrigation project in Williams County and the Corps of Engineers now proposes to buy their problem by purchasing the remainder of the Buford-Trenton Project.

We propose that it is time to stop eroding our economic base and use irrigation based economic development to expand our economy and to build "an island of prosperity" here in northwestern North Dakota.

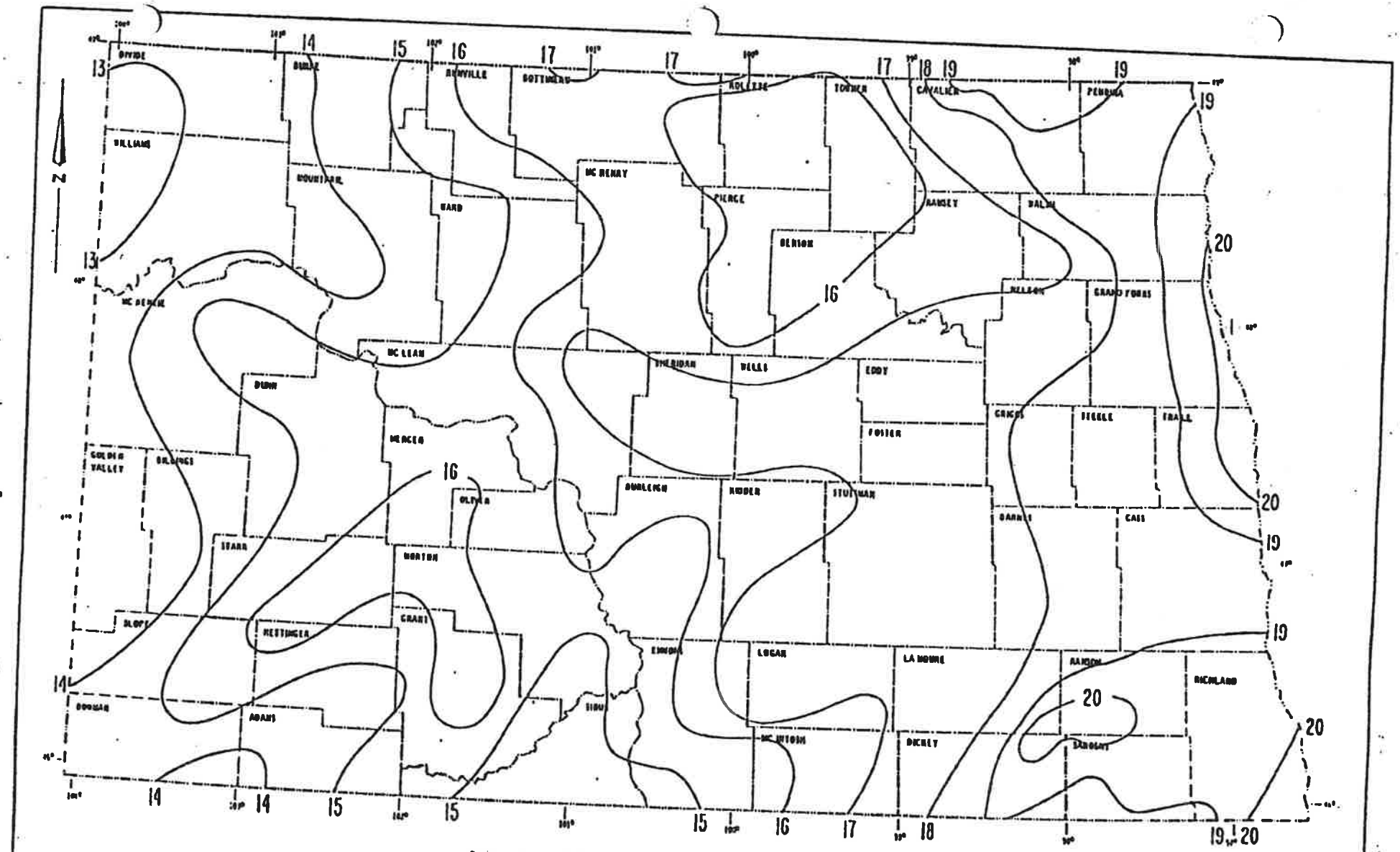

ANNUAL NORMAL PRECIPITATION IN INCHES
REFERENCE:
U.S.W.B.
BASE MAP SOURCE:
FAMILY OF MAPS G.S-32.014 (9-74)
ALBERS EQUAL AREA PROJECTION
NORTH DAKOTA
SCALE

Figure 2

CLIMATE COMPARISON

	Miles City, MT (similar to Williston)	Jamestown, ND
Arid	2 years	1 year
Semi-Arid	25	5
Dry-Sub Humid	11	13
Moist-Sub Humid	1	15
Years of History	39	34

Semi-Arid Climate
13-14 inches annual precipitation

Sub-Humid Climate
17-18 inches annual precipitation

ADVANTAGES OF IRRIGATION IN NORTHWESTERN NORTH DAKOTA

1. Adequate high quality water supply for irrigation and food processing industries.
2. Well drained irrigable soil with high water holding capacity.
3. Approximately 500,000 potentially irrigable acres to allow industry to grow.
4. Better return on investment.
5. Less costly to develop

Proposed Project Acres	Acres	Per Acre Costs
Turtle Lake (McLean County)	16,198	3447
Nesson Valley (Williams Cty.)	4,948	1400
Painted Woods (Williams Cty.)	19,370	3090

6. Less environmental concerns
   a. Wet Lands
   b. Chemical pollution
   c. Fertilizer pollution
7. Less crop disease (semi-arid vs. sub-humid climate)

PROPOSED IRRIGATION PROJECTS

STAGE ONE - Williams County

1. Buford-Trenton Area Addition
2. Nesson Valley
3. Lower Little Muddy

STAGE TWO -

Processing facility or facilities to add value to crop and improve per acre returns.

STAGE THREE -

1. Painted Woods
2. McKenzie County Development?

STAGE FOUR -

Depends on combined projects potential, success of Stages one-three and political and financial considerations.

REGION OR AREA: Missouri River Basin, Irrigation **DATE:** April 22, 1994

EXISTING CONDITION/ONGOING ACTIVITIES: The North Dakota State Water Commission has conducted a reconnaissance level study to determine the possibility of developing new irrigation areas in Williams County.

PURPOSE/NEED: Development of irrigation in Williams County.

ISSUES/CONFLICTS: Cost (economic impact), landowner interest

SOLUTION PARAMETERS/ALTERNATIVES: Three areas in Williams County appear to have potential to develop irrigtaion:

1. Adjacent to Buford-Trention Irrigation District
2. Nesson Valley area
3. Lower Little Muddy area

The basic solution parameters or features for the three alternatives are:

Adjacent to Buford-Trenton Irrigation District

1. 1,068 acres have been identified as irrigable using preliminary detailed soil survey maps supplied by SCS (map attached),
2. Peak flow required is 6,400 gpm (14.3 cfs).
3. Estimated annual water use 2,060 acre-feet.
4. Estimated development cost is $1.73 million.
5. Approximately 1,950 acres of land are currently being irrigated that could be added to the project if the landowners are interested.
6. State Water Commission is recommending feasibility study to be conducted--estimated cost of feasibility study is $60,000.

Nesson Valley

1. 4,948 acres have been identified as irrigable using preliminary detailed soil survey maps supplied by SCS (map attached).
2. Peak flow required is 25,800 gpm (57.5 cfs).
3. Estimated annual water use is 9,570 acre-feet.
4. Estimated development cost is $6.67 million.
5. State Water Commission is recommending feasibility study to be conducted--estimated cost of feasibility study is $75,000.

Lower Little Muddy

1. 7,496 acres have been identified as irrigable using preliminary detailed soil survey maps supplied by SCS (map attached).
2. Peak flow required is 39,800 gpm (88.8 cfs).
3. Estimated annual water use is 14,500 acre-feet.
4. Estimated development cost is $19.1 million

CONSTRUCTION AND OM&R COSTS: Total estimated cost for the 3 areas is $27,635,000.

FIGURE # 29
BUFORD – TRENTON AREA
LAND IRRIGATION CLASSIFICATION

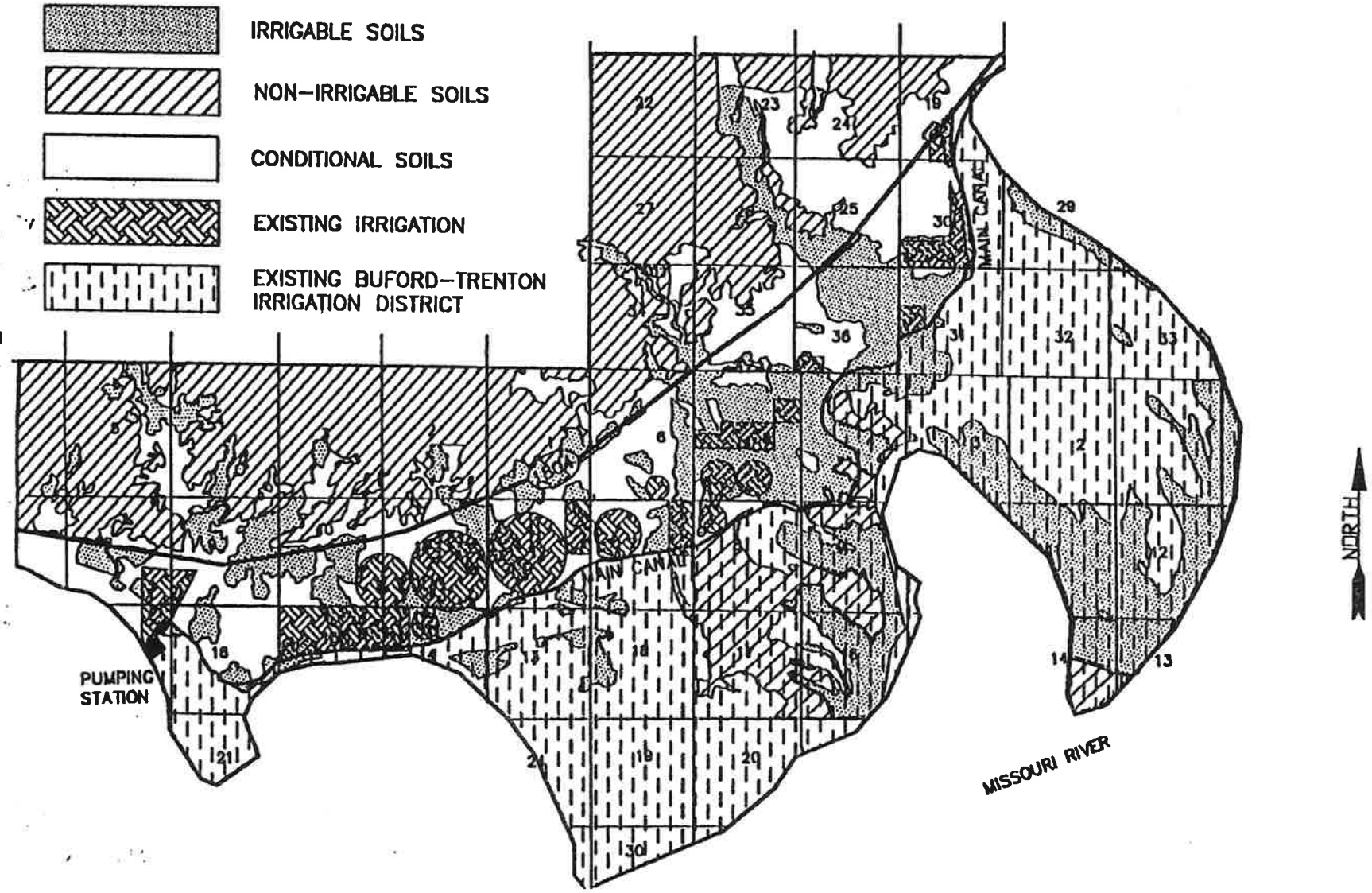


FIGURE 31
BUFORD – TRENTON AREA
ALTERNATIVE #1

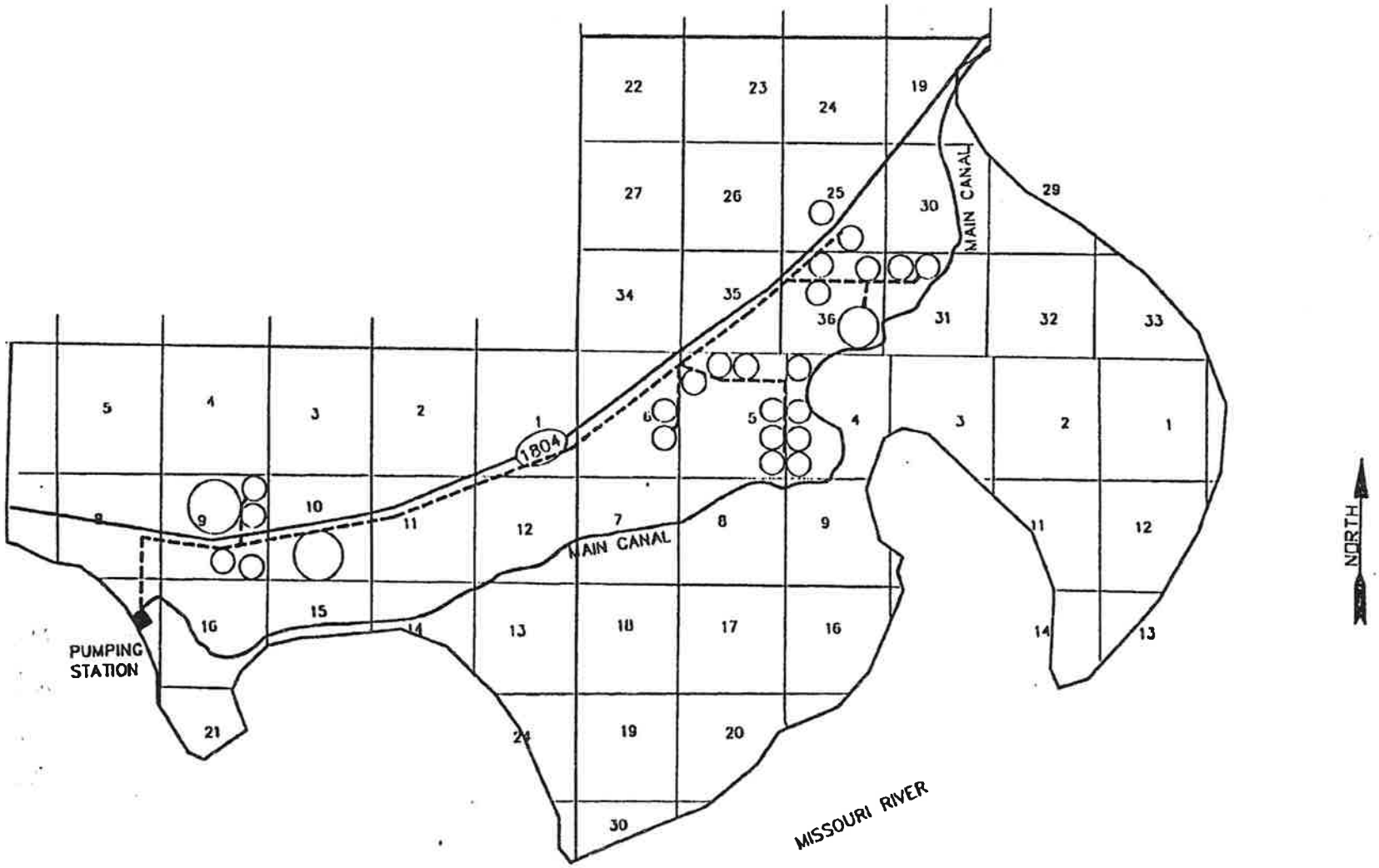


Table C-11 - Buford-Trenton Area
Alternative 1

Project	Quantity	Unit	Unit Price	Total
Pumping Plant		LS	$	$ 244,390
Distribution System		LS		1,590,010
Subtotal				$ 1,834,300
15% Unlisted				275,100
Subtotal				$ 2,109,400
30% Contingencies and Engineering				$ 632,800
160 Ac. Pivots	3	Ea.	35,000	$ 105,000
40 Ac. Pivots	23	Ea.	22,000	506,000
Total				$ 3,353,200

Table C-12 - Buford-Trenton Area
Alternative 2

Project	Quantity	Unit	Unit Price	Total
East Pumping Plant		LS	$	$ 160,810
West Pumping Plant		LS		151,370
East Distribution System		LS		356,000
West Distribution System		LS		229,000
Subtotal				$ 897,180
15% Unlisted				134,580
Subtotal				$ 1,031,760
30% Contingencies and Engineering				$ 309,530
160 Ac. Pivots	3	Ea.	35,000	$ 105,000
40 Ac. Pivots	23	Ea.	22,000	506,000
Total				$ 1,952,290

FIGURE 24
NESSON VALLEY
LAND IRRIGATION CLASSIFICATION

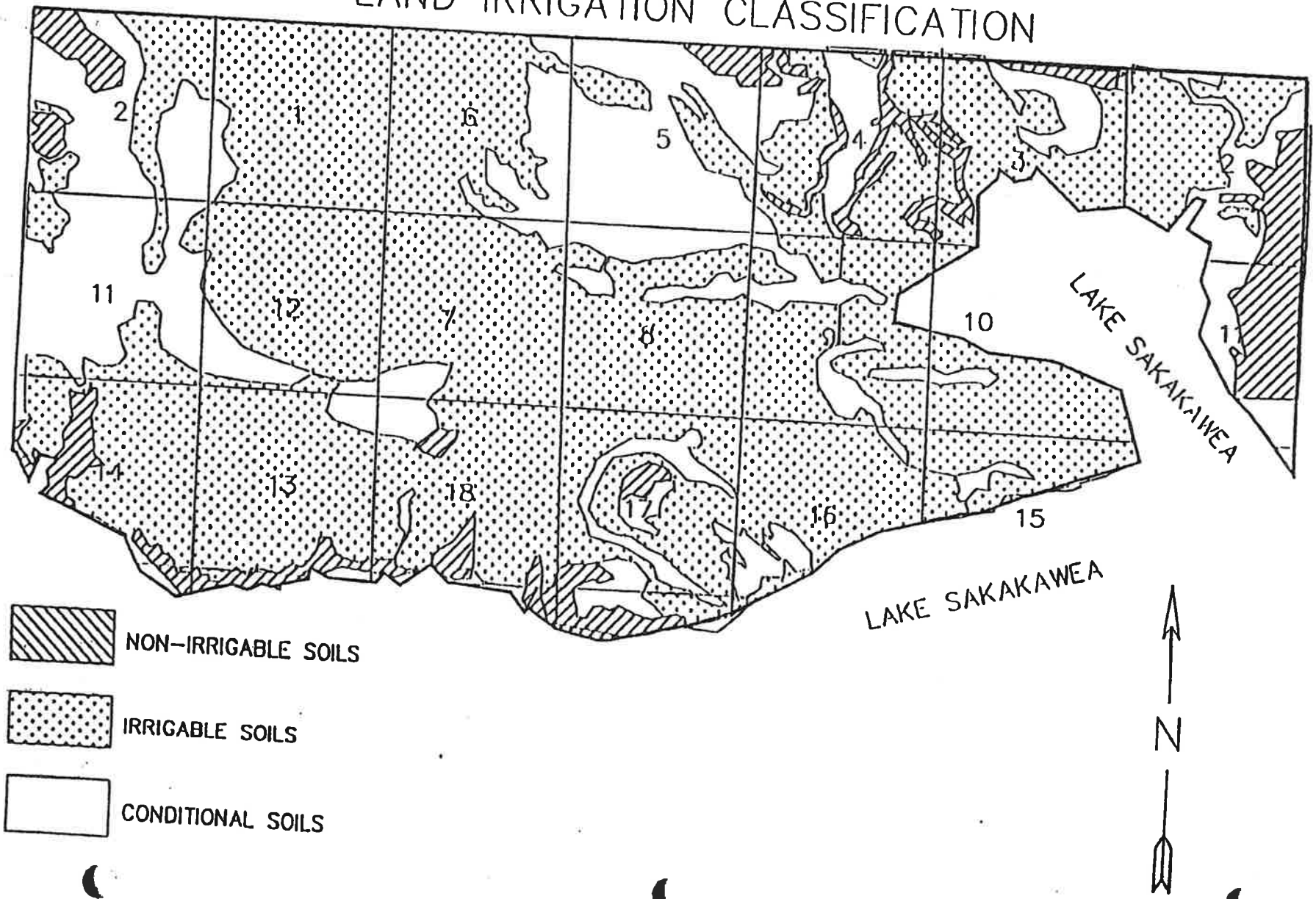


FIGURE 26
NESSON VALLEY
ALTERNATIVE # 1
PIPE LAYOUT

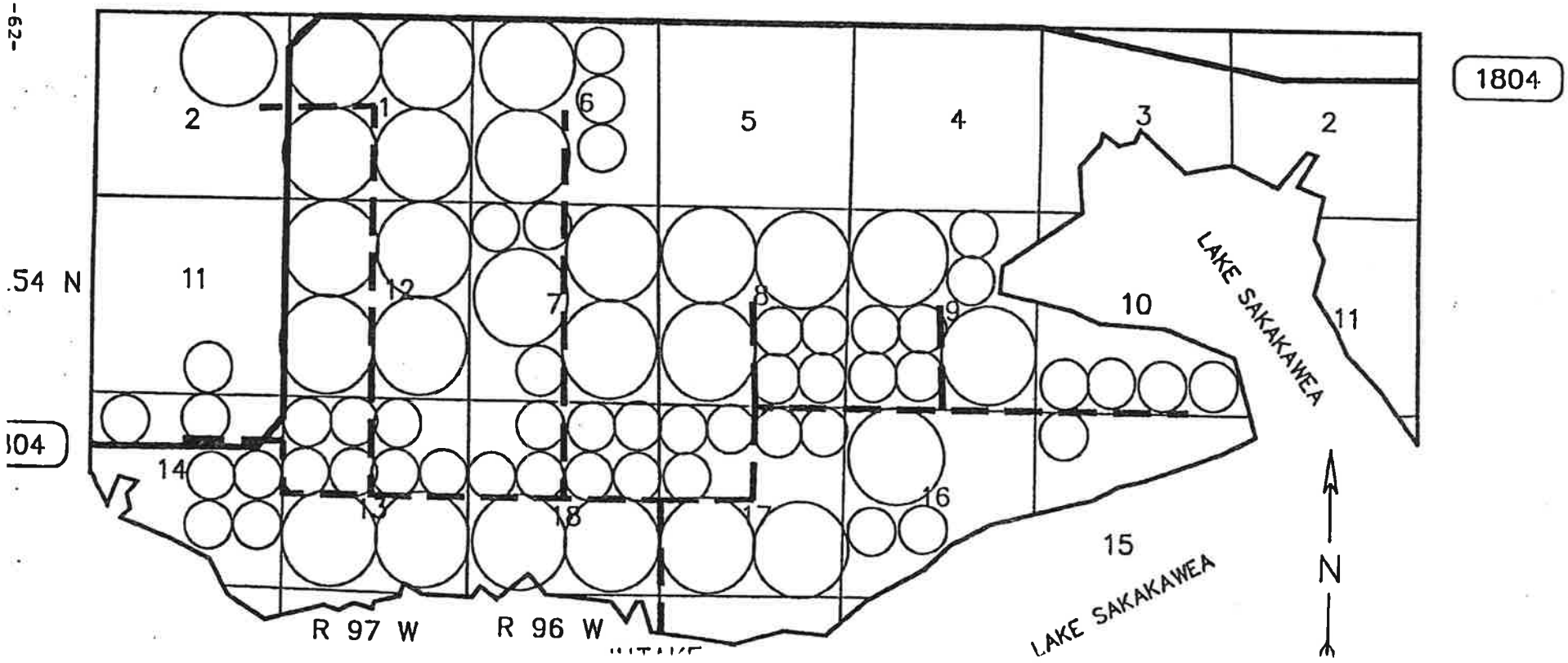


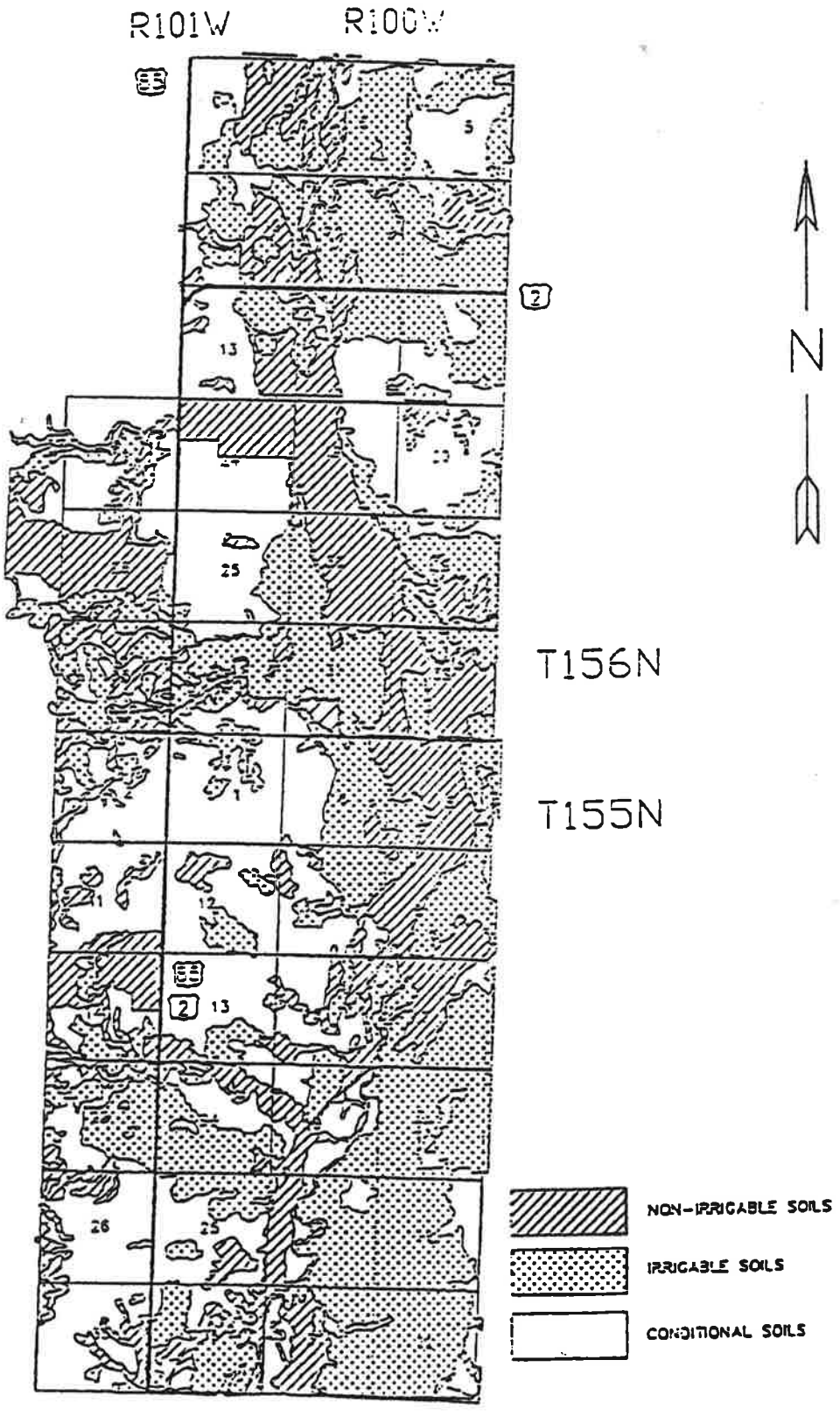
Table C-8 - Nesson Valley
Alternative 1

Project	Quantity	Unit	Unit Price	Total
River Pumping Plant				
Relift Pumping Plant			$	$ 450,000
Reservoir				400,000
Distribution System		LS		2,089,530
Subtotal				$ 2,939,530
15% Unlisted				440,930
Subtotal				$ 3,380,460
30% Contingencies and Engineering				$ 1,014,140
160 Ac. Pivots	26	Ea.	35,000	$ 910,000
40 Ac. Pivots	49	Ea.	22,000	1,078,000
Total				$ 6,382,600

Table C-9 - Nesson Valley
Alternative 2

Project	Quantity	Unit	Unit Price	Total
River Pumping Plant				
Relift Pumping Plant			$	$ 452,500
Reservoir				400,000
Distribution System		LS		2,442,240
Subtotal				$ 3,294,740
15% Unlisted				494,210
Subtotal				$ 3,788,950
30% Contingencies and Engineering				$ 1,136,690
160 Ac. Pivots	26	Ea.	35,000	$ 910,000
40 Ac. Pivots	49	Ea.	22,000	1,078,000
Total				$ 6,913,640

FIGURE - 6
LOWER LITTLE MUDDY
LAND IRRIGATION CLASSIFICATION



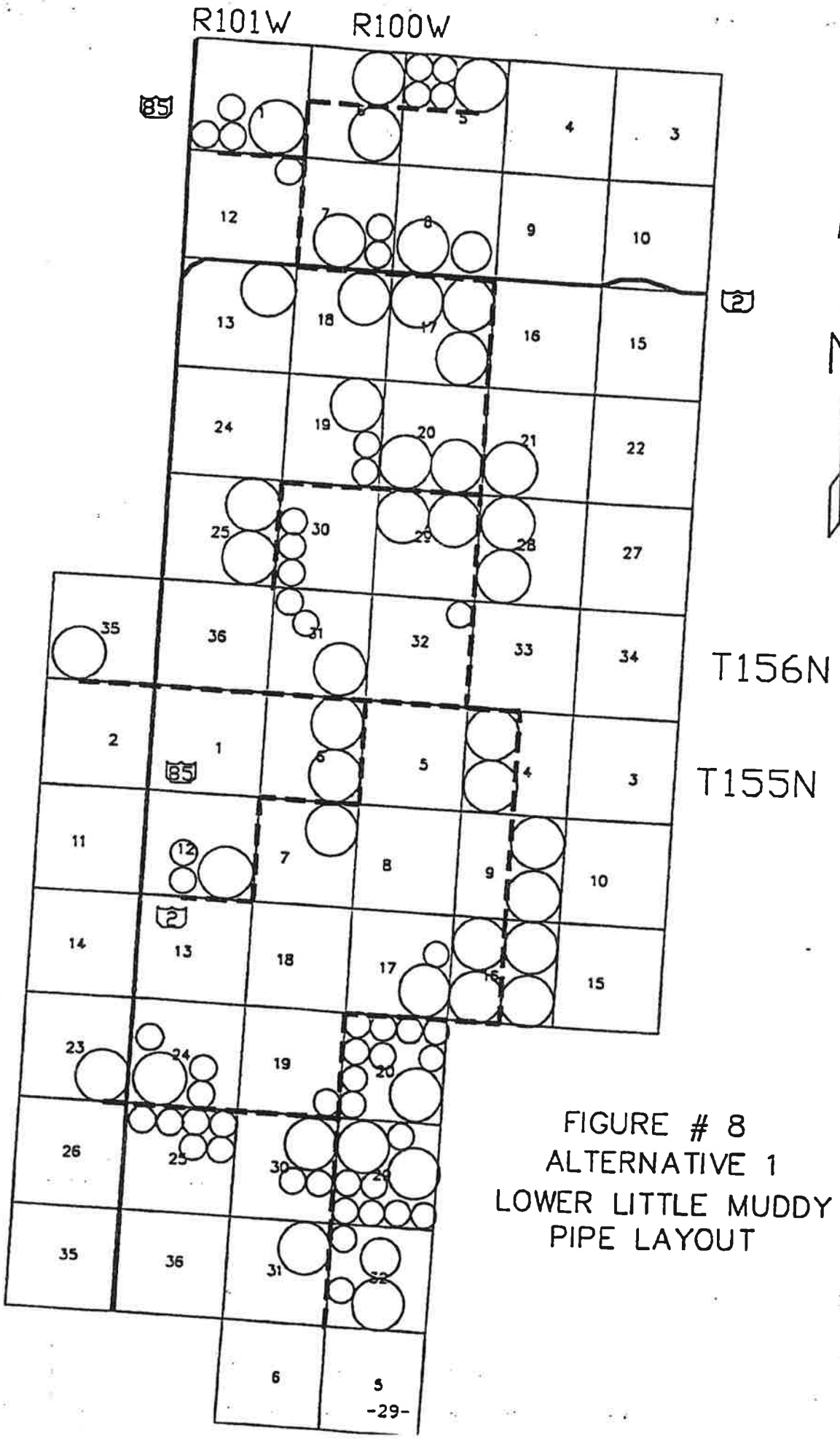


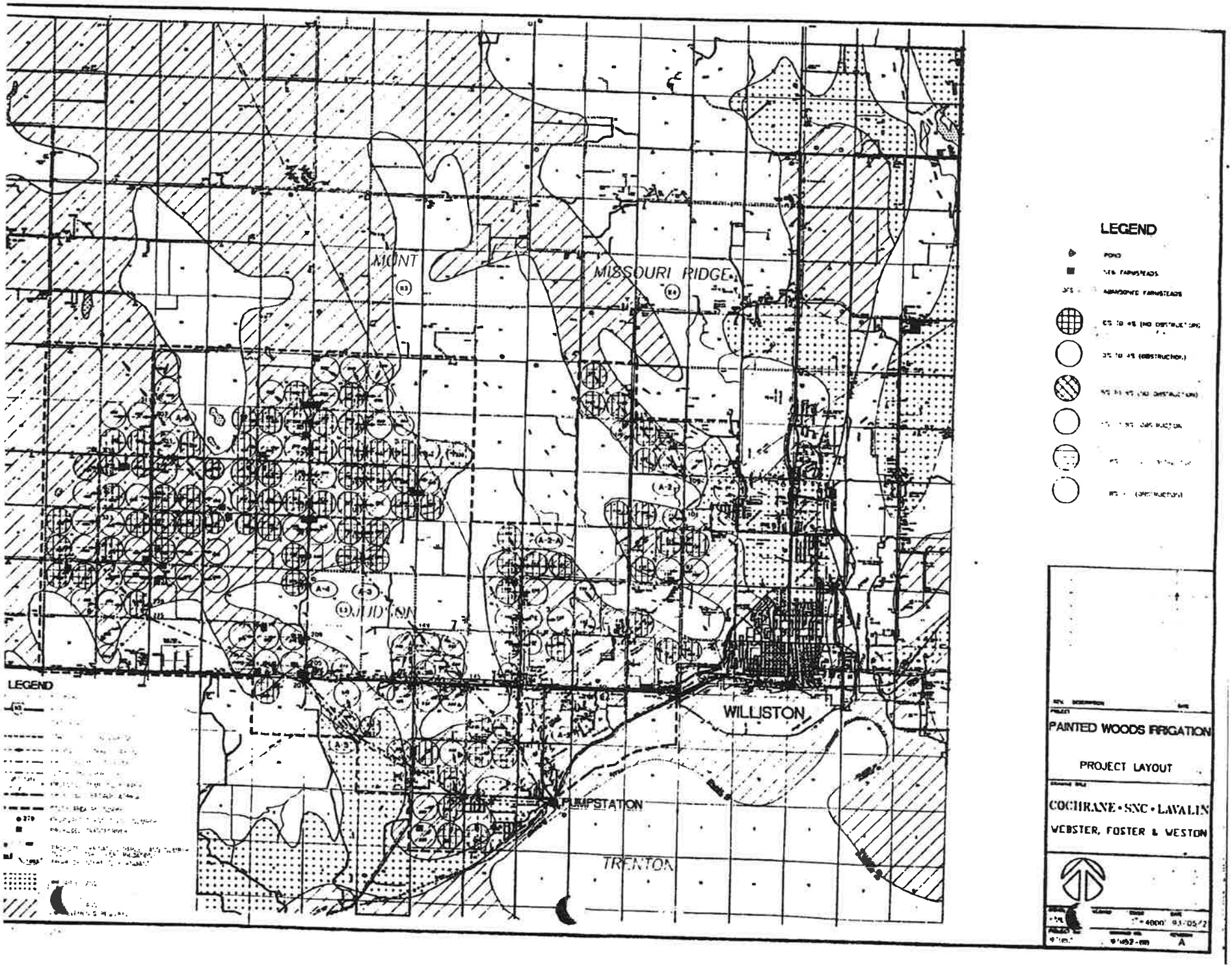
FIGURE # 8
ALTERNATIVE 1
LOWER LITTLE MUDDY
PIPE LAYOUT

Table C-1 - Lower Little Muddy
Alternative 1A

Project	Quantity	Unit	Unit Price	Total
Floating Pumps		LS	$	$ 434,000
Relift Pumping Plant		LS		1,845,040
Pipe	28,600	FT	100	2,860,000
Distribution System		LS		7,009,860
Subtotal				$12,148,900
15% Unlisted				1,822,300
Subtotal				$13,971,200
30% Contingencies and Engineering				$ 4,191,400
160 Acre Pivots	46	Ea.	35,000	$ 1,610,000
40 Acre Pivots	51	Ea.	22,000	1,122,000
Total				$20,894,600

Table C-2 - Lower Little Muddy
Alternative 1B

Project	Quantity	Unit	Unit Price	Total
River Pumping Station		LS	$	$ 152,500
Pipe to Reservoir	8,980	FT	68	610,640
Relift Pumping Station		LS		1,915,000
Pipe to Distribution System	5,000	FT	100	500,000
Distribution System		LS		7,009,860
Dam		LS		889,230
Subtotal				$11,077,230
15% Unlisted				1,661,580
Subtotal				$12,738,810
30% Contingencies and Engineering				$ 3,821,640
160 Acre Pivots	46	Ea.	35,000	$ 1,610,000
40 Acre Pivots	51	Ea.	22,000	1,122,000
Total				$19,292,460


LEGEND
MISSOURI RIDGE
WILLISTON
PUMP STATION
TRENTON
LEGEND
PAINTED WOODS IRRIGATION
PROJECT LAYOUT
COCHRANE • SNC • LAVALIN
WEBSTER, FOSTER & WESTON

PAINTED WOODS IRRIGATION PROJECT
CAPITAL COST ESTIMATE
SUMMARY (THOUSAND US$)
(19,370 acres)

ITEM NO.	DESCRIPTION	1993 THOUSAND $US ESTIMATE (INC 5.5% SST)	CONTINGENCY	TOTAL
1.	PUMPSTATION - STRUCTURAL	$ 3,649	$ 547	$ 4,196
2.	PUMPSTATION - MECHANICAL	3,210	417	3,627
3.	PUMPSTATION - ELECTRICAL	1,493	224	1,717
4.	ELECT. FIELD DISTR. & CONTROL	1,725	259	1,984
5.	MAIN PIPELINES & TURNOUTS	27,136	1,900	29,036
	A-2 5,360 acres	(5,960)	(417)	(6,377)
	A-3 4,050 acres	(5,995)	(420)	(6,415)
	A-4 4,360 acres	(6,828)	(478)	(7,306)
	A-5 5,600 acres	(8,353)	(585)	(8,938)
6.	LATERAL PIPELINES	2,390	168	2,558
	A-2 5,360 acres	(609)	(43)	(652)
	A-3 4,050 acres	(526)	(37)	(563)
	A-4 4,360 acres	(573)	(40)	(613)
	A-5 5,600 acres	(682)	(48)	(730)
7.	PROJECT DRAINS	1,356	176	1,532
8.	ON-FARM IRRIGATION	6,334	317	6,651
9.	ON-FARM DRAINAGE	316	32	348
10.	TOPOG AND LEGAL SURVEYS	430	43	473
11.	SUB-TOTAL (INC. TAXES)	$48,039	$4,083	$52,122
12.	ENGINEERING SERVICES DESIGN CONSTR. & PROJ. MGT	$ 7,206	$ 612	$ 7,818
13.	GRAND TOTAL	$55,245	$4,695	$59,940

A	PROJECT TOTAL	$47,227	$4,223	$51,450
	STATE SALES TAX	$ 1,368	$ 123	$ 1,491
B	ON-FARM TOTALS	$ 6,320	$ 332	$ 6,652
	STATE SALES TAX	$ 330	$ 17	$ 347
C	GRAND TOTAL	$55,245	$4,695	$59,940

PROBLEMS WITH COST SHARING

1. The farmer cannot and should not be required to carry the entire cost of Rural Economic Development, when the community and the rest of the state are also beneficiaries.

2. No one, to my knowledge, has ever done a study to determine proper cost sharing in North Dakota. A study in Alberta, Canada assessed 83% to provincial and federal government and 17% to farmers.

3. When value added processing is available and income is increased, the farmer then should bear a larger share because his land increases in value.

4. For purposes of argument, study and to address the issue, we suggest that the costs of new irrigation development be assessed as follows:

   All on-land costs, supply pipeline and sprinklers - 100% to the farmers.

   The system to supply water to the edge of the farmers field:
   - 40% - Federal (in our area this is mitigation for loss to Garrison)
   - 40% - State
   - 20% - Farmer owned irrigation district

TABLE 6. RETAIL TRADE, PERSONAL INCOME, TOTAL BUSINESS ACTIVITY, AND EMPLOYMENT, IRRIGATED AND DRY CROPLAND, 9,000 ACRES, BUFORD-TRENTON IRRIGATION DISTRICT, 1990

Cropping Options	Retail Trade	Personal Income	Total Business Activity	Secondary Employment
	-------- thousand dollars --------			
Irrigation	3,762	4,065	11,154	140
Dryland	337	27	765	8
Net Impact	-3,425	-4,038	-10,389	-132

Summary

The economic on-farm impact of a switch from irrigated to dry cropland agriculture in 1990 in the Buford-Trenton Irrigation District would have been a decline of $197 per acre in returns to unpaid labor and management. Irrigation in the Buford-Trenton area contributed over $11.1 million in total business activity and 140 jobs to the state in 1990. A switch to dry cropland agriculture would have resulted in a decline of over $10.4 million in total business activity and 130 fewer jobs in 1990 in North Dakota.

Summary

Four major scenarios were examined for expanded irrigation in McKenzie County - 31,000 and 155,000 acres both with and without potatoes in the crop mix. As acreage increases and potatoes are added, total direct impacts, total economic impacts, tax revenues, and secondary employment increase (Table 8). The on-farm net economic impact of converting dryland to irrigated cropland would be from

TABLE 8. SUMMARY OF ECONOMIC IMPACTS FROM EXPANDED IRRIGATION, McKENZIE COUNTY, NORTH DAKOTA, 1994

Crop Mix/Impact Category	Expanded Irrigation (acres) 31,000	155,000
Without potatoes		
Net returns ($/acre)[a]	24	24
Gross receipts ($/acre)	242	242
Total direct impacts (000s $)	5,728	28,643
Total economic Impacts (000 $)	13,875	69,383
Tax revenue (000s $)[b]	354	1,772
Secondary employment	142	729
Additional backgrounding (hd)[c]	5,700	111,800
With potatoes		
Net returns ($/acre)[a]	165	165
Gross receipts ($/acre)	694	694
Total direct impacts (000s $)	19,731	98,659
Total economic impacts (000 $)	50,516	252,597
Tax revenue (000s $)[b]	1,229	6,144
Secondary employment	534	2,691
Additional backgrounding (hd)[c]	480	85,000

[a]Returns to unpaid labor, management, and equity.
[b]Only includes sales and use, corporate income, and personal income taxes.
[c]Calves supported based on adding 250 pounds of gain over 150 days on feed. Grain requirements estimated at 10 pounds and roughage at 4 pounds per day (dry matter basis).

about $185 per irrigated composite acre without potatoes to $636 per irrigated composite acre with potatoes in the rotation schedule (Table 4). At the fully developed level of 155,000 acres, added regional business activity with potatoes is $252 million, which is enough economic activity to support 2,700 jobs. Potatoes are the irrigated crop with the most economic potential for expansion. Removing potatoes from the crop mix (155,000 acres) reduces both on-farm and regional economic activity to about $69 million with 140 jobs supported.

Backgrounding additional feeder calves would stimulate the local and regional economies. Availability of calves for backgrounding operations does not appear to be a limiting factor. The net change in feed production could be a limiting factor to expanded backgrounding, depending upon the irrigation scenario. At the fully developed level (155,000 acres) feed production would not be a limiting factor to expanded backgrounding. At 31,000 acres feed production is limited by crop mix (Table 8).

If McKenzie County, or the nearby area, backgrounded about 10,000 calves from the additional feed generated by expanded irrigation, an estimated $3.0 million to $4.8 million in total economic activity could result.

Farmers would require contracts before making the necessary commitments to potato production. Therefore, inclusion of potatoes in the crop mix would require construction of a potato processing plant or a similar market. A model plant would require approximately 53,000 irrigated acres with potatoes in rotation. Sufficient irrigated acres would exist to supply a model processing plant. However, these results do not account for physical factors or producer decisions which might prevent or reduce potential potato production on existing or proposed irrigated acres.

HYPOTHETICALLY - - YEARLY PRODUCTION

500,000 Irrigated Acres	Gross/Acre	Total Product Value
50% Feed Crops or 250,000 acres x $ 818.28 (750 lb x 86¢/lb = $645 each or $818.28/acre)		$ 204,570,000.00
12.5% Beets or 62,500 acres x $ 800.00 (20 tons @ $40.00 = $800.00)		$ 50,000,000.00
12.5% Potatoes or 62,500 acres x $1,462.50 (325 CWT x 4.50 = $1,462.50)		$ 91,406,250.00
12.5% Oil Seeds or 62,500 acres x $ 375.00 (12.5% x 3,000 lb = $375.00)		$ 23,437,500.00
12.5% Sm Grains or 62,500 acres x $ 320.00 (80 Bushels x $4/bushel = $320.00)		$ 20,000,000.00
	TOTAL	$ 389,413,750.00

500,000 Dry Land Acres	
250,000 Acres Wheat (½ Small Grain - ½ Summer Fallow Rotation) (30 Bu. ave. yield @ $4.00/acre = $120.00/crop acre)	$ 30,000,000.00

GAIN FROM IRRIGATION	$ 359,413,750.00

IX. COMBINED PROJECTS

Williams County:

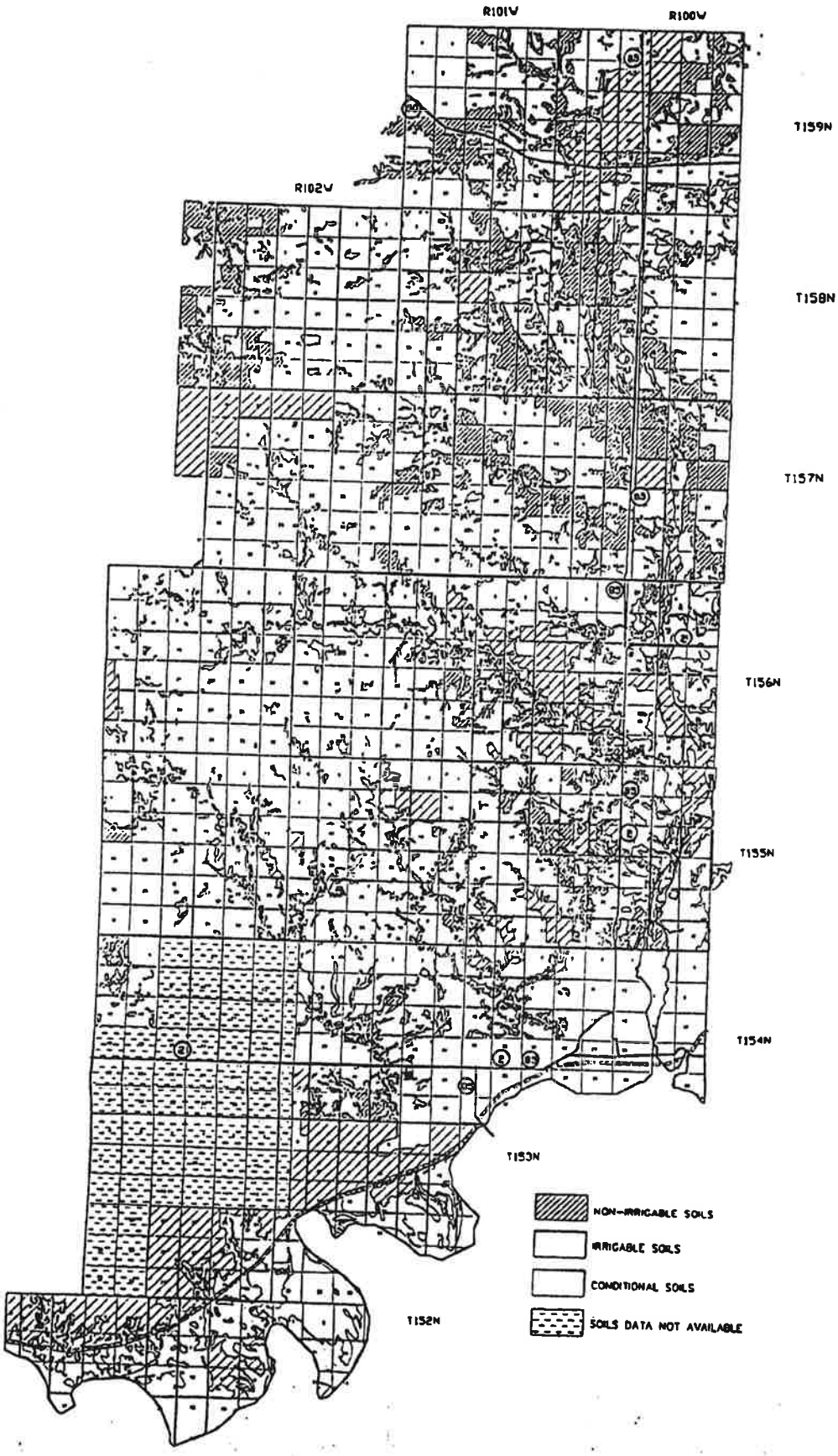
It may be possible to develop a large irrigation project in the western part of Williams County. This area would extend from the Little Muddy River to the state line. The land irrigation classification for this area is shown in Figure 37. The Lower Little Muddy and the North Little Muddy areas could also be supplied by this project. In the Little Muddy areas 18,190 acres of irrigable land have been identified. In the western part of the county, 16,680 acres of land have been identified as being irrigable and 139,760 acres of conditional soils have been identified. Further study will be required to determine the amount of conditional soils which could be irrigated.

Because of the large potential irrigation area a canal would form the backbone of the conveyance system for this project. This canal and the associated pumping plants, and other structures would be a huge undertaking, some of the features could approach the size of the features of the Garrison Diversion Project.

North Dakota-Montana Project:

In 1944 the Bureau of Reclamation published a report entitled "Missouri River Basin - Conservation, Control, and Use of Water Resources of the Missouri River Basin" which proposed a plan to irrigate 1,402,400 acres in North Dakota and Montana. Many of the North Dakota features of this plan were incorporated into the

FIGURE 37
WESTERN WILLIAMS COUNTY
LAND IRRIGATION CLASSIFICATION



Pick-Sloan plan and were authorized as part of the original Garrison Diversion Unit.

The Upper Missouri Lake Sakakawea Planning Committee (UMLSPC), the Williston Basin Resource Conservation and Development Area (RC&D), and the Eastern Plains RC&D of Montana have discussed using part of this plan to irrigate land in Montana and North Dakota. The original plan would have irrigated 1,000,000 acres in the Souris Basin, New Rockford, and Oakes area; much like the original Garrison Diversion plan. The plan proposed by the UMLSPC and the RC&Ds would not cross the divide into the Souris Basin but would supply water to areas in Williams County and eastern Montana.

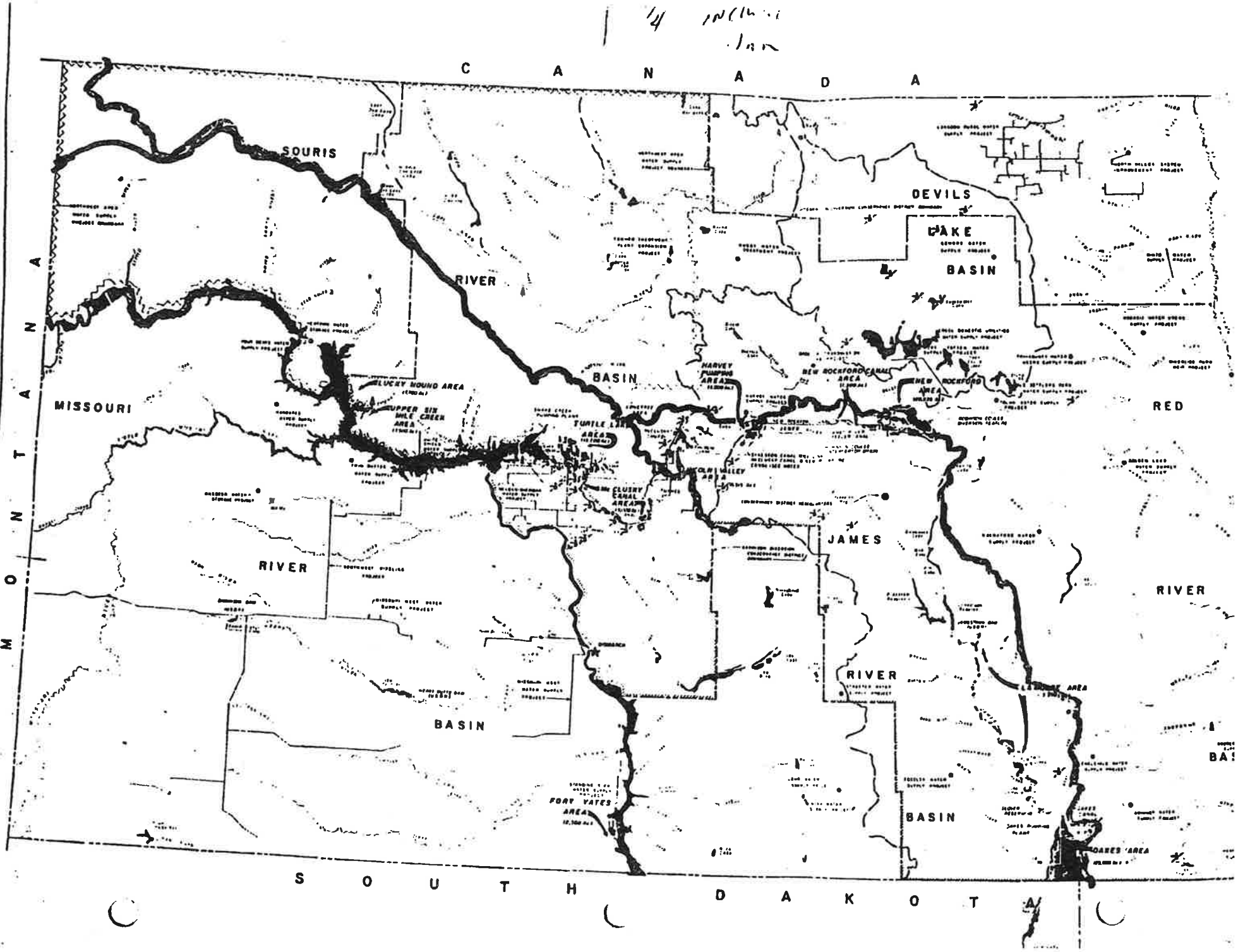
The Bureau plan proposed a dam on Big Muddy Creek near Culbertson, Montana, to create the Medicine Lake Reservoir. This reservoir would have backed water to within four miles of Grenora, North Dakota. It would also inundate the Medicine Lake National Wildlife Refuge. Such inundation has become socially unacceptable, making the proposed reservoir impossible.

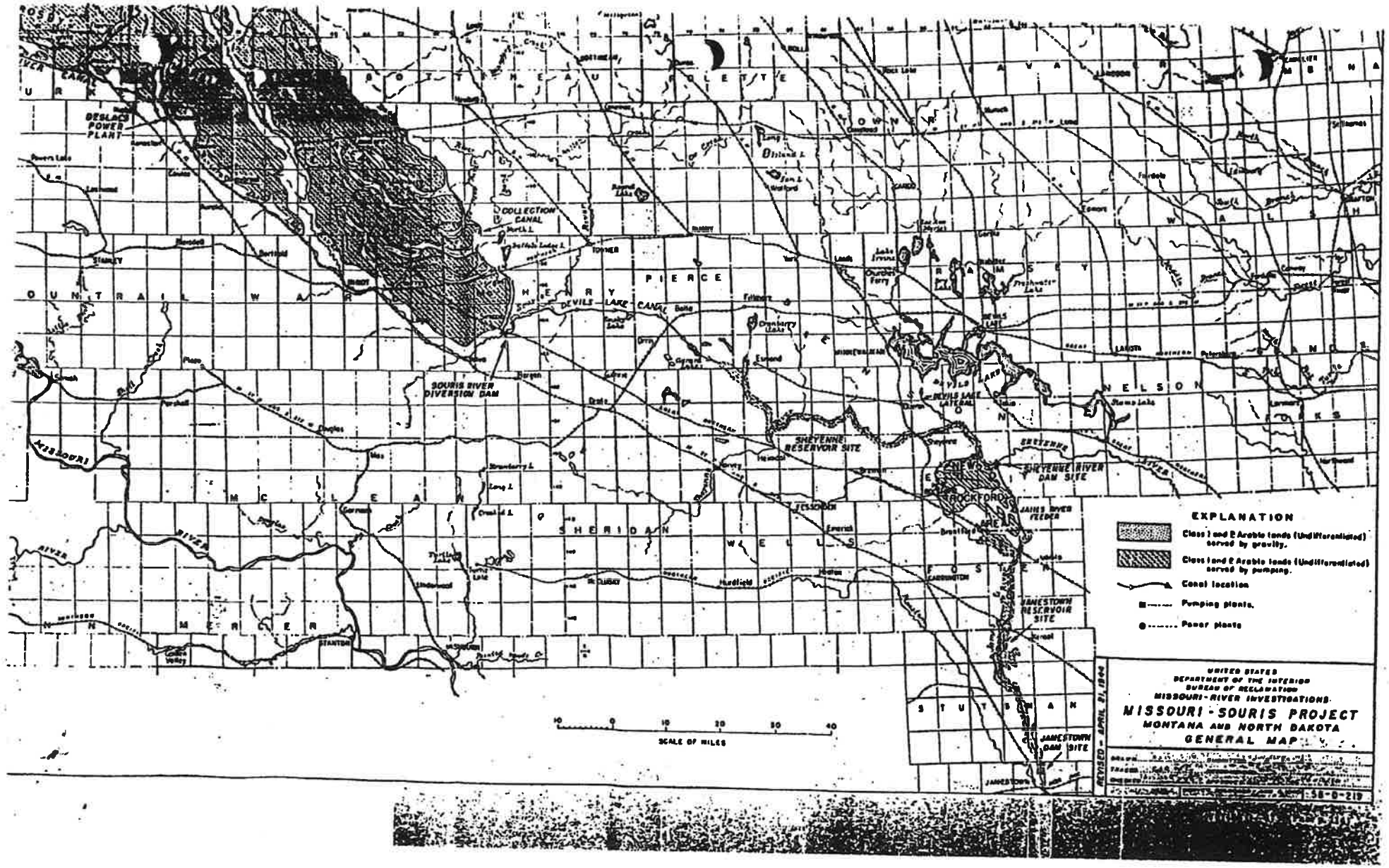
The Bureau identified 45,600 acres of irrigable land near the present Medicine Lake, and an additional 21,400 irrigable acres near Culbertson. It may be possible to construct a canal from the Missouri River to serve these areas and the areas in western Williams County. Such a canal would approach the size of the McClusky Canal. The details of such a large project are beyond the

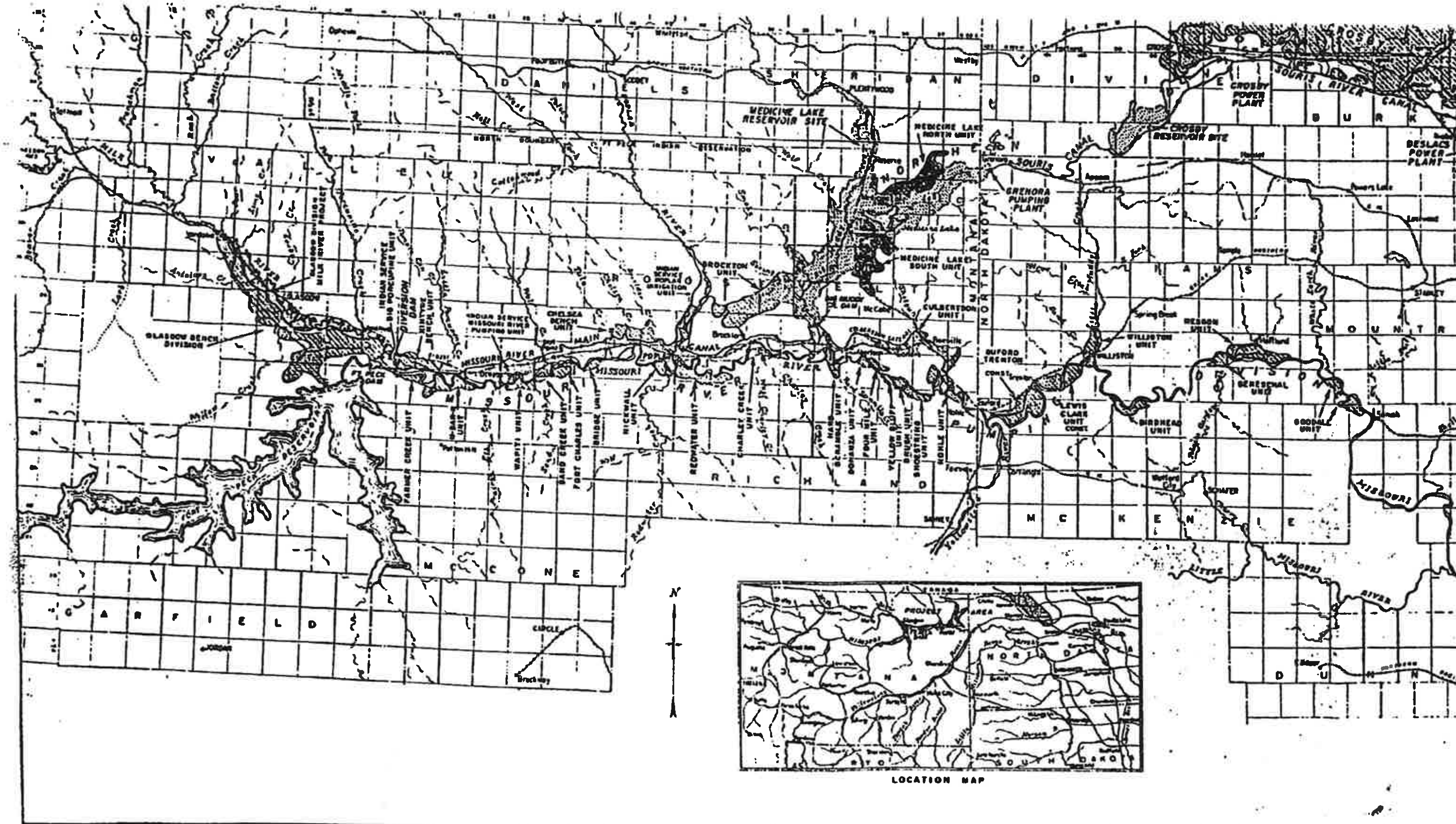
scope of this report.

Summary:

Considering all the potential economic benefits to the landowners and the regional economy of a large project irrigating many thousands of acres, either of these combined projects may be economically feasible. However, the problems of coordination between the states, environmental impacts, fish and wildlife concerns, political ramifications and funding sources for such an immense project; while perhaps not insurmountable will be extremely difficult to overcome. Strong local support and action will be necessary to even begin such a project.


C A N A D A
SOURIS
RIVER
DEVILS
LAKE
BASIN
MISSOURI
RIVER
BASIN
HARVEY PUMPING AREA
NEW ROCKFORD CANAL AREA
NEW ROCKFORD AREA
LUCKY MOUND AREA
UPPER SIX MILE CREEK AREA
TURTLE LAKE AREA
GLORY CANAL AREA
GLORY VALLEY AREA
RED
JAMES
RIVER
RIVER
BASIN
FORT YATES AREA
BASIN
LAKES AREA
M O N T A N A
S O U T H D A K O T A


BESLACS POWER PLANT
COLLECTION CANAL
SOURIS RIVER DIVERSION DAM
DEVILS LAKE CANAL
DEVILS LAKE LATERAL
SHEYENNE RESERVOIR SITE
SHEYENNE RIVER DAM SITE
JAMES RIVER FEEDER AREA
JAMESTOWN RESERVOIR SITE
JAMESTOWN DAM SITE
ROCKFORD
PIERCE
MCLEAN
SHERIDAN
WELLS
FOSTER
NELSON
STUTSMAN
MERCER
EXPLANATION
Class I and II Arable lands (Undifferentiated) served by gravity.
Class I and II Arable lands (Undifferentiated) served by pumping.
Canal location
Pumping plants.
Power plants
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI-RIVER INVESTIGATIONS
MISSOURI-SOURIS PROJECT
MONTANA AND NORTH DAKOTA
GENERAL MAP
REVISED - APRIL 21, 1944
58-D-219


MEDICINE LAKE RESERVOIR SITE
MEDICINE LAKE NORTH UNIT
MEDICINE LAKE SOUTH UNIT
CROSBY POWER PLANT
CROSBY RESERVOIR SITE
DESLACS POWER PLANT
SOURIS RIVER CANAL
GRENORA PUMPING PLANT
BROCKTON UNIT
CULBERTSON UNIT
INDIAN SERVICE POPLAR IRRIGATION UNIT
INDIAN SERVICE MISSOURI RIVER PUMPING UNIT
CHELSEA BENCH UNIT
GLASGOW BENCH DIVISION
GLASGOW DIVISION MILK RIVER PROJECT
INDIAN SERVICE BIG PORCUPINE UNIT
DIVERSION DAM
NASHUA BENCH UNIT
FARMER CREEK UNIT
WAPITI UNIT
SAND CREEK UNIT
FORT CHARLES UNIT
BRIDGE UNIT
NICKWALL UNIT
REDWATER UNIT
CHARLEY CREEK UNIT
SCHAMBLE UNIT
BONANZA UNIT
FOUR MILE UNIT
YELLOW BRUSH UNIT
SHOESTRING UNIT
NOHLE UNIT
BUFORD TRENTON
WILLISTON UNIT
NESSON UNIT
SERESCHAL UNIT
LEWIS CLARK UNIT CONST.
BIRDHEAD UNIT
GOODALL UNIT
FORT PECK DAM
MISSOURI RIVER
MAIN CANAL
NORTH DAKOTA
DANIELS
SHERIDAN
DIVIDE
BURKE
VALLEY
ROOSEVELT
RICHLAND
McKENZIE
MOUNTRAIL
WILLIAMS
McCONE
GARFIELD
DUNN
N
LOCATION MAP

STATE NORTH DAKOTA

WATERSHED TAYLOR

CONTRACT NO. _____

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

PROJECT AGREEMENT

THIS AGREEMENT, made this 27th day of May, 1994, by and between the State Water Commission, called the Sponsor; and the Soil Conservation Service, United States Department of Agriculture; called the Service.

WITNESSETH THAT:

WHEREAS, under the provisions of the Watershed Protection and Flood Prevention Act, the sponsor and Service agreed to a plan for the Taylor Watershed, which provides for installation of certain works of improvement;

NOW THEREFORE, the Sponsors and the Service do hereby agree as follows:

A. It is agreed that the Taylor Watershed Agricultural Water Supply Project is to be installed at an estimated cost of $1,514,230.00.

B. The Sponsor will:

1. Provide 64.2 percent of the cost of all bid items for the installation of Taylor Watershed Agricultural Water Supply Project. Sponsor costs are estimated to be $972,135.66. Total actual costs will be based on the low bid for the installation of the Taylor Watershed Agricultural Water Supply Project.

2. Review and approve the final drawings and specifications for the installation of the Taylor Watershed Agricultural Water Supply Project.

3. Upon acceptance of the work by the Service from the contractor, assume responsibility for operation and maintenance in accordance with the Operation and Maintenance Agreement.

4. Designate an individual to serve as liaison between the Sponsor and the Service, listing the individual's duties, responsibilities, and authorities. Furnish such information in writing to the State Administrative Officer of the Service.

5. Accept all financial and other responsibility for excess costs resulting from their failure to obtain, or their delay in obtaining, adequate land and water rights, permits and licenses needed for the works of improvement described for the Taylor Watershed Agricultural Water Supply Project.

C. The Service will:

1. Provide 35.8 percent of the cost of all bid items for the installation of the Taylor Watershed Agricultural Water Supply Project. This cost is estimated to be $542,094.34. Actual costs will be based on the low bid for the installation of the Taylor Watershed Agricultural Water Supply Project.

2. Contract for the construction of the works of improvement described for the Taylor Watershed Agricultural Water Supply Project in accordance with Federal contracting procedures.

3. Provide authorized technical services, including but not limited to obtaining basic information; preparation of drawings, designs, and specifications; performance of layout, inspection services, and quality control during construction.

4. Arrange for and conduct final inspection of the completed works of improvement with the Sponsors to determine whether all work has been performed in accordance with contractual requirements. Accept work from contractor and notify the Sponsors of acceptance.

D. It is mutually agreed that:

1. No member of or delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

2. The furnishing of financial and other assistance by the Service is contingent upon the availability of funds appropriated by Congress from which payment may be made and shall not obligate the Service upon failure of the Congress to appropriate.

3. The Sponsor and the Service will review total bid cost and individual bid items and issue a concurrent decision to award the contract.

4. Either party may terminate this agreement in whole or in part when it is determined by the other party that the first party has failed to comply with any of the conditions of this agreement. The terminating party shall promptly notify the other party in writing of the determination and reasons for the termination, together with the effective date. Payments made by or recoveries made by either party under this termination shall be in accord with the legal rights and liabilities of the Service and the Sponsors.

5. This agreement may be temporarily suspended by either party if it determines that corrective action by the other party is needed to meet the provisions of this agreement. Further, either party may suspend this agreement when it is evident that a termination is pending.

6. The activities conducted under this agreement will be in compliance with the nondiscrimination provisions as contained in the Titles VI and VII of the Civil Rights Act of 1964, as amended, the Civil Rights Restoration Act of 1987 (Public Law 100-259 and other nondiscrimination statues, namely Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, and in accordance with regulations of the Secretary of Agriculture (7CFR-15, Subparts A and B) which provide that no person in the United States shall, on the grounds of race, color, national origin, age, sec, religion, marital status, or handicap be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance from the Department of Agriculture or any agency thereof.

STATE WATER COMMISSION

BY David A Sprynczynatyk

TITLE State Engineer

DATE May 24, 1994

This action authorized at an official meeting of the _____

_____

the ____ day of _____,
1994 at _____,
North Dakota.

_____
(Signature)

_____
(Title)

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

BY _____

TITLE State Conservationist

DATE 5/27/94

OPERATION AND MAINTENANCE AGREEMENT

THIS AGREEMENT made on June 3, 1994 is between the Soil Conservation Service (SCS), United States Department of Agriculture, hereinafter referred to as the Service, and the following organization(s), hereinafter referred to as the Sponsor:

North Dakota State Water Commission

The Sponsor and the Service agree to carry out the terms of this agreement for the operation and maintenance of the project measures in the State of North Dakota. The project measures covered by this agreement are identified as follows:

Taylor Watershed Agricultural Water Supply Project

I. OPERATIONS

A. The Sponsor will be responsible for operating project measures installed without cost to the Service as follows:

1. Remain in compliance with applicable federal, state, and local laws;

2. Remain in compliance with the conditions set out in the instruments by which rights-of-way were acquired to install, operate, and maintain the measure(s).

B. The Sponsor will not be responsible for the operation of practices installed by individual landowners under SCS long-term contracts or other agreements.

C. The Service will, upon request of the Sponsor and to the extent that its resources permit, provide consultative assistance in the operation of all measures installed,

II. MAINTENANCE

A. The Sponsor will:

1. Be responsible for and promptly perform or have performed without cost to the Service all maintenance of installed project measures;

2. Obtain prior Service approval of all plans, designs, and specifications for maintenance work that significantly alters items identified in the Operation and Maintenance Plan;

3. Will not be responsible for maintenance of practices installed by individuals under SCS long-term contracts or other agreements.

B. The Service will, upon request of the Sponsor and to the extent that its resources will permit, provide consultative assistance in the maintenance of all measures.

III. REPLACEMENT

A. The Sponsor will be responsible for the replacement of parts or portions of the project measure(s), which have been damaged or destroyed.

B. The Service will, upon request from the Sponsor, provide consultative assistance in the replacement of measure components.

IV. PLAN OF OPERATION AND MAINTENANCE

A. The Service and Sponsor will prepare a detailed plan of operation and maintenance for the measures covered by this agreement. It will not include practices installed by individuals under SCS long-term contracts or other agreements.

V. INSPECTIONS AND REPORTS

A. The Sponsor will inspect the project measures at least annually.

B. The Service may inspect the measures at any reasonable time during the period covered by this agreement. At the discretion of the State Conservationist, Service personnel may assist the Sponsor in their inspections.

C. An annual report of operation and maintenance activities will be provided to the Service. The report will describe the conditions found and list any corrective action needed with a time frame to complete each action.

VI. TIME OF RESPONSIBILITY

A. The responsibility of the Sponsor for operation and maintenance begins when a part of or all of the measures are in place and have been accepted. This responsibility shall continue until the expiration of the evaluated life of all the installed project measures. This project

measure has a 50-year estimated life. The liability of the Sponsor continues throughout the life of this measure.

VII. RECORDS

A. The Sponsor will maintain, in a centralized location, a record of all inspections and significant actions taken, cost of performance, and completion date with respect to operation, maintenance, and replacement. The Service may inspect these records at any reasonable time during the term of the agreement.

VIII. GENERAL

A. The Sponsors(s) will:

1. Prohibit any activities that will interfere with the operation or maintenance of the project measures as outlined in the Operation and Maintenance Plan.

2. Obtain prior Service approval for any alterations or improvements to the installed water supply system.

3. Obtain prior Service approval of any agreement to be entered into with other parties for the operation or maintenance of all or any part of the installed project measures, and provide the Service with a copy of the agreement after it has been signed by the Sponsor and the other party.

4. All livestock pasture water taps, including those installed after the initial installation of the project, will require range or pasture management plans to be developed and implemented by the user/landowner through the local soil conservation districts.

B. Service personnel will be provided the right of free access to the project measures at any reasonable time for the purpose of carrying out the terms of this agreement.

C. The responsibilities of the Sponsor under this agreement are effective simultaneously with the acceptance of the project measures in whole or in part.

Sponsor: North Dakota State Water Commission

By: [signature] State Engineer

This action was authorized at an official meeting of the Sponsor named immediately above on _____ at _____

Attest: _____ Title _____

Soil Conservation Service
Department of Agriculture

By: [signature] Title STC

INTRODUCTION

This is a plan for the operation and maintenance (O&M) of project measures installed for the Taylor Watershed Agricultural Water Supply Project, located in Stark and Dunn Counties, North Dakota. The Taylor Watershed was planned and developed under the authority of the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress; 68 Stat. 666). This project includes structural measures for agricultural water supply and potential mitigation features that may be required as a result of the installation. This plan provides the basis for a permanent and continuous case history of all operation and maintenance activities.

The work set forth in this plan will be carried out in compliance with the O&M agreement signed by the North Dakota State Water Commission (NDSWC) and Soil Conservation Service (SCS).

OPERATION

Inspection

Structural measures have two types of inspection. First, is the routine annual inspection which is directed at observing changes from the as-built condition. Second, is the inspection following major repair caused by storms or other causes. This inspection includes surveying storm or other damages caused by system component failure prior to repair, as applicable.

The annual and post storm or component failure inspections will be made jointly by the sponsors and the SCS for a period of 3 years after the project is completed. After this 3-year period, the sponsors will continue the annual, post storm or component failure inspections. SCS assistance may be provided after the 3-year establishment period if requested by the sponsors and if SCS resources permit. All inspections will be accomplished by properly trained people. The following is a list of the kinds of items to be inspected:

a.	Vegetation	- types, size, age, deficiencies
b.	Pipe Trenches	- erosion, settlement, rutting
c.	Pipe, Fittings, Control Valves, Meters	- displacement, leakage or breaks, flow restriction, impaired operation from manufacturer standards
d.	Manholes, Signs, Other Related Appurtenances	- faulty operation, corrosion, material condition, displacement, breakage or other visible or operational impairments or damages

Funding

Structural measures will require periodic repair and replacement. The funding for this will be provided by the Southwest Water Authority (SWA), as agreed to in the work plan for the Taylor Watershed Agricultural Water Supply. Page 43 of the work plan indicates the SWA should anticipate annual O&M cost of $20,100 for the entire watershed.

Operation Activity Summary

1. Provide properly trained personnel to carry out thorough inspections.
2. Ensure financial capability to carry out O&M activities in a timely manner.
3. Ensure that quality of repair is consistent with original components.
4. Adapt to changing needs and conditions during project life.
5. Maintain necessary O&M cost records.

MAINTENANCE

The as-built plans provide details of structural dimensions and locations. The engineering design report has minimum material requirements that should be used for replacement.

Detailed operation, maintenance, and repair information will be found in the contractor provided Operation, Maintenance, and Repair (OM&R) Manual. This manual will contain specific OM&R information for equipment supplied or installed under the contract, together with certain shop, erection and record drawings, and catalog data.

Maintenance Activity Summary

Photograph for documentation any repairs made that are considered to exceed normal operation and maintenance.

1. Vegetation

   Areas to reseed, spray, fertilize, or reshape will be limited to those initially revegetated.

   a. Reseed with adapted species, resod, and fertilize initial seeded areas having poor stands or destroyed by erosion.
   b. Cut or spray with approved herbicide and remove undesirable vegetation. Observe local ordinances regarding spraying and burning.
   c. Fertilize vegetation as required to maintain a vigorous stand.
   d. Replace eroded material and revegetate eroded area. Construct needed interceptor waterbars to direct water away from slopes if practical.

2. Pipe Trenches

   a. Replace and shape soil to conform with surrounding ground elevation all trenches that have settled or eroded excessively.

   b. Maintain vegetation where applicable.

3. Pipe, Fittings, Control Valves , Meters

   a. Repair damaged pipe and fittings as required for proper operation of the system. Consult the OM&R Manual provided for specific repair of valves and meters.

4. Manholes, Signs, other related Appurtenances

   a. Materials for placement shall be equal to or better than those used in the original installation. Consult the SCS engineering staff and the project design folder for material requirements, for those materials not described in the O&M Manual.

MODIFICATION

This plan may be modified by mutual consent of the sponsors and the SCS in keeping with the O&M agreement. As further agreements are signed, a plan of O&M of the respective measures will be developed and added to this document.

EXECUTIVE SUMMARY

Northwest Area Water Supply Project

Pre-final Design

D R A F T

North Dakota State Water Commission

and the

Garrison Diversion Conservancy District

May 1994

Houston Engineering, Inc. in association with
American Engineering, P.C.
Montgomery Watson

DRAFT EXECUTIVE SUMMARY

INTRODUCTION

This executive summary presents the results of the Northwest Area Water Supply (NAWS) Pre-Final Design project. The goal of this phase of the NAWS project is to bring the project to a point where funding can be obtained for final design and construction. Project tasks have included: the review of water supply needs in the project area, an evaluation of current and anticipated water quality standards, an assessment of environmental impacts, a determination of the facilities necessary to serve the project area and preparation of estimated costs for those facilities.

PROJECT HISTORY

Most municipalities and small communities, as well as farms and ranches, in northwestern North Dakota, are currently obtaining their water supplies from groundwater sources which are of poor quality and limited quantity. With the exception of the Missouri River, surface water supplies are also considered marginal from both a quality and quantity standpoint.

The Garrison Diversion Municipal, Rural and Industrial Water Supply (MR&I) Program passed by the U.S. Congress on May 12, 1986, authorized the appropriation of $200 million of federal funds for the planning and construction of water supply facilities throughout North Dakota. An agreement between the North Dakota State Water Commission (SWC) and the Garrison Diversion Conservancy District entitled "Agreement for the Joint Exercise of Governmental Powers", dated July 18, 1986, provides a method through which the agencies can request funding for MR&I water system projects from the Secretary of the Interior. On the basis of this agreement, the Northwest Area Water Supply (NAWS) study was initiated in November 1987.

In 1988, Houston Engineering, Inc., in association with American Engineering, P.C., and James M. Montgomery, Consulting Engineers, Inc. (now Montgomery Watson), was retained as the study team for the NAWS study. The scope of the 1988 study included the nine county area of northwestern North Dakota. The final NAWS Study report was completed on November 30, 1988.

The 1991 North Dakota Legislative Assembly passed into law a bill creating a NAWS Advisory Committee and gave its full support to development of the NAWS project. In February of 1993, Houston Engineering, Inc., in association with American Engineering and Montgomery Watson, was retained as the design team for the NAWS Pre-final Design. The Pre-final Design includes the following tasks:

- Update community water supply needs and obtain Agreements of Intent to Purchase project water.
- Evaluate environmental impacts which may be associated with the project.
- Size and locate pipeline facilities including pump stations and reservoirs for cities and other users.
- Evaluate and determine the necessary improvements to the Williston, Parshall, and Minot Water Treatment Plants to meet project capacity and water quality requirements.

- Update cost estimates based on the potential users who sign Agreements of Intent.

UPDATED COMMUNITY NEEDS ASSESSMENT

The community water supply needs within the original nine-county study area of northwestern North Dakota were initially outlined in the 1988 NAWS report. The purpose of the 1993 Community Needs Assessment was to update the earlier study using information obtained and compiled through ten regional public meetings, special mailings, and personal phone contacts. All communities with municipal distribution systems and five rural water associations were contacted to determine if any changes in the status of quantity, quality, or supply facilities have occurred since the 1988 survey. In addition, Pierce County was added to the NAWS project area.

The 1988 Needs Survey identified 118 communities which were listed under one or more of the three general or primary types of water supply systems including: municipal distribution systems, rural water systems, and private wells. This number increased to 125 with the addition of Pierce County. Presently, five operational and three organized rural water associations exist within the ten-county project area. All of these entities signed an Agreement of Intent to Purchase. In addition, during the course of the public involvement process, two additional rural water associations were being considered and local representatives have signed an Agreement of Intent to Purchase. The signed Agreements of Intent are an indication that a community or rural water association is interested in being included in the NAWS Pre-final Design process. These communities and rural water associations represent approximately 73 percent of the total population within the ten-county project area or a population of about 92,000.

The Community Needs Assessment has found that many communities within the NAWS project area are currently in need of some type of service to improve water supply, storage, quality or a combination of the three. As presently proposed, the regional supply systems will provide water to the local municipal distribution systems and existing rural water distribution supply points. A water supply for the development of new rural water systems or expansion of existing systems was included in the pre-final design.

SAFE DRINKING WATER ACT

Passage of the Safe Drinking Water Act (SDWA) in 1974 authorized the Environmental Protection Agency (EPA) to regulate contaminants in drinking water. Amendments to the SDWA were passed in 1986 and resulted in a rapid acceleration of EPA's schedule for setting water quality standards. The new standards have propelled the water supply industry in the United States into a new era of regulations, monitoring, and compliance requirements. The new standards also increase the cost to monitor these contaminants and will require the upgrading and renovation of many existing WTP facilities to ensure compliance.

Existing water quality data were reviewed during the 1993 Community Needs Assessment. The analysis found that many of the current domestic water supplies are or may be in violation of future EPA standards as new requirements of the SDWA are implemented. Water treatment facilities to be upgraded as part of the NAWS project will supply water in compliance with current and anticipated SDWA requirements.

ENVIRONMENTAL IMPACTS

An Environmental Assessment (EA) was prepared to evaluate and describe the environmental impacts of the NAWS project. The goal of the EA was to present these potential impacts to the general public, special interest groups, and the decision makers in order to insure that they have sufficient information to make a sound decision as to whether or not to proceed with further development. The information provided in the EA was based on published and non-published data. Limited field studies were conducted to gather additional data. Published data were used extensively to identify soils, land use, wetlands, vegetation, archaeologic, and cultural resources. Approximately 750 miles of proposed pipeline routes were evaluated, and estimates of resource impacts were made.

Environmental impacts associated with the NAWS project are expected to be minimal in the long term. During construction, some negative short-term impacts will occur. With proper planning, these impacts can be minimized. History has shown that a high quality water supply has a stabilizing effect on a community. Economic and social impacts are expected to be positive.

PROJECT DESCRIPTION

West System

The SWC selected an upgraded and expanded water treatment plant at Williston as the best alternative to serve the western portion of the project area. The service area for the West System includes all of Williams, Divide, and Burke Counties. This system would use the City of Williston's intake structure on the Missouri River and the existing water treatment plant. The required intake and treatment capacity for this system would be 13 million gallons per day (mgd) with 9 mgd to supply major users (the City of Williston and Williams Rural Water Association) and 4 mgd to supply the small communities and rural users in the service area. The secondary users on the West System include the communities of: Grenora, Powers Lake, Crosby, Columbus, and Bowbells. Several smaller cities and towns within the area along with the proposed Writing Rock Rural Water Association would also be served. The design population of the West System is approximately 27,000 people of which 21,100 are city residents and 5,900 reside in rural areas.

Although the existing Missouri River intake at Williston is adequate for the West System, the current capacity of the water treatment plant is limited to 7 mgd; therefore, the plant will have to expanded by 6 mgd. Approximately 236 miles of pipeline ranging in diameter from 4 to 24 inches, 15 pumping stations, and five reservoirs will also be required. The West System would provide treated and softened water to all users, and no additional treatment facilities would be necessary. Figure 1 shows the approximate locations of the facilities and the proposed pipeline routes.

Parshall System

The SWC selected an upgraded and expanded water treatment plant at Parshall to serve the south central part of the service area which includes portions of Mountrail, Ward, and McLean Counties. The system will use portions of Parshall's existing intake on Lake Sakakawea and its existing lime softening water treatment plant. The required intake and treatment capacity for this system would be 1.5 mgd with 1 mgd allotted to supply Parshall, New Town, Makoti and Plaza; and 0.5 mgd to supply other users in the counties including the proposed Mountrail Rural Water System. The design population of the

Parshall System is about 4,700 people of which about 2,800 reside in the four cities and 1,900 reside in rural areas.

Inclusion in the NAWS project will require expansion and upgrading of the existing water treatment plant from 0.5 to 1.5 mgd and improvements to the existing intake, raw water pumping station, and transmission line. The transmission system will require construction of approximately 35 miles of pipeline ranging in diameter from 6 to 10 inches, one pumping station, and one reservoir. The expanded Parshall WTP will serve treated and softened water to users in the expanded service area. The locations of key elements of the Parshall system are shown in Figure 1.

East System

The SWC selected an upgraded and expanded water treatment plant at Minot as the preferred option to deliver water to the eastern portion of the project area. The service area of this system includes the northern portion of McLean County; all of Pierce, McHenry, Renville, and Bottineau Counties; and the eastern two-thirds of Ward County. The major users would include: the cities of Minot (which also serves the Minot Air Force Base and the North Prairie Rural Water System), Kenmare, Mohall, and Bottineau; and the Upper Souris and All Seasons Rural Water Associations. The design population for the East System is approximately 80,300 people of which about 61,200 are city residents and 19,100 reside in rural areas.

The primary components of this system would include a new intake at Lake Audubon and expansion of the existing Minot Water Treatment Plant from 18 to 28 mgd. Some additional facilities are included along the pipeline and at the water treatment plant to address biota transfer concerns. The East System would include 457 miles of pipeline ranging in diameter from 4 to 42 inches, 17 pumping stations, and 15 reservoirs.

The East System would provide treated and softened water to this regional system, and no additional water treatment plants would be required. Figure 1 shows the approximate locations of the facilities and proposed pipeline routes.

CONSTRUCTION COST ESTIMATE

Construction cost estimates for the pipeline, pumping stations and reservoirs shown in Table 1 were prepared using manufacturers' quotes and were compared with actual bids from the Southwest Area Water Supply Project. Cost estimates for the three water treatment plant expansions were prepared using information from similar facility designs, equipment suppliers, and recent bids from projects of similar complexity.

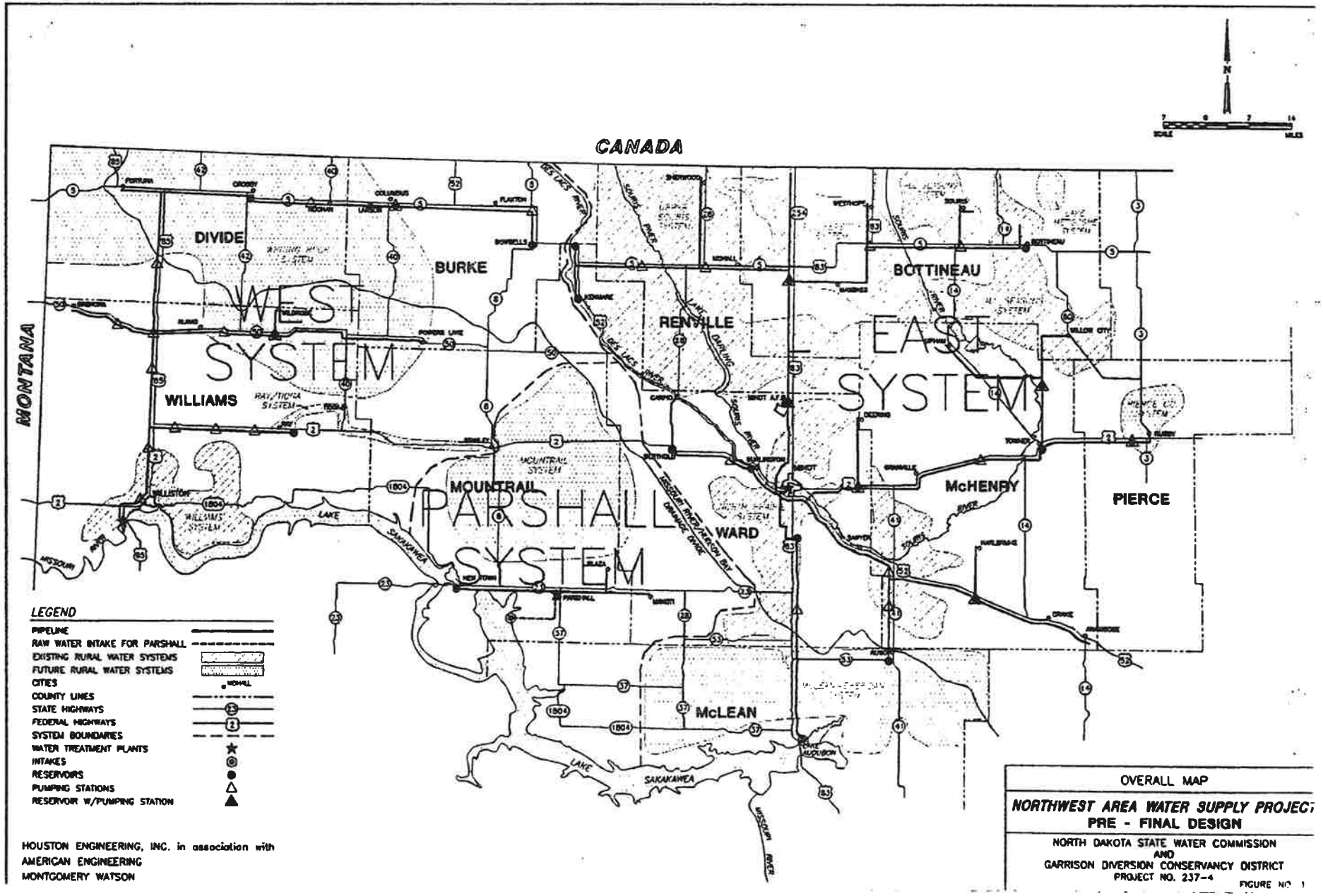
An allowance of 30 percent of construction costs has been included in the totals to cover costs for legal, engineering, land and easements, and contingencies. Land and easement costs are assumed to be 3 percent of construction costs.

TABLE 1

PROJECT COST ESTIMATE

NORTHWEST AREA WATER SUPPLY PROJECT
PRE-FINAL DESIGN

System Components	Systems		
	East	Parshall	West
Pipelines			
Large Diameter (14 to 42 inch)	$48,700,000	0	$6,800,000
Small Diameter (4 to 12 inch)	16,100,000	1,900,000	12,000,000
	$64,800,000	**$1,900,000**	**$18,800,000**
Pumping Stations	**3,900,000**	**0**	**2,600,000**
Reservoirs	**6,500,000**	**400,000**	**1,500,000**
Intakes	**2,700,000**	**1,500,000**	**0**
Water Treatment Plants			
Expansion	4,900,000	800,000	3,500,000
Upgrades	2,000,000	400,000	2,900,000
New Regulation Needs	4,300,000	800,000	3,600,000
Biota Transfer	1,000,000	0	0
	$12,200,000	**$2,000,000**	**$10,000,000**
Construction Cost Totals	**$90,100,000**	**$5,800,000**	**$32,900,000**
Engineering and Contingencies	27,000,000	1,700,000	9,900,000
PROJECT COST TOTALS	**$117,100,000**	**$7,500,000**	**$42,800,000**


CANADA
MONTANA
DIVIDE
BURKE
WILLIAMS
MOUNTRAIL
RENVILLE
BOTTINEAU
WARD
McHENRY
PIERCE
McLEAN
WEST SYSTEM
EAST SYSTEM
PARSHALL SYSTEM
LAKE SAKAKAWEA
LAKE AUDUBON
MISSOURI RIVER
SOURIS RIVER
DES LACS RIVER
LAKE DARLING
TESSUM RIVER DIVERSION BAY
LEGEND
PIPELINE
RAW WATER INTAKE FOR PARSHALL
EXISTING RURAL WATER SYSTEMS
FUTURE RURAL WATER SYSTEMS
CITIES
COUNTY LINES
STATE HIGHWAYS
FEDERAL HIGHWAYS
SYSTEM BOUNDARIES
WATER TREATMENT PLANTS
INTAKES
RESERVOIRS
PUMPING STATIONS
RESERVOIR W/PUMPING STATION
HOUSTON ENGINEERING, INC. in association with
AMERICAN ENGINEERING
MONTGOMERY WATSON
OVERALL MAP
NORTHWEST AREA WATER SUPPLY PROJECT
PRE - FINAL DESIGN
NORTH DAKOTA STATE WATER COMMISSION
AND
GARRISON DIVERSION CONSERVANCY DISTRICT
PROJECT NO. 237-4
FIGURE NO. 1

Missouri River Master Water Control Manual Review and Update
Preferred Alternative for the Draft Environmental Impact Statement

The purpose of this document is to provide an executive summary of the water control plan criteria and impact data used to select a preferred alternative for the Draft Environmental Impact Statement (DEIS) for the Missouri River Master Water Control Manual Review and Update (Review and Update). The water control plan criteria considered for change are:

Navigation Service Level and Season Length During Drought
Non-Navigation Minimum Service Level
Permanent Pool Level
Intrasystem Regulation
Normal Navigation Season
Spring Rise
Flood Control Constraints

These criteria were evaluated for a number of economic uses and environmental resources. The economic uses evaluated were:

Flood Control
Navigation
Hydropower
Water Supply
Recreation

The environmental resources evaluated were:

Physical Habitat for Native River Fish
Interior Least Tern and Piping Plover Habitat
Wetland Habitat
Warm River Fish Habitat
Cold River Fish Habitat
Reservoir Fish Reproduction (Young-of-Year)
Cold Reservoir Fish Habitat
Riparian Habitat
Historic Properties

The navigation service level is the amount of water released from the mainstem reservoir system to support navigation from Sioux City, Iowa to St. Louis, Missouri. Navigation service level is classified as either full, which provides 9 feet (ft) of water depth (8.5 ft of navigation draft), or minimum, which provides 8 ft of depth (7.5 feet of navigation draft). The navigation

season length is normally 8 months from April 1 to December 1 of each year. The navigation season is extended into December if excess water in storage must be released from the system. The navigation service level and season length are reduced during drought to conserve water in storage in the mainstem reservoir system. The potential modification studied for the Review and Update would conserve water in storage sooner during a drought.

The non-navigation minimum service level is the minimum amount of water released from the mainstem reservoir system at Gavins Point Dam near Yankton, South Dakota to the lower Missouri River during times when navigation is not supported. Higher minimum non-navigation service levels were evaluated for the Review and Update.

The permanent pool level refers to the minimum reservoir water level that would be allowed during drought. Higher permanent pool levels were evaluated for the Review and Update.

Intrasystem regulation refers to the manner in which water in storage is distributed among the upper three reservoirs in the mainstem reservoir system. The upper three reservoirs contain nearly all the water that is used during drought periods to augment downstream river flows. The potential modification studied for the Review and Update would change the current regulation that calls for an equal balance of the upper three reservoirs, to an unbalanced approach.

As previously stated, the Current Water Control Plan provides at least an 8-month navigation season from April 1 to December 1 during non-drought periods. Potential modifications were studied for the Review and Update that would shorten or interrupt the navigation season each year.

A modification to provide a spring rise in the lower Missouri River was investigated for the Review and Update. A spring rise would more closely mimic the natural flow pattern of the river that existed prior to the construction of the mainstem reservoir system. A more natural flow pattern provides increased value to the native species that have adapted to pre-project river conditions.

Flood control constraints are applied to the mainstem reservoir system releases from Gavins Point Dam to minimize flooding on the lower Missouri River. The flood control constraints are triggered when river flow exceeds designated levels at any of three lower Missouri River target locations (Omaha, Nebraska City, Kansas City). The Current Water Control Plan calls for two flood control constraints. The elimination of one or both of the flood control constraints was investigated for the Review and Update.

Modification of the criteria for navigation service level and season length during drought was selected for the preferred alternative since it would increase total economic value without severely impacting any use or resource. The values for the non-navigation minimum service levels were not modified for the preferred alternative because the modest gains for a few uses and resources associated with an increase in these service levels would be more than offset by losses in value to other uses and resources. The current permanent pool level was not modified for the

preferred alternative since economic use gains and losses generally offset each other and physical habitat for native river fish value declines slightly at higher permanent pool levels. Modification of the intrasystem regulation criteria was selected for the preferred alternative because this would provide greater value to reservoir fish reproduction and interior least tern and piping plover habitat. A shortened or interrupted normal navigation season would not provide as much value to navigation. However, it would provide greater value to physical habitat for native river fish and wetland habitat. A shortened normal navigation season (April 1 to November 1) was selected for the preferred alternative to strike a balance in value provided to these competing uses and resources. Provision of a spring rise would reduce value to flood control and navigation and increase the value to physical habitat for native river fish, interior least tern and piping plover habitat, and wetland habitat. Provision of a spring rise better mimics the natural pre-project flow pattern and is a key element for improving the river ecosystem. Similar to the navigation season length, the magnitude of the spring rise for the preferred alternative was selected to provide balanced value to the competing uses and resources. The number of flood control constraints was not modified for the preferred alternative since this would not provide substantial gains for any use or resource. However, to allow the spring rise, the flood control constraints were adjusted to be triggered at higher river flow levels.

The following is a comparison of the water control plan criteria for the Current Water Control Plan and the preferred alternative for the DEIS. Flows are shown in thousands of cubic feet per second (kcfs), permanent pool level is shown in millions of acre-feet (MAF).

Water Control Plan Criteria	Current Water Control Plan	Preferred Alternative
Navigation Service Level and Season Length	Current	Modified
Non-Navigation Minimum Service Level		
Winter	12 kcfs	12 kcfs
Spring/Fall	9 kcfs	9 kcfs
Summer	9 kcfs	9 kcfs
Permanent Pool Level	18 MAF	18 MAF
Intrasystem Regulation	Current	Modified
Normal Navigation Season	8 Months	7 Months
Navigation Season Interruption	None	None
Spring Rise	Nav Target	Nav Target + 20 kcfs
Flood Control Constraints	2 Constraints	2 Constraints

Attached is a table that shows a comparison of the values that would be obtained under the preferred alternative against the maximum attainable value for each use or resource; and a comparison of the preferred alternative values to the values obtained under the Current Water Control Plan.

Comparison of the Preferred Alternative to the Current Water Control Plan and Maximum Values for 1898-1993 Data

	FC	NAV	HYDRO	WS	REC	TOTAL ECON	PHY HAB	TERN PLO	WET HAB	WRM RIV	CLD RIV	YOY	CLD RES	RIP HAB	HIS PRO
	in Millions of Dollars						Index	Acres	1000's Acres	Miles	Miles	Index	MAF	1000's Acres	Index
Maximum Attainable Values	44.7	17.7	643.8	549.2	81.3	1321	70.8	1450	186	62.3	201	2.23	13.2	108	4743
Current Water Control Plan	44.4	17.7	614.9	546.2	75.7	1299	59.0	432	155	49.4	187	1.96	9.9	108	4689
Preferred Alternative	42.6	15.0	620.6	546.7	77.7	1303	64.1	587	166	58.8	187	2.03	10.6	96	4484
	FC	NAV	HYDRO	WS	REC	TOTAL ECON	PHY HAB	TERN PLO	WET HAB	WRM RIV	CLD RIV	YOY	CLD RES	RIP HAB	HIS PRO
Preferred Alternative % of Maximum Attainable	95%	85%	96%	100%	96%	99%	90%	41%	89%	94%	93%	91%	80%	89%	95%
Preferred Alternative % of Current Water Control Plan	96%	85%	101%	100%	103%	100%	108%	136%	107%	119%	100%	104%	107%	89%	96%

Office of the State Engineer

M E M O R A N D U M

TO: Governor Edward T. Schafer
North Dakota State Water Commission Members

FROM: David A. Sprynczynatyk, State Engineer

SUBJECT: Cannonball River Basin Study Update

DATE: May 11, 1994

The Cannonball River Basin study participants continue to refine the study scoping document. The final scoping document will be available within a month. The scoping document includes the study goals and objectives and it also delineates specific work tasks to be accomplished by each study participant. A contract agreement between the Bureau of Reclamation (Bureau) and the Standing Rock Sioux Tribe is being developed as well as a Memorandum of Understanding (MOU) between the Bureau and the participating State agencies. The MOU can also be used as the contract between the Bureau and the State agencies for any in-kind services that will be provided by the State agencies. The agreements should be completed within the next month.

The State Water Commission's contribution to the study effort will consist of in-kind services involving staff time for the duration of the study effort which is anticipated to be 2-3 years. The study time frame will be determined based upon an evaluation of the existing data and an evaluation of data requirements of the water budget model.

The study will involve the following components: identifying and compiling existing information and data; identifying data gaps and the need for additional information; developing a water budget model(s); identifying basin-wide problems, needs and opportunities; developing and assessing management scenarios; and developing the final report.

Data collection has already begun and will consist of compiling hydrologic, economic, demographic, environmental, land use, social, cultural and water use data. It is anticipated that the data collection will be completed by July 1, 1994. Once all existing data has been compiled, it will be evaluated to determine if additional data requirements will be needed for the model development.

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The Study Group has formed a modeling team. The modeling team will consist of staff members of the State Water Commission, the Standing Rock Sioux Tribe, the State Health Department, the Game and Fish Department, and the Bureau. The modeling team will determine what the model needs are and what type of model software should be used or developed to provide study participants with the type of model(s) that will be needed.

The model criteria will identify exactly what the model should accomplish. Basically, this will involve a water balance of the Cannonball River Basin that can be used to evaluate projects and programs that are anticipated to evolve from the study process and the public involvement process.

A survey is being developed to obtain public input from the local water resource districts, the local soil conservation districts and the residents of the Cannonball Basin. The survey will help identify area concerns, attitudes and needs involving water resources. It will give us a better perspective of local attitude and will be very useful as management scenarios are developed for the Basin.

DAS:LW:dp/322-1