Red River Valley Water Supply Project
Environmental Impact Statement

Summary of June 2003 Public Meetings
Final Report

2003

U.S. Department of the Interior
Bureau of Reclamation
Dakotas Area Office

State of North Dakota
Garrison Diversion Conservancy District

INTRODUCTION

This Public Scoping Summary compiles public and agency comments received during the formal scoping process for the Red River Valley Water Supply Project (Red River Project) Environmental Impact Statement (EIS). Following brief background information on the Red River Project and on the scoping process, this report presents a summary of the scoping comments gathered by the lead agencies for consideration in preparing the EIS and summary responses.

Purpose and Need for Federal Action

The following Statement of Purpose and Need was included in the Notice of Intent to Prepare an EIS published in the Federal Register on October 8, 2002 (Appendix A):

> The Red River Valley Water Supply Project EIS will evaluate alternative ways to meet the comprehensive "water quality and quantity needs of the Red River Valley in North Dakota" [DWRA Section 8(b)(1)]. The needs are defined as municipal, rural, and industrial supplies; water quality; aquatic environment; recreation; and water conservation measures [Section 8(b) (2)].

BACKGROUND

On December 15, 2000, the 106th Congress passed the Dakota Water Resources Act of 2000, which was signed into law on December 21, 2000 (Public Law 106-554). Among other things, the Dakota Water Resources Act of 2000 (DWRA) states that, "the Secretary of the Interior shall conduct a comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs@ (Section 8(b)(1)). In addition, the DWRA states that, Apursuant to an agreement between the Secretary and State of North Dakota as authorized under section 1(g)Y. the Secretary and the State of North Dakota shall jointly prepare and complete a draft environmental impact statement concerning all feasible options to meet the comprehensive water quality and quantity needs of the Red River Valley and the options for meeting those needs" (Section 8 (c)(2)(A)).

Pursuant to Section 102 (2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the Bureau of Reclamation (Reclamation) and the State of North Dakota (ND) are jointly preparing this EIS. The State of North Dakota has designated the Garrison Diversion Conservancy District (GDCD) to serve as the state lead in preparation of the EIS. Reclamation, acting under the authority of the Secretary of the Interior, is the lead federal agency. Reclamation is concurrently preparing a feasibility-level engineering report, *Report on the Red River Valley Water Needs and Options* (Needs and Options Report), to assess the needs and to identify alternatives.

Cooperating agencies include the Cities of Fargo ND, Grand Forks ND, and Moorhead, Minnesota; Minnesota Department of Natural Resources; North Dakota State Historic Preservation Office; U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service, U.S. Forest Service (Sheyenne National Grassland); and U.S. Geological

Survey. These agencies have been invited to be cooperating agencies because of their expertise or jurisdiction. The Environmental Protection Agency was also invited, but declined due to an insufficient travel budget and the lack of staff resources which preclude full participation. The State of Missouri requested cooperating agency status.

SCOPING PROCESS

Scoping is an important part of the NEPA process. It serves as the public=s opportunity to provide input and direction on the EIS throughout its preparation. Reclamation and GDCD developed a public involvement strategy that included publication of a Notice of Intent, holding six public scoping meetings, meeting with state and federal agencies, distributing newsletters, sending scoping letters to agencies, forming a cooperating agency team, issuing news releases, posting web sites and distributing this Summary of Public Scoping.

Input analyzed for this Public Scoping Summary came from the following:

1. Series of open houses and public scoping meetings held in six locations in North Dakota (Fargo, Valley City, Grand Forks, Pembina, Wahpeton, and Bismarck).
2. Consultation meetings with federal, state, and local agencies in North Dakota and Minnesota.
3. Comments on previous Red River Valley studies.
4. Written comments submitted by agencies, organizations, Tribes, and the public.

The format of public scoping meetings included break-out sessions, during which facilitators recorded comments on flip charts. Notes from these sessions and all written comments are included in the Appendix B.

This Public Scoping Summary is based upon both oral and written input from federal, state, and local agencies, Tribes, and other interested persons. It describes the scope of actions, alternatives, and impacts to be studied in the Red River Project EIS, and it identifies the significant environmental issues that will be studied in detail, as well as those that are not significant or are outside the scope of this analysis.

SCOPING SUMMARY

The following paragraphs summarize comments received during the scoping period. The wording is intended to categorize and summarize the substance of the comments, not reproduce the exact wording of individual comments. The order in which the issues are presented does not reflect their relative importance.

Geographic Scope of Analysis

- Inclusion of Minnesota

Comment: Several individuals and entities commented that alternatives should be formulated to meet needs in both North Dakota and Minnesota.

Response: Three different geographic scopes have been identified for the EIS. These are 1) the area to be served by the project; 2) the area for potential water sources; and 3) the area to be evaluated for

potential environmental impacts.

Water needs will be quantified for the Red River Valley in North Dakota and Minnesota. Needs must be quantified for both states to estimate future depletions, and subsequent surface water and groundwater availability.

Section 8(b)(2) of DWRA mandates " … a comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs."

Because of this specific language in DWRA, the geographic scope which was disclosed in the Notice of Intent to Prepare an EIS published in the Federal Register on October 8, 2002 (Appendix A) included only the North Dakota portion of the Red River Valley in the project service area. Many individuals and entities commented that alternatives should be formulated to meet needs in both North Dakota and Minnesota.

Because North Dakota and Minnesota share the Red River and there is no interstate compact allocating flows, the Red River Project could affect water availability in Minnesota cities bordering the river. Inclusion of Minnesota cities along the Red River in the project service area is therefore reasonable under NEPA.

CEQ regulations require evaluation of all reasonable alternatives, including those outside the jurisdiction or authority of the lead agency. In the *Forty Most Asked Questions concerning CEQs National Environmental Policy Act Regulations (40 CFR 1500-1508). Federal Register Vol 46, No. 55, 18026-18038. March 23, 1981.,* CEQ states:

> Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies. Section 1500.1(a).

Therefore, the geographic scope for the project service area has been expanded to include the Red River Valley in North Dakota and the Minnesota cities of Breckenridge, Moorhead, and East Grand Forks. If a project is ultimately constructed, providing water to Minnesota will require additional Congressional authorization.

The geographic area considered for potential water sources will include the Red River basin in North Dakota and Minnesota and the Missouri River.

The geographic scope for analysis of environmental impacts of alternatives includes the Red River basin and the Missouri River from North Dakota to its confluence with the Mississippi River.

Determination of Water Needs and Options to Meet those Needs

Several individuals and entities commented on various aspects of the quantification of needs, and availability of surface water and groundwater supplies to meet those needs.

- Quantification of Need

Comment: This issue includes questions on estimating future water needs identified in DWRA, and how that could influence identification of alternatives to be evaluated, and ultimately selection of an alternative to implement. In particular, estimates of future population, per capita demand, industrial demand, and potential water conservation savings were frequently brought up as issues during scoping.

Response: As part of the Needs and Options Report, Reclamation will estimate year 2050 water needs for municipal, rural and industrial water, water quality, aquatic environment, recreation, and water conservation measures. The needs for each sector will be estimated separately, and will be reviewed by an interagency technical team prior to incorporation in the EIS.

- Tributary Flows

Comment: This issue relates to the need for hydrologic modeling of streamflow in tributaries to the Red River, which generally was not done in previous studies. Several individuals commented that inadequate modeling of tributary flows could result in overestimation of available water during a drought.

Response: Reclamation has contracted with U.S. Geological Survey (USGS) to update the naturalized flow database that will be used for hydrologic modeling. The updated database will include additional detail on tributary flows.

- Time Step for Hydrologic Modeling

Comment: This issue relates to whether use of monthly flows and demands are adequate for modeling potential water shortages. Several comments were received indicating that daily modeling was needed to estimate peak demands, and to evaluate the adequacy of system storage to meet those peaks.

Response: Selected periods will be modeled using a daily time step to assess the adequacy of monthly modeling and to potentially develop conversion factors for monthly and daily shortages.

- Determination of Drought Scenario for Modeling Shortages

Comment: Previous Reclamation studies have used the 1930s drought as a basis for estimating future shortages. Some entities and individuals have commented that the 1930s drought was an anomaly that is unlikely to occur again in the foreseeable future. Others commented that a drought more severe than the 1930s should be considered.

Response: Reclamation will evaluate the effects of climatic cycles on streamflow within the Red River basin. This will, in part, be used to establish the appropriate drought scenario to use for hydrologic modeling, and will provide the reader context regarding the likelihood of more or less severe droughts.

- Purchase of Irrigation Groundwater Rights

Comment: We received several comments indicating that purchase of irrigation

groundwater rights for MR&I use should be included as a component of all alternatives evaluated in the EIS.

Response: Groundwater withdrawals will be quantified, and purchase of irrigation rights may be included as a component of one or more alternatives.

- Desalination of Dakota Aquifer Water

Comment: Issues were raised pertaining to the low yield of the Dakota Aquifer, the high cost of desalination, and problems associated with brine disposal.

Response: Desalination of Dakota Aquifer water will be evaluated as a potential water supply, and may be incorporated as a component of one or more alternatives. The issues will be addressed in the EIS.

Scope of Alternatives

- Features and Alternatives

Comment: Concerns were raised about specific features of the eleven specific alternatives disclosed for comment during the public scoping process, like the practicality of ring dikes, desalination of the Dakota Aquifer, and the environmental impacts of constructing Kindred Dam or raising Lake Ashtabula. The adequacy of in-basin water sources, the political challenges of importing water from Minnesota, and the benefits as well as the potential adverse effects of importing Missouri River water were also discussed. Other new features and alternatives, such as a Minnesota water supply, were identified.

Response: As required by the Council on Environmental Quality implementing regulations (40 CFR 1502.2[e]), a full range of reasonable alternatives will be evaluated in the EIS. These alternatives will include No Action and development of in-basin and out-of-basin water sources. The inclusion of a No Action Alternative, which was objected to by a number of participants, is required by NEPA and is the basis against which all other alternatives are compared. The EIS will evaluate potential environmental impacts of specific alternatives together with engineering and socioeconomic considerations. A preferred alternative has not been identified at this time.

The following general alternatives, which meet appraisal-level MR&I needs, are expected to be evaluated in the EIS:

No Action Alternative **-** This alternative is the future without the Red River Valley Water Supply Project.

North Dakota In-basin Alternative B An in-basin alternative that would use water sources within the Red River Valley of North Dakota.

Principal Supply Works Import to Sheyenne River Alternative **B** Missouri River import alternative that would use part or all of the existing Garrison Diversion Unit Principal Supply Works and the Sheyenne River to convey water to the Red River Valley.

Principal Supply Works Import Pipeline Alternative B Missouri River import alternative that would

use part or all of the existing Garrison Diversion Unit Principal Supply Works and an enclosed pipeline system to deliver water to the Red River Valley.

Missouri River to Red River Valley Import Alternative **B** This river import alternative would use a pipeline directly from the Missouri River to the Red River Valley.

Minnesota Water Supply Alternative **B** Available surface and/or groundwater from Minnesota would be used to supplement the existing water supply within the Red River Valley in North Dakota.

At least one specific alternative within each of these general categories will be identified by GDCD and Reclamation. These will be disclosed for public comment during public meetings in June 2003.

Environmental Consequences of Alternatives

- Biota Transfer

Comment: Included in this issue is the potential for the Red River Project to transfer organisms between the Missouri River basin and the Red River basin, and the ecological and economic consequences of transferring unwanted organisms. Numerous entities commented on the importance of this issue, particularly in regard to compliance with the Boundary Waters Treaty and the Executive Order on Invasive Species.

Response: Reclamation has contracted with USGS Columbia Environmental Research Center to conduct a biota transfer risk and consequence assessment for the Red River Project. Risks and consequences (ecological and economic) will be estimated for each alternative evaluated in the EIS, including No Action. USGS will evaluate the potential risks of a transfer on non-native biota and the uncertainty associated with the risk estimations.

- Missouri River Depletion

Comment: This issue includes potential impacts to the Missouri River from a diversion of water to the Red River Valley.

Response: Direct, indirect, and cumulative effects on the Missouri River will be evaluated for each alternative. The analysis will include ecological impacts, including endangered species, as well as impacts to navigation, recreation, and water supply. The cumulative effects analysis will include existing and reasonably foreseeable future withdrawals from the Missouri River.

- Riverine and Riparian Resources

Comment: Effects on riverine and riparian ecosystems along the Sheyenne River (including Lake Ashtabula), the Red River, and other potentially affected streams (e.g., Ottertail River) were raised as an issue.

Response: Potential impacts to fisheries, invertebrates, and phytoplankton will be evaluated.

- Water Quality

Comment: Potential water quality changes in the Sheyenne and Red Rivers due to

imported water, changes in flow rates, or changes in reservoir operations are part of the water quality issue. Water quality impacts resulting from treatment disinfection byproducts and disposal of brine from desalination are concerns.

Response: Effects on water quality, flow rates and reservoir operations will be addressed in the EIS.

- Wetlands

Comment: This issue includes effects on wetlands, including construction impacts and indirect impacts associated with changes in aquifer levels or streamflow.

Response: The direct, indirect and cumulative impacts of construction and operation of each alternative will be evaluated.

- Terrestrial habitats

Comments: Changes in quality and quantity of terrestrial habitats was raised as a concern.

Response: Impacts to terrestrial habitats caused by construction or operation of project features (e.g., pipeline impacts, inundation under new or expanded reservoirs) will be addressed.

- Groundwater

Comment: This issue includes effects on groundwater quantity and quality, including effects of aquifer recharge and interactions with surface water.

Response: Changes in groundwater hydrology for each alternative will be investigated.

- Cultural Resources

Comment: The potential effects on historic archaeological, architectural, or traditional properties were of concern.

Response: Reclamation will consult with the North Dakota and Minnesota State Historic Preservation Officers and tribes to determine the effects of the proposed alternatives on historic properties.

- Threatened and Endangered Species

Comments: Effects on species that are federally listed or proposed for listing as threatened or endangered were raised as an issue.

Response: In compliance with the Endangered Species Act, Reclamation will prepare a biological assessment to determine if the project may adversely affect threatened or endangered species. If potentially adverse effects are found, Reclamation will begin formal consultation with the U.S. Fish and Wildlife Service.

- Devils Lake Outlet

Comment: The potential cumulative impacts of the project with either a state or federally funded outlet from Devils Lake were highlighted by a number of commenters. In particular, impacts to riverine and riparian habitats and associated biotic communities along the Sheyenne and Red Rivers, bank erosion, and water quality (both for aquatic life and human use) are a concern.

Response: Impacts will be evaluated with and without a Devils Lake outlet.

- Agriculture

Comment: This issue includes construction-related effects on agricultural lands (e.g., ring dikes), as well as effects caused by changes in water availability (e.g., impacts of purchasing irrigation water rights).

Response: Potential impacts to agriculture from each of the alternatives will be evaluated.

- Recreation

Comment: A number of comments were received regarding affects on fishing, boating, and other water-based or water-dependent recreation activities.

Response: The effects of the alternatives on recreation within the project area will be addressed.

- Socioeconomic

Comment: This issue includes the costs of construction, operation and maintenance, and mitigation, and the economic impacts of alternatives (both positive and negative), including environmental justice. In addition, the distribution of project costs, repayment obligations, and the ability and willingness of project beneficiaries to pay for reimbursable costs were cause for concern.

Response: Socioeconomic impacts of the alternatives will be evaluated in the EIS.

Outside the Scope

The following comments and resources were identified during the scoping process, but either are not expected to have potentially significant impacts or are beyond the scope of analysis for this EIS.

- Global Climate Change

Effects of global climate change, including global warming and long-term changes in precipitation patterns, are considered outside the scope of the EIS.

- Inlet to Devils Lake

This issue is outside the scope of this EIS. The use of any funds authorized under DWRA to transfer water from the Missouri River drainage basin to Devils Lake is prohibited by DWRA (Section 8(f)). This includes use of previously constructed Garrison Diversion Unit facilities.

Issues Not Identified as Significant

- Noise

Noise was not identified as a significant issue.

- Air quality

Air quality was not identified as a significant issue.

- Paleontological Resources

Paleontological resources were not identified as a significant issue.

- Mineral Resources

Mineral resources were not identified as a significant issue.

FUTURE PUBLIC INVOLVEMENT

Additional opportunities for public involvement will be provided during the preparation of the Red River Project EIS. The next public meetings are scheduled in Grand Forks (June 23), Breckenridge MN (June 24), Fargo (June 25), and Valley City (June 26). Public comments will also be invited during the review period for the Draft Environmental Impact Statement, scheduled for December 2005.

APPENDIX A

RED RIVER VALLEY
WATER SUPPLY PROJECT EIS

PUBLIC MEETING COMMENTS

From: "Gary Pearson" <gpearson@daktel.com>
To: "Signe Snortland" <ssnortland@gp.usbr.gov>
Date: 6/22/03 10:58AM
Subject: Fw: National Wildlife Federation comments on Final EIS/IPR DevilsLake North Dakota

Dr. Snortland--

At the May 29, 2003, Red River Valley Water Supply Project Technical Team meeting, the subject of cumulative impacts analysis was again raised.

The attached National Wildlife Federation comments on the U. S. Army Corps of Engineers' April 2003 Final Devils Lake, North Dakota, Integrated Planning Report and Enviornmental Impact Statement include a great deal of information relevant to this matter, and at pages 13-16 they specifically address cumulative impacts of a Red River Valley Water Supply Project utilizing features of the Garrison Diversion unit to deliver Missouri River water to the Sheyenne River, and an outlet from and an inlet to Devils Lake.

Gary Pearson

----- Original Message -----
From: David Conrad <CONRAD@nwf.org>
To: <Robert.a.anfang@usace.army.mil>
Cc: <gpearson@daktel.com>
Sent: Thursday, June 19, 2003 1:31 PM
Subject: National Wildlife Federation comments on Final EIS/IPR DevilsLake North Dakota

> Robert, thank you for agreeing to forward this email to Headquarters
> today.
>
> I will Federal Express overnight hard copies of these to both St.Paul
> District and Headquarters (Mark Matusiak) at: HQUSACE Attn: CECW-PC,
> 441 G. Street, NW #3G80, 20314-1000. (phone 202-761-4828), as well as
> the Telegraph Road office.
>
> If possible, can you email me back that you have received this email
> and passed it on to HQ? Thanks! David Conrad
>
> David Conrad
> Water Resources Specialist
> National Wildlife Federation
> 1400 16th Street, NW
> Washington DC 20036
>
> email conrad@nfw.org
>
> phone 202-797-6697
> (h) eves 301-589-0210
> cell 202-365-0565
> fax 202-797-5486
>
>

CC: "David Conrad" <dconrad@nwf.org>, "Genevieve Thompson" <gthompson@audubon.org>, "Mike Whittington" <mandl@wtp.net>, "Neil Stessman" <nstessman@aol.com>

NATIONAL WILDLIFE FEDERATION®
People and Nature: Our Future is in the Balance

June 19, 2003

Headquarters
U.S. Army Corps of Engineers
ATTN: CECW-P (IP)
7701 Telegraph Road
Alexandria, VA 22315-3860

C/O

Mr. Robert Anfang
St. Paul District
U.S. Army Corps of Engineers
ATTN: CEMVP-PM-A
190 Fifth Street East
St. Paul, MN 55101-1638

By E-mail (and hardcopy by Fed Ex)

Dear Sirs:

On behalf of the National Wildlife Federation, I would like to submit the following comments on the U. S. Army Corps of Engineers' ***Final Devils Lake, North Dakota Integrated Planning Report and Environmental Impact Statement (EIS) April, 2003***. The National Wildlife Federation, with more than 4 million members and supporters, is the nation's largest conservation education and advocacy organization. The Federation has a long history of involvement with development and conservation of the nation's water resources, and particularly with water resources issues in North Dakota, including the proposed Devils Lake project. These comments are also submitted on behalf of the Minnesota Conservation Federation, Minnesota's oldest conservation organization, which is dedicated to preserving the State's natural resources - it's air, soil, minerals, forests, waters and wildlife - on behalf of its more than 3,900 members.

Our organizations are deeply concerned that in preparing this FEIS, the Corps has seriously failed to meet both the requirements of NEPA and Section 404 of the Clean Water Act. The EIS continues to use an entirely unrealistic and unlikely climate scenario to justify this project. The EIS and the Section 404(b)(1) analysis fails in virtually all categories to identify and mitigate the enormous likely impacts that will result from construction and operation of this Outlet. The EIS fails to explore critically important alternatives to building a pump and canal system to drain water from the Devils Lake. It fails to utilize current sound science in addressing the water issues involved and utterly fails to substantiate its conclusion of support for the proposed "preferred" alternative. The Corps should support a policy of continued infrastructure protection and wetland restoration and reject the FEIS and 404(b)(1) analysis as entirely inadequate to meet the requirements of NEPA and the Clean Water Act.

If you have further questions regarding our comments, please do not hesitate to call me at 202-797-6697 or Mr. Gary Pearson at 701-252-6036.

Respectfully submitted,

David R. Conrad
Water Resources Specialist
National Wildlife Federation

attachment

COMMENTS OF

THE NATIONAL WILDLIFE FEDERATION

ON

THE U. S. ARMY CORPS OF ENGINEERS'

APRIL 2003

FINAL DEVILS LAKE, NORTH DAKOTA, INTEGRATED PLANNING REPORT AND ENVIRONMENTAL IMPACT STATEMENT

Prepared by

Gary L. Pearson
1305 Business Loop East
Jamestown, North Dakota 58401

and

David R. Conrad
National Wildlife Federation
1400 Sixteenth Street, N. W.
Washington, D. C. 20036-2266

June 19, 2003

TABLE OF CONTENTS

Page

Preface 3
Introduction 4
History of North Dakota's Plans to Stabilize Devils Lake 4
Continuing Political Interference in the NEPA Process 7
Flawed Scoping Process 11
Inappropriate Tiering of Environmental Impact Analysis 12
Failure to Consider Cumulative Impacts 13
Red River Valley Water Supply Project 13
Inlet to Deliver Missouri River Water to Devils Lake 13
North Dakota's 300 cfs "Temporary" Emergency Outlet 15
Absence of Authorization to Construct and Operate an Outlet 16
Inadequate Description of Environmental Impacts of the Proposed Action 17
Devils Lake Outlets – Technically Unsound and Economically Unjustified 25
Hidden Costs 26
The Wet Future Scenario – Fantasizing Feasibility 27
The $200 Million Lottery Ticket 29
Erosion of the Natural Outlet – Indulging Geologic Fiction 31
Wetlands, Wetland Drainage and Wetland Restoration 33
Water Resource Management in the Devils Lake Basin 34
Wetlands and Wetland Drainage in the Devils Lake Basin 35
Contribution of Wetland Drainage to the Rise of Devils Lake 36
Wetland Restoration and Upper Basin Storage 37
Continuing Wetland Drainage in the Devils Lake Basin 39
Inflated Values and Exaggerated Benefits 40
Flooding at Devils Lake – Hardships, Handouts and False Hopes 41
Inadequate Analysis of Alternatives 43
Continued Infrastructure Protection 44
Wetland Restoration 45
Inadequate Clean Water Act Section 404(b)(1) Evaluation 47
Biota Transfer – Confusing Absence of Proof with Proof of Absence 49
Mythical Mitigation 51
U. S. Army Corps of Engineers Environmental Operating Principles 54
Conclusions 55
References 59

PREFACE

"...it is difficult, if not impossible, for the state to support a project that includes unnecessary and expensive additions that are designed to address remote 'what if' risks."

—North Dakota State Water Commission, January 3, 2003. Final Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement, p. 9-2

"The stochastic analysis identifies that there is about a 9.4-percent probability that the lake will overflow sometime in the next 50 years. Given this probability, the environmental analysis based on the stochastic future assumes it is unlikely that the lake will overflow naturally."

—Final Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement, p. 5-52

"... an outlet would reduce the chance of an overflow from 9.4 percent to 4.6 percent..."

—Final Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement p. S-5

Introduction

The National Wildlife Federation (NWF) submitted extensive, detailed and documented comments identifying numerous conceptual flaws, technical deficiencies and legal defects in the U. S. Army Corps of Engineers' (Corps) February 2002 *Draft Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement* (Draft EIS, DEIS) (Pearson and Conrad, 2002). On April 18, 2003, the Corps of Engineers announced the release of its April 2003, *Final, Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement* (Final EIS, FEIS) (*Federal Register*, Vol. 68, No. 75, pp.19206-19207). The following comments address the adequacy of the FEIS in resolving and rectifying the flaws, deficiencies and defects identified in the NWF's comments on the Draft EIS. Therefore, these comments on the Final EIS are supplemental to and are to be considered in conjunction with NWF's comments on the Draft EIS.

History of North Dakota's Plans to Stabilize Devils Lake

Many of the fundamental flaws and deficiencies in the Draft EIS and Final EIS have their origins in the history of proposals to control the level of Devils Lake. As was noted in NWF's comments on the Draft EIS, the geologic record shows that, since Devils Lake was formed 10,000 years ago by the Wisconsin Glacier, its level has fluctuated substantially over long periods of time through a range of some 65 feet, from dry at 1394 feet above mean sea level (msl) to overflowing to the Sheyenne River at 1459 feet. The lake was at its current elevation of 1447 feet in the early 1800s, but it had declined to 1438 feet when the level was first officially recorded in 1867, and it had dropped to1424 feet by 1889. As the lake continued to recede, reaching its modern day low of 1401 feet in 1940, proposals were developed in the early 1900s to divert water from the Missouri River to "restore," "freshen" and "stabilize" Devils Lake. Consequently, the Flood Control Act of 1944 authorized the Missouri-Souris Diversion Unit, to be built by the U. S. Bureau of Reclamation, to divert water from the Missouri River to irrigate 1,007,000 acres in northwestern North Dakota, including an inlet canal to restore Devils Lake to "its former level" and an outlet canal from Stump Lake to the Sheyenne River to "maintain Devils Lake at a uniform level." By 1948, soils studies had disclosed that much of the land proposed for irrigation in the Missouri-Souris Diversion Unit was not irrigable, so the project was abandoned and a replacement Garrison Diversion Unit was authorized in 1965, also including an inlet to deliver Missouri River water to Devils Lake and an outlet from East Stump Lake to the Sheyenne River to freshen and stabilize the lake. However, by that time it was recognized that:

> "The freshening of the Devils-Stump Lake chain will be one of the early operational problems of the Garrison Diversion Unit." (U. S. Congress, 1960)

The 1974 Final Environmental Statement for the Garrison Diversion Unit pointed out that:

> "Original plans were to flush the lakes in the chain through the Stump Lake outlet canal into the Sheyenne River, but because this would adversely affect the Sheyenne and Red Rivers, present plans are for East Stump Lake to contain water flushed from the other lakes. (U. S. Bureau of Reclamation, 1974)

By 1975, Devils Lake had risen naturally to 1425 feet—two feet higher than the level to which it was to be "restored" by the Garrison Diversion Unit. And by 1983, a report by the Corps recommended the construction of a levee to protect the City of Devils Lake from the rising lake (U. S. Army Corps of Engineers, 1983), and a 1988 report recommended the construction of an outlet channel from the west end of Devils Lake (U. S. Army Corps of Engineers, 1988). When

the Garrison Diversion Unit was reauthorized in 1986, neither an inlet nor an outlet was included (P. L. 99-294). Nevertheless, the 1955 North Dakota statute establishing the Garrison Diversion Conservancy District continues to declare that construction of the Garrison Diversion Unit is necessary:

> "To replenish the waters, and to restore the level of Devils Lake, Stump Lake and Turtle Lake." (North Dakota Century Code Section 61-24-01)

On March 27, 1990, the U. S. Senate Committee on Environment and Public Works adopted a resolution stating that:

> "The Secretary of the Army is authorized and directed to conduct a study for the purposes of providing plans for the development, utilization, and conservation of water and related land resources in the Devils Lake Basin, North Dakota. The study should include appropriate consideration of the needs of the area for water management, **stabilized lake levels**, water supply, water quality, recreation, water pollution abatement, and enhanced conservation of fish and wildlife. Such study and plans provided shall be compatible with comprehensive development plans formulated by other agencies." (Emphasis added)

House Report 101-536 on June 13,1990, and Senate Report 101-378 on July 19, 1990, both directed the Corps to "study an outlet for Devils Lake."

The purpose of the resulting Reconnaissance Report was:

> "...to identify at least one alternative for each stated purpose that is technically feasible, economically justified and environmentally acceptable to solve water resource problems that occur in the study area." (U. S. Army Corps of Engineers, 1992).

According to the Reconnaissance Report:

> "The results of public involvement in early 1991 indicate that the most urgent concerns of residents around the lake chain are for a water inlet to stabilize low lake levels, the flooding and potential flood damages caused by the high lake levels, making water management compatible with protection of agricultural production, and the water quality within the lakes and its effects on the fishery and recreation resources and subsequent effects on the economy of the region." (U. S. Army Corps of Engineers, 1992).

The Reconnaissance Report concluded that:

> "It has been determined that at least one flood control outlet and at least one lake stabilization inlet have been identified that are: in the Federal interest, economically justified, technically feasible, and environmentally sound, socially acceptable, and supported by the non-Federal sponsor." (U. S. Army Corps of Engineers, 1992)

and it reported that the benefit/cost ratios were 1.77 for the outlet and 1.11 for the inlet (U. S. Army Corps of Engineers, 1992). However, a review by higher levels of the Corps disclosed that the benefit/cost ratio for the outlet actually was only 0.39 (U. S. Army Corps of Engineers, 1994). Consequently, 50 years after stabilization of Devils Lake had first been authorized by the Flood Control Act of 1944, it still could not be shown to be economically feasible.

Meanwhile, although authorization for delivery of Missouri River water to Devils Lake had been removed by the 1986 Garrison Diversion Unit Reformulation Act, in 1990 the State of North Dakota and the Garrison Diversion Conservancy District released their own Devils Lake Stabilization Plan involving the construction of a 200 cfs pipeline from Devils Lake to the Sheyenne River to pump Missouri River water delivered from the Garrison Diversion Unit to Devils Lake when the level was low and to pump water from Devils Lake to the Sheyenne River when the lake level was high (North Dakota State Water Commission et al., 1990)

Following four years of severe drought that saw Devils Lake drop from 1429 feet in 1987 to 1423 feet in 1992, unusually high levels of precipitation starting in 1993 caused the lake to begin rising rapidly, and the North Dakota Congressional Delegation requested the Corps of Engineers to prepare a contingency plan to address potential flooding problems around the lake. In its February 15, 1996, Contingency Plan, the Corps identified a suite of measures to deal with the flooding problem, including: (1) an outlet to the Sheyenne River, (2) an outlet to Stump Lake, (3) upper basin management (including upper basin storage of 200,000 to 300,000 acre-feet of water), (4) raising the levee protecting the City of Devils Lake, (5) flood insurance, (6) relocation of structures, (7) construction of other levees, (5) road raises, and (6) infrastructure protection (U. S. Army Corps of Engineers, 1996a). The report included estimated construction and operation costs for four outlet options to the Sheyenne River, but it did not determine the economic feasibility of any of them (U. S. Army Corps of Engineers, 1996a)

On May 13, 1996, the North Dakota Congressional Delegation met with the Assistant Secretary of the Army for Civil Works, resulting in a May 24, 1996, directive from the U. S. Army Corps of Engineers Headquarters for preparation of a Devils Lake Emergency Outlet Plan "based on existing information" with the outlet plan "selected from one of the 'Outlet to Sheyenne River' measures... in the 15 February 1996 *Devils Lake, North Dakota Contingency Plan*" (U. S. Army Corps of Engineers, 1996b). Thus, after meeting with the North Dakota Congressional Delegation on May 13, 1996, the Corps promptly disregarded the six other categories of flood protection measures identified in its February 15, 1996, Contingency Plan and proceeded to prepare an Emergency Outlet Plan based on outlet options none of which had not been demonstrated to be either effective or economically feasible.

The Corps' August 12, 1996, *Emergency Outlet Plan, Devils Lake, North Dakota* concluded that a 200 cubic feet per second (cfs) outlet operating from October 1985 through September 1995 would have reduced the level of the lake by 13 inches (U. S. Army Corps of Engineers, 1996b). The report estimated the costs of a 200 cfs outlet at $21 million and the annual operation and maintenance costs at $200,000, but it did not include an analysis of the economic feasibility of the project.

Nevertheless, the Emergency Supplemental Appropriations Act of 1997 (P. L. 105-18) appropriated $5,000,000 and directed the Corps to use the money to

> "...initiate and complete preconstruction engineering and design and the associated Environmental Impact Statement for an emergency outlet from Devils Lake, North Dakota, to the Sheyenne River." (U. S. Army Corps of Engineers and North Dakota state Water Commission, 2001)

At the urging of the North Dakota Congressional Delegation, the Energy and Water Development Appropriations Acts for Fiscal Years 1998 through 2001 (P. L. 105-62, 105-245, 106-60, 106-377) continued to provide funds for the construction of an outlet from Devils Lake to the Sheyenne River (FEIS p. 7-2; Appendix 1 p. 1-3)) but, at the insistence of other members of the

Senate Appropriations Committee (Condon, 1997; Davis, 1997), included language specifying that the funds were not to become available unless the Secretary of the Army reports to the Congress:

> "...that the construction is technically sound, economically justified, and environmentally acceptable and in compliance with the National Environmental Policy Act of 1969...That the economic justification for the emergency outlet shall be prepared in accordance with the principles and guidelines for economic evaluation as required by regulations and procedures of the Army Corps of Engineers for all flood control projects, and that the economic justification shall be fully described, including the analysis of the benefits and costs, in the project plan documents... That the plans for the emergency outlet shall be reviewed and, to be effective, shall contain assurances provided by the Secretary of State, after consultation with the International Joint Commission, that the outlet will not violate the requirements or intent of the [Boundary Waters Treaty of 1909] Between the United States and Canada... [and] That no funds made available under this Act or any other Act for any fiscal year may be used by the Secretary of the Army to carry out the portion of the feasibility study of the Devils Lake Basin... that addresses the needs of the area for stabilized lake levels through inlet controls... or carry out any activity that would permit transfer of water from the Missouri River Basin to Devils Lake."

In consenting to these conditions,

> "[North Dakota Senators] Conrad and Dorgan said Congress could revisit the issue in the future and approve funding for an inlet..." (Davis, 1997)

and:

> "Dorgan said he will bring back the inlet in future sessions, but for now, he said, the inlet is needed." (Condon, 1997)

> <u>Continuing Political Interference in the NEPA Process</u>

As originally stated in the Corps' February 1999 Environmental Impact Statement (EIS) Scoping Document for the Devils Lake outlet:

> "The purpose of the proposed action is the reduction of flood damages and flood protection costs related to the rising lake levels in the flood-prone areas around Devils Lake." (U. S. Army Corps of Engineers and North Dakota State Water Commission, 2001)

However, in June 1999 the U. S. Army Corps of Engineers reported to the Congress that:

> "Findings from these recent studies [of an outlet from Devils Lake] indicate that an economically feasible solution cannot be developed using the current economic and hydrologic models. Benefit-cost ratios vary from 0.12 to 0.72 depending on what assumptions for a without-project condition are used. Also, a outlet of 300 cubic feet per second (cfs) has limited effectiveness in terms of reducing peak levels..." (U. S. Army Corps of Engineers, 1999)

Despite the outlet's lack of economic feasibility, the Associated Press reported on July 17, 1999, that:

"Earlier in the week, [North Dakota Senator Kent] Conrad had threatened to block legislation concerning corps' promotion activities and staff. Conrad had said he wouldn't work with the Mississippi office unless something was done to address the Devils Lake flooding.

'I reached the conclusion that the Mississippi division... had no intention of acting to construct an outlet for Devils Lake,' he said." (Associated Press, 1999a)

Later, *The Bismarck Tribune* reported that Senator Conrad blocked appointments of Department of State officials in an attempt to force the agency to pressure the Government of Canada to agree to initiate consultation with the International Joint Commission before the Corps had completed studies on the design and impacts of an outlet or determined that one should be built. According to the *Tribune*:

"Secretary of State Colin Powell had been to Conrad's budget committee to talk about spending for Afghanistan.

Conrad suggested that he could listen better if Powell would get word to the U. S. Army Corps of Engineers that a Devils Lake outlet is critical to North Dakota.

A few days later, the State Department showed up at his office ready to listen.

Conrad said he employed the senatorial privilege of holding up department appointments until the matter is resolved.

'This is important to my state. I want to send a message in the strongest terms,' he said." (Donovan, 2002)

In September 1999, the Associated Press reported that officials of the Corps, the Federal Emergency Management Agency and other Federal agencies had met at the White House to discuss the situation at Devils Lake, and:

"... Sen. Kent Conrad, who was briefed on the meeting, said officials reviewed plans for an outlet to Stump Lake, an outlet on the west end of the lake, and measures that would affect roads and sewer systems.

'I think this is very positive,' said Conrad, a North Dakota Democrat who has advocated a Devils Lake outlet to reduce the water level." (Associated Press, 1999b)

Consequently, instead of acknowledging the lack of efficacy or economic feasibility of an outlet, the North Dakota Congressional Delegation persuaded the Corps to change the purpose of the project to make an outlet appear justified. Therefore, the Corps published a revised Notice of Intent to prepare an EIS on December 22, 2000, which stated that:

"The purpose of the proposed action is to reduce the flood damages related to the rising lake levels in the flood prone areas around Devils Lake *and to reduce the potential for a natural overflow event*." (Emphasis added) (U. S. Army Corps of Engineers and North Dakota State Water Commission, 2001)

Because an outlet would be minimally effective in reducing peak levels of the lake, it would not significantly reduce flood protection costs, so that purpose was eliminated, and the Corps included reduction in the potential for a natural overflow as a benefit, despite the low 9.4 chance of a natural overflow occurring and the fact that an outlet would reduce that chance by only 4.8 percent (FEIS pp. 5-52, 6-105).

In order to create a hypothetical situation where an outlet theoretically could reduce the potential for a natural overflow event, the Corps had to fabricate an artificial "Wet Future Scenario" involving the repetition of the climatic and hydrologic conditions for the seven years of unusually high precipitation from 1993 to 1999 two more times in immediate succession in order to cause the lake to overflow 14 years later, and then repeating them for an additional seven years to create hypothetical downstream damages that an outlet might then prevent (DEIS pp. 3-4, 3-5, 4-12). The obvious fallacy of such an approach, of course, is that a hypothetical scenario could be fabricated to justify virtually any project, so this sets a dangerous precedent for approving other government actions costing hundreds of millions of dollars that also have no relationship to reality.

The Draft EIS pointed out that:

> "The Corps of Engineers traditionally recommends plans that show the greatest expected net benefits, where benefits exceed costs based on the probability of events. As a standard process under the Principles and Guidelines, this is referred to the National Economic Development, or NED, plan. A stochastic approach was used to determine whether any of the outlet plans met that criterion, and a stochastic approach was used for economic evaluation." (DEIS p. 6-28)

However, under the Principles and Guidelines for economic evaluation required by the Army Corps of Engineers for all flood control projects, the Draft EIS determined that the proposed Pelican Lake 300 cfs outlet from Devils Lake would have a benefit/cost ratio of only 0.37 (DEIS Table 4 p. 4-2) and, therefore, concluded:

> "The [Pelican Lake 300 cfs] outlet plan that has been preliminarily selected for design is not economically justified using methods that would determine expected net benefits by producing probability-weighted benefits and costs." (DEIS p. 1-S-7)

The Corps' February 2002 Draft EIS stated in its Conclusions that:

> "In the Energy and Water Development Appropriations Acts for Fiscal Years 1998, 1999, 2000, and 2001 (Public Laws 105-62, 105-245, 106-60, and 106-377, respectively), Congress provided funding for the construction of an emergency outlet from Devils Lake to the Sheyenne River, but it imposed several conditions to the funds becoming available. *Since these conditions have not been met, no funds have been provided to the Corps to proceed with construction.*" (Emphasis added) (DEIS p. 6-28)

So, instead of accepting the fact that an outlet from Devils Lake would not meet the conditions imposed by the Congress, North Dakota Congressional Delegation members sought to and succeeded in changing those conditions in the massive Fiscal Year 2003 Omnibus Appropriations Bill (P. L. 108-7) to eliminate the requirements that the economic analysis of the outlet be prepared according to the Corps' Principles and Guidelines and that the outlet be economically justified, and while they were at it, they also eliminated the requirement for consultation with the

International Joint Commission to establish compliance with the Boundary Waters Treaty (FEIS p, 1.1, 1-2). As the Final EIS explains:

> "Public Law 108-7 directs the Corps to construct an outlet from Devils Lake to the Sheyenne River, subject to several conditions, including *the Secretary of State providing assurances that the project will not violate the Boundary Waters Treaty of 1909.* Additionally, it differs from the Energy and Water Development Act, 2001, Public Law 106-377, and earlier laws by *no longer [requiring] that the outlet be economically justified.* Rather, Public Law 108-7 requires instead that the justification for the outlet be fully described, including the analysis of benefits and costs." (Emphasis added) (FEIS p. 1-2)

Consequently, although the Final EIS also concludes that:

> "The stochastic model provides a means of conducting a probability weighted economic analysis. While the *use of a wet future scenario* may also provide insight into potential benefits of the outlet alternatives, such an analysis *provides little assurance as to the soundness of such an investment, since it is tied to the unlikely assumption that a particular scenario will ever occur.* Studies indicate that *an outlet plan using methods that would determine expected net benefits by producing probability-weighted benefits and costs would not be economically justified.* Within the context of this evaluation, the preferred action in the near term would be the continuation of infrastructure protection." (Emphasis added) (FEIS, p. 5-177)

nevertheless:

> "Having reviewed and evaluated documents concerning the proposed action and *views of other interested agencies and parties raised on the draft IPR/EIS*, the Corps of Engineers has identified that the preferred alternative to alleviate flood damage at Devils Lake in North Dakota is the Pelican Lake 300 cfs outlet plan." (Emphasis added) (FEIS p. 13.1)

However, the only agency to express support for construction of an outlet from Devils Lake in its comments on the Draft EIS was the North Dakota State Water Commission (FEIS Appendix 4, pp. 75-80. The U. S. Environmental Protection Agency, the U. S. Department of the Interior, Environment Canada, Fisheries and Oceans Canada, Manitoba Conservation, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, the Minnesota Department of Health and the Missouri Department of Natural Resources all recommended that an outlet not be constructed from Devils Lake (FEIS Appendix 4). Of the remaining parties submitting comments on the Draft EIS, only the Governor of North Dakota, Nelson County, Benson County and three private citizens supported construction of an outlet in their comments on the Draft EIS (FEIS Appendix 4). The National Wildlife Federation, the Sierra Club, the Spirit Lake Alliance, Eddy County, Audubon North Dakota, the North Dakota Chapter of The Wildlife Society, the Minnesota Center for Environmental Advocacy, the Minnesota Conservation Federation, the Peterson Coulee Outlet Association, People to Save the Sheyenne, the Pembina Valley Water Cooperative Inc. and 11 private citizens submitted comments on the Draft EIS expressing opposition to an outlet (FEIS Appendix 4). Overall, of the 43 agencies and parties listed in the Final EIS as submitting comments on the Draft EIS, 31 (72%) expressed opposition to an outlet, 6 (14%) were neutral and 6 (14%) supported an outlet (FEIS Appendix 4). These facts clearly demonstrate that, contrary to its claim here in the Final EIS, the Corps did not base its determination that the Pelican Lake outlet is the preferred alternative to alleviate flood

damages at Devils Lake on "the views of other interested agencies and parties raised on the draft IPR/EIS."

The flaws and deficiencies in the DEIS and FEIS resulting from the State of North Dakota's and the North Dakota Congressional Delegation's adamant insistence that the lack of efficacy and economic feasibility of an outlet not be considered are further compounded by their parallel efforts to assure that other alternatives for dealing with problems created by the rising level of Devils Lake are not fully analyzed. This is demonstrated by the highly unusual disclosure that the North Dakota Congressional Delegation and Governor's staff had exclusive authority for "Screening of alternatives" considered in the DEIS (pp. 6-31, 6-32) and in the FEIS (p. 14-1). The failure of the FEIS to evaluate thoroughly and consider seriously other alternatives besides an outlet is clearly demonstrated by the statement in the Summary that the second "primary purpose" of the FEIS (after implementing "tiering" in order to delay consideration of the operational impacts of an outlet) is:

> "...to evaluate *an outlet plan* (proposed action being evaluated) *and present a preferred outlet* alternative." (Emphasis added) (FEIS p. S-1)

With the constraints imposed by the North Dakota Congressional Delegation of (1) dismissing the lack of efficacy of an outlet, (2) disregarding the lack of economic feasibility of an outlet, (3) having to create a hypothetical "Wet Future Scenario" in order fabricate a justification for an outlet, and (4) having alternatives screened by avowed advocates of an outlet, fundamental conceptual flaws and technical deficiencies were intentionally incorporated into the Corps' EIS process that automatically render the Final EIS manifestly inadequate under the National Environmental Policy Act (NEPA).

The following comments discuss how specific conceptual flaws, technical deficiencies and legal defects identified in NWF's comments on the Draft EIS are perpetuated, and in some cases compounded, in the Final EIS.

Flawed Scoping Process

In its comments on the Draft EIS, NWF pointed out that the Corps' EIS scoping process was designed to discourage and frustrate, rather than encourage and facilitate, public participation and involvement, and it cited the statements from the Corps' own Environmental Justice Analysis that:

> "Findings from this study revealed a noticeable lack of definitive information available from agency sources on a number of issues, such as... impacts to Devils Lake flooding of upper basin drainage." (DEIS Appendix C p. C-102)

and:

> "Data from this study indicate that a majority of respondents, from all groups, feel that their views either have not been heard, or have been heard, but not acted on. These findings call into question the effectiveness of the current public involvement process." (DEIS Appendix C p. C-104)

Nevertheless, the Final EIS continues to omit any mention of upper basin drainage being among "the issues identified during the scoping process" (FEIS Appendix C p. C-169-C173), and it still makes no attempt to address the findings of its own Environmental Justice Analysis regarding the

ineffectiveness of its public involvement process (FEIS Appendix C pp. C-136-C-141), including the disclosure that:

> "Findings from this study also indicate that many respondents felt that the scoping process did not allow or welcome input from the public." (FEIS Appendix C p. 140)

Instead of addressing these issues in a factual, substantive and objective manner, the Final EIS simply dismisses them with the cavalier declaration that:

> "The scoping process was not flawed and was conducted in compliance with regulations." (FEIS Appendix 5 p. 5-10)

As NWF pointed out in its comments on the Draft EIS, if for no other reason, this pervasive exclusion of the public from meaningful participation in the EIS process—while actively accommodating the involvement of the North Dakota Congressional Delegation and other political proponents of an outlet in the most fundamental aspects of the process—also renders the Final EIS inadequate in meeting the Corps' statutory responsibilities under NEPA.

Inappropriate Tiering of Environmental Impact Analysis

NWF pointed out in its comments on the Draft EIS that it is not the construction of an outlet, but its operation, that will have the most significant adverse impacts on the environment, and:

> "It is important to note that it is not just mitigation of environmental impacts of the construction of an outlet that the Corps proposes to address in supplemental NEPA documents under CEQ Regulation 1508.2(b), but also the impacts of the operation of the outlet itself (DEIS pp. 5-92-94). Thus, rather than employing 'tiering' as provided under the regulation, the Corps is instead using 'tiering' as a ploy for segmenting the analysis of the environmental impacts of the proposed action itself, in clear violation of both CEQ Regulation 1508.2(b) and NEPA.
>
> Until an operation plan is developed for the proposed outlet and the impacts of the operation of the outlet are described in detail, the Corps will be unable to make a decision regarding the construction of an outlet that is in compliance with NEPA... Thus, any supplemental NEPA documents dealing with the most significant impacts of an outlet will not become available until after the decision has been made to build an outlet, when it is too late to avoid those impacts or select less damaging alternatives. The Corps' NEPA process for the proposed outlet, therefore, is deliberately crafted to circumvent the fundamental purpose of NEPA."

However, instead of addressing these important issues in a substantive, factual and objective manner, the Final EIS casually acknowledges the "limited" data and the "high degree of uncertainty" regarding the impacts of the operation of an outlet, and then simply dismisses the issues with a vacant reference to "recommended" "potential" monitoring and mitigation plans that may or may not be implemented (FEIS p. 8-9, Appendix C pp. C-175-C-186) and the arbitrary assertion that:

> "It is the Corps' determination that tiering is appropriate and allows for a timely decision as to whether or not the construction of an outlet should proceed." (FEIS Appendix 5 p. 5-7)

Failure to Consider Cumulative Impacts

NWF pointed out in its comments on the Draft EIS that the Corps had failed to consider adequately the cumulative impacts of three reasonably foreseeable State and Federal projects, the implementation of which could significantly increase the environmental impacts of an outlet from Devils Lake. However, instead of addressing these deficiencies, the Final EIS compounds them by further diminishing consideration of the cumulative impacts of those projects.

Red River Valley Water Supply Project

NWF pointed out in its comments on the Draft EIS that:

> "The Dakota Water Resources Act of 2000 authorizes a Red River Valley Water Supply Project, one alternative of which to be considered is the delivery of Missouri River water to the Sheyenne River utilizing the U. S. Bureau of Reclamation's Garrison Diversion Unit. The DEIS acknowledges that utilizing the Garrison Diversion Unit to deliver Missouri River water for a Red River Valley water supply project is a reasonably foreseeable action (DEIS p. 5-92), but, despite the fact that the projects would deliver water to the Sheyenne River from different sources, it does not discuss how operation of the proposed Devils Lake outlet might alter the operation or impacts of the Red River Valley Water Supply Project, or how operation of the Red River Valley Water Supply Project might alter the operations or impacts of the proposed outlet. With absolutely no data or analysis, the DEIS summarily dismisses discussion of the cumulative impacts of the two projects with the statement that they 'do not result in any additional impacts above those described in this Draft Report/EIS.' (DEIS p. 5-92)"

The primary limitations on discharges from a Devils Lake outlet are water quality standards and channel capacity in the Sheyenne River (FEIS pp. 5-21,5-22. 5-72, 5-73, 7-10). Therefore, discharges from the outlet may be limited by Sheyenne River channel capacity during periods of high natural flows on the Sheyenne River, and they may be limited by water quality standards during periods of low natural flows. With better quality Missouri River water being delivered to the Sheyenne River during periods of low natural flows from a Red River Valley Water Supply Project using features of the Garrison Diversion Unit, higher discharges could be made from the outlet without violating water quality standards. These higher discharges could have significant impacts on Devils Lake (lower water quality and lower future lake levels, both of which will escalate demands for an inlet to divert Missouri River water to the lake) and on the Sheyenne River (pollutant loading, erosion and flooding).

Instead of addressing the potentially significant cumulative impacts on Devils Lake and the Sheyenne River of the operation of an outlet and a Red River Valley Water Supply Project utilizing features of the Garrison Diversion Unit to deliver Missouri River water to the Sheyenne River, the Corps summarily dismisses the issue by simply eliminating all mention of the "Garrison water supply study for the Red River basin; possible measures include reservoirs, water diversion, pipelines, and wells" (DEIS p. 5-92) from the "reasonably foreseeable actions that are either being planned or considered by other agencies or groups" (FEIS p. 6-112). The Corps provides no rationale whatsoever for its decision to deal with the cumulative impacts of a Devils Lake outlet and a Red River Valley Water Supply Project utilizing the Garrison Diversion Unit to deliver Missouri River water to the Sheyenne River by arbitrarily ignoring them.

Inlet to Deliver Missouri River Water to Devils Lake

In comments on the Draft EIS, NWF discussed the clear and unequivocal evidence that the State of North Dakota and the North Dakota Congressional Delegation consider the current proposal to construct an outlet as simply the first step in the State's plan to "stabilize" Devils Lake with an inlet to deliver Missouri River water to the lake when the level is low and an outlet to the Sheyenne River to discharge water when the level is high. NWF went on to point out that the Corps' statement in the Draft EIS that:

> "Public Law 105-62 prohibits the Corps from using any funds to study an inlet involving the transfer of water from the Missouri Basin. Therefore, an inlet is not part of the analysis." (DEIS p. 1-S-1)

misinterprets the language of the 1997 Energy and Water Development Appropriations Act (P. L. 105-62), which simply prohibits the **Corps** from carrying out a **feasibility study** for an inlet to Devils Lake, but does not prohibit the Corps from addressing the **cumulative environmental impacts** of an inlet in association with an outlet from Devils Lake that is required under NEPA.

The Corps' response to its erroneous interpretation of the language of the 1997 Energy and Water Development Appropriations Act, however, is not simply to repeat it (FEIS Appendix 5 p. 5-11), but then to add another erroneous statement that:

> "The cumulative effects of reasonably foreseeable actions, *such as water supply* and other flood damage reduction measures, are addressed in the cumulative effects discussion." (Emphasis added) (FEIS Appendix 5 p. 5-11)

Of course, as we have just seen regarding the Red River Valley Water Supply Project, instead of discussing the cumulative effects of water supply projects, the Corps deliberately eliminated the "Garrison water supply study for Red River basin" (DEIS, p. 5-92) from the discussion of cumulative effects in the Final EIS (p. 6-112).

It should also be noted that the language of the 1997 Energy and Water Development Appropriations Act simply prohibits the Corps from carrying out a feasibility study for an inlet to Devils Lake and it does not prohibit other Federal agencies, such as the U. S. Bureau of Reclamation, or the State of North Dakota—which has enacted a statutory mandate "To replenish the waters, and to restore the level of Devils Lake and Stump Lake..." (North Dakota Century Code 61-24-01(4)), and which already has initiated construction of its own outlet (Weixel, 2002)—from constructing an inlet.

It is significant to note in this context that the recently-published Special Edition 2003 Irrigation Issue of *North Dakota Water* features a map of "North Dakota Water Resources" prepared by the North Dakota State Water Commission which shows as proposed water facilities a "Sheyenne River Pipeline" leading from the end of the Garrison Diversion Unit's New Rockford Canal to the Sheyenne River and a "Devils Lake Inlet/Outlet" leading from the Sheyenne River to West Bay of Devils Lake (North Dakota Water Education Foundation, 2003).

Rather than addressing these issues and the potentially significant cumulative environmental impacts—including increased risk of transfer of foreign biota from the Missouri River Basin to the Hudson Bay Basin (International Joint Commission, 1977) of an inlet to and an outlet from Devils Lake, the Final EIS ignores them and simply modifies the above statement to:

> "Public Law 105-62 prohibited the Corps of Engineers from using any of the funds to study any inlet involving the transfer of water from the Missouri River basin. Therefore,

an inlet *is not viewed as a reasonably foreseeable action* and is not part of the analysis." (Emphasis added) (FEIS p. S-14)

North Dakota's 300 cfs "Temporary" Emergency Outlet

NWF pointed out in its comments on the Draft EIS that:

> "Clearly, the construction and operation by the State of a 300 cfs West Bay outlet would have profound impacts on the justification for and feasibility of the Corps' proposed Pelican Lake 300 cfs outlet, as well as on the cumulative impacts to the Sheyenne River if the Corps' proposed outlet were to be built. However, the Corps summarily dismisses consideration of the State's proposed 300 cfs West Bay outlet with the statement that:
>
> > 'The design and detailed operation plan for a temporary outlet have not been completed at this time, and there is a high probability for delays or suspension of the plan due to possible litigation and permitting issues. Therefore, the construction and operation or a temporary outlet is not considered to be a reasonably foreseeable action at this time, and the Corps is not including this outlet in the future without project conditions. If the State actually begins construction, a decision would have to be made on whether the future without project conditions should be reevaluated, which would result in the extension of the schedule to complete project design and the preparation of a revised NEPA document.' (DEIS p. 1-S-10)"

Eight months after the February 2002 Draft EIS was released, the State began construction of its temporary outlet in October 2002 (Weixel, 2002), at the same time the April 2003 Final EIS was released, the North Dakota Department of Health released a draft Clean Water Act Section 402 North Dakota Pollutant Discharge Elimination System discharge permit for the State's temporary outlet (North Dakota Department of Health, 2003), and at its June 2003 meeting, the North Dakota State Water Commission voted to move forward with its outlet and to advertise for bids on the next segment of the project (Weixel, 2003). Despite acknowledging that:

> "North Dakota completed much of the design for an outlet along the Peterson Coulee, has also initiated construction of an access road and site preparation at the pump station area, and has approved funding for the Peterson Coulee channel portion of the outlet." (FEIS p. S-13)

and that a "sensitivity analysis:"

> "... showed that the benefit-cost ratio of the Pelican Lake outlet for a stochastic approach is reduced from 0.19 to 0.13 with a temporary outlet included in the future without-project conditions and from 1.54 to 1.17 for a wet future scenario." (FEIS p. S-13)

the Final EIS dismisses consideration of the cumulative impacts of the State's outlet by continuing to maintain that:

> "There is a high probability for delay or suspension of the plan due to possible litigation and permitting issues. Therefore, the Corps does not include this outlet in the future without-project conditions analysis." (FEIS p. S-13)

Rather than addressing the obvious cumulative environmental impacts of the State's outlet associated with the resulting 24 to 32 percent reduction in the benefit-cost ratio of the Corps' proposed Pelican Lake outlet, the Final EIS attempts to dismiss them with the irrelevant notation that:

> "By Public Law 108-7, Congress removed the traditional economic justification requirement for construction of an outlet and only required a description of the justification, including an analysis of the benefits and costs." (FEIS p. S-13)

The Final EIS neglects to mention, however, that the Congress did not remove the requirement of the National Environmental Policy Act for the Corps to consider and analyze the cumulative impacts of its proposed Pelican Lake outlet and the State's temporary emergency outlet.

Absence of Authorization to Construct and Operate an Outlet

NWF pointed out in its comments on the Draft EIS that:

> "The DEIS cites the 1997 Emergency Supplemental Appropriations Act as its authority to undertake preconstruction engineering and design and the associated EIS for an emergency outlet from Devils Lake to the Sheyenne River (DEIS p. 1-2), and it cites the Energy and Water Development Appropriations Acts for Fiscal Years 1998, 1999, 2000, and 2001 as 'providing funding for the construction of an emergency outlet to the Sheyenne River' (DEIS p. 1-2), but it does not cite any congressional *authorization act* language that specifically authorizes the construction and operation of an outlet from Devils Lake to the Sheyenne River.
>
> ...The language of the 1998 Energy and Water Development Appropriations Act clearly indicates that it was the intent of the Congress that the Corps, after meeting the conditions specified, was authorized only to 'initiate construction of an emergency outlet' from Devils Lake to the Sheyenne River. The language demonstrates that, in the event the Corps should meet the conditions specified in the Act and initiate construction of an outlet, the Congress retained the authority to review the status of the 'emergency' before authorizing further construction and operation of the outlet and the appropriation of additional funds for its construction. That authorization would properly be in the form of a specific congressional authorization act, rather than simply through the appropriation of funds in a continued piecemeal fashion."

By March 2003, Devils Lake had declined 1.43 feet from its July 2001 peak level of 1448.33 feet FEIS pp.I-1, 4-1, 4-4), suggesting that the "emergency" under which the Congress authorized the Corps to initiate construction of an emergency outlet, providing specific conditions were met, has subsided. Although the 2003 Energy and Water Development Appropriations contained in the 2003 Omnibus Appropriations Bill (P.L.108-7) eliminates the requirements for traditional economic analysis and economic justification for the outlet and consultation with the IJC, it specifies:

> "That the Secretary of the Army, acting through the Chief of Engineers, is authorized and directed to use $5,000,000,000 of Construction, General funding as provided herein for construction of an emergency outlet from Devils Lake, North Dakota, to the Sheyenne River, *at an estimated cost of $100,000,000...*" (Emphasis added)

However, the Corps now estimates the cost of the 300 cfs Pelican Lake outlet "preferred alternative" at $186,539,000 to $208,228,000 (FEIS p. 5-147), which is $86,539,000 to $108,228,000 more than the estimated $100,000,000 project authorized by the 2003 Act. Clearly, the Congress has not authorized the Corps to construct a $186,539,000 to $208,228,000 outlet. Therefore, in the absence of either an "emergency" or authorization to construct a $186,500,000 outlet, there still is no authorization for the Corps to construct and operate its "preferred alternative" 300 cfs Pelican Lake outlet. Although the Final EIS acknowledges that:

> "Additional authorization would be needed for the Corps to construct an outlet." (FEIS pp. 8-9, 8-13)

it does not specify the nature or form of the authorization that would be needed. However, with project costs now approaching $200,000,0000, as NWF pointed out in its comments on the Draft EIS, that authorization should properly be in the form of a specific congressional authorization act, rather than simply through the continued appropriation of funds in a piecemeal fashion.

Inadequate Description of Environmental Impacts of the Proposed Action

NWF pointed out in its comments on the Draft EIS that:

> "Not only does the DEIS fail to describe adequately the environmental impacts of the operation of the proposed Pelican Lake outlet, but the discussion that is provided is designed to minimize and obscure the impacts that are identified.
>
> The downstream impacts of the operation of the proposed Pelican Lake 300 cfs outlet under a 'wet future scenario' where those impacts would be most severe have not been modeled, so they have simply been interpolated from the impacts of West Bay 300 cfs and 480 cfs alternatives modeled under two 'moderate' (1450 and 1455 feet) lake future scenarios. For example:
>
> > 'Impacts to aquatic resources were evaluated for a 300 cfs constrained and a 480 unconstrained outlet from West Bay… The effects of outlets from other locations such as Pelican Lake, would have to be interpreted from these findings. It is *possible* [emphasis added] that a Pelican Lake outlet would approximate the water quality effects of a 300 cfs West Bay outlet and the flow effects of a 480 cfs West Bay outlet.' (DEIS Appendix C p C-38).
> >
> > '… Because of the uncertainty as to which outlet operation plan would be proposed for design, 300 cfs or 480 cfs—constrained or unconstrained, the analysis of natural resource effects was designed to bracket the potential effects for the *two moderate lake scenarios* [emphasis added] selected for analysis…'
> >
> > The outlet plan preliminarily selected for design does not originate in West Bay *and falls somewhat outside the bounds of this analysis* [emphasis added]. The water quality effects on aquatic resources *would likely be* [emphasis added] very similar to those identified with the West Bay 300 cfs outlet, constrained by water quality and channel capacity. However, since a Pelican Lake outlet captures the fresh water flowing into Devils Lake, the outlet would have substantially higher flows, and the effects of increased flow on aquatic habitat in the Sheyenne River *would likely be* [emphasis added] closer to the effects identified with the West Bay 480 cfs outlet. In lieu of additional modeling, the water quality effects of the

300 cfs constrained operation and the flow effects of the 480 cfs constrained operation were used to evaluate the potential effects of the Pelican Lake outlet on aquatic resources.' (DEIS p. 5-45)"

NWF listed two pages of devastating impacts to the Sheyenne River of a 300 cfs Pelican Lake outlet "interpreted" in the Draft EIS from the operation of 300 cfs and 480 cfs West Bay outlets under the 1450 and 1455 feet "moderate" future scenarios, but pointed out that the Draft EIS contains only two brief paragraphs (DEIS pp. 5-55, 5-86) discussing the downstream impacts associated with the more than 50 percent increase in discharges from these "moderate" conditions of a Pelican Lake outlet operating under the "wet future scenario" conditions where the Draft EIS claims it would be economically justified. As NWF pointed out:

> "That's it! These two paragraphs are the sum and substance of what the public, the Congress and other decision-makers are told about the specific environmental impacts of the operation of the proposed 300 cfs outlet under the 'wet future scenario' under which outlet proponents such as the North Dakota congressional delegation, Ramsey County elected officials and Lake Emergency Management Committee representatives are advocating that the outlet be justified (Associated Press 2002)
>
> Of course, the reader is told that more detailed discussion of the impacts under the scenario future is presented in the Technical Appendices (DEIS p. 5-66), but examination of Appendix C, which addresses 'Environmental Resources,' reveals only the same kinds of abstract and ambiguous generalizations that are used in the DEIS itself to minimize and obfuscate the downstream impacts of the operation of the proposed Pelican Lake 300 cfs outlet under the 'wet future scenario' necessary to rationalize its construction."

The Corps responded to the lack of specific information regarding the environmental impacts of its "preliminarily identified" 300 cfs Pelican Lake outlet by summarily dismissing it with the remarkable assertion that:

> "Those paragraphs are a 'summary' of the preceding 20 pages. The entire Report is a compilation of many investigations and over 4,000 pages of data. Those reports were put on the District's ftp site at various times during the study and put on a CD that was a made available at public meetings. *Those studies are cited in the report and are available to the public, Congress, and other decision-makers.*" (Emphasis added) (FEIS Appendix 5 p. 5-42)

Of course, the Corps' response neglects to consider the obvious facts that:

- The Draft EIS openly admits that the environmental impacts of the "preliminarily identified" 300 cfs Pelican Lake outlet were not modeled but were interpreted from the impacts of the operation of 300 cfs and 480 cfs West Bay outlets under "moderate" future scenario conditions. (DEIS p. 5-45, Appendix C p. C-38)

- The paragraph quoted from Draft EIS p. 5-55 summarizes 10 preceding pages of discussion of environmental impacts of a 300 cfs Pelican Lake outlet based on an interpretation of the impacts of the operation of 300 cfs and 480 cfs West Bay outlets under 1450 and 1455 feet "moderate" future scenarios, and they do not include specific information on the environmental impacts of the operation of the proposed 300 cfs Pelican Lake outlet under the "wet future scenario." The paragraph was

quoted simply as a basis for evaluating the implications of the preceding paragraph of the comments quoted from Draft EIS p. 5-86.

- The paragraph quoted from Draft EIS p. 5-86 is not a summary but simply states that:

  "Because the scenario is based on a wet climate, the pumping may last longer and greater quantities may be pumped out. Therefore, the impacts described for the stochastic analysis would last longer and the flow effects would be greater. For example, erosion would be more, aquatic effects from flow would be the same type but would be of a greater magnitude, soil salinity effects would also be of the same type but irrigators and land users would be subject to those effects for a longer period."

- Draft EIS Environmental Appendix C lists 19 documents in its bibliography that "are incorporated by reference into this Appendix" and states that they "are on file at the St. Paul District, Corps of Engineers," but it says nothing about them having been "put on the District's ftp site at various times during the study," nor does it indicate which, if any, were still available on the ftp site at the time the Draft EIS was released. (DEIS Appendix C pp. C-149-C-151)

- Draft EIS Environmental Appendix C contains an endnote disclaimer stating that:

  "The information presented in this appendix is subject to revision pending the results of ongoing studies and additional analysis." (DEIS Appendix C p. C-151)

The National Environmental Policy Act specifies in Section 102(2)(C) that all agencies of the Federal Government shall include in major Federal actions significantly affecting the human environment "a detailed statement by the responsible official on – (i) the environmental impact of the proposed action." It is, therefore, patently ludicrous and astonishingly audacious for the Corps to suggest that the public, the Congress and other decision-makers, after struggling through the Corps' disjointed and confusing three-inch thick DEIS, should then be expected to attempt to locate and sort through 4,000 additional pages of data that might or might not still be available on the District's ftp site—and which are subject to change even if they are available—in an effort to find what the environmental impacts of the proposed 300 cfs Pelican Lake might be.

The Corps obviously views the *Devils Lake, North Dakota Integrated Planning Report and Environmental Impact Statement* as a public obfuscation document, rather than the public disclosure document required by law. Indeed, there could be no clearer evidence that the Corps' NEPA process is deliberately calculated to subvert both the letter and the intent of NEPA, rather than to comply with its requirements.

It is appropriate, therefore, to consider how the Final EIS addresses the environmental impacts of the Corps' 300 cfs Pelican Lake outlet "preferred alternative." Unfortunately, however, instead of a providing specific information on the environmental impacts resulting from the operation of the 300 cfs Pelican Lake outlet "preferred alternative" under standard stochastic (probability-based) conditions, the 1450 feet and 1455 feet "moderate" future scenarios having 30 percent and 24 percent chances, respectively, of occurring (FEIS p.5-57), and the hypothetical "wet future scenario" with its virtually zero chance of occurring (FEIS p. 5-56), the Final EIS presents the same "interpretation" of effects based on those of the operation of 300 cfs and 480 cfs West Bay outlets under "moderate" future scenario conditions found in the Draft EIS. In fact, the Final EIS

contains virtually identical statements to those in the Draft EIS regarding the evaluation of the environmental impacts of a 300 cfs Pelican Lake outlet:

> "Impacts to aquatic resources were evaluated by Earth Tech, Incorporated for a 300-cfs constrained and a 480-cfs unconstrained outlet from West Bay… The effects of outlets from other locations, such *as a Pelican Lake outlet, would have to be interpreted* from these findings. It is *possible* that a Pelican Lake outlet would *approximate* the water quality effects of a 300-cfs West Bay outlet and the flow effects of a 480-cfs West Bay outlet…" (Emphasis added) (FEIS Appendix C p. C-45)
>
> "The determination of effects from operating an outlet from Devils Lake is dependent on the conditions assumed to persist into the future and the location of the outlet. These two conditions affect the quality of the water to be discharged into the Sheyenne River and flows that are in the Sheyenne River, which in turn affects the assumptions concerning the operation of an outlet… Because of the uncertainty as to which outlet operation plan would be proposed for design, 300 cfs or 480 cfs – constrained or unconstrained, the analysis of natural resources effects was designed to bracket the potential effects for the *two moderate lake scenarios* selected for analysis…
>
> The best outlet plan, the Pelican Lake 300-cfs/300-mg/l sulfate outlet plan, does not originate in West Bay and *falls somewhat outside the bounds of this analysis*. The water quality effects on aquatic resources *would likely be* very similar to those identified with the West Bay 300-cfs outlet, constrained by water quality and channel capacity. However, since a Pelican Lake outlet captures the fresh water flowing into Devils Lake, the outlet would have substantially higher flows, and the effects of increased flow on aquatic habitat in the Sheyenne River *would likely be* closer to the effects identified with the West Bay 480-cfs outlet. *In lieu of detailed modeling, the water quality effects of the 300-cfs constrained operation and the flow effects of the 480-cfs unconstrained operation were used to evaluate the potential effects of the Pelican Lake outlet on aquatic resources*." (Emphasis added) (FEIS p. 6-53)

Consequently, the Final EIS still provides no specific information on the environmental impacts of the operation of the 300 cfs Pelican Lake "preferred alternative" under the "Wet Future Scenario," which are the only conditions where it might be economically justified (FEIS pp. 5-115, 5-117, Table 5-27 p. 5-158).

The Final EIS states that "the greatest potential for significant adverse impacts to natural resources, cultural resources, and downstream water users is associated with increased flows and water quality in the Sheyenne River" (FEIS. P. 6-75), and it acknowledges "the inability to accurately quantify all of the project impacts associated with operation" of an outlet (FEIS p. 6-76) and that "there is a high level of uncertainty with respect to the actual occurrence, location, and timing of potential effects" (FEIS. p. 6-84). Nevertheless, it is instructive to consider some of the environmental impacts on the Sheyenne River resulting from the operation of the Corps' 300 cfs Pelican lake outlet "preferred alternative" under "moderate" future scenarios that are identified in the Final EIS:

- "A constrained outlet is not expected to exacerbate flooding problems along the Sheyenne River or Red River. Some *flooding may be inevitable*, though, due to the inability to quickly control discharges into the Sheyenne River in response to heavy localized rainfalls." (Emphasis added) (FEIS p. 6-46)

- "To the extent that outlet releases accelerate erosion-deposition patterns along the Sheyenne River and damage the riparian corridor..., there may be some aesthetic impacts associated with the outlet releases." (FEIS p. 6-47)

- "An outlet to the Sheyenne River could also affect recreation along the river by creating increasing flows and perhaps hazardous conditions for canoeists and swimmers. It could also reduce the aesthetics of the riparian zone by accelerating erosion-deposition processes along the river or by affecting vegetation with higher ambient salinity levels." (FEIS p. 6-47)

- "... an outlet could exacerbate flooding along the Sheyenne River with consequent damage to transportation infrastructure, including roads and bridges." (FEIS p. 6-49)

- "As in the case of an overflow, farms that withdraw water from the Sheyenne River or the Red River for irrigation could suffer reduced crop yields from the lower river water quality associated with an outlet. Exacerbated flooding in the Sheyenne River could damage agricultural property, including lands, equipment, and structures... " (FEIS p. 6-49)

- "An outlet from Devils Lake could diminish property values along the Sheyenne River. The potential for adverse impacts to property values would be based on damage in the riparian zone, exacerbated flood risks, and reduced water quality for agriculture or recreation." (FEIS p. 6-50)

- "Modeling showed the total annualized costs [to municipal water treatment facilities] for increased softening would range from $25,000 per year to $56,000 per year, depending on the modeled water quality future. The *total annualized cost* for capital improvements or alternate source water development required to bring the with-outlet product water to the water quality of without-outlet product water *ranged from $1,757,000 per year to $3,304,000 per year*." (Emphasis added) (FEIS p. 6-51)

- "Extended high flows from Baldhill Dam may result in problems related to the ability to drain the fish ponds at Baldhill Dam and Valley City National Fish Hatcheries. Flows around 700 to 800 cfs will prevent the ponds from being drained." (FEIS p. 6-52)

- "Operation of the Pelican Lake outlet would result in a substantial change in the flow regime of the Sheyenne River. Discharges of up to 300 cfs over a major portion of the summer would result in a five- to tenfold increase in summer/fall flows along the Sheyenne River. Increased flows throughout the summer would result in changes in river stage on the Sheyenne and Red Rivers." (FEIS p. 6-56)

- "... the outlet could result in up and down flows with sudden and extreme fluctuations in flow for much of a 50-year period of operation. These are the types of situations that make it difficult for species to adapt to habitat conditions." (FEIS p. 6-56)

- "The operation of an outlet would increase the level of constituents in the Sheyenne and Red Rivers. On the Sheyenne River, water quality standards are not exceeded but there are significant increases in, for example, TDS [total dissolved solids],

sulfate and chloride levels. Chloride concentrations would increase from 100 to 600 percent over the baseline on the Sheyenne River, but would still be below the 100 mg/l standard. *The outlet would exceed standards for TDS on the Red River.* Loading and concentrations for many constituents could exceed the 15-percent limit established for antidegradation by the State of North Dakota. Results from nutrient modeling indicate that nutrient loading could increase significantly. *The changes in water quality constituents and nutrients would violate the State of North Dakota's antidegradation policy and the objectives under water quality promulgated by the International Joint Commission.*" (Emphasis added) (FEIS p. 6-57)

- "Operation of a Pelican Lake outlet would affect both the water quality aspects and the physical characteristics of aquatic habitat on the Sheyenne River. While water quality constituents would not exceed tolerance levels for aquatic fauna in the Sheyenne or Red River, *many constituent levels would be dramatically increased over baseline conditions. Water quality modeling indicates that the levels of these constituents would increase as much as 100 percent during pumping.*" (FEIS p. 6-57)

- "Studies have indicated that the operation of an outlet could result in changes in channel width, and in meander length and amplitude. Depending on location, channel widths on the Sheyenne River could change by as much as 3 feet on reaches below Balldhill Dam , and as *much as 9 feet at some locations on the Sheyenne River above Baldhill Dam.*" (Emphasis added) (FEIS p. 6-58)

- The changes in flow duration, stage, and frequency would result in an increase in erosion and sedimentation in the Sheyenne River... It is probable that increased river stages during the growing season would result in loss of vegetation along the lower portions of the banks. The potential weakening of the banks due to vegetative loss, along with increased shear stress and velocities along the bed and bank, would contribute to an increased erosion rate along the river. The effects may be more pronounced on the upper Sheyenne River because of the larger increase in river stage. Overall, it is likely that the net result of increased erosion on the upper Sheyenne River would be a slightly wider, shorter, and less sinuous river." (FEIS p. 6-58)

- "Changes in habitat composition and availability would result in *changes in species composition and abundance.* There may be some *lost year classes of fish and declines in invertebrate populations.*" (Emphasis added) (FEIS p. 6-59)

- "The changes on the Sheyenne River in water quality, hydrology, gemorphology, and habitat could result in *substantial changes in or stress to aquatic biota...* The outlet operation would also cause the *loss of spawning and nursery habitat,* increased erosion, and changes in channel morphology. Increases in channel width may result in *less available habitat once outlet operation ceases.*" (Emphasis added) (FEIS p. 6-59)

- "The Pelican Lake outlet would have an effect on water quality in the Sheyenne and Red Rivers. *Even under a constrained operation approach, the levels of many water quality constituents are increased by two to three times to concentrations just below the established water quality standards.*" (Emphasis added) (FEIS p. 6-59)

- "... although water quality standards on the Sheyenne River are not violated, *the percent of time any particular concentration is exceeded increases dramatically. For example, sulfate exceedences increase from zero to 42 percent for the 250-mg/l level.*" (Emphasis added) (FEIS p. 6-59)

- "The loss of habitat due to increased flows, changes in channel geometry, loss of overbank cover and sedimentation, coupled with changes in water quality and algal growth, would all contribute to *a substantial change in the aquatic community present in the Sheyenne River*. Projected water quality and quantity changes associated with outlet operation may *adversely influence fish reproduction and result in lost-year classes. The threshold chloride levels for some aquatic species, such as mussels, would be approached with operation of an outlet*; however, no direct effects due to increased chloride levels are *anticipated. The cumulative result of all of these changes would be a decrease in diversity and density of aquatic species in the Sheyenne River.*" (Emphasis added) (FEIS p. 6-59)

- "With the increase in flow, some change is expected in width and depth, and erosion would probably increase. Expected habitat changes include a decline of shallow pool, shallow riffle, and medium pool habitats, and an increase in fast riffle, raceway, and deep pool habitats in spring, summer and fall. Increases in summer and fall discharges reduce the slower flowing fish nursery habitat (slow riffle, shallow and medium pool guilds)." (FEIS p. 6-60)

- "Monthly discharge would be highly altered during summer and fall, and then decline dramatically in winter... *Fish would be affected by the change to deep/fast less usable habitat in all seasons, and the loss of summer and fall habitat for shallow, medium and deep pool guilds*. Unionids and other invertebrates would be affected by the decrease in moderately flowing habitat. The increase in raceway and fast riffle habitat may benefit the tricopteran guild, *but overall invertebrate diversity* (low gradient guild) *would be negatively affected*. Macrophytes, although not common in this reach of the river, probably would be scoured by high flows. Unionids would most likely be affected by the dramatic decline between fall and winter flow. *Many unionids would not survive these changes during outlet operation.*" (Emphasis added) (FEIS p. 6-60)

- "Effects in Lake Ashtabula include reduced retention time, increased nutrient loading, increased movement of fish out of the lake, increased salinity, and increased storage of water. The outlet would reduce the storage time in Lake Ashtabula and increase the turnover rate. This *could affect walleye production* and increased movement of some fish out of Lake Ashtabula and into downstream habitats." (Emphasis added) (FEIS p. 6-60)

- "The operation of an outlet would affect river stages, groundwater levels near the river, erosion, availability of aquatic habitat, river access, and river crossings." (FEIS p. 6-60)

- "In summary, changes in hydrology would be significant with a Pelican Lake alternative because large amounts of water could be discharged during wet periods in the Devils Lake basin due to improved water quality. Erosion will be greater,

summer nursery habitat will be less, unproductive habitat will increase in summer and fall, and change in flow magnitude between fall and winter will be greater. Therefore, aquatic communities may survive the water quality changes of the alternative, only to be affected by the change in habitat and hydrology. *The changes in the aquatic community would persist for many years after outlet operation has ceased.*" (Emphasis added) (FEIS pp. 6-61, 6-62)

- "After outlet operation ceases, slower flowing, shallow habitats would return and the upper reach would return to a less hydrologically stable condition. In addition, after a number of years of outlet operation the channel would have changed, becoming wider and deeper, such that the reduced water levels would result in less available wetted habitat (and higher temperatures) during low flow conditions. The increased flows associated with the operation of an outlet wold also alter habitat distribution and probably result in some erosion and deposition. These changes would affect habitat conditions and availability when the outlet ceases operation. Only a few small permanent tributaries drain into the upper Sheyenne River, and their suitability as unionid refugia is not known. Fish hosts are prevented from carrying glochidia upstream past Baldhill Dam. *Unless unionid refugia occur in the small tributaries, fauna is unlikely to recolonize to pre-project conditions*. Fish species that benefited from the increased spawning and nursery habitat associated with higher flows would be negatively affected by the lack of these habitats with lower flows. *Invertebrate fauna may recover over time.* However, *species composition would probably differ from pre-pumping conditions*." (Emphasis added) (FEIS p. 6-62)

- "There is increased risk of transfer of biota or the increase in the distribution of existing organisms associated with any feature that improves the connectivity between systems that have been segregated for many centuries. *The operation of the outlet would be considered such a feature...* In addition, the operation of an outlet may improve the conditions necessary for the dispersal of organisms currently found in the Sheyenne or Red River." (Emphasis added) (FEIS p. 6-62)

- "Vegetation in the riparian corridor may be affected by changes in groundwater elevation and quality, changes in frequency and duration of flooding and induced erosion associated with increased flows. Based on the assumption of a ¼-mile area of influence, groundwater changes could potentially affect about 112,000 acres of riparian lands along the Sheyenne River... In rare instances, there could be overbank flooding due to unforeseen rainstorms and the inability to turn the outlet off in time." (FEIS p. 6-63)

- "... it is likely that *a large portion of the riparian vegetation would shift from woods to a more open community type*, resulting in a concurrent change in animal species composition along the river. Changes in water quality to a more saline condition could also influence the amount and type of vegetation along the river. *Some of the larger overstory forest trees may survive a year or longer but with reduced vigor. Once the outlet operation is completed, recovery of these areas through succession would occur, which could take decades in some areas.*" (Emphasis added) (FEIS p. 6-65)

- "Induced floodplain salinization resulting from the raising of water tables of floodplain and adjacent soils in the Sheyenne River valley above a 'critical depth." (FEIS p. 6-67)

- "Additional salt loading to the floodplain could result from both overbank flooding with mixed Devils Lake/Sheyenne River water and intrusion of this water into adjacent floodplain soils as infiltrated floodwater and groundwater flow. Seepage outflow of mixed Devils Lake/Sheyenne River water could produce additional salt loading to adjacent floodplain soils during periods when the river is contained within the channel." (FEIS p. 6-67)

- "The outlet would result in an increase in salinity hazards associated with use of the water for irrigation purposes." (FEIS p. 6-72)

The stunning scope, magnitude, duration and severity of these impacts of the operation of the Corps' 300 cfs Pelican Lake outlet "preferred alternative" interpreted from the operation of 300 cfs and 400 cfs West Bay outlets under "moderate" future scenarios, coupled with the Corps' acknowledgement of "the inability to accurately quantify all of the project impacts associated with operation" (FEIS p. 6-76) and the "high level of uncertainty with respect to the actual occurrence, location, and timing of potential effects" (FEIS p. 6-84), constitute clear and unequivocal proof of the inadequacy of the EIS in providing a detailed statement of the environmental impacts of the 300 cfs Pelican Lake outlet under the "wet future scenario"—the only conditions where it might be justified (FEIS pp. 5-115, 5-117, Table 5-27 p. 5-158).

As NWF pointed out with the Draft EIS, the failure of the Final EIS to provide the *detailed* statement of the qualitative and quantitative environmental impacts of the construction and operation of the 300 cfs Pelican Lake outlet "preferred alternative" required by NEPA also renders the FEIS technically inadequate and legally deficient on its face. Nevertheless, the stunning scope, magnitude, duration and severity of the impacts that have been identified clearly demonstrate that the outlet is not environmentally acceptable.

Devils Lake Outlets – Technically Unsound and Economically Unjustified

NWF pointed out in its comments on the Draft EIS that, under a conventional stochastic analysis, the "preliminarily selected" 300 cfs Pelican Lake outlet would reduce the peak lake level in 2014 by half a foot (DEIS p. 1-S-4), it would reduce the chance of the lake reaching 1459 feet where it would overflow to the Sheyenne River from 9.4 percent to 4.1 percent (DEIS p. 5-71), it would reduce the chance of the lake reaching a level of 1460.6 feet, where the natural overflow would equal that of the outlet, from 4 percent to 2 percent (DEIS Appendix B Table II.ST-2 p. B-195), and it would do virtually nothing to prevent the most serious damages resulting from an overflow of the lake at 1463 feet (DEIS p. 2-9, 5-71 to 5-84; Appendix B Table II.ST-2 p. B-195; Appendix C p. C-124). Under the hypothetical "wet future scenario," the lake would continue to rise another 10 feet to elevation 1457 even with the outlet in operation (DEIS p. 5-89), and with any significant increase in precipitation above the 1993-1999 level, it still would overflow to the Sheyenne River. The benefit-cost ratio for the "preliminarily identified" 300 cfs Pelican Lake under standard economic analysis was 0.39. Consequently, the outlet was neither technically sound nor economically justified.

The Final EIS discloses that the 300 cfs Pelican Lake outlet "preferred alternative"is even less technically sound than the 300 cfs Pelican Lake outlet described in the Draft EIS. For example, the current outlet would reduce the 9.4 percent chance of the lake overflowing to only 4.6 percent

instead of to 4.1 percent (FEIS p. S-5). The Final EIS does not disclose the efficacy of the current outlet in preventing the most serious damages resulting from an overflow of the lake at 1463 feet, but it is safe to assume that it would be minimal. As the Final EIS notes:

> "The risk still exists that, because of the limited effectiveness of a constrained outlet, the lake may still rise, it may still overflow, and residents may be disappointed that the outlet does not completely solve their flooding problem." (FEIS p. S-5)

The 300 cfs Pelican Lake outlet "preferred alternative" also is even less economically feasible than the 300 cfs Pelican Lake outlet described in the Draft EIS. That outlet had benefit-cost ratios of 0.37 under the stochastic analysis, 0.38 under the 1450 feet moderate future scenario, 1.38 under the 1455 feet moderate future scenario and 2.63 under the "wet future scenario" (DEIS p. 1-S-4 Table B). **The current 300 cfs Pelican Lake outlet "preferred alternative" has benefit-cost ratios of 0.19 under the stochastic analysis,** 0.13 under the 1450 feet moderate future scenario, 0.55 under the 1455 feet moderate future scenario and 1.54 under the "wet future scenario" (FEIS Table S-2, p. S-4). The Final EIS acknowledges that:

> "On the basis of the scenarios analyzed, there is a 6.5 percent chance that in the next 15 years the lake will reach or exceed elevation 1458, the approximate lake stage showing economic viability. Therefore, there is about a 93.5-percent chance that if an outlet were built it would not be economically beneficial on a national level of evaluation." (FEIS p. S-6)

Unfortunately, even this dismal economic conclusion regarding the outlet's lack of economic justification reflects unwarranted optimism, because it neglects to consider that there still would be a 4.6 percent chance that the lake would overflow with the outlet in operation, thereby negating most of the presumed benefits upon which the project is justified. Consequently, there actually is only about a 1.9 percent chance that if an outlet were built it would be economically beneficial on a national level of evaluation.

The Final EIS deals with the total lack of economic justification for its 300 cfs Pelican Lake outlet "preferred alternative" by listing it among "Areas of Controversy" and disavowing responsibility by noting that:

> "In Public Law 108-7, the Congress removed traditional economic justification requirements and instead only required the Corps to fully describe the justification for an emergency outlet in the project plan documents, including the analysis of benefits and costs... *The benefit-cost ratio of the selected outlet plan incorporating probabilities, or the stochastic approach, is 0.19.* However, pursuant to Public Law 108-7, economic justification of an outlet no longer is a requirement." (Emphasis added) (FEIS p. S-12)

The Final EIS neglects to mention that the "emergency" at Devils Lake has subsided, with the lake level having dropped from 1448.33 feet in July 2001 to 1446.9 feet in March 2003 (FEIS pp. 4-1, 4-4), and that few members of the Congress were aware that the North Dakota Congressional Delegation had quietly inserted language in the massive Fiscal Year 2003 Omnibus Appropriations Bill (P. L. 108-7) exempting the outlet from the requirement for economic feasibility.

But, at least the matter of the outlet's lack of economic justification has finally been settled.

Hidden Costs

In its comments on the Draft EIS, NWF pointed out that the lake would continue to rise under the "wet future scenario" even with the "preliminarily identified" 300 cfs Pelican Lake outlet in operation, resulting in additional infrastructure protection costs, and:

> "Therefore, the total cost of implementing the Pelican Lake 300 cfs outlet plus the associated infrastructure protection for a lake level of 1457 feet required with this alternative is not the $125 million [outlet cost] shown in the DEIS, but likely is *in the range of $425 to 525 million.*"

Unfortunately, the Final EIS now discloses that NWF's estimate was unduly conservative. Because the lake would continue to rise under both the 1455 feet moderate future and "wet future scenario," the outlet by itself is not an alternative for addressing flooding at Devils Lake, and continued infrastructure protection costs, in addition to the $208,228,000 construction costs and $2,963,600 annual operation, maintenance, rehabilitation, repair and replacement costs of the outlet (FEIS p. 11-1) also would be required with the outlet alternative. Under the 1455 feet moderate future scenario, the lake would continue to rise three feet to elevation 1452.1 feet (FEIS Appendix A Table A5-4 p. A-138) and require an additional $160,000,000 in continued infrastructure protection costs (FEIS p. 5-133). Under the "wet future scenario," which is the only situation where the outlet would be economically justified (FEIS p. 5-115, 5-117, Table 5-27 p. 5-158) the lake would continue to rise to 1457 feet (FEIS Appendix A Table A5-4 p. A-137) and require an additional $577,000,000 in continued infrastructure protection costs (FESI p. 5-133, 6-107).

The only situations described in the Final EIS where the outlet would be a "stand alone" alternative would be the 1450 feet moderate future scenario where the lake would rise only 7 inches from its July 2001 peak level of 1448.33 feet to 1448.9 feet (FEIS p. 4-1; Appendix A Table A5-4 p. A-138)), and the "Dry Trace."

> "This trace represents the case whereby the lake level decreases and no pumping occurs.... It is an actual 50-yr trace from the 10,000 stochastic traces generated for Devils Lake. In this scenario the lake reaches a peak elevation of 1448.6 feet in year 2003 and then falls continuously." (FEIS Appendix A p. A-42).

Consequently, implementation of the 300 cfs Pelican Lake outlet "preferred alternative" is not simply a decision to spend $208,228,000 for an outlet from Devils Lake, but it is a decision to spend from **$368,000,000 to $$785,000,000** for an outlet **and** the additional infrastructure protection measures that are required as the lake continues to rise under the 1455 feet moderate future and the "wet future scenario" even with the outlet in operation.

It should also be noted that, under the "Dry Trace," the lake would peak at 1448.6 feet in 2003 and then fall continuously. However, after reaching a peak of 1448.3 feet in July 2001 (FEIS p. 4-1), the lake has fallen to 1446.9 feet in March 2003 (FEIS p. 4-4), so the real conditions actually have been even drier than the "Dry Trace."

The Wet Future Scenario – Fantasizing Feasibility

As NWF pointed out in its comments on the Draft EIS that:

> "The DEIS offers no evidence and makes no claim that the 'wet future scenario' provides a more reliable—or even remotely more realistic—analysis of future conditions than the stochastic analysis."

and cited statements from the Draft EIS confirming that the "wet future scenario" has virtually zero probability of occurring:

> "Thus, the 'wet future scenario' has nothing to do with reality, but is simply a set of manufactured conditions specifically created to result in just enough precipitation over a 21-year period to cause the lake to overflow without the Pelican Lake 300 cfs outlet, but not so much that the lake would still overflow even with the outlet. But, of course, 'The probability that the lake will rise exactly in this way is zero.' (DEIS p. 5-71)."

In responding to extensive criticism of its use of an artificial "wet future scenario" to justify an outlet from the U. S. Environmental Protection Agency, the U. S. Department of the Interior, Environment Canada, Fisheries and Oceans Canada, Manitoba Conservation, the Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Minnesota Department of Health, the Missouri Department of Natural Resources, the National Audubon Society, the Sierra Club, the National Wildlife Federation, and others (FEIS Appendix 4), the Corps simply says:

> "The 'Wet' future was not an actual trace but a scenario to represent a continuation of the recent wet period. A scenario that resulted in Devils Lake overflowing to the Sheyenne River was obviously needed to assess the potential damages that could occur for those events represented in this class. A trace from the stochastic model could have been selected to represent this case or class, and it would have generated similar results. The 'Wet' future is one that the local interests can relate to from their experience, as opposed to a synthetic stochastic trace." (Emphasis in original) (Appendix 5 p. 5-43, 5-44)

The Corps' response fails to address three important points. First, it neglects to mention that, as is explained in the Introduction above under Continued Political Interference in the NEPA Process, the only reason that a scenario that resulted in Devils Lake overflowing to the Sheyenne River was "needed" is because the North Dakota Congressional Delegation requested the Corps to change the scope of the EIS to include a fabricated overflow event when conventional science-based analysis showed that an outlet was not economically feasible. Second, it is ludicrous to suggest that fabricating an artificial worst case scenario with virtually zero probability of occurring under the guise relating to local interests constitutes much other than deception and fear-mongering. Third, this is now the third year of the hypothetical "wet future scenario" based on repetition of the climatic and hydrologic conditions of the seven exceptionally wet years from 1993 to 1999 for a total of 21 years (FEIS 5-56), and precipitation has remained at or below average.

The Corps' claims that:

> "The wet future is not used to economically justify the outlet alternative." (FEIS Appendix A p. 5-43)

can most charitably be described as a deliberate falsehood. Final EIS Appendix B, Economic Evaluations, includes economic analysis of seven outlet alternatives under "wet future scenario" conditions. (FEIS Appendix B Table WF-1 p. B-46, Table WF-2 p. B-47, Table WF-3 p. B-48), and states that:

"Results from the analysis of the *Wet Future scenario* indicate that, when downstream impacts are included, all alternatives except the Raise Natural Outlet *are economically feasible*. The plan with the greatest net benefits, the NED plan, is the East End outlet. *These plans are feasible* because, *under a wet scenario*, a rising lake and a natural overflow are sure to happen." (Emphasis added) (FEIS Appendix B p. B-35)

In addition, the Final EIS itself contains numerous statements explicitly asserting that the outlet is economically justified under the "wet future scenario," e.g.:

- "The preferred outlet is shown to be cost-effective under the wet future scenario..." (FEIS p. S-5)
- "With all benefits and costs considered, every alternative appears to be cost-effective using the wet future approach to the economic analysis, except for the Expanded Infrastructure Protection Plan and the Natural Outlet Raise alternative." (FEIS p. 5-69)
- "If a wet future is assumed to occur, the outlet plans are shown to be the most cost-effective alternatives for addressing the damages associated with the rising waters of Devils Lake." (FEIS p. 5-115)
- "Departing from stochastic-based methods using a cost-effectiveness analysis with the scenario of a future without-project condition of a repeated wet cycle (a non-probabilistic analysis) indicates that a Pelican Lake 300 cfs outlet plan would be the best overall outlet alternative." (FEIS p. 5-117)
- Table S-2, "Comparison of Selected Outlet Plan and No Outlet," shows benefit-cost ratios of an outlet to be 0.19 under a stochastic analysis, 0.13 under a 1450 feet moderate future, 0.55 under a 1455 feet moderate future, and 1.54 under a "Wet Scenario." (FEIS p. S-4)
- Table 5-27, "'Benefit-Cost Ratios' for Alternatives Being Evaluated in Detail" also shows benefit-cost ratios for the 300 cfs Pelican Lake outlet "preferred alternative" of 0.19 under a stochastic analysis, 0.13 under a "1450 Max. Stg. Future," 0.55 under a "1455 Max Stg. Future," and 1.54 under a "Wet Future." (FEIS p. 5-158).

It is precisely because of the need to rely on an indefensible, fabricated "wet future scenario" in order to create a phony economic justification for the outlet that the North Dakota Congressional Delegation sought to insert language in the Fiscal Year 2003 Omnibus Appropriations Bill to salvage the project by eliminating the requirements for the economic analysis to be performed according to the Corps' standard Principles and Guidelines and for the outlet to be economically 'feasible.'

The $200 Million Lottery Ticket

NWF noted in its comments on the Draft EIS that:

"The DEIS attempts to rationalize a justification for the proposed outlet in the face of such climatic uncertainty (DEIS p. 1-S-4; Appendix A, p A-9-18) and tenuous benefits (DEIS p. 5-71) by suggesting that:

> 'Given the uncertainty and controversy around the ability to forecast future lake stages, a decision to proceed with an outlet must consider risk aversion. Instead of relying on the probability analysis, one could view the construction of an outlet as an insurance policy, rather than as an investment.' (DEIS p. 1-S-3)"

but pointed out that:

> "The analogy, however, is patently invalid. An insurance policy is not a guarantee that an adverse event will not occur, but rather provides compensation if the event should occur. The proposed Pelican Lake 300 cfs outlet does neither. It does not guarantee that the lake will not continue to rise—under the 'wet future scenario" it would (DEIS p. 5-89)—or that it would not overflow to the Sheyenne River—it could (DEIS p. 5-89), nor does it provide any compensation if either of these occurs. Consequently, rather than viewing the proposed Pelican Lake outlet as an insurance policy as the DEIS suggests, it should more accurately be viewed as a $125 million (DEIS Table 6, p. 4-13) lottery ticket—with virtually no chance of winning (DEIS pp. 4-40, 5-71, 5-88)."

In its response to NWF's comment, the Corps said:

> "This comment has been taken into consideration when developing a project recommendation." (FEIS Appendix 5, p. 5-49)

However, the Corps' "consideration" of the fundamental conceptual invalidity of using the analogy to an insurance policy to justify the outlet simply resulted in virtually the same statement being repeated in the Final EIS:

> "Given the uncertainty and controversy around the ability to forecast future lake levels and the experience of the past 10 years, one could view the construction of an outlet from a different perspective, as an insurance policy, rather than an investment." (FEIS p. S-3)

Because the Corps continues to insist on promoting a conceptually invalid insurance policy analogy, it is instructive to examine further the merits of the alternate lottery ticket analogy based on additional information contained in the Final EIS.

The Corps' 300 cfs Pelican Lake outlet "preferred alternative" is not economically justified under a standard stochastic analysis or under the 1450 feet or 1455 feet lake level "moderate" future scenarios, and it would be economically justified only under the hypothetical "wet future scenario" (FEIS pp. 5-115, 5-117, Table 5-27 p. 5-148). However, as discussed above under Hidden Costs, under the "wet future scenario," the lake would continue to rise another 10 feet from its current elevation, to 1457.5 feet, even if the $208,228,000 Pelican Lake outlet is built (FEIS p. 5-147; Appendix A Table A5-4 p. A-137), resulting in an additional $577,000,000 in infrastructure protection costs (FEIS pp. 5-133, 6-107), for total combined outlet and continued infrastructure protection costs of $785,228,000. According to the Final EIS, under the hypothetical "wet future scenario," if the outlet were not built and Devils Lake were to overflow to the Sheyenne River, the total continued infrastructure protection costs at Devils Lake and downstream would be $917,000,000 (FEIS pp. 5-133, 6-107), or only $131,772,000 more than the combined project and infrastructure protection costs if the outlet were built. However, there

is only a 6.5 percent chance that the lake will reach an elevation of 1458 feet or higher where the outlet would be economically justified (FEIS p. 6-106), but there still is a 4.6 percent chance that the lake will overflow with the outlet in operation (FEIS p. 2-5), thus negating some $340,000,000 of the project's presumed benefits (FEIS p. 6-107). This leaves only a 1.9 percent chance that the outlet would be economically justified. Consequently, the selection of the 300 cfs Pelican Lake outlet "preferred alternative" actually amounts to gambling the $208,228,000 costs of the outlet against less than 1 in 50 odds of saving $131,772,000 in continued infrastructure protection costs.

Erosion of the Natural Outlet – Indulging Geologic Fiction

The Draft EIS stated that:

> "A sensitivity analysis was conducted *assuming the natural outlet would erode* and no actions would be taken to prevent it. The analysis is based on the materials present at the site and not on a determination if it actually eroded in the past. There is evidence and some debate if it did erode in the past or did it actually accrue sediment. Materials at about 7 feet are over 7,000 years old. Devils Lake is estimated to have spilled to the Sheyenne River within the last 1,200 years; therefore, it did not erode a that time." (Emphasis added) (DEIS p. 5-90; Appendix C p. 129)

but then went on to speculate that:

> "If the outlet were to erode, the effects would be much more significant. It is estimated that the outlet would *erode down to elevation 1450* feet with a maximum discharge of about 6,000 cfs and erosion of over 400,000 cubic yards of material..." (Emphasis added) (DEIS p. 5-90; Appendix C p. C-129)

NWF pointed out, however, that:

> "Not only is there no evidence in the geologic record that significant erosion of the outlet would result if an overflow occurred, but the probability of an overflow occurring is, itself, very small. The probability that Devils Lake will reach elevation 1459 feet is 9 percent and the probability that it will reach 1460 is 7 percent (DEIS Appendix B Table II-ST-2, p. B. 195)

The Corps responded to the absence of scientific evidence to support its speculation regarding the impacts resulting from erosion of the natural outlet with more speculation also based on an absence of evidence:

> "The evidence is still inconclusive. Sites that were chosen for dating the soils *may have missed* a buried channel. Test pits *may not represent* soil across the valley floor. A channel that removed older sediments *may exist*. A buried outlet channel, within, or outside of, the coulee *is a possibility*—covered by post-glacial alluvial processes." (Emphasis added) (FEIS Appendix 5 p. 5-34)

The Corps not only continues to base its speculation regarding erosion of the natural outlet on an absence of evidence while ignoring conflicting available evidence, but it has, without citing any substantiating evidence at all—and contrary to the information contained in Final EIS Appendix C p. C-165—*more than doubled* the amount of erosion estimated at the outlet. For example, the Final EIS states that:

> "*Based on the most recent surveys*, overflow from Stump Lake occurs when the lake level reaches an elevation of 1459.1 feet. This analysis indicates that the outlet control point would slowly be eroded, with the *maximum potential erosion occurring down to 1450.8*." (Emphasis added) (FEIS p. 5-103)

but then states:

> "For a wet future scenario, a discharge from a natural overflow could approach 6,000 cfs, assuming the full extent of erosion, and carry *as much as 940,000 cubic yards* of material into the Sheyenne River." (Emphasis added) (FEIS p. 6-104)

The natural outlet from West Stump Lake through Tolna Coulee is approximately 13 miles long (Murphy et al., 1997) and 150 feet wide (Willard, 1923). In order to discharge 940,000 cubic yards of material into the Sheyenne River, it would be necessary for an overflow to erode a channel 8.3 feet deep and 46 feet wide, a third of the width and the entire length of the outlet. The Final EIS cites no scientific evidence, or even credible rationale, to suggest that an 8 feet deep, 46 feet wide buried channel running the entire length of the 13-mile Tolna Coulee "may have been missed" in previous geological studies of the area.

Thus, rather than addressing substantively the absence of any scientific evidence that the outlet has eroded significantly in any of the previous three overflow events in the past 4,000 years (FEIS Figure 4-3 p. 4-3), and citing no scientific evidence whatsoever, the Final EIS now claims that erosion of the outlet 8.3 feet down to 1450.8 feet will result in 2.35 times more material being discharged into the Sheyenne River than if it eroded 9.1 feet—another 0.8 foot—down to 1450 feet!

This astonishing conclusion is reached in defiance scientific evidence such as that reported by North Dakota State Geologist John Bluemle:

> "Generally, the sequence of beds exposed by the backhoe cuts, *both in the beaches and in the outlet channels*, suggests that , after Devils Lake had risen to relatively high levels that resulted in the deposition of beach sediments, its level dropped sufficiently and for long enough periods of time to allow *extensive soil development on the beaches and in the channels*. When the lake rose again, it flooded the soils and deposited more beach sands over them. *Each time the lake rose high enough to overflow out of its channel into Stump Lake, the flowing water deposited gravel over the existing soils. The lake remained at levels high enough to flood the areas of the channels for prolonged periods of time and layers of lake sediment accumulated there*." (Emphasis added) (Bluemle, 1991)

The scientific evidence demonstrates, therefore, that the result of overflow events has not been erosion as the Final EIS assumes, but exactly the opposite—the aggregation of sediments and soils building up the level of the outlet. The absence of evidence of erosion also suggests that, despite overflowing three times in the past 4,000 years, the lake has never in the past reached the "wet future scenario" elevation of 1460.6 feet upon which the Final EIS bases its speculation that catastrophic erosion would occur.

This, in fact, is further confirmed by the 1896 Monographs of the U. S. Geological Survey, which, with the lake at 1430 feet, identified former shorelines at Devils Lake (corrected for a 4.5 foot underestimation of the elevation of the outflow channel from Stump Lake to the Sheyenne

River) at elevations ranging from 1443.5 feet to 1458.5 feet, and at Stump Lake ranging from 1443.5 feet to 1459.5 feet (U. S. Geological Survey, 1896). This demonstrates not only the complete lack of foundation for the Corps' speculation about catastrophic erosion of the natural outlet, but even more significantly, it demonstrates the complete lack of scientific evidence in the geologic record for anything like the Corps' hypothetical "wet scenario future" ever having occurred since Devils Lake was formed 10,000 years ago.

For the Corps to persist in indulging such fabrications, fantasies and fiction regarding "wet future scenarios" and catastrophic overflows in order to promote an outlet from Devil Lake not only destroys the credibility of the Final EIS, but it calls into serious question the Corps' professional expertise and ethics.

Wetlands, Wetland Drainage and Wetland Restoration

NWF pointed out in its comments on the Draft EIS that:

> "A fundamental deficiency of the DEIS is its narrow focus on engineering solutions to the problems resulting from the rising level of Devils Lake, to the total exclusion of any consideration of the cause...
>
> Although increased levels of precipitation from 1993 to 1999 (average of 21 inches per year, compared with an average of 16.5 inches per year from 1980 to 1992 [WEST Consultants, Inc. 2001) obviously were the force driving the recent dramatic rise of the lake, the DEIS does not make any attempt to identify the contribution of other factors, such as land use changes and wetland drainage in the Devils Lake Basin, in exacerbating the rise of the lake."

NWF then provided 12 pages of detailed and documented information and data on the sordid history of water resource mismanagement and rampant wetland drainage in the Devils Lake basin, the substantial contribution of wetland drainage to the rise of the lake, the potential for wetland restoration to reduce inflows to the lake, continuing wetland drainage in the basin even while the Corps is proposing an outlet from the lake, and the inevitability that construction of the outlet will precipitate additional wetland drainage in the basin. However, rather than addressing these important and relevant issues in a responsive, responsible and substantive manner, the Corps summarily dismisses them with the astonishingly cavalier assertion that:

> "It is not pertinent to discuss the number and acreages of the different types of wetlands originally in the Devils Lake basin, nor the numbers, acreages, and types of wetlands that have been drained and their flood capacity. This is not an inventory type of study. What is pertinent is what exists now and what can be restored as a viable alternative that will ultimately benefit flood damage reduction in the Devils Lake basin. It is reasonable to conclude that the sudden rise in the lake levels from 1992 to the present was not due to some corresponding sudden drainage of wetlands." (FEIS Appendix 5 p. 5-26)

It is significant and revealing to note, however, that, other than stating—without substantiation and despite documented evidence to the contrary—that:

> "The Corps does not agree that the West Report [upon which its Upper Basin Storage alternative is based] is flawed." (FEIS Appendix 5, p. 5-27)

the Corps makes no attempt to dispute or refute ANY of the information contained in NWF's comments on the Draft EIS regarding wetlands, wetland drainage, and the potential for wetland restoration in the Devils Lake Basin. It is instructive, therefore, to review some of the information regarding those issues that the Corps has chosen to ignore.

Water Resource Management in the Devils Lake Basin

NWF cited the statement from the Fifth Biennial Report for 1911-1992 of the North Dakota State Engineer to the Governor that:

> "The water level of any lake possessing no outlet depends on the amount of evaporation, seepage, rainfall and runoff into the Lake from the drainage area tributary to it. The drainage area of Devils Lake is nearly two thousand square miles, but the land lies so nearly level, and *there are so many marshes, meadows, small ponds and lakes which arrest the flow of water and from which it evaporates that it is not likely that the runoff from more than seven hundred to eight hundred square miles of the total area ever reaches the lake.*" (Emphasis added) (State Engineer, 1919)

but pointed out that:

> "Unfortunately, management of water resources in the Devils Lake Basin since that time has been characterized by decades of rampant and unregulated wetland drainage and ill-considered public agricultural drainage projects (Pearson, 1985)."

NWF then outlined in a three-page review the concerted campaign over the last half-century by private landowners, county water boards and the North Dakota State Engineer to drain wetlands in the Devils Lake Basin, despite mounting evidence over the past three decades that the drainage was contributing to flooding problems at Devils Lake. NWF noted that:

> "The attitude of drainage proponents in the face of the escalating problems created by the rising level of Devils Lake was still being expressed... in 1985 by Ramsey County Water Resource Board chairman and Devils Lake Advisory Committee member Robert Garske:
>
> > 'Wetlands are a 'round robin' that profit both farmers and businessmen, Garske said. Farmers can raise wheat instead of ducks on drained wetlands, and businessmen profit from more customers drawn to the Devils Lake fishery, which runoff water supports by keeping the lake from getting too salty and killing the fish, he said.
> >
> > "Rather than trying to hold (water) back, we need to figure out how to get more in," Garske said." (Butz, 1985)'
>
> That attitude has not changed. At an August 26, 200, public meeting in Valley City, North Dakota, on the State of North Dakota's proposed 'temporary' emergency outlet from Devils Lake, former North Dakota State Engineer David Sprynczynatyk stated that his office would resume issuing permits for wetland drainage in the Devils Lake Basin as soon as the outlet is built."

Faced with the documented history of gross water mismanagement and rampant wetland drainage in the Devils Lake Basin, the Corps had to make a choice. It chose to ignore the issue.

Wetlands and Wetland Drainage in the Devils Lake Basin

NWF cited documented information, much of it from the State of North Dakota itself, showing that from 569,000 to 589,000 acres of wetlands originally were present in the Devils Lake Basin, and that from 189,000 to 378,000 acres of those wetlands have been drained.

Although both the Draft EIS (DEIS Appendix C, p. C-102) and the Final EIS (Appendix C p. C-140) acknowledge that wetland drainage in the Devils Lake Basin is an issue that was raised during the scoping process, the only mention of the issue in the Final EIS is a statement in Appendix A that:

> "As a first step in addressing the issue, in June 1997, Governor Ed Schafer directed the NWSWC to identify illegal drains in the Devils Lake basin and to work with local water resource boards to close them. The NDSWC found 22,575 drains in the basin draining 41,305 acres of wetlands. Of these drains, 244 (1.1 percent) were earmarked as potentially illegal, i.e., post-1957 nonpermitted drains with a watershed exceeding 80 acres. Descriptions of potentially illegal drains were turned over to the county water resource boards for further investigation and proper action." (FEIS Appendix A p. 288)

The inadequacy and inaccuracy of this statement in addressing the extensive wetland drainage in the Devils Lake Basin is demonstrated by several facts. First, of course, whether the wetlands were drained legally or illegally does not alter the fact that the water form drained wetlands ultimately reaches Devils Lake where it contributes to water levels in the lake.

Second, in directing the State Water Commission in 1997 to identify and close illegal drains in the Devils Lake Basin, the Governor admitted that:

> "The challenge is to identify the illegal drains, many of which have been overlooked by water boards for years or have perhaps developed gradually over time." (Associated Press, 1997a).

Third, the State Water Commission identified 22,575 drains draining 41,350 acres of wetlands in the Devils Lake Basin from aerial photographs and maps, but it then turned the information over to the county water boards to determine which, if any, of the drains were illegal, and to decide what, if anything, to do about them:

> "The State Engineer's staff is undertaking a process where each township in the basin is studied. A list of possible illegal drains is compiled for each township and then turned over to the county water board. The water board must act on each individual complaint, check out circumstances and determine if the drain is legal or illegal." (Weixel, 1997)

However:

> "The problem most water board directors perceive, is that it isn't up to the state to determine if a drain is illegal or to enforce the law, close the drain and penalize the culprit—it's the county resource board's responsibility." (Weixel, 1997)
>
> "But water board directors aren't very enthusiastic about going out and declaring established drains illegal...

> 'If people start pointing fingers they are probably going to get shot at,' says Ramsey County water board member Robbin McMorrin, who urged that [State Engineer] Sprynczynatyk and Governor Schafer be on hand when the water boards attempt to close the 'illegal drains…'
>
> Kent Vesterso, Towner county water board has this to say, 'We're being asked to go out and deprive a lot of these property owners of their livelihood. I'm not sure we're prepared to do this – will the state?' he says." (Weixel, 1997)

The water boards had a simple solution for their dilemma:

> "[Ramsey County Water Resource District Chairman Wayne] Simon said *the district will investigate some of the drains* to determine whether to close them. But he said the district needs state money, and *doesn't really want to do the job anyway.*
>
> 'We don't feel that there are illegal drains up there,' Simon said. '*We would like to find a way to make them all legal.*'" (Emphasis added) (Associated Press, 1997b)

Consequently, the Corps does not cite a single drain, legal or illegal, having been closed in the Devils Lake Basin.

Fourth, the 15-member Devils Lake Basin Advisory Committee established by the North Dakota Legislative Assembly in 1975 to address water resource issues in the Devils Lake Basin included representatives of the water resource boards of six of the seven counties constituting the Devils Lake Basin, and it received extensive technical assistance from the staff of the State Water Commission (TPI Consultants, 1976). The Advisory Committee reported that a total of 98,144 acres of wetlands already had been drained in the Devils Lake Basin at that time, and it estimated that another 62,000 acres of wetlands would be drained in the basin by 1990 (TPI Consultants, 1976). Therefore, the 41,395 acres of drained wetlands identified in the Devils Lake Basin in 1997 by the State Water Commission is less than half (42%) of the acreage of drained wetlands identified by the State Water Commission staff and those same county water resource boards twenty years earlier, and it is only one-fourth of the acreage that the Advisory Committee estimated would be drained by 1990. In fact, even the Corps' own 2001 study identified twice as many acres of drained wetlands (92,400 acres) in the basin (FEIS p. 5-48) as the State Water Commission identified in 1997.

The Final EIS makes no attempt to address the issue of wetland drainage in the Devils Lake Basin in a factual, objective, or substantive manner.

> Contribution of Wetland Drainage to the Rise of Devils Lake

NWF pointed out in its comments on the Draft EIS that:

> "Although wetland drainage obviously is not the sole cause of the recent rise of Devils Lake, with inflows to the lake from 1993 to 1999 averaging 317,000 acre-feet (DEIS p. 1-5), the contribution of wetland drainage to those inflows clearly warrants careful evaluation."

In its comments, NWF had provided data and analyses documenting the very significant contribution of drained wetlands in the Devils Lake Basin to inflows to the lake and pointed out that the drainage of 189,000 acres of wetlands in the Devils Lake Basin—the minimum

defensible estimate—resulted in at least 254,000 acre-feet of additional water initially reaching Devils Lake when the 1988-1992 drought was succeeded by unusually high levels of precipitation beginning in 1993. NWF pointed out that this is equivalent to at least an additional 2 feet at Devils Lake's January 2002 elevation of 1447.1 feet and surface area of 132,000 acres, including Stump Lake (DEIS p. 2-6). NWF went on to explain that, if those 189,000 acres of wetlands were not drained, they could reduce the average annual runoff during periods of high precipitation by another 207,000 acre-feet, a volume equivalent to 1.6 feet at the lake's January 2002 elevation, or 1.65 times the volume that could be removed from the lake each year with the proposed 300 cfs Pelican Lake outlet operating at maximum capacity.

However, instead of providing a careful evaluation of the contribution of wetland drainage to inflows to Devils Lake from 1993 to 1999, the Corps simply evaded the subject with the sarcastic and unresponsive statement that:

> "It is reasonable to conclude that the sudden rise in the lake from 1992 to the present was not due to some sudden drainage of wetlands." (FEIS Appendix 5, p. 5-26)

It is significant to note again that the Corps made no attempt to dispute NWF's data, but had to resort to ridicule instead. It also is instructive to note in this context that the Corps stated in its February 1992 Devils Lake Basin North Dakota Reconnaissance Report that:

> "*Drainage of wetlands* in the Devils lake [sic] Basin, which converts non-contributing area to a contributing drainage area, *can hasten and increase the volume of runoff that reaches the lake.* The net effect that drainage in the Devils lake [sic] basin has on rising level situations of Devils Lake cannot be estimated reliably; however, drainage does appear to be *a major influence.* For these reasons, it would be ideal to be able to control wetland drainage in accordance with a comprehensive watershed management plan that *recognizes the watershed's effect on lake levels.*" (Emphasis added) (U. S. Army Corps of Engineers, 1992)

Wetland Restoration and Upper Basin Storage

The Final EIS estimates that a total of only 132,729 acre-feet of water storage capacity has been lost due to the drainage of 92,429 acres of wetlands in Devils Lake Basin, and that the potential for increasing storage is only 63,608 acre-feet with wetland restoration (FEIS p. 5-48; Appendix A, pp. A-259 to A-267).

NWF discussed the significant deficiencies of the WEST Consultants report upon which the Final EIS discussion of the Upper Basin Storage alternative is based, including the evidence that it significantly underestimated the acreage of drained wetlands in the Devils Lake Basin. In fact, the U. S. Fish and Wildlife Service's Fish and Wildlife Coordination Act Report contained in Appendix 2 of the Final EIS now cites a study (Johnson, 2001) which confirms that the digital elevation model used in the WEST Consultants study to develop estimates of drained and intact wetlands in the Devils Lake Basin is not an accurate method for delineating wetlands. NWF pointed out that the omissions and underpredictions result in a substantial underestimation of the potential for runoff reduction from wetland restoration, and:

> "Consequently, by minimizing the benefits of wetland restoration by several fold while exaggerating the costs by several fold, the DEIS seriously underestimates, and thereby dismisses, the feasibility of the upper basin storage alternative.

> The failure of the DEIS to provide an accurate, objective and realistic analysis of upper basin storage involving wetland restoration and other land use practices to reduce inflows to the lake renders the discussion of alternatives to the proposed action, and therefore the DEIS itself, inadequate on its face."

Final EIS Appendix A, Hydrology, Hydraulics and Water Quality, now includes a discussion of the effects of changing farming practices on runoff (FEIS Appendix A pp. 292-299), but instead of providing an accurate, objective and realistic analysis of upper basin storage involving wetland restoration, Appendix A continues to evade the issue by again stating that:

> "In regards to the Corps study on restoration of wetlands/depressions in the upper basin..., most review comments have faulted the study for underestimation of the benefits of this alternative. This underestimation has been largely attributed to the underestimation of the estimate of possibly drained wetlands/depressions in the upper basin. However, it is not pertinent to discuss the numbers, acreages, and types of wetlands originally in the Devils Lake basin, nor of the numbers, acreages, and types of wetlands that have been drained and their corresponding flood capacity. This is not an inventory type of study. What is pertinent is what exists now and what can be restored as a viable alternative that will ultimately benefit flood damage reduction within the Devils Lake basin." (FEIS Appendix A p. 302)

The Corps apparently feels that it is "not pertinent" to discuss the numbers, acreages and types of wetlands originally in the Devils Lake basin because those figures confirm the serious underestimation of the acreage of drained wetland and their corresponding flood storage capacity upon which the Final EIS's analysis of an upper basin storage alternative employing wetland restoration is based. The Corps argues those figures are "not pertinent" because "This is not an inventory type study," yet in discussing the study, the Final EIS states that:

> "Depressions in the Upper Basin were delineated and classified as possibly intact, possibly drained, lake, or other based on information obtained from a combination of aerial photos, National Wetlands Inventory (NWI) data, flow direction data, and digital quad maps." (FEIS p. 5-48)

Of course, it is ludicrous for the Corps to suggest that a study that involves the "delineation and classification" of wetlands and utilizes information from aerial photos and National Wetland *Inventory* data to develop "Estimates of possibly intact and possibly drained depressions by subwatersheds" (WEST Consultants, Inc, 2001) is "not an inventory type study"—especially when it obviously would be impossible to determine "what exists now and what can be restored as a viable alternative" without an inventory of existing and potentially restorable drained wetlands in the basin. What the Corps apparently is saying is that its own inadequate wetland inventory data are pertinent to a study of an upper basin storage alternative, but any other wetland inventory data that demonstrate the inadequacy of its study are "not pertinent."

What is pertinent to note, however, is that the Corps again makes no attempt to dispute the information presented in NWF 's comments on the Draft EIS regarding wetland drainage in the Devils Lake Basin and the potential for wetland restoration to reduce inflows into the lake. It also is pertinent to note that, in 1996, the Corps itself had reported that:

> "Various upper basin storage figures (as high as 657,000 ac-ft) have been used by different agencies. The COE/BOR [Corps of Engineers/Bureau of Reclamation] Concept-Level Plan of Study talks about finding 200,000 to 300,000 ac-ft. The

> FEMA [Federal Emergency Management Agency] draft report sets a goal of 'at least 100,000 acre-feet.' The USFWS [U. S. Fish and Wildlife Service] pointed out that the Devils Lake Basin Advisory Committee Study Report (1976) estimated 120,000 ac-ft of wetland drainage through 1975, hinting at restoration possibilities..." (U. S. Army Corps of Engineers, 1996a)

However, the Corps makes no attempt to reconcile its current estimate of the potential for increasing storage through wetland restoration with its own figures from seven years ago.

Continuing Wetland Drainage in the Devils Lake Basin

In its comments on the Draft EIS, NWF cited statements from the U. S. Fish and Wildlife Service's Fish and Wildlife Coordination Act Report that:

> "The Service is concerned that the construction of an outlet, without control on additional inflow to the lake from drainage, will provide the supporters of wetland drainage a way to export water out of the basin." (DEIS Appendix 2, p. 11-20)

and:

> "The Service recommends that the Corps coordinate with the State to insure that any plans to remove water from the landscape and place it into the lake through wetland drainage be postponed during the life of the project to avoid the need to move additional water downstream. Taking precautions to prevent further aggravating factors, such as wetland drainage and pumping from increasing water levels is consistent with the goal of the outlet to reduce lake levels and prevent a natural overflow of Devils Lake to the Sheyenne River." (DEIS Appendix 2, p. 14-2)

NWF also pointed out that, at an August 26, 2000, meeting in Valley City, North Dakota, the North Dakota State Engineer had stated that his office would resume authorizing wetland drainage in the Devils Lake Basin as soon as an outlet to the Sheyenne River is built. NWF concluded that:

> "It is clear, therefore, that before expending any further public revenues on the proposed $125 million Pelican Lake 300 cfs outlet or other structural measures to deal with problems caused by the high water levels at Devils Lake, the Corps has a fiduciary duty to implement and enforce an effective program to prevent further wetland drainage in the Devils Lake Basin in order to protect the Federal Government's investment in those measures. The drainage prevention program and its enforcement provisions should be discussed in a revised DEIS.
>
> Indeed, Congress requires that this be part of any Corps of Engineers flood damage reduction project. Section 402(c) of the Water Resources Development Act of 1986 as amended requires, as a basic condition of Federal participation in any flood control project, the development and completion of a floodplain management plan by non-Federal interests to preserve the level of flood protection that is provided by the project and upon which it is justified. The plan is intended to be developed as part of and concurrent with the project feasibility study. In this case, to the contrary, the Corps is not involved in working with the State of North Dakota and local agencies in developing the required plans and non-Federal activities that would be necessary to preserve the level of flood protection that is intended to be accomplished by the proposed Pelican Lake outlet.'

NWF noted that, instead of addressing this important issue in a responsive and substantive manner in the Draft EIS, the Corps dismissed it with the statement that:

> "The Corps concurs that controls on future wetland drainage in the upper basin would improve the effectiveness of other features. *The decision to place a moratorium on future drainage is under the control of the State.*" (Emphasis added) (DEIS p. 6-18)

Instead of addressing the issue in the Final EIS, the Corps continues to dismiss it with a similar statement that:

> "The Corps concurs that controls on future wetland drainage in the upper basin would improve the effectiveness of other features. The Project Cooperation Agreement (PCA) includes requirements that the non-Federal sponsor comply with the requirements of Section 402 of the Water Resources Act of 1986, which require the Non-Federal interest to implement a flood management plan. *Whether the sponsor is to maintain the level of protection that is provided by the project to include a moratorium on any new drainage permits in the upper basin will be determined during development of the PCA.*" (FEIS Appendix 5 p. 5-48)

The Corps does not indicate, however, how the limited level of protection that is provided by the 300 cfs Pelican Lake outlet can be maintained without a moratorium on further wetland drainage in the Upper Devils Lake Basin to prevent the escalation of inflows to the lake during periods of high precipitation.

The Corps also does not address the fact that the non-Federal sponsor for its 300 cfs Pelican Lake outlet "preferred alternative" is the North Dakota State Water Commission (FEIS p. 10-1)—the same State agency that has aided, abetted, promoted and ignored rampant wetland drainage in the Devils Lake Basin for the past half century (Pearson, 1985).

Inflated Values and Exaggerated Benefits

NWF noted in its comments on the Draft EIS that the Corps used an average value of $600 per acre for non-urban land in estimating that the inundation of 93,000 acres of land around Devils Lake since 1993 "represents a loss of over $55 million" (DEIS p. 2-38). However, NWF pointed out that the Draft EIS (p. 5-19) also reports that the market value of agricultural lands and buildings ranges from $320 per acre in Benson County, to $391 per acre in Ramsey County and $476 per acre in Nelson County, so using a value of $600 per acre results in an overestimation of the damages by 53 percent. In fact, NWF pointed out that less than half of the 184,182 acres of non-urban around Devils Lake between elevations 1447 and 1463 feet is classified as cropland (DEIS Appendix C. Table C-5 p. C-16), so the average value of non-urban lands in the area actually is less than $265 per acre. This suggests that the Draft EIS overestimates the damages to agricultural lands inundated since 1993 by 120 percent, and that the additional 62,000 acres of non-urban land that could be inundated between 1457 feet and 1463 feet under the hypothetical "wet future scenario" if the $125 million outlet were not built are worth approximately $17 million.

Instead of responding substantively to the issue of its serious over-estimation of land values in determining past and future damages resulting from the rising levels of Devils Lake, and of the corresponding over-estimation of the benefits—and, therefore, of the benefit-cost ratio—of an outlet in preventing those damages, the Corps simply states that:

> "In 1999, the Corps completed a Gross Appraisal on the then current Peterson Coulee outlet alignment... It concluded that fee *cropland* values were $400 per acre, plus 25 percent for contingencies. Since land that is inundated is equivalent to a fee take, use of the fee value for land is appropriate." (Emphasis added) (FEIS Appendix 5, p. 5-21)

and it continues to assert that:

> "At a current approximate lake stage elevation of 1447 feet, the lake covers 137,000 acres, an increase of about 93,000 acres (approximately 145 square miles) since 1993. At an average value of $600 per acre for non-urban lands, this represents a loss of over $55 million." (FEIS p. 3-13)

The Corps does not address the facts from its own Final EIS that (1) a fee cropland value of $400 per acre plus 25 percent for contingencies is $500 per acre, not $600 per acre, (2) less than half of the land use around Devils Lake to elevation 1463 is cropland (FEIS pp. 5-8, 6-24), (3) the average market value of non-urban land and buildings is $320 per acre in Benson County, $376 per acre in Towner County, $391 per acre in Ramsey County, and $476 per acre in Nelson County (FEIS p. 6-23), but (4) most of the land that has been flooded by the rising lake and most of the land that would be flooded if the lake continues to rise is located in Benson, Ramsey and Towner counties (FEIS Figure 4-6 p. 4-6). It also neglects to mention that, unlike fee take, no "contingencies" are involved when land is flooded. Consequently, the Corps does not address how the overestimation by more than $10,000,000 of the value of the 50,000 acres of farmland between lake elevations 1457 and 1460 (FEIS p. 6-105) that would have a 4.8 percent lower chance of being inundated under the "wet future scenario" if the outlet is built (FEIS p. S-5) affects the 1.54 "wet future scenario" benefit-cost ratio of the 300 cfs Pelican Lake outlet (FEIS Table S-2, p. S-4).

Flooding at Devils Lake –Hardships, Handouts and False Hopes

NWF pointed out in its comments on the Draft EIS that proponents of an outlet frequently cite the "loss" of 400 homes and the flooding of 93,000 acres of "agricultural" land around Devils Lake as demonstrating the need to "do something" and thereby automatically confer justification on the construction of an outlet from Devils Lake to the Sheyenne River. NWF also pointed out that the Draft EIS acknowledged that, although it is unlikely that the City of Devils Lake would be inundated, there is "a perception propagated by media coverage of the rising lake that the city proper is at risk", but noted that, instead of addressing the misperceptions upon which an outlet is being promoted and "justified," the Corps simply proposes to proceed with construction of an outlet.

The Final EIS does not dispute information presented by NWF demonstrating that most of the 400 homes threatened by the lake were not lost but were instead relocated at Federal expense, that most of those whose homes were relocated reaped substantial economic gains in the process, and that, as a result of the influx of some $350,000,000 in Federal emergency funds to deal with problems created by the rising lake and the tourist industry based on the outstanding sport fishery that has developed with the rising level of Devils Lake, the Devils Lake area economy is one of the most vigorous in the region, e.g.:

- "Approximately 400 homes around Devils Lake have been moved or abandoned in response to the rising lake waters. While some homes have been abandoned, most homes have been relocated." (FEIS p. 6-6)

- "... most of the monetary burdens of relocation were borne by Federal emergency funds." (FEIS p. 6-7)

- "...even under the adversity produced by the rising of Devils Lake, some parties have benefited. For example, the influx of Federal emergency funds to relocate threatened homes, protect the City of Devils Lake, raise threatened roads, provide crisis counseling, and maintain local infrastructure has brought over $350 million in Federal Funds into the Devils Lake region... In addition, the improvement in the Devils Lake fishery associated with the lake level rises has benefited the local recreation-related industry." (FEIS p. 6-20)

Nevertheless, the Final EIS continues to dwell on fears and misperceptions:

- "The slow, relentless creeping level of the lake over many years has caused significant anxiety for many lakeside residents. There is significant anticipatory stress regarding if and when the lake would rise to threaten one's home." (FEIS p. 6-8)

- There is another issue that concerns the behavioral response of populations at risk in the City of Devils Lake to the potential for the city's levee to fail." (FEIS p. 6-15)

- "The perceived risk [of additional lake level rises] may be more damaging to community vitality than the actual risk. Although it is unlikely that the City of Devils Lake would be inundated, there is a perception propagated by media coverage of the rising lake that the city proper is at risk." (FEIS p. 6-16)

Consequently, despite acknowledging that:

> "It is supposed that a constrained or unconstrained outlet could also have negative impacts on lakeside communities if the lake keeps rising despite the outlet. The dashed expectations could be more detrimental to community vitality than if they never had an outlet." (FEIS p. 6-48)
>
> "The risk stills exists that, because of the limited effectiveness of a constrained outlet, the lake may still rise, it may still overflow, and residents may be disappointed that the outlet does not completely solve their flooding problem." (FEIS p. 6-105)

the Final EIS concludes that:

> "There appears to be a general consensus within the communities around the lake that an outlet is needed to control lake levels. This consensus is reflected in the State of North Dakota support for an outlet." (FEIS p. 6-17)
>
> "Communities around the lake have experienced significant adversity during recent years due to the rapid rise of the lake. Each additional increment of rise produces new calls from these communities to solve the problem, with a current chorus of support for an outlet. The State of North Dakota has responded with the prospect of continuation of the wet cycle and additional rise of the lake by pursuing a temporary outlet from the West Bay through Peterson Coulee. For residents of lakeside communities, development of an

> outlet is perceived as long overdue, and their frustration grows with any additional delays." (FEIS p. 6-19)

Consequently, instead of taking positive steps to provide the public with factual information to dispel unfounded fears and to correct the misperceptions being propagated by the media and by the State of North Dakota, the Corps continues to exploit those fears and misperceptions as a rationale for building a $208,228,000 outlet to allay with false hopes the anxieties of the estimated 2,994 people who live around Devils Lake between the elevations of 1448 feet and 1459 feet (FEIS p 6.9).

Inadequate Analysis of Alternatives

The cornerstone of Section 102(2)(C) of the National Environmental Policy Act is the two-faceted requirement imposed on Federal agencies to include with every proposal for Federal actions affecting the quality of the human environment "a detailed statement" by the responsible official on "(i) the environmental impacts of the proposed action" and "(iii) alternatives to the proposed action." It is primarily through this requirement for Federal agencies to identify and analyze alternatives to their proposed actions that NEPA's purpose of promoting efforts which will prevent or eliminate damage to the environment is achieved. Indeed, the analysis of alternatives is so fundamental to the implementation of NEPA that Section 102(2)(D) imposes a specific requirement on Federal agencies to:

> "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

The courts also have repeatedly confirmed that NEPA requires a rigorous and objective analysis of alternatives and not simply a listing or dismissive discussion. It is appropriate, therefore, to consider how the Final EIS deals with alternatives to the proposed 300 cfs Pelican Lake outlet.

Although the Corps claims that the scoping document developed from public meetings on its Devils Lake Study "describes the scope of actions, alternatives, and impacts to be studied" (FEIS p. 8-3), it actually was the North Dakota Congressional Delegation and the Governor who had sole authority for "Screening of alternatives" considered in the Draft and Final EIS (DEIS p. 6-22; FEIS p. 14-1). However, the Congressional Delegation and the Governor all are avowed advocates of the construction of an outlet from Devils Lake, they have routinely dismissed the contribution of wetland drainage to the rise of the lake and consistently discounted wetland restoration to reduce inflows to the lake, and the Governor has publicly expressed his concern that continued investments in infrastructure protection measures will diminish the need and economic justification for an outlet.

As is explained above in the Introduction, when the Corps disclosed in 1999 that an outlet was not economically justified for reducing flood damages and flood protection costs around Devils Lake (U. S. Army Corps of Engineers, 1999), the North Dakota Congressional Delegation requested the Corps to change the purpose to include reducing the potential for a natural overflow event (U. S. Army Corps of Engineers and North Dakota State Water Commission, 2001), despite the fact that such a natural overflow is so unlikely that it is not even considered in the Final EIS's environmental analysis under probability-based stochastic future conditions (FEIS p. 5-52). Of course, imposing a requirement to select an alternative that addresses such extremely unlikely conditions deliberately created a bias against other alternatives that would be effective and economically feasible under more realistic conditions.

Then, as is explained above in The Wet Future Scenario—Fantasizing Feasibility, because the probability of a natural overflow is so low and the conditions where an outlet would be effective are so narrow that, in order to justify an outlet, the Corps was forced to fabricate an unrealistic hypothetical "wet future scenario" where the lake would overflow without an outlet but an overflow would be prevented with operation of an outlet (FEIS pp. 5-55, 5-56). However, the outlet still would not guarantee that an overflow would not occur, but would simply reduce the low 9.4 percent chance of an overflow occurring by 4.8 percent, to 4.6 percent (FEIS p. S-5).

The Final EIS relies on this "wet future scenario" specifically fabricated to justify an outlet to support the selection of the 300 cfs Pelican Lake outlet as the "preferred alternative" (FEIS pp S-11, 5-115, 5-117, Table 5-27 p. 5-128), but it rejects serious consideration of other alternatives that that would be effective and economically justified under other more realistic conditions. Consequently, the discussion in the Final EIS only further supports the already compelling *prima-faciae* evidence of a pervasive pro-outlet bias in the consideration of alternatives for dealing with problems associated with the recent rise of the lake.

Continued Infrastructure Protection

As is discussed above under Hidden Costs, the Corps' 300 cfs Pelican Lake outlet "preferred alternative" is not economically justified under a standard stochastic analysis or under the 1450 feet or 1455 feet lake level "moderate" future scenarios, and it would be justified only under the hypothetical "wet future scenario" (FEIS pp. 5-115, 5-117, Table 5-27 p. 5-158). However, under the "wet future scenario," the lake would still continue to rise another 10 feet from its current elevation, to 1457.5 feet, even if the $208,228,000 Pelican Lake outlet is built (FEIS p. 5-147; Appendix A Table A5-4 p. A-137), requiring an additional $577,000,000 in continued infrastructure protection costs (FEIS pp. 5-133, 6-107), for total combined outlet and infrastructure protection costs of $785,228,000. According to the Final EIS, under the "wet future scenario," if the outlet were not built and Devils Lake were to rise to 1460 feet and overflow to the Sheyenne River, the total continued infrastructure protection costs at Devils Lake and downstream would be $917,000,000 (FEIS pp. 5-133, 6-107), or only $131,772,000 more than the combined project and infrastructure protection costs if the outlet were built. However, there is only a 6.5 percent chance that the lake will reach an elevation of 1458 feet where the outlet would be economically justified (FEIS p. 6-106), but there still would be a 4.6 percent chance that the lake would overflow with the outlet in operation (FEIS p. 2-5), thus negating some $340,000,000 of the project's presumed benefits (FEIS p. 6-107) and leaving only a 1.9 percent chance that the outlet would be economically justified. Consequently, in selecting the 300 cfs Pelican Lake outlet as the "preferred alternative," the Corps is proposing to spend $208,228,000 for an outlet on less than a 1 in 50 chance of saving $131,772,000 in continued infrastructure protection costs.

The Final EIS itself concludes that:

> "The Continued Infrastructure Protection plan (which is implementation of the most likely future [and involves continuing the same measures to relocate structures and raise roads and dikes that have been implemented to deal with the rising lake in the past]) shows a benefit cost ratio of 1.88. In comparison of alternatives to a 'No Action' base condition, the 'Continued Infrastructure Protection' alternative has a positive annual net benefit for both the stochastic and wet future scenario approach. This signifies that the implementation of the Continued Infrastructure Protection within the basin is

economically justified, and *may in fact represent the most economically defensible approach to flood damage management at the lake.*" (Emphasis added) (FEIS p. 5-71)

"Within the context of this evaluation, *the preferred* action in the near term would be continuation of infrastructure protection." (Emphasis added) (FEIS p. 5-71)

"Using the results of the stochastic modeling approach for the economic analysis, the *only cost-effective alternative appears to be continuation of infrastructure measures* within the Devils Lake basin, including measures for further flood protection and continued transportation needs." (Emphasis added) (FEIS p. 5-115)

and:

"From an economic standpoint, infrastructure protection is a wise investment of funds because it is constructed incrementally as needed." (FEIS p. 7-4)

However:

"The Continued Infrastructure Protection 'alternative' is *not an alternative* in the sense that is a potential project, but is intended to analyze the cost-effectiveness of carrying out incremental infrastructure protection measures as the lake continues to rise..." (Emphasis added) (FEIS p. 5-56)

Consequently, the Final EIS does not seriously consider the very alternative that it has identified as "the most economically defensible approach to flood damage management at the lake," the only cost-effective alternative," and "the preferred action in the near term."

Wetland Restoration

As discussed above under Wetland Restoration and Upper Basin Storage, in its comments on the Draft EIS, NWF cited data showing that some 569,000 to 589,000 acres of wetlands originally existed in the Devils Lake Basin, and that from 189,000 to 378,000 acres of those wetlands have been drained. NWF calculated that if those wetlands had not been drained, they would reduce runoff into the lake under high precipitation conditions by an average of at least 207,000 acre-feet per year—1.65 times the volume that could be removed from the lake by a 300 cfs outlet operating at maximum capacity seven months of the year.

However, rather than providing the detailed study of the Upper Basin Storage alternative required by NEPA, the Final EIS simply states that:

"Given the limitations of in the available data and other project constraints, some simplifications and assumptions were made during the analysis... Since the results of this study indicate that depression restoration can reduce the volume of runoff entering Devils Lake, further studies should be conducted to more accurately quantify the runoff reduction resulting from depression restoration." (FEIS Appendix A p. A-259)

"Overall, however, the estimates of intact and drained depression area and volume are believed to be conservative (i.e., underestimated) to some degree for the following reasons: (1) the added NWI [National Wetlands Inventory] polygons do not represent the maximum depression area; (2) the number of DEM [Digital Evaluation Model] depression polygons appeared to be smaller in area than the corresponding depressions on

the aerial photos… and (3) there were areas, especially within the 10-foot contour interval region, where depressions were missed by both the DEM and the NWI data set, For these reasons, it is likely that a more intensive analysis would result in a greater number of depressions.

Although the depression delineation and classification conducted in this study were extensive and detailed, there were some limitations to the methods. These limitations, with varying degrees of importance, included the following: (1) no field verification was conducted due to the time constraints and the presence of snow cover during the study period; (2) partial drainage was not accounted for; (3) some individual depression classifications were subject to interpretation; (4) classification was based on aerial photos representing one point in time; (5) a small number of the aerial photos were darker than normal, making the depressions more difficult to categorize; and (6) the resolution of the aerial photos was not fine enough to identify the location of fully drained depressions not captured by the DEM nor the NWI data and the location of some of the drainage ditches." (FEIS Appendix A p. A-260)

"The [wetland restoration] scenarios were constructed by **randomly** selecting depressions that had been classified as possibly drained and converting these depressions to possibly intact. The selection process was not optimized by drainage area or location." (Emphasis in original) (FEIS Appendix A p. A-263)

"…the depressions were modeled as hard-bottom 'bowls.' Consequently, infiltration of water from a depression into the soil and evapotranspiration from the soil in the dry portions of the depressions (when the depression was less than 100 percent full) were not modeled. Therefore, the model could be underpredicting the net total evaporation (free surface evaporation plus evapotranspiration from the soil) in the depressions…

Since the net total evaporation from the depressions was probably underpredicted, the annual runoff reduction with depression restoration could be underestimated." (FEIS Appendix A pp. A-265, A-266)

"The *assumed* 50-percent utilization of *possibly* drained depressions is *felt to be* a *reasonable* amount of the total drainage that could be acquired and effective in storage. No effort was made to optimize the most effective depressional areas to be used for storage." (Emphasis added) (FEIS p. 5-48)

"Upper basin storage information is not at the point where a detailed cost estimate could be developed." (FEIS p. 7-11)

"On the basis of the stochastic analysis, upper basin storage/watershed management is not economically justified, while net benefits result under the wet future scenario. Further analysis to optimize the most cost-effective plan for upper basin storage/watershed management as a complementary project feature, along with further evaluation of associated social, economic, and environmental effects, appears warranted." (Emphasis added) (FEIS p. 12-3)

Nevertheless, the FEIS concludes that:

"Based on the stochastic analysis, upper basin storage in not economically justified and is not included as a feature of the outlet plan." (FEIS p. 7-4)

It is instructive to compare this superficial and preliminary treatment of wetland restoration under the Upper Basin Storage alternative with the extensive evaluation and discussion of outlet alternatives in the Final EIS, and to note that (1) the Final EIS specifically fabricated a hypothetical "wet future scenario" in order to justify an outlet, (2) like the Upper Basin Storage Alternative, the 300 cfs Pelican Lake outlet also is not economically justified under the stochastic analysis; (3) like the 300 cfs Pelican Lake outlet "preferred alternative," the Upper Basin Storage alternative is economically justified under the hypothetical "wet future scenario," (4) the Final EIS rejects the Upper Basin Storage alternative because it is not economically justified under the stochastic analysis, but (5) then justifies its recommendation of the 300 cfs Pelican Lake outlet as the "preferred alternative" despite the fact that it also is not economically justified under the stochastic analysis because (6):

> "... in Public Law 108-7, *the Congress removed the traditional requirements regarding economic justification* and provided instead that that the justification *for the* emergency *outlet* shall be fully described, including the analysis of the benefits and costs." (Emphasis added) (FEIS pp. S-10, 12-2)

Thus, the efforts of the North Dakota Congressional Delegation not only assured that there would be an over-whelming pro-outlet bias in the consideration of alternatives in the Final EIS, but to guarantee that only an outlet alternative could be selected, they exempted outlet alternatives from the requirement for economic feasibility while maintaining the requirement for economic feasibility for all other alternatives. The North Dakota Congressional Delegation, therefore, deliberately undermined the fundamental purpose of the National Environmental Policy Act by explicitly subverting the EIS's analysis of alternatives to an outlet from Devils Lake.

The failure of the Final EIS to provide the rigorous analysis and detailed study of alternatives required by NEPA is further demonstrated in the Corps' Clean Water Act Section 404(b)(1) Evaluation found in Appendix 1 of the Final EIS. The Corps relies solely on the Final EIS as the basis for its 404(b)(1) Evaluation (FEIS Appendix 1 pp. 1-2, 1-10), and the Evaluation states that:

> "A number of structural *outlet alternatives* were considered." (Emphasis added) (FEIS p. 1-2)

In fact, the Evaluation states explicitly that:

> "*COE efforts have been for the purpose of a plan* being designed and ready to implement should decision makers decide *to proceed with construction of an outlet*. This evaluation has been prepared in the event that decision makers determine that an outlet should be constructed." (Emphasis added) (FEIS Appendix 1 p. 1-2)

Consequently, instead of providing the required analysis of alternatives **to** an outlet, the Corps' 404(b)(1) Evaluation confirms that the Final EIS and the Evaluation both proceed from the premise that an outlet is the only alternative to be considered seriously. Because of this fundamental and pervasive pro-outlet bias, the Final EIS does not provide an adequate evaluation of alternatives to the proposed action.

Inadequate Clean Water Act Section 404(b)(1) Evaluation

The Corps states in its Clean Water Act Section 404(b)(1) Evaluation of an outlet from Devils Lake to the Sheyenne River contained in Appendix 1 of the Final EIS that:

"This evaluation addresses the effects that would result from the placement of fill in waters of the United States in conjunction with the construction of an outlet from Devils Lake to the Sheyenne River and the construction of mitigation features on selected reaches of the Sheyenne River to address operational effects. The effects associated with the operation of the outlet are discussed in detail in the IPR/EIS." (FEIS Appendix 1 p. 1-2)

"There would be no appreciable secondary affects [sic] on aquatic ecosystems associated with the placement of the proposed fill. Secondary effects of the proposed fill activities are associated with the operation of the outlet. The Corps believes that the environmental effects associated with outlet operation should be and are fully discussed in the EIS. The proper interpretation of 40 C.F.R. 230.11(h)(1) is that the Section 404(b)(1) Guidelines do not require operational impacts of the outlet to be considered as part of the 404(b)(1) analysis itself. 40 C.F.R. 230.11(h)(1) provides, in part, that "Information about secondary defects on aquatic ecosystems *shall be considered prior to the time final section 404 action is taken by the permitting authorities*". (emphasis added) The EIS considers operational impacts, and this consideration is prior to the time final section 404 action will be taken. 40 C.F.R. 230.11(h)(1) contains the only references to evaluation of secondary impacts in the guidelines and it imposes no requirement to evaluate those effects as part of the 404(b)(1) analysis, but specifically provides that such analysis may be done (at any time) 'prior to the time final section 404 action is taken.' Therefore, the EIS, as written, is fully compliant with the requirement to consider secondary effects on aquatic ecosystems of the outlet discharge. The Corps and Army decision-makers for the outlet proposal will fully consider the information on the secondary environmental effects of the outlet operation before taking action under CWA Section 404 to authorize any discharge of dredged or fill material associated with proposed construction of the outlet." (FEIS Appendix 1 pp. 1-9, 1-10)

The Corps' position is fundamentally flawed by the facts that (1), as demonstrated above in the discussion of Inadequate Description of Environmental Impacts of the Proposed Action and below in Mythical Mitigation, the Final EIS does not provide a full and detailed discussion of the environmental impacts of the 300 cfs Pelican Lake outlet "preferred alternative"—in fact, the FEIS states explicitly that, "Additional data acquisition and monitoring will be required to further define and evaluate the operational impacts of an outlet" (FEIS p. S-1), (2) as demonstrate above in the discussion of Inadequate Analysis of Alternatives, the Final EIS does not provide a thorough and objective evaluation of alternatives to the proposed action, and (3) the Final EIS fails adequately to consider less environmentally damaging practicable alternatives, as is required under 40 C.F.R. 230.10(a).

The National Wildlife Federation strongly disagrees with the Corps' interpretation of the scope of its Section 404(b)(1) analysis regarding secondary effects set forth in Appendix 1 pp. 1-9 and 1-10, of the Final EIS. The Corps' argument that the "proper interpretation" of C.F.R. 230.11(h)(1) is that the Section 404(b)(1) Guidelines do not require operational, secondary, downstream impacts of the outlet to be considered in the 404(b)(1) analysis itself is a gross misreading of the Guidelines, a dramatic and, NWF believes, unlawful deviation from long-standing U. S. Army Corps of Engineers and U. S. Environmental Protection Agency interpretations of the Guidelines, and a self-serving and unfair deviation from the standards the Corps applies to other 404 permit applicants for similar activities. Contrary to the Corps' position, the Section 404(b)(1) Guidelines require the Corps to consider these secondary effects in its 404(b)(1) analysis.

Biota Transfer – Confusing Absence of Proof with Proof of Absence

Because the Devils Lake Basin geologically is a subbasin of the Red River of the North/Hudson Bay Basin (FEIS p. 4-2), and despite the fact that it has not drained to the Sheyenne River for more than a thousand years (FEIS Figure 4-3, p. 4-3), proponents of an outlet frequently cite the geologic relationship as evidence that an outlet does not pose a threat for introducing foreign species into the Hudson Bay Basin. In its comments on the Draft EIS, NWF discussed at length the paucity of information on the biotic composition of Devils Lake and the Red River of the North and pointed out the fallacy of confusing the absence of proof that the outlet poses a threat of introducing foreign biota into the Hudson Bay Basin with proof of the absence of such a threat.

The fallacy of viewing Devils Lake simply as a sub-basin of the Red River of the North/Hudson Bay Basin is further demonstrated by the fact that, beginning in 1956 and continuing through 2002, the Devils Lake fishery was restored and has repeatedly been supplemented by the stocking of northern pike, walleyes, yellow perch, black crappies, white bass, striped bass and muskellunge, with many of those fish stocks originating from areas outside the Hudson Bay Basin, including the Missouri River and the Atlantic Coast. For example, data from the North Dakota Game and Fish Department show that, beginning in 1967 and continuing through 2000, 138 stockings, including over 12.4 million walleyes, 2.7 million northern pike and 57,000 yellow perch—a total of over 15 million fish—were made from the Garrison Dam National Fish Hatchery on the Missouri River into Devils Lake. In addition to the 15 million fish, tens of thousands of gallons of untreated Missouri River water in which the fish were transported (900 gallons per truck) also were discharged into Devils Lake.

Thus, although the Devils Lake Basin geologically is a sub-basin of the Red River of the North/Hudson Bay Basin, biologically it can more accurately be regarded as a sub-basin of the Missouri River Basin. In fact, as the fishery has flourished since 1980, Devils Lake has attracted increasing numbers of fishermen from throughout the Upper Midwest, resulting in thousands of boats, boat trailers and bait buckets from areas outside the Hudson Bay Basin coming to Devils Lake every year, increasing further the potential for the introduction of biota not found elsewhere in the Hudson Bay Basin. Consequently, although the Devils Lake Basin is geologically a sub-basin of the Red River of the North/Hudson Bay Basin, biologically the Devils Lake outlet represents interbasin transfers from several systems outside the Hudson Bay Basin.

Instead of minimizing the potential for interbasin transfer of foreign biota by the outlet as the Draft EIS did, the Final EIS recognizes that it is a legitimate and potentially significant issue, e.g.:

> "There is increased risk of the transfer of biota or the increase in the distribution of existing organisms associated with any feature that improves the connectivity between systems that have been segregated for centuries. The operation of the outlet would be considered such a feature. On the basis of the limited available information, there do not appear to be any organisms in Devils Lake that are not already present in the Red River of the North Basin. However, it cannot be said with certainty that some may not be identified or introduced in the future. In addition, the operation of an outlet may improve the conditions necessary for the dispersal of organisms currently found in the Sheyenne or Red River." (FEIS p. 6-62)
>
> "The literature review has identified that there are substantial data gaps in the knowledge of biota in both the Devils Lake and Red River basins and that further investigations would be necessary to render a definitive analysis of the presence/absence of biota of concern. The increased use of Devils Lake for recreational purposes, combined with the

natural dispersal mechanisms of invasive species, results in an extremely high risk that biota of concern could already be present or have a high risk of being introduced into the Devils Lake watershed at any time in the future. If biota of concern are present or invade Devils Lake, the risk is also extremely high that these biota would be transferred via a pumping operation from Devils Lake into the Sheyenne River if a preventative filtering system were not in place." (FEIS p. 6-69)

Consequently, the outlet now includes a sand filter in the design of the outlet to address the issue (FEIS pp. S-9, S-11, 5-138, 6-62, 6-69, 6-72, 6-81). However:

> "The sand filtration system was added late in the analysis to address biota and invasive species transfer issues. It is intended to filter much of the organic material from the water transferred through the outlet and would be located between the pressure pipeline and the control reservoir. Due to its late addition to the design, the filtration system has only been conceptually designed at this time." (FEIS p. 5-138)

In addition to a sand filter, a combined trash rack and fish screen would be incorporated into the pump station intake design (FEIS p. 5-137).

Ironically, a fish screen and sand filter were the same features proposed 25 years ago to address the biota transfer issue presented by the diversion of Missouri River water to the Red River Basin under the U. S. Bureau of Reclamation's Garrison Diversion Unit in North Dakota. It is appropriate, therefore, to review once again the conclusions of the International Joint Commission regarding the adequacy of those measures (sand filters and a much more sophisticated double 40 mesh phosphor bronze fish screen) in preventing the introduction of biota from the Missouri River Basin into the Hudson Bay Basin:

> "In fact, overriding everything else, as it turns out, has been the necessity that such introduction be prevented at all costs...
>
> ...
>
> Unlike some other adverse consequences that can be minimized by additional mitigating measures or by cessation of operation of the Project, remedial measures to control unwanted exotics are oftentimes futile and, what makes it even more difficult, is that it may be some years before the full adverse impact is apparent.
>
> ...
>
> There is no question in the Commission's mind that the Board's recommendations greatly reduced the risk of an unintentional transfer. There would be two lines of defense, either of which by itself might accomplish the desired result... The Commission gives great weight to the Board's opinion that these two lines of defense will work. At the same time, the Commission must weigh the consequences to Canada if the Board is wrong. Were the potential biological consequences to the Hudson Bay ecosystem predictable in manner and extent, the Commission might accept the Board's approach. The Board has reduced the risk of a biological 'time bomb' but not eliminated it. The Commission is concerned that even with the best engineering talent available and with the best operating practices possible, the very complexity of the scheme, the immensity of the physical features, the large number of human beings involved in carrying out the responsibility,

and the possible mechanical failure, what cannot happen, will happen..." (International Joint Commission, 1977)

As with the Garrison Diversion Unit, the inclusion of a sand filter in the design of a Devils Lake outlet reduces the risk of a biological "time bomb" but does not eliminate it.

Mythical Mitigation

After reviewing the mitigation measures for an outlet proposed in the Draft EIS, NWF pointed out that

> "It is evident... that the Corps (1) does not know what the impacts of the operation of the proposed Pelican Lake 300 cfs outlet will be, (2) it has no plan for mitigating those impacts, (3) it does not know if the impacts can be mitigated, and (4) it already has written off the mitigation of impacts to aquatic resources. Faced with the daunting task of developing an effective plan to mitigate the impacts of the project, the DEIS finally dismisses the matter with the cursory statement that:
>
> > 'Monitoring to determine the actual magnitude of effects is perhaps the best mitigation. Further mitigation can then be designed to address actual impacts.' (DEIS p. 5-102)"

and:

> "It is abundantly clear from the DEIS that the Corps does not have a mitigation plan for the proposed Pelican Lake 300 cfs outlet, but it then claims that monitoring is a major component of the project's mitigation 'package' when it does not have a monitoring program, either, or know how it would be funded or who would conduct it—or even if it would be effective in identifying impacts.
>
> There could not be a more clear or blatant violation of the mandate of the National Environmental Policy Act for Federal agencies to know the impacts of their actions before taking them."

Little of substance has changed in the Final EIS. For example:

> "The current mitigation proposal acknowledges potential effects on aquatic and riparian resources but *assumes* that if the ecological integrity of the Sheyenne River and riparian corridor is maintained, *the river's natural state will recover upon cessation of project operation.* Because of the inability to define how the alternatives would actually be constructed and operated, the limited precision of modeling techniques, and the lack of detailed system-wide information regarding terrestrial and aquatic species and habitat distribution, *many of the operational impacts cannot be quantified.* The conclusions regarding potential impacts are based on the best available information. However, the eventual occurrence of any impacts is highly dependent on the eventual length of operation and the final operational constraints. Therefore, *there is a high level of uncertainty with respect to the actual occurrence, location, and timing of potential effects*.
>
> Mitigation measures are *proposed* to *help ensure the recovery of the system after the outlet has ceased operation*... The mitigation proposal adopts an adaptive management

approach by including *extensive monitoring* to: (1) establish a reliable reflection of baseline conditions on the Sheyenne River prior to outlet operation, (2) document expected level of effects associated with outlet operation, and (3) ensure that mitigation features were sufficient to *allow recovery of aquatic resources on the Sheyenne River once operation of the outlet has ceased.* Monitoring activities to establish baseline conditions and monitoring costs for the first 10 years of operation are proposed as first costs. At this time, with the uncertainty regarding future climatic conditions, it appears to be reasonable to include the monitoring costs for the first 10 years as a project cost." (Emphasis added) (FEIS p. S-9, S-10)

"If Congressionally mandated requirements are satisfied and funding is available, construction of an outlet could be initiated in the fall of 2004. If construction is initiated in the fall of 2004... construction could be completed by the fall of 2007." (FEIS Appendix 1 p. 1-5)

"Because of the inability to predict how the alternatives would actually be constructed and operated and the limited precision of modeling techniques, not all impacts and associated mitigation needs have been quantified. Various mitigation features have been *identified to help ensure the recovery of the system after the outlet ceases operation.* To address data gaps and the difficulty in predicting effects, monitoring of various resources during project operation would be used to modify the mitigation measures as needed during operation to appropriately address project impacts...

Long term monitoring of impacts is included, as well as agency coordination, to determine if additional mitigation measures are needed. A *framework* for the monitoring has been *identified.* This framework will be revised as necessary to ensure the objectives of monitoring are met. *No costs are included for* agency participation in the long-term monitoring, interpretation of the long-term monitoring data, or *implementation of any additional mitigation features identified through the long-term monitoring.* An interagency task force would have to be established to manage and coordinate the long-term monitoring program. Some mitigation measures would be implemented concurrently with construction, and ongoing studies and adaptive management are included. Monitoring will provide the data necessary to confirm the effect of operation on the system, and will assist in determining any future mitigation needs..." (Emphasis added) (FEIS p. S-15)

"Monitoring is a major component of the *proposed* mitigation package... *Monitoring would require a long-term commitment of time and funds by agencies involved* in the operation of an outlet. It is assumed that monitoring would be required for the life of the project or until agency coordination determines that it no longer is needed." (FEIS p. 6-76)

"The length of operation depends on the future climatic conditions, but *the outlet could be operated for many years.*" (Emphasis added) (FEIS p. 6-71)

"Examples of the amount, duration, and timing of flows from Devils Lake ... show[]... sudden and extreme fluctuations in flow for much of *the 50-year period of operation.*" (Emphasis added) (FEIS p. 6-56)

"The changes in the aquatic community *would persist for many years after outlet operation has ceased.*" (Emphasis added) (FEIS p. 6-62)

"...*after a number of years of outlet operation* the [Sheyenne River] channel would have changed, probably becoming wider and deeper..." (Emphasis added) (FEIS p. 6-62)

"*Once the outlet operation has been completed*, recovery of these areas through succession, would occur, *which could take decades* in some areas." (Emphasis added) (FEIS p. 6-65)

"Because of the inability to accurately quantify all of the project impacts associated with operation, mitigation measures are included to alleviate effects and *try to maintain some existing critical habitat to facilitate recovery following project operation*. An adaptive mitigation approach is also *recommended*." (Emphasis added) (FEIS p. 6-76)

"It is *assumed* that over time the system would recover to pre-project conditions, but this *may require decades and would result in losses during project operation*." (Emphasis added) (FEIS p. 6-112)

"Monitoring activities to establish baseline conditions and monitoring for the first 10 years of operation are *proposed* as first costs. *Subsequent monitoring and any required mitigation would be the responsibility of the local sponsor*. At the cessation of the project, monitoring may suggest the need for *total restoration of the system*. The needs and costs for this restoration cannot be identified at this time and would require additional authorization. ... the following monitoring programs are *proposed*. (Emphasis added) (FEIS p. 6-84)

"Figure 6-6 shows the locations of *potential* mitigation and monitoring sites." (Emphasis added) (FEIS p. 6-76)

"A sand filter is *proposed* to reduce the potential for the transfer of biota, and long-term monitoring would include surveys for biota of concern." (Emphasis added) (FEIS p. 6-63)

"The Corps will *recommend* including provisions in the outlet operation plan to specify that, if long-term monitoring identifies that the operation results in the spread or introduction of invasive species, operation of the outlet will be suspended and immediate remedial actions will be initiated." (Emphasis added) (FEIS p. 6-63)

"The local sponsor will be responsible for operation and maintenance activities after the initial installation. Also, *the local sponsor would be expected to continue any required monitoring procedures and implementation of any identified mitigation needs beginning after 10 years of outlet operation*." (Emphasis added) (FEIS p. 10-1)

"The project sponsor for a flood damage reduction project at Devils Lake, North Dakota, would be the North Dakota State Water Commission..." (FEIS p. 10-1)

"...it is difficult, if not impossible, for the state to support a project that includes unnecessary and expensive additions that are designed to address remote 'what if' risks." (FEIS p. 9-2)

Consequently, the Corps does not know how the outlet would be constructed and operated and does not have detailed information on the resources that would be affected, so many of the

operational impacts of the outlet cannot be quantified. Therefore, the Corps has identified the framework for a proposed monitoring program and potential monitoring sites to establish baseline conditions for evaluating the impacts of the operation of the project. However, with only three field seasons between the initiation of project construction in the fall of 2004 and the beginning of operation in the spring of 2008, there will be insufficient time to "establish a reliable reflection of baseline conditions on the Sheyenne River prior to outlet operation" as a basis for evaluating the impacts of the operation of an outlet over the next 50 years.

The Corps has proposed various mitigation measures and potential mitigation sites to try to maintain some existing critical aquatic habitats in the hope that the system may recover once operation of the outlet has ceased. However, these measures would not mitigate the impacts that occur during operation of the outlet, which could last for many decades, and recovery, if it does occur, could take many more decades after that.

Despite the need for long-term monitoring to identify impacts that may not become evident for many decades and that may require extensive mitigation measures—including total restoration of the system, only the costs for monitoring to establish baseline conditions and impacts during the first 10 years of operation are proposed as a project cost. After that, responsibility for long-term monitoring for the life of the project to identify the most significant impacts of operation of the outlet, as well as responsibility for implementing all mitigation measures, will be turned over to the local sponsor. However, no costs are included for the local sponsor's participation in the long-term monitoring or for implementation of any additional mitigation features identified through the long-term monitoring—which could include total restoration of the system.

Under the Corps' proposed potential recommended mitigation plan, the local sponsor to whom responsibility for long-term monitoring of impacts for the life of the project and mitigation of those impacts will be transferred after 10 years is the North Dakota State Water Commission. However, not only does the State Water Commission lack the commitment and the technical and financial resources to conduct an adequate long-term monitoring program for the life of the project, but it is unrealistic to suggest that the State would implement, or would be capable of implementing, the extensive mitigation measures that would be necessary after project operation ceases.

Like the Draft EIS, the Final EIS lists various proposals and recommendations, but there still is no actual mitigation plan for the Corps' 300 cfs Pelican Lake outlet "preferred alternative."

U. S. Army Corps of Engineers Environmental Operating Principles

NWF noted in its comments on the Draft EIS that:

> "On March 26, 2002, Chief of Engineers Lt. General Robert Flowers announced new Corps of Engineers Operating Principles to guide the Corps in all of its works:
>
> > 'The Principles:
> >
> > Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse and sustainable condition is necessary to support life.
> >
> > Recognize the interdependence of life and the physical environment.

Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.

Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.

Continue to accept corporate responsibility under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems. [Emphasis added]

Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full cycle of our processes and work.

Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environmental impacts of our work.

Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.'

As the preceding comments document, the DEIS repeatedly violates every one of these principles. Therefore, a revised DEIS should discuss, substantively and specifically, how it has been modified to comply with these principles in each of the areas outlined in these comments."

However, instead of respecting the views of others, listening to them actively and learning from their perspective, the Corps summarily—and despite overwhelming evidence to the contrary—dismisses them by declaring:

"The IPR/EIS alternatives analysis and recommendations are consistent with these principles." (FEIS Appendix 5, pp. 5-48, 5-49)

The Corps may have had an excuse for violating its Environmental Operating Principles in the Draft EIS because the principles were not issued until a month after the Draft EIS was released. However, there is absolutely no excuse for the continued repeated and blatant violations of those Environmental Operating Principles in the Final EIS that was released a year later.

Conclusions

The Final EIS fails to address substantively, objectively and responsively the major issues raised by NWF in its comments on the Draft EIS. Therefore, based on the above comments, the following conclusions regarding the Final EIS are warranted:

1. The Final EIS is based on a flawed scoping process that discouraged and frustrated public participation.

2. The Final EIS inappropriately employs tiering of the analysis of the environmental impacts of the 300 cfs Pelican Lake outlet "preferred alternative" in order to segment the analysis of

those impacts and avoid their disclosure until after the decision has been made as to whether to build the project.

3. The Final EIS fails to consider the cumulative impacts of other related and reasonably foreseeable projects, including the Red River Valley Water Supply Project, an inlet to deliver Missouri River water to Devils Lake, and the State of North Dakota's "temporary" emergency outlet from Devils Lake to the Sheyenne River.

4. The Corps lacks congressional authorization to build and operate an outlet from Devils Lake to the Sheyenne River.

5. The 300 cfs Pelican Lake outlet "preferred alternative" would have severe and long-lasting adverse impacts on the Sheyenne River under moderate future conditions. Although the Final EIS does not describe the environmental impacts of the 300 cfs Pelican Lake outlet "preferred alternative" under the hypothetical "wet future scenario" upon which it is justified, they would be substantially more severe.

6. All Devils Lake outlet alternatives discussed in the Final EIS would be either ineffective in preventing the continued rise of the lake under the "wet future scenario" or they would cause unacceptable downstream impacts, and none of the outlet alternatives, including the 300 cfs Pelican Lake outlet "preferred alternative," have positive benefit/cost ratios under standard economic analyses. Therefore, the outlet alternatives are neither technically sound nor economically justified.

7. The "wet future scenario" upon which the 300 cfs Pelican Lake outlet "preferred alternative" is justified is a manufactured set of conditions specifically fabricated to result in just enough precipitation to cause Devils Lake to overflow without the outlet, but not overflow with the outlet. This artificial scenario has no basis in reality and has virtually a zero probability of occurring.

8. The use of an artificial, fabricated, hypothetical "wet future scenario" to justify an outlet from Devils Lake to the Sheyenne River creates a dangerous and irrational precedent for using such manufactured scenarios to justify other wasteful, ineffective and damaging projects costing hundreds of millions of dollars.

9. The 300 cfs Pelican Lake outlet "preferred alternative" is estimated to cost $208,228,000, but because the lake would continue to rise another 10 feet under the "wet future scenario" even with the outlet in operation, an additional $577,000,000 would still have to be invested in infrastructure protection measures, bringing the total cost of this alternative to $785,228,000.

10. The Final EIS suggests that because of the low probability that the conditions will occur that are necessary to justify the 300 cfs Pelican Lake outlet "preferred alternative," the outlet should be viewed as an insurance policy rather than an investment. However, the outlet neither guarantees that the lake will not continue to rise and overflow, nor provides compensation if it does. Therefore, because the 300 cfs Pelican Lake outlet would be economically justified only under the hypothetical "wet future scenario," and because the lake would still continue to rise with the outlet in operation, the decision to build the 300 cfs Pelican Lake outlet "preferred alternative" more accurately represents a decision to gamble the $208 million costs of the outlet against 1 in 50 odds of saving $132 million in continued infrastructure protection costs.

11. There is no evidence in the geologic record to support speculation that an overflow of Devils Lake would result in the natural outlet eroding down 8.1 feet and releasing 6,000 cfs of water and 900,000 cubic yards of sediment into the Sheyenne River. Moreover, if the level of Devils Lake were to approach the overflow elevation, measures would be implemented to prevent erosion of the outlet.

12. The Final EIS fails to address wetland drainage in the Devils Lake Basin and its contribution to the rise of the lake, it significantly underestimates the potential for wetland restoration in the Upper Devils Lake Basin to reduce flooding problems at the lake, and it disregards the effects of continuing wetland drainage in reducing the efficacy of the 300 cfs Pelican Lake outlet "preferred alternative" and other publicly funded measures in dealing with flooding problems at Devils Lake.

13. The Final EIS significantly inflates the value of non-urban lands around Devils Lake that already have been flooded and, by implication, those that would be flooded if the lake continues to rise with or without the outlet. The result is exaggeration of the benefits of preventing those losses and inflation of the benefit/cost ratio for the outlet.

14. Although flooding at Devils Lake has resulted in personal hardships for those residents living adjacent to the lake, the influx of $350 million in Federal emergency funds and the thriving tourist industry based on the outstanding sport fishery that has developed at Devils Lake, combined with generous compensation of affected homeowners by Federal agencies, have substantially blunted the economic impacts of the rise of the lake.

15. The Final EIS not only fails to provide an adequate evaluation of alternatives to the proposed action, but the request by the North Dakota Congressional Delegation to expand the project's purpose to include reducing the already low probability of Devils Lake overflowing to the Sheyenne River, coupled with the North Dakota Congressional Delegation and the Governor being given sole authority for screening the alternatives considered in the Final EIS, effectively eliminated all non-outlet alternatives from serious consideration.

16. The North Dakota Congressional Delegation's having obtained exemption of an outlet alternative from the requirement for economic feasibility in the Fiscal Year 2003 Omnibus Appropriations Act while maintaining the requirement for other alternatives to be economically feasible, resulted in the Corps imposing a blatant bias into the NEPA process by subverting the EIS's analysis of alternatives in a move deliberately designed to exclude non-outlet alternatives from serious consideration.

17. The Corps of Engineer's Clean Water Act Section 404(b)(1) evaluation is based on an inadequate evaluation of the environmental impacts of the 300 cfs Pelican Lake outlet "preferred alternative," an inadequate analysis of alternatives to the proposed action, a gross misreading of the 404(b)(1) Guidelines, and a dramatic and unlawful deviation from long-standing Corps of Engineers and U. S. Environmental Protection Agency interpretations of the 404(b)(1) Guidelines.

18. The potential for transfer of foreign biota from Devils Lake to the Hudson Bay Basin by the 300 cfs Pelican Lake outlet "preferred alternative" is a major issue, and its resolution is complicated by the paucity of information on the biota of Devils Lake, the potential for introduction of new damaging species into Devils Lake, and the absence of effective measures to mitigate the impacts of biota transfer if it should occur.

19. The Final EIS fails to provide a detailed discussion of the environmental impacts of the operation of the 300 cfs Pelican Lake outlet "preferred alternative," it acknowledges that it may not be possible to mitigate some impacts to aquatic resources, it does not include a plan to mitigate adequately impacts that already have been identified, and it does not include an actual plan to monitor the impacts of the project and implement mitigation measures for those impacts that are identified in the future. Although the most severe impacts are not likely to be identified until the project has been in operation for a number of years, no funds are identified for long-term monitoring or for the implementation of mitigation measures, and the responsibility for those is turned over the North Dakota State Water Commission, which lacks the commitment and the technical and financial resources to implement effective monitoring and mitigation programs.

20. The Final EIS continues to violate the Corps of Engineers' Environmental Operating Principles issues on March 26, 2002.

21. The Final EIS is procedurally faulty, conceptually flawed, technically deficient and legally defective. The inadequacies are so fundamental and the deficiencies are so pervasive that the Corps has no recourse under the law except to withdraw the Final EIS and begin the NEPA process anew to produce an environmental impact statement that complies with both the letter and the spirit of the National Environmental Policy Act.

22. Despite its profound shortcomings, the Final EIS is forced to acknowledge the inescapable conclusions that:

> "An outlet is not economically justified using methods that would determine expected net benefits by producing probability-weighted benefits and costs." (FEIS p. S-10)
>
> "Using results of the stochastic modeling approach for the economic analysis, the only cost-effective alternative appeared to be continuation of infrastructure protection within the Devils Lake Basin, including measures for further flood protection and continued transportation needs." (FEIS p. 5-115)
>
> "...implementation of the Continued Infrastructure Protection within the basin is economically justified, and may in fact represent the most economically defensible approach to flood damage management at the lake." (FEIS p. 5-71)
>
> "Within the context of this evaluation, the preferred action in the near term would be continuation of infrastructure protection." (FEIS p. 5-71)

REFERENCES

Associated Press. 1997a. Schafer: Identify, close illegal drainage system. The Jamestown Sun, Jamestown, North Dakota. June 16, 1997.

Associated Press. 1997b. Landowners' group raps Schafer plan. The Bismarck Tribune, Bismarck, North Dakota. July 3, 1997.

Associated Press. 1999a. Corps officer ordered to turn over work. The Jamestown Sun, Jamestown, North Dakota. July 17, 1999.

Associated Press. 1999b. Decision near on Devils Lake proposals. The Jamestown Sun, Jamestown, North Dakota. September 17, 1999.

Associated Press. 2000. Impact study shows nothing to derail plan. The Jamestown Sun, Jamestown, North Dakota. March 1, 2002.

Bluemle, John P. 1991. Radiocarbon dating of beaches and outlets of Devils Lake. North Dakota Geological Survey, Miscellaneous Series No. 75. 10 pp.

Butz, H. 1985. Comparison of Stump Lake, Devils Lake water levels shows effect s of Drainage. The Devils Lake Daily Journal. Devils Lake North Dakota. February 26, 1985.

Condon, Patrick. 1997. Panel approves $5 million for Devils Lake outlet. The Forum, Fargo, North Dakota. September 26, 1997.

Davis, Don. 1997. N.D. Senators push for emergency inlet. The Bismarck Tribune, Bismarck, North Dakota. September11, 1997.

Donovan, Lauren. 2002. N.D. senators increasingly powerful. The Bismarck Tribune, Bismarck, North Dakota. June 2, 2002.

International Joint Commission. 1977. Transboundary Implications of the Garrison Diversion Unit. An IJC Report to the Governments of Canada and the United States. 146 pp. plus appendices.

Johnson, Rex. 2001. Evaluation of alternative techniques for delineating restorable depressional wetlands in the prairie pothole region and prairie parklands of Minnesota. A report prepared for the Restorable Wetlands Working Group.

Murphy, Edward C., Ann M. K. Fritz and R. Farley Fleming. 1997. The Jerusalem and Tolna Outlets in the Devils Lake Basin, North Dakota. North Dakota Geological Survey, Report of Investigation No. 100. Bismarck, North Dakota. 36 pp.

North Dakota Department of Health. 2003. Public Notice for Issuance of NDPDES Permit, Notice of Public Hearing on Draft NDPDES Permit. April 14, 2003. 3 pp.

North Dakota State Water Commission and State Engineer, North Dakota Stage Game and Fish Department, Garrison Diversion Conservancy District and North Dakota State

Department of Health and Consolidated Laboratories. 1990. Summary Devils Lake Stabilization Briefing Report. 19 pp.

North Dakota Water Education Foundation. 2003. North Dakota Water Resources. Map prepared by North Dakota State Water Commission. North Dakota Water, Vol. 11, Special Issue 2003, Irrigation Issue. pp.10-11.

Pearson, Gary L. 1985. Draining the great marsh. USA Today. November, 1985. pp. 83-89.

Pearson, Gary L. and David R. Conrad. 2002. Comments of the National Wildlife Federation on the U. S. Army Corps of Engineers' February 2002 Draft Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement. 58 pp.

State Engineer. 1912. Fifth biennial report of the State Engineer to the Governor of North Dakota for the years 1911-1912. Public Document No. 21. Knight Publishing Company, State Printers. Fargo, North Dakota.

TPI Consultants. 1976. Devils Lake Basin Advisory Committee, Study Report, Volume 1. Devils Lake, North Dakota. 235 pp.

U. S. Army Corps of Engineers. 1983. Section 205 Detailed Project Report, Flood Control Project at Devils Lake, North Dakota. St. Paul District.

U. S. Army Corps of Engineers. 1988. Integrated Feasibility Report and Environmental Impact Statement at Devils Lake Basin, North Dakota. St. Paul District.

U. S. Army Corps of Engineers. 1992. Devils Lake Basin, North Dakota, Reconnaissance Report. St. Paul District.

U. S. Army Corps of Engineers. 1994. Devils Lake, North Dakota, Stage 1A Issues Resolution Conference Agenda and Background Information.

U. S. Army Corps of Engineers. 1996a. Devils Lake, North Dakota, Contingency Plan. St. Paul District Army Corps of Engineers Centre, St. Paul, Minnesota.

U. S. Army Corps of Engineers. 1996b. Emergency Outlet Plan, Devils Lake, North Dakota. St. Paul District.

U. S. Army Corps of Engineers. 1999. Draft Summary Document for Report to Congress on the Emergency Outlet from Devils Lake, ND to the Sheyenne River. St. Paul District.

U. S. Army Corps of Engineers. 2002. Draft Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement. St. Paul District.

U. S. Army Corps of Engineers. 2003. Final Devils Lake, North Dakota, Integrated Planning Report and Environmental Impact Statement. St. Paul District.

U. S. Army Corps of Engineers and North Dakota State Water Commission. 1998. Devils Lake Emergency Outlet Newsletter, Issue #1. 6 pp.

U. S. Army Corps of Engineers and North Dakota State Water Commission. 2001. Devils Lake

Study Newsletter, Issue # 4. 6 pp.

U. S. Bureau of Reclamation. 1974. Final Environmental Statement, Initial Stage, Garrison Diversion Unit, Pick-Sloan Missouri Basin Program, North Dakota. INT FES 74-3. U. S. Department of the Interior.

U. S. Congress. 1960. Garrison Diversion Unit. Letter from The Secretary of the Interior Transmitting a Report on the Garrison Diversion Unit, North Dakota and South Dakota, Missouri River Basin Project. House Document No. 325. 86th Congress, 2d Session.

U. S. Geological Survey. 1896. Monographs of the United States Geological Survey, Vol. XXV. Department of the Interior. House of Representatives, 54th Congress, 1st Session, Document No. 297. Government Printing Office, Washington, D. C.

WEST Consultants, Inc. 2001. Final Report, Devils Lake Upper Basin Storage Evaluation. Prepared for: St. Paul District, U. S. Army Corps of Engineers. San Diego, California. 79 pp.

Weixel, Gordon. 1997. In search of... Illegal drains. Devils Lake Daily Journal, Devils Lake, North Dakota.

Weixel, Gordon. 2002. Outlet construction begins. Devils Lake Journal, Devils Lake, North Dakota. October 22, 2002.

Weixel, Gordon. 2003. State outlet project moves forward. Devils Lake Journal, Devils Lake, North Dakota. June 17, 2003.

Willard, Daniel E. 1923. The Story of the Prairies or the Landscape Geology of North Dakota, 10th Edition. Web Publishing Company, St. Paul, Minnesota.

Comments on Environmental Impact Statement
for the Red River Basin Water Development Plan

Good Evening, my name is Thomas Lane. I'm a Fargo City Commissioner. Tonight, I will be presenting comments on behalf of the City of Fargo. I would like to thank the Bureau of Reclamation and Garrison Diversion Conservancy District staff for organizing these public hearings for the Environmental Impact Statement of the Red River Basin Water Development Plan.

I will be making some brief comments and then will call on Mr. Steve Burian and Mr. Pat Zavoral to address in more detail our concerns and observations.

My comments will focus on the population projections for Fargo. As you are aware, during the development of the Phase I and Phase II Needs Assessment process that was completed in 2000, there was a dispute as to what Fargo's population would be in 2050. The result of that assessment process was a recognition of two projections of Fargo's population. One projection was based on BOR calculations and the other on a City of Fargo calculation.

Fargo's projections were considerably higher then those of the BOR. It appears this same difference in opinion is occurring in the needs assessment that is part of this EIS process. We encourage the Bureau of Reclamation to reconsider their conservative approach to population forecasting.

Here are reasons we think Fargo's approach will be more accurate 20, 30 and ultimately 50 years down the road. First, historical trend data; while the method is simplistic, the fact is that a population trend based on past growth has proven to be accurate for Fargo. The City of Fargo has grown by approximately 2 percent a year for the past 40 years; the growth can be attributed to a variety of factors but the fact remains that the average rate of growth is about 2 percent a year. We do not believe that this growth rate will change in the future for several reasons.

> **Migration**. Historically, most of Fargo's new residents came from other parts of North Dakota or northwestern Minnesota. The City provided the jobs and services being sought by these citizens that did not want to leave the area. While people who already live in this area still make up an important portion of new Fargo residents, new residents are also coming from other urban communities in the region and overseas.
>
> A recent analysis of this immigration shows over 30 percent of new residents come from outside of North Dakota and Minnesota. Plus, over one-third of the population growth that occurred in Cass County between 1990 and 2000 can be attributed to new Americans [refugee re-settlement process].

Population characteristics. Fargo's minority population doubled in the last decade. As the community's population continues to become more racially and ethically diverse, assumptions about other basic population characteristics must change as well. Specifically, both birth rates and household sizes tend to be higher in non-white households than in white households.

The community's changing racial composition is something that should inform long-term population projections.

Growing Small City. Fargo is a healthy, growing small city. The economic base is diversified and job growth is strong, even in relatively weak economic times. As the city approaches 100,000 people its role as an "urban" center in the region is further solidified. In addition, the community is actively planning new development to responsibly accommodate growth.

The city is committed to making sure that Fargo is a desirable place to live. There is no reason to expect growth trends to slow significantly.

Steve Burian will provide you with additional statistical evidence to support our assertion that this more optimistic rate of growth will continue into the future. He will also touch on our concerns that the study's assumptions on reduction in water consumption rates will have a detrimental effect on the EIS process and the ultimate conclusions that are drawn about the size of water delivery system.

Mr. Burian's comments address the importance of adjusting the assumptions underlying these very important benchmark factors. The conclusions one must draw by using the BOR's very conservative approach to population projections and water usage paints the wrong picture of Fargo's future. We have only one chance to make this evaluation of need as accurate as possible.

We urge the BOR to consider the suggested changes now instead of later. Not doing so will prolong the EIS process and delay any decision on the best alternative water delivery system.

Thank you and here is Mr. Steve Burian.

CITY OF
Fargo

Mayor Bruce W. Furness
200 3rd Street North
Fargo, North Dakota 58102
Phone: (701) 241-1310
Fax: (701) 241-1526

January 14, 2003

Ms. Signe Snortland
Senior Environmental Specialist
Bureau of Reclamation
P.O. Box 1017
304 East Broadway
Bismarck, ND 58502

Re: Fargo EIS Public Scoping Meeting Comments
Red River Valley Water Supply Project

Dear Ms. Snortland:

I appreciated the opportunity to represent the City of Fargo and the surrounding region by providing public comments regarding the Red River Valley Water Supply (RRVWS) project at the Environmental Impact Study (EIS) Scoping meeting held on Monday, October 28, 2002. The timely completion of the RRVWS project is of the greatest importance as the City of Fargo and the surrounding region continues to grow. We are fully aware of the social and economic ramifications should we experience an inadequate supply of water. To stress the importance of the RRVWS project to the City of Fargo, I would like to take this opportunity to submit my formal comments to the Bureau of Reclamation in written form. As support documentation, enclosed is a summary of technical comments pertaining to the work to be completed under the Specific Plans of Study for the RRVWS project.

Water is a top priority for the City of Fargo, second only to public safety. The entire region has experienced significant growth in the recent past, and our projections indicate that this growth will continue into the foreseeable future. As our region grows, the City of Fargo will be required to meet increasing residential, commercial, institutional and industrial water demands and to support economic growth. We recognize the value of our current water supply and diligently practice water conservation measures, as necessary. However, we remain concerned that existing water supplies will be insufficient to meet our future water demands during drought conditions.

Fargo-Moorhead
All-America City
2000

The "No-Action" alternative of the RRVWS project is absolutely unacceptable. In considering the water demands of the area in conjunction with historical low-flow data for the Red River, it is evident that drought conditions would have devastating social and economic effects on the livelihood of the region. In-basin alternatives could be evaluated for limited support, but the City of Fargo believes that alternatives importing Missouri River water to the Red River Valley provide the most benefit and reliable assurance of a sustainable future water source. The Red River Valley has been promised 100 cubic feet per second of water from the Missouri River in an effort to meet future water demands and the City of Fargo desires to see that commitment fulfilled.

The possibilities for drought conditions that would cripple our economy and quality of life continually increase. As a result, there is a growing sense of urgency to provide for the demands that will be placed on existing and future water supply sources. The City of Fargo desires that the RRVWS project progress in a more timely fashion than currently proposed, not only to complete the required study efforts, but also to implement a solution that provides a sustainable water source to the Red River Valley.

The City of Fargo will continue its active participation on the Technical Team and Study Review Team and to monitor the progression of the RRVWS project. It is imperative that the Bureau of Reclamation promotes timely completion of the project in an effort to meet the water needs of the entire Red River Valley. If you have any questions or comments regarding this letter or the attached technical document, please contact me at (701) 241-1310 or Fargo City Administrator Pat Zavoral at (701) 241-1553.

Sincerely,

Bruce W. Furness
Mayor

BWF:sf
Enclosure
cc: Pat Zavoral, City Administrator
Mark Bittner, P.E., City Engineer
Bruce Grubb, P.E., Enterprise Director
Steve Burian, P.E., Advanced Engineering & Environmental Services, Inc.
ffssd

TECHNICAL COMMENTS
CITY OF FARGO
RED RIVER VALLEY WATER SUPPLY PROJECT
December 16, 2002

ANTICIPATED REGIONAL GROWTH

The City of Fargo has experienced approximately a 2-percent growth rate per year for the last 20 years, and projections indicate that the City can be expected to sustain a similar annual growth rate for the foreseeable future. It should be noted that the growth rate for the City of Fargo has exceeded all recent estimates by the Bureau of Reclamation. It is critical that continued work on the Red River Valley Water Supply (RRVWS) project not be based on population projections that continue to underestimate the growth potential for the City of Fargo and the surrounding region. In addition to population growth, increased water use associated with future institutional, commercial, and industrial growth should be considered as well. The growth rate established in the RRVWS project study effort could be the basis for future water supply projects. Failure to adequately provide for future demands could have ramifications that result in ultimate failure of a proposed RRVWS project. Undersized infrastructure or inadequate water allocation could result in the inability to meet the demands of growing communities throughout the region.

EVALUATION OF EXISTING LOW-FLOW CONDITIONS

The data analysis included in the Red River Valley Water Needs Assessment, Phase 1 Part A is based on annual and monthly flow conditions in the Red River from 1931 to 1984. The City of Fargo cannot rely on average river flows based on monthly and/or annual data, due to a lack of natural (in-channel) raw water storage. If the river flow falls below adequate levels on a short-term basis, the City of Fargo would be unable to meet its daily water demands. Historical United States Geological Survey (USGS) daily flow data from 1902 to 2002 indicates that multiple individual days, and even 7-day periods, would yield "no flow" in the Red River. Certainly, the use of this data would better represent the actual shortfall that could be experienced by the City of Fargo, surrounding communities, and industries of the Red River Valley that rely on surface water. Therefore, the City of Fargo strongly urges that future hydrology work be based on no more than 7-day, preferably 1-day, low-flow data.

Furthermore, it is prudent to assume that data collected in the 1930's does not represent the worst-case drought conditions for the Red River Valley. This assumption is supported by personal accounts of Red River flow conditions, photographs from the early 1900's, academic research, and paleoclimatic information (tree ring data, lake and dune sediments, archaeological remains, etc.) presented on websites such as that administered by staff of the National Oceanic and Atmospheric Administration (NOAA) Paleontology Program. According to the NOAA Paleontology Program website, the paleoclimatic record indicates that 20th century droughts do not represent the possible range of drought variability and duration that have occurred in parts of North America as recently as 500 years ago, which suggests that Red River flows were potentially lower than that measured and recorded during the 1930s. Although it may not be reasonable to plan for a 500-year drought, this information suggests that no compromises can be made when planning for a drought similar to the 1930s.

When considering low flow conditions in the Red River, it is important that the RRVWS project impose peak day demand projections onto these conditions to estimate water supply shortages. Since peak day demands typically coincide with dry conditions, this would serve as the most appropriate set of circumstances with which to develop and evaluate alternatives proposed to

meet the water supply needs of the Red River Valley. The City of Fargo understands that the Bureau of Reclamation intends to utilize peak day demand projections under the RRVWS project in lieu of average day demand projections, as utilized in previous study work.

LIMITATIONS OF IN-BASIN FEATURES

The City of Fargo is concerned that in-basin alternatives could provide marginal benefit and would be insufficient to meet the comprehensive water quantity and quality needs of the Red River Valley. Various entities throughout the region have been involved in alternative water supply studies in recent years. These studies have considered similar concepts presently included in the in-basin alternatives. Based on the conclusions of these studies, the in-basin features and associated alternatives will likely have limitations as to their ability to meet future demands. A summary of these limitations is provided below.

Construction of Kindred Reservoir or Enlarging Lake Ashtabula

The construction of a new Kindred Reservoir or enlarging Lake Ashtabula could prove to be the most politically challenging features being considered in the RRVWS project. It could be expected that a significant number of stakeholders may have reservations or outright objection to the environmental and/or personal implications of constructing new reservoirs or raising the levels of existing regional reservoirs. It is the City's understanding that the Kindred Reservoir was not constructed in the past due to its limited benefits and the significant amount of public resistance presented by various stakeholders. Given the significant amount of existing and ongoing development in the Lake Ashtabula area, it would seem plausible that a similar level of public resistance could be put forth to stop the implementation of raising Lake Ashtabula based on the limited amount of benefit when compared to the anticipated exorbitant costs associated with this feature as well.

Ring-Dike Reservoirs

The ring-dike reservoir feature is burdened with multiple factors that have the potential to significantly limit their environmental, operational, and technical feasibility. The construction of ring-dike reservoirs would necessitate the acquisition of thousands of acres of premium agricultural property. Public resistance to the acquisition of agricultural and/or recreational property could become a major obstacle towards the successful implementation of this feature.

More importantly, there are a host of operational issues that should be considered when evaluating the technical feasibility of ring-dike reservoirs. The ultimate success of the ring-dike reservoirs would require that excessive spring runoff be retained for gradual use during ensuing water supply shortage periods. It is quite possible that a drought season would not be proceeded by the required amount of excessive runoff to adequately fill the ring-dike reservoirs. In addition, runoff is typically very turbid; therefore, the build-up of organic and inorganic solids in the base of the retention structures could also be expected to occur during the extended period of time over which the water is stored. The organic material would likely undergo anaerobic conditions and require aeration to control potential odor problems.. Unless controlled, algal blooms could also cause undesirable taste and odor problems that would require advanced water treatment processes and/or increased chemical dosage rates. Periodic dredging

of the inorganic solids would also be required to maintain the design capacity intended of the reservoirs. Overall water loss from the ring-dike reservoirs, as a result of evaporation and seepage, also has the potential to limit the ability of ring-dike structures to meet project objectives. Given these operational challenges, the ring-dike reservoir feature should be carefully evaluated for its technical feasibility.

Groundwater Supplies and Water Rights

The availability of groundwater resources are limited and are likely to become more limited as a result of both drought conditions and increasing interest in groundwater for its various uses. The awareness of limited groundwater resources has prompted a more conservative approach by the North Dakota State Water Commission (NDSWC) when considering the approval of groundwater permit applications. The level of shortages that could potentially be identified for the City of Fargo coupled with the NDSWC's conservative approach could ultimately require a series of wells spread over numerous sections of land. The number of wells and land requirements could be further exacerbated if the mandated well spacing necessitates the construction of wells in areas of aquifers with relatively low production rates. Conveyance via existing river channels could be complicated due to in-stream water quality limitations, evaporation, and channel losses. Furthermore, the water quality could ultimately require the construction of technologically advanced treatment processes to remove constituents that existing treatment processes are presently unable to remove. These issues could significantly limit the practicality of features related to the use of regional groundwater resources.

Artificial Aquifer Recharge

The City of Fargo is interested in studying the technical feasibility of artificial aquifer recharge. The identification of all groundwater resources as candidates for aquifer recharge and their respective amounts of available hydraulic storage capacity will be critical factors in the evaluation of this feature. For instance, how much aquifer storage is available for recharge in the West Fargo Aquifer that can be appropriated for use during a drought? Are there specific physical properties of aquifers (i.e. transmissivity, permeability, porosity, specific yield, etc.) that make them ideal candidates for recharge? If so, do the aquifers being considered meet or exceed these ideal parameters? The study should also consider the potential implications associated with introducing treated surface water to a groundwater source. Will the natural groundwater and the treated surface water be compatible with one another? Will additional treatment be required to make the waters compatible? Recognizing there may be others, these are a few of the obvious technical questions that will need to be addressed during the feasibility evaluation associated with this feature.

Reverse Osmosis to Treat Groundwater from the Dakota Aquifer

Water quality data has indicated that the Dakota Aquifer and other groundwater sources would be difficult to treat with existing conventional facilities due to water quality issues, thereby requiring desalination treatment. Physical aquifer characteristics, including porosity, permeability, transmissivity, and specific yield, remain to be investigated in great detail. These factors would ultimately determine well production rates, well spacing requirements, and costs associated with supplying water to the desalination facilities. It is likely that the desalination facilities would have the ability to treat regional groundwater sources to a quality within required standards; however, reverse osmosis

membranes are not necessarily a silver bullet treatment process. Naturally occurring water quality constituents can limit the applicability of membrane technology due to excessive scale formation potential and compounds that cause irreversible fouling of the membrane material.

If technically feasible, the desalination of groundwater would result in the generation of a substantial volume of waste concentrate (brine solution) that would require an environmentally acceptable disposal strategy. It is anticipated that direct discharge of the concentrate would be prohibited by the controlling environmental agencies, especially given the low-flow conditions in regional waterways during drought conditions that would be unable to dilute regulated parameters to acceptable levels on a mass balance basis. The concentrate disposal issue was not considered at the appraisal level of effort expended during the previous study.

Based on the potential limitations of the in-basin alternatives with respect to their ability to meet future water demands, the City of Fargo strongly urges the Bureau of Reclamation to consider eliminating the currently identified in-basin alternatives from further consideration. It would be difficult for the City of Fargo to justify significant financial support for the RRVWS project should it ultimately be based on alternatives displaying potentially limited ability to meet the long-term water quantity and quality demands of the City of Fargo and surrounding region. Unless a much more reliable in-basin alternative is identified compared to those identified to date, the City of Fargo could better justify support for an alternative based on the technical feasibility and relative assurance of sustainability offered by the inter-basin import alternatives.

ADVANTAGES OF INTER-BASIN IMPORT ALTERNATIVES

The City of Fargo strongly encourages the Bureau of Reclamation to concentrate future efforts on the inter-basin import alternatives. The Missouri River offers a reliable water source of improved water quality when compared to the surface waters of the Red River Basin. The Red River Valley has been promised 100 cubic-feet-per-second (cfs) of Missouri River water to provide for future water needs. However, there is concern as to whether the additional 100 cfs of imported water will be sufficient to meet the future needs of the City of Fargo and surrounding region, as alluded to in previous topics discussed in this document. With respect to water quality, Black and Veatch Corporation, a national engineering consulting firm, has worked with the City of Fargo to complete a study on the relative cost of treating Missouri River water as compared to Red River water. The report concluded that the Missouri River water could be treated for approximately 50 percent less than the current water source. Benefits such as these would prompt the City of Fargo to support a long-term investment in an appropriate share of a recommended RRVWS project alternative.

BIOTA TRANSFER

Although the City of Fargo understands the biota transfer issue, the City does not feel that the issue should be a limiting factor for the consideration of the inter-basin import alternatives. Biota treatment facilities implementing multiple barrier technology could be utilized to mitigate potential environmental impacts of inter-basin water transfer. It is anticipated that cost-effective alternatives are available to address reasonable environmental concerns of inter-basin biota transfer.

It should also be noted that the order of magnitude of risk associated with inter-basin biota transfer could be considered much lower with an engineered system than by other human related or natural transfer methods. The risk of inter-basin biota transfer to occur in association with recreational boating, "bait-bucket" transfer, or migratory waterfowl should be assessed and compared against the risk of biota to circumvent a multiple barrier treatment facility.

NEEDS OF NEIGHBORING MINNESOTA WATER SYSTEMS

Continuing the RRVWS project study effort without considering the water needs of neighboring Minnesota cities and existing/potential major water users could ultimately result in failure of the RRVWS project to meet its intended objectives. On average, the tributaries in Minnesota contribute approximately 75 percent of flow in the Red River. Therefore, future municipal and/or industrial development in Minnesota could potentially decrease available Red River flows by increasing demands on major contributing tributaries. Regardless of whether the DWRA specifically includes Minnesota water demands, communities such as Moorhead and East Grand Forks concurrently use water supply sources with Fargo and Grand Forks, respectively. As a result, there could be a potential legal conflict pertaining to differing water laws between North Dakota (Western Water law) and Minnesota (Riparian Water Law).

The Moorhead City Council has passed a resolution officially requesting that the City be included in the RRVWS project. The Mayor of Moorhead further noted that the future needs and potential shortages of the City of Moorhead have been included in previous studies by the Bureau of Reclamation. Via the inclusion of Minnesota water needs, the study effort would more accurately show supply availability, would more prudently estimate water demands, and could ultimately be better received by various agencies and/or individuals presently serving on the Technical Team and Study Review Team. It would also broaden the population base upon which to spread the costs of the RRVWS project, thereby improving the proposed project's level of feasibility.

Population Data:

Year	Population
2001	92,410
2000	90,599
1999	88,128
1998	86,935
1997	85,358
1996	83,822
1995	82,442
1994	80,924
1993	79,164
1992	77,558
1991	75,883
1990	74,111
1989	72,660
1988	71,230
1987	69,836

Future Population Projections:

Year	Population
2010	110,085
2020	134,193
2030	163,580
2040	199,404
2050	243,072

Approximately 2 percent per year

Supplemental Water Use Information					
Year	Population[1]	Percent Unaccounted for Losses (Metered vs. Treated)[2]	Annual Treated Water (gpcd)[3]	Estimated Annual Raw Water Diversion (gpcd)[3,4]	Peak Day Diversion (gpcd)[3]
2001	92,410	7.3	112.5	125.1	231.6
2000	90,599	9.8	114.5	127.3	239.5
1999	88,128	16.1	122.3	135.9	225.8
1998	86,935	18.6	132.4	147.2	240.4
1997	85,358	20.7	129.4	143.7	226.1
1996	83,822	18.2	136.3	151.5	NA
1995	82,442	14.0	129.4	143.8	NA
1994	80,924	11.3	131.1	145.7	NA
1993	79,164	17.4	122.6	136.2	NA
1992	77,558	16.4	124.3	138.1	NA
1991	75,883	19.5	135.2	150.2	NA
1990	74,111	21.3	144.9	161.1	NA
1989	72,660	NA	151.0	167.8	NA
1988	71,230	NA	158.2	175.8	NA
1987	69,836	NA	152.8	169.8	NA

[1]Based on data presented in the population section.

[2]Based on data presented in Historic Raw and Treated Water Use Data table above.

[3]Based on data presented in table above and population data (gallons per capita per day)

[4]Calculated based on an estimated 10 percent loss prior to metering Annual Treated Water at WTP

Notes regarding historic raw and treated water use and supplemental data:

1. Prior to 1997, the Fargo Water Treatment Plant was aware of a relatively large discrepancy between the raw and treated meter readings.
2. The transition from the old water treatment plant to the new water treatment plant took place in 1997. For nearly a year and half since that time, the annual treated water value substantially exceeds the annual raw water diversion value because water used in the treatment process was not being metered.
3. Since 1999, the process water has been metered at the water treatment plant, which results in a much better correlation to the raw water and treated water meter values calculated as follows:
   a. Annual Raw Water Diverted = Raw Water Meter Reading
   b. Annual Treated Water = Treated Water Meter Reading - WTP Process Water Meter Reading
4. As shown in the Supplemental Water Use Information table, water use rates during dry years (1987-1991) tend to increase substantially.
5. Although the information is unavailable due to lost records, it would be reasonable to assume that peak day diversion values during dry years (1987-1991) would be considerably higher than those presented for wet years (1997-2001).

TECHNICAL COMMENTS
POPULATION PROJECTIONS
RED RIVER VALLEY WATER SUPPLY PROJECT
BY
CITY OF FARGO
June 20, 2003

CITY OF FARGO POPULATION PROJECTIONS

Population projections for the City of Fargo as part of the Red River Valley water supply studies have been a much-discussed subject since the multiple phase needs assessment was initiated and completed by the Bureau of Reclamation (BOR) in the 1990's. In the Red River Valley Water Needs Assessment Phase II; Appraisal of Alternatives to Meet Projected Shortages, the BOR presented a 2050 projected population for Fargo ranging from 192,600 to 243,072 people. The lower number of 192,600 people was labeled the "Reclamation projection" and was based on an annual growth rate of 1.6 percent from the 1990 census population to 2050. The higher number of 243,072 people was labeled the "participant projection" and was based on an annual growth rate of 2 percent from the 1990 census population to 2050. The 2 percent per year growth rate for Fargo stems from multiple planning efforts. This percentage has been used by the City of Fargo to project the life of the existing water treatment plant in terms of capacity. This percentage is also being used by the Fargo Planning office as a basis for much of its planning efforts.

The actual population for the City of Fargo for 2000 as estimated by the United States Census Bureau was 90,599 people. If one compares this number to the 1990 census population for Fargo of 74,111 people, the compounded annual growth rate for the City equaled 2.03 percent. In other words, the growth rate of 2 percent per year, as supported by the City of Fargo, would have resulted in a projected population error from the 1990 census to 2000 of only 258 people. Furthermore, the Fargo projections were low. Conversely, applying the 1.6 percent per year growth rate supported by the BOR to the 1990 census population results in a 2000 population for Fargo of only 86,860 people, which is 3,739 less than the actual population. As a result, the more aggressive growth rate appears to have provided a much more accurate projection for the City of Fargo for the last decade.

The City of Fargo has completed a preliminary review of two population projection documents for the Red River Valley Water Supply (RRVWS) studies. These documents include Current and Future Population of the Red River Valley Region 2000 through 2050, (BOR, Draft May 2003) and Population Projections for Red River Valley Counties and Municipalities, 2000 through 2050, (Northwest Economic Associates, May 23, 2003). Specific comments regarding both of these documents are presented in the later sub-sections of this document.

In general, it was noted that the City of Fargo population projections as discussed in our public scoping comments of January 2003 (copy of comments attached) and provided to Houston Engineering Inc. (copy of projections attached) as part of the data collection process were not included and discussed in the population projection documents as one source of population projection data. It was also noted that the new projections did not present population projections based on trend analysis and compare the associated results with other population projection methodologies. It is recognized that trend analysis is a rather simplistic population methodology that relies upon a future continuation of past trends. With this in mind, it also must be recognized that it is hard to argue with the relative success of this methodology for the City of Fargo.

Since 1980, the City of Fargo has grown at a compounded rate of slightly less than 2 percent per year. Estimated population growth since the 2000 census continues to support a similar growth rate. Job growth development has included some very large national and international corporations, and these large corporations are increasingly showing interest in the City. In fact, Forbes recently ranked Fargo as the 5th best small place in the nation for businesses and careers, up from last year's ranking of 21st.

Additional support for aggressive population growth exists. Annexation, land development, and housing starts continue at a rate similar to the population growth of 2 percent per year. The City has an outstanding primary and secondary school system and excellent medical facilities. North Dakota State University (NDSU) is rapidly growing under its strategic plan, including significant expansion of its research centers and transition to Division 1 athletics. NDSU, along with Minnesota State University-Moorhead, Concordia College, and several technical and trade schools, are a significant draw for the younger population, and Fargo's population is aging at a rate slower than that of the national average. Fargo has a low cost of living relative to other metropolitan areas in the country, a low crime rate, and an overall high quality of life. These positive factors must be considered when projecting future population growth, particularly if the projections are to be used to support securing a reliable long-term water supply.

In general, it was also recognized that both the BOR and Northwest Economic Associates relied heavily on the Cohort method for population projections. The Cohort method utilizes anticipated fertility, mortality, and net migration for specific population cohorts to project future population. The documents acknowledge that "The migration component of a cohort component model is often the component that is most difficult to estimate." The Cohort projections completed by both parties looked only at zero migration and trend migration. The City of Fargo must question the use of this methodology if more aggressive migration rates are not going to be considered. Based on the positive growth dynamics within the City of Fargo, a third migration component based on future increasing net migration seems prudent. The United States Census Bureau reports a net migration for Cass County of 7,517 people from 1990 to 1999. The Cass County Immigration Factsheet from the Federation for American Immigration Reform (FAIR) reports that "In 2000, the Census recorded that nearly three-quarters (72.4%) of the metro area's foreign-born population had arrived since 1990. The 2000 data showed an increase of 124.7 percent in the immigrant population since 1990.....That meant that immigration accounted for nearly 10.8 percent of the overall population increase in the County." The City of Fargo has maintained that the RRVWS projections need to include some form of positive outlook for populations in the future. Expanding the Cohort method analysis to include a third migration scenario would seem to be a reasonable request and technically sound technique for accomplishing this objective.

POPULATION PROJECTIONS BY THE BUREAU OF RECLAMATION

Based on a preliminary review of Current and Future Population of the Red River Valley Region 2000 through 2050, (BOR, Draft May 2003), the following comments and questions were developed in the order of appearance in the document:

1. According to the Needs Assessment Specific Plan of Study, it was understood that the participant population projections would be included in this document as one of the projection methods. These projections were then to be discussed in the document and presented along with the projections developed from other sources.
2. The stabilization of the decline in some of the rural counties supports using a stable population for these counties and associated municipalities when projected growth cannot reasonably be supported. This approach was also considered reasonable during the Phase I and II needs assessments completed by the BOR.
3. There appears to be an error in the 1960 Grand Forks population in Table 1.
4. The recognized difficulty in predicting migration rates supports including a third migration trend with increasing migration rates as discussed above, especially given the wide range of possibilities over a 50-year planning horizon.
5. Although the BOR work focused on the first three population projection techniques presented in the document, some consideration of the impacts of the significant economic development within Fargo and the region should be considered when developing the population projections. Presenting a range of population projection scenarios may also be advisable until the sensitivity of the population projections on the ultimate preferred water supply alternative is better understood.
6. Why was a linear trend used to extend the North Dakota Data Center and Minnesota Demographic Center population projections forward to 2050 for all counties? It would seem more appropriate to use best fit curves for counties such as Cass County, which have more of an exponential growth rate than a linear one.
7. Why was trend analyses used for the counties but not the municipalities? Trend analysis is a recognized, albeit simplistic, method for projecting populations. Including trend analysis for the larger municipalities such as Fargo and Grand Forks as another projection technique would seemingly help to gauge the reasonableness of the Cohort projections.
8. As noted in comment 6 above, utilizing a best fit curve for extending the United States Bureau of the Census county estimates would seem more appropriate than a simple linear trend model for some of the counties with an established exponential growth trend.
9. It is agreed that the Census trend estimates are not very realistic for counties that have had a consistently decreasing population since 1960.
10. The reference to the migration rates from the FAIR needs to be confirmed.
11. Better documentation and explanation needs to be provided for the state current and future migration patterns estimated by the United States Bureau of Census, Department of Commerce. Are the state migration rates appropriate for the Red River Valley? What projected migration rates were used for Cass and Grand Forks counties?
12. A better explanation needs to be provided regarding which projection methodologies were used for each municipality within the study area. The existing paragraph is clear for communities specifically mentioned, but the basis for other communities is unclear.

13. How will the BOR determine the appropriate population projection for each county and municipality given the range that is created from the BOR, Northwest Economic Associates, and participant projections?
14. The suggestion of using the demographic modeling technique with the highest projections for each county and municipality seems reasonable given the uncertainty of the projections and the importance of securing a reliable long-term water supply for the region.

POPULATION PROJECTIONS BY NORTHWEST ECONOMIC ASSOCIATES

Based on a preliminary review of Population Projections for Red River Valley Counties and Municipalities, 2000 through 2050, (Northwest Economic Associates, May 23, 2003), the following comments and questions were developed in the order of appearance in the document:

1. It is surprising that the BOR directed Northwest Economics Associates to use the Cohort component method for population projections and also dictated which migration trends would be used in the analysis. Given this direction, are the Northwest Economics Associates population projections truly an independent effort or are they more of a verification effort of the BOR work?
2. Shouldn't Northwest Economics Associates have been allowed to consider trend analysis and participant projections along with any other appropriate methodologies and data to develop their independent population projections?
3. Once again, a third migration component utilizing an increasing migration rate would be prudent.
4. What is the basis for population increases due to migration that decreases with time? Is this true for the City of Fargo and Cass County to the same extent as other municipalities and counties with growth within the region?
5. Was sufficient consideration given to migration from outside of the region for Fargo and Cass County?
6. The forces that affect migration cited in the documents, such as job growth, housing availability, schools, farm policy, availability of healthcare, and the changing preferences of the age cohort that tends to dominate migration all are a positive for Fargo, with the possible exceptions of farm policy and the age cohort issue. Over time, Fargo has become much less reliant on the farm policy issues, helping to negate this force. In addition, concerted efforts to attract and retain the dominant age cohort will likely benefit Fargo in the future as well.

Population and Water Demand Projection Issues

Red River Valley Water Supply Project

Public Meeting

Ramada Plaza Suites

1635 42nd Street SW

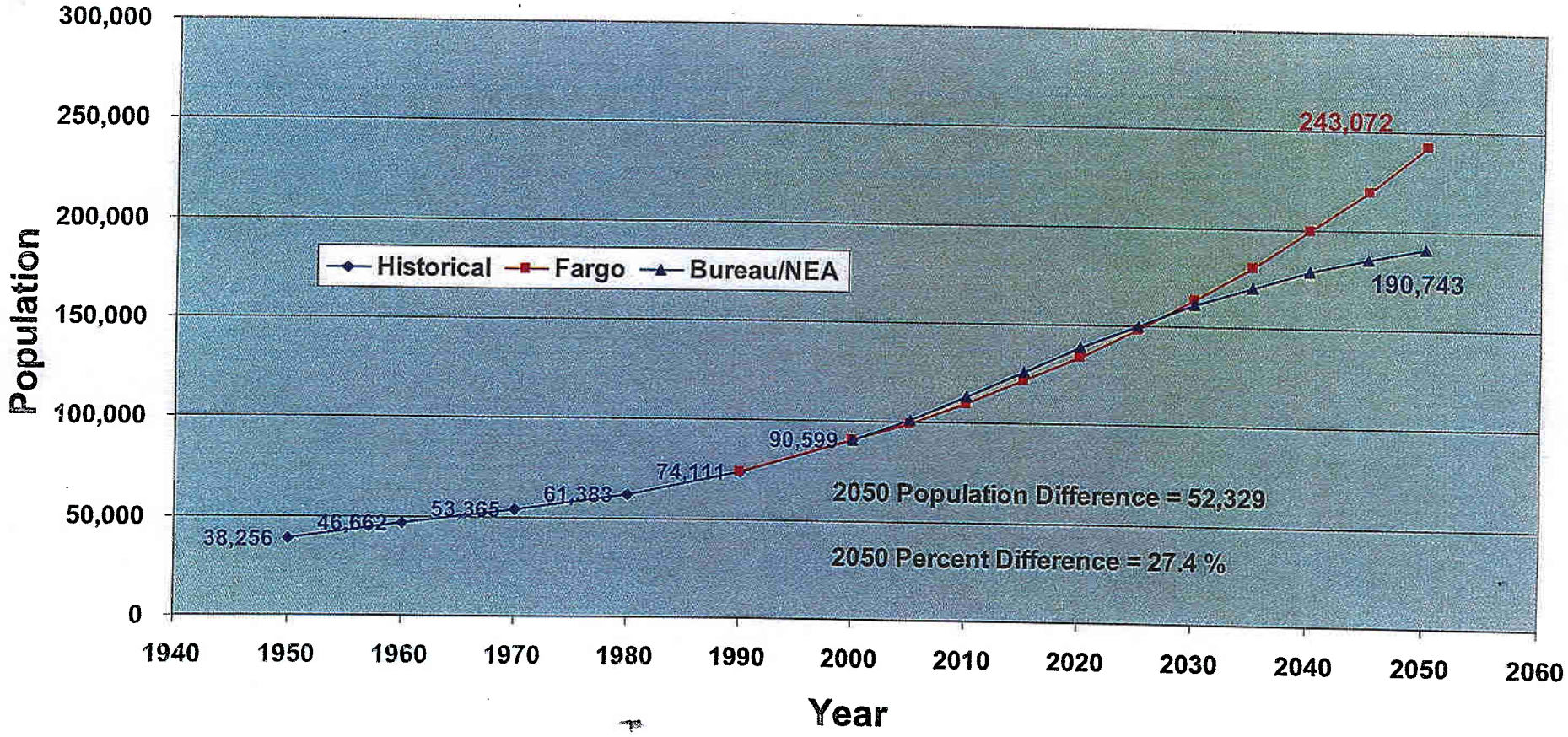
Fargo, ND

June 25, 2003 7:00 p.m.

CITY OF Fargo

AE2S

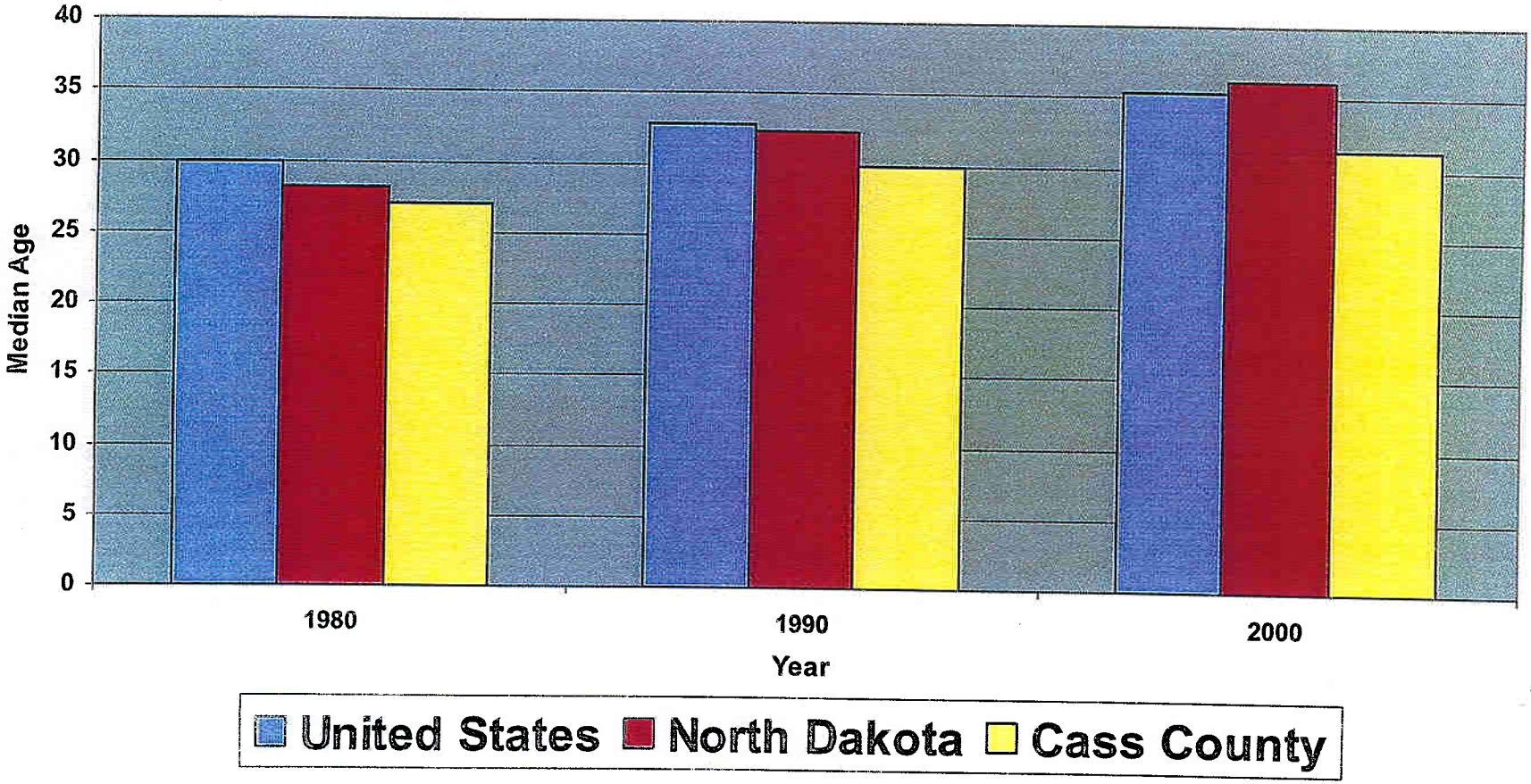
Population Projection Summary
City of Fargo



CITY OF Fargo

AE2S

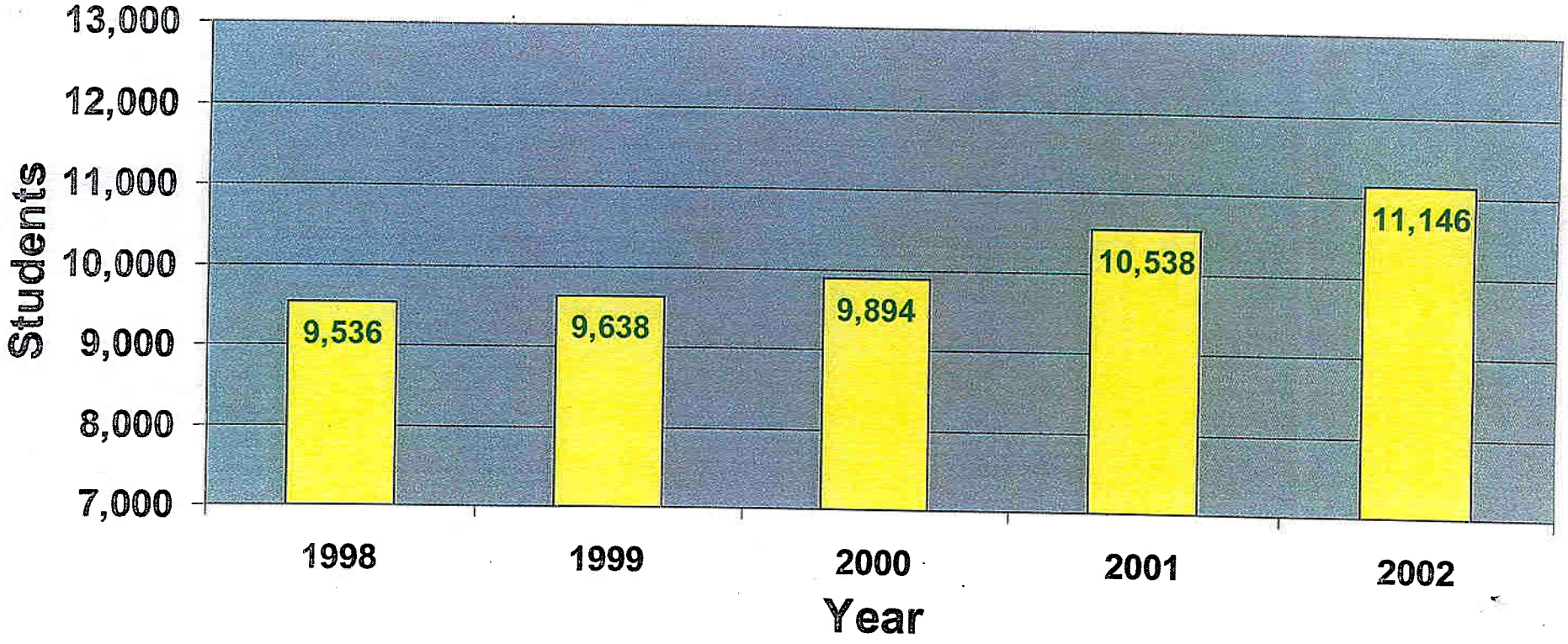
Median Age Comparison



CITY OF Fargo

AE2S

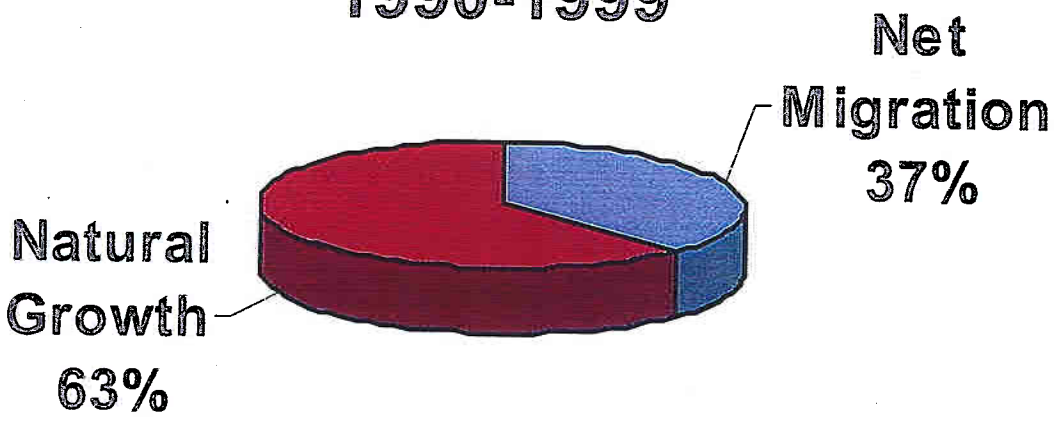
NDSU Total Enrollment Figures
(Undergraduate & Graduate)



CITY OF Fargo

AE2S

Cass County Components of Population Growth 1990-1999



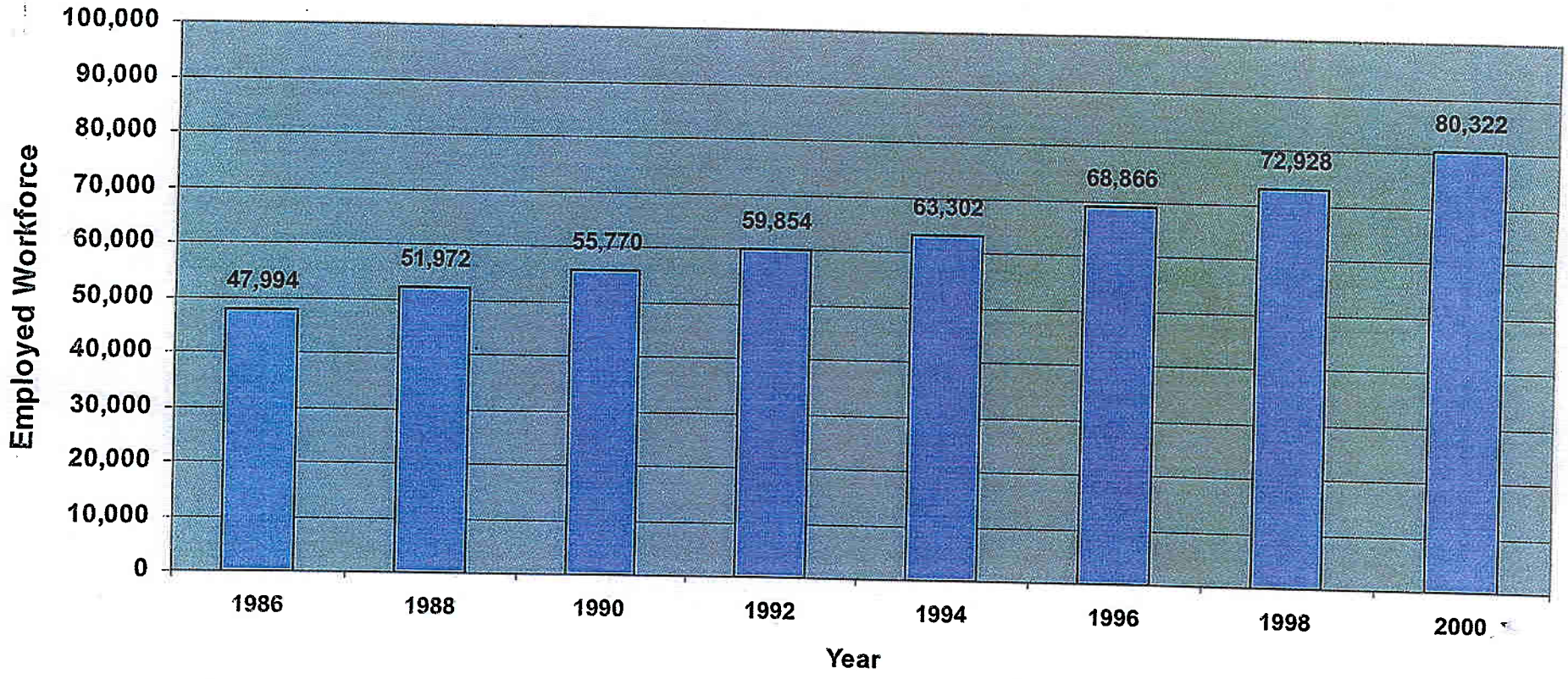
- The 2000 Census recorded that nearly three-quarters (72.4%) of the metro area's foreign-born population had arrived since 1990.
- The 2000 data showed an increase of 124.7% in the immigrant population since 1990.
- The 2000 Census recorded that foreign-born residents represent 3.2 percent of the overall Cass County population.
- Immigration was the second largest source of population change in 2002.

from "FAIR" – Cass County Immigration Factsheet

CITY OF Fargo

AE2S

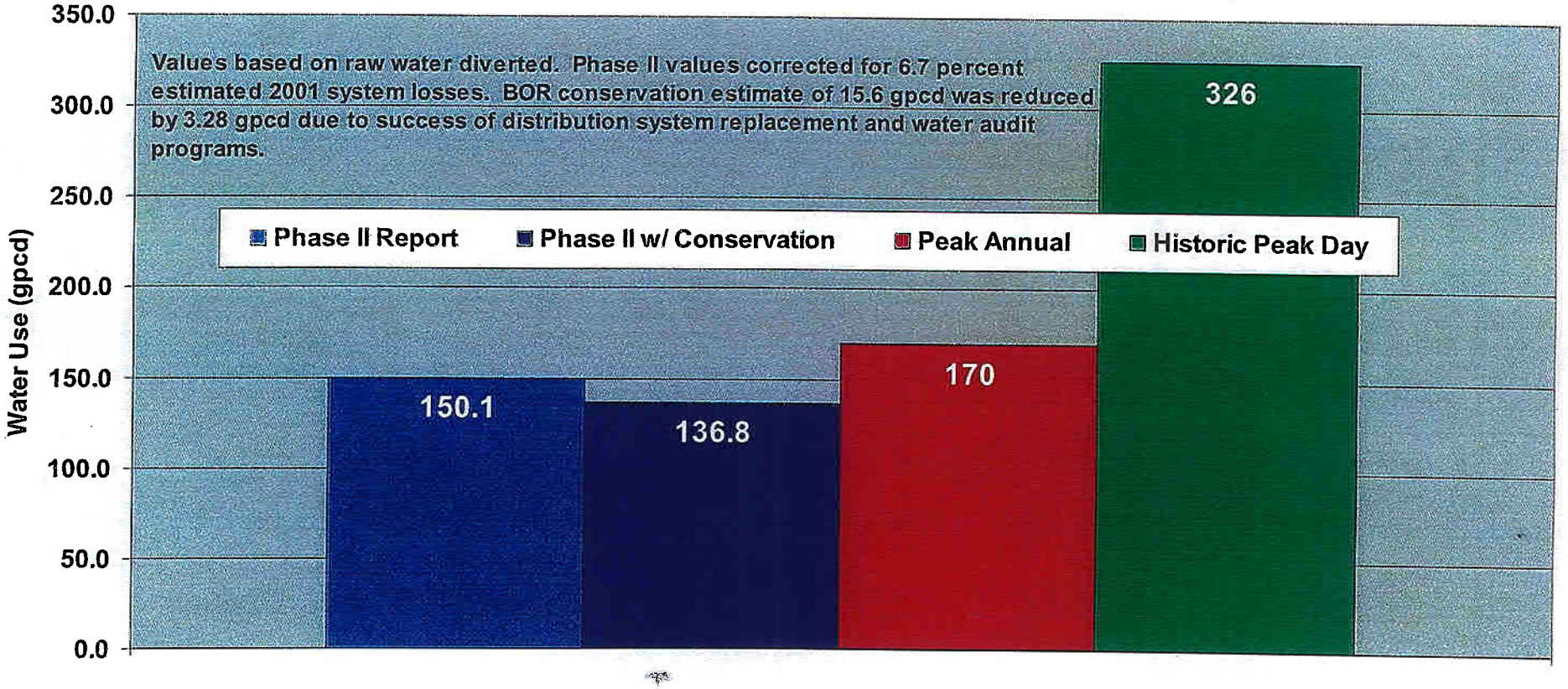
Total Employment Figures
City of Fargo



CITY OF Fargo

AE2S

Range of Potential Water Use Rates
City of Fargo



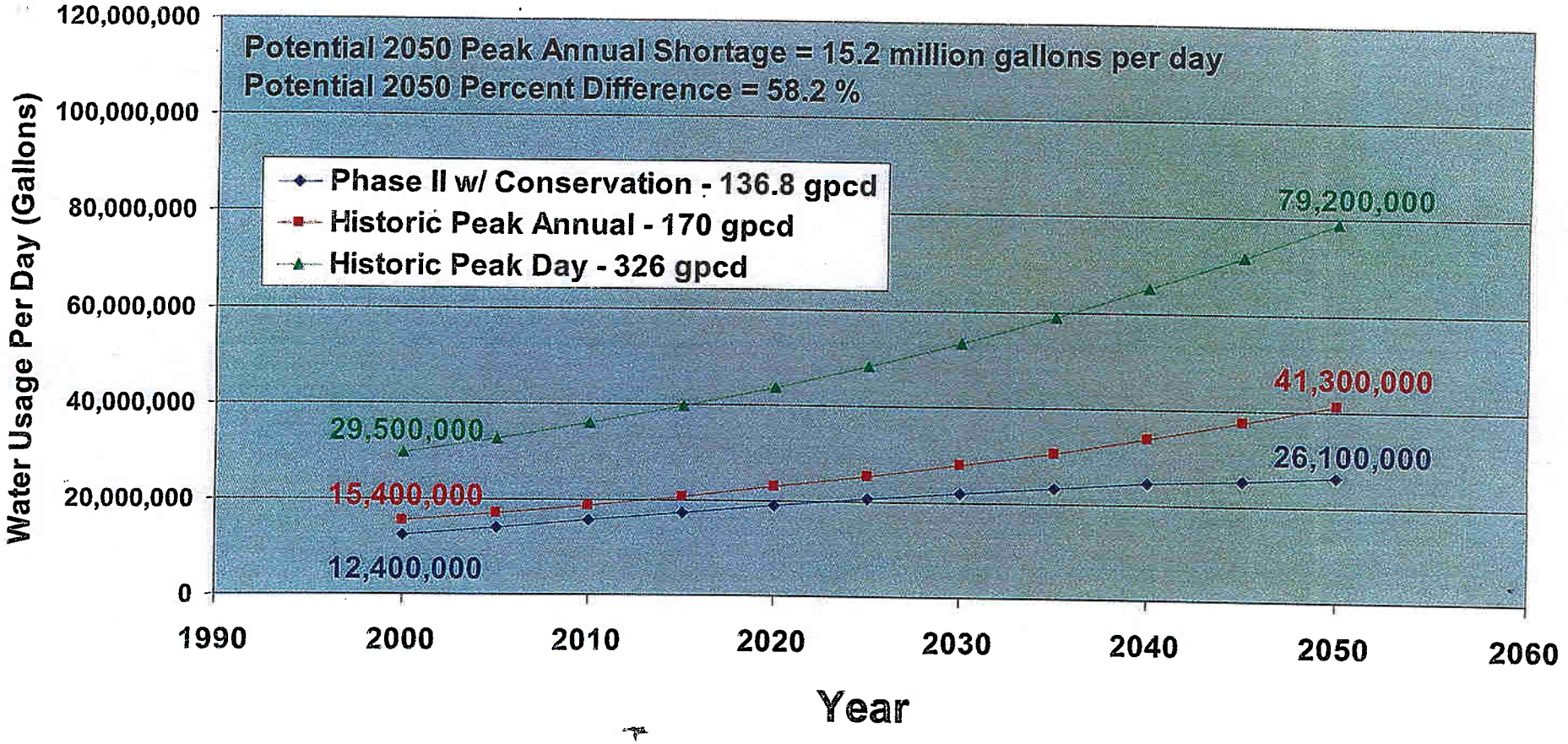
CITY OF Fargo

AE2S

Bureau of Reclamation Has Overestimated Fargo's Water Conservation Potential.

- Did not recognize recent decreased water loss data.
- Optimistic saturation of low-flow plumbing fixtures.
- Underestimated cost of xeriscaping.
- Assumed no cost for industrial, commercial, and institutional water use measures.

City of Fargo Water Usage Rate Disparities Based on Population Projection and Conservation Estimates



CITY OF Fargo

AE2S

MOORHEAD
MINNESOTA
500 Center Avenue, Box 779 • Moorhead, MN 56561
(218) 299-5301 • TDD: (218) 299-5370
www.ci.moorhead.mn.us

June 25, 2003

Ms. J. Signe Snortland
Environmental Specialist
U. S. Bureau of Reclamation
P. O. Box 1017
Bismarck, ND 58502-1017

RE: Red River Valley Water Supply Project Population Projections for the City of Moorhead, Minnesota

Dear Ms. Snortland:

Thank you for the opportunity to provide comments at the June 25, 2003, public information meeting concerning the Red River Valley Water Supply Project Environmental Impact Statement (EIS). The City of Moorhead would appreciate that the comments from the City of Moorhead at the June 25, 2003, meeting, and this letter and attachments be included in the record and taken under consideration for the Red River Valley Water Supply Project EIS. Moorhead hopes that the following request is strongly taken into consideration.

The City of Moorhead encourages the U. S. Bureau of Reclamation to correct the population projections for the city of Moorhead, Minnesota. The Bureau of Reclamation (Bureau) has facilitated a number of projection studies, and due to low historic growth rate for Moorhead over the past few decades, the Bureau of Reclamation's projected population for Moorhead in 2050 is extremely low. While the 2000 census lists Moorhead's population at 32,177, the Bureau's population projection for 2050 is estimated at 35,360. Recent planning initiatives, infrastructure improvements, and growth trends all suggest an increased growth rate for Moorhead, which would be supported by the general population increase in the Fargo-Moorhead metropolitan area.

The City of Moorhead has received and reviewed the draft Red River Valley Water Supply projections for municipal and county populations for the year 2050. We understand the City of Fargo is projecting an increase of a 2 percent growth rate per year though the Bureau has projected Fargo's population growth rate at 1.2 percent. The Bureau also supports the City of West Fargo's population growth rate at 1.2 percent as determined by statistics provided by the Fargo-Moorhead Metropolitan Council of Governments 2003 Metropolitan Surveillance and Monitoring Report (June 2003).

Fargo/Moorhead
All-America City

Moorhead has a 2000 census of 32,177 and the Bureau of Reclamation's new 2050 population projection has Moorhead growing by approximately 3,000 people in 50 years (almost no growth!), although in the Bureau's Phase 2 study of the Red River Valley Water Supply Assessment had Moorhead's population at 41,758. The latter appears more accurate, yet we believe the population will be even stronger than this.

We would like you to consider that the City of Moorhead supplies water to Oakport Township and Americana Estates—approximately 550 residences that are not included in the projections. These areas will be annexed into the city of Moorhead by 2015.

Moorhead is experiencing strong growth due to legislative and community infrastructure improvements. Legislative changes several years ago lowered the effective tax rate (commercial/industrial properties) of various Minnesota border cities. This, coupled with the state's recent property tax reform, has lowered the effective property tax rate such that it now approximates Fargo's, which historically maintained a competitive advantage through its lower tax rates.

Moorhead's infrastructure is being prepared for future growth. To accommodate and further encourage growth, the community approved bonds in excess of $24 million to serve an additional 3,000 acres of land with municipal infrastructure. Also, the Moorhead School District is investing $64 million for school facility construction and rehabilitation, with two new schools being built in the city's high-growth areas. Additionally, the City of Moorhead has invested substantial resources in redeveloping its downtown, and we are expecting to release a downtown redevelopment request for proposals next month. To help guide and direct this growth, the Mayor and City Council have recently approved the development of a Comprehensive Plan Update and Housing Market Study.

Over the past two years, Moorhead has experienced a rate of growth that it has prepared to sustain. The growth rate for 2002 is up 137 percent over 2001 (a typical year). In 2002, Moorhead saw 493 new housing units constructed. Moorhead has 20 active new housing neighborhoods with more than 500 single-family lots available, ranging from entry level at $6,000 per lot to executive at $94,900 per lot. At the current absorption rate, lots available are just over a two-year supply. Comparatively, Fargo and West Fargo combined have 20 active subdivisions.

Officials in Moorhead believe that these facts point to a much higher growth rate than we've experienced in the past. Moorhead is ready for development, the metropolitan region will grow, and this growth will not be exclusive to Fargo, North Dakota. The City of Moorhead has 3,000 acres—or 25 years of growth area—which has infrastructure ready for development. At four residences per acre, those 3,000 acres will support 15,000 to 25,000 in additional population within the next 25 years. This projected growth rate closely approaches that of the city of Fargo. The City of Moorhead has 20 active subdivisions, which are identical to Fargo this current year.

The core, new infrastructure in Moorhead is in place for future development. The City of Moorhead has currently expended $24 million in wastewater service improvements and an additional $20 million in recent electric and water improvements. The City is also prepared to

begin constructing new additions and the corresponding street and other necessary requirements for the new developments.

We have regional partners to support our growth. Staff from the City of Moorhead and Clay County continue working together to improve our infrastructure and further our community's economic development efforts in order to prepare for future growth.

Others are noticing and also believe Moorhead's growth rate is strong. Attached is the Official Statement for the City of Moorhead's General Obligation Improvement Bonds, Series 2003B, for infrastructure improvements. This statement shows the general facts that are outlined above. We have also included Moody's Investor Service findings that support increased growth within the city of Moorhead. One of the findings indicates that Moorhead's population will increase by one-third within the next 25 years. This represents a 1.2 percent rate of growth, which Moorhead believes is more appropriate for use by the Bureau of Reclamation.

Considering our current rate of growth and the demographics that are supported by Richard Rathge, Ph.D., Professor and Director, North Dakota State Data Center and the Metropolitan Area Council of Governments, the City of Moorhead requests that the Bureau of Reclamation use population projections for the City of Moorhead based on a 1.2 percent annual growth factor as outlined in the letter from the demographer of the North Dakota State Data Center and the Fargo-Moorhead Metropolitan Council of Governments for the metro area. Using the numbers for the 2000 census of 32,177, Moorhead's new 2050 population projection would be 58,421 for 2050. We respectively request that the population projection of 58,421 be used for Moorhead in 2050.

In conclusion, I would like to thank you for the opportunity to provide this information and would like you to strongly consider our request to use 58,421 for Moorhead's population projection for 2050. If you need any additional information, please do not hesitate to call me.

Sincerely,

Mark Voxland
Mayor

NDSU NORTH DAKOTA STATE UNIVERSITY

Department of Agribusiness and Applied Economics
P.O. Box 5636
Fargo, ND 58105-5636

701.231.7441
Fax 701.231.7400
con-econ@ndsuext.nodak.edu

June 25, 2003

Scott Hutchins
Director Community Services
City of Moorhead
500 Center Avenue Box 779
Moorhead, MN 56561

Dear Scott,

This letter is in response to your request to review population projections compiled by the U.S. Department of Interior, Bureau of Reclamation and sent to Bruce Messelt, Moorhead City Manager in a memo from Bill Schwandt dated June 10, 2003. The projections were compiled for consideration in determining Red River water supply for the year 2050.

The projection series outlined by the Bureau of Reclamation offer various scenarios and sources. One of the sources was my office at the North Dakota State Data Center. We were contracted by the Cass-Clay Metropolitan Council of Governments (COG) to develop population projections for the metropolitan transportation plan in the winter of 2001. The numbers cited in the document are extrapolations from those projections. They were based on a cohort component projection technique using baseline data from the 2000 Census. Data on births and deaths were obtained from vital statistics using a 3-year average surrounding the year 2000. A 10-year trend line from 1990 to 2000 was used in calculating age-specific migration trends. These assumptions and methodological procedures were reviewed and accepted by representatives from each of the jurisdictions involved in COG and are available for review in their minutes.

Several observations are important to bring to your attention. First, the population projections for the metropolitan area were developed as a whole. The accuracy of projecting the metropolitan area is much better than each individual jurisdiction separately because the error estimates for a large area are much smaller compared to those of each jurisdiction. More importantly, the metropolitan area should be viewed as one unit. Decisions to move within the metropolitan area are quite variable and can change quickly due to various factors (e.g., taxes, housing availability, changes in neighborhoods, interest rates, etc.). It was this reasoning that led the representatives in COG to use an allocation method to divide the population within the metropolitan area into jurisdictions. Therefore, the distribution among jurisdictions is subjective. This is an important point because historical trends are not very useful in predicting what factors will influence the movement of people within the metropolitan area between now and 2050. More useful predictors are short and long-term planning initiatives, annexation plans, and current development activities. In short, you will find more consistency in population projections for the metropolitan area than you will for the corresponding jurisdictions. For example, the difference between our projection for the metropolitan area and that made independently by the Census

NDSU is an equal opportunity institution.

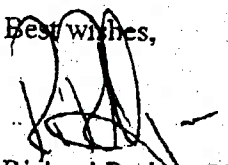
Bureau is less than 4 percent for the year 2050 (i.e., 247,141 vs. 256,911). However, the population projection for Clay county by the Census Bureau is 20 percent higher than our projection.

A second observation I need to bring to your attention is the different type of scenarios provided in the document. Two of the scenarios relate to zero migration assumptions and the other two relate to different migration trend assumptions. These scenarios should be used as context or as a guide to suggest meaningful ranges within which the projections are likely to lie. The zero migration assumption is useful because it offers you insight into how the area will naturally grow because of the net difference between births and deaths. In other words, if the boarders were sealed and no one could either enter or leave, what would the metropolitan area look like in the year 2050? Obviously, this is an absurd assumption but it does offer important context. Similarly, the remaining two alternatives simply look at very different migration assumptions which may be viewed as high and low scenarios.

Finally, I think it is extremely important to consider the purpose of the population projections. In this case, it is for determining potential water use. I think prudent policy would recognize that the greatest amount of error is in the distribution of the population between jurisdictions rather than overall size of the metropolitan area. Therefore, a policy that recognizes the growth potential in each jurisdiction and yet is constrained by an overall growth of the metropolitan area is wise. In brief, one should not assume that Moorhead will grow at its historic low levels and that the lion share of the metropolitan growth will be in Fargo. Rather, one should assume that the overall growth in the metropolitan area will reach somewhere around 250,000 and the distribution between Cass and Clay counties can be quite variable.

If you have any questions regarding my comments, please contact me.

Best wishes,



Richard Rathge, Ph.D.
Professor and Director
North Dakota State Data Center

OFFICIAL STATEMENT DATED APRIL 16, 2003

NEW ISSUES

Ratings: Requested from Moody's Investors Service

In the opinion of Ohnstad Twichell, P.C., Bond Counsel, on the basis of laws in effect on the date of issuance of the Bonds, interest on the Bonds is not includable in gross income of the recipient for federal income tax purposes or in taxable net income of individuals, estates and trusts for Minnesota income tax purposes, but is includable in taxable income of corporations and financial institutions for purposes of the Minnesota franchise tax (see "Tax Exemption" herein).

City of Moorhead, Minnesota

$12,050,000
General Obligation Wastewater Revenue Bonds, Series 2003A
(the "Series 2003A Bonds")

$12,775,000
General Obligation Improvement Bonds, Series 2003B
(the "Series 2003B Bonds")

(collectively referred to as the "Bonds," the "Obligations" or the "Issues")

(Book Entry Only)

Dated Date: May 1, 2003

The **Series 2003A Bonds** will bear interest payable on May 1 and November 1, commencing November 1, 2003 and will mature November 1 as shown on the inside front cover.

The **Series 2003B Bonds** will bear interest payable on February 1 and August 1, commencing February 1, 2004 and mature February 1 as shown on the inside front cover.

The Bonds will be general obligations of the City for which the City pledges its full faith and credit and power to levy direct general ad valorem taxes. Additional sources of security are described more fully herein. Proceeds of the Series 2003A Bonds will be used to finance infrastructure improvements to the City's wastewater utility system. Proceeds of the Series 2003B Bonds will be used to finance street and wastewater infrastructure improvement projects throughout the City.

Separate proposals for not less than the amounts shown below must be submitted for each Issue, along with a certified or cashier's check or a Financial Surety Bond, payable to the order of the City. Rates shall be specified in integral multiples of 5/100 or 1/8 of 1% and must be in level or ascending order. The Bonds will be awarded on the basis of True Interest Cost (TIC). The purchaser will be required to certify compliance with this requirement.

	Minimum Bid	Good Faith Deposit
Series 2003A Bonds	$11,869,250	$120,500
Series 2003B Bonds	12,551,438	127,750

The Bonds will not be bank-qualified tax-exempt obligations pursuant to Section 265(b)(3) of the Internal Revenue Code of 1986, as amended, and will not be subject to the alternative minimum tax for individuals.

The Bonds will be issued as fully registered Bonds without coupons and, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC"). DTC will act as securities depository of the Bonds. Individual purchases may be made in book entry form only, in the principal amount of $5,000 and integral multiples thereof. Investors will not receive physical certificates representing their interest in the Bonds purchased. (See "Book Entry System" herein.) US Bank National Association, St. Paul, Minnesota will serve as registrar (the "Registrar") for the Bonds and the City will pay for registration services. The Bonds will be available for delivery at DTC on or about May 22, 2003.

PROPOSALS RECEIVED: April 28, 2003 (Monday) until 12:00 Noon, Central Time

AWARD: April 28, 2003 (Monday) at 5:30 P.M., Central Time

SPRINGSTED
Advisors to the Public Sector

Further information may be obtained from SPRINGSTED Incorporated, Financial Advisor to the Issuer, 85 East Seventh Place, Suite 100, Saint Paul, Minnesota 55101 (651) 223-3000

GENERAL INFORMATION CONCERNING THE CITY

The City of Moorhead is located on the Minnesota-North Dakota border across the Red River from Fargo, North Dakota. Moorhead is the Clay County Seat and is a regional center for culture, commerce, and higher education in northwestern Minnesota. Moorhead is the home of the Heritage Hjemkomst Interpretive Center, Plains Art Museum, American Crystal Sugar Company, Busch Agricultural Resources, Inc., Minnesota State University Moorhead, Concordia College, and Northwest Technical College. The City's 1990 U.S. Census is 32,295, as compared with the 1980 U.S. Census population of 29,998, an increase of 7.7%. The City's 2000 U.S. Census count is 32,177, a 0.4% decrease from the 1990 count. The area of the City incorporates 12.19 square miles.

Major Employers

Employer	Product/Service	Approximate Number of Employees
Independent School District 152	Public education	812
Concordia College	Higher education	780
Minnesota State University-Morehead	Higher education	750
Eventide Lutheran Home	Nursing home	430
American Crystal Sugar Co.	Sugar processing	410
Clay County	County government	400
City of Moorhead	City government	247
Hornbacher's Foods, Inc.	Retail grocery	233
Moorhead Electric	Electric contractor	216
CAMAS Inc.	Concrete blocks and gravel	195
Northwest Technical College	Higher education	150
Moorhead Health Care Center	Nursing home	130
Kmart	Retail	89
Heritage Marketing	Business services	75
American Security & Protection	Security service	67
Sunmart Foods	Retail grocery	45

Source: Telephone survey of individual employers, December 2002.

Labor Force Data

	February 2003		February 2002	
	Civilian Labor Force	Unemployment Rate	Civilian Labor Force	Unemployment Rate
Clay County	31,522	3.5%	30,885	3.6%
State of Minnesota	2,879,326	4.9	2,878,259	5.1

Source: Minnesota Department of Economic Security. 2003 data are preliminary.

Building Permits

Year		Commercial Construction Number	Commercial Construction Value	New Residential Construction Number	New Residential Construction Value	New Residential Construction Units	Total Permits and Valuation Number	Total Permits and Valuation Value
2003	(to 2-28)	0	$ 0	2	$ 152,000	2	43	$ 708,100
2002		24	4,794,700	233	35,698,128	505	766	72,084,373
2001		54	17,740,644	123	23,075,500	160	608	48,601,367
2000		35	6,040,790	115	13,979,097	144	708	27,699,288
1999		93	16,365,942	101	16,750,000	176	597	35,940,996
1998		105	14,401,050	105	11,309,147	110	621	28,077,235
1997		101	9,460,260	57	7,108,000	57	620	20,702,468
1996		111	14,541,159	79	8,196,300	81	554	25,069,947
1995		121	8,131,729	131	12,482,300	146	649	23,831,684
1994		113	13,959,123	85	9,782,500	123	686	26,651,516
1993		138	24,248,351	158	17,283,500	296	729	43,554,522
1992		110	3,722,820	126	13,105,334	211	615	19,970,216
1991		134	13,442,021	67	8,218,900	184	513	23,085,259

Community Development

Construction continued in 2002 in the Holiday Mall redevelopment area of south Moorhead. The Courtyard by Marriott Hotel and Moorhead Area Conference Center facilities neared completion by year-end and they are scheduled to open in February 2003. A Village Inn restaurant is under construction on the site and developer efforts continue to secure leases for other retail tenants.

The sale of the former Red River Inn was announced in late 2002. The 170-room hotel, scheduled to re-open in the spring of 2003 after extensive remodeling, will complement the 126-room Courtyard by Marriott Hotel with additional rooms for larger conferences and meetings.

New commercial construction, including a strip retail center, was launched along East Highway 10. The two-facility project is expected to be valued at over $2,600,000 when it is completed in 2003. New investment and expansions were started in downtown Moorhead, including construction of a new Kentucky Fried Chicken facility, a major renovation of the top floor of the F-M Building and a relocation and renovation in the Moorhead Center Mall. In addition, construction commenced along 30th Avenue South and in both industrial parks, reflecting a strong metropolitan economy and greater interest in the reasonable land prices and good accessibility to Interstate 94.

Plans continue for the redevelopment of downtown property near the Main Avenue Bridge and Fourth Street. The properties acquired in 2001 were all vacated in 2002, and the actual property transfer to the MN Department of Transportation will occur in early 2003. In addition, the Main Avenue Bridge, spanning the Red River between Moorhead and Fargo, will be under construction in 2003, with completion expected in fall of 2004. The project is being designed by the Minnesota Department of Transportation (MNDOT) and includes complete removal and replacement of the bridge. Plans are to widen the new bridge to accommodate four standard-sized traffic lanes, with sidewalks on each side. The bridge will be raised above floodwater elevation.

The Moorhead Municipal Airport expansion was completed in 2002. The improvements, largely funded by a $1,600,000 grant from the FAA, included construction of a parallel runway, a 300-foot extension to and overlay on the existing runway, navigational lighting, expansion of the apron for airplane parking, and fencing.

Moorhead Flight Support was selected in late 2002 as the new Airport Manager/Fixed Base Operator. The same experienced staff was retained, and there are plans to offer charter service from Moorhead in 2003.

Moorhead Public Service (MPS) issued Public Utility Revenue Bonds in August 2002 to finance upgrades to its electric power system and water system. Completion of these upgrades is expected by spring of 2004. This financing demonstrates the MPS's continued commitment to bring affordable and reliable power to its customer-owners. MPS intends to decrease both the duration and frequency of outages, improve voltage support and maintenance ability, and lower the system's energy losses through these major improvements. The major components of the project include the construction of a new transmission line linking the Centennial to the Northeast Substation, the replacement of the Brookdale Substation, and the addition of double breakers to each substation. Improvements to the water system primarily consist of the ongoing plan to replace old water mains with the goal of reducing water main breaks and system leaks. Also planned is the encasement of a well line within a major highway interchange construction zone. The encasement of the line will allow heavy equipment to operate at the construction site without damaging the line.

Medical

Acute medical care is available at Heartland Hospital in Fargo, North Dakota. Long-term care is provided by Moorhead Health Care Center and Eventide Lutheran Home with combined capacity for 284 residents. Also located in the City are over 200 housing units for the elderly.

Education

Independent School District 152, encompassing Moorhead and the surrounding area, provides education programs from kindergarten through grade 12. The kindergarten through 12th grade enrollment for the 2002/03 school year is approximately 5,404. The District employs approximately 815 teachers and staff.

In March 2002, voters approved a $64,000,000 bond referendum and issued the total voted authorization. The District will begin immediately to build a new K-5 elementary school and a new 6-8 middle school, to convert Robert Asp and Moorhead Junior High to K-5 elementary schools, to renovate Moorhead High School and to convert Probstfield Elementary School to a district education center. It is expected that these projects will be completed by September 2004.

Post-secondary education is available at the Northwest Technical College-Moorhead, Minnesota State University of Moorhead and Concordia College, a private liberal arts institution located in the City and North Dakota State University, located in the City of Fargo, North Dakota.

GOVERNMENTAL ORGANIZATION AND SERVICES

The City has been a municipal corporation since 1881 and is a Home Rule Charter City under Minnesota statutes. The City is operated under a Council/Manager form of government and the Charter was most recently amended in July of 1995. The Council is composed of the Mayor, elected at large, and eight City Council members, two elected from each of the City's four wards. Current Council members are:

		Expiration of Term
Mark Voxland	Mayor	December 31, 2005
Lauri Winterfeldt-Shanks	Council Member	December 31, 2005
Nancy Otto	Council Member	December 31, 2003
Morris R. Kelsven	Council Member	December 31, 2005
Brian Gramer	Council Member	December 31, 2003
Larry Nicholson	Council Member	December 31, 2003
Jim Danielson	Council Member	December 31, 2005
Greg Lemke	Council Member	December 31, 2003
John Rowell	Council Member	December 31, 2005

Mr. Bruce Messelt was appointed as City Manager in June 2002. Prior to his appointment he served first for two years as a Project Manager with the Office of the Secretary of Defense in Washington DC, and then for four years as Assistant to the City Manager of Tucson, Arizona. Ms. Kaye Buchholz has been City Clerk since 1985 and Mr. Harlyn Ault has been the City Finance Officer since 1985 and with the City since 1978.

City Services

The City has 247.21 full-time equivalent employees and 87 temporary/seasonal employees.

The City has a police department with 50 sworn officers and a fire department consisting of 30 full-time paid fire fighters. The City and Clay County occupy a combined law enforcement center.

The City has 958 acres of parks and recreational land, including improved bicycle/pedestrian trails, landscaping, new shelter buildings, and playground and sports facilities.

Public Utilities

Pursuant to the City Charter the control, management and operation of the water and electric utilities is vested in the Public Service Commission (the "Commission"). The Commission consists of five residents of the City, a majority of whom must have been residents of the City for at least five years prior to appointment. Appointment to a term of three years is made by the City Council for four members from Wards and a fifth by the Mayor for the at-large member.

Mr. William Schwandt is the General Manager of the Public Service Department. Mr. Dave Kahly is the Electric Division Manager. Mr. Clifford McLain serves as Water Division Manager. Mr. Guy Thoreson is the Business Manager for the Public Service Department.

The electric utility has both generation and distribution facilities. However, since 1983, the utility has generated power only for standby emergency purposes and has purchased power from the Western Area Power Administration ("WAPA") and the Missouri River Energy Services ("MRES"). The Commission has a take and pay contract with WAPA through the year 2020; the

allocation with WAPA was frozen in 1977. Supplemental power above the WAPA allocation is purchased from MRES, with which the Commission also has a take and pay contract. In 1993, the Commission extended its power supply contract with MRES, which provides a firm power supply for the City through the year 2030.

The City's water utility system consists of a well field on the Buffalo River with a pumping station, a water intake works on the Red River of the North, a filtration and treatment plant and eight treated water storage facilities with 7.8 million gallons capacity. Pumping capacity is 13,000 gallons per minute: The water treatment plant has a capacity of 16 million gallons per day (mgd). In 1994, the City expanded and rehabilitated the City's water treatment facility, increasing the system capacity from 9 mgd to 16 mgd and increasing the water treatment quality to meet federal water quality standards. Two new water towers were completed in 1995.

Pensions

All full-time and certain part-time employees of the City of Moorhead are covered by defined benefit pension plans administered by the Public Employees Retirement Association of Minnesota (PERA). PERA administers the Public Employees Retirement Fund (PERF) and the Public Employees Police and Fire Fund (PEPFF), which are cost-sharing multiple-employer retirement plans. PERF members belong to either the Coordinated Plan or the Basic Plan. Coordinated members are covered by Social Security and Basic members are not. All new members must participate in the Coordinated Plan. All police officers, fire fighters and peace officers who qualify for membership by statute are covered by the PEPFF.

The City's contributions to the Public Employees Retirement Fund for the years ending December 31, 2002, 2001 and 2000 were $507,904, $471,309 and $446,508, respectively. The City's contribution to the Public Employees Police & Fire Fund for the years ended December 31, 2002, 2001 and 2000 were $364,601, $364,095 and $356,674, respectively.

(The Balance of This Page Has Been Intentionally Left Blank)

Harlyn Ault - Moorhead (City of) MN

From: "Moody's Investors Service" <epi@moodys.com>
To: <harlyn.ault@ci.moorhead.mn.us>
Date: 04/21/2003 9:57 AM
Subject: Moorhead (City of) MN

MOODY'S ASSIGNS A3 RATING TO THE CITY OF MOORHEAD (MN) $12,050,000 G.O. WASTEWATER REVENUE BONDS, SERIES 2003A AND $12,775,000 G.O. IMPROVEMENT BONDS, SERIES 2003B

RATING AFFIRMATION AFFECTS $61.2 MILLION OF PARITY DEBT, INCLUDING CURRENT ISSUES

Moorhead (City of) MN
Municipality
Minnesota

Moody's Rating

Issue	Rating
General Obligation Wastewaste Revenue Bonds, Series 2003A	A3
Sale Amount $12,050,000	
Expected Sale Date 04/28/03	
Rating Description General Obligation Unlimited Tax	
General Obligation Improvement Bonds, Series 2003B	A3
Sale Amount $12,775,000	
Expected Sale Date 05/28/03	
Rating Description General Obligation Unlimited Tax	

NEW YORK, April 21, 2003 -- Moody's Investors Service has assigned an A3 rating to the City of Moorhead (MN) $12,050,000 General Obligation Wastewater Revenue Bonds, Series 2003A and $12,775,000 General Obligation Improvement Bonds, Series 2003B. In addition, Moody's affirms the A3 rating on the city's parity debt of $61.2 million, including the current issues, and the Moorhead Economic Development Authority's $15.4 million of outstanding parity debt. The bonds are secured by the unlimited tax pledge of the city, although debt service for Series A is expected to be covered by revenues from the city's wastewater system and special assessments. Debt service for Series B will receive special assessment support. Proceeds for both series will finance an expansion of the city's wastewater utility system. The A3 rating reflects the city's stable economy; a history of conservative budgeting evidenced by healthy reserves; and high debt burden, largely reflecting recent issuance by the overlapping school district.

REGIONAL HUB NEIGHBORS FARGO, NORTH DAKOTA

Economic stability for this county seat and agricultural service center is provided by a diversity of educational, governmental and commercial concerns within the city and in neighboring Fargo, North Dakota (general obligation

rated Aa2). Legislative changes several years ago lowered the effective tax rate (commercial/industrial properties) of various Minnesota border cities. This, coupled with the state's recent property tax reform, has lowered the effective property tax rate such that it now approximates Fargo's, which historically maintained a competitive advantage through its lower tax rates. The city's $1.1 billion tax base has experienced ongoing growth, averaging 6.3% over the past five years. City officials report continued strong demand for development, which is expected to receive a boost once currently unserviced lands are connected to the wastewater system. Management has a longterm annexation plan in place which would see the city grow by approximately a third over the next 20-25 years, with the current improvements expected to accommodate the expected population growth during that period. City unemployment rates (1.6% in December 2002) have consistently remained below state (3.7%) and national (5.7%) averages. Income levels and housing values lag the state and are somewhat influenced by the presence of a state university and a private college, with a total post-secondary enrollment of almost 12,000 students. This compares to a population of 32,177 in 2000, representing a stable population base from 1990.

HISTORICALLY SATISFACTORY FINANCIAL POSITION; RELIANCE ON ELECTRIC FUND

Moody's expects the city's financial position to remain satisfactory given historically stable reserve levels and continued moderate tax base growth. Based on unaudited results for FY 2002, the city posted an operating surplus for the third consecutive year, resulting in a General Fund balance of $7.2 million (or 63.8% of General Fund revenues). Evidencing financial stability, the balance has also averaged 45.8% since 1996. Reliance on the electric enterprise to support General Fund operations continues, with transfers amounting to 12.8% of revenues for FY 2002, representing a decline from 18.8% in fiscal 1998. The transfer is equivalent to 17% of electric gross revenues, below the 20% allowed by the city charter. Moorhead purchases its power from the Western Area Power Administration (WAPA) and the Missouri Basin Municipal Power Agency (MBMPA). Both WAPA and MBMPA have low cost structures, which put them in a favorable position in an increasingly competitive market, and the city's existing electric rates are competitive. Moody's believes that the city will maintain adequate financial margins as the electric market becomes more competitive. The city has prepared a number of scenarios to help it overcome the expected revenue shortfalls stemming from the state's budget gap, and has already made several anticipatory expenditure reductions. The city does not intend to draw down its reserves, but may increase its electric transfer to the maximum allowable to help it overcome any revenue shortfall. It will also consider program reductions and a delay in filling vacant positions in order to achieve balanced operations.

HIGH DEBT BURDEN LARGELY REFLECTS OVERLAPPING ISSUANCE

Moody's believes that Moorhead's overall debt burden, 11%, will remain high but manageable given continuing tax base growth and an above average principal amortization of 56.2% in ten years. Recent issuance of over $64 million by the overlapping school district sharply increased the city's overall debt burden; however, it should be noted that school officials expect approximately 47% of debt service will be equalized by the state, thus reducing the impact on property taxpayers. Pactiv, a local company, recently decided to prepay outstanding maturities of the Moorhead Economic Development Authority's general obligation bonds of $8.7 million; the funds are being held in escrow until callable. While still high, most of the city's direct debt is supported

by special assessments and non-levy sources, mitigating the impact on the city's property tax levy. As with other Minnesota cities, tax increment districts' revenue flows were adversely impacted by property tax reform due to class rate compression. Favorably, however, the state also authorized a special offsetting tax levy for Moorhead (through 2005), which will not only offset any shortages in increment revenue, but will also reportedly be supported by state aid. Outstanding tax increment debt (city and EDA) comprises $17 million. The city anticipates issuing improvement bonds of up to $4.5 million in the summer of 2003.

KEY STATISTICS:

Population (2000 Census): 32,177

2000 full valuation: $1.1 billion

Full value per capita: $34,403

Unemployment rate (City, 12/02): 1.6%

Overall debt burden: 11%

Direct debt burden: 5.9% (adjusted for Pactiv debt, funds held in escrow)

Payout of principal (10 years): 56.2%

FY 2001 General Fund balance: $6.2 million (43.2% of General Fund revenues)

FY 2002 unaudited General Fund balance: $7.2 million

ANALYSTS:
Christine Grima, Analyst, Public Finance Group, Moody's Investors Service
Jon M. North, Backup Analyst, Public Finance Group, Moody's Investors Service

CONTACTS:
Journalists: (212) 553-0376
Research Clients: (212) 553-1653

Copyright 2003, Moody's Investors Service, Inc. and/or its licensors including Moody's Assurance Company, Inc. (together, "MOODY'S"). All rights reserved.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and MOODY'S, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall MOODY'S have any liability to any

person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER. Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MOODY'S have, prior to assignment of any rating, agreed to pay to MOODY'S for appraisal and rating services rendered by it fees ranging from $1,500 to $1,500,000.

CHAMBER
Fargo Moorhead

Chamber of Commerce
of Fargo Moorhead

(202 First Avenue North,
Moorhead)
P.O. Box 2443
Fargo, ND
58108-2443
218.233.1100
Fax 218.233.1200

www.fmchamber.com
info@fmchamber.com

June 26, 2003

OFFICIAL FILE COPY
RECEIVED
JUN 27 2003
REPLY: YES NO
INFO COPY TO:

DATE	INITIAL	TO
		Denny
6/27	copied	Ridy
"	"	Signe
		Dean
CLASSIFICATION		Greg
PROJECT		Neil

Dr. Maryanne Bach, Director
Great Plains Region
U.S. Bureau of Reclamation
316 26th Street North
Billings, Montana 59101

Dave Koland, Manager
Garrison Diversion Conservancy District
PO Box 140
Carrington, North Dakota 58421

Dear Dr. Bach and Mr. Koland:

The Chamber of Commerce of Fargo Moorhead is a bi-state, regional federation of 1,700 private, public and nonprofit sector firms that collectively employ more than 62,000 people in our region. Our mission is unifying and advancing business and community interests in our region.

This letter is written to thank your agencies for your cooperative involvement in the Red River Valley Water Supply Project, and for your cooperative planning and sponsorship of four RRVWSP public meetings this month, including one that was held last night in Fargo.

As you know, water continues to be a vital resource for residents, businesses and communities in both our region and the entire nation. It nourishes our bodies, irrigates our fields, powers our communities and supports our commerce. Without water, life itself would be impossible.

As industry grows, population expands and commerce continues in eastern North Dakota and throughout the Red River Valley, the need for a dependable water supply will continue to increase. At the same time, water management and flood mitigation continue to be vital factors for everyone across the Red River Valley.

Our Chamber supported passage of the Dakota Water Resources Act, supports an outlet or other appropriate solution to the problems being experienced at Devils Lake and supports nationally-uniform, science-based and cost-effective water quality standards that balance environmental protection and the needs of communities and industry. We also support completion of Garrison Diversion or a similar project representing a long-standing federal commitment to our region.

Thanks again for your agency's efforts on behalf of water supply issues in the Red River Valley.

Sincerely,

David K. Martin

David K. Martin
Public Affairs Director

P.S. You have specifically added Breckenridge, East Grand Forks and Moorhead by name to the study/impact area. Dilworth is also part of our four-city, bi-state metropolitan community. May I suggest that you add Dilworth to your list, too?

pc: Dakotas Area Office, U.S. Bureau of Reclamation
Mayors of Fargo and West Fargo, ND and Moorhead and Dilworth, MN
Thomas Lane and Pat Zavoral, City of Fargo
Lauri Winterfeldt-Shanks and Cliff McLain, City of Moorhead
Mark Nisbet, Xcel Energy and Bill Schwandt, Moorhead Public Service

ALLEN R. GRASSER, P.E.
CITY ENGINEER

City of Grand Forks

255 North 4th Street • P.O. Box 5200 • Grand Forks, ND 58206-5200

(701) 746-2630
FAX (701) 787-3744

July 10, 2003

OFFICIAL FILE COPY
RECEIVED
JUL 11 2003

REPLY: YES NO		
INFO. COPY TO:		
DATE	INITIAL	TO
7/11	Copy	Signe
//	//	Dean
//	//	Rick
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

Ms. J. Signe Snortland
Senior Environmental Specialist
Bureau of Reclamation
P.O. Box 1017
304 East Broadway
Bismarck, ND 58502

Re: Comments on Population Projections
Red River Valley Water Supply Project

Dear Ms. Snortland:

We have reviewed the population projections prepared by the Bureau of Reclamation (Reclamation) and its consultant, Northwest Economic Associates (NEA). Based on feedback from those in attendance at the Technical/Study Review Team meeting on May 29, 2003, it appears that population projections continue to be a rather controversial subject. The purpose of this comment letter is not to refute the data presented to date as it is based on existing data and complex methodologies. Instead, this letter is intended to present the rationale behind the population projections that were previously provided by the City of Grand Forks as part of the Municipal, Rural, and Industrial (MR&I) water system data collection process and justify the inclusion of these population projections in the final set of data prepared for the Needs and Options Report.

Discussion of Historical Trends

Historically, the City of Grand Forks has experienced a consistent trend of positive population growth. As a result, trend analysis of historical population data has served as the basis for projecting future needs of the City from an infrastructure planning perspective. The Planning and Zoning Department, the Engineering Department, and the Public Works Department have generally accepted this population projection methodology, despite its simplistic nature, to plan for the capacity of large-scale facilities and to size various infrastructure components.

From 1960 to 1990, the population growth rate in Grand Forks was approximately 1.2 to 1.3 percent per year based on United States Census Bureau information. Unfortunately, the City of Grand Forks was unable to continue this growth rate from 1990 to 2000. This was most definitely attributable to the mission change of the Grand Forks Air Force Base (GFAFB), ultimately resulting in its downsizing, and the impacts associated with the Flood of 1997. Even with these setbacks, the City of Grand Forks continues to experience growth. In fact, a recent independent estimate suggests that Grand Forks has recently surpassed a population of 50,000, which is a positive indication that the flood recovery and economic development efforts

have and continue to support growth in our community. The growth rate from 1998 to present is estimated at greater than 1 percent per year according to the population decline estimated at 47,500 after the Flood of 1997.

Justification of Continued Growth

The City of Grand Forks strongly believes that the previous decade was indeed an anomaly and projects its population to grow once again at a rate of 1.2 percent to 1.8 percent per year, at least through the year 2020 (*Metro-Forks Community Profile*, August 2002). The document was prepared by the Grand Forks/East Grand Forks Metropolitan Planning Organization and provided to Houston Engineering, Inc. as part of the MR&I water system data collection process. The reasoning behind the positive projections for the population of Grand Forks is predicated on multiple local demographic factors that were not taken into consideration under the methodologies utilized by the Reclamation and NEA. The following are some examples of these factors:

Population Age Statistics: The presence of the University of North Dakota (UND) and the GFAFB reduces the average age of Grand Forks with respect to the surrounding region. Approximately 9.2 percent of the population in Grand Forks is 65 years of age or older as compared to 14.2 percent for the State of North Dakota (Metro-Forks Community Profile, August 2002). This statistic suggests that there would be a relatively large number of residents of working age to encourage economic development, meet corresponding employment demands, and support the vitality of the community.

GFAFB: Although the GFAFB experienced downsizing in the mid-1990s with the abandonment of the missile mission, recent news indicates that the GFAFB will receive new refueling tankers beginning in 2006. The North Dakota Congressional Delegation views this as a key to the future of keeping the GFAFB in operation and avoiding the next round of Base Realignment and Closure panel discussions. North Dakota airspace is being considered for designation as "special-use airspace" by the United States Air Force. Upon approval, the special-use airspace designation would further support the long-term need for the GFAFB.

In addition to enlisted Air Force personnel, the GFAFB provides a significant number of civilian employment opportunities. As a result, the City of Grand Forks and surrounding region benefit by the dual presence of the enlisted personnel and civilian employees and their families. Nearly 55 percent of the GFAFB population is between the ages of 20 to 44, thereby suggesting that the continued presence of the GFAFB will likely support the vitality of the Grand Forks region. Due to its economic impact, the City of Grand Forks is actively committed to supporting the viability of the GFAFB alongside Governor Hoeven and the North Dakota Congressional Delegation.

UND: As noted above, UND plays a major role in the population of Grand Forks. Enrollment continues to climb to record levels and administrative representatives continue to proactively pursue opportunities for enhancing the level of education and student life on campus. These efforts have resulted in consistent enrollment increases of 2.1, 4.2, 6.6, and 5.6 percent per year in 1999, 2000, 2001, and 2002, respectively.

The Aerospace/Aviation program, which continues to be regarded as one of the best in the nation, and the postgraduate schools of Medicine and Law are mainstay attractions for students, both inside and outside of the region. UND also offers strong programs in other disciplines such as accounting, business, education, engineering, and nursing, just to name a few. Graduates from UND offer a large base of prospective employees for local businesses and institutions. In an effort to keep more UND graduates in the area, the City of Grand Forks assists in financially supporting the Grand Forks Region Economic Development Corporation (EDC), which is devoted to expanding the region's economy and creating employment opportunities.

UND continues to invest in its campus through donations from alumni. The Rural Technology Center has experienced recent growth and has prompted the construction of a hotel/convention center to accommodate its activities. The Center for Innovation is also scheduled to add a building to its facilities. The Energy & Environmental Research Center (EERC) continues to thrive, expand its facilities, and maintain its esteemed reputation in science and technology research. These are some of the many examples of educational advancements at UND.

Athletics at UND also continue to thrive. Most notably, the Ralph Engelstad Arena serves as one of the best college hockey venues in the nation. In the inaugural season of the Alerus Center, the UND football team won the national championship. UND is also in the process of constructing a new stadium for the men's and women's basketball programs. The addition of these facilities promotes the ability to host regional and/or national tournaments, which increases the demand for local goods and services. For instance, the Ralph Engelstad Arena has already been selected to host the 2005 World Junior Hockey Tournament.

Alerus Center: As mentioned above, the Alerus Center serves as the venue for the UND football team. It was also the host site of the high school football playoffs in 2002 and will likely share this event with the Fargodome in the future. In addition, the Alerus Center is capable of attracting entertainment events such as live concerts, indoor racing events (motocross and snowcross), and other entertainment and trade shows. The Alerus Center is also utilized as a convention center, and the City has recently negotiated a deal for the construction of a hotel adjacent to the facility. Discussions are in progress regarding the construction of an aquatics center/water park, a hockey hall of fame, and a car museum at the Alerus Center site as well. This facility, along with the Ralph Engelstad Arena, will serve as a population and visitor draw for years into the future.

Flood Protection: In addition to addressing water quantity and quality concerns, the City of Grand Forks is presently in the process of implementing a large-scale, multi-phased Flood Protection Project. Since the Flood of 1997, the City of Grand Forks, its residents, and business owners have made significant investments in the community. The Flood Protection Project will protect these investments, provide peace of mind to area residents and business owners, and support future economic development.

Greenway Project: In the past, Grand Forks and East Grand Forks have not been well known for recreation. The Greenway Project, which is a component of the Flood Protection Project, designates approximately 2,200 acres areas of land for parks and recreational use along both

sides of the Red River in the Grand Forks/East Grand Forks area. The Greenway Project will provide a boost in recreational visitors and improve the quality of life in Grand Forks/East Grand Forks by offering hiking, biking, cross-country skiing, camping, fishing, and other recreational activities for residents and visitors alike to enjoy.

King's Walk Golf Course: In line with recent recreational development, the Grand Forks Park District added the King's Walk Golf Course to its list of recreational activities in 2002. The course, which was designed by Arnold Palmer, is the only Professional Golf Association-rated course in North Dakota and Manitoba. The unique links-style design of the course is intended to be an attraction for golfers at all skill levels.

Economic Development: The City of Grand Forks recognizes the importance of having a progressive economic development plan. In addition to the strong presence of agricultural industries such as J.R. Simplot, RDO Foods Company, Conte Luna Foods, and the North Dakota Mill and Elevator, Grand Forks continues to see major commercial and technical development. To support local innovation and entrepreneurialism, UND opened the Rural Technology Incubator in 1996. When combined with the City's economic development efforts, companies such as Cirrus Design Corporation (opened in 1997 – 190 employees), Amazon.com (opened in 1999 – 400 employees), and LM Glasfiber (opened in 1999 – 120 employees) have located their place of business in Grand Forks. In a June 17, 2002 press release by Grand Forks Region EDC, Larry Anderson of Job Service North Dakota is quoted as saying; "Overall employment in Grand Forks over the last three years is up five percent, with the area's manufacturing industry showing growth of over 21 percent." In January 2003, SEI Information Technology opened a Customer Care facility in Grand Forks with near-term (1 year) and long-term (2-3 years) projections of 75 and 300 employees, respectively. The City foresees that the combination of its progressive approach toward economic development and the solid workforce foundations provided by the GFAFB, UND (including the EERC), Altru Health System, and local industries is the right blend of resources to generate additional commercial and industrial opportunities in the future.

Quality of Life: When considering population growth for a community, the quality of life should serve as an indication of whether a community is destined to flourish or experience a decline. Since the Flood of 1997, the City of Grand Forks has made significant investments in its future, ranging from flood protection to an events center. Under Mayor Brown's leadership, the City has challenged itself under the goals and objectives of the *Destination City Initiative*, whereas the City wants to be regarded as a desirable community for permanent residence, tourism, or business opportunities. According to Mayor Brown, "There is no status quo for communities... we either move forward or we move backward." As indicated in the following paragraphs, reliable sources and statistics support Mayor Brown's *Destination City Initiative* and the desire to move Grand Forks forward.

According to a recent article published by *Expansion Management* Magazine, the City of Grand Forks was given a Four Star rating with respect to 50 criteria that are used to develop Quality of Life Quotients for 329 metropolitan statistical areas. This distinctive survey placed Grand Forks in the top 33 percent of locations that rapidly growing mid-sized companies (100 to 500

employees) should consider for new manufacturing, distribution, and/or back office operations facilities. Factors comprising the survey included cost of living, affordable housing, crime rates, transportation access, education systems, proximity to community colleges and universities, work force availability, and taxes to name a few. Although the survey is intended to assist in business planning, the most heavily weighted criteria addresses employee financial needs and desires, suggesting that the key to a successful business is happy employees that are able to live comfortably. The City of Grand Forks is proud to be recognized as a community with this distinction.

In support of this survey, the City of Grand Forks was ranked among the top 25 percent (39th overall) for the best small place for business and careers in America, according to *Forbes* magazine. This was a significant improvement over the previous ranking in the bottom 25 percent. The ranking factors included the cost of doing business, income levels and trends, housing markets, and crime levels. The results of the survey suggest the region appears to be quite attractive to prospective businesses and employees, as Fargo ranked 5th and Bismarck ranked 18th. The City of Grand Forks believes this to be true in reflection of recent commercial and industrial developments in the community and surrounding area. Recent success stories for companies such as Amazon.com and SEI Information Technology indicate that the Grand Forks area offers an attractive mix of facility/land costs, taxes, and wage levels to new or relocating businesses. If the trend continues where businesses see opportunities in the Red River Valley and our region in general, it stands to reason that the population will continue grow in larger, urban areas and most likely level off and potentially grow to lesser degree in smaller urban and rural areas.

Housing Starts: According to the Grand Forks Region EDC, housing starts in Grand Forks increased dramatically in 2002. As of November 2002, the number of building permits issued for homes nearly doubled the 11-month number in each of the past three years. The EDC also reports that the market for existing homes remains strong, with 811 homes being sold in Grand Forks/East Grand Forks in 2002. Although probably supported by low interest rates, these trends indicate that an increasing number of Grand Forks residents are making long-term investments in the community.

Support for Consideration and Inclusion of Grand Forks Population Projections
As noted above, the projections provided by the City of Grand Forks are based on historical population trends, rather than the complex set of birth rate, death rate, migration rates, and other data trends that are accounted for in the methodologies (i.e. the Cohort method) completed by Reclamation and NEA. Although a claim could be made that the City's population trends lack the experience and education of a demographer, the City questions whether population projections determined by the Reclamation and NEA include such factors as presented in this letter. The Needs Assessment Specific Plan of Study (SPOS) references the potential consideration of four sets of population projection estimates. The Needs Assessment SPOS also states that local cities and counties could provide population projections for consideration. To span the range of possibilities that could transpire over a 50-year planning horizon, it would seem prudent to consider a more positive outlook than that prepared based on Reclamation/NEA methodologies.

According to *Water Resources Planning, M50*, one of a series of water supply practice manuals published by the American Water Works Association, "City planning departments are often the best sources for population, housing values and density, land use by area, and projections of expected growth in city and county plans." In fact, this document goes on to state, "the planning department's projections are generally used, and the forecaster simply states the potential sensitivity of the issue on the water demand projections in the forecasting report." From a politically sensitive perspective, it would seem that Reclamation would want to include population projections prepared by the participants since the concepts and features will ultimately be sized accordingly and paid for by study participants. The gravity of underestimating future population could result in the implementation of a project that falls short of meeting the needs of the Red River Valley. If participants decide to reduce the scope and size of features later on in the study for financial reasons, population projections prepared by Reclamation serve as a less aggressive range of justified data for consideration to meet this objective.

Requested Action Item
As a cooperating agency involved with the RRVWS Project, the City of Grand Forks strongly recommends consideration of the population projections submitted during the MR&I water system data gathering process. The population projections increase the 2000 census population exponentially at a rate of 1.2 percent per year. This data was provided based on the projections prepared by the Grand Forks/East Grand Forks Metropolitan Planning Organization in the *Metro-Forks Community Profile*, August 2002.

Thank you for the opportunity to comment on the population projection process being completed for the RRVWS Project. Representatives of the City of Grand Forks look forward to continuing our participation in this very important project. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Allen R. Grasser, P.E.
City Engineer

c: Rick Duquette, Grand Forks City Administrator
Todd Feland, Grand Forks Public Works Administrator
Hazel Fetters-Sletten, Grand Forks Water Treatment Plant Superintendent
Steve Burian, P.E., Advanced Engineering and Environmental Services, Inc.
Dave Johnson, P.E., Garrison Diversion Conservancy District

R I V E R

K E E P E R S

OFFICIAL FILE COPY
RECEIVED
JUL 21 2003

REPLY:	YES	NO
INFO. COPY TO:		
DATE	INITIAL	TO
	Copy	Signe
	↓	Dan
		Ricki
		Denny
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		

July 17, 2003

Signe Snortland
Bureau of Reclamation
PO Box 1014
Bismarck ND 58502-1017

Re: RRV Water Supply Project EIS – Recreation Needs Assessment

Dear Ms. Snortland;

We've been asked by the Garrison Conservancy District to comment on the Recreation Needs Assessment for the Red River Valley. First of all, we'd like to give you some background of our organization and provide some general commentary on recreation on the Red River before providing specific comments to your document.

River Keepers is a nonprofit organization that works with the Red River of the North. Our mission is to advocate the sustainable use of the Red River of the North. We were created in 1990. Some of our work includes the promotion and development of the recreational use of the Red. Our primary focus is the Fargo area but we definitely have interest in areas or projects that in anyway affect the Red River especially in relation to aesthetics, water quality, and recreational use.

The Red River was an important resource for the early European settlers of the valley. The Red River was used as a source of food, as a mode of transportation and commerce, the riparian forest provided wood for heat and construction and it served as an important source of recreation. Until the 1950s the Red hosted canoe and boat rental operations, public swimming, riverfront concerts, races and floating parades. After a period of disuse by recreational interests the Red River of the North is experiencing a resurgence. Valley residents and visitors are rediscovering the river.

In the Fargo-Moorhead area the modification of the dams has been a significant reason for this resurgence. Dangerous currents at the dams are being eliminated by the addition of rock slope ways. Previously, government agencies and other organizations warned citizens to avoid the river after numerous tragic deaths at dam sites. Now these same government agencies are participating in activities and events to bring people back to the river. Two dams owned by the City have Fargo have recently been rebuilt with the rock slope ways. One more will be rebuilt this fall and there are explorations underway to

examine two other dams owned by the city. In the United States portion of the valley two other dams also recently underwent similar treatment.

Another benefit of the rock slope ways is that fish can more easily traverse the dams during spawning. While the Red has always been a good fishery, these dam modifications will allow continuing use of the fish resource. The reputation of the Red as a source of trophy fish is spreading. For example this last season at least two syndicated television shows featured the Red River fishery. Currently there are three fishing guides that serve the lower part of the Red and their schedules are often booked months in advance. Tourists, who have traditionally used the Red in Canada, are now discovering that the Red is in the United States also. Because of this increased use the State of ND and the State of Minnesota have collaborated on a recently published guide to fishing on the Red. Also, due to increased demand there have been four new boat ramps constructed on the United States portion of the Red in the last 3 years.

Parks departments and other organizations located in cities along the Red are increasingly including activities in their programming that features the Red. Activities such as canoe races, youth and adult fishing clinics, tour boat rides, and riverfront bird watching are becoming commonplace. Many cities, including Moorhead and Fargo have placed considerable resources into improving riverfront bike and walking trails. Canoe rental and outfitting services are starting to serve the Red.

The State of Minnesota recently declared the Red River of the North an official canoe and boating route. A master plan for that designation was published this last year. The plan indicates that the potential is great but that increased infrastructure such as campsites and ramps are need to support additional recreational use. This fall the State of Minnesota Department of Natural Resources will be supervising the creation of the first ever canoe/boating map for the first 120 miles of the Red.

We believe its obvious that Red River based recreation is increasing in popularity. Water supply and other studies of the Red must take into account recreational use and insure that increased use of the Red for other purposes does not detract from its recreational potential.

Specifically, we provide these comments to your recreation document.

The Recreation Needs Assessment is very general which is what you'd expect using information readily available in existing studies that do not specifically address the Red River and it's tributaries. Beginning at the bottom of page 2, you describe methods found in the literature to quantify recreational water needs. It does not appear that any of these methods were used. Since there very little existing data and this study is quite important to those of us living in the valley, we think more effort should be put into getting more data. We don't believe relying on regional or national studies meets the intent of the DWRA. For example, the discussion on page 2 concerning conflicts among users like hydropower and the examples given regarding rafting and swimming are not germane to

the Red River mainstem. Hydropower generation, swimming and rafting do not occur on the main stem of the Red.

On the top of page 3 there is a statement regarding the ND canoe rating system and is further explained on page 15 in regards to the Sheyenne River. Further discussion on this subject would be helpful. It seems too simplistic to rate canoeing in terms of depth in feet which is then related to the flow. The system certainly does not take into account the effect of the dams located in the major cities, which is currently where most of the canoeing currently takes place. This is an important subject since it is the only reference in the study where flows are actually quantified and related to some recreational benefit.

On page 8 there is a discussion of the changing participation levels of outdoor related activities. On the Red, I think the biggest influence has been attitude. If the community has bad feelings about the Red they will not use it. Groups such as River Keepers which are changing that perception by talking about water quality, teaching canoeing and fishing classes etc may have as big an influence as national trends. Also, discussion of primary purpose trips etc. is interesting; however most of the users of the Red currently have been and will probably continue to be people who live within 15 minutes of the resource. They use it after work, on Saturday afternoon, etc. My point is the document should be focused on the Red River Valley and not national trends.

Carrying capacity has been addressed in several places. It should be noted that with the minimal current infrastructure in place i.e. boat ramps; the carrying capacity could be managed or controlled for certain types of use. For instance canoes could be encouraged and boats discouraged just by the placement of ramps. Because of its size the Red can carry many more canoes than boats.

On page 18 there is a discussion of decreased fishing on the Red. I believe this data is dated. I think there has been an increase. Today there are 3 fishing guides serving the lower reaches of the Red. Five years ago there were none.

Also on page 18 the flow ratings for canoeing do not take into account dams. I also question if a flow of 800cfs results in a depth of 2 feet. This needs to be reexamined. Several assumptions are made in the document based upon this information (for example the discussion on p 25). There is also a statement on page 26 stating that canoeists will have a better experience with a bank full flow. What is the discharge at bank full flow and where is that documented?

On page 21 there is a discussion on diversity. This should be expanded. Increasingly new cultures in the valley are using the fishery. Fish, in some cases, may be used for a significant food source for certain groups. In addition, because of the types of fish that these New Americans prefer, it may significantly increase the use of the fishery.

In the references section (the page after 32) the Red River anglers guide is listed. The current edition should be used.

In addition, we'd like to point out the State of Minnesota recently declared the Red River of the North an official canoe and boating route. The Red River Canoe and Boating Master Plan (MN DNR) was developed last year as a result of that declaration. It is the most specific source for Red River canoe and boating information and was not cited in this study. The plan indicates that the potential is great but that increased infrastructure such as campsites and ramps are need to support additional recreational use. This fall the State of Minnesota Department of Natural Resources will be supervising the creation of the first ever canoe/boating map for the first 120 miles of the Red.

We believe its obvious that Red River based recreation is increasing in popularity. Water supply and other studies of the Red must take into account recreational use and insure that increased use of the Red for other purposes does not detract from its recreational potential.

Robert Backman
Executive Director

cc: Garrison Diversion Conservancy District at PO Box 140, Carrington, ND 589421

GARRISON DIVERSION
CONSERVANCY DISTRICT
P.O. BOX 140
CARRINGTON, N.D. 58421
(701) 652-3194
FAX (701) 652-3195
gdcd@daktel.com
www.garrisondiversion.org

OFFICIAL FILE COPY
RECEIVED
AUG 5 2003

REPLY: YES NO		
INFO. COPY TO:		
DATE	INITIAL	TO
		DENNY
8/5	(opied	Rick
		Sigrid
		Dean
CLASSIFICATION		Nell
PROJECT		
CONTROL NO.		
FOLDER I.D.		

August 4, 2003

Dennis Breitzman, Area Manager
Bureau of Reclamation
Dakotas Area Office
PO Box 1017
Bismarck, ND 58502-1017

Dear Mr. Breitzman:

As the clearinghouse agency for the state of North Dakota, the Garrison Diversion Conservancy District has reviewed the enclosed comments and finds them to be consistent with current state policy in regard to the Red River Valley Water Supply Project. Please accept the enclosed comments from the state agencies.

Thank you for your consideration in this matter.

Sincerely,

Dave

Dave Koland
Manager

Enclosures

DJ/DK/slg

JUL 23 2003

North Dakota Parks & Recreation Department

1835 Bismarck Expressway, Bismarck, ND 58504
Phone: (701) 328-5357 Fax: (701) 328-5363 E-Mail: parkrec@state.nd.us Web: http://www.ndparks.com

John Hoeven, Governor

Douglass A. Prchal, Director

Field Manager
Brad Pozarnsky
#2 Lake Metigoshe State Park
Bottineau, ND 58318
Ph. (701) 263-4054

Cross Ranch
1403 River Road
Center, ND 58530
Ph. (701) 794-3731
•Little Missouri-Killdeer

Devils Lake
152 S. Duncan Dr.
Devils Lake, ND 58301
Ph. (701) 766-4015
•Black Tiger Bay
•Grahams Island
•Shelvers Grove

Abraham Lincoln
0 Fort Lincoln Road
ndan, ND 58554
(701) 663-9571
Sully Creek-Medora

Ft. Ransom
5981 Walt Hjelle Parkway
Ft. Ransom, ND 58033
Ph. (701) 973-4331
•Beaver Lake-Wishek
Ph. (701) 452-2752

Ft. Stevenson
1252A 41st Ave. NW
Garrison, ND 58540
Ph. (701) 337-5576

Icelandic
13571 Hwy 5
Cavalier, ND 58220
Ph. (701) 265-4561

Lake Metigoshe
2 Lake Metigoshe State Park
Bottineau, ND 58318
Ph (701) 263-4651

Lake Sakakawea
Box 732
Riverdale, ND 58565
Ph. (701) 487-3315

Lewis & Clark
1904 119th Rd. NW
pping, ND 58843
(701) 859-3071

Turtle River
3084 Park Ave.
Arvilla, ND 58214
Ph. (701) 594-4445
•Elmwood-Grafton

COPY

July 21, 2003

Dave Koland, Manager
Garrison Diversion Conservancy
P.O. Box 140
Carrington, ND 58421

Dear Dave:

Last week Jerry Schock visited our office regarding the Red River EIS with interest in further agency comments on potential recreation opportunities. Following that meeting I received your letter asking for similar information so offer these general thoughts.

Early in the data gathering stage of this study we provided recent State Comprehensive Outdoor Recreation Plan (SCORP) findings that identify general outdoor recreation interests by planning region. A copy of that information is also attached to this note. As you know, delivery of water, especially a reliable source, provides enhanced opportunity for economic and municipal expansion. Recreation is one of those amenities that adds to a communities quality of life while also supporting economic development efforts. Within Planning Regions 4and 5, encompassing the Red River Corridor, priority recreation needs identified are open space development that encompasses sport facilities including sport courts and playground and picnic areas. Pools and beaches along with trails also constitute identified interests along the Red River Valley.

To provide more specific information, especially the type and numbers of facilities in any of the SCORP categories is difficult for our office to provide. Consultation with citizens and park and recreation staff in the respective cities within the planning corridor will best gather that specific data. Population data is best gathered at the local level also to aid in assessing the appropriate level of future facility need related to existing supply. Our agency conducted a statewide assessment of the recreation value of rivers roughly a decade ago and that study classified the Red River as a low priority for canoeing. That assessment was determined due primarily to the presence of low head dams, low river flows and water quality issues identified by the public.

No issues arise regarding public scoping, and alternative plans, or biota transfer will not be commented on. Routing of the water delivery system or biota transfer are both areas we do not have the expertise to comment on. Environmental aspects of the project we focus on include the avoidance of endangered species in any routes selected for study. Reference to identified species were provided to the planning team early in the study so we trust that information was utilized in selection of the alternative routes. Water delivery routes should be selected to minimize impact to existing natural and cultural resources as well as avoiding existing outdoor recreation areas so as not to reduce those experiences.

We are pleased to aid your study efforts and look forward to continued dialogue and input.

Sincerely,

Doug Prchal,
Director

Attachment

Cc Jesse Hanson

JUL 2 1 2003

COPY

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

July 18, 2003

Dave Koland, Manager
Garrison Diversion Conservancy District
PO Box 140
Carrington, ND 58421

Dear Mr. Koland:

The Department has reviewed the following draft documents pertaining to the proposed environmental impact statement on the Red River Valley Water Supply Project: 1) summary of public scoping, 2) alternative plans, 3) population needs numbers and projections, 4) environmental specific plan of study, and 5) the biota transfer specific plan of study. It appears from initial review of these documents the input into this process from agencies and the general public has provided good comprehensive draft documents.

The Department has not yet reviewed the individual alternatives for specific environmental impacts but will review the anticipated impacts and the proposed mitigation plan at the appropriate time. One of our interests during the review is to optimize the opportunity to establish and maintain minimum in-stream flows through Red River Valley's rivers and tributaries. By establishing in-stream flows we maintain numerous values of the streams.

In regards to the other draft documents, the Department does not have any further comments but remains committed to participate in the process. Should you have any questions, please contact Bruce Kreft at 328-6224.

Sincerely,

Michael G. McKenna
Chief
Conservation & Communication Division

blk

NORTH DAKOTA DEPARTMENT OF HEALTH
Environmental Health Section

JUL 20 2003

Location:
1200 Missouri Avenue
Bismarck, ND 58504-5264

Fax #:
701-328-5200

Mailing Address:
P.O. Box 5520
Bismarck, ND 58506-5520

July 18, 2003

Dave Koland, Manager
Garrison Diversion Conservancy District
PO Box 140
Carrington, ND 58421

COPY

Dear Mr. Koland:

This Department has completed its review of the draft documents pertaining to the proposed environmental impact statement on the Red River Valley Water Supply Project.

As an overview I think the process is proceeding very well with agencies and the public having ample opportunities for input.

The Department of Health is particularly interested in the wise use and distribution of the best possible water for human needs and environmental enhancement.

The Water Quality Needs Assessment and Aquatic Needs Assessment furthers our understanding of chemical and biological river processes and subsequent environmental needs. We view water quality and water quantity as inextricably linked and therefore encourage these efforts.

The alternatives identified for study are reasonable and should be explored. We suggest the Red Lake River be added as a supply alternative in the study.

The biota transfer plan of study is an appropriate approach to this issue.

Thank you again for asking for our input into this very important issue. Should you have any questions, I can be reached at 328-5237.

Sincerely,

Michael T. Sauer
Senior Environmental Scientist
Div. Of Water Quality

MTS:dlp

JUN 12 2003

North Dakota Department of Transportation

David A. Sprynczynatyk, P.E.
Director

John Hoeven
Governor

June 11, 2003

COPY

Mr. Dave Koland, Manager
Garrison Diversion Conservancy District
P.O. Box 140
Carrington, ND 58421

COMMENTS ON RED RIVER VALLEY WATER SUPPLY PROJECT - EIS - SUMMARY OF PUBLIC SCOPING

This is to convey our initial comments regarding the proposed project. In addition to these comments, we will have attendance at the upcoming meetings to be held in Grand Forks, Valley City, and Fargo later this month. Our comments are as follows:

With regard to the options that use existing river and stream channels, we wish to point out that the North Dakota Century Code provides a requirement for various levels of government to provide certain levels of flood frequency provisions for bridge crossings of roadways. The storm frequency requirements are dependent upon functional classification of the roadway and our conveyed through administrative rules. The administrative rules for the various bridge/roadway crossings are to be found at North Dakota Administrative Code Article 89-14 Stream Crossings. We believe that the EIS should address any impacts with regard to cost and flood frequency availability of the bridge crossings for options that provide for the conveyance of the proposed water supply through current river channels. The cost participation of mitigating impacts to highways and bridges should also be addressed in the document. Information on existing bridges on state and county roads can be obtained by contacting the North Dakota DOT Bridge Division. Also, any wetland and cultural impacts must be addressed and mitigated by the GDCD or project owner.

Those options that will require new crossings of highways should address the cost of maintaining traffic during the time of construction. This is most critical in crossings of the Interstate system as advance construction of median crossovers typically needs to be done prior to closing down the roadway impacted by a construction site.

Throughout the area where work must be done on the highway right of way, appropriate permits and risk management documents will need to be obtained from the North Dakota DOT at the appropriate district office. The district map and contact person for each district is enclosed.

The alternative that provides for a pipeline down the I-94 corridor should address the methods for crossing rivers along the corridor as well as interchanges and separations along the corridor.

In closing, those are our comments to date. We will try to have attendance of our District Engineers at the respective June meetings where additional, more site specific comments may be advanced.

If you have any questions, please contact me at 701-328-4406.

Tim Horner

TIMOTHY J. HORNER, P.E., TRANSPORTATION PROGRAMS DIRECTOR

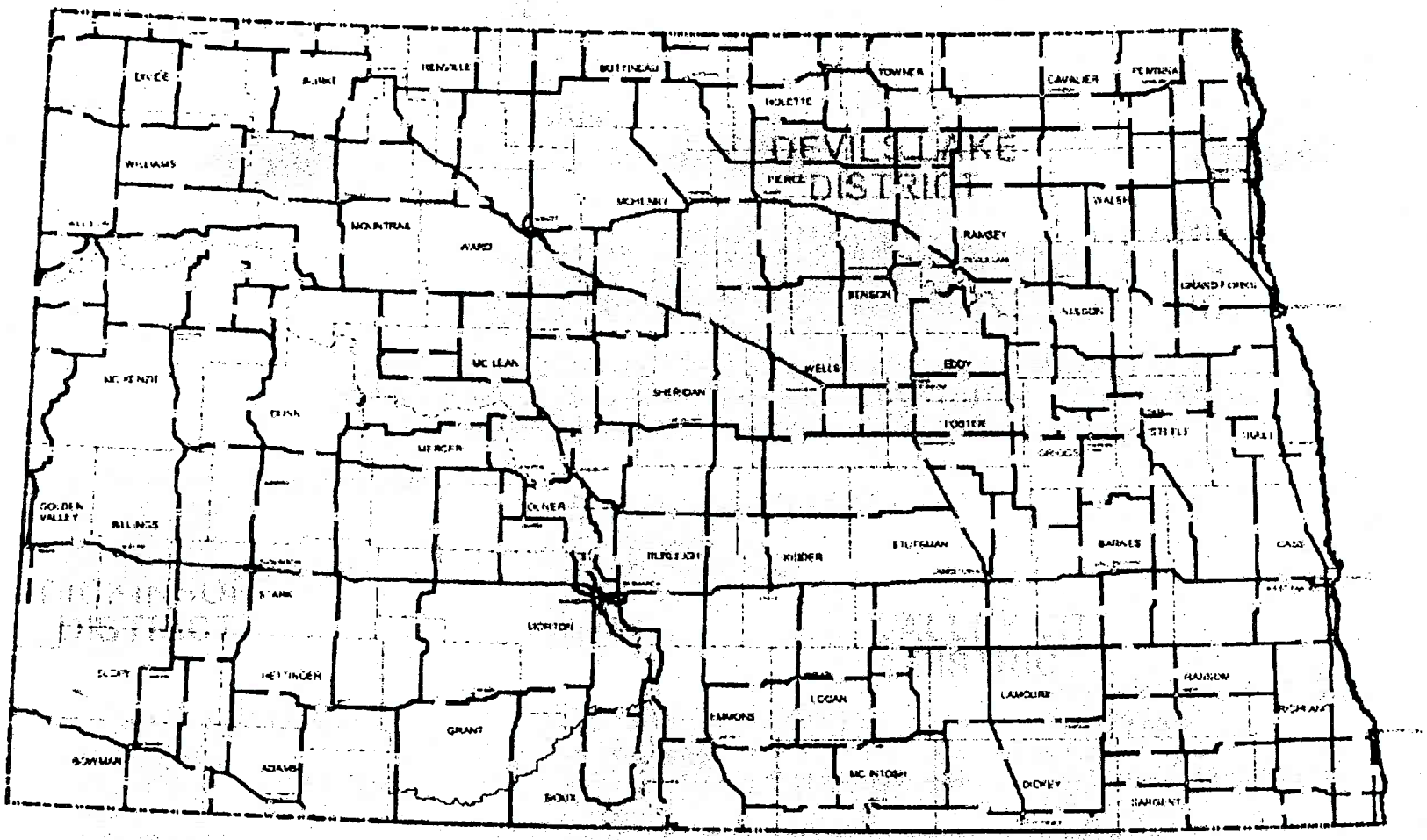
sas
Enclosure
c: Francis Ziegler
Terry Udland
Kevin Levi
Brad Darr
Nick Ludowese
John Thompson
Bob Walton

Discover ND Your Gateway to North Dakota

About NDDOT

Home Search Table of Contents

District Map



NDDOT District Information

District 1
Bismarck
218 South Airport Road
701 328-6950
Kevin Levi, Dist. Engineer

District 2
Valley City
1524 Eighth Avenue SW
701 845-8800
John Thompson, Dist. Engineer

District 3
Devils Lake
316 South Sixth Street
701 665-5100
Brad Darr, Dist. Engineer

District 4
Minot
1305 Highway 2 Bypass East
701 837-7625
Paul Regan, Dist. Engineer

District 5
Dickinson
1700 Third Avenue West, Suite 101
701 227-6500
Larry Gangl, Dist. Engineer

District 6
Grand Forks
1951 North Washington
P.O. Box 13077
701 787-6500
Nick Ludowese, Dist. Engineer

District 7
Williston
605 Dakota Parkway West
P.O. Box 698
701 774-2700
Walter Peterson, Dist. Engineer

District 8
Fargo
503 38th Street South
701 239-8900
Bob Walton, Dist. Engineer

This website is maintained by the Multi-Media section of the NDDOT
Copyright © 2003 North Dakota Department of Transportation. All rights reserved.
If you have questions or comments, please direct them to: dot@state.nd.us

NDDOT Home Page | *About/Contact NDDOT* | *Road & Traveler Information* | *Drivers License & Traffic Safety* | *News & Miscellaneous* | *Manuals* | *Jobs-Jobs-Jobs* | *Doing Business with the NDDOT* | *Motor Vehicle* | *Transportation Info* | *State Fleet Services* | *Privacy Policy and Disclaimer* | *North Dakota State Home Page*