

Devils Lake, North Dakota Strategy Plan

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Devils Lake, North Dakota Strategy Plan

BACKGROUND

Over the past 7 years, Devils Lake has risen almost 25 feet, flooding homes, roads, farmlands, utilities, railways, and threatening several communities. During this period, the lake has expanded from 70 square miles to 195 square miles. The shoreline has expanded landward 1 to 10 miles. Devils Lake is now higher than at any time since the 1830's. In response to this situation, more than \$300 million in Federal emergency response funding has been spent relocating people, raising roads, and building levees to combat the flooding. Devils Lake is currently at an elevation of about 1446 feet above mean sea level (msl), about 1 foot lower than its peak in 1999. If the lake levels rise above elevation 1446.5 msl, water will begin to flow into Stump Lake; a smaller lake located just to the east and could eventually inundate a National Wildlife Refuge. Additionally, if Devils Lake rises to elevation 1459 msl, areas downstream of Devils Lake (extending into Canada) will be threatened as well, including the Sheyenne River and the Red River of the North, which flows into Manitoba. An east-end overflow into these rivers may threaten water quality conditions because Devils Lake contains high concentrations of solids including chlorides and sulfates. The Army Corps of Engineers estimates that an additional \$500 million in potential damages would occur around Devils Lake, if lake levels continue to rise. The greatest impact would be to the City of Devils Lake and to four major highways in the area. Additional damages would occur downstream if the lake reached levels where it would overflow out of Stump Lake into the Sheyenne River.

PURPOSE AND NEED STATEMENT

The purpose of the proposed action is the reduction of 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.

AUTHORIZATION

The 1997 Emergency Supplemental Appropriations Act provided up to \$5 million under the Flood Control and Coastal Emergency account to conduct preconstruction engineering and design (PED) and associated Environmental Impact Statement (EIS) for an emergency outlet at Devils Lake. These funds were not sufficient to complete the PED studies and EIS. An amount of \$2 million was provided from a supplemental appropriation in Fiscal Year 2000 and another \$4 million was included in the Fiscal Year 2001 appropriations. These funds, which are from the General Investigation account, are for preconstruction and engineering and design of an emergency outlet from Devils Lake, North Dakota, to the Sheyenne River.

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The Energy and Water Development Appropriations Acts of 1998, 1999, and 2000 provided funds for construction of the Devils Lake project subject to determination of economic justification, compliance with the National Environmental Policy Act (NEPA) of 1969, compliance with the Boundary Waters Treaty Act of 1909, and technical soundness. No funds were ever allotted to the Corps under this authority.

PROPOSED ACTION

The Army will use its authority and funding to continue the collection of data, and the evaluation of alternatives to address the flooding problems at Devils Lake, North Dakota. Upon completion of an alternative evaluation, preconstruction engineering and design for the recommended plan will be accomplished concurrent with the necessary evaluations to be accomplished in accordance with the National Environmental Policy Act (NEPA) and the Boundary Waters Treaty of 1909.

It is proposed to invite participation of representatives from key agencies that are in best position to provide advice and technical input. These points of contact will help evaluate needed studies and consideration of alternatives, but their role is not to represent the position of the agency. Likely agencies to be invited to have a representative serve on this technical group may include:

- US Geological Survey
- Environmental Protection Agency
- US Fish and Wildlife Service
- Federal Emergency Management Agency
- Bureau of Indian Affairs
- North Dakota State Water Commission
- North Dakota Department of Health
- North Dakota Fish and Game Department
- Minnesota Department of Natural Resources
- Minnesota Pollution Control Agency
- Minnesota Department of Health
- Manitoba Conservation Department
- Environment Canada
- Spirit Lake Nation
- Red River Basin Board

(Note: comments from other groups and the general public will be sought during the NEPA process.)

The St. Paul District of the Corps of Engineers intends to issue a number of delivery orders under existing indefinite delivery type contracts for completion of the planning report and EIS and design of the preliminarily recommended plan, utilizing emergency contracting procedures when necessary and appropriate. The work would be accomplished in three phases, culminating in an initial set of plans and specifications, which could lead to construction, assuming that flood conditions continue to exist, all legal requirements have been met, the

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Record of Decision supports construction and operation, and the State of North Dakota has provided the necessary lands, easements, rights-of-way and relocations, and non-Federal cost sharing is available.

- Planning Phase – During this phase, an initial evaluation of alternatives will be performed. Upon completion of this alternative evaluation, design of the preliminarily recommended plan will proceed, concurrent with the EIS preparation. For selection of the plan that will be advanced into the design phase, cost effectiveness of alternatives will be bracketed using traditional Corps of Engineers standard economic methodologies, as well as evaluating economic justification in terms of a range of scenarios for various future lake stages. Much of this evaluation will be based on already available data and modeling. The plan selected for proceeding into the design phase will be considered a preliminarily recommended plan until the NEPA process is completed (more than a year later). A planning report, further evaluating alternatives (including discussions of evaluations already done), will accompany the EIS.
- Design Phase - During this phase, the main features of the preliminarily recommended plan will be designed. This will be done concurrently with the EIS preparation.
- Plans and Specifications phase - During this phase, the plans and specifications for multiple construction contracts will be prepared.

ALTERNATIVES

The Army will examine the environmental impacts of the proposed action in an Environmental Impact Statement (EIS) in accordance with the NEPA. The EIS will identify and evaluate alternatives to the preliminarily recommended plan, but will rigorously explore and evaluate in detail only those alternatives determined to meet the purpose and need identified above and otherwise determined to be reasonable alternatives. Among these alternatives are the following:

Most Likely Future Without the Proposed Project

The measures identified with this alternative are the base condition upon which other alternatives are to be compared for impact assessment under NEPA. This alternative assumes that the types of emergency measures currently being pursued in the project area would continue to be implemented as necessary as the lake continues to rise. These emergency measures include such actions as raising the levees protecting the City of Devils Lake and relocating homes if the lake level continues to rise. If technically and economically feasible they may also include building temporary levees, raising selected roads and railroads (within limits of reasonable safety acceptance), and protecting or relocating utilities. A continuation of the current level of upper basin storage and measures at the location of a natural overflow to minimize erosion will also be considered as potential features of the most likely future without the proposed project. For the portion of the cost effectiveness evaluation using a scenario approach, it will be assumed that the

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wet cycle continues, as evidenced by USGS and UND studies, to the point of naturally overflowing into the Sheyenne River. Proposed actions by the State of North Dakota, such as an overflow to Stump Lake and a temporary outlet to the Sheyenne River along the Twin Lakes route, will not be assumed to be included in the no action alternative at this time. If either or both are implemented, the evaluation of alternatives will be reviewed to determine what measures are needed to complete NEPA with this changed base condition.

Upper Basin Management

This alternative would examine taking further measures in the upper basin to reduce inflow into the lake such as providing storage through retention structures, wetland restoration, or land use change.

Expanded Infrastructure Measures

A situation exists in which roads are being used to provide barriers to the rising and expanding waters of Devils Lake. Since these roads are acting as dams, but not constructed to function as dams, there is a potential safety hazard to road users and to the people living in areas being sheltered by the barriers. This alternative would examine taking additional measures beyond those described in the most likely future with out a proposed action alternative to provide a safe level of flood protection within the basin.

Outlets

Many potential outlet routes and concepts have been evaluated in prior studies and can be **adequately addressed with minimal additional work**. The one **appearing to have the** greatest potential for being effective in drawing down the lake levels, while meeting objectives for downstream channel capacities and water quality criteria and ability to implement is along the Peterson Coulee Route. Therefore, it is likely that following the initial **reanalysis of outlet options**; this is the only outlet alternative to be further considered among the array of other alternatives. Further consideration, however, is needed to define the recommended operation plan (ranging from a 300 cfs maximum discharge constrained for downstream channel capacity and water quality standards to a maximum discharge of 480 cfs unconstrained discharge – with operation limited to 7 months of the year (May-November)).

The Peterson Coulee Route includes a pipeline to the top of the divide at elevation 1570 msl, or about 123 feet above the current lake level, and down to the Sheyenne River. It would be about 17 miles long. Only the northernmost 1½ to 2 miles of this route lie within the Spirit Lake Reservation. Affected reservation lands are all in private ownership. No Tribal trust lands are impacted. The preliminary estimate of the cost of constructing a pump station and pipeline along this route ranges from about \$60-100 million. Annual O&M costs are estimated to be about \$2-3 million.

Combinations and Sensitivity Analysis

In addition to evaluation of the above alternatives independently, several combinations of these alternatives will also be addressed. And to better understand the sensitivity of assumptions used for future lake scenarios and for the most likely future without a proposed project condition, a single alternative will be evaluated in comparison to at least three other base conditions. This

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single alternative will be selected following the alternative evaluation, and then will be evaluated against these other 3 scenarios:

- 1) Absolutely no more emergency work be done in the Devils Lake basin (No Action)
- 2) A more moderate scenario for future lake stage (max. elevation 1455?)
- 3) An even more moderate scenario for future lake stage (max. elevation 1450?)

APPROACH TO ENVIRONMENTAL IMPACT STATEMENT DEVELOPMENT

In order to adequately respond to the flooding at Devils Lake, it will be necessary to proceed expeditiously to gather and evaluate data and to coordinate preparation of the EIS. This strategy plan includes an expedited NEPA process, which will involve streamlined procedures and will require that all Federal agencies cooperate with the Corps of Engineers, and is based on the following assumptions:

1. Public and agency review and comment periods will be restricted to the minimum contemplated under applicable regulations and will not be extended. The EIS will address operational impacts and associated mitigation in as great a depth as feasible with information available at the time and in sufficient detail to allow a determination as to whether the project should be constructed and operated. Mitigation may include an adaptive management approach during project operations, if appropriate.
2. A programmatic agreement concerning cultural resources along the Devils Lake outlet route and the Sheyenne River must be completed between St. Paul District of the Corps of Engineers, the Spirit Lake Tribe, the North Dakota State Historic Preservation Officer, and the Advisory Council on Historic Preservation for inclusion in the final EIS in order to facilitate the emergency response. Negotiations with the Spirit Lake Tribe on the Traditional Cultural Properties (TCP) Study are an essential part of this process. The TCP Study must be completed prior to the start of construction and in accordance with the programmatic agreement.
3. Cultural resources surveys, evaluative testing, and mitigation of National Register of Historic Places eligible or listed sites must be completed in accordance with the programmatic agreement for the proposed plan prior to the start of any construction that would impact such sites.
4. A detailed erosion monitoring plan and mitigation plan for project impacts to properties along the Sheyenne River that are eligible or listed in National Register of Historic Places must be developed in accordance with the programmatic agreement for the proposed plan prior to operation that would impact such sites.
5. The Army will work with the Office of Management and Budget who will consult with Canada through the Department of State during the NEPA process to ensure that the requirements of the Boundary Waters Treaty of 1909 are met. It is that intent that the United States will work with technical representatives from Canada to evaluate matters

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that must be addressed to comply with the requirements and intent of the Boundary Water Treaty of 1909 concurrently with the NEPA studies.

6. Completion of the study assumes that full funding level is provided in fiscal year 2002.

COST ESTIMATES

The 5 major tasks associated with this design and NEPA effort, which remain to be addressed following the initial \$5 million provided by the 1997 Emergency Supplemental Appropriations Act include:

Environmental Resources Analysis & NEPA Process	\$ 3,200,000
Water Quality and Hydraulic Modeling	842,000
Design & Preparation of Plans and Specifications	2,460,000
Corps Real Estate Activities	45,000
Administration, Management, Coordination, and Contingencies	<u>1,153,000</u>
Total	\$ 7,700,000

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PROPOSED SCHEDULE¹

Funding Received	21 Aug 00
Strategy Plan Accepted	30 Nov 00
Issue Notice of Intent for EIS	30 Nov 00
Scoping Meetings Completed	31 Mar 01
Complete Evaluat. of Alternatives	31 May 01
*Release Prelim. Impact Evaluations & Prelim. Planning Report for Agency Review	31 Jul 01
*Initiate Design of Prelim. Recommended Plan	1 Aug 01
*Complete Real Estate Plan	30 Sep 01
Complete Planning Report	30 Nov 01
*Draft PCA to Local Sponsor	30 Nov 01
*Initiate P&S for First Feature	15 Jan 02
*ROW Drawings to Local Sponsor	31 Jan 02
Draft EIS Released to the Public	28 Feb 02
*Complete P&S for First Feature	1 July 02
Final EIS Released to the Public	1 July 02
*Execute PCA	31 Aug 02
Record of Decision Prepared	1 Sep 02
*Advertise 1 st Construction Contract	1 Sep 02
Sign Record of Decision	30 Sep 02
Award 1 st Construction Contract	31 Oct. 02 (2)

* Actions that need to be performed ahead of normal sequence in order to meet final expedited schedule

- (1) Schedule assumes the selected plan is an outlet along the Peterson Coulee Route since most past work has been accomplished for this plan. If another plan is selected, the schedule may need to be revised.
- (2) As stated earlier, the proposed schedule and timeline assume that construction will proceed only if flood conditions continue to exist, all legal requirements have been met, and the Record of Decision supports construction and operation.