

**UNITED STATES DISTRICT COURT**

**DISTRICT OF MINNESOTA**

Richland/Wilkin Joint Powers Authority, a  
Minnesota-North Dakota Joint Powers  
Authority,

Civil File No. 0:13-CV-02262-JRT-LIB

Plaintiff,

vs.

United States Army Corps of Engineers;  
John McHugh, Secretary of the U.S. Army  
Corps of Engineers (in his official  
capacity); Jo-Ellen Darcy, Assistant  
Secretary of the Army for Civil Works (in  
her official capacity); and Col. Dan  
Koprowski, District Commander, St. Paul  
District, U.S. Army Corps of Engineers (in  
his official capacity),

Defendants,

and

Fargo-Moorhead Flood Diversion Board of  
Authority,

Defendant-Intervenor.

**DECLARATION OF JILL SCHLICK NGUYEN IN SUPPORT OF AMICUS CURIAE  
MINNESOTA DEPARTMENT OF NATURAL RESOURCES' MEMORANDUM  
REGARDING MOTION TO DISMISS AND MOTION FOR PRELIMINARY  
INJUNCTION**

I, Jill Schlick Nguyen, do upon personal knowledge declare as follows:

1. I am an Assistant Attorney General for the State of Minnesota, and I represent the Minnesota Department of Natural Resources in the above-captioned matter.

2. Attached to this declaration as Exhibit A is a copy of excerpts from the U.S. Army Corps of Engineers' response to comments on the Supplemental Draft Environmental Impact Statement for the Fargo-Moorhead Metropolitan Area Flood Risk Management project.

I declare under penalty of perjury under the laws of the United States of America that the following is true and correct, as provided by 28 U.S.C. § 1746.

Dated: March 12, 2015.

/s/ Jill Schlick Nguyen \_\_\_\_\_  
JILL SCHLICK NGUYEN

**C-33 Soil Analysis**

Expert comments in the geotechnical appendices of the SDEIS raise questions about the lack of adequate analysis of soil issues for the project. The true cost of the project cannot be estimated without proper soil analysis.

**Response:**

Geotechnical investigations have been conducted as part of the feasibility study. All comments generated through the Corps of Engineers' technical review processes have been adequately addressed in the FEIS. More detailed geotechnical investigations will continue during the design phase, but the information in the FEIS is sufficient for feasibility level design and cost estimating, and to make a reasoned choice among alternatives.

**C-34 Growth Potential**

Growth and development potential will be severely restricted for towns in and around the upstream staging and storage area.

**Response:**

Chapter 5 and Appendices C and D of the FEIS discuss impacts on growth and development in the study area. It is true that areas in and near the upstream staging and storage area will be significantly impacted, but positive benefits will occur in other parts of the study area.

**C-35 Sedimentation**

The proposed project will change the constitution of the river and there will be increased sedimentation in the protected area.

**Response:**

The FEIS includes the USGS report "Sediment Concentrations, Loads, and Particle Size Distributions in the Red River of the North and Selected Tributaries near Fargo, North Dakota during the 2010 Spring High-Flow Event." In addition, Appendix F of the "Red River Diversion, Fargo-Moorhead Metro Flood Risk Management Project, Feasibility Study, Phase 4" prepared by the consulting team (Moore Engineering, Inc., Houston Engineering, Inc., Barr Engineering, Co., and HDR Engineering, Inc.) includes a full exhibit presenting and interpreting this USGS 2010 dataset as well as other sediment/geomorphology datasets available for the study area, upon which an evaluation of the potential impacts on the sediment transport characteristics and geomorphology of the rivers that could be anticipated as a result of the selected plan will be made. The USGS 2010 dataset combined with the Geomorphology Study by West Consultants (2001) clearly show that the Horace-West Fargo diversion has not resulted in large changes on the sediment dynamics of the Sheyenne River; the Horace West Fargo diversion provides an example of the potential maximum impacts that can be expected from the diversion channel alternatives.

**C-36 Impacts to Churches, Bars, Establishments, and Other Community Centers**

Churches, bars, business establishments, and other public gathering areas will be negatively impacted by the upstream staging and storage area. What compensation will be provided for these buildings? Even if these buildings are not directly impacted, the surrounding communities

given that the amount of acreage available on the bottom of the diversion channel greatly exceeds that lost.

**C-73 Mosquitoes**

There is a possibility for increase mosquito habitat and an increased mosquito problem associated with the water in the upstream storage and staging area. The SDEIS lacks a cost and risk assessment for mosquito borne diseases.

**Response:**

Currently Fargo ND, Moorhead MN and Cass County are part of a mosquito spraying program to combat the mosquito problem; this plan would be adjusted to include any areas where the project would result in mosquito habitat.

**C-74 Fish Stranding**

If fish stranding occurs and it is not possible to resolve the problem, then nothing will be done. This is unacceptable, something must be done about fish stranding if it occurs.

**Response:**

If substantial fish stranding is observed following project operation, the Adaptive Management Team (including the sponsor and resource agencies) can discuss actions to remedy the situation. This could include modifying project operations, construction or grading activities in specific problem areas, or if warranted, implementing additional mitigation to address the issue.

**C-75 Impacts South of Highway 46**

Have complete studies on impacts south of Highway 46 been done? We have seen maps showing impacts of less than a foot ranging to 2.6 feet 10 miles to the south. This seems inaccurate and incomplete; has a credible impact study been done for the area south of Highway 46?

**Response:**

Impacts have been assessed upstream to Abercrombie, North Dakota. During the public meetings, several maps were presented; some showed impacts (differences between the with-project and without-project condition), while others showed total flood depths. Increases to the 1-percent chance flood stage outside of the defined staging area are less than one foot. One-percent chance flood depths vary significantly depending on the location and ground elevation. See Section 5.2.1.4 in the FEIS for updated information

**C-76 Impacts to Sugarbeet Production**

The best time to plant sugarbeets is mid April to early May, and sugarbeets do not tolerate standing water. Sugarbeet production in the upstream staging and storage area will disappear, and there will be many negative repercussions of this including substantial economic losses.

**Response:**

There will be no impact to crop production for most years. Only for the most severe flood events will there be an effect from additional water and duration. Even with a 1-percent chance spring flood event, the duration of standing water is estimated to only increase 5 to 15 days.

the North Dakota diversion is a more effective and cost-effective way to reduce downstream impacts than distributed storage is.

The environmental effects of storage are addressed in and Section 3.7.5 of the FEIS and also in Section 8.4.3 of Appendix O of the FEIS. Flood storage, if operated carefully, could provide environmental benefits, though to a smaller degree than restoration projects. Adverse environmental impacts of storage include increased inundation over large areas of land because flood storage impoundments would be designed to allow maximum water storage. To implement the effective storage upstream equal to the 200,000 acre feet in the storage and staging areas would require many sites, which would result in greater impacts to more people, property, agriculture, and the environment. The upstream staging and storage is more implementable from a logistical perspective, will have greater reliability, and will have less overall impacts than distributed storage.

Section 8.4.3.5 of Appendix O of the FEIS describes combinations of Minnesota diversions and flood storage and Section 8.4.3.4 describes Minnesota diversions with staging.

#### **C-87 Bank Stability**

The duration of bankfull conditions will be longer under the LPP and the SDEIS provides no support for the conclusion that soil strength conditions would not be substantially changed. The FEIS must provide support for the conclusion that soil strength conditions would not be substantially changed under the LPP.

#### **Response:**

Bank failures are extremely common throughout the Red River valley, especially on the outside bends of most rivers. Conditions that most often trigger or exacerbate existing slides are drought conditions, where water elevations are reduced to levels below those that have occurred for many previous weeks, months or even years. The Corps does not dispute that increased durations of water elevations might contribute towards increased bank instability; however, this would most likely occur at the outer face of the lower bank. A modeling analysis could be completed to further assess changes to bank stability under the selected plan. However, there are many variables that influence bank stability, including soil types, precipitation, vegetation presence and type, bank loading, riparian land use, current velocities, changes in water elevation, and several other factors. The modeling analysis of bank stability would be greatly influenced based on what assumptions are made for these many variables. Any modeled changes in stability of the outer face of the lower bank would likely be extremely small, and likely within the error and uncertainty of the model. In addition, the stability of a larger portion of the lower bank and the upper bank would not likely be affected by a small increase in duration of bankfull conditions. Hydraulic modeling for the selected plan suggests that water above bankfull might occur for about 4.5 days without project, compared to 11.5 days with project for a 10-percent chance event. While this difference could exacerbate slides on the outer face on the lower bank, it would be difficult to reliably model or measure the small incremental difference in bank failure rates for with- and without project conditions. Our conclusions for risks to soil strength conditions, bank stability and failure are based on professional judgment which has developed

over several decades of project work in the Red River basin. Section 5.2.1.1.3 of the FEIS describes the effect of upstream staging on upstream geomorphology.

**C-88 Fish Passage at the Red River Control Structure**

Additional minimization measures must be provided to facilitate fish passage across a larger range of flows through the Red River control structure (i.e. additional fish passage channels) and included in the Record of Decision. Post-operation monitoring over time will indicate if additional mitigation is necessary and assurances must be provided upfront.

**Response:**

The LPP includes up to eight fish passage channels to provide fish passage at the Red River control structure from the time the project begins to operate, up to approximately 30,000 cfs (as measured at Fargo). The FEIS outlines adaptive management and future mitigation funding. This includes the options available for funding future mitigation.

**C-89 Wetland Impacts and Wetland Mitigation**

The FEIS must discuss how wetland mitigation will replace functions and values lost at the impacted sites. The FEIS must also discuss the potential for channel bottom wetlands to be influenced by non-native plant species and associated functional decline. This discussion must be in context of Corps mitigation policy. A description of whether perpetual easements or other protections will be placed on the replacement sites should also be provided.

**Response:**

Wetland areas resulting within the proposed diversion channel were analyzed using the Minnesota Routine Assessment Methodology for Evaluating Wetland Functions (MnRAM), Version 3.3. Based on the design of the diversion channel, a base flow is assumed within the channel bottom in most years, resulting in flow-through/riverine shallow marsh wetlands within the lowest portions and behind the periodic grade controls and fresh wet meadow wetlands dominating the remaining area below the upland slope. Wetland areas will be planted with native seed mixes appropriate for the intended plant communities and managed for invasive species such as reed canarygrass (*Phalaris arundinaceae*) and purple loosestrife (*Lythrum salicaria*).

The selected plan is expected to provide equal to greater wetland functionality compared to existing conditions when considering individual functions analyzed. When overall functions are considered together, the selected plan is expected to provide greater wetland functionality than existing conditions. Most importantly, wetlands within the proposed diversion corridor will not be subject to the regular disking/plowing for agricultural production to which the majority of the existing wetland resources are subject, accounting for much of the functional lift. Finally, the replacement of wetland functions lost will be done within the same watershed as the impacts, adequately addressing some of the needs of the watershed.

The wetlands within the diversion corridor are expected to provide at least a “Moderate” level of functionality for *Maintenance of Hydrologic Regime, Flood/Stormwater/Attenuation, Downstream Water Quality, Maintenance of Wetland Water Quality* and *Aesthetics/Recreation/Education/Cultural* functions and values. Of course, the intent of the

and 3.8.4 of Appendix C of the FEIS contains additional details about impacts to rural and public infrastructure.

**C-95 Increased Costs of Homes in Fargo-Moorhead**

How will displaced home owners from the upstream staging area be able to afford homes in Fargo-Moorhead, since certainly the increased demand from the many displaced people will increase home costs.

**Response:**

It is not anticipated that the selected plan will result in substantial changes to home costs. Not all of the displaced people are likely to relocate to Fargo-Moorhead, and not all of the displaced home owners will move at the same time. Given the size of Fargo-Moorhead, any increase demand would likely be negligible.

**C-96 Impacts in Northern Richland County**

The northern tier of Richland County has been a strong growth area, and this area will be severely affected by flooding as a result of the diversion.

**Response:**

The 1-percent chance flood stage at Highway 46 on the north side of Walcott Township is expected to increase one foot or less. Impacts would gradually decrease southward to nearly zero feet at Richland County Road 2.

**C-97 Impacts of Potential Channel Enlargements**

There is a potential for channel enlargement due to the increased duration and frequency of bankfull and higher events. Since channel forming flows are a function of the product of sediment transport rate and flow frequency, changes to either could have adverse consequences for riparian vegetation, channel stability, sediment, and habitat.

**Response:**

Potential impacts to geomorphology, which includes changes to channel stability and dimensions, have been characterized within the FEIS (Section 5.2.1.1).

**C-98 Fish Passage and Impacts on Spawning**

Implementation of the LPP will result in no fish passage from the upstream end of the diversion channel into the Red River. Fish that are on a spawning migration and swim the 36 miles to the upper end of the diversion channel will either drop their eggs in the bypass channel where they are not likely to survive; reabsorb the eggs due to lack of suitable spawning habitat; or, and this is unlikely to happen, travel 36 miles back downstream to the Red River, and then migrate 57 miles upstream in the Red River to the bypass channels. Fish passage should be added to allow fish passage out of the diversion channel.

**Response:**

As outlined in Chapter 5 the FEIS, it is likely that some fish will be drawn into the diversion channel during project operations. However, the number that would migrate to the upper end of

the diversion channel is uncertain. The diversion channel is approximately 36 miles long. During coordination for this project, the Minnesota Department of Natural Resources identified that through their experiences, fish movement is substantially impeded within and through long, channelized river segments and ditches. Thus, there remains uncertainty with how many fish might actually migrate to the upper end of the flood diversion channel.

The project team has evaluated the potential for fish passage at the upper end of the diversion channel. Given the many constraints with project design, a fish bypass channel at this location would likely be expensive, potentially on the order of \$10 million or more for this specific feature. Given the high cost, and the uncertainty with how many fish might actually migrate up the diversion channel during project operation, the most appropriate way to address this issue is through adaptive management. This impact will be evaluated to better assess what, when and how many fish migrate up the diversion channel during project operations. Once the impact is better understood, mitigation can be proposed, if appropriate. This could include fish passage at the upper end of the diversion channel; improved fish passage at a nearby dam, or some other action. Potential mitigation would need to be balanced with the significance of the impact and cost of potential mitigation measures. These discussions would be held amongst the Adaptive Management Team.

#### **C-99 Wetland Impacts for Various Alternatives**

There is no analysis of wetland impacts that would be induced by operation of the various alternatives.

#### **Response:**

The wetland analysis provided in section 5.2.1.5 discusses the impacts to wetlands caused by the diversion channel alternatives. The operation of the project was considered in this analysis; no appreciable impacts to wetlands would occur due to operation of the project.

#### **C-100 Zebra Mussels**

The Final EIS should acknowledge that there may be some colonization of zebra mussels on the bypass structure which may require periodic cleaning to ensure the gates remain operational.

#### **Response:**

The FEIS has been updated to address potential presence of zebra mussels at project structures. See Section 5.2.1 of the FEIS for further details.

#### **C-101 Impacts to Birds**

The SDEIS lacks an assessment of impacts to Bald Eagles and Water Cranes.

#### **Response:**

The report addresses the impacts to Bald Eagles and Whooping Cranes in section 5.2.1.9 Endangered Species and subsection 5.2.1.9.1 Federal Species.

#### **C-102 Bird Strike Assessment**

The SDEIS lacks a "bird strike" assessment for Hector International Airport.