Attachment 1

Section 404(b)(1) Evaluation
Supplement 1

Section 404(b)(1) Evaluation
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FARGO MOORHEAD METROPOLITAN
FLOOD RISK MANAGEMENT PROJECT
CASS COUNTY, NORTH DAKOTA AND CLAY COUNTY, MINNESOTA

I **PROJECT DESCRIPTION**

A. Background – The U. S. Army Corps of Engineers (Corps) is currently designing a Flood Risk Management Project for the Fargo Moorhead Metropolitan Area. A Final Feasibility Report and Environmental Impact Statement (FEIS) and Section 404(b)(1) analysis for the project was completed in July 2011 and a Record of Decision for the project signed April 3, 2012. The proposed modifications identified since the FEIS include: shifts in the alignment of the diversion channel to include the elimination of Storage Area 1 adjacent to the inlet of the diversion channel, the addition of gates on the inlet structure, and the elimination of the structure on Wolverton Creek; construction of levees/floodwalls in downtown Fargo; construction of a ring levee around the towns of Oxbow, Hickson, and Bakke, ND; adding permanent and temporary easements to the footprint area; and modification of the diversion channel cross section . The Corps has prepared an Environmental Assessment to assess the changes in impacts associated with the design modifications for the Fargo Moorhead Metropolitan Flood Risk Management Project. This supplement to the Section 404(b)(1) evaluation dated July 2011 addresses the revised impacts and associated changes in fill quantities due to the design modifications. The Section 404(b)(1) evaluation dated July 2011 (hereafter "the original Section 404(b)(1) evaluation") remains unchanged except as identified herein.

B. Location – The project area affected by the project construction is located in Cass County, North Dakota and Clay County, Minnesota. The changes to the proposed fill activities would affect the Red River of the North, Wild Rice River (ND), Wolverton Creek, and surrounding wetlands[1].

C. General Description – This supplement addresses the effects that would result from the placement of fill in waters of the United States in conjunction with proposed modifications to the project as described in the Environmental Assessment. A general overview of the project is provided here, along with details on the design modifications. The effects associated with the features described here are discussed in detail in chapter 5 of the FEIS and in the Environmental Assessment.

The project is a diversion channel system including but not limited to excavated channels, a channel inlet control structure, tie-back embankments, river control structures on the

[1] Note that for the purposes of both the original Section 404(b)(1) evaluation and this amendment, it was assumed that any wetland was a water of the United States, and therefore jurisdictional under the Clean Water Act. A jurisdictional determination was not completed, and some of the wetlands may in fact not be jurisdictional.

Red and Wild Rice (ND) rivers, an upstream flood water staging area, hydraulic structures on tributaries, levees and floodwalls, non-structural features (such as fee acquisitions, relocations, or raising individual structures), recreation features, and environmental mitigation. When operated, the project would divert a portion of the Red River flow upstream of the metro area, pick up flow at the Wild Rice, Sheyenne, Maple, Rush, and Lower Rush rivers, and return it to the Red River downstream of the Fargo-Moorhead metro area. The diversion channel system includes a 6 mile long connecting channel between the Red River and the diversion channel inlet control structure and 30 mile long diversion channel extending from the inlet control structure to its outlet at the Red River near Georgetown, Minnesota.

The diversion channel has a maximum bottom width of 300 feet and a variable-width low-flow channel that would meander within a 200-ft meander belt width within the 300-ft bottom width. Although the maximum bottom width has increased from the 250 foot bottom width described in the original Section 404(b)(1) evaluation, the total footprint of the diversion channel has not increased, and no additional wetlands are impacted due to this modification.

The proposed fill activities associated with the construction of the hydraulic structures, tie-back embankments, Oxbow/Hickson/Bakke ring levee, and the excavation of the diversion channel would include: partially filling the abandoned channels on the Wild Rice and Red Rivers; excavation for the diversion channel and sidecasting material into wetlands within approximately 600 feet on either side of the diversion channel; placing fill into wetlands for the tie-back embankments and Oxbow/Hickson/Bakke ring levee; and fill associated with diverting the flow through the constructed hydraulic structures. No dredged or fill material would be placed in wetlands for the activities associated with construction of the in-town levees.

Figure 1identifies the modified diversion channel alignment and control structure locations compared to the diversion channel alignment that was discussed in the original Section 404(b)(1) evaluation, as well as associated features to be constructed as part of the project. Changes to fill quantities and locations would occur in wetlands along the diversion channel alignment, the tie-back embankments, and at the general location of the hydraulic structures in the Wild Rice, Sheyenne, Maple, Rush, and Lower Rush Rivers.

The fill activities on the Red River would change for both the control structure and the outlet structure: the location of the control structure would be re-located to just upstream of river mile 476 (Figure 2), and design modifications eliminated the need for fill in the river channel at the outlet of the diversion channel. The fill activities on the Wild Rice River (Figure 3) would occur approximately 2 miles downstream from the previous location. Due to the shift of the southern alignment, there would no longer be any fill placed in Wolverton Creek.

Construction of the ring levee around Oxbow, Hickson, and Bakke would result in the loss of wetlands along the alignment (Figure 4).

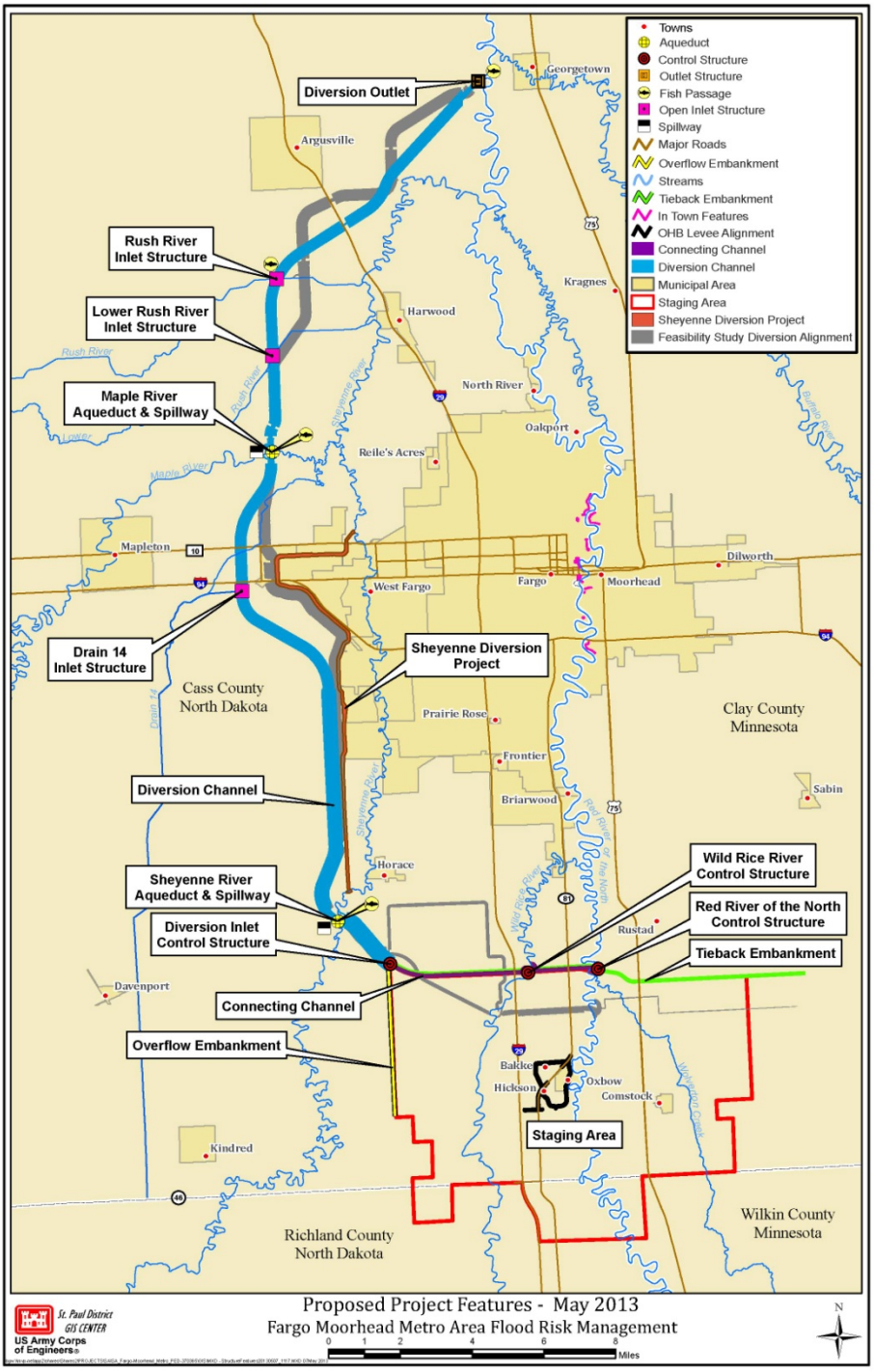

Figure 1. Project Features.

Figure 2. Red River Control Structure Fill Area.

Figure 3. Wild Rice River Control Structure Fill Area.

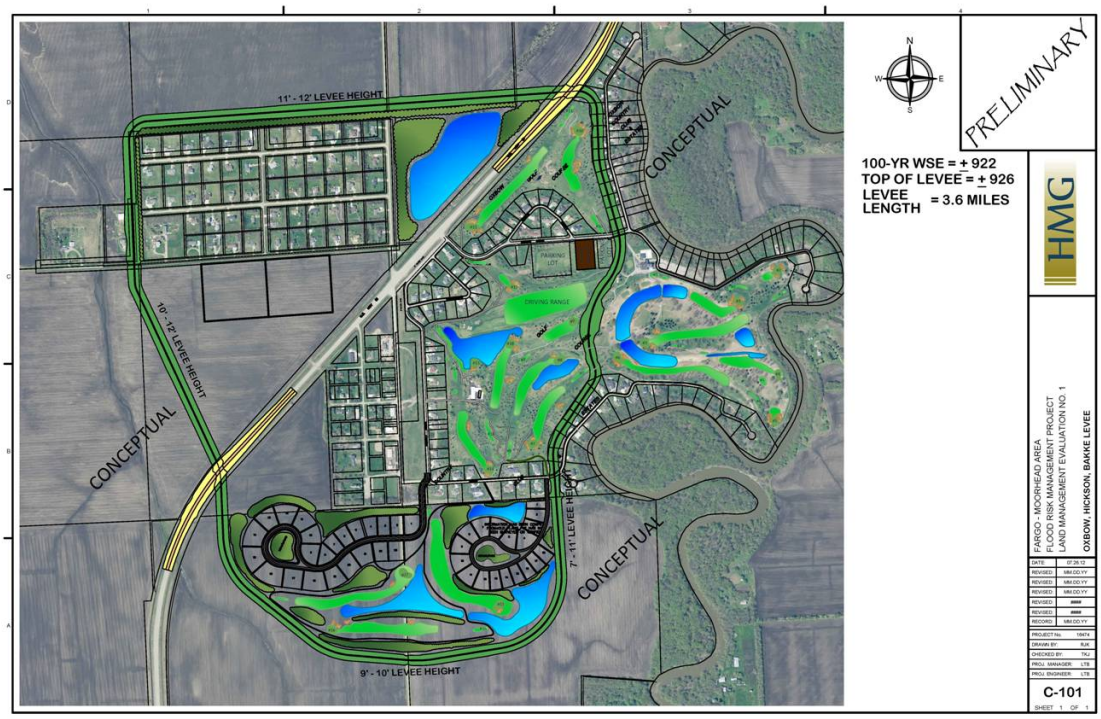

Figure 4. Oxbow, Hickson, and Bakke Levee Alignment.

D. Authority and Purpose – There would be no change from what was described in the original Section 404(b)(1) evaluation.

E. General Description of Dredged or Fill Material

1. General Characteristics of Material – There would be no change from what was described in the original Section 404(b)(1) evaluation. Final determinations for the source of material have not been made. Rock for the project would be obtained from existing sources. Stone for riprap would be durable material free from cracks, blast fractures, bedding, seams and other defects that would tend to increase deterioration from natural causes. Bedding used for the base layer would be clean rock 8-inches in diameter, or smaller, produced from an existing facility. Levee fill would be obtained from project excavations.

2. Quantity of Material – For the purpose of this analysis quantities were calculated based on the ordinary high water mark (OHWM) being at the level of the 50-percent chance event. Table 1 lists quantities for each area of impact that has changed from the original Section 404(b)(1) evaluation and the new estimates. The proposed modifications would result in 574,722 cubic yards of earth fill placed below the OHWM (140,878 cubic yards less than identified in the original Section 404(b)(1) evaluation), approximately 25,000 cubic yards of riprap and aggregate filter fill placed below the OHWM (50,000 cubic yards less than identified in the original Section 404(b)(1) evaluation), and 13,200 sf of sheet pile installed below the OHWM (9,600 sf less than identified in the original Section 404(b)(1) evaluation). No appreciable changes were

made to the estimate magnitude of impacts for the earthwork and the hydraulic structures at the Sheyenne River, the Maple River, the Lower Rush River, and the Rush River.

Earthwork estimates have been updated during design phase to accommodate the modifications to the project. Overall excavation was decreased from approximately 59,616,847 cy to approximately 51,168,563 cy.

Table 1. Impacts.

Impact Location:	Estimated Impact Type	Original Section 404(b)(1) Evaluation Estimated Impact Magnitude	Updated Estimated Impact Magnitude	Units
Red River Control Structure	Total Extent of impacts Within OHWM	22.8	17.1	Acre
Red River Control Structure	Total Grading Extent Within OHWM	22.7	8.8	acre
Red River Control Structure	Fill Within OHWM	20.5	8	acre
Red River Control Structure	Fill Volume Below OHWM	405,000	206,222	cy
Red River Control Structure	Excavation Within OHWM	2.2	2.2	acre
Red River Control Structure	Riprap and Aggregate Filter Fill Within OHWM	13,000	13,000	cy
Red River Control Structure	Sheet Pile Installed Within OHWM at Toe of Tie-back Levee Crossing	9,000	9,000	sf
Hydraulic Structure at Wild Rice River	Total Extent of Impacts Within OHWM	14.5	12.7	acre
Hydraulic Structure at Wild Rice River	Total Grading Extent Within Assumed OHWM	11	12.6	acre
Hydraulic Structure at Wild Rice River	Fill Within OHWM	10.1	11.5	acre
Hydraulic Structure at Wild Rice River	Fill Volume Below OHWM	113,000	170,900	cy
Hydraulic Structure at Wild Rice River	Excavation Within OHWM	0.9	1.1	acre
Hydraulic Structure at Wild Rice River	Wild Rice River Rock Boulder Grade Control with Aggregate Bedding Within OHWM	1.0	1	acre
Hydraulic Structure at Wild Rice River	Riprap and Aggregate Filter Fill Within OHWM	12,000	12,000	cy

Hydraulic Structure at Wild Rice River	Sheet Pile Installed Within OHWM at Toe of Fill	4,200	4,200	sf
Diversion Outlet to Red River	Fill Within OHWM	12.0	0	acre
Diversion Outlet to Red River	Riprap and Aggregate Filter Fill Within OHWM	25,000	0	cy
Hydraulic Structure at Wolverton Creek	Fill Within OHWM	0.2	0	acre
Hydraulic Structure at Wolverton Creek	Fill Volume Below OHWM	1,600	0	cy
Hydraulic Structure at Wolverton Creek	Excavation Within OHWM	0.8	0	acre
Hydraulic Structure at Wolverton Creek	Excavate and Install Riprap Within OHWM	1,000	0	cy

3. Source of Material - There would be no change from what was described in the original Section 404(b)(1) evaluation. All stone would be clean and reasonably free from soil, quarry fines, and refuse. Materials would be obtained from approved pits/quarries in the project vicinity and would be free of chemical contaminants.

F. Description of the Proposed Discharge Sites

1. Location – For Red River control structure construction, material would be placed just upstream of river mile 476, but off to the side of the channel and would only have fill impacts where the channel is diverted toward the structure; at this location the channel would be filled to help divert the flow toward the structure. For the diversion channel construction, material would be placed into the Red River for approximately 200 feet just downstream of river mile 477 and also at the crossings of the Wild Rice where the channel will be abandoned, Sheyenne, Maple, Lower Rush and Rush rivers (Figure 1). For the diversion outlet construction, material would no longer be placed in the Red River, in contrast to what was described in the original Section 404(b)(1) evaluation.

2. Size - Changes in impacts due to design modifications are presented in Table 2, 3 and 4. Approximately 49 acres of riverine habitat would be affected by the abandonment of river channel for the construction of features for the project, a decrease of about 1 acre in impacts due to design modifications. Approximately 1,770 acres of wetlands would be affected by either fill activities or excavation along the modified diversion channel alignment, an increase of approximately 720 acres. This increase is largely due to the addition of a Temporary and Permanent Easement Area for construction (250 ft on either side of the diversion channel footprint). For purposes of this analysis, it is assumed that all of the Easement Area would be filled during

construction. However, it is possible that much of this area would not be filled. Another reason for the increase is further analysis of likely wetland areas using updated information that was not available during the 2010/2011 review. An additional 14.5 acres of wetlands would be affected by fill activities along the Oxbow/Hickson/Bakke ring levee alignment. The majority of the additional wetlands affected are farmed wetlands.

Table 2. Riverine habitat acres.

Impact Location	Estimated Impact Type	Original Section 404(b)(1) Evaluation Estimated Impact Magnitude	Updated Estimated Impact Magnitude	Units
Red River Control Structure	Riverine Habitat	14	14	acres
Wild Rice River Control Structure	Riverine Habitat	12	11	acres
Sheyenne River Aqueduct	Riverine Habitat	8	8	acres
Maple River Aqueduct	Riverine Habitat	10	10	acres
Rush River	Riverine Habitat	3	3	acres
Lower Rush River	Riverine Habitat	3	3	acres

Table 3. Diversion Channel Wetland Acres Impacted.

Diversion Channel			
Wetland Type	Original Section 404(b)(1) Evaluation Estimated Impact Magnitude	Updated Estimated Impact Magnitude	Units
Open Water	0	1	acres
Seasonally Flooded Basin (farmed wetlands)	790	1,477	acres
Shallow Marsh	50	107	acres
Shrub-Carr	0	1.5	acres
Wet Meadow	140	120	acres
Floodplain Forest	62	62	acres
Total Acres	**1,042**	**1,768.5**	

Table 4. Oxbow/Hickson/Bakke Ring Levee Wetland Acres Impacted.

Oxbow/Hickson/Bakke Ring Levee			
Wetland Type	Original Section 404(b)(1) Evaluation Estimated Impact Magnitude	Updated Estimated Impact Magnitude	Units
Seasonally Flooded Basin (farmed wetlands)	0	6	acres
Shallow Marsh	0	1.5	acres
Wet Meadow	0	7	acres
Floodplain Forest	0	0	acres
Total Acres	**0**	**14.5**	

3. Type of Site/Type of Habitat – Habitat affected by the proposed fill activities is a mix of wet meadow, shallow marsh, shallow open water, floodplain forest, riverine habitat, and farmed seasonally flooded wetland. Farmed seasonally flooded wetlands constitute the vast majority of the affected acreage (1477 acres). The aquatic habitats located within the project area are typical of the Red, Wild Rice, Sheyenne, Maple, Rush, and Lower Rush rivers. Depths on the Red River and the tributaries generally vary from 1 to 2 feet near shoreline areas to about 5-20 feet at mid-channel locations, depending on the tributary. Substrates present include a mixture of silt, sand, and clay. The Red River channel is approximately 200 feet wide in the vicinity of the Red River control structure and 20-80 feet wide at the other tributary crossings.

4. Timing and Duration - There would be no change from what was described in the original Section 404(b)(1) evaluation. Subject to authorization and appropriation of funds, construction could potentially begin in the year 2014. Construction is expected to last approximately eight and a half years, if sufficient funding is appropriated.

G. Description of Disposal Method – There would be no change from what was described in the original Section 404(b)(1) evaluation. Material would be moved and placed mechanically. Cranes, backhoes, scrapers, dump trucks and other heavy machinery suited to working with rock would be used to deliver and place rock materials and other levee fill during construction. Riprap would generally be placed in a systematic manner to ensure a continuous uniform layer of well-graded stone. Stone placed underwater would not be cast across the surface of the water.

II. FACTUAL DETERMINATIONS

A. Physical Substrate Determinations

1. Substrate Elevation and Slope - There would be no change from what was described in the original Section 404(b)(1) evaluation. Substrate would be excavated before placement of riprap and aggregate filter layer(s) to ensure that the existing substrate grade is maintained. Riprap placed on slopes for erosion protection would follow the existing contour. An exception to this armoring technique would be at areas of significant water depth in existing channels, where armoring would be placed directly over existing grade to avoid dredging below the water surface elevation. The areas where different armoring placement strategies are utilized will be determined during final design. At locations where channels are directed through newly constructed hydraulic structures, the substrate will consist of concrete at the locations of the hydraulic structures.

2. Sediment Type - There would be no change from what was described in the original Section 404(b)(1) evaluation. Substrates in the Red River basin are composed primarily of clay rich, unconsolidated glacial sediments. Placement of riprap for erosion protection would replace existing substrates with multiple layers of rock with varying gradations.

3. Dredged/Fill Material Movement – There would be no change from what was described in the original Section 404(b)(1) evaluation. Fill material would be placed directly into abandoned reaches of the river channels. The fill material would be sufficiently large or protected with riprap, sheet pile coffering, plant community restoration, or other stabilization measures so as to preclude downstream movement of the placed material. The method of stabilization applied to specific areas will be determined during final design.

4. Actions Taken to Minimize Impacts - Standard construction procedures in compliance with Federal and State requirements and best management practices would be used during construction to minimize impacts. Work on the rivers would be done during low flow periods so as to limit downstream sedimentation. Construction sequencing would be used to minimize impacts. Construction of large hydraulic structures (at the Red, Wild Rice, Sheyenne, and Maple Rivers) would take place off channel “in the dry” to avoid exposure of unprotected soils within the existing river channels during the construction of the structure. Following the structure’s construction, these sites would be connected to the existing river channels with excavated channels. At this time, stabilization measures would be promptly applied to reduce the amount of downstream sedimentation. Temporary erosion prevention and sedimentation control measures would be used project-wide and would be operated and maintained in accordance with necessary permit(s). By moving the diversion channel north, the construction of the Wolverton Creek structure would not be necessary.

B. Water Circulation, Fluctuation, and Salinity Determinations

1. General Water Chemistry - There would be no change from what was described in the original Section 404(b)(1) evaluation. The use of clean fill material would preclude any significant impacts on water chemistry during project construction.

Some minor, short-term decreases in water clarity are expected from the proposed fill activities. No significant impacts on water color, odor, taste, dissolved oxygen levels, temperature or nutrient levels are anticipated.

2. Water Circulation, Fluctuation, and Salinity Determination

a. Current Patterns and Flow – The hydraulic structures on the Red River and Wild Rice River in combination with the diversion inlet control structure would be operated in a manner that increases upstream water surface elevations (staging) during flood events. Water would be conveyed into the diversion channel for flood events where the peak flow for the Red River at the USGS gage in Fargo exceeds 17,000 cubic feet per second (cfs). This is an increase from 9,600 cfs identified in the original Section 404(b)(1) evaluation, and is attributable to the inclusion of the in-town levees. Otherwise, these structures resemble bridges (when the gates are fully open). When it is known that a flow of 17,000 cfs will occur at the Fargo gage, the control structure gates would be partially closed as necessary to limit the flow continuing in the Red River through Fargo and Moorhead, to divert flow into the diversion channel and direct water to the upstream staging area. There would be no significant change to current patterns and circulation for flows less than 17,000 cfs. The Sheyenne River and Maple River hydraulic structures would not increase upstream water surface elevations on the tributaries and would allow channel forming flows to pass through into the benefitted area. The pass through flow into the benefitted area would increase for larger events, but would be less than the 10-percent chance event tributary flow. Other than the Sheyenne River and Maple River, all drainage ways interrupted by the diversion channel would have all upstream flow directed into the diversion channel. Large drainage ways like the Rush River, Lower Rush River, and Drain 14 would have flow directed into the diversion channel via open drop structures. Small drainage ways would have flow directed into the diversion channel via culvert structures. Abandoned channels within the benefitted area would continue to provide drainage for local inflows.

b. Velocity - The proposed diversion channel would result in some changes on the flow velocities upstream and downstream of the control structures on the Red River and Wild Rice River. These changes would occur when the gates at the control structures are partially closed (only when it is known that the peak flow for the Red River at the USGS gage in Fargo will exceed 17,000 cubic feet per second (cfs)) to limit the discharge passing into the benefitted area, and when upstream staging is induced to make use of available flood storage in the floodplain in order to minimize impacts on flood levels downstream of the project. As a result, flow velocities upstream of the control structure would be reduced in comparison to existing conditions, but both the with-project and existing conditions velocities are relatively low across the very wide active floodplain. With-project flow velocities downstream of the Red River and Wild Rice River control structures would also be reduced in comparison to existing conditions, but this happens because the with-project discharge passing into the benefitted area would be smaller than existing conditions to accomplish the project goal of providing flood risk management. In the case of the Sheyenne River and Maple River, the

aqueducts have been designed to maintain channel forming discharges within the streams inside the benefitted area.

c. Sedimentation Patterns- There would be no change from what was described in the original Section 404(b)(1) evaluation. Impacts of the project on sedimentation patterns was presented in the FEIS and is being refined as detailed studies are completed. The proposed fill activities associated with the design modifications would have no appreciable incremental change on sedimentation patterns.

3. Actions Taken to Minimize Impact - Standard construction procedures in compliance with Federal and State requirements would be used. The in-town levees would allow more flow through town. With the modification, the project would not begin operating until the 10-percent chance (10-year) event, as opposed to the 3.6-year event discussed in the FEIS. The inlet control structure design was modified from a weir to a gated structure to provide the capability to better mimic the natural hydrograph downstream of the project.

C. Suspended Particulate/Turbidity Determination

1. Suspended Particulates and Turbidity - There would be no change from what was described in the original Section 404(b)(1) evaluation. Turbidity and the concentration of suspended solids would be expected to increase temporarily during construction of project features. However, increases would be relatively minor and restricted to a relatively localized area. No long-term adverse impacts on water quality are expected.

2. Effects on Chemical and Physical Properties of the Water Column - There would be no change from what was described in the original Section 404(b)(1) evaluation. Some minor short-term impacts on light penetration and aquatic organisms would occur during riprap placement. However, these effects would be rapidly dissipated upon project completion. No effects are expected on toxic metal concentrations, pathogens, or the aesthetics of the water column.

3. Actions Taken to Minimize Impacts – There would be no change from what was described in the original Section 404(b)(1) evaluation. Impacts would be minimized by requiring that best management practices to limit the extent of turbidity plumes, such as silt curtains, would be followed during construction.

D. Contaminant Determinations - There would be no change from what was described in the original Section 404(b)(1) evaluation. The use of clean, quarry-run rock riprap for construction would not introduce contaminants into the aquatic system. Neither the materials used nor the placement method would cause relocation or increases of contaminants in the aquatic system.

E. Aquatic Ecosystem and Organism Determinations

1. Effects on Plankton - There would be no change from what was described in the original Section 404(b)(1) evaluation. During construction, increases in turbidity and suspended solids near the proposed fill activities might have a short-term localized effect on phytoplankton productivity. The plankton populations should recover quickly once the fill and other construction activities have ceased. In the long-term, overall aquatic habitat quality would improve, with resulting positive effects on plankton.

2. Effects on Benthos - There would be no change from what was described in the original Section 404(b)(1) evaluation. Placement of rock during construction would cover and smother benthic communities located within the footprint of the structures. In-water excavation activities also would result in mortality of macro invertebrates within these areas. However, rapid colonization of newly placed rock substrates would be anticipated with minimal long-term effects. Benthic invertebrates also may re-colonize newly excavated channels leading in to and out of project structures.

3. Effects on Fish - Increases in turbidity and suspended solids during construction of in-water features, as well as general noise and disturbance, would temporarily displace fish occupying the construction areas. Fish are more mobile than benthic invertebrates and would likely avoid construction areas during construction. Some fish could potentially be stranded during the period when river flows are permanently diverted from the existing river channel through the newly engineered channels. These fish may be lost. Invertebrates within these construction areas also would be lost. Upon completion, fish migration would be impeded on the Red and Wild Rice rivers during floods large enough to trigger project operation. However, these floods would be relatively infrequent, and the period of operation would generally be short (e.g., a couple weeks). As noted above, with the inclusion of in-town levees, the project would not begin operation until the 10-percent chance (10-year) event, as opposed to the 3.6-year event discussed in the FEIS. Historically these larger floods have occurred during late winter or early spring, a time generally outside of spawning migrations for many Red River species. Because the project would operate less frequently, fish passage will no longer be needed at hydraulic structures to reduce the impacts to fish. Impacts to fish migration would be further mitigated by constructing fish passage at Drayton Dam on the Red River and the Wild Rice Dam on the Wild Rice River.

4. Effects on Aquatic Food Web - There would be no change from what was described in the original Section 404(b)(1) evaluation. The proposed fill activities are not expected to affect the total productivity of the Red River although there would be a temporary disruption to the aquatic biota present during project construction.

5. Effects on Special Aquatic Sites - There would be 1,785 acres of wetlands impacted by the diversion channel, Oxbow/Hickson/Bakke ring levee, and features associated with construction of the project. These impacts would be either by the filling of wetlands or the excavation of wetlands.

6. Threatened and Endangered Species - There would be no change from what was described in the original Section 404(b)(1) evaluation. No known Federally-listed threatened or endangered species would be affected by the project. The project has been coordinated with the U.S. Fish and Wildlife Service and it concurs with this determination.

7. Other Wildlife - There would be no change from what was described in the original Section 404(b)(1) evaluation. The proposed fill activities would result in the loss of aquatic and terrestrial habitat, as outlined in the FEIS and the original Section 404(b)(1) evaluation. However, significant habitat losses as a result of the proposed fill activities would generally be mitigated for as outlined in Attachment 6 of the FEIS (Mitigation and Adaptive Management). The general diversity and productivity of the affected areas would be maintained.

8. Actions Taken to Minimize Impacts – The modifications to the diversion channel alignment are intended to avoid, to the extent practicable, existing wetlands. In particular, the modifications to the western alignment avoid higher quality wetlands. Wetlands would be established along the bottom of the diversion channel during construction. During the design phase there will be features added that would help create wetlands, including meandering the low flow channel and constructing rock riffles (grade control) at bridge crossings that would create ponding. In-town levees would allow more flow through town, minimizing the impacts to fish. A mitigation plan is also in place to mitigate for impacts caused by the construction of the hydraulic structures and impacts to the floodplain forest habitat.

F. Proposed Disposal Site Determinations

1. Mixing Zone Determination - There would be no change from what was described in the original Section 404(b)(1) evaluation. The proposed fill activities would have minimal mixing zones. The fill material used for the project would be large and relatively clean so that very little exposed material could be suspended in the water column.

2. Determination of Compliance with Applicable Water Quality Standards There would be no change from what was described in the original Section 404(b)(1) evaluation. The fill materials used for this project would be obtained from approved quarries in the project area or excavated on-site. The area does not have a history of contamination, which should insure that State water quality standards would not be violated because of project-related activities. Water quality certification from Minnesota and North Dakota would be obtained prior to project construction.

3. Potential Effects on Human Use Characteristics - There would be no change from what was described in the original Section 404(b)(1) evaluation. The proposed project would provide community flood protection without adversely affecting the river. The land acquired for the project would provide locations for the installation of recreational features. Water related recreational use of the project area would not be

adversely affected by the project at normal flows. During high flows when the control structures are under operation, recreational use (boaters, jet skis, canoes, kayaks, etc.) would not be allowed to pass through the structure on the Red River or the Wild Rice Rivers due to safety concerns.

G. Determination of Cumulative Effects on the Aquatic Ecosystem - There would be no change from what was described in the original Section 404(b)(1) evaluation. See section 5.4 Cumulative Effects in the FEIS and section 5.4 of EA.

H. Determination of Secondary Effects on the Aquatic Ecosystem – There would be no change from what was described in the original Section 404(b)(1) evaluation. There could be some indirect impacts to wetlands adjacent to the diversion channel. This is unlikely because the soil types are not very permeable, which limits the potential for percolation, and any wetlands within 600 feet of the excavated channel would have already been accounted for as filled by the side cast of material from the diversion channel excavation. The Lower Rush River and Rush River will have 5 miles of abandoned channel which would be maintained as wetland habitat. Disturbed aquatic habitat would be expected to quickly recover after construction.

III. FINDING OF COMPLIANCE WITH RESTRICTIONS ON DISCHARGE

The proposed fill activities, as modified, would comply with Section 404(b)(1) guidelines of the Clean Water Act. No significant adaptations of the guidelines were made for this evaluation. Alternatives for each of the design modifications are discussed in the Environmental Assessment; any increase in the discharge of dredged or fill material was necessary to optimize the function and safety of the project, reduce flood risk, or reduce other environmental impacts of the project.

The proposed fill activities, as modified, would comply with all State water quality standards, Section 307 of the Clean Water Act, and the Endangered Species Act of 1973, as amended. The proposed fill activities, as modified, would not have significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife would not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity, and stability and on recreational, aesthetic, and economic values would not occur.

To minimize the potential for adverse impacts, the fill would be placed during periods of normal to low water levels. Since the proposed action, including the design modifications, would result in few adverse effects, no additional measures to minimize impacts would be required.

On the basis of this evaluation, I have determined that the proposed action, including the design modifications, is the least environmentally damaging practicable alternative and

complies with the requirements of the Section 404(b)(1) guidelines for the discharge of fill material.

19 SEP 13
Date

Daniel C. Koprowski
Colonel, Corps of Engineers
District Engineer