US Army Corps of Engineers®
St. Paul District

Attachment I: Draft Clean Water Act Section 404(b)(1) Evaluation Supplement #2

Fargo Moorhead Metropolitan Area
Flood Risk Management Project

Supplemental Environmental
Assessment Document

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Draft
Clean Water Act
Section 404(b)(1) Evaluation
Supplement #2

Draft Clean Water Act Section 404(b)(1) Evaluation Supplement #2 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 (USACE) has invoked Clean Water Act Section 404(r) for the Fargo-Moorhead Metropolitan Area Flood Risk Management Project (Project), and as such this Section 404(b)(1) evaluation is not strictly required. However, in order to fully convey the aquatic impacts of the Project, this evaluation was prepared.

A Final Feasibility Report and Environmental Impact Statement (FEIS) and Clean Water Act Section 404(b)(1) Evaluation for the Project was completed in July 2011. A Record of Decision for the FEIS was signed April 3, 2012. Detailed engineering and design studies conducted after the completion of the FEIS resulted in several proposed modifications to the Project. An initial round of modifications were addressed in the first Supplemental Environmental Assessment (2013 SEA), with a Finding of No Significant Impact (FONSI) signed September 19, 2013. A supplement to the FEIS Section 404(b)(1) Evaluation was prepared to address the modifications proposed in the 2013 SEA (Section 404(b)(1) Evaluation Supplement #1 or Supplement #1).

Additional modifications are proposed for the Project. The proposed modifications since the 2013 SEA include: the re-alignment of the Southern Embankment and increased flow through town during project operation (stage of 37'). The Project with the proposed modifications is referred to as "Plan B" and is addressed in the Supplemental Environmental Assessment #2 (2018 SEA) to which this supplement (Section 404(b)(1) Evaluation Supplement #2 or Supplement #2) is attached. Supplement #2 addresses the revised impacts and fill quantities due to the proposed modifications with Plan B. The Section 404(b)(1) Evaluation Supplement #1 remains unchanged except as identified herein.

B. Location – The area affected by project construction is located in Cass County, North Dakota and Clay County, Minnesota. The changes to the proposed fill activities covered in this evaluation would affect areas of the Red River of the North, Wild Rice River (ND), Wolverton Creek, and wetlands in the vicinity of the Southern Embankment of the Project.[1] Additional information for these changes is provided in Section C of this document.

[1] Note that for the purposes of this and previous evaluations, it was assumed that any wetland was a water of the United States, and therefore subject to the permitting requirements of Section 404 of the Clean Water Act. A jurisdictional determination was not completed, and some of the wetlands may in fact not be jurisdictional.

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 2018 SEA. A general overview of the Project is provided here, along with details on the modifications. The effects associated with the features described here are discussed in detail in Chapter 5 of the FEIS, the 2013 SEA, and the 2018 SEA.

The Project is a diversion channel system including but not limited to excavated channels, a gated channel inlet structure, tieback embankments, river structures on the Red and Wild Rice 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 and Wild Rice River flow upstream of the metro area, pick up flow at the 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 30 mile long diversion channel extending from the gated inlet structure to its outlet at the Red River near Georgetown, Minnesota.

Figure 1 identifies the proposed modifications for Plan B when compared to the features described in the 2013 SEA and Supplement #1. Changes to fill quantities and locations would occur in wetlands along the Southern Embankment alignment and at the general location of the hydraulic structures in the Red River (Figure 2), the Wild Rice River (Figure 3), and Wolverton Creek (Figure 4).

The modification to the alignment would place the Wild Rice River Structure 0.6 mile south and the Red River Structure 0.9 mile south of the locations identified in Supplement #1. Fill would also be placed in Wolverton Creek to install culverts through the Eastern Tieback; the Project as described in the 2013 SEA did not involve the placement of fill material in Wolverton Creek.

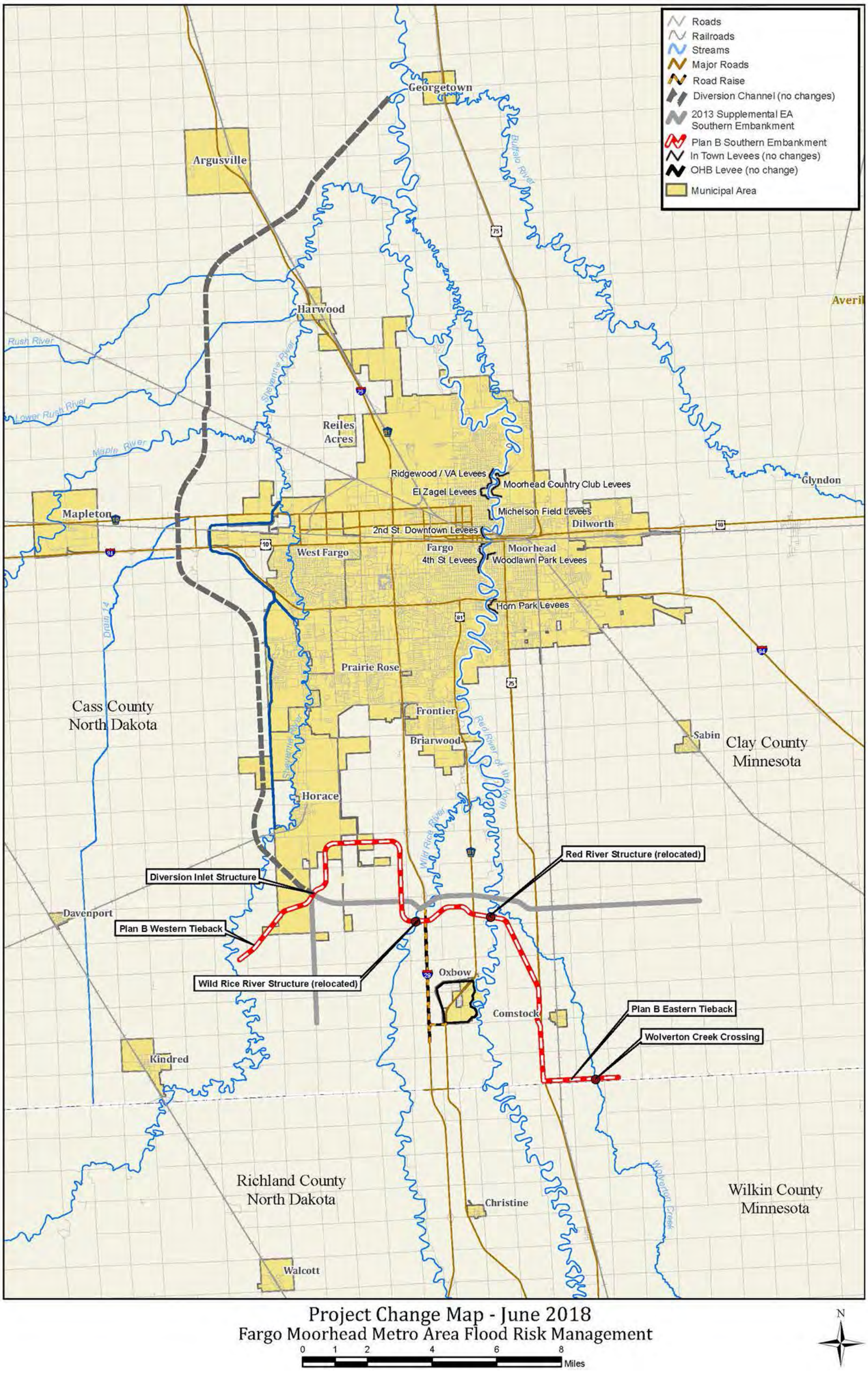

Figure 1. Proposed modifications to the Project since the 2013 Supplemental Environmental Assessment.

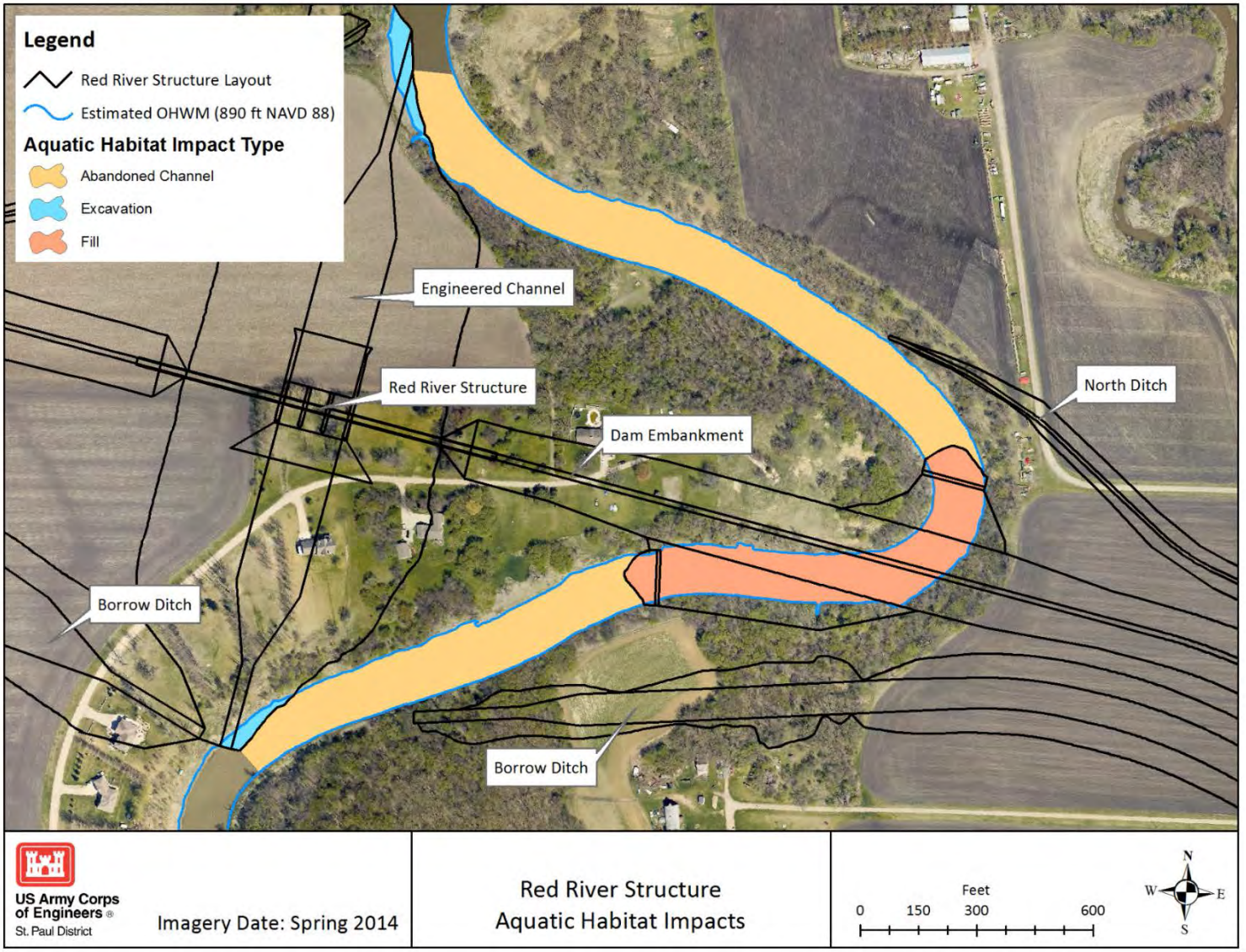

Figure 2. Red River Structure Fill Area.

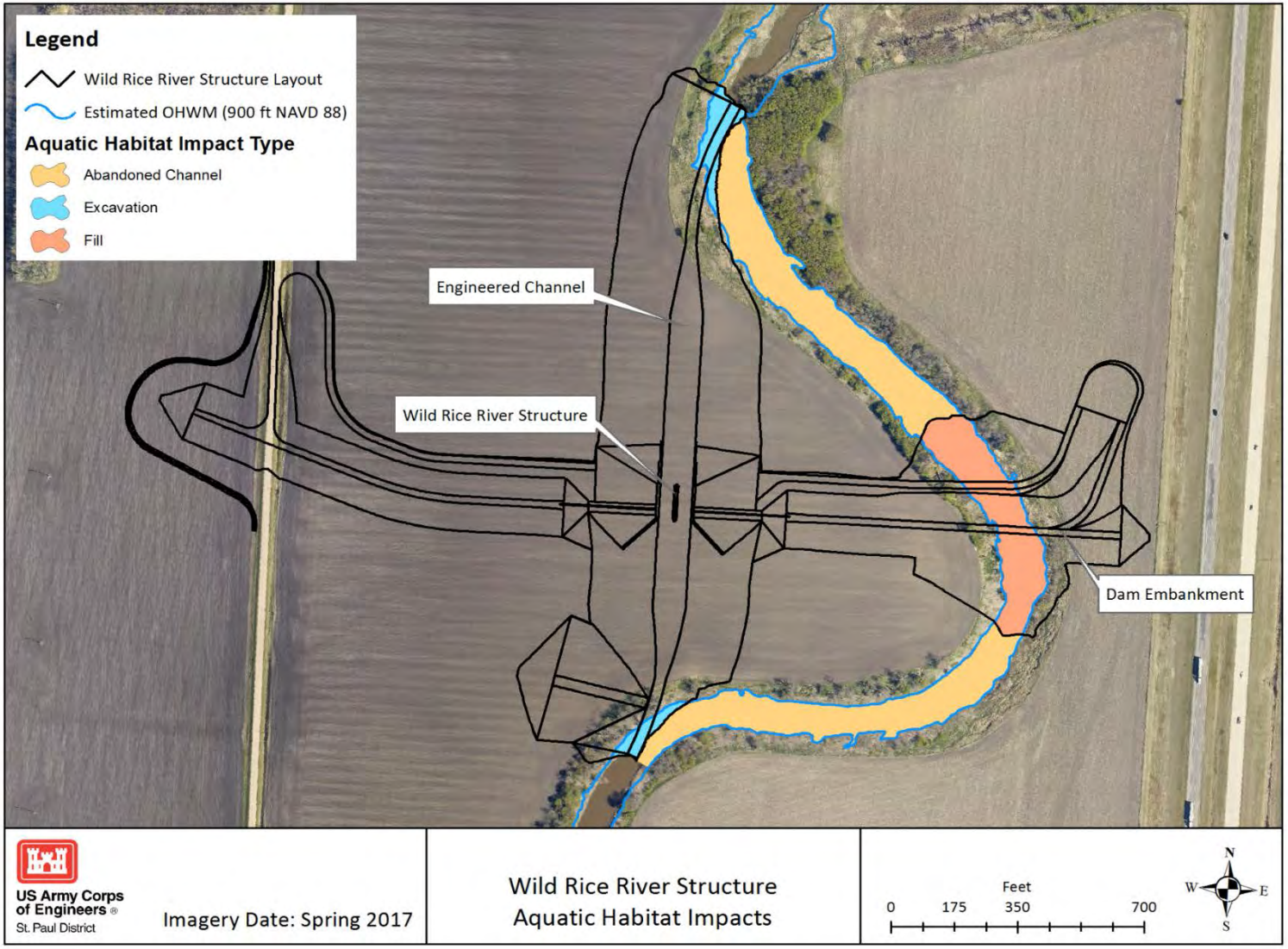

Figure 3. Wild Rice River Structure Fill Area.

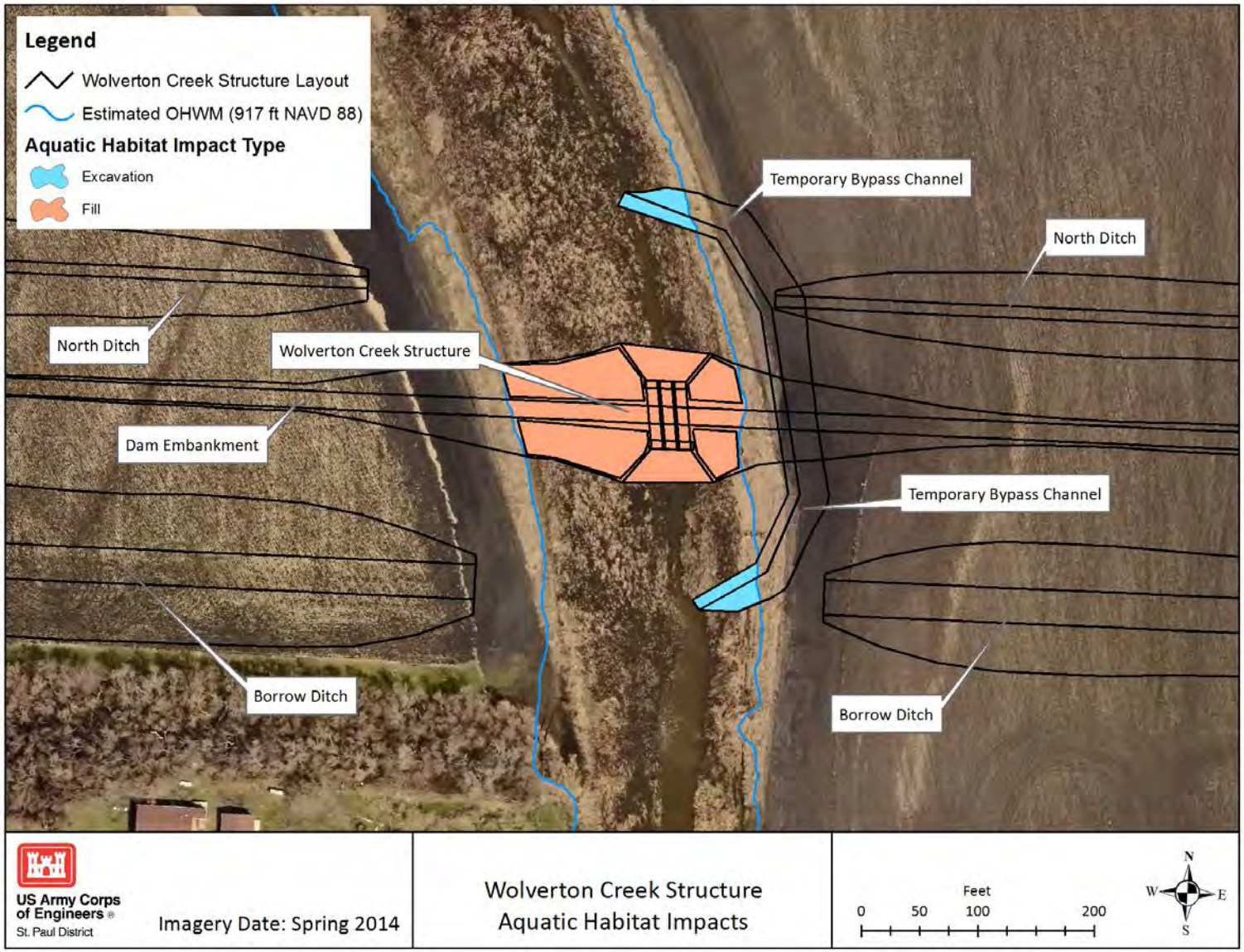

Figure 4. Wolverton Creek Structure Fill Area.

D. Authority and Purpose – The Project was authorized by the Water Resources Reform and Development Act of 2014. The purpose has not changed from what is described in the FEIS.

E. General Description of Dredged or Fill Material

1. General Characteristics of Material – There would be no change from Supplement #1.

2. Quantity of Material – For the purpose of this analysis, quantities at the Wild Rice River, Red River, and Wolverton Creek impact locations were calculated based on an estimate of the ordinary high water mark (OHWM) elevation.[2] Table 1 displays the estimated fill differences from Supplement #1. No changes were made to the estimated quantities for the earthwork and the hydraulic structures at the Sheyenne River, the Maple River, the Lower Rush River, and the Rush River. In total, Plan B would result in the placement of approximately 445,000 cubic yards of earthen fill placed below the OHWM (approximately 178,000 cubic yards less than the amount identified in Supplement #1). Approximately 30,000 cubic yards of the total would be comprised of riprap and aggregate filter fill placed below the OHWM (19,000 cubic yards less than the amount identified in Supplement #1).

[2] Multiple years of aerial photography and lidar contours were reviewed to estimate the OHWM at each location. Absence of terrestrial vegetation was the primary indicator used to estimate the location of the OHWM. The estimated OHWM are as follows: 900 ft at Wild Rice River, 890 ft at Red River, and 917 ft at Wolverton Creek. These values likely overestimate the elevation of the OHWM and impact quantities, but are sufficient for purposes of this evaluation. OHWM values may be field verified at later date during project development.

Table 1. Impacts

Impact Location:	Estimated Impact Type	Supplemental #1 Estimated Impact Magnitude	Plan B Estimated Impact Magnitude	Unit
Red River Structure	Total Extent of Impacts Within OHWM	17.1	12.9	acre
	Total Grading Extent Within OHWM	8.8	3.9	acre
	Fill Within OHWM	8.0	3.1	acre
	Fill Volume Below OHWM	206,222	153,000	cy
	Excavation Within OHWM	2.2	0.8	acre
	Riprap and Aggregate Filter Fill Within OHWM	13,000	3,400	cy
	Sheet Pile Installed Within OHWM at Toe of Tie-back Levee Crossing	9,000	0	sf
Wild Rice River Structure	Total Extent of Impacts Within OHWM	12.7	7.8	acre
	Total Grading Extent Within Assumed OHWM	12.6	2.6	acre
	Fill Within OHWM	11.5	1.8	acre
	Fill Volume Below OHWM	170,900	59,000	cy
	Excavation Within OHWM	1.1	0.8	acre
	Wild Rice River Rock Boulder Grade Control with Aggregate Bedding Within OHWM	1.0	0.0	acre
	Riprap and Aggregate Filter Fill Within OHWM	12,000	1,200	cy
	Sheet Pile Installed Within OHWM at Toe of Fill	4,200	0	sf
Wolverton Creek Crossing	Total Extent of Impacts Within OHWM	0.0	1.3	acre[3]
	Fill Within OHWM	0.0	1.2	acre
	Fill Volume Below OHWM	0	6,200	cy
	Excavation Within OHWM	0.0	0.5	acre
	Excavate and Install Riprap Within OHWM	0	1,300	cy

3 The total extent of impacts within the OHWM represents the areal extent of impacts to Wolverton Creek following construction of the structure. Separately, the areas of fill and excavation within the OHWM total an amount higher than 1.3 acre since some areas would be excavated before filling.

3. Source of Material - There would be no change from Supplement #1.

F. Description of the Proposed Discharge Sites

1. Location – Descriptions of the conditions at the Southern Embankment, including the Wild Rice Structure, Red River Structure, and Wolverton Creek Crossing, are included in Section 3.1 of the 2018 SEA. The locations of the Diversion Inlet Structure and the Diversion Channel have not changed from Supplement #1.

2. Size - Changes in impacts due to proposed modifications are presented in Tables 1, 2 and 3. Approximately 46 acres of riverine habitat would be affected by the placement of fill, excavation of river channel, or abandonment of river channel for the construction of project features. This is a decrease of approximately 3 acres in impacts from Supplement #1. Approximately 1,665 acres of wetlands would be impacted by the Project, a decrease of approximately 38 acres in impacts identified in Supplement #1[4]. In addition, 124 acres of forest impact has been identified with Plan B. It is uncertain what portion of the forests identified could be classified as forested wetland; however all forest impacts would be mitigated for by converting farmed or degraded wetlands into floodplain forest wetlands.

Table 2. Riverine habitat acres.

Impact Location	Supplemental #1 Estimated Impact Magnitude (ac)	Plan B Estimated Impact Magnitude (ac)
Red River Structure	14	12.9
Wild Rice River Structure	11	7.8
Sheyenne River Aqueduct	8	8
Maple River Aqueduct	10	10
Rush River	3	3
Lower Rush River	3	3
Wolverton Creek	0	1.3
Total	**49**	**46**

[4] Wetlands within the temporary easement, permanent easement, and fee title areas required for construction of the Project are identified as impacted wetlands; however, this is a conservative estimate, as portions of this area may not be impacted by the Project, especially those within the temporary construction easement.

Table 3. Wetland Acres Impacted – Complete Alignment Summary

	Total Project Wetland Impacts (Including Diversion Channel)			Southern Embankment Wetland Impacts	
Wetland Type	**As Proposed in 2013 SEA (ac)**	**Plan B (ac)**		**As Proposed in 2013 SEA (ac)**	**Plan B (ac)**
Open Water	1	<1		<1	0
Farmed Seasonally Flooded Basin	1,475*	1,426		205	156
Shallow Marsh	106	84		39	17
Shrub-Carr	1	0		1	0
Wet Meadow	120	155		35	71
Total Acres	**1,703***	**1,665**		**281**	**244**

*Numbers vary slightly from what was reported in 2013 SEA due to change in coordinate system. Numbers displayed were calculated in NAD 1983, State Plane North Dakota South, FIPS 3302, Feet.

3. Type of Site/Type of Habitat – There would be no change from Supplement #1. The habitat at Wolverton Creek is similar to that of the other river crossings.

4. Timing and Duration – The Project was authorized in WRRDA 2014 and appropriated new-start construction funding in 2016. Federal construction began with the Diversion Inlet Structure in 2016 but was halted due to a preliminary injunction in September 2017. Construction is expected to last approximately 8.5 years, if sufficient funding is appropriated.

G. Description of Disposal Method – There would be no change from Supplement #1.

II. FACTUAL DETERMINATIONS

A. Physical Substrate Determinations

1. Substrate Elevation and Slope - There would be no change from Supplement #1.

2. Sediment Type - There would be no change from Supplement #1.

3. Dredged/Fill Material Movement – There would be no change from Supplement #1.

4. Actions Taken to Minimize Impacts - There would be no change from Supplement #1.

B. Water Circulation, Fluctuation, and Salinity Determinations

1. General Water Chemistry - There would be no change from Supplement #1.

2. Water Circulation, Fluctuation, and Salinity Determination

a. Current Patterns and Flow – 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 21,000 cubic feet per second (cfs). This is an increase from 17,000 cfs in Supplement #1. Above a flow of 21,000 cfs, the Red River Structure and Wild Rice River Structure gates would be partially closed as necessary to limit the flow 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 21,000 cfs.

A temporary bypass channel would likely be used to divert flows during the construction of the Wolverton Creek Crossing. Sheetpile would be driven into the creek bottom and an approximately 550 foot long bypass channel would be excavated to allow construction of the Wolverton Creek Crossing. The sheetpile would be removed and the temporary channel restored following construction of the feature.

b. Velocity - There would be no change from Supplement #1, with the exception that the gates would partially close when the USGS gage in Fargo exceeds 21,000 cfs. For the five design floods (10%, 5%, 2%, 1%, and 0.2% annual chance exceedance (ACE) events) analyzed with the HEC-RAS unsteady flow model, velocities on the upstream side of the Red River and Wild Rice River structures are lower than under existing conditions due to the ponding of water. Downstream of the structures, velocities are generally the same or slightly less under Plan B conditions than under existing conditions. In the immediate vicinity

of the gated structures for the 10% and 5% ACE events (when the structure gates are fully open and not impeding flow), the Plan B velocities will increase less than 1.5 feet per second (fps) due to constriction of the channel as it passes through the gated opening. In the immediate vicinity of the gated structures on the Red River and Wild Rice River, velocities for the 2%, 1%, and 0.2% ACE events are expected to be approximately 17 to 23 fps higher than existing conditions velocities due to flow passing under the partially-closed gates.

c. Sedimentation Patterns - There would be no change from Supplement #1.

3. Actions Taken to Minimize Impact - Standard construction procedures in compliance with Federal and State requirements would be used. Plan B would allow more flow through town. With the modification, the Project would not begin operating until the 5% ACE event (20-year event), as opposed to the 10% ACE event (10-year) and the 27.8% ACE event (3.6-year event) discussed in the 2013 SEA and FEIS, respectively.

C. Suspended Particulate/Turbidity Determination

1. Suspended Particulates and Turbidity - There would be no change from Supplement #1.

2. Effects on Chemical and Physical Properties of the Water Column - There would be no change from Supplement #1.

3. Actions Taken to Minimize Impacts – There would be no change from Supplement #1.

D. Contaminant Determinations - There would be no change from Supplement #1.

E. Aquatic Ecosystem and Organism Determinations

1. Effects on Plankton - There would be no change from Supplement #1.

2. Effects on Benthos - There would be no change from Supplement #1.

3. Effects on Fish – There would be no change from Supplement #1, with two exceptions. First, the Project would not begin operation until the 5% ACE event, as opposed to the 10% ACE event and the 27.8% ACE event discussed in the 2013 SEA and FEIS, respectively. Historically these larger floods have occurred during late winter or early spring, a time generally outside of spawning migrations for many Red River species.

Second, Plan B would again include a structure on Wolverton Creek. This structure would have similar impacts to connectivity as those outlined above for the

Red and Wild Rice rivers. However, disruptions to connectivity would be minor and infrequent.

4. Effects on Aquatic Food Web - There would be no change from Supplement #1.

5. Effects on Special Aquatic Sites - There would be 1,665 acres of wetlands impacted by construction of the Project with Plan B. These impacts would be the result of filling wetlands to construct features or excavating wetlands to direct the flow of water.

6. Threatened and Endangered Species – The northern long-eared bat (NLEB) has been listed as a threatened species since Supplement #1. Tree clearing required for the construction of the Project has resulted in the conclusion that the Project may affect, but is not likely to adversely affect, the NLEB. Fill activities would not adversely affect the NLEB.

7. Other Wildlife - There would be no change from Supplement #1. The proposed fill activities would result in the loss of aquatic and terrestrial habitat. However, significant habitat losses as a result of the proposed fill activities would generally be mitigated for as outlined in Appendix G (Mitigation and Adaptive Management) of the 2018 SEA. The general diversity and productivity of the affected areas would be maintained.

8. Actions Taken to Minimize Impacts – There would be no change from Supplement #1, with the exception that further increasing the flow through town would reduce the frequency of project operation and minimize impacts to fish passage through hydraulic structures. A mitigation plan is 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 Supplement #1.

2. Determination of Compliance with Applicable Water Quality Standards
USACE has invoked Section 404(r) for the Project. However, 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, and therefore it is unlikely that State water quality standards would be exceeded because of project-related activities. The Project proponents intend to apply for water quality certification from Minnesota and North Dakota.

3. Potential Effects on Human Use Characteristics - There would be no change from Supplement #1.

G. Determination of Cumulative Effects on the Aquatic Ecosystem - There would be no change from Supplement #1.

H. Determination of Secondary Effects on the Aquatic Ecosystem – There would be no change from Supplement #1.

III. FINDING OF COMPLIANCE WITH RESTRICTIONS ON DISCHARGE

As noted above, USACE has invoked Section 404(r) for the Project, and therefore compliance with the Section 404(b)(1) guidelines is not necessary. That said, the proposed fill activities, as modified, would comply with Section 404(b)(1) guidelines of the Clean Water Act.

The proposed fill activities, as modified, would comply with 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, the proposed action, including the design modifications, would comply with Section 404(b)(1) guidelines for the discharge of fill material if the guidelines applied to this Project.

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Date

Samuel L. Calkins
Colonel, Corps of Engineers
District Engineer

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Attachment II: Draft Finding of No Significant Impact

Fargo Moorhead Metropolitan Area
Flood Risk Management Project

Supplemental Environmental
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DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
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ST. PAUL MN 55101-1678

Regional Planning and Environment Division North

DRAFT

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, the St. Paul District, Corps of Engineers, has assessed the environmental impacts for the following:

MODIFICATIONS TO THE FARGO MOORHEAD METROPOLITAN AREA FLOOD RISK MANAGEMENT PROJECT

The U.S. Army Corps of Engineers is proposing modifications to the Fargo-Moorhead Metropolitan Area Flood Risk Management Project (Project). The Final Feasibility Report and Environmental Impact Statement (FEIS) for the Project was completed in July 2011 and a Record of Decision was signed on April 3, 2012. Detailed engineering and design studies resulted in several modifications to the Project which were addressed in a Supplemental Environmental Assessment (SEA) completed in September 2013, with a Finding of No Significant Impact (FONSI) signed September 19, 2013. Additional modification are again proposed for the Project. The proposed modifications include changes to the alignment of the Project's Southern Embankment and the passage of more flow through the benefitted area during Project operation. The Project with all proposed modifications is referred to as "Plan B". A second SEA was prepared to address the proposed modifications and evaluate potential impacts of Plan B.

This Finding of No Significant Impact is based on the following factors, as discussed in the attached SEA. Compared to the proposed alternative in the 2013 SEA, Plan B would have similar effects on noise levels, air quality, aesthetics, community cohesion, water quantity, and threatened and endangered species. Compared to the proposed alternative in the 2013 SEA, Plan B would reduce adverse effects to transportation upstream of the Southern Embankment and have minor adverse effects in the benefitted area; Plan B would also reduce adverse effects to business and home relocations upstream of the Southern Embankment but have minor adverse effects to business and home relocations in the benefitted area. Compared to the proposed alternative in the 2013 SEA, Plan B would reduce adverse effects to fish passage, geomorphology, aquatic habitat, and wetlands; would have minor adverse effects to upland habitat and prime and unique farmland; and would have a minor reduction in beneficial effects to public health and safety. Impacts to cultural resources have been or will be identified and will be mitigated for. The modifications would not result in effects substantially different in type or magnitude from what was described in the FEIS.

For the reasons stated above, the proposed modifications do not constitute a major Federal action significantly affecting the quality of the environment. Therefore, a supplemental environmental impact statement for the proposed modifications will not be prepared.

_____
Date

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Attachment III: Glossary

Fargo Moorhead Metropolitan Area
Flood Risk Management Project

Supplemental Environmental
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Glossary

2018 Supplemental Environmental Assessment

2013 Supplemental Environmental Assessment - The 2013 Supplemental Environmental Assessment analyzed proposed modifications identified since the FEIS, including: (1) diversion channel modifications, including alignment shifts and channel cross-section modifications; (2) the addition of levees and floodwalls in downtown Fargo; (3) a ring levee around the towns of Oxbow, Hickson, and Bakke, ND, which are immediately adjacent to each other; and (4) the addition of gates to the Diversion Inlet Structure.

2018 Supplemental Environmental Assessment - This 2018 Supplemental Environmental Assessment is the second supplemental environmental assessment for the overall Project. This 2018 SEA analyzes modifications identified as a result of the Governors' Task Force.

Additional Flooded Acreage - Acreage flooded under Plan B conditions that is not flooded under Existing conditions

Additional Flooded Structures - Structures flooded under Plan B conditions that are not flooded under Existing conditions

Annual Chance Exceedance – The percent chance of occurrence in a given year. A 100-year event would have a probability of occurring once every one hundred years, and so has a 1% ACE in any given year.

Area of Potential Effect – The Area of Potential Effect consists of the footprint of the Project including the diversion channel alignment, its associated tieback levee(s), associated construction work areas, construction staging areas, borrow areas, and disposal areas, as well as associated upstream water storage and water staging areas, project-related floodproofing locations, project-related environmental mitigation areas, project-related in-town (Fargo and Moorhead) levees, and the viewshed to one-half mile from the diversion channel's centerline and all other above-ground project features.

Built Environment - The built environment comprises all architectural remains on a landscape and includes culturally modified landscapes. Examples of eligible built environment components may include, but is not limited to, buildings such as residences, barns, and silos, structures such as bridges, signage, field boundaries, and ruins. An historic district or a cultural landscape may include transportation corridors, farms with cultivated fields, and cemeteries.

Cultural Resources - Cultural Resources covers a broad range of resources beyond "historic properties" and includes sacred sites, archaeological sites not eligible for the National Register of Historic Places, and archaeological collections.

Diversion Channel - The proposed excavated channel and associated structures located around the west side of the Fargo-Moorhead Metropolitan Area. Water released by the Diversion Inlet Structure flows into the diversion channel.

Diversion Inlet Structure - A gated structure within the Southern Embankment consisting of three 50-foot wide gates located approximately 2-1/2 miles south of Horace that controls flow into the diversion channel.

Eastern Tieback - The eastern-most portion of the Southern Embankment, beginning at Hwy. 75 and running east approximately 500 feet north of the county line to high ground in Minnesota.

Engineered Channel - refers to the approach (upstream) and outlet (downstream) portions of the new river channel that will be constructed to pass through both the Wild Rice River Structure as well as the Red River Structure. The area encompassed by the approach channel begins at each structure and extends upstream to the point where the constructed channel transitions to the natural, or existing channel. Similarly, the area encompassed by the outlet channel begins at each structure and extends downstream to the point where the constructed channel transitions to the natural, or existing channel.

Expert Opinion Elicitation Hydrology - The hydrology developed for use in the FEIS was revised from the use of Period of Record (POR) hydrology to focus on a shorter period of record developed by an Expert Opinion Elicitation (EOE) panel. The EOE hydrology produced peak flow and balanced hydrographs that varied over time. Project design focused on assuring the Project would perform for the highest peak flow and volume conditions identified via the EOE panel. This hydrology has since been referred to as the Wet Cycle Hydrology.

Existing Conditions - Current river and floodplain conditions.

Final Feasibility Report and Environmental Impact Statement - The Final Feasibility Report and Environmental Impact Statement, dated July 2011, analyzed the alternatives and impacts of the Fargo-Moorhead Metropolitan Area Flood Risk Management Project, and is the basis for the authorized project.

Flow Through Town - The stage at the USGS gage in Fargo that would be maintained up to the 0.1% ACE event. The Project would begin operation when this stage is expected to occur at this gage.

Governor's Task Force – In October 2017, North Dakota Governor Doug Burgum and Minnesota Governor Mark Dayton created a joint task force to propose a framework for flood risk management for the Fargo-Moorhead region. The Governors served as the Task Force Co-Chairs. Each Governor appointed eight members seeking to represent the range of perspectives in the region. Also known as simply the "Task Force."

Historic American Buildings Survey – The Historic American Buildings Survey was established to create a public archive of measured drawings, historical reports, and large-format black-and-white photographs of important and/or representative examples of our built environment.

Historic Property - According to the National Historic Preservation Act of 1966 (as amended), a historic property is any prehistoric, or historic, district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior.

Leadership Group - The Leadership Group (also referred to as a Policy Group) was formed subsequent to the conclusion of the Task Force meetings to include two executive-level representatives from each of the following entities: the MnDNR, the Diversion Authority, the USACE and the RWJPA.

Metro Flood Diversion Authority - The Metro Flood Diversion Authority is one of sponsors that entered into the Project Partnership Agreement with the USACE for construction of the Fargo-Moorhead Metropolitan Area Flood Risk Management Project. The other two entities are the cities of Fargo, ND, and Moorhead, MN.

Micrositing – The process of determining the exact location of a project feature.

No Action Alternative - The proposed alternative described in the 2013 SEA.

Period of Record Hydrology - The Period of Record hydrology initially used in the FEIS uses the full period of record. The Governor's Task Force recommended use of the Period of Record hydrology for analyzing Plan B, and the data in this 2018 SEA uses POR hydrology.

Plan B - Proposed with-project conditions. Plan B consists of the authorized project as modified by the 2013 SEA and as modified as a result of the Governors' Task Force recommendations.

Project - The Project is the authorized Fargo-Moorhead Metropolitan Area Flood Risk Management Project, as modified by the 2013 SEA and this 2018 SEA.

Red River Structure - A gated structure within the Southern Embankment expected to consist of three 50-foot wide gates to control flow of the Red River.

Revision Reach - Part of the Conditional Letter of Map Revision that will be developed in accordance with the USACE/FEMA Coordination Plan, revised 26 June 2018. In general, the Revision Reach is where the 1% ACE floodplain will be revised as a result of the Project.

Southern Embankment - The proposed earthen embankment and associated structures located within the alignment of the earthen embankment upstream of the Fargo-Moorhead Metropolitan Area.

Sponsors - The non-Federal sponsors for the Project, consisting of the Metro Flood Diversion Authority, the City of Fargo, ND, and the City of Moorhead, MN.

Staging Area - A combination of Zone 1 and Zone 2.

Viewshed - The geographical area that is visible from a location. It includes all surrounding points that are in line-of-sight with that location and excludes points that are beyond the horizon or obstructed by terrain and other features (e.g., buildings, trees).

Technical Advisory Group – An advisory group to the Task Force to assess components and alternatives and provide technical guidance to the Task Force. The Technical Advisory Group included representatives from the City of Fargo, the City of Moorhead, Clay County, the Houston Moore Engineering Group and the Minnesota Department of Natural Resources. Subsequent to the conclusion of the Task Force meetings, the Technical Advisory Group membership was expanded to include an engineer from the RWJPA and representation from USACE.

Western Tieback - The portion of the Southern Embankment starting at the Diversion Inlet Structure and running southwest to high ground in North Dakota.

Wild Rice River Structure - A gated structure within the Southern Embankment expected to consist of two 40-foot wide gates to control flow of the Wild Rice River.

Wolverton Creek Crossing - A structure within the Southern Embankment expected to consist of three 10-foot wide box culverts to allow uncontrolled flow of the Wolverton Creek through the embankment.

With Project Conditions - The river and floodplain conditions after completion of the Project.

Zone 1 - Defines the operating pool extents required to ensure the operation of the Project as planned, which includes minimizing downstream impacts. Land use and development limitations would be imposed on these lands.

Zone 2 - Portion of the staging area outside of Zone 1. Land use and development limitations would be imposed on these lands.

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Attachment IV: Acronyms

Fargo Moorhead Metropolitan Area
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Supplemental Environmental
Assessment Document

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Acronyms

2018 Supplemental Environmental Assessment

2013 SEA	2013 Supplemental Environmental Assessment
2018 SEA	2018 Supplemental Environmental Assessment
AAHU	Average Annual Habitat Unit
ac	acre
ACE	Annual Chance Exceedance
AIS	Aquatic Invasive Species
Alt C	Alternative C
AM	Adaptive Management
AMMP	Adaptive Management and Mitigation Plan
AMT	Adaptive Management Team
APE	Area of Potential Effect
CEQ	Council on Environmental Quality
cfs	cubic feet per second
CLOMR	Conditional Letter of Map Revision
Co Rd	County Road
CRREL	Cold Regions Research and Engineering Laboratory
DBH	Diameter at breast height
DIS	Diversion Inlet Structure
DIV	Diversion Channel
DSS	Data Support System
EOE	Expert Opinion Elicitation
ESA	Environmental Site Assessment
EX	Existing conditions
EOE/WET	Wet Cycle Hydrology
FAC	Facultative wetland indicator status
FACW	Facultative Wetland wetland indicator status

FEIS	Final Feasibility Report and Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
ft	feet
GMT	Geomorphology Monitoring Team
HABS	Historic American Buildings Survey
HEC-RAS	Hydrologic Engineering Center's River Analysis System
HMA	Hot mix asphalt
HMG	Houston-Moore Group
HIS	Habitat Suitability Index
HTRW	Hazardous, toxic and radioactive waste
IBI	Index of Biotic Integrity
IPaC	Information for Planning and Consultation tool
LiDAR	Light Detection and Ranging
mi	miles
MN	Minnesota
MnDNR	Minnesota Department of Natural Resources
MnDOT	Minnesota Department of Transportation
MN EIS	Final Minnesota Environmental Impact Statement
MnPCA	Minnesota Pollution Control Agency
MNRAM	Minnesota Routine Assessment Method
MOA	Memorandum of agreement
mph	miles per hour
NAVD	North American Vertical Datum
ND	North Dakota
NDDoH	North Dakota Department of Health
NDDOT	North Dakota Department of Transportation
NDGF	North Dakota Game and Fish
NDSWC	North Dakota State Water Commission

NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHIS	National Heritage Information System
NHPA	National Historic Preservation Act
NLEB	Northern long-eared bat
NRCS	Natural Resources Conservation Service
OBL	Obligate wetland indicator status
OHWM	Ordinary high water mark
OMRR&R	Operation, Maintenance, Repair, Rehabilitation, and Replacement
PA	Programmatic Agreement
PMF	Probable Maximum Flood
POR	Period of Record
RS	River stage
RS35’	Passing a flow through the Fargo-Moorhead urban area (Flow Through Town) that results in a river stage (RS) 35’ at the USGS Fargo stream gage during the 1% ACE event
RS37’	Passing a flow through the Fargo-Moorhead urban area (Flow Through Town) that results in a river stage (RS) 37’ at the USGS Fargo stream gage during the 1% ACE event
RWJPA	Richland/Wilkin Joint Powers Authority
RRS	Red River Structure
SCP	Species of conservation priority
SEA	Supplemental Environmental Assessment
sq mi	Square miles
Stg	Stage
SWAP	State Wildlife Action Plan
TAG	Technical Advisory Group
TBD	To Be Determined
TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
USFS	United States Forest Service

USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WP	With Project conditions
WRRDA	Water Resources Reform and Development Act of 2014
WRRS	Wild Rice River Structure
WSE	Water surface elevation