July 2013 version

ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:
http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.
Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.
Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project title:

Weaver Bottoms (Pool 5) Aquatic Habitat Restoration/Enhancement Project

2. Proposer: Minnesota Department of Natural Resources, Fisheries
Contact person: Kevin Stauffer
Title: Area Fisheries Supervisor
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Phone: 651-345-3365, Ext. 229
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Contact person: Dan Dieterman
Title: Assistant Area Fisheries Supervisor
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City, State, ZIP: Lake City, MN 55041
Phone: 651-345-3365, Ext. 230
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3. RGU: Minnesota Department of Natural Resources
Contact person: Charlotte W. Cohn
Title: Environmental Review Project Manager
Address: 500 Lafayette Road
City, State, ZIP: St. Paul, MN 55155-4025
Phone: 651-259-5072
Phone: 651-296-1811
Email: environmentalreview@state.mn.us
Include phrase "Weaver Bottoms Aquatic Habitat Restoration Project" in subject line

4. Reason for EAW Preparation: (check one)

Required:	Discretionary:
☐ EIS Scoping	☐ Citizen petition
☒ Mandatory EAW	☐ RGU discretion
	☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

Minn. Rules part 4410.4300, Subpart 26, Stream Diversion; and
Minn. Rules part 4410.4300, Subpart 27.A. Wetlands and Public Waters.

5. Project Location:

County: Wabasha
City/Township: Minneiska Township
PLS Location (¼, ¼, Section, Township, Range):

Dredge spoil placement location is the SW 1/4 of the SW 1/4, Section 8, Township 109N, Range 9W
Dredging location is the SE 1/4 of the SW 1/4, and the SW 1/4 of the SE 1/4, Section 8, Township 109N, Range 9W

Watershed (81 major watershed scale): Mississippi River – Winona (HUC) 07040003
GPS Coordinates: 15T 586372 4900346 UTM
Tax Parcel Number: R10.00031.00

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project;
  Refer to Figure 1. Project Location Map – Weaver Bottoms (Pool 5) Overview
  Refer to Figure 2. Brown's Survey Map (1890s) of the Weaver Bottoms and Goose Lake area project area Pre-Impoundment Conditions

- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and
  Refer to Figure 3. Topographic Map with Project Boundaries for the dredge site, truck route, and dredge material placement site.

- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.
  Refer to Figure 4. Drawing of typical dredge cut specifications.
  Refer to Figure 5. Map of Land Use and Cover Types in the project area.
  Refer to Figure 6. 2013 Aerial Photo of Parcels and Land Ownership in the project area.
  Refer to Figure 7. Wabasha County Shoreland Zoning district map.

List of Attachments referenced or referred to in this EAW:

- Attachment A – Pre-Project Dredge Material Sediment Core and Baseline Contaminant Analysis Summary for Weaver Bottoms Sediment Basin Maintenance Project, Kellogg, Minnesota (prepared by Braun Intertec, April, 2014).
- Attachment B – Natural Heritage Information System (NHIS) Summary Index Occurrences Report (ERDB #20140074) revised July, 2015.
- Attachment C – Minnesota Department of Natural Resources' Blanding's Turtles 2012 Flyer and Blanding's Turtle 2008 Fact Sheet.

- Attachment D – Minnesota Department of Natural Resources Invasive Species Operational Order #113 (January, 2013) to Reduce the Introduction and Spread of Invasive Species from Construction Projects.
- Attachment E – State Historic Preservation Office (SHPO), Weaver Bottoms Fisheries Enhancement Project, Project Review Correspondence (SHPO No. 2014-0821), February 3, 2014.
- Attachment F – Minnesota Department of Natural Resources, Weaver Bottoms Project Turtle and Snake Avoidance Plan (August, 2015).

6. Project Description:

a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

The Minnesota Department of Natural Resources (MN DNR) – Section of Fisheries is proposing to restore and enhance aquatic habitat in a backwater area of Pool 5 of the Mississippi River in Wabasha County. The Weaver Bottoms Aquatic Habitat Enhancement project will restore depth to a natural floodplain lake that has become filled with fine sediments over the past 80 years since navigation dams were built on the Upper Mississippi River. Sediment from approximately 20 acres of shallow water will be mechanically dredged and then trucked approximately 1/3 mile to be deposited at a ten-acre upland site on privately owned agricultural/pasture land.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

<u>Project Location:</u>
The Minnesota Department of Natural Resources (MN DNR) – Section of Fisheries is proposing to restore and enhance aquatic habitat in a backwater area of the Mississippi River. The project is located in Pool 5 of the Mississippi River, approximately 5.2 miles southeast of Kellogg, Minnesota and 3.9 miles north, northwest of Minneiska, Minnesota (Figure 1). The area to be restored is known as Goose Lake in the Weaver Bottoms area of Pool 5. Goose Lake is an historic floodplain lake area (Figure 2) that was inundated by the construction of Lock and Dam 5 in the 1930s.

<u>Project Design and Operation Methods</u>
Accumulated sediments in Goose Lake will be mechanically dredged from a portion of Goose Lake and the dredge material will be hauled by truck and placed on a nearby parcel of private property. Sediment type has been mapped and analyzed for particle size and chemical contaminants to comply with Minnesota Pollution Control Agency (MPCA) requirements (Attachment A, the Weaver Bottoms Sediment Basin Maintenance Project Pre-Project Dredge Material Sediment Core and Baseline Contaminant Analysis Summary prepared for the Department of Natural Resources by Braun Intertec in April, 2014).

Dredging will be conducted using a portable barge equipped with a backhoe which will be used to scoop sediment and place it in a storage barge. Dredge material will be barged up to a maximum of 0.25 miles to shore and off-loaded into trucks and then hauled 0.33 miles and placed on private property in an existing borrow pit and on light-use agricultural land (Figure 3). The location of the private property for dredge material placement is shown in Figure 6. Dredging will remove up to 50,000 cubic yards of fine sediments from a 20-acre area, increasing water depths from an average depth of 2.6 feet to an average depth of 6.5 feet. Dredging will be conducted so that a 3:1 side slope will be maintained at the face cut, which will limit sloughing of sediment back into the dredged area (Figure 4). The amount of material to be removed from the restoration site and transferred to the placement site is estimated at no more than 50,000 cubic yards. The DNR's proposed project is to improve habitat in the dredging area, not at the placement site. The DNR's requirements at the placement site will be to stabilize the deposition of the material according to National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) and Dredge Material Management permits.

There is an existing public water access at the project location. Currently the water level can be low affecting the use of the access. The access will be used as part of the project for hauling and removing the dredged materials. At the present time, the access includes a gravel parking lot, gravel driveway, ramp with concrete planks, and a roll-in-dock. The project proposers have been and will be coordinating with other DNR divisions and units regarding use of the access during construction; activities that will occur during construction at the access; and the needs for repair, improvement, or replacement at the access resulting from construction. This access will be closed during the dredging operations and will not be usable. As planned at this time, the dock at the access will likely need to be removed. There are a number of other public accesses in the vicinity of the project which can be used. After project completion, the will be improvements in the area of the access as accumulated sediment will be dredged and habitat will be improved at the restoration site.

After completion of the dredge material placement, the placement site will be graded and stabilized by seeding. The vegetation established on the placement site will be at the discretion of the private landowner, as the lease agreement for the placement site identifies that the placed material will become the property of the private landowner. DNR oversight of the management of the placement site will conclude once the material is placed and stabilized to meet applicable permit requirements. If the landowner chooses to seed all, or part, of the area to a mixture of native grasses and forbs, Standard Mix 35-221-Dry Prairie will be used, and planting design will follow guidelines provided in Minnesota Department of Transportation (MnDOT) Report No. MN/RC 2010-20. The landowner may also choose to manage all, or part, of the site for pasture grasses or small grain agricultural crops. These areas will be seeded with a cover crop of oats to stabilize the soil. The landowner will have improved ability to manage the land for any of these uses because the organic material that will be placed will improve overall soil characteristics and fertility. Whichever type of planting is selected, material deposited at the placement site will be stabilized by establishing vegetation to prevent erosion and soil loss.

Timing and Duration of Activities

Placement site preparation consisting of minor berm construction and installation of silt fence will be conducted in April or May. Dredging and placement of material will start no sooner than July 15 and all dredging activity will be completed by September 15. Final grading and seeding of the placement site will be completed no later than November 1. Material will be dredged and hauled on a daily basis during daylight hours (approximately 6:00 a.m. to 8:00 p.m. depending on the particular month) between July 15 and September 15.

Project magnitude:

Total Project Acreage	30 acres (20 acres for dredging and 10 acres for disposal)
Linear project length	N/A
Number and type of residential units	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	N/A
Structure height(s)	N/A

c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The Weaver Bottoms in Pool 5 of the Upper Mississippi River (UMR) is a 5,000 acre backwater within the 226 mile long UMR National Wildlife and Fish Refuge. The Weaver Bottoms has a rich history of fishing and waterfowl hunting experiences. However, the effects of sedimentation and altered hydrology have reduced opportunities to experience the historic potential of this area. This proposed project is also the first one this type of aquatic habitat restoration/enhancement projects on the UMR to be funded by the State of Minnesota's Lessard-Sams Outdoor Heritage Fund.

The overall goal of this proposed project is to restore/enhance bathymetric diversity in an area of Weaver Bottoms that historically provided deeper water, over-wintering habitat for fish, and high quality fishing opportunities. The project will increase available aquatic habitat needed to sustain both healthy and diverse fish populations, and fishing opportunities during all seasons of the year. The Weaver Bottoms project is one part of a larger Statewide Aquatic Habitat package proposed by the DNR and is being made possible with funding for habitat enhancement from the State of Minnesota's Lessard-Sams Outdoor Heritage Fund.

The proposed project is also likely to benefit water recreation, such as boaters, anglers, and hunters using the public water access as there will be improved access to the lake and to the Mississippi River.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐Yes ☒ No
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

f. Is this project a subsequent stage of an earlier project? ☐Yes ☒ No
If yes, briefly describe the past development, timeline and any past environmental review.

7. Cover types: Estimate the acreage of the site with each of the following cover types before and after development:

	Before	**After**		**Before**	**After**
Wetlands	20	20	Lawn/landscaping		
Deep water/streams			Impervious surface		
Wooded/forest			Stormwater Pond		
Brush/Grassland	3	5	Other (borrow pit)	2	0
Cropland	5	5			
			TOTAL	**30**	**30**

The restoration of depth to this floodplain lake will not change or alter the Type 5 wetland type which is the predominant wetland type within the dredging boundary. The borrow pit and adjacent agricultural land will receive dredge material and will be graded to match adjacent contours and seeded down to native grasses and/or agricultural crops, thereby converting the borrow pit to a brush/grassland cover type and improving crop land soil composition and productivity. During this conversion (estimated to take approximately five months), much of the placement site will not have a vegetated layer.

8. **Permits and approvals required:** List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Unit of Government	Type of Application	Status
Federal (USACE)	404 Permit	Pending
State of Minnesota (DNR)	Public Waters Permit	Pending
State of Minnesota (MPCA)	NPDES/SDS permit (including Stormwater Pollution Prevention Plan, SWPPP)	Pending
State of Minnesota (MPCA)	Dredge Material Management	Pending
State of Minnesota (MPCA)	Section 401 Water Quality Certification	Pending
State of Minnesota (SHPO)	SHPO Review (not a final governmental action)	Pending
Wabasha County	Grading and Fill permit	Pending

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. **Land use:**

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

Land use of the dredging location is public water that is used for fishing, boating, hunting and other water related activities. Land use of the placement site is light agricultural/pasture/residential. An existing borrow pit on site will be filled with dredge material and any additional material will be spread out on the adjacent privately-owned agricultural field.

ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

The proposed project is part of and identified in an inter-jurisdictional environmental operating plan for the Upper Mississippi River (UMR). UMR "Pool Plans" were developed by a variety of State and

Federal resource management agencies in partnership with citizen groups and non-governmental organizations to identify resource issues/concerns and locations where management actions were needed. Further information about the UMR Environmental Pool Plans are available at: http://www.mvp.usace.army.mil/Missions/Navigation/RiverResourcesForum/MississippiRiverEnvironmentalPool.aspx
The interagency effort in this environmental operating plan identifies restoration of backwater depth as a desired method of habitat restoration.

The project area is not specifically addressed in the Wabasha County 2008 to 2012 Local Water Management Plan. The plan, however, acknowledges the importance of the Mississippi River to the county and the extensive recreation opportunities the river provides. Numerous priority concerns within the plan refer to land use practices that are affecting sedimentation and nutrient delivery to the Mississippi River. Although this project is proposed to restore a small area of aquatic habitat that has been degraded by sedimentation, it does not address more watershed-wide and land use issues referred to in the county's water plan.

Land use on parcels adjacent to, and in close proximity to, the project area includes a mix of agricultural, residential, and conservation/natural resource management properties (Figures 5 and 6). The aquatic area of the project lies within the UMR National Wildlife and Fish Refuge. U.S. Fish and Wildlife Service (USFWS) National Wildlife and Fish Refuge staff have been consulted in the development of this project and the project is compatible with USFWS Refuge goals and priorities.

Large tracts of conservation/natural resource lands are also located in the vicinity of the proposed project area (Figure 6). This includes properties held, owned, and/or managed by the DNR, the USFWS, and/or The Nature Conservancy (TNC). The proposed project is compatible with management objectives on these lands, as the project is intended to restore aquatic habitat in an area that has been affected by water impoundment and sedimentation. It will also improve natural resource-related recreation such as fishing, hunting, and boating.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

The dredging area is located in public waters (i.e., a land use district does not apply). A portion of the dredge material placement site is located within the shoreland district (i.e., approximately two acres) (Figure 7). U.S. Lock and Dam No. 5 Pool (DNR Public Waters Inventory or PWI ID No. 790001) and Prichard Lake (DNR Public Waters Inventory or PWI ID No. 79000102), also known as or referred to as Goose Lake, are identified by Wabasha County as a General Development Lake and Recreational Development Lake, respectively.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

Use of the dredge area and the dredge material placement area will be similar to adjoining areas. The aquatic area restored by dredging will have improved angling opportunities. Land use in the dredge material placement site is currently open space including an abandoned gravel pit and pasture. Land use within the placement site will not change. The current and future land use is an allowed use in the shoreland district and for land use districts for General Development and Recreational Development lakes. Incorporating the dredge material into existing soils will improve the soils in the borrow pit and in

adjacent pasture/agricultural lands, allowing for the establishment of grass and shrubs and/or improved grazing and cropping.

The site naturally drains to internal depressions on the property. Low berms (i.e., proposed size to be two feet high by five feet wide) will be added to the west and north property boundary before construction to ensure that runoff does not leave the site and drain to public waters. The project will comply with the vegetation alteration and grading and filling standards of the Wabasha County Shoreland Ordinance and with requirements in a Wabasha County grading and filling permit. With improved soil properties, better vegetative cover and native plant species can be established.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above. .

Since the project will not change existing uses at either the restoration site or material placement site, the potential for incompatibility with existing uses on nearby lands is limited. Specific measures to be incorporated into the proposed project to limit or mitigate potential incompatibility are not necessary.

10. Geology, soils and topography/land forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

The dredge area is located at the site of an old floodplain lake that was inundated by the construction of U.S. Lock and Dam No. 5. The dredge material placement site is located on the St. Mary's Terrace deposited by River Warren. The terrace consists of sand and gravel covered by 25 feet to 60 feet of sand. Although the site is not located in the floodplain, the rolling land surface in the dredge material placement site extends from below the base flood elevation to almost 30 feet above the base flood elevation. The St. Mary's Terrace consists of fine to medium textured clean sand that has been formed into sand dunes (Source: Geologic Atlas of Wabasha County, 2001). No geologically sensitive features are known to occur in the vicinity of the project area.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

Soils are in the Arenzville-Genesee-Minneiska Alluvial land association. They consist of well drained, sandy soils. Any excess water contained in the dredge material will either evaporate or percolate into surrounding soils within one week of placement and erosion potential is minimal. Topographic features similar to adjacent land will be restored to the area after placement is completed. The estimated volume

and acreage of soils to be disturbed for berm construction will be less than 1,000 cubic yards on five acres. The site naturally drains to internal depressions on the property. Low berms will be added to the west and north property boundary before construction to ensure that runoff does not leave the site and drain to public waters. Existing two foot berms along the southwest border of the property adjacent to TNC land will be maintained to ensure no erosion or deposition affects that property.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

11. Water resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.
   i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

The area to be restored is located in an old lake bed that was inundated by the construction of U.S. Lock and Dam No. 5, which formed Pool 5 of the Mississippi River. The Mississippi River supports a wide variety of commercial and recreational uses. The excavation site is located in a backwater of the Mississippi River identified as Prichard Lake and Prichard Lake (DNR Public Waters Inventory or PWI ID No. 79000102), also known as or referred to as Goose Lake. The area has filled with sediment during the 80 years of inundation since U.S. Lock and Dam No. 5 was constructed. Dredging will restore/enhance depth diversity and will improve aquatic habitat in the area for fish and wildlife. The improved depth will also provide improved angling opportunities.

The MPCA identifies and lists the Mississippi River in this reach as impaired for PCB and Mercury in fish tissue. Concentrations of PCB in fish tissue and mercury in fish tissue exceed the water quality standard. Specific fish consumption advice can be found at the Minnesota Department of Health website at http://www.health.state.mn.us/divs/eh/fish/eating/sitespecific.html. Available data indicate a thriving community of fish and other aquatic organisms. This project is not designed or intended to have any effect on increasing or decreasing the listed impairment for PCB and Mercury in fish tissue. The proposed project is not planned or designed to address or resolve MPCA-identified and MPCA-listed impairments.

No other impairments are listed within one mile of the project area in the MPCA's list of 303(d) Impaired Waters.

The proposed project area is permanently flooded by U.S. Lock and Dam No. 5 and is not planned to reduce future potential inundation occurrences.

   ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells,

including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

Regarding aquifers, springs, and seeps:

- The depth to groundwater is four feet to 30 feet and varies due to local topography. There are no known springs or seeps in the project area.
- The project is not within a Minnesota Department of Health wellhead protection area.
- Using the County Well Index layer in ArcMap 10.1, there are no known wells (verified and unverified) on the dredge placement site.

The ground water layer at the placement site is equivalent to the pool elevation in Weaver Bottoms (Pool 5) and except during flooding, is controlled by the USACE at Lock and Dam No. 5`. The variability in depth to groundwater layer is largely due to the depth of the existing borrow pit and its proximity to the groundwater layer.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.
   1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.
   2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.
   3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

Not applicable**.** The proposed project will not produce any sanitary, municipal/domestic, or industrial wastewater.

ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

No runoff drains from the placement site and no runoff is expected from the site after project completion. The placement site preparation will establish perimeter berms and operations will be managed in such a

way that eliminates the possibility of runoff onto adjacent property. An existing two foot high berm along the western edge of the placement site will be stabilized with silt fence. A two foot high berm with 3:1 side slope will be constructed from existing soils along the northern edge of the placement site and will also be stabilized with silt fence. Following placement of material, final grading and seeding will limit any erosion at the site. The seed mixture (Standard Mix 35-221 Dry Prairie) and planting design will follow guidelines provided in MnDOT Report No. MN/RC 2010-20.

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The proposed project is for a mechanical dredging operation and a water appropriation permit is not required.

iv. Surface Waters

a) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

The spoils parcel will be examined by a qualified wetland delineator to identify potential wetland areas. If wetland areas are found, these will be delineated and the demonstration of wetland impact avoidance will follow the sequencing process of the Minnesota Wetland Conservation Act and the federal Clean Water Act. Effects or impacts to delineated wetlands will be avoided during project activities of grading, filling, and dewatering.

b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The restoration area is located in the Weaver Bottoms, which is part of Pool 5 of the Mississippi River (Figure 1 to Figure 3). The Weaver Bottoms in Pool 5 of the Upper Mississippi River (UMR) is a 5,000 acre backwater within the 226 mile long UMR National Wildlife and Fish Refuge. The Weaver Bottoms has a rich history of fishing and waterfowl hunting experiences. However, the effects of sedimentation and altered hydrology have reduced opportunities to experience the historic potential of this area. The backwater area to be dredged (Goose Lake) is considered part of the Mississippi River. Dredging accumulated silts from the project area, up to 20 surface acres, will increase average water depth by 4.0 feet (1.2 meters). This physical alteration will restore depth and volume to an historic floodplain lake that has filled with fine sediments over the past 70 to 80 years. The direct environmental effect will be the temporary loss of submersed aquatic vegetation and the physical disruption and removal of sediments and the invertebrates that live there. Experience with similarly designed and constructed projects on the UMR demonstrates these areas have been recolonized by plants and invertebrates within approximately one year of construction.

Mechanical dredging has been used in other habitat projects on the UMR where fine sediments are r+emoved and techniques have been developed that limit or minimize re-suspension of fine sediments and in-water effects. The technique involves slowly lowering the backhoe's bucket into the water in an open position that allows water to flow out of the bucket as it begins to cut into the sediment. The bucket is then inverted back into the closed position while in the sediment and slowly lifted free from the sediment. The storage barge will be attached and located immediately adjacent to the barge supporting the backhoe and there will be limited potential for sediment spillage back into the water. These techniques are widely used by local and regional contractors for construction efficiency and to improve the relationship between project costs and benefits.

There is an existing public water access at the project location. Currently the water level can be low affecting the use of the access. The access will be used as part of the project for hauling and removing the dredged materials. The access will also be used as part of the transfer of dredged material from the water to the land. Equipment to be used is as described in this EAW and in this item (i.e., equipment to be used includes a backhoe, barge, front loading excavators, and a bulldozer). At the present time, the access includes a gravel parking lot, gravel driveway, ramp with concrete planks, and a roll-in-dock. The project proposers have been and will be coordinating with other DNR divisions and units regarding use of the access during construction; activities that will occur during construction at the access; and the needs for repair, improvement, or replacement at the access resulting from construction. This access will be closed during the dredging operations and will not be usable. As planned at this time, the dock at the access will likely need to be removed. There are four to six other public accesses in the immediate vicinity of the project and near to the project which can be used for public access and public recreation activities. After project completion, there will be improvements in the area of the access as accumulated sediment will be dredged and habitat will be improved at the restoration site, resulting in the area being more usable and more beneficial for public recreation opportunities. The public access is often used during times of hunting seasons and proposed construction plan timing can limit effects for those using the public access so that dredging activities affecting the use of the public access can occur in advance of certain hunting seasons. Since the public access will need to be closed during dredging operations, public use can be redirected to other public accesses in the vicinity and nearby. In addition, the project proposers will be coordinating activities with other DNR divisions and units and with federal units such as the UMR National Wildlife and Fish Refuge regarding redirecting public use to other locations, public notice, and applicable signage.

The project is planned to restore enough depth to the area to allow the use of small boats and canoes without having to remove excessive amounts of submersed vegetation from props and paddles. Thus, boat use will likely increase from little use to low-moderate use and the incidence of transporting invasive aquatic vegetation will be reduced. In addition, ice fishing pressure is likely to increase substantially. Boat use will likely increase slightly from three to five boats/week to ten to 15 boats/week. In addition, ice fishing pressure is likely to increase substantially and is estimated to increase from less than ten hours/acre to 100+ hours/acre.

12. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

To determine and analyze contamination, hazardous materials, potential soil contamination, and potential hazardous wastes, six sediment core samples and twelve sieve samples were taken from the proposed dredging area as part of an assessment completed by Braun Intertec and analyzed by Pace Analytical Services. The assessment is in the report prepared by Braun Intertec (Attachment A). The report which is part of Attachment A is a summary of the report; reviewers can request from the DNR an electronic copy of the entire report. Sample locations and detailed laboratory results are included in the report in Attachment A. Based on this report, "[c]hromium IV and selenium were not detected at or above the laboratory method reporting limit (MRL) in the samples analyzed. Although chromium IV was not detected above the MRL, the reporting limit was above the MPCA Level 1 management category for this element. Arsenic, cadmium, chromium III copper, lead, mercury, nickel, selenium, and zinc were detected at concentrations above the laboratory MRL in each sampled analyzed. However, in each case, the concentration was below the MPCA Level 1 management category with the exception of arsenic" at three sample locations. However "the arsenic concentration for those locations was below the MPCA Level 2 management category. PCB's were not detected at or above the laboratory MRL for eight PCB compounds included in the analytical list (MPCA Level 1 management category). Based on analytical results, excavated sediments from the proposed dredge area are suitable for industrial re-use. Due to only the concentration of arsenic exceeding the MPCA Level 1 management category at three sample locations and the low levels exhibited at these locations" and "that chromium IV was not detected above the MRL at these locations, land application for agricultural re-use may be considered as well."

Final determinations and decisions regarding the concentrations for both the proposed dredging area and the land application for agricultural re-use will be part of the permit and approval review and requirements by the MPCA.

Results of the sediment contaminant testing will be submitted to MPCA for review and comment and approval and as part of the Dredge Material Management permit application. In the event that the MPCA determines the dredge material is not suitable for placement on the private landowner's property (i.e., the dredge placement site property), the proposed dredging project may not be able to be completed. Current proposed project funding does not allow disposal of dredge material in an area determined to be not suitable for disposal of contaminated materials. Material of this nature cannot be placed in a landfill.

There may be newer management levels for arsenic and the project proposers have been meeting with MPCA staff regarding these and other applicable or allowable concentrations.

b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

The dredge material is to be placed on ten acres of private land based on a lease agreement between the DNR and the owner of the land. As described in the EAW, the material dredged will be placed on private land and allowed to dewater by infiltration and evaporation, and then the deposited material will be stabilized with seeding material. The material will have high organic content and when spread out over the property will provide a much improved medium for native grasses/forbs and agricultural crops than that provided by the predominantly sandy soils that currently exist.

c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

Regarding the use and/or storage of hazardous materials, the only toxic or hazardous materials to be used or present at the project site are fuel, oil, and hydraulic fluid for the construction equipment and machinery. Equipment will be inspected and maintained by the contractor to prevent accidental loss of hazardous fluids. The potential environmental effects from an accidental spill of construction-related fuel will be limited by having a containment boom on board the barge while in the water. Since no runoff is anticipated from the placement site, very minimal environmental impact is anticipated in the event of an accidental spill in that location. Spill notification procedures will be described and outlined in the Stormwater Pollution Prevention Plan (SWPPP) that will be developed and required as part of the NPDES/SDS permit from the MPCA.

d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

On-site storage tanks of petroleum products or other hazardous materials are not anticipated. Fueling of construction vehicles will be done off-site or with fuel transport vehicles.

13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The Weaver Bottoms of Pool 5 provides aquatic and semi-aquatic habitat for a great diversity of fish and wildlife species. Most of the 5,000 acre Weaver Bottoms area is Type 5 wetland. Fish and wildlife species associated with that habitat type include: sunfishes, bass, northern pike, bowfin, gar, herons, waterfowl, pelicans, eagles, turtles, muskrats, beaver, otter, and mink.

Additionally, since this area lies within the floodplain of the UMR and is contiguous with the main channel of the Mississippi River, there is seasonal use of this area by pelagic fish species. These include numerous species of minnows and shiners (Cyprinidae), as well as some sucker species like buffalo (Ictiobus spp.).

The 20-acre area where dredging will occur is mostly two feet to three feet deep and contains submersed aquatic vegetation (i.e., sago, curly-leaf, and leafy pondweeds; Eurasian water milfoil; coontail; elodea; and yellow water star grass).

The ten-acre dredge material placement site contains grasses and forbs typical of disturbed/pastured Ups13 plant communities as described in the Field Guide to the Native Plant Communities of Minnesota (i.e., Eastern Broadleaf Forest Province). Grasses and forbs in this dredge material placement site are include: horsemint, sand burs, Russian thistle, goldenrods, Junegrass, porcupine grass, and panic grass. The placement site is also located in an area that is used by various species of turtles and snakes, including Blanding's turtles, gophersnakes, eastern hognose snakes, and plains hog-nosed snakes.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB #20140074) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

There are several sensitive resources in the vicinity of the dredge material placement area including Minnesota Biological Survey (MBS) Sites of Biodiversity Significance, native plant communities, and rare species. The Natural Heritage Information System contains many rare feature records within one mile of the project location including Blanding's turtles (Threatened species), paddlefish (Threatened species), and three snake Species of Greatest Conservation Need as identified in Minnesota's State Wildlife Action Plan (gophersnake, eastern hognose snake, and plains hog-nosed snake) (Attachment B). The plains hog-nosed snake and the gophersnake are also state-listed species of special concern.

The proposed project is within an area of statewide importance to the Blanding's turtles. These areas are relied upon to maintain the species' security within Minnesota, and for the DNR, these are areas of the highest priority for Blanding's turtle research and management activities.

DNR Non-game telemetry studies of turtles and snakes conducted in the area show that the area is used as a travel corridor. Reports and correspondence from DNR MBS staff states that "at least one of our radio tracked bullsnakes traveled through the placement site several times during the 2013 active season, but did not spend a significant amount of time at that location" (Personal correspondence from MBS zoologist). During a site visit to the placement site in September, 2014, one Blanding's turtle hatchling was found on site.

Survey work conducted by DNR malacologists within the past seven years found no listed freshwater mussels within the dredge area boundary, and very few mussels exist due to poor habitat conditions caused by shallow water and unconsolidated fine sediments (Personal e-mail communication from DNR malacologist).

Fish and submersed aquatic vegetation surveys were conducted in 2014 within and near the restoration site and no rare species or habitats were found (Source: DNR Division of Fish and Wildlife project proposer). The DNR's Division of Fish and Wildlife, Fisheries annually samples fish and aquatic vegetation in backwater habitats in Pool 5 and Weaver Bottoms. Some controlled burning has been attempted by the landowner at the placement site to control invasive species (i.e., black locust, Siberian elm, and common buckthorn) and to control the growth of woody vegetation.

No other habitat or species work has been conducted on the dredge material placement site.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

During the construction portion of the proposed project (i.e., dredging and the placement of material), once material has been removed from the restoration area, natural processes of revegetation and colonization of aquatic organisms will occur and there are no further planned operational activities. On the placement site, once the site has been graded and seeded, the germination and establishment of vegetation will be part of the construction phase. Management of the land following establishment of vegetation will be at the discretion of the private landowner. Measures to prevent the introduction and spread of invasive species are further described in this subitem and also in subitem c. of this Item.

Dredging and restoring depth diversity to a 20 acre portion of Weaver Bottoms will provide improved overwintering habitat for Blanding's turtles by increasing water depth (Personal communications from DNR Non-game specialist and Michael Pappas, independent turtle expert). Expanded open water areas from dredging will provide paddlefish and large piscivorous birds such as pelicans, osprey, and eagles better foraging habitat. Site preparation and placement of dredge material on the upland site may temporarily interrupt nesting and movement patterns of Blanding's turtles and other wildlife species that may frequent the site from the nearby Sites of Biodiversity Significance. However, measures described in this EAW will minimize these effects. In the long term, after the project is completed, the upland habitat will be returned to a similar or improved condition.

Pool 5 of the Mississippi River is designated as infested water for zebra mussels, Eurasian watermilfoil, Bighead Carp, and Silver Carp. There is minor risk of additional spread of these species within the boundaries of this project. Any incidental movement of these species would be to an upland area where no aquatic habitat is present. Construction equipment and trucks will be decontaminated by appropriate measures (pressurized heated water; and drying and/or freezing periods) prior to being moved off site.

Exposed soils during and after placement of dredge material are at risk to become colonized by invasive plant species. However, construction Best Management Practices including those described in DNR Operational Order 113 which addresses Prevention of Terrestrial Invasive Species (Attachment D), will be required to be followed by the project contractor. Immediately after final placement, soils will be stabilized by grading and seeding. The project proposers will be working with and coordinating with other DNR disciplines and

interests regarding best management practices and regarding guidelines as part of this operational order; these disciplines include the Divisions of Ecological and Water Resources, Fish and Wildlife, and Parks and Trails.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

Dredging operations will be restricted and only conducted between the middle of July and the middle of September, thereby avoiding the primary months for nesting, spawning, and migration by fish, birds, and reptiles. Nearby sensitive lands/plants/animals that exist on The Nature Conservancy property, Weaver Dunes Scientific and Natural Area (SNA), and the McCarthy Lake Wildlife Management Area (WMA) will be protected from any inadvertent overflow of dredge material by the berms being constructed around the placement site. In addition, silt fence will be placed on top of the berm and around the entire perimeter of the placement site to prevent adult turtles and snakes from entering the site. In addition, a ground survey will be completed to look for any adult or juvenile turtles and snakes; this will occur one to two days prior to and continually during placement of material.

A Turtle and Snake Avoidance Plan will be provided to the project contractor so that workers can readily identify, avoid, and/or remove turtles and snakes when needed (Attachment F). The Avoidance Plan includes specific instructions to workers regarding recommended actions if they encounter a snake or turtle. Refer also to informational background regarding Blanding's turtles in Attachment C. In addition, Minnesota Biological Survey (MBS) staff has offered to, and if available, may be contacted to remove any turtles or snakes that are found at the placement site prior to and during placement activities. There may be temporary impacts to turtle and snake movement due to placement of the silt fence. A post-project vegetation plan includes seeding newly placed and exposed soils with a seed mixture (Standard Mix 35-221 Dry Prairie) and planting design following guidelines provided in MnDOT Report No. MN/RC 2010-20 ("Native Seed Mix Design for Roadsides"). In areas that are currently used as agricultural ground, a cover crop of oats or rye will be planted until the landowner decides what other crops to plant. Final grading of material will be done to match existing and adjacent topographical features.

14. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

The proposed project has been reviewed by the State Historic Preservation Office (SHPO). No historic features were identified in this SHPO review. Correspondence from SHPO is included in the EAW (Attachment E).

15. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

The potential for adverse visual effects from the proposed project is anticipated to be minimal and temporary . Visual appearance from trucks, construction equipment, and bare soil will occur temporarily (for approximately two to three months) as material is being placed. These types of visual appearances are similar to activities which occur throughout agricultural landscapes during this time period. Visual appearance of dredging equipment in Weaver Bottoms will be noticed or observed; this is a relatively common occurrence and is similar to that of other dredging projects on the Mississippi River, including areas near the restoration site.

16. Air:

a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

No stationary source emissions will occur.

b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

During the dredging and placement activity there will be a localized, short-term increases in vehicle-related emissions from truck hauling and equipment operation. Equipment to be used includes a backhoe, front loading excavators, a bulldozer, and ten-yard to 12-yard dump trucks. The contractor will be required to follow a diesel idling minimization plan for trucks waiting to be loaded with dredge material.

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

Generation of odor may occur at the load-out site and when dump trucks are hauling dredge material as the material is highly organic. If complaints are received about excessive odor, the load-out site will be rinsed periodically and trucks will use covers to limit the effect. Occasional localized increases in dust may occur from dump trucks traveling on gravel roads between the loading and off-loading sites; to limit this effect, the contractor will be required to apply a dust suppressant to the roadway prior to hauling. Some increase in dust may occur during grading of the placement site, but this is anticipated to be minimal due to the moisture content of the placed material. Construction phasing will be implemented as necessary to limit the size of the active grading zone and limited work hours will operate to minimize disturbance to area residents.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Noise from dump trucks periodically traveling between the load-out and off-loading sites will occur during daylight hours between July 15 and September 15. Contractors will be required to restrict hauling efforts before 8:00 a.m. and after 6:00 p.m. Occasional operation of a small bulldozer and excavator at the both the load-out and placement site during daylight hours will also be required to occur.

18. Transportation

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

Truck traffic on a 1/3 mile section of Minneiska Township Road 155 will temporarily increase to a much higher level because of the proposed project as material is hauled from the load-out location to the placement site. It is expected that 60 to 70 trucks per weekday (from six to seven trucks per hour) will travel the 1/3 mile section of road to and from the placement site. This will be a substantial increase from existing levels which rarely exceed four or five truck trips per day.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 *(available at: http://www.dot.state.mn.us/accessmanagement/resources.html)* or a similar local guidance,

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

Dump truck traffic will be limited to a ten hour day (approximately from 8:00 a.m. to 6:00 p.m.) and the contractor will be required to post the area with appropriate "truck hauling" signage to advise that truck hauling operations are ongoing. Any excessive amount (one cubic yard or more) of dredge material that spills out of trucks during transport will be required to be immediately removed from the roadway. Dump truck drivers will be instructed to look for and avoid contact with any turtle or snake species while traveling anywhere on Wabasha County Road 84, Minneiska Township Road 155, and on haul roads established at the placement site (refer to Attachment C for the Blanding's turtle background information, and to Attachment F, the Turtle and Snake Avoidance Plan). Any damage to Minneiska Township Road 155 due to hauling will be repaired immediately if the damage affects road safety, and after project completion for minimal damage to the roads. Minneiska Township representatives will be contacted prior to construction activities to coordinate and/or be involved with grading and maintenance needs.

19. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Weaver Bottoms in Pool 5 of the Upper Mississippi River (UMR) is a 5,000 acre backwater of the Mississippi River, and part of the 226 mile UMR National Wildlife and Fish Refuge. The Weaver Bottoms has a rich history of legendary fishing and waterfowl hunting experiences. However, the effects of sedimentation and altered hydrology have degraded aquatic habitat in this area and many other areas of the UMR. This project alone will not address the large scale ecological impacts that have resulted from the creation of the navigation system and impoundments. The project attempts to restore a small area of aquatic habitat by removing accumulated sediments. The geographic scale for this project is limited in relation to entire river system. Similar or companion efforts to enhance and restore riverine habitats are also being proposed and funded at the federal level through the Upper Mississippi River Restoration (UMRR). Thus, cumulative, ecologically beneficial effects are anticipated from this project as it will add to the other overall restoration efforts currently underway and/or proposed. There is no predicted timeline for complete restoration of the UMR, rather it is an ongoing effort to restore habitats and continue to mitigate impacts that are continuous in nature (i.e., river impoundment and operation of the navigation system).

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

Federal and local interests and governmental units have been contacted and coordinated with to identify any reasonably foreseeable future projects in the area. Reasonably foreseeable future projects were not identified within the geographic scale and timeframe of the proposed project and associated environmental effects. Therefore, no other projects are known to be proposed in the nearby or surrounding areas during this timeframe that would contribute to cumulative potential effects.

Previous projects that have been completed in the area include construction during the 1980s of partial closing structures across side channels that provide flow into the upper end of the Weaver Bottoms and were designed to limit channel expansion and sedimentation. Other projects that have been proposed in the area include island construction in open water expanses of Weaver Bottoms to reduce wind fetch and re-suspension of fine sediments. The location of this project is in close proximity to large beds of aquatic emergent vegetation that will be maintained by using periodic pool-wide water level management for ecological benefits (i.e., periodic drawdowns). Pool-wide drawdowns are implemented periodically on Pools of the UMR to restore a more natural hydrograph in summer months to emulate the low water conditions that normally would occur in the un-impounded river. The proposed restoration project for Goose Lake will not directly affect the water level management efforts, but it does work in concert with that effort by adding additional bathymetric diversity. Greater diversity in water depth will promote more diverse vegetation, which in turn provides more diverse habitat for a variety of fish and animals. These projects should help mitigate some of the impacts of sedimentation in the area that occur throughout a large floodplain river that has been managed for commercial navigation by placement of dams and the creation of pooled reservoirs since the 1930s.

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

Cumulative potential effects are limited to those created by this project. Environmental effects resulting from the project would be expected to be temporary in nature and minor and occur during the dredging operations and the dredge material placement. Construction periods will be limited to minimize and avoid affects to identified species. Additionally, following project completion, the affected environment is expected to benefit from improved water quality and improved stream stability. Any cumulative potential effects will likely be beneficial and will build upon Environmental Pool Plans that have been developed by State and Federal resource managers using relevant biological data and public participation. This project represents one of the features described in the Environmental Pool Plans for the Upper Mississippi River (i.e., referenced and described in Item 9.a.ii.).

20. Other potential environmental effects: If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

All potential environmental effects associated with the proposed project, the potential effect on the environment, and measures to limit any effects have been addressed throughout this EAW in Items 1 to 19. No other environmental effects are anticipated beyond those already discussed and assessed.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature ___ Charlotte W Ash _____ Date 10 August, 2015

Title EAW Project Manager