



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Twin Cities Field Office  
4101 American Blvd E.  
Bloomington, Minnesota 55425-1665

JUN 11 2007

Mr. Peter M. Garcia  
Construction Program Manager  
Federal Highway Administration  
U.S. Department of Transportation  
Wisconsin Division Office  
567 D'Onofrio Drive, Suite 100  
Madison, WI 53719-2814

Dear Mr. Garcia:

This transmits our Biological Opinion (enclosed) for the replacement of the Dike Road Bridge (Walnut Street), St. Croix County, Wisconsin (Project ID 8999-00-41) as described in the Biological Assessment that was prepared by Bonestroo, Rosene, Anderlik and Associates of St. Paul, Minnesota for the Wisconsin Department of Transportation.

We have determined that the winged mapleleaf is not likely to be found in the project area and we have determined that the project will have no effect on both the spectaclecase and sheepsnose mussels, which are candidate species. We have determined that the project is likely to adversely affect the Higgins eye, but will not jeopardize the species. To reduce incidental take of the project to Higgins eye, we require that all mussels found within the proposed 10,164-square foot bridge construction area be relocated to an approved relocation site directly across the St. Croix River along the Minnesota shoreline. In addition, we concur that the proposed action is not likely to adversely affect the bald eagle, a threatened species.

If you have questions, please call Mr. Nick Rowse of my staff at 612-725-3548 x210 or by email at [nick\\_rowse@fws.gov](mailto:nick_rowse@fws.gov).

Sincerely,

Tony Sullins  
Field Supervisor

Enclosure

Cc: Tom Lovejoy, Wisconsin Department of Natural Resources, Eau Claire, WI  
Steve Colvin, Minnesota Department of Natural Resources, St. Paul, MN  
Bob Effinger, Wisconsin Department of Transportation, Eau Claire, WI  
Todd Stevens, Bonestroo, Rosene, Anderlik, and Associates, St. Paul, MN  
Jill Medland, National Park Service, St. Croix Falls, WI

## **BIOLOGICAL OPINION**

Dike Road Bridge Reconstruction Project on the St. Croix River, WisDOT #8999-00-41, Walnut Street, St. Croix County, Wisconsin

**June 11, 2007**

**U.S. FISH AND WILDLIFE SERVICE  
TWIN CITIES FIELD OFFICE  
BLOOMINGTON, MINNESOTA**

## Introduction

This document transmits the Fish and Wildlife Service's (Service) Biological Opinion (Opinion) based on our review of the proposed replacement of the bridge on Dike Road (Walnut Street) connecting the Waterfront Park in the City of Hudson to the levee which extends most of the way across the St. Croix River, and its effects to the federally endangered Higgins eye pearly mussel. The Federal Highway Administration (FHWA) is providing partial funding of the project, specifically, through the Wisconsin Department of Transportation (WisDOT) Local Bridge Replacement Program. The Dike Road bridge is located in St. Croix County, Wisconsin and extends from the Wisconsin shore of the St. Croix River to the east end of the levee. On November 17, 2006, we received your request for formal consultation under section 7 of the Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. 1531 et seq.). Included in your request was a Biological Assessment (BA) (February 17, 2006), which was prepared by Bonestroo, Rosene, Anderlik, and Associates (Bonestroo) for WisDOT. We have concluded that the proposed crossing is not likely to jeopardize the continued existence of the Higgins eye, the federally endangered winged mapleleaf, or the federally threatened bald eagle. This Opinion is based on information provided in your biological assessment and in three previous Biological Opinions that were issued by this office for similar St. Croix River Crossing projects (August 30, 1996, December 20, 1999, and October 11, 2005). A complete administrative record of this consultation is on file at the Fish and Wildlife Service's Twin Cities Field Office (TCFO).

## Introduction and Consultation History

The City of Hudson, Wisconsin, in conjunction with WisDOT, is proposing to replace the bridge on Dike Road connecting Waterfront Park to the levee, which extends most of the way across the St. Croix River. The bridge is not open to regular vehicular traffic, but needs to accommodate vehicles and trucks for emergency response, garbage pickup, commercial deliveries and maintenance. The new bridge will be about the same length as the old bridge (150-feet), but will be narrower (26-feet). Demolition of the existing bridge will start in 2008 along with the construction of the new bridge. The City is funding 20% of the cost while WisDOT is funding the remainder. The following is a list of Federal and State species, which could potentially occur in the vicinity of the project area:

- bald eagle (*Haliaeetus leucocephalus*), federal threatened
- Higgins eye (*Lampsilis higginsii*), federal endangered, Wisconsin endangered
- spectaclecase (*Cumberlandia monodonta*), federal candidate, Wisconsin endangered
- sheepnose (*Plethobasus cyphus*), federal candidate, Wisconsin endangered
- winged mapleleaf (*Quadrula fragosa*), federal endangered, Wisconsin endangered

On May 24, 2005, we received a letter from Bonestroo notifying us of plans by the City of Hudson to replace the Dike Road Bridge, and requesting our review of the project's potential impacts to threatened and endangered species. On August 22, 2005, the Wisconsin Department of Natural Resources, presented preliminary environmental considerations to Bonestroo that the site was known to contain populations of rare

mussels and that a survey of mussels should be done. On September 6, 2005, Nick Rowse of the Fish and Wildlife Service and Byron Karns of the National Park Service, conducted a mussel survey and found a fresh dead specimen of a Higgins eye. Live mussels collected included three ridge (*Amblema plicata*), pink heelsplitter, (*Potamilis alatus*), black sandshell (*Ligumia recta*), and fluted shell (*Lasmigona costata*). One fresh-dead Higgins eye mussel was collected. The substrate was a mix of sand and gravel. Because of the Higgins eye, it was recommended that the lead federal agency, the FHWA, prepare a Biological Assessment (BA) of the proposed project and its impacts to the Higgins eye. On November 27, 2006, we received the letter from the FHWA requesting our review and a biological opinion of the proposed project.

## **Concurrence**

In the BA, it was determined that the Dike Road Bridge Project is not likely to adversely affect the bald eagle. We concur with this determination. The BA concludes the project will have no impact on critical habitat for Higgins eye, but no critical habitat has been designated for Higgins eye. The recovery plan for Higgins eye (USFWS 2004) identifies an area directly across the Hudson Narrows as Essential Habitat, which are specific areas throughout the historical range of Higgins eye that support dense and diverse mussel beds where Higgins eye are successfully reproducing. It was concluded in the BA that the project may have a minimal adverse effect on Higgins eye. We concur with your minimal affect determination. It was also concluded that the project will have no impact on critical habitat for spectaclecase mussel and for sheepsnose mussel. Both of these species are candidates for Federal listing and thus do not have critical habitats designated by the Service. The BA concludes the project will have minimal adverse effect on spectaclecase and sheepsnose. We concur with this determination. It was determined in the BA that winged mapleleaf is not likely to be found in the proposed project area. We concur with this determination.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

The new bridge will replace an existing bridge on Dike Road connecting Waterfront Park to the levee, which extends most of the way across the St. Croix River. The existing bridge is not open to regular vehicular traffic, but needs to accommodate vehicles and trucks for emergency response, garbage pickup, commercial deliveries and maintenance. The new bridge will be about the same length as the old bridge (150-feet), but will be narrower (26-feet). Demolition of the existing bridge will start in 2008 along with the construction of the new bridge.

### **Action Area**

The action area within the St. Croix River extends the width of the channel, which is 77-feet by 132-feet from upstream to downstream. The area of the channel which may be impacted by the project is 10,164-square feet. Removal of the existing bridge and

construction of a new bridge will require relocating all mussels within this area. The mussel relocation area will be sited across the St. Croix River along the Minnesota shoreline of the Hudson Narrows opposite the end of the levee dike. The relocation site is 2,900-feet from the mussel collection site under the Walnut Street bridge.

### **Status of the Species**

Higgins eye pearl mussel is the federally-listed species in or near the proposed action area that is likely to be adversely affected by the project. The Higgins eye was listed as an endangered species by the Service on June 14, 1976 (Federal Register, 41 FR 24064). According to the Higgins Eye Pearl mussel (*Lampsilis higginsii*) Recovery Plan: First Revision (U.S. Fish and Wildlife Service 2004), Higgins eye was listed as an endangered species because of (1) former and ongoing direct harvest and incidental harm during commercial harvest of other mussel species, (2) alteration of the Upper Mississippi River riverine environment by the Federal navigation dams, (3) channel dredging to create and maintain navigation channels and dredging for other projects, (4) other habitat impacts following dredging, such as sedimentation, smothering, reduction in glochidial host fish, and possibly by (5) disease and (6) competition by the Asian clam (*Corbicula fluminea*).

The historical distribution of Higgins eye is not known with certainty. Although nowhere abundant, it is believed to have been widely distributed, inhabiting the Mississippi River from just north of St. Louis, Missouri, to Minneapolis-St. Paul, Minnesota (Coker 1919). It was also found along the mainstem of the Mississippi River and several of its tributaries including the Ohio, Illinois, Sangamon, Iowa, Cedar, Wapsipinicon, Rock, Wisconsin, Black, Minnesota, and St. Croix Rivers (U.S. Fish and Wildlife Service 2004). The range of Higgins eye has been reduced approximately 53 percent from its historic distribution to a 302-mile reach of the Mississippi River (Havlik 1980, Havlik 1987) and is now found only in the Upper Mississippi River upstream of Canton, Missouri, in the St. Croix River between Wisconsin and Minnesota, the Wisconsin River, Wisconsin, and in the lower Rock River in Illinois (U.S. Fish and Wildlife Service 2004). The southern-most population is believed to be in pool 19 of the Mississippi River at RM 407 (Cawley 1984). Higgins eye occurs most frequently in medium to large rivers with current velocities of 0.49 to 1.51 ft/sec and in depths of one to six meters (m). Higgins eye appears to prefer water with dissolved oxygen greater than 5 ppm and calcium carbonate levels greater than 50 ppm. The species' distribution is significantly correlated with substrate characterized by firm, coarse sand (Hornbach et al. 1995). Higgins eye are usually found in large, stable mussel beds with relatively high species and age diversity. Hornbach et al. (1995) concluded that Higgins eye are associated with areas of higher mussel species richness and generally higher mussel population densities.

The reproductive cycle of Higgins eye is typical of the family Unionidae (Cummings and Mayer 1992). Males discharge sperm to the surrounding water; females obtain the sperm as they siphon water for food and respiration. Egg fertilization occurs within the gills of the female; fertilized eggs are retained within the marsupial gills of the female until they mature into glochidia and are released. The mantle edge near the posterior end of Higgins eye is modified into a flap, or conglutinate, resembling a small, swimming fish that is

used to attract fish hosts. Gill tissue containing glochidia protrudes between the mantle flaps. When the gill tissue is attacked by a fish, glochidia are released, thus enhancing the probability that glochidia will come into contact with a host fish. Released Higgins eye glochidia will attach themselves to the gills of host fish. Successfully attached glochidia mature and encyst from hosts' gills as bivalve juveniles; they settle to the substrate and become sedentary in the substrate, if it is suitable. The species is bradyctictic (i.e., a season-long breeder) that retains developing glochidia throughout the year, except for the period following glochidia release. Baker (1928) and Holland- Bartels and Waller (1988) indicate Higgins eye glochidia are carried in the gill marsupia through winter and released the following spring or summer. Seven common fish species are listed in the Higgins eye recovery plan (U. S. Fish and Wildlife Service 2004) as being suitable hosts for the Higgins eye. These include the sauger (*Stizostedion canadense*), walleye (*Stizostedion vitreum vitreum*), yellow perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), black crappie (*Pomoxis nigromaculatus*), and freshwater drum (*Aplodinotus grunniens*).

Factors believed to be threatening to the Higgins eye and contributing to its decline include impoundment, dredging, channelization, siltation, and water quality degradation. The sedentary nature of mussels predisposes them to be especially sensitive to chronic water problems. Higgins eye populations on the Upper Mississippi River have been particularly affected as the river has been altered from a free flowing to an impounded river system. Subsequently, the flow patterns, substrate characteristics, and fish habitats have been adversely altered. Deterioration in water quality associated with municipal, industrial, and agricultural effluents has also contributed to this species' decline.

The Higgins Eye Pearlymussel Recovery Team has designated seven distinct areas as being "essential habitat" for Higgins eye (U.S. Fish and Wildlife Service 2004). Essential habitat is believed to currently contain viable reproducing Higgins eye populations. The recovery of the species cannot be accomplished without the populations that exist in these essential habitats or in other sites that contain viable populations of Higgins eye (e.g., sites not yet discovered or where improving conditions may allow for the development of viable populations of Higgins eye). The seven areas identified in the recovery plan as essential habitat include (1) the St. Croix River opposite Hudson, Wisconsin (RM 16.2 - 17.6); (2) the Mississippi River at Whiskey Rock, opposite Ferryville, Wisconsin, Pool 9 (RM 655.8 - 658.4); (3) the Mississippi River at Harpers Slough, Pool 10 (RM 639.0 - 641.4); (4) the Mississippi River Main and East Channel at Prairie du Chien, Wisconsin, and Marquette, Iowa, Pool 10 (RM 634 - 636); (5) the Mississippi River at McMillan Island, Iowa, Pool 10 (RM 616.4 - 619.1); (6) the Mississippi River at Cordova, Illinois, Pool 14 (RM 503 - 505.5); and (7) the Mississippi River at Sylvan Slough, Quad Cities, Illinois, Pool 15 (RM 485.5 - 486).

The current range wide population trend of Higgins eye is unknown, but may be declining. A reported decline in Upper Mississippi River fingernail clams (*Musculium transversum*) may reflect a general decline in Upper Mississippi mussels (Wilson et al. 1995). The causes of the decline are unknown at present, but fingernail clams are good leading indicators of environmental conditions. The conditions that caused this sensitive

species' population decline may also threaten Higgins eye populations. In 1993, Miller (1993) reported that populations of Higgins eye were stable because, wherever it was found, it remained at approximately the same relative abundance since the early 1980's. Hornbach et al. 1995 stated that the recent invasion of the Mississippi River and probable subsequent invasion of the St. Croix River with zebra mussels has cast the survival of Higgins eye in doubt. Although zebra mussels have recently been detected in the lower reach of the St. Croix River (Karns 2000), the river contains the only population of Higgins eye mussels that is not currently infested with reproducing populations of zebra mussels. With the continuing expansion of the zebra mussel and the limited locations of Higgins eye populations within the Upper Mississippi River system, it is clear that the Higgins eye is under severe threat from the zebra mussel. Currently, zebra mussels are increasing in number from RM 20 and downstream on both sides of the St. Croix River, particularly south of Afton at RM 11.5 (Karns 2005). The highest density of zebra mussels (107 zebra mussels per square meter) was located south of the Kinnickinnic Narrows (RM 6) as reported by the National Park Service (2004).

In 2000, the Service issued its Final biological opinion for the operation and maintenance of the 9-foot navigation channel on the Upper Mississippi River system (U.S. Fish and Wildlife Service 2000). The Service concluded that the continued operation and maintenance of the 9-Foot Navigation Channel Project on the Upper Mississippi River System (UMR) would likely jeopardize the continued existence of the Higgins eye. To avoid jeopardy, the U.S. Army Corps of Engineers agreed to develop a Higgins eye Relocation Action Plan and to conduct a reconnaissance study to control zebra mussels in the UMR.

### **Environmental Baseline**

Regulations implementing the Act (50 CFR §402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area which have already undergone section 7 consultation, and the impacts of state and private actions which are contemporaneous with the consultations in progress. Such actions include, but are not limited to, previous timber harvests and other land management activities. Natural processes and features that make the St. Croix River excellent mussel habitat in general, and excellent Higgins eye habitat in particular, include moderate to high flow currents, stable substrates, the presence of aquatic vegetation and high water quality.

### **Effects of the Proposed Action**

Effects of the action are defined as “the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with the actions, that will be added to the environmental baseline” (50 CFR §402.02). The proposed project may adversely affect Higgins eye in several general ways, including siltation from bridge pier construction, erosion of disturbed levee land

from the removal of pavement, sedimentation from the removal of bridge piers, and erosion and sedimentation associated with construction and construction staging.

### **Direct Effects**

Direct effects in biological opinions are the direct or immediate effects of the project on the listed species or its habitat. Direct effects result from the agency action including the effects of interrelated actions and interdependent actions. In the case at hand, direct effects are effects likely to result from the removal of the existing bridge and the construction of a new bridge. Any Higgins eye located in the construction area would be crushed or dislodged during the construction of this facility. In addition, erosion from the levee road will result from construction of the bridge. This erosion may lead to increased sedimentation into the St. Croix River along the Wisconsin shoreline, thus having a direct effect on the native mussels just downstream of the project site. Two bridge piers will be constructed in the channel of the St. Croix River under the bridge. Erosion control methods will be implemented by the bridge contractor to minimize sedimentation impacts. A construction staging plan should be developed prior to the initiation of construction activities to better define the duration of the various construction activities and to minimize impacts in addition to an erosion/sediment control plan. To minimize the adverse impacts, relocation of all native mussels subject to disturbance will be completed prior to the beginning of the bridge construction project.

### **Indirect Effects**

Indirect effects in biological opinions are project impacts caused by the proposed action and are later in time, but still are reasonably certain to occur. No indirect effects are expected with the replacement of this bridge.

### **Effects of Interrelated or Interdependent Actions**

Interrelated actions are those that are a part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. No interrelated or independent actions are expected with this project.

### **Cumulative Effects**

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service knows of no projects reasonably certain to occur in the action area that will produce cumulative effects.

## **Conclusion**

We concur with the determination that the Dike Road Bridge Project is not likely to adversely affect the bald eagle. The BA concludes the project will have no impact on critical habitat for Higgins eye, but no critical habitat has been designated for Higgins eye. The recovery plan for Higgins eye (U.S. Fish and Wildlife Service 2004) identifies an area directly across the Hudson Narrows as Essential Habitat, which are specific areas throughout the historical range of Higgins eye that support dense and diverse mussel beds where Higgins eye are successfully reproducing. It was concluded in the BA that the project may have a minimal adverse effect on Higgins eye. We concur with your minimal effect determination. It was also concluded that the project will have no impact on critical habitat for spectaclecase mussel and for sheepnose mussel. Both of these species are candidates for Federal listing and thus do not have critical habitats designated by the Service. The BA concludes the project will have minimal adverse effect on spectaclecase and sheepnose. We concur with this determination. It was determined in the BA that winged mapleleaf is not likely to be found in the proposed project area. We concur with this determination.

## **Incidental Take Statement**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the FHWA so that they become binding conditions of any grant or permit issued to the WisDOT, as appropriate, for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity covered by the incidental take statement. If the FHWA (1) fails to assume and implement the terms and conditions or (2) fails to require the WisDOT to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the FHWA or WisDOT must report the progress of the action and its impact on the

species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

### **Amount or Extent of Take Anticipated**

In 1994, 14,043 mussels were relocated prior to the construction of the new eastbound Interstate 94 bridge crossing the St. Croix River (Ecological Specialists 1996). Sixty eight Higgins eye (0.48% of all mussels) were relocated during the bridge project. During the project, three fresh-dead Higgins eye (0.02% of total) were documented. During the Dike Road Bridge project, the Service anticipates 10,164-square feet (944-square meters) of mussel habitat will be exposed to construction impacts in the area of the bridge construction if the requested Federal funding is granted for the project. Based upon survey data obtained by the WIDNR (Kenyon et al. 1999), the mussel density of all species in the Wisconsin work area of the St. Croix River was calculated to be 2.85 mussels/m<sup>2</sup>. Using the percent community composition of Higgins eye found to be 0.48 percent of total population in the river at the project site at the end of the causeway shoreline and assuming a similar density at the proposed bridge relocation work area, the number of Higgins eye individuals is estimated to be 13. The Service anticipates that all Higgins eye mussels in addition to all other native mussels within the project area will be gathered and relocated. Thus, the Service has determined that up to one Higgins eye mussel could be lethally taken during the project operation.

### **Effect of the Take**

### **Reasonable and Prudent Measures**

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of Higgins eye. The measures described below are non-discretionary, and must be implemented by the agency as binding conditions of any authorization issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to implement the activity covered by this incidental take statement. If the FHWA fails to require WisDOT's adherence to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the Higgins eye:

1. Collect and relocate all Higgins eye mussels and all other native mussels found within the proposed 10,164-square foot, bridge construction area in Wisconsin to an approved mussel relocation site directly across the St. Croix River along the Minnesota shoreline.
2. Monitor and report on the results of the mussel relocation project in the year following the relocation.

## Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. Relocate all mussels that will be adversely impacted by bridge construction activities from the work area following the protocol as detailed in a mussel relocation protocol for a crossing of the St. Croix River between Oak Park Heights, Minnesota and the Town of St. Joseph, Wisconsin (Federal Highway Administration 2006) and as updated by the Twin Cities Field Office, U.S. Fish and Wildlife Service. These terms and conditions are non-discretionary:

1. Prior to any mussel relocations, a pre-relocation conference meeting will be set up with all responsible parties to ensure that relocation activities are coordinated.
2. Collection of endangered mussels from the zone of impact shall be completed under the supervision of a qualified malacologist.
3. The following protocol shall be implemented for mussel collection, temporary holding and relocation:
  - a. Higgins eye specimens must be collected by hand by divers under the supervision of the direct, on-site malacologist.
  - b. Collection may not be done when air temperatures are at or below 32°F, nor when water temperatures are at or below 40°F; collection may not be done when air temperatures are at or above 95°F.
  - c. Higgins eye specimens may be temporarily held in one of three ways.
    - i. Specimens may be held for up to one and one-half hours at the collection site in mesh bags, either suspended in the water or held in a container containing river water. If held in bags, specimens may be held for a total of up to 3 hours, including the time necessary to transport them to a new location, provided they are held in the water within bags that allow free movement of water the mussels were taken from, or held in containers of water that is changed every hour (every half-hour when air temperatures are at or above 80°F and replaced with water freshly taken from the water where the mussels were collected.
    - ii. Specimens may be temporarily held at the collection site and transported to relocation site in a flow-through tank. If held in a flow-through tank, mussels may be temporarily held for up to 12 hours.
    - iii. They will be returned to the substrate by the mussel relocation team in accordance with the mussel relocation protocol.

4. During collection and relocation, any dead endangered mussel shells and any specimens accidentally killed or that are moribund or freshly-dead and contain soft tissue are to be preserved according to standard museum practices, properly identified and indexed (complete scientific and common name, UTM of collection site, site conditions, date collected, and Biological Opinion authorizing collection). These specimens shall be transferred to the U.S. Fish and Wildlife Service, Twin Cities Field Office, 4101 American Blvd. E., Bloomington, MN 55425-1665.

With implementation of these terms and conditions, the Service believes that no more than one Higgins eye will be incidentally taken. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

### **Conservation Recommendations**

Section 7(a)(1) of the Act, directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery programs, or to develop information.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

### **Reinitiation – Closing Statement**

This concludes formal consultation for the potential effects of the Dike Road Bridge project on Higgins eye. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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