

Authorization for Incidental Take and Implementing Agreement

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) the Illinois Department of Transportation's (IDOT) authorization for the incidental take of the State threatened black sandshell mussel (*Ligumia recta*) in Winnebago County, Illinois [associated with the FAP 301/US 20 bridge project] is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources has determined that this authorized take is incidental to the construction/replacement of the US 20/FAP 301 bridge, over the Rock River, in Winnebago County, Illinois.

Procedural History

IDOT prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and IDOT's request for authorization for the incidental take of black sandshell mussels were received by the Illinois Department of Natural Resources (Department) on 22 February 2012. Public notice of IDOT's request for authorization of incidental take of black sandshell mussels was published in the Breese Courier (Official State newspaper) and the Rockford Register Star (local circulation) on March 14, March 21, as well as on March 28, 2012. Public comments on IDOT's conservation plan were accepted by the Department until April 27, 2012. No comments were received by the public during the period of March 14, 2012 through April 27, 2012.

Compliance with the Endangered Species Protection Act

The Illinois Endangered Species Protection Act includes six (6) criteria which must be met for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each criterion are listed below.

1. The taking will not be the purpose of, but will only be incidental to, the carrying out of an otherwise lawful activity:

This bridge project is part of a larger project, which will reconstruct US 20 from IL 2 to I-39 from a four-lane to a six-lane freeway. Most of the widening will occur in the median of the existing roadway. The bridges (four structures) carrying US 20 over the Rock River will be removed and replaced with wider structures. They are located 0.5 miles east of the US 20/IL 2 interchange. These bridges will be replaced first, due to their deteriorating condition. All construction activities required to remove and replace these bridges will take place within existing IDOT right-of-way. The bridges carrying US 20 over the Rock River are located in the 3rd Principal Meridian, Township 43N, Range 1E, Northeast Quarter of the Northeast Quarter of Section 10, and the Northwest Quarter of the Northwest Quarter of Section 11, in Winnebago County, Illinois. The coordinates for the center of all of the bridges are Latitude 42D 13M 10W, Longitude 89D 14M 49W.

The proposed improvements involve the removal and replacement of four bridges, consisting of two sets of twin structures spanning the east and west channels of the Rock River. The bridges have sufficiency ratings of 40, 49.9, 49.9, and 55. A sufficiency rating is a percentage value that is calculated based on several different factors which indicate the bridge's condition to remain open. A 100 percent rating represents an entirely sufficient bridge and a zero percent rating represent an entirely insufficient or deficient bridge. A structure having a sufficiency rating of 80 or above is not eligible for federal (HBRRP) funding for rehabilitation or replacement. A structure with a sufficiency rating between 50 and 80 is eligible for federal funding for rehabilitation only. And a structure with a sufficiency rating of less than 50 is eligible for federal funding for complete replacement. Although only one of the bridges is not eligible for replacement using HBRRP funding, the District is attempting to secure a waiver that will allow all of the bridges to be replaced using these funds, as they are approaching structural deficiency. The four existing three span bridges will be replaced with two spans and plate girder structures.

The proposed work within the stream channel includes removal of the existing structures, driving of piles for the piers, and placement of rip-rap at the abutments. Temporary work will consist of cofferdams to control water inflow during construction around the piers. After completion of the in-stream activities, any temporary work will be removed and the area will be seeded and restored to its original configuration.

2. The parties to the conservation plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking.

The State-threatened black sandshell mussel (*Ligumia recta*) is widely distributed in much of the Midwest, but uncommon. Three (3) live individuals were found under or near the bridges during the September 2011 survey conducted by the Illinois Natural History Survey (INHS). Its preferred habitat is in the riffles or raceways of medium to large rivers with strong currents and having gravel or firm, sand bottoms. It can be found in sand, gravel or silt, and in water depths of several inches to more than six feet. Its host fish species for its glochidia include rock bass (*Ambloplites rupestris*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), sauger (*Stizostedion canadense*), white crappie (*Pomoxis annularis*), green sunfish (*Lepomis cyanellus*), and common carp (*Cyprinus carpio*).

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If not relocated, all mussels could be buried or crushed by construction activities.

The area of the work zone has been minimized to reduce the impact to the mussel habitat. The total area is approximately 106,519 square feet (approximately 2.44 acres). The length of impact along the stream channel will be 300 linear feet and construction activity will be limited to the existing right-of-way, 150 feet on either side of the road centerline. The amount of habitat affected is equal to the area required to complete the in-stream portion of the work. The number of piers for each bridge has been reduced from three to two, which will decrease impacts to the substrate habitat.

The existing bridges will be removed so that they are not dropped into the river. If blasting is required for pier removal, the piers will be contained within a five-foot area around each pier. This will also minimize impacts to the substrate habitat beneath the bridges and minimize the amount of silt travelling downstream.

Suitable habitat is located both upstream and downstream of the work area. After the work activities are completed, the streambed and habitats will be controlled by natural processes, namely flooding. Mussels should move back into the area over time since measures will be taken to minimize substrate disturbances in the area around the bridges.

The Resident Engineer will be responsible to monitor all activities of the Contractor, including compliance with the special provisions regarding mitigation and the use of best management practices (BMP's) to minimize erosion and siltation. National Pollutant Discharge Elimination System (NPDES) documentation will be included as required by the NPDES permit. This will include a storm water pollution prevention plan (SWPPP), contractor certification statement, weekly inspections of BMP's, and the reporting of incidents of non-compliance.

The Illinois Department of Transportation's Bureau of Design and Environment (BDE) Special Provisions entitled "National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction" and "Temporary Erosion Control" will be included in the contract documents.

Regular inspections to ensure proper working order and maintenance of BMP's will be made weekly by the Resident Engineer. Additional inspections will be made right after heavy rain events as indicated in the SWPPP. Additional soil conserving practices, including those not in the SWPPP, will be implemented if eroded soil is noted to be leaving the jobsite or construction limits.

US 20 will remain open to traffic during construction. All traffic will be diverted to the westbound lanes during construction of the eastbound bridges. Then traffic will be switched to the eastbound lanes during construction of the westbound structures. Therefore, temporary run-arounds will not be used during construction, which will further minimize impacts.

Overall, IDOT shall ensure that all freshwater mussel surveys, and subsequent relocations, would be conducted prior to initiation of bridge construction/repair. All mussels observed (listed or non-listed species) are to be relocated in order to minimize impacts.

Mussel surveys will be conducted using standard survey techniques including searching by feel to methodically cover the area to be disturbed by the project (viewing boxes, wading in shallow water, SCUBA in deeper water-if applicable, although not likely with this project). All mussels found will be identified to species. Mussels will be relocated into areas of suitable habitat, in the same stream/river, preferably upstream of the construction site. Specifically, the transplant site will be close to the collection area and have similar to better water quality and substrate.

The ecological staff/freshwater mussel consultant conducting this mussel relocation effort shall have extensive experience with Midwestern mussels. The mussel consultant will provide the Department with a report detailing the results of all mussel surveys and relocation efforts within 60 days of completing all surveys/relocations [this report will also be submitted internally to the Illinois Natural Heritage Database and the Illinois Endangered Species Protection Board]. In summary, mussel surveys and related relocations will occur only after Department authorization and prior to any construction activities.

These measures discussed above should minimize the amount of habitat that is affected. Permanent loss of habitat is likely restricted to the areas adjacent to the abutments that will have riprap placed for scour protection.

3. The parties to the conservation plan will ensure that adequate funding for the conservation plan will be provided:

This project is authorized by the Illinois Department of Transportation/IDOT, which receives funding from the Illinois General Assembly and the Federal Government in carrying out its programs. In addition, the Illinois Department of Transportation, exclusively abides by the National Environmental Policy Act (NEPA) and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of the survival or recovery of the endangered species or threatened species in the wild in Illinois, the biotic community of which the species is a part, or the habitat essential to the species' existence in Illinois:

The relocation of all mussels encountered will make it unlikely that a significant number of individuals will be exposed to threats related to the construction and repair/replacement of the US 20 (FAP 301) bridge over the Rock River in Winnebago County.

There are four (4) alternatives for this project involving these bridges, as follows:

A. Do Nothing.

The only alternative that does not result in the taking of the listed species is by leaving the bridges as they are. However, this would keep bridges in poor condition in service. Normal maintenance will not correct these structural deficiencies and the bridges will continue to deteriorate to the point of a potential collapse, with probable injury and loss of life. If these bridges were to collapse, they would probably also crush the mussels under the bridges. This alternative is not feasible or prudent, because it poses an unacceptable safety hazard and places intolerable restrictions on travel and transport due to an eventual closure at the structure.

B. Leave existing bridges in place and construct new structures on an offset alignment.

With this alternative there would be no disturbance at the existing bridge sites, but there would be in-stream impacts required to construct the new bridges. There is similar habitat located upstream and downstream from the existing bridge sites and the in-stream work that would be required to construct bridges at an alternate location would more than likely result in impacting the species at this alternate location. This alternative is not considered feasible or prudent, since it would still require the taking of the species. Also, additional right-of-way would be required due to the offset alignment which would significantly impact the adjacent properties. After crossing the Rock River, US 20 intersects with the interchange for IL 2 to the west. Relocating the alignment over the Rock River would require the relocation of this US 20/IL 2 interchange, which would also require additional right-of-way and impacts to adjacent properties.

C. Rehabilitate the existing structure.

The existing superstructures (steel plate girders) are in poor condition which will require their complete replacement. The existing abutments and piers will require a total replacement to accommodate a 20 foot wider bridge. A wider deck will allow an additional lane and wider shoulders in each direction to be added to the roadway. The bridges will also be lengthened to accommodate a multi-use path underneath on both sides of the river. Due to the age, structural

condition and geometric constraints of the existing bridges, this alternative is considered not to be a feasible and prudent option.

D. Construct a new structure on existing alignment.

This is the preferred alternative. Complete removal and replacement of the bridges with an additional third lane will provide the maximum benefit to the area residents and travelling public. Most of the widening will take place in the median, but some of the widening will also be required on the outside of the bridges. No additional right-of-way will be needed to construct the new structure on the existing alignment. Roadway excavation and embankment work will be minimal. This is the most practical, beneficial, and cost effective improvement option for this project.

The black sandshell mussel is widely distributed in Illinois. The occurrences in the northern half of the state are sporadic and it currently only occupies one third of the drainages it formerly occupied. The black sandshell still occurs in many localities in Illinois including the following Winnebago County watersheds: Lower Rock, Kishwaukee and Pecatonica.

As stated in the April 1996 Technical Report (working draft) titled - "Measures to minimize harm to *Lampsilis higginsii* [federally endangered Higgins Eye mussel] caused by passage of commercial navigation vessels in the upper Mississippi River" [prepared by the U.S. Army Corps of Engineers-Waterways Experiment Station]:

Relocation is one of several methods that can be used to protect freshwater mussels. Relocation can be used to recolonize areas where previous populations were extirpated, to remove mussels from proposed construction sites, to boost numbers of endangered species, or to protect against high densities of the zebra mussel (*Dreissena polymorpha*). The survival of relocated mussels is closely linked to habitat quality.

Relocation sites should have the same conditions of substratum type and stability, and water velocity as the original habitat. Research from the federally endangered Higgins Eye mussel (*Lampsilis higginsii*) recovery team, under the guidance of the United States Fish and Wildlife Service, has determined that minimal mortality (<12%) and high recovery rate (>88%) were shown when aerial exposure of mussels was less than four (4) hours and when relocations were conducted in spring or autumn when air (12-18 C) and water temperature (15-23 C) were moderate.

Lastly, IDOT's Bureau of Design and Environmental Manual (2002); Landscape Design and Erosion Control criteria and Specification 280: Temporary Erosion Control shall be used during this project. The methodologies described in these documents utilize the latest techniques in sediment and erosion control design and implementation.

5. Any measures required under Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], will be performed:

Additional measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and official IDOT signature(s) on this authorization indicates their commitment to performing those measures.

6. The public has received notice of the application and has had the opportunity to comment before the Department made any decision regarding the application:

IDOT prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and IDOT's request for authorization for the incidental take of black sandshell mussels were received by the Illinois Department of Natural Resources (Department) on 22 February 2012. Public notice of IDOT's request for authorization of incidental take of black sandshell mussels was published in the Breese Courier (Official State newspaper) and the Rockford Register Star (local circulation) on March 14, March 21, as well as on March 28, 2012. Public comments on IDOT's conservation plan were accepted by the Department until April 27, 2012. No comments were received by the public during the period of March 14, 2012 through April 27, 2012.

Authorization

It is the determination of the Department that the measures to be implemented by IDOT will adequately minimize and mitigate for the anticipated taking (relocation) of a small number of black sandshell mussels due to the construction and repair/replacement of the US 20 (FAP 301) bridge over the Rock River in Winnebago County. Further, it is our opinion that the take (relocation) authorized herein would not diminish the likelihood of the survival of the black sandshell mussel in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species' existence in Illinois.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], this authorization is issued subject to the following additional terms and conditions:

1. This authorization is effective upon signature of the Department and shall remain in effect for a period of six (6) years after the official "project completion date". "Completion" shall be defined as the date the US 20/FAP 301 bridge is officially open for public use. This authorization is effective unless terminated pursuant to Section 5.5. of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.80].

2. Prior to demolition/repair of the existing bridge and construction of the new the US 20 (FAP 301) bridge over the Rock River in Winnebago County, IDOT shall conduct/facilitate, or cause to be conducted, a thorough survey of the reach of the affected portion of the Rock River that will be directly affected by bridge construction activities and shall relocate any and all (listed and/or non-listed species) freshwater mussels found within the area that will be directly affected by the bridge replacement to suitable habitat, preferably upstream, of the project site.

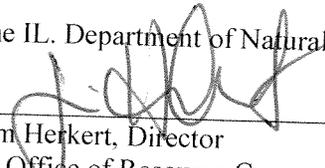
Handling of mussels shall be in compliance with any and all conditions and/or protocols included in the state and/or federal authorizations for this work. Relocated mussels shall be identified to species and enumerated. A report on the species and numbers of mussels relocated and the location(s) at which they were released shall be provided to the Department within 60 days of completion of the relocation.

3. IDOT shall conduct/facilitate, or cause to be conducted, a thorough survey of both the construction area (within existing right-of-way) and the mussel relocation site(s) for freshwater mussels in the second and fourth years following completion of bridge construction. "Completion" shall be defined as the date the bridge is officially open for public use. For example, if the US 20/FAP 301 bridge is completed in 2013, surveys shall be conducted in 2015 and 2017.

Freshwater mussels located within the construction right-of-way and relocation site(s) shall be identified to species and enumerated and the length of each mussel shall be measured to the nearest millimeter. Handling of mussels shall be in compliance with any and all conditions and/or protocols included in the state and/or federal authorizations for this work. A report on the species, numbers, and sizes of mussels found shall be provided to the Department within 60 days of the completion of this survey [this report will also be submitted internally to the Illinois Natural Heritage Database and the Illinois Endangered Species Protection Board]. This report shall also include a qualitative evaluation of the habitat for freshwater mussels being provided by the construction right-of-way area and the relocation site(s) and the manner in which that habitat has changed since the initial bridge construction project.

4. All mussels encountered within the State of Illinois during this project shall be subject to the general U.S. Fish and Wildlife Service handling protocol for determining presence/absence of species as found in "Section H" of the attached Federal Fish and Wildlife document.
5. Specified IDOT erosion and sediment control practices for this project (US 20/FAP 301 - Winnebago County) shall be implemented. IDNR recommends that inspections to ensure proper working order and maintenance of practices be made daily by local engineering staff. IDNR also recommends that additional inspections be made immediately prior to and following events of heavy rain for the area. If through daily monitoring, eroded soil is observed leaving the job-site or limits of construction, additional soil conserving practices, shall be installed in order to minimize soil erosion.
6. The effective period of this authorization may be altered by mutual agreement between IDOT and the Department.
7. This authorization may be revoked pursuant to Section 5.5 of the Act if the Department finds that IDOT has failed to comply with any of these terms and conditions or has been responsible for the take of any black sandshell mussels beyond that which is incidental to the construction and repair/replacement of the US 20/FAP 301 bridge over the Rock River in Winnebago County.
8. The IDOT official identified below is authorized to execute this agreement. Execution by IDOT indicates acceptance of all terms and conditions described in this document.

For the IL. Department of Natural Resources

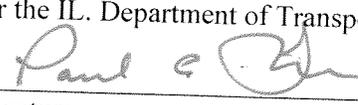


Dr. Jim Herkert, Director
IDNR Office of Resource Conservation

Date Signed

11/7/12

For the IL. Department of Transportation/IDOT



Signature

PAUL A. LOETE
DEPUTY DIRECTOR OF HIGHWAYS, REGION 2
Please print name and official title ENGINEER

Date Signed

9/26/12