

**CONSERVATION PLAN
FOR INCIDENTAL TAKING OF
THREATENED SPECIES**

**US 20 (FAP 301) Over the Rock River
Section (3, 4)R
Job No. P-92-075-08
Sequence #16748
Winnebago County, Illinois**



Upstream (North) of East Channel of the Rock River from US 20

**Prepared by
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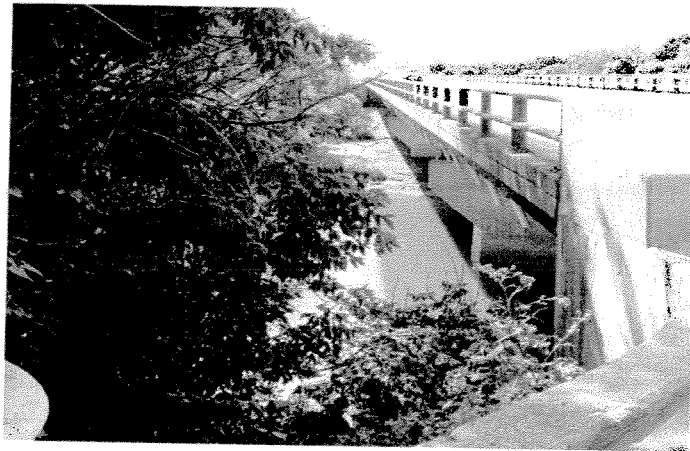
September 30, 2011

**Conservation Plan for the State Threatened Black Sandshell Mussel (*Ligumia recta*)
Inhabiting the Rock River Under FAP 301 (US 20) South of Rockford,
Winnebago County, Illinois**

1. Description of the impact likely to result from the proposed taking

A. Legal description of the project area

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 mile 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.

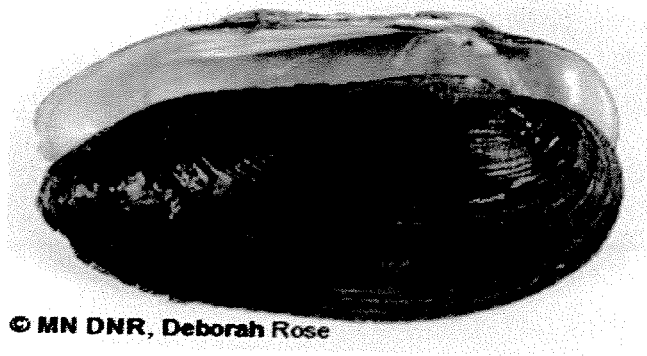


Eastbound Structure over the West Channel

B. Biological Data on the Affected Species

The State-threatened Black Sandshell Mussel (*Ligumia recta*) is widely distributed in much of the Midwest, but uncommon. Three 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 croppie (*Pomoxis annularis*), green sunfish (*Lepomis cyanellus*), and common carp (*Cyprinus carpio*).

This mussel species is widespread in eastern and central U.S. and Canada, occurring from the Great Lakes basin south into the Mississippi River drainage to Louisiana and in some Gulf Coast drainages with some declines throughout its range. It has become increasingly more difficult to find with many occurrences represented by few individuals, often without evidence of recruitment. This species is listed as occurring in Illinois, Minnesota, Iowa, Missouri, Wisconsin, Indiana and Ohio.



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Ligumia recta

The Black Sandshell Mussel has an elongate shell that is pointed on the posterior end and up to ten inches long. The shell has a smooth surface, which is usually dark brown to black with a pinkish or purple nacre.

C. Description of Incidental Taking

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 represents 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 instream activities, any temporary work will be removed and the area will be seeded and restored to its original configuration.



Eastbound Structure over the East Channel

D. Anticipated Adverse Effects of the Listed Species.

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

2. Measures to Minimize and Mitigate Impacts.

A. Plans to minimize the affected area, the amount of individuals of the threatened species that will be taken and the habitat affected.

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 instream 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.

B. Plans for management of the area affected by the proposed action that will allow continued use of the area by the species.

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, as indicated below.

- C. **Description of all measures to be implemented to minimize or mitigate the effects of the proposed action to the threatened species, plans for monitoring the effects of the measures implemented, and adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted.**

The Black Sandshell mussels will be moved from the areas within the construction limits to suitable habitat in the adjacent stream channel. This will prevent the mussels from being affected by construction activity. Erosion and siltation has the greatest potential to harm the remaining mussels downstream from the work site.

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.

IDOT will conduct, or cause to be conducted, a post construction survey for freshwater mussels in the second and fourth year following the completion of the contract. "Completion" shall be defined as the date the bridge is officially open for public use.



D. Verification that funding to support mitigation activities will be available for the life of the conservation plan.

The project estimated budget includes funding for design and implementation of erosion control and sedimentation measures. Additional soil conserving practices and measures, not included in the initial construction contract, will be implemented by change order or force account. By law, the erosion and sediment control plan must be in place for the life of the project.

3. Analysis of Project Alternatives.

There are four 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 instream impacts required to construct the new bridges. There is similar habitat located upstream and downstream from the existing bridge sites and the instream 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.

4. **Data and information regarding survival of the species after the proposed take is completed.**

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.

5. **Implementing Agreement.**

A. **Names of all participants in the execution of the conservation plan, including public bodies, corporations, organizations, and private individuals.**

Eric S. Therkildsen
Regional Engineer
Illinois Department of Transportation

Joe A. Kath
Endangered Species Project Manager
Illinois Department of Natural Resources

B. **The obligations and responsibilities of each of the identified participants in the conservation plan.**

The Illinois Department of Natural Resources is responsible for the review of this conservation plan and for the subsequent issuance of the Incidental Take Authorization.

The Illinois Natural History Survey shall be responsible for surveying for threatened and endangered species and for moving any found mussels away from the project location. INHS shall also be responsible for post-construction surveys.

The Illinois Department of Transportation shall be responsible for all biological resource consultation and clearance; securing all permits, including NPDES and Section 404; inspection of the construction activities; and contractor compliance with the contract documents. The Illinois Department of Transportation shall conduct, or cause to be conducted, a thorough survey for threatened and endangered species of

mussels prior to construction, an effort to move all mussels to locations outside of the construction limits, and a post-construction survey for mussels within the construction limits and vicinity.

C. Assurances that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan.

The project is authorized by the Illinois Department of Transportation, which receives funding from the Illinois General Assembly and the Federal government.

D. Assurances of compliance with all other federal, state, and local regulations pertinent to the proposed action and to the execution of the conservation plan.

The Illinois Department of Transportation exclusively abides by the National Environment Policy Act 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.

E. Copies of any federal authorizations for taking issued to the applicant.

Not applicable since the Black Sandshell Mussel is not a federally listed species.

F. For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner.

Not applicable.

6. Attachments.

A. Location Map

B. Plan and Profile of Proposed Action

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