

## **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 slippershell mussel (*Alasmidonta viridis*) and the State threatened little spectaclecase mussel (*Villosa lienosa*) in Vermilion County, Illinois [associated with the T.R. 427/1270 E Road 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 T.R. 427 bridge, over Fayette Creek, in Vermilion County, Illinois.

### Procedural History

IDOT and the Vermilion County Highway Department (VCHD) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and IDOT/VCHD's request for authorization for the incidental take of slippershell and little spectaclecase mussels were received by the Illinois Department of Natural Resources (Department) on 20 July 2009. Public notice of IDOT/VCHD's request for authorization of incidental take of slippershell and little spectaclecase mussels was published in the Arlington Heights Daily Herald (Official State newspaper) and The Georgetown Independent News (local circulation) on August 5, August 12, as well as on August 19, 2009. Public comments on IDOT/VCHD's conservation plan were accepted by the Department until September 19, 2009. No comments were received by the public during the period of August 5, 2009 through September 19, 2009.

### 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 criteria 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 construction/replacement project is located in the Southeast quarter of Section 10, Township 17 North, Range 12 West of the Second Principal Meridian. The project area will be within the existing right-of-way. The approximate coordinates of the bridge are: latitude 39° 56' 27.16", longitude 87° 41' 52.63".

The stated and apparent purpose of this proposed action is to construct/repair a bridge on T.R. 427 (1270 E; BDE Seq. No.: 15251) impacting a portion of Fayette Creek in Vermilion County, Illinois. This portion of Fayette Creek potentially contains habitat for freshwater mussels, including State listed species. In the course of these construction activities, IDOT and the Vermilion County Highway Department (VCHD), acting through qualified ecological subconsultants, will relocate all observed mussels (listed or non-listed species) disturbed by construction, hence a technical “taking” of these species. Such taking is not the purpose of the activities proposed by IDOT and VCHD, but is incidental to the carrying out of a lawful activity.

Overall, this bridge construction project consists of removal of an existing single span bridge on concrete closed abutments and replace it with a single span, precast, prestressed concrete (PPC) deck beam bridge on concrete spill-thru abutments. These activities include, but are not limited to, requiring equipment in the stream to remove a temporary support system that was installed sometime in the past. Also, the abutments for the new bridge will be further removed from the stream than the current abutments. This action will require shaping of the ground from the new abutments to the stream.

It shall be stated that the Vermilion County Highway Department, as directed by the Illinois Department of Transportation, exclusively abides by the National Environmental 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.

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

The total footprint of the work zone is approximately 0.40 acres. Approximately 0-2 listed species of mussels may be taken during work hours. The amount of habitat affected is equal to the area required to complete the in-stream portion of the work (approximately 0.03 acres).

The Vermilion County Highway Department will ensure that the contractor performing the work will implement best management practices in order to minimize impacts during work hours. Best management practices are described in detail in the Illinois Department of Transportation Bureau of Design and Environment Manual Chapter 59 and IDOT’s Standard Specifications for Road and Bridge Construction Section 280 and can be accessed through the IDOT website.

A Stormwater Pollution Prevention Plan will be included with the plans regardless of whether or not this project requires NPDES documentation. IDOT’s BDE Special Provision for ‘National Pollutant Discharge Elimination System/Erosion Control Deficiency Deduction’ will be included in the contract documents. Any areas disturbed by the scour countermeasures, will be re-seeded,

with erosion control blanket placed in appropriate areas. If needed, any temporary access pads will be constructed in accordance with Check Sheet 8 of the IDOT Supplemental Specifications and Recurring Special Provisions, adopted January 1, 2009 and any provisions provided in the plans and contract documents. After completion of the in-stream work, any temporary access pads will be removed and the area restored to its original configuration.

The formal conservation plan prepared by IDOT/VCHD, and received by the Department on 20 July 2009, stated that 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. In summary, mussel surveys and related relocations will occur only after Department authorization and prior to any construction activities.

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

The estimate for the cost of the bridge replacement is \$250,000.00. This estimate includes funding for design and implementation of erosion and sediment control measures. Additional soil conserving practices and measures necessary to deal with changed and unforeseen circumstances would be funded through change order and force account practices. By law, the erosion and sediment control plan must be in place for the life of the project.

This project is authorized by the Illinois Department of Transportation/IDOT, who oversees the use of state-distributed funding among local agencies. In addition, the Vermilion County Highway Department (VCHD), as directed by the Illinois Department of Transportation, exclusively abides by the National Environmental 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.

Overall, the PPC deck beam bridge is the most cost effective and consistent with the type of bridges built by Vermilion County, Illinois. The only alternative that would not result in a potential take would be to do nothing and close the bridge, which is not feasible.

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:

Construction and repair/replacement of the T.R. 427 (1270 E Road) bridge over Fayette Creek in Vermilion County, Illinois will most likely not reduce the likelihood of the survival of state-listed threatened or endangered mussels in Illinois. For the purposes of biological comparison, it should be noted that the freshwater mussel fauna of the Fox River and its tributaries in Illinois and Wisconsin were surveyed by Department staff during the summers of 1997-2001. A total of 3,585 live individuals comprised of 23 species were collected from 96 sampling stations. Of this total, 31 slippershell mussels (*Alasmidonta viridis*) were collected.

The little spectaclecase (*Villosa lienosa*) was widely distributed in tributaries to the Wabash River in Illinois. It is still extant in the upper North Fork Vermilion, the middle Embarras and the Little Vermilion rivers. The largest remaining population of this mussel in Illinois occurs in the upper Little Vermilion River. This species ranked 4<sup>th</sup> in overall abundance in the present survey and was common at sites 2-4 per the INHS, 1998.

The slippershell (*Alasmidonta viridis*) was historically widespread in the northern half of Illinois but has since been reduced to widely scattered populations throughout its range. The slippershell was found alive at three sites (3-5) in the upper part of the Little Vermilion River in 1997. The only live records for this species in the adjacent Vermilion River basin to the north were collected from Bean Creek (Middle Fork Drainage) in 1989 per the INHS, 1998.

Throughout North America, the slippershell mussel (*Alasmidonta viridis*) is known from the upper Mississippi, Ohio, Cumberland, and Tennessee river drainages and lower and middle sections of the St. Lawrence. In Illinois, it is known from the Sangamon, Kankakee, Vermilion, and Little Vermilion river systems. This mussel inhabits small to medium sized streams where it is usually found buried in sandy substrates in shallow water. Unfortunately, the slippershell now has a restricted distribution in Illinois, and its numbers have been reduced most likely as a result of increased siltation and channelization in small to medium sized streams throughout the state. Any live animals that are overlooked during the relocation effort could be at risk of injury or death as a result of construction activities.

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 T.R. 427 (1270 E Road) bridge over Fayette Creek in Vermilion County.

As stated in the April 1996 Technical Report (working draft) titled - "Measures to minimize harm to *Lampsilis higginsi* [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 higginsi*) 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.

Specified erosion and sediment control practices in the Stormwater Pollution Prevention Plan will be implemented. Inspections to ensure proper working order and maintenance of practices will be made daily by the engineering staff with the Vermilion County Highway Department. Additional inspections will be made immediately prior to and following forecast events of heavy rain for the area.

As noted in the official Conservation Plan, the Vermilion County Highway Department will ensure that the contractor performing the work will implement best management practices in order to minimize impacts during work hours. Best management practices are described in detail in the Illinois Department of Transportation Bureau of Design and Environment Manual Chapter 59 and IDOT's Standard Specifications for Road and Bridge Construction Section 280 and can be accessed through the IDOT website.

A Stormwater Pollution Prevention Plan will also be included with the plans regardless of whether or not this project requires NPDES documentation. IDOT's BDE Special Provision for 'National Pollutant Discharge Elimination System/Erosion Control Deficiency Deduction' will be included in the contract documents. Any areas disturbed by the scour countermeasures, will be re-seeded, with erosion control blanket placed in appropriate areas. If needed, any temporary access pads will be constructed in accordance with Check Sheet 8 of the IDOT Supplemental Specifications and Recurring Special Provisions, adopted January 1, 2009 and any provisions provided in the plans and contract documents. After completion of the in-stream work, any temporary access pads will be removed and the area restored to its original configuration.

Furthermore, soil conserving practices will be implemented to minimize the amount of eroded soil entering Fayette Creek. The installation and effectiveness of the soil conserving practices will be monitored each day by engineering staff with the Vermilion County Highway Department. If through daily monitoring, eroded soil is observed leaving the job-site or limits of construction, additional soil conserving practices, including those not included in the Stormwater Pollution Prevention Plan, shall be installed or measures taken to minimize soil erosion. The need to implement additional practices would be most apparent following extreme or record rainfall.

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/VCHD 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 and the Vermilion County Highway Department (VCHD) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and IDOT/VCHD's request for authorization for incidental take of slippershell and little spectaclecase mussels were received by the Illinois Department of Natural Resources (Department) on 20 July 2009. Public notice of IDOT/VCHD's request for authorization of incidental take of slippershell and little spectaclecase mussels was published in the Arlington Heights Daily Herald (Official State newspaper) and The Georgetown Independent News (local circulation) on August 5, August 12, as well as on August 19, 2009. Public comments on IDOT/VCHD's conservation plan were accepted by the Department until September 19, 2009. No comments were received by the public during the period of August 5, 2009 through September 19, 2009.

## Authorization

It is the determination of the Department that the measures to be implemented by IDOT and the VCHD will adequately minimize and mitigate for the anticipated taking (relocation) of a small number of little spectaclecase and slippershell mussels due to the construction and repair/replacement of the T.R. 427 (1270 E Road) bridge over Fayette Creek in Vermilion County. Further, it is our opinion that the take (relocation) authorized herein would not diminish the likelihood of the survival of the little spectaclecase and/or slippershell 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 T.R. 427 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 T.R. 427 (1270 E Road) bridge over Fayette Creek in Vermilion County, IDOT/VCHD shall conduct/facilitate, or cause to be conducted, a thorough survey of the reach of the affected portion of Fayette Creek that will be directly affected by bridge construction activities and shall relocate any and all (listed 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/VCHD 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 fifth (5<sup>th</sup>) year following completion of bridge construction. "Completion" shall be defined as the date the bridge is officially open for public use. For example, if the T.R. 427/1270 E Road bridge is completed in 2010, this survey shall be conducted in 2015. 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 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 erosion and sediment control practices in the Stormwater Pollution Prevention Plan for this project (T.R. 427/1270 E Road - Vermilion County) shall be implemented. Inspections to ensure proper working order and maintenance of practices shall be made daily by the engineering staff with the Vermilion County Highway Department (VCHD). Additional inspections will be made immediately prior to and following events of heavy rain for the area as indicated in the project specific Stormwater Pollution Prevention Plan. If through daily monitoring, eroded soil is observed leaving the job-site or limits of construction, additional soil conserving practices, including those not included in the Stormwater Pollution Prevention Plan, shall be installed in order to minimize soil erosion.

6. The effective period of this authorization may be altered by mutual agreement between IDOT/VCHD and the Department.

7. This authorization may be revoked pursuant to Section 5.5 of the Act if the Department finds that IDOT/VCHD has failed to comply with any of these terms and conditions or has been responsible for the take of any slippershell and/or little spectaclecase mussels beyond that which is incidental to the construction and repair/replacement of the T.R. 427 (1270 E Road) bridge over Fayette Creek in Vermilion County.

8. The IDOT/VCHD official identified below is authorized to execute this agreement. Execution by IDOT/VCHD indicates acceptance of all terms and conditions described in this document.

For the IL. Department of Natural Resources

John D. Rogner  
John Rogner, Assistant IDNR Director  
Office of Resource Conservation

12/14/09  
Date Signed

For the IL. Department of Transportation and/or  
the Vermilion County Highway Department

Doug Staske  
Signature

DOUG STASKE  
VERMILION COUNTY ENGINEER  
Please print name and official title

Dec 2, 2009  
Date Signed