

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 Iowa darter (*Etheostoma exile*) and the State threatened Spike mussel (*Elliptio dilatata*) in McHenry County, Illinois (as described/shown in the final conservation plan received by the Department on 26 March 2010) 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 reconstruction of the bridge that carries Illinois Route 23 (IL 23) over Coon Creek in unincorporated McHenry 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 incidental take of the Iowa darter and Spike mussel were received by the Illinois Department of Natural Resources (Department) on 26 March 2010 (final version). Public notice of IDOT's request for authorization of incidental take of these species was published in the Arlington Heights Daily Herald (Official State newspaper) and the Northwest Herald (local circulation) on April 2, 2010, as well as on April 9 and April 16, 2010. Public comments on IDOT's conservation plan were accepted by the Department until May 16, 2010. No comments were received by the public during the period of April 2, 2010 through May 16, 2010.

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:

The project is for the reconstruction of Illinois Route 23 (IL 23) bridge over Coon Creek (Structure No. 056-0012) located in unincorporated McHenry County, approximately 5.5 miles south of the City of Marengo. The structure is located on IL 23 (FAP 324) in the southwest quarter of Section 26 of T43N, R5E at latitude 42°-10'-13" N, longitude -88°-37'-13" W. The project is for the complete removal and replacement of the existing IL 23 bridge over Coon Creek. The original four-span structure was built in 1929. The structure was widened in 1969, at which time the superstructure was replaced with a new precast, prestressed concrete (PPC) deck beam superstructure. The horizontal alignment was moved 10' to the west (towards the inside of the curve), thereby only requiring the roadway and bridge to be widened toward one direction. The substructure currently consists of closed abutment walls and three solid wall piers in the waterway.

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The bridge is currently load posted and needs to be replaced. The superstructure consists of 40-year old PPC deck beams that are rated in critical condition. The substructure is in fair condition and has portions dating back to 1929, which would not be expected to survive the design life of the proposed superstructure. Additionally, the existing bridge does not meet the hydraulic clearance or freeboard criteria.

The anticipated adverse effects of this project therefore include:

- a) Short term erosion and sedimentation during construction may impact water quality.
- b) There is a potential for either the Iowa darter and/or spike mussel to be crushed by the operations necessary to divert the water for the excavation area. This will be accomplished by the uses of timbers, sheet piling, granular embankment, non erodible barrier material, or other structural elements adequate to protect and support the excavation.
- c) Short term disturbances due to increased noise and activities during construction would occur.
- d) Continued degradation of habitat associated with surface runoff and salt spray from the bridge deck. This impact is minimal compared to surrounding agricultural runoff.

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

The proposed structure is a three-span bridge with open abutments and two solid wall encased pile piers in the stream. The abutments will be placed at the top of a 2:1 embankment slope and located approximately 14' behind the existing closed abutment walls. The proposed piers will be located between the two outside existing piers. The roadway will be reconstructed for 600' each side of the bridge for a total reconstruction length of 1200'. The profile will be raised approximately 3' at the bridge to meet the hydraulic clearance and freeboard criteria. The existing alignment will be relocated back to the original 1929 alignment, approximately 10' towards the east at the bridge. No additional lanes will be constructed, but the roadway realignment will require additional embankment on the east side of the roadway.

The realignment of the road and resulting embankment addition will not affect adjacent wetlands. The side-slopes of the embankment were designed at 2:1 with guardrail protection near the bridge. This design meant that no additional right-of-way was required and allowed for the avoidance of wetland impacts. The existing piers will not be completely removed but will instead be sawed off above the footing, leaving the below streambed portions of the piers in place. The pier removal and construction will involve in-stream work. A pile driver will be required on a temporary causeway. Additional riprap will be required at the pier and abutment removal areas and on the new abutment slope-walls.

The overall in-stream work for pier construction is considered a short term operation and shall be scheduled at the beginning or end of the construction time-frame to avoid the spawning season of the Iowa darter. Minimization of impacts to the spike mussel will be accomplished by having the Illinois Natural History Survey (INHS) conduct a mussel survey prior to construction. All mussels found will be relocated to outside of the construction zone at that time.

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

This project is authorized by IDOT, which receives funding from Illinois General Assembly and the Federal government in carrying out its programs. In addition, the Illinois Department of Transportation and McHenry County, Illinois exclusively abide 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. In addition, IDOT will apply for any Section 404 Clean Water Act permits from the U.S. Army Corps of Engineers, as well as the applicable State of Illinois Section 401 Clean Water Act permit and the Illinois Department of Natural Resources, Office of Water Resources' permit for work in a flood-way. IDOT will adhere to all permit conditions.

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 Illinois Department of Transportation and McHenry County, Illinois exclusively abide 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.

MEASURES TO MINIMIZE AND MITIGATE IMPACTS

Minimization of impacts to the Iowa darter will occur through the timing of the construction. The project is scheduled to begin in the Fall of 2010. The construction will be performed in two stages. *Stage I* construction will construct the northbound direction, building up the widened portion towards the east (embankment, etc.) *Stage II*, which is likely to occur in Summer/Fall 2011, will complete the southbound direction. The overall in-stream work for pier removal and construction is a short term operation and will be scheduled at the beginning or end of the construction time-frame in order to avoid the spawning season of the Iowa darter (April 1 – June 30). Measures will be taken to avoid any substructure construction work during the spawning season.

During construction, the piers will be installed by diverting the water for the excavation by the uses of timbers, sheet piling, granular embankment, non erodible barrier material, or other structural elements adequate to protect and support the excavation. The protection need not be watertight. During these operations, sediment control silt curtains will be used to minimize any sedimentation that enters the water, thereby reducing water quality impacts and potential impacts to the Iowa darter or spike mussel.

Water quality impacts will be further minimized through the use of erosion and sediment control during construction. Current erosion and sediment control technologies will be used during construction, following IDOT specifications. These will include the use of silt fence on the ditch fore-slopes to minimize runoff into the channel during construction. Erosion and sediment

control inspections will occur weekly, and following a 0.5" rainfall. The construction contractor will be required to repair any deficiencies noted within one (1) week. If it is determined that the design of the erosion and sediment control is insufficient, a new design will be implemented. Additionally, any conditions placed by the U.S. Army Corps of Engineers' and/or the State of Illinois permits for the protection of water quality will be strictly followed.

The existing piers will not be completely removed but will instead be sawed off above the footing, leaving the below streambed portions of the piers in place. This will minimize the disturbance of creek sediments. Minimization of impacts to the spike mussel will be accomplished by having the Illinois Natural History Survey conduct a mussel survey prior to construction. All mussels will be relocated to outside of the construction zone at that time.

Water quality impacts from construction will be minimized due to the design of the project. The limits of construction include a very small area within the Coon Creek watershed. Adjacent road-work will occur for a distance of no more than 750 feet in either direction. The proposed limits of construction represent the minimum area necessary in which to work and construct the new crossing over Coon Creek. The footprint of the project has avoided wetland impacts due to increasing or tightening the slope of the roadway embankment to 2:1. This design factor results in the avoidance of wetland impacts and therefore allows for the maximum amount of wetland available to filter runoff from the roadway. It is anticipated that any temporary haul road or temporary causeway will not impact the wetlands. Lastly, in-stream construction activity will be limited to approximately 75 feet upstream and downstream of the project.

Below is a summary of project related avoidance and minimization efforts:

A. Construction

1. Timing of the construction will minimize impacts. The in-stream work for pier construction will be scheduled at the beginning or end of the construction time-frame in order to avoid the spawning season of the Iowa darter. The construction work will not occur during the April 1st through June 30th spawning season.
2. The Illinois Natural History Survey will conduct a mussel survey prior to construction. All mussels will be relocated to suitable habitat outside of the construction zone at that time.
3. Erosion and sediment control technologies will be used to minimize impacts. These will include the use of silt fence on the ditch fore-slopes to minimize runoff into the channel during construction. Erosion and sediment control inspections will occur weekly, and following a 0.5" rainfall.
4. The proposed limits of construction represent the minimum area necessary in which to work and construct the new crossing over Coon Creek.
5. During construction, any Iowa darters that are located within the project vicinity are expected to avoid the area because of the noise associated with construction activity.

B. Post-Construction

1. Areas of temporary impacts, including wetlands and uplands, will be re-vegetated using native plants species.
2. IDOT's Bureau of Design and Environment Manual will be used. This Manual utilizes the latest techniques in sediment and erosion control design and implementation. Erosion and sediment control inspections will occur weekly, and following a 0.5" rainfall. The construction contractor will be required to repair any deficiencies noted within one week. If erosion and sediment control appears to be insufficient, corrections in the field will be made.

C. Alternative Designs Considered

Various bridge types and configurations were evaluated in an attempt to minimize impacts. The three-span option was chosen because it minimizes the amount of in-stream work necessary. The option of reusing the existing pier is not feasible due to the age and condition of the existing pier. The option of a single span (no pier) does not provide enough freeboard above the water surface. The option of a two-span bridge was explored, however this would have required the complete replacement of the existing middle pier, which would result in disruptions to the streambed during the removal of the existing foundation.

In order to minimize wetland impacts and thereby minimize long-term water quality impacts, the design includes 2:1 side-slopes protected by guardrails. This avoids the necessity to obtain additional right-of-way and minimizes the amount of fill required that would impact wetlands.

Several alternative bridge designs were addressed in the early stage. The bridge design chosen was chosen for the fact that it resulted in the least amount of environmental impacts. Design standards require that the bridge have sufficient clearance to clear the high water elevation which results from a 50-year storm event. Based on this clearance, a minimum height of the beams and number of spans was chosen in order to reduce the amount of earthwork that would be needed on the approach and the abutments of the stream-bank. By minimizing the earthwork needed on the approach and the abutments, environmental impact to the stream and adjacent wetlands were lessened.

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 Illinois Department of Transportation (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 incidental take of the Iowa darter and Spike mussel were received by the Illinois Department of Natural Resources (Department) on 26 March 2010 (final version). Public notice of IDOT's request for authorization of incidental take of these species was published in the Arlington Heights Daily Herald (Official State newspaper) and the Northwest Herald (local circulation) on April 2, 2010, as well as on April 9 and April 16, 2010. Public comments on IDOT's conservation plan were accepted by the Department until May 16, 2010. No comments were received by the public during the period of April 2, 2010 through May 16, 2010.

Authorization

It is the determination of the Department that pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5), the measures to be implemented by the IDOT will adequately minimize and mitigate for the possible taking of the State threatened Iowa darter (*Etheostoma exile*) and the State threatened Spike mussel (*Elliptio dilatata*) in McHenry County, Illinois. The Illinois Department of Natural Resources has determined that this authorized take is incidental to the reconstruction of the bridge that carries Illinois Route 23 (IL 23) over Coon Creek in unincorporated McHenry County, Illinois. Further, it is our opinion that the restrictions authorized herein would not diminish the likelihood of the survival of these species 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 four (4) years [beginning the first day the new bridge is officially open for use by the general public], 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. Regarding in-stream work and spawning fish: The overall in-stream work for pier alteration and construction is a short term operation and will be scheduled at the beginning or end of the construction time-frame in order to avoid the spawning season of the Iowa darter (April 1 – June 30).
3. IDOT shall coordinate a post-construction monitoring regime for the listed fish species of concern in Year 2, following the completion of all work activities [“completion” shall be defined as: the first day the new bridge is officially open for use by the general public]. All fish shall be identified to species and enumerated and the length of each fish shall be measured to the nearest millimeter. Handling of fish 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 fish found shall be provided to the Illinois Department of Transportation and the Illinois Department of Natural Resources (Attn: Joseph Kath) within 90 days of the completion of each survey. Each report shall also include a qualitative evaluation of the habitat fish being provided by the construction right-of-way and the manner in which the habitat has changed since the previous survey.

4. If the results of the Year 2 study described above show that the listed fish species of concern is not present within the project corridor, and/or the habitat has changed drastically (positive or negative fashion) since the official completion of the bridge, a subsequent monitoring survey shall be conducted in Year 4 following bridge completion. All fish shall be identified to species and enumerated and the length of each fish shall be measured to the nearest millimeter. Handling of fish 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 fish found shall be provided to the Illinois Department of Transportation and the Illinois Department of Natural Resources (Attn: Joseph Kath) within 90 days of the completion of this survey. Each report shall also include a qualitative evaluation of the habitat fish being provided by the construction right-of-way and the manner in which the habitat has changed since the previous survey.

5. Prior to the removal/replacement/repair of the IL 23 bridge over Coon Creek in McHenry County, Illinois, IDOT/INHS shall conduct, or cause to be conducted, a thorough survey of the reach of the creek/river that will be directly affected by 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 repair to suitable habitat preferably upstream of the project site. The relocation area shall be an area with suitable stable substrates and if possible, a similar unionid assemblage that is near the project area. 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 90 days of completion of the relocation.

6. IDOT/INHS shall conduct, 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 (2nd) and fourth (4th) year(s) following completion of bridge construction/scour repair. "Completion" shall be defined as the date the bridge is officially open for public use. For example, if the IL23 bridge work is completed in 2010, these surveys shall be conducted in 2012 and 2014. All 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 90 days of the completion of each survey.

Each 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 previous survey.

7. 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.

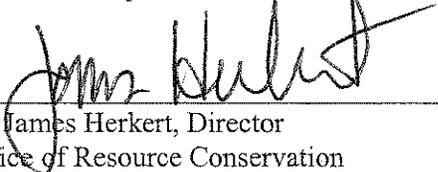
8. The IDOT, or Resident Engineer assigned to the construction, will ensure that erosion and sediment control is maintained in good working condition. Inspections shall occur weekly, and following a 0.5" rainfall. IDOT shall ensure that any deficiencies noted in the erosion and sediment control will be repaired within one week. If it is determined that the design of the erosion and sediment control is insufficient, a new design will be implemented. Additionally, any conditions placed by the U.S. Army Corps of Engineers or the State of Illinois' permits for the protection of water quality shall be strictly followed.

9. The effective period of this authorization may be altered by mutual agreement between the Illinois Department of Transportation (IDOT) and the Department.

10. This authorization may be revoked pursuant to Section 5.5 of the Act if the Department finds that the IDOT has failed to comply with any of these terms and conditions or has been responsible for the take of any State listed species, namely the: Iowa darter and the Spike mussel, associated with the of the bridge that carries Illinois Route 23 (IL 23) over Coon Creek in McHenry County, Illinois.

11. The Illinois Department of Transportation (IDOT) official identified below is authorized to execute this agreement. Execution by the IDOT indicates acceptance of all terms and conditions described in this document.

For the IL. Department of Natural Resources



Dr. James Herkert, Director
Office of Resource Conservation

9-24-10

Date Signed

For the Illinois Dept. of Transportation/IDOT



Signature

DIANE OKURA
REGIONAL ENGINEER

Please print name and official title

9-24-10

Date Signed