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 spike mussel (*Elliptio dilatata*) in Boone County, Illinois [associated with the Orth Road bridge over Beaver Creek 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 modification of the Orth Road bridge over Beaver Creek in Boone County, Illinois.

Procedural History

Hanson Professional Services, Inc. (on behalf of the Village of Timberlane – VOT) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and VOT's request for authorization for the incidental take of spike mussels were received by the Illinois Department of Natural Resources (Department) on February 25, 2013. Public notice of VOT's request for authorization of the incidental take of spike mussels was published in the Breeze Courier (Official State newspaper) and the Belvidere Daily Republican (local circulation) on March 10, March 19, and March 26, 2013. Public comments on VOT's conservation plan were accepted by the Department until April 25, 2013. No comments were received by the public during the period of March 10, 2013 through April 25, 2013.

This project was not elevated to the IDNR's formal incidental take committee as the applicant chose to enter into the ITA process without prompting by the Department – simply due to the results of the 2007 mussel survey indicating the presence of listed mussel species in the project area. The following e-mail transcripts describe the actions taken:

***E-mail #1:**
From: *Hamer, Steve [mailto:Steve.Hamer@Illinois.gov]*
Sent: *Friday, December 07, 2012 1:37 PM*
To: *Jeff Bushur*
Subject: *RE: Orth Road Bridge Replacement - DCEO funding for engineering/design only*

Tracy Evans will review this and provide a response to you and DCEO for their $$ to design/engineering. Termination is based on the ITA being submitted and wetlands being covered as usual. Again what is the ITA status? And when is construction to be started??

Steve Hamer
Transportation Review Program
Illinois Department of Natural Resources
Division of Ecosystems and Environment
One Natural Resources Way
Springfield, Illinois 62702-1271
Phone (217) 785-4862
Fax (217) 524-4177

E-mail #2:
Sent: Monday, 12/10/12 at 7:59am
Joe: Hanson's Professional Services has gone ahead and has prepared an ITA for the spike mussel which is located in Beaver Creek in Boone Co. The bridge has been closed for some time for safety. The ITA is currently being reviewed by IDOT. Several months ago I spoke with Hanson's on this and at the time they were just wanting an information request. Knowing the issue and concern for emergency bridge replacement they started the ITA process therefore this was not presented to the ITA committee. This will be coming in sometime soon I expect. Any questions, please call. thx

Steve Hamer
Transportation Review Program
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E-mail #3:
***From:** Jeff Bushur [mailto:JBushur@hanson-inc.com]*
***Sent:** Monday, December 10, 2012 8:14 AM*
***To:** Hamer, Steve*
***Cc:** Hanson Professional Services, Inc. (Rockford)*
***Subject:** RE: Orth Road Bridge Replacement - DCEO funding for engineering/design only*

Steve,
We received a copy of Tracy's letter on Friday.
We submitted the draft ITA to IDOT at the end of November. IDOT was to forward it on. The Village/County would like to let the project in April 2013, but the ITA processing may delay this. It appears we can avoid the wetlands.
Thanks for the help.
Jeff

The Conservation Plan and VOT's request for authorization for the incidental take of spike mussels were received by the Illinois Department of Natural Resources (Department) on February 25, 2013. Public notice of VOT's request for authorization of the incidental take of spike mussels was published in the Breeze Courier (Official State newspaper) and the Belvidere Daily Republican (local circulation) on March 10, March 19, and March 26, 2013. Public comments on VOT's conservation plan were accepted by the Department until April 25, 2013. No comments were received by the public during the period of March 10, 2013 through April 25, 2013.

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:

The project is located midway along the southern edge of Section 35, Township 45 North, Range 3 East of the Third Principal Meridian. The project is located within the road right-of-way of FAU Route 5208, Orth Road in the southeast corner of the Village of Timberlane limits in Boone County. The coordinates of the bridge are: latitude 42D 19M 39.38S, longitude 88D 51M 06.87S.

The proposed improvements involve the removal and replacement of a structurally deficient bridge with a sufficiency rating of 4.3. The existing bridge has been closed to traffic since February 2012. The existing two-span bridge will be replaced with a three-span concrete slab bridge on pile bent wall piers and abutments at the same location, which will require the removal of the one existing pier and the placement of two piers. The bridge and roadway are under the jurisdiction of the Village of Timberlane. Federal funding will be used for the project.

The proposed work within the stream channel includes removal of the existing structure, 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 (preferably with a native seed mix) 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 existing superstructure (PPC deck beams) is structurally deficient, with some beams exhibiting partial failure. The existing substructures are not capable of supporting current design live loads. The bridge width is substandard, and cannot be widened without in-stream work to widen the piers and abutments. Therefore, this alternative could potentially harm spike mussels as well. Due to the age, structural condition and geometric constraints of the existing bridge, this alternative is rejected as a feasible and prudent option.

The Illinois state threatened spike mussel (*Elliptio dilatata*) has a widespread but sporadic distribution. This species is common in Missouri and Ohio and uncommon to rare in other states. They are considered vulnerable in Indiana and Wisconsin and under review for listing in Michigan. Its preferred habitat is small to large streams and occasionally lakes. They are most often found in silt, sand, or gravel substrates in depths ranging 2 to 24 feet. When spike mussels inhabit lakes they are usually associated with outlet habitats dominated by swift currents.

The spike mussel (1) was found under the structure carrying Orth Road over Beaver Creek in 2007 (malacologist Nick Owens of Helms & Associates [under contract with Huff & Huff]) One relict shell was found in Beaver Creek four miles northeast of the project area in 2011, and the substrate was 45 percent sand, 25 percent cobble, 20 percent silt, and 10 percent gravel. There are also recorded occurrences 12 miles northwest of the project river in the Rock River and 13.5 miles southeast of the project in Coon Creek.

As noted above, similar habitat is located upstream and downstream of the work area as indicated by the previous survey work done in the vicinity of the subject project. The proposed improvements are not expected to have any long-term impacts on the spike mussel's continued use of the area. There are no planned maintenance activities that would be expected to impact the mussel resource. It is possible that many species of mussels, including the spike, will re-colonize any area where they have been removed from.

The proposed improvements involve the removal and replacement of a structurally deficient bridge with a sufficiency rating of 4.3. The existing bridge has been closed to traffic since February 2012. The existing two-span bridge will be replaced with a three-span concrete slab bridge on pile bent wall piers and abutments at the same location, which will require the removal of the one existing pier and the placement of two piers. The bridge and roadway are under the jurisdiction of the Village of Timberlane.

The area of the in-stream work zone has been minimized to reduce the impact to the mussel habitat. The total area is approximately 6,700 square feet (approximately 0.15 acres). The length of impact along the stream channel will be 66 linear feet and construction activity will be limited to the existing right-of-way (ROW), 33 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.

Erosion and siltation have the greatest potential to harm the remaining mussels downstream from the work site. Thus, 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 (BMPs) to minimize erosion and siltation. Erosion and sediment control documentation will be included in the project plans. This will include storm water pollution prevention measures, contractor weekly inspections of BMPs, and documentation of storm water erosion/siltation incidents.

The existing two-span bridge will be replaced with a three-span concrete slab bridge on pile bent wall piers and abutments at the same location, which will require the removal of the one existing pier and the placement of two piers. The proposed work within the stream channel includes removal of the existing structure, 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.

All mussels will be removed from within the in-stream impact zone described above before any construction occurs. The mussels will be marked and then relocated to areas up (preferably) or downstream where mussel concentrations are known to exist. This relocation effort will minimize the potential for direct impacts to mussels located in "harm's way" and consequently any spike mussels that might be present within the footprint.

Regular inspections to ensure proper working order and maintenance of BMPs will be made weekly by the resident engineer. Additional inspections will be made right after heavy rain events as indicated in the erosion and sediment control plans. Additional soil conserving practices, including those not in the erosion control plans, will be implemented if eroded soil is noted to be leaving the jobsite or construction limits. Also, regular inspections shall be made by the Village's (VOT) Resident Engineer, particularly during the period of the mussel relocation work. This will ensure that the mussel contractor(s) are closely coordinating the mussel removal and relocation effort(s).

Overall, VOT shall ensure that all freshwater mussel surveys, and subsequent relocations, would be conducted prior to construction of the Orth Road bridge over Beaver Creek in Boone County, Illinois. **All** mussels observed (listed and/or non-listed species) are to be relocated in order to minimize impacts.

Mussel surveys/relocations will be conducted using standard survey techniques including, but not limited to, searching by feel to methodically cover the area to be disturbed by the project, viewing boxes, wading in shallow water, and SCUBA in deeper water. All mussels found will be identified to species and all shells shall be uniquely marked using a non-lethal method – this will

allow for identification during post-construction/follow-up surveys. 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(s) conducting this mussel relocation effort shall have extensive experience with Midwestern mussels. The mussel consultant will provide the Department (attn.: Joseph Kath) with a report detailing the results of all mussel surveys and relocation efforts within 60 days of completing all surveys/relocations [this report shall also be submitted by the consultant to the Illinois Natural Heritage Database and the Illinois Endangered Species Protection Board – *see below*]. In summary, mussel surveys and related relocations will occur only after Department authorization and prior to any construction activities. The measures discussed above should minimize the amount of habitat that is affected.

Illinois Department of Natural Resources
Division of Natural Heritage
Attn: Joseph Kath
One Natural Resources Way
Springfield, Illinois 62702-1271

Illinois Endangered Species Protection Board
Attn: Anne Mankowski
One Natural Resources Way
Springfield, Illinois 62702-1271

Illinois Department of Natural Resources
Natural Heritage Database
Attn: Tara Kieninger
One Natural Resources Way
Springfield, Illinois 62702-1271

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

The proposed improvements involve the removal and replacement of a structurally deficient bridge with a sufficiency rating of 4.3. The existing bridge has been closed to traffic since February 2012. The existing two-span bridge will be replaced with a three-span concrete slab bridge on pile bent wall piers and abutments at the same location, which will require the removal of the one existing pier and the placement of two piers. The bridge and roadway are under the jurisdiction of the Village of Timberlane. Federal funding will be used for the project.

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.

The project's 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. The erosion and sediment control plan will be in place for the life of the project.

The Village of Timberlane and Boone County are responsible for securing authorization for the incidental take; securing all permits including NPDES (if required), Section 404 and IDNR Office of Water Resources; inspection of the work and contractor compliance with the contract documents; and notifying the Illinois Department of Transportation when project construction has been completed in order to proceed with post-construction monitoring requirements.

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:

-Spike (*Elliptio dilatata*): As of June, 2013, there are 53 EORs (element occurrence records) for this species in the State of Illinois. The Orth Road project site occurs in Boone County. As of June, 2013, the number of EORs for this species within Boone County is 1. The most recent EOR for this mussel in Boone County (Beaver Creek) = 2007 (exact location in Beaver Creek is not known). The major risk at this site for the spike is possible habitat loss and possible mortality via crushing from construction debris. Therefore, direct (financial) mitigation will be sought for this species – please see the Authorization section of this document for details.

The project is authorized by the Illinois Department of Transportation, which oversees the use of state-distributed funding among local agencies. The Village of Timberlane (VOT) and the County of Boone are the legal local authorities for the project. All participants will carry out their respective obligations and responsibilities under the conservation plan.

The Illinois Department of Transportation, Village of Timberlane, and Boone County will comply with all other federal, state and local regulations pertinent to the proposed project in carrying out their mission of performing the most environmentally sensitive methods of transportation planning and engineering.

The relocation of <u>all</u> mussels encountered will make it unlikely that a significant number of individuals will be exposed to threats related to the Orth Road bridge over Beaver Creek in Boone County, Illinois.

The alternative that does not impact the listed species is to leave the existing bridge closed. This alternative is not reasonable, because it would sever a main east-west traffic corridor that extends from Winnebago County into and across Boone County. The current bridge closure has already resulted in hardships for motorists and local residents due to longer drive times, disrupted school bus routes, and longer response times for emergency response vehicles. The majority of the local, re-routed east-west traffic now utilizes Dawson Lake Road. Because Dawson Lake Road is narrower and in worse condition, it is not suited to accommodate the increased traffic indefinitely. The permanent closure of the Orth Road bridge would create an unacceptable safety hazard and place intolerable restrictions on travel and transport.

If VOT were to leave the existing bridge in place and construct a new structure on offset alignment there would be no disturbance at the existing bridge site, but there would be in-stream impacts required to construct the new bridge. There is similar habitat located upstream and downstream from the existing bridge site and the in-stream work that would be required to construct a bridge at an alternate location would likely result in impacting the species at this alternate location. Furthermore, a new bridge on an alternative alignment would impact delineated wetlands located outside the existing ROW on each side of Orth Road. This alternative was not considered further because it would still impact the threatened species, impact wetlands, require acquisition of new ROW, and substantially impact adjacent properties due to the offset alignment.

The construction of a new structure on the existing alignment is the preferred alternative. Complete removal and replacement of the bridge will provide the maximum benefit to the area residents and travelling public. No additional ROW will be needed to construct the new structure on the existing alignment. Roadway excavation and embankment work will be minimal. This alternative avoids the wetlands located north and south of the existing bridge. This is the most practical, beneficial and cost effective improvement option for this project; and is the least impacting alternative which meets the transportation need of the project.

The Illinois state threatened spike mussel (*Elliptio dilatata*) has a widespread, but sporadic distribution. This species is common in Missouri and Ohio and uncommon to rare in other states. They are considered vulnerable in Indiana and Wisconsin and under review for listing in Michigan. Its preferred habitat is small to large streams and occasionally lakes. They are most often found in silt, sand, or gravel substrates in depths ranging 2 to 24 feet. When spike mussels inhabit lakes they are usually associated with outlet habitats dominated by swift currents.

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. As of 2013, the States of Michigan, West Virginia, Ohio, Florida, Georgia, Minnesota, Wisconsin, and Ontario, Canada have formal mussel relocation protocols related to a variety of projects including road/bridge construction, pipelines, stream relocations, etc.

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.

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 VOT 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:

Hanson Professional Services, Inc. (on behalf of the Village of Timberlane – VOT) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and VOT's request for authorization for the incidental take of spike mussels were received by the Illinois Department of Natural Resources (Department) on February 25, 2013. Public notice of VOT's request for authorization of the incidental take of spike mussels was

published in the Breeze Courier (Official State newspaper) and the Belvidere Daily Republican (local circulation) on March 10, March 19, and March 26, 2013. Public comments on VOT's conservation plan were accepted by the Department until April 25, 2013. No comments were received by the public during the period of March 10, 2013 through April 25, 2013.

Authorization

It is the determination of the Department that the measures to be implemented by VOT will adequately minimize and mitigate for the anticipated taking (relocation) of a small number of spike mussels due to the modification of the Orth Road bridge over Beaver Creek in Boone County, Illinois. Further, it is our opinion that the take (relocation) authorized herein would not diminish the likelihood of the survival of the spike 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 five (5) years after the official "project completion date". "Completion" shall be defined as the date the Orth Road bridge over Beaver Creek in Boone County, Illinois, 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 construction of the Orth Road bridge over Beaver Creek in Boone County, Illinois, VOT shall conduct/facilitate, or cause to be conducted, a thorough mussel survey of the reach of the affected portion of Beaver Creek 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 dock construction 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. All mussels found will be identified to species and all shells shall be uniquely marked using a non-lethal method – this will allow for identification during post-construction/follow-up surveys. 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.

*Reports shall be sent to the following parties:

Illinois Department of Natural Resources
Division of Natural Heritage
Attn: Joseph Kath
One Natural Resources Way
Springfield, Illinois 62702-1271

Illinois Endangered Species Protection Board
Attn: Anne Mankowski
One Natural Resources Way
Springfield, Illinois 62702-1271

Illinois Department of Natural Resources
Natural Heritage Database
Attn: Tara Kieninger
One Natural Resources Way
Springfield, Illinois 62702-1271

3. VOT shall conduct/facilitate, or cause to be conducted, a thorough survey of both the affected portion of Beaver Creek that will be directly affected by bridge construction activities (i.e. construction right-of-way) and the mussel relocation site(s) in the second (2) and fourth (4) years following completion of the Orth Road bridge over Beaver Creek. "Completion" shall be defined as the date the Orth Road bridge over Beaver Creek in Boone County, Illinois, is officially open for public use. 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, attn.: Joseph Kath, within 60 days of the completion of this survey.

*Additional copies of these monitoring reports shall also be sent by the applicant to the following:

Illinois Endangered Species Protection Board
Attn: Anne Mankowski
One Natural Resources Way
Springfield, Illinois 62702-1271

Illinois Department of Natural Resources
Natural Heritage Database – Attn: Tara Kieninger
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This report(s) 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 repair/replacement 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. The following electronic link also provides useful information:

http://www.fws.gov/northeast/pafo/pdf/Mussel%20Survey%20Guidelines%20-%20Smith%20et%20al%202001.pdf

5. According to the following scientific publication (2003):
Southwick, R.I., and A.J. Loftus, editors. 2003. Investigation and monetary values of fish and freshwater mussel kills. American Fisheries Society, Special Publication 30, Bethesda, Maryland.

Standard formulas have been developed to determine the replacement costs of juvenile freshwater mussels. Cost categories for production of juvenile mussels (2 months old) and their relevant production costs are as follows: EASY = $0.44/mussel; AVERAGE = $0.73/mussel; and DIFFICULT = $9.63/mussel. All variables associated with producing mussels were considered in assigning mussels to cost categories. The costs assigned to the three categories were calculated

based on the actual average costs incurred by mussel propagation facilities to raise mussel species assigned to each category. In addition, based on the experience and data from expert panel members, combined with limited available data, a conservative survival rate of 9.5% is employed. This panel also determined that five (5) years is the typical age of sexual maturity. When performing a cost analysis, if ages cannot be determined, then we shall assume all are adult/mature mussels.
For this project, we will assume that natural reproduction will be the means for the resource to repair itself. Repopulation of lost mussels are achieved by natural reproduction of the mussels that remain after the project has been completed. In this case, the costs of the mussels, if they were to be produced and stocked, are used as a surrogate value to assign damages for the responsible party [i.e. the calculated costs are used to assess restitution/mitigation, even though no stocking occurs]. All mitigation costs are deposited into the Illinois Wildlife Preservation Fund and are used solely for the management and recovery of listed mussels within the State of Illinois.

Using the project specifics:

a. The area of the in-stream work zone has been minimized to reduce the impact to the mussel habitat. The total area is approximately 6,700 square feet (approximately 0.15 acres). The length of impact along the stream channel will be 66 linear feet and construction activity will be limited to the existing right-of-way (ROW), 33 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.
b. The spike mussel was found under the structure carrying Orth Road over Beaver Creek in 2007 (Helms & Associates). One relict shell was found in Beaver Creek four miles northeast of the project area in 2011, and the substrate was 45 percent sand, 25 percent cobble, 20 percent silt, and 10 percent gravel. There are also recorded occurrences 12 miles northwest of the project river in the Rock River and 13.5 miles southeast of the project in Coon Creek.
c. Using an average sampling adequacy of time-based hand searches for mussels in the Midwest of 47% (Cummings, 2011; Szafoni, 2013), the presence of one (1) spike mussel detected in the 2007 survey (malacologist Nick Owens of Helms & Associates [under contract with Huff & Huff]) yields an estimated spike population in the Orth Road impact zone of 2.12 spike mussels.
d. 2.12 mussels/0.095 survival rate = 22 mussels needed for replacement
e. Spike mussel = DIFFICULT cost category ($9.63/mussel)
f. 22 mussels x 9.63 = $212.00

Accordingly, this yields a total mitigation amount of: $212.00 due to the Department. Therefore, the applicant shall provide the Department with a check made out to the Illinois Wildlife Preservation Fund in the amount of: $212.00. This check shall be received within 6 months after formal implementation of the ITA (after the document is signed by both the VOT and the IDNR). These funds will be used solely for management and recovery actions of listed mussels within the State of Illinois.

6. Please note that the conditions of this agreement do not apply to any lands protected under the Illinois Natural Areas Preservation Act (525 ILCS 30/) (INAPA). Any adverse impacts to said protected lands and the species therein is considered a violation of the INAPA and grounds for referral to the Office of the Attorney General or State's Attorney.

7. The effective period of this authorization may be altered by mutual agreement between VOT and the Department.

8. This authorization may be revoked pursuant to Section 5.5 of the Act if the Department finds that VOT has failed to comply with any of these terms and conditions or has been responsible for the take of any spike mussels beyond that which is incidental to the modification of the Orth Road bridge over Beaver Creek in Boone County, Illinois.

9. The VOT official identified below is authorized to execute this agreement. Execution by VOT indicates acceptance of all terms and conditions described in this document.

For the IL. Department of Natural Resources

Jim Herkert

Dr. Jim Herkert, Director
IDNR Office of Resource Conservation

8-9-13

Date Signed

For the Village of Timberlane (VOT), Illinois

Signature

STEPHEN M. RAPP - VILLAGE PRESIDENT

Please print name and official title

07-16-2013

Date Signed