Illinois Department of Natural Resources
CONSERVATION PLAN
(Application for an Incidental Take Authorization)
Per 520 ILCS 10/5.5 and 17 Ill. Adm. Code 1080

150-day minimum required for public review, biological and legal analysis, and permitting

PROJECT APPLICANT: *DeKalb County Highway Department*
1826 Barber Greene Road, DeKalb IL 60115

PROJECT NAME: *Somonauk Road over Somonauk Creek Bridge Replacement.*

COUNTY: *DeKalb*

AREA OF IMPACT: *140 linear feet of channel of Somonauk Creek at Somonauk Road, approximately 0.18 acres of stream channel and banks.*

The incidental taking of endangered and threatened species shall be authorized by the Illinois Department of Natural Resources (IDNR) only if an applicant submits a conservation plan to the IDNR Incidental Take Coordinator that meets the following criteria:

1. A description of the impact likely to result from the proposed taking of the species that would be covered by the authorization, including but not limited to -

A) Identification of the **area to be affected** by the proposed action, include a legal description and a detailed description including street address, map(s), and GIS shapefile. Include an indication of ownership or control of affected property. Attach photos of the project area.

The project is located where Somonauk Road (CH 10) crosses over Somonauk Creek in DeKalb County. The bridge is located approximately 4 miles south of Hinckley, Illinois in DeKalb County, Township 34N, Range 5E, Section 3. The road right-of-way is approximately 140 feet wide at the crossing and is owned by the DeKalb County Highway Department. A project location map is provided as Exhibit 1 and photographs of the creek at the bridge location are included in Exhibit 2.

Somonauk Creek is a mid-sized tributary to the lower portion of the Fox River. It flows southerly through DeKalb and LaSalle Counties before its confluence with the Fox River at Sheridan, Illinois.

The original plat of dedication and an April 2016 plat of survey are provided as Exhibit 3.

B) **Biological data** on the affected species including life history needs and habitat characteristics. Attach all biological survey reports.

This application addresses the Illinois threatened slippershell (Alasmidonta viridis). The Illinois Natural History Survey (INHS) conducted a mussel survey in the affected reach of Somonauk Creek in July 2016. Their report dated July 27, 2016 is attached as Appendix A. INHS found

thirty-seven individuals representing twelve species of freshwater mussels in the reach of Somonauk Creek at Somonauk Road in 2016. No live mussels of listed species were found, but INHS did find a fresh dead and relict shell of the slippershell at this location. Therefore, they recommended obtaining an Incidental Take Authorization since their observations suggested that suitable habitat for this listed species was present.

The slippershell is a small species with a somewhat rectangular or rhomboidal shell measuring about an inch and a half across. Adults are very light yellowish brown or almost cream colored, to dark brown with few to many greenish rays on the posterior half of the shell. Shells can be somewhat rough in texture. The pseudocardonal teeth are triangular, bladelike, and weakly serrated. Lateral teeth are short, less than half the shell length, fine and somewhat indistinct.

Slippershells inhabit creeks and headwaters streams in sand, mud, or fine gravel. They are considered widespread, yet imperiled throughout most of their range. They are listed as threatened in Illinois and Wisconsin.

Relatively little is known about the biology of the slippershell mussel. Like most freshwater mussels of the family Unionidae, the slippershell mussel requires a fish host to complete its life cycle. Sperm is released into the water, and then taken in through the female mussel's siphon for fertilization. Eggs develop into larvae within the female mussel. The slippershell mussel is probably a long-term (bradytictic) breeder, holding the larvae internally for about a year. These larvae, called glochidea, then are released into the water and must attach to a suitable fish host in order to survive. Their host fish species include johnny darter (Etheostoma nigrum), mottled sculpin (Cottus bairdii), and banded sculpin (Cottus carolinae). Glochidea typically remain on fish hosts for a couple of weeks to several months depending on mussel species and other factors, although duration for the slippershell is unknown. During this time the mussel transforms into the adult form then drops from the host fish. The mussel then spends the remainder of its life in suitable substrate. The life span of the slippershell mussel is not known.

Like all freshwater mussels, the slippershell mussel is a filter feeder, obtaining nutrition by filtering particles, such as algae, zooplankton and debris, from the water column. The slippershell requires clear, clean water and substrates for survival.

C) **description of project activities** that will result in taking of an endangered or threatened species, including practices to be used, a timeline of proposed activities, and any permitting reviews, such as a USFWS biological opinion or USACE wetland review. Please consider all potential impacts such as noise, vibration, light, predator/prey alterations, habitat alterations, increased traffic, etc.

The project is the removal and replacement of the existing bridge structure over Somonauk Creek at Somonauk Road. The existing structure is a two span precast concrete deck beam structure carrying two-way traffic over Somonauk Creek. The typical section is a concrete surface with bridge rail. The total length is approximately 70.8 feet. The proposed structure is a single span concrete deck, steel beam bridge on integral abutments. The proposed bridge total length is approximately 85 feet 4 inches.

The existing pavement, bridge and guardrail will be completely removed. The road will be closed at this crossing for the duration of construction, though it will remain open up to the crossing from both sides. Once the existing structure is removed, the new bridge will be constructed, including complete embankment grading, new shoulders, pavement resurfacing, and new guardrails.

Because the existing bridge structure has a support pier in the middle of the creek channel, this project will involve some unavoidable in-stream work. The specific means and methods, including whether a coffer dam will be used, will be determined by the contractor. The existing center pier is supported by H-piles driven into the stream bed. The contractor will first try to pull these out for complete removal of the center pier. If this proves infeasible, then the steel H-pile would be cut off at a level at or just below the stream bed, so that no structure above the stream bed remained. Similarly, the existing abutments would be removed and replaced with the integrated bridge abutments.

Thus, it is anticipated that this work will cause temporary impacts to any stream biota in the stream within the work area, including the slippershell if it is present. Impacts would come from temporary suspension of soft sediments, direct impact from equipment, and debris from the bridge structure removal.

It is the applicant's goal to start the project in April 2017 with construction completion by August 25, 2017. However, water temperatures and levels in the spring will dictate when effective mussel searches and relocations can be effectively conducted. Mussel searches and relocations will be completed prior to any construction activities. The USACE permit for the project is attached as Appendix B. No federally listed species are present, so no coordination with USFWS has occurred.

It is anticipated that all impacts will be temporary in nature, and once the new bridge structure is completed the stream habitat will recover.

D) Explanation of the anticipated **adverse effects on listed species**; how will the applicant's proposed actions impact each of the species' life cycle stages.

It is unknown at this time whether there will be adverse effects on the listed slippershell. Potential adverse impacts to the state-listed mussel species include improper relocation, sediment burial, vibration from construction activity in the stream bed, and physical destruction. Fish species carrying the slippershell glochidea could become entrapped in temporary cofferdams installed in the work area during construction.

Pre-project searches will be conducted and any adult slippershells and all other mussel species found will be relocated to appropriate habitat upstream of the project at the direction of the IDNR.

Temporary stream impacts have the potential to occur as a result of in-stream work during construction. In-stream work could include installation of cofferdams for dewatering and removal of the existing bridge pier.

2) Measures the applicant will take to minimize and mitigate that impact and the funding that will be available to undertake those measures, including, but not limited to -

A) plans to **minimize the area affected** by the proposed action, the estimated **number of individuals** of each endangered or threatened species that will be taken, and the **amount of habitat** affected (please provide an estimate of area by habitat type for each species).

The Somonauk Creek bridge replacement project uses the existing, previously disturbed transportation corridor for Somonauk Road and replaces the existing double-span bridge with a single-span structure. Maximizing the use of the ROW and existing road alignment avoids new construction on undisturbed area.

To avoid and minimize impacts within the project area to Somonauk Creek and to avoid or minimize the take of listed species, the following will occur:

1. *Because avoiding temporary impacts to Somonauk Creek was not practicable, the area of disturbance has been minimized to the area needed for construction purposes.*

2. *Erosion and sediment control measures will be implemented to avoid sediment runoff into Somonauk Creek. Erosion control measures will adhere to those presented in IDOT's BDE Design Manual, IDOT's 2016 Specifications and Standards for Bridge and Road Construction, and the Illinois Urban Manual, latest revision. The resident engineer (RE) will provide day-to-day enforcement of SESC measures during construction.*

3. *In-stream activities during construction will be kept to the minimum necessary to safely remove the existing bridge and construct the new bridge structure. Cofferdams and dewatering may be used as necessary and determined by the contractor.*

4. *Worker awareness training, consisting of a pre-construction briefing, will be provided by a qualified environmental professional to help minimize and avoid impacts. This will include procedures to notify IDNR and the qualified environmental professional if any live mussels are encountered during construction activities.*

5. *Prior to construction or any in-stream work, additional mussel surveys will be completed in Somonauk Creek. All mussels collected during the survey will be relocated to suitable habitats outside of the limits of construction as directed by the IDNR. The specific timing of the searches and relocations will be dependent on water temperatures and levels in the creek.*

6. *Additionally, the following BMPs will be employed in Somonauk Creek during the fish spawning period from March 15 to July 15 to reduce the potential for impacts to fish species that may carry the glochidea for the slippershell mussels.*

    - *Silt/turbidity curtains will be installed around areas of in-stream work to prevent suspended sediment from migrating downstream and potentially silting in spawning and foraging areas, and mussel beds.*

    - *Cofferdams may be used during the removal of the existing center pier and for construction of the abutments. To eliminate vibration and minimize sedimentation the use of*

inflatable bladders or sand bags may be considered. These methods would not require driving sheet piling for the cofferdams. Once the cofferdams are installed, the work area will be dewatered using pumps after searches for and relocation of any fish or mussels within the coffered off area.

- *Turbidity monitoring would demonstrate that the cofferdams and silt curtains are functioning as intended to contain re-suspended sediment and minimize downstream transport of sediment. This would entail visual observations and in-situ turbidity measurements to demonstrate that the controls are functioning as intended. The water pumped from within the cofferdams may need to be filtered or re-suspended sediment allowed to settle out of the water column prior to discharge to the creek to prevent turbidity impacts to fishes and other aquatic life in the vicinity of the construction site. The need for filtration or a settling tank depends on the substrate within the work area. If little fine sediment is encountered, then turbidity monitoring would likely be sufficient.*

Specific slippershell mussel impacts are not known at this time. However, field surveys conducted in 2016 at the Somonauk Creek bridge location identified only 1 fresh-dead, and 1 relict individual. Thus, it is estimated that the total of affected mussels will be equal to or less than those identified during the survey. As such, the number of affected slippershell mussels is estimated to be zero or one.

B) **plans for management of the area** affected by the proposed action that will enable continued use of the area by endangered or threatened species by maintaining/re-establishing suitable habitat (for example, native species planting, invasive species control, use of other best management practices, restored hydrology, etc.).

All work within Somonauk Creek will be temporary. After the work is completed, the substrate in which the mussels live will restore itself through natural geofluvial processes and the hydrology will be restored once any cofferdams are removed. The soil erosion and sediment control practices will help ensure that suitable substrates are not buried by re-suspended sediments. The new bridge opening will be the full-width of the stream channel and without a center pier, essentially offering more available habitat when completed than in the existing condition.

C) description of **all measures to be implemented to avoid, minimize, and mitigate** the effects of the proposed action on endangered or threatened species.

- Avoidance measures include working outside the species' habitat.
- Minimization measures include timing work when species is less sensitive or reducing the project footprint.
- Mitigation is additional beneficial actions that will be taken for the species such as needed research, conservation easements, propagation, habitat work, or recovery planning.

- It is the applicant's responsibility to propose mitigation measures. IDNR expects applicants to provide species conservation benefits 5.5 times larger than their adverse impact.

The following measures will be implemented to avoid, minimize and mitigate any potential effects on the threatened slippershell.

1. *Because completely avoiding temporary impacts to Somonauk Creek was not practicable due to the fundamental nature of the project, the area of disturbance within the creek is the minimum needed for construction purposes.*

2. *Erosion and sediment control measures will be implemented to avoid sediment runoff into Somonauk Creek.*

3. *In-stream activities during construction will be kept to the minimum necessary to safely remove the existing bridge and construct the new bridge structure. Cofferdams and dewatering may be used as necessary and determined by the contractor. The center pier will be completely removed if possible, and cut off at the stream bed elevation if removal is not feasible. This will actually increase the habitat area under the bridge within the stream channel.*

4. *Worker awareness training, consisting of a pre-construction briefing, will be provided by a qualified environmental professional to help minimize and avoid impacts.*

5. *Prior to construction or any in-stream work, additional mussel surveys will be completed in Somonauk Creek. All mussels collected during the survey will be relocated to suitable habitats outside of the limits of construction as directed by the IDNR.*

6. *The following BMPs will be employed in Somonauk Creek during the fish spawning period from March 15 to July 15 to reduce the potential for impacts to fish species that may carry the glochidea for the slippershell mussels.*

    - *Silt/turbidity curtains will be installed around areas of in-stream work to prevent suspended sediment from migrating downstream and potentially silting in spawning and foraging areas, and mussel beds.*

    - *Cofferdams may be used during the removal of the existing center pier and for construction of the abutments. To eliminate vibration and minimize sedimentation the use of inflatable bladders or sand bags may be considered. These methods would not require driving sheet piling for the cofferdams. Once the cofferdams are installed, the work area will be dewatered using pumps after appropriate searches and relocations of any fish or mussels within the work area.*

    - *Turbidity monitoring will be used to demonstrate that the cofferdams and silt curtains are functioning as intended to contain re-suspended sediment and minimize downstream transport of sediment.*

- *Specific slippershell mussel impacts are not known at this time. However, field surveys conducted in 2016 at the Somonauk Creek bridge location identified only 1 fresh-dead, and 1 relict individual. Thus, it is estimated that the total of affected mussels will be equal to or less than those identified during the survey. As such, the number of affected slippershell mussels is estimated to be zero or one.*

- *The stream bed will be restored to a condition as good as or better than its current condition, specifically with substrate suitable for the slippershell in mind.*

- *As compensatory mitigation for any potential impacts to the slippershell mussel a contribution of $5,580 to the Forest Preserve District of DuPage County's Urban Stream Research Center's native freshwater mussel propagation program will be made that can be used to learn about propagation and the life cycle of the slippershell mussel.*

D) plans for **monitoring** the effects of the proposed actions on endangered or threatened species, such as species and habitat monitoring before and after construction, include a plan for follow-up reporting to IDNR.

A malacologist will conduct post construction follow-up at locations adjacent to and within the construction work area. Follow up surveys will be completed in year 2 and 5 following completion of construction. A report will be prepared to summarize the condition of mussel populations and submitted to the IDNR by January 31 of the year following each survey.

E) **Adaptive management practices** that will be used to deal with changed or unforeseen circumstances that effect on endangered or threatened species. Consider environmental variables such as flooding, drought, and species dynamics as well as other catastrophes. Management practices should include contingencies and specific triggers. Note: Not foreseeing any changes does not quality as an adaptive management plan.

1. *Siltation during all phases of construction will be minimized through use of proper soil erosion and sediment control measures such as silt fences to prevent sediment from entering the river and affecting threatened mussel habitat. The RE will inspect and ensure maintenance of all silt fences, silt curtains, and other erosion control structures. If site inspections show that the measures in place are not functioning or are not adequate, different or additional measures will be added.*

2. Mussels from the surveyed area will be collected from the project area and relocated to an appropriate location outside of the project area using approved methods for handling mussels with minimal stress. If any observations during construction suggest that additional measures are needed, these will be proposed and implemented by appropriately trained personnel.

3. After construction is completed, cofferdams will be removed and the stream bottom will be restored to its approximate original condition and flow pattern, allowing for re-colonization of biota. Monitoring and observations will be used to guide these restoration activities following adaptive management principles.

4. The contractor will be responsible for having contingency plans for high water/flood conditions should they occur during construction such that further damage to habitat is

minimized. This will include anchoring equipment, storing supplies and equipment on high ground and measures to ensure trapped sediment is not released into the waterway.

5. If unforeseen observations pertaining to listed species arise, coordination with IDNR staff will be sought.

F) Verification that **adequate funding** exists to support and implement all mitigation activities described in the conservation plan. This may be in the form of bonds, certificates of insurance, escrow accounts or other financial instruments adequate to carry out all aspects of the conservation plan.

Full local project funding was approved by the DeKalb County Board, a public agency, in November of 2015. The DeKalb County Highway Department will be responsible for project implementation and oversight. The contractor will be required to post appropriate performance securities and insurance certificates. The avoidance, minimization and mitigation measures described herein are part and parcel of this bridge replacement project and will be funded accordingly.

3) A description of alternative actions the applicant considered that would reduce take, and the reasons that each of those alternatives was not selected. A "no-action" alternative" shall be included in this description of alternatives. Please, describe the economic, social, and ecological tradeoffs of each action.

The No-Action alternative would leave the existing structurally deficient bridge in place. Over time this structure would fail and become unsafe, causing the closure of DeKalb County Highway 10 or Somonauk Road. This would create a hardship for local residents, farmers, and emergency crews and is not a viable alternative. In addition, the bridge structure or parts thereof could fall into the creek and cause damage to available habitat.

An alternative alignment for Somonauk Road would involve construction of a new roadway on new right-of-way, and would still include a crossing of Somonauk Creek. The impacts from such an alternative would likely be greater than the preferred alternative of replacement in-place of the bridge structure.

4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival of the endangered or threatened 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.

Given the widespread distribution of this species, and the lack of living individuals at this location, this project is not likely to reduce the likelihood of the survival of this listed species. At most, it is anticipated a single individual would be taken and this would not imperil the local population of slippershell mussels.

5) An implementing agreement, which shall include, but not be limited to (on a separate piece of paper containing signatures):

A) The names and signatures of all participants in the execution of the conservation plan;

B) the obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the IDNR;

C) Certification 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;

D) Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;

E) **Copies of any final federal authorizations for a taking already issued to the applicant**, if any.

See attached Implementing Agreement.

PLEASE SUBMIT TO: Incidental Take Authorization Coordinator, Illinois Department of Natural Resources, Division of Natural Heritage, One Natural Resources Way, Springfield, IL, 62702 OR DNR.ITAcoordinator@illinois.gov

References

Carman, Stephanie M. 2002. Special Animal Abstract for *Alasmidonta viridis* (Slippershell mussel). Michigan Natural Features Inventory. Lansing, MI. 3 pp.

Chicago Wilderness. Undated. A Field Guide to the Freshwater Mussels of Chicago Wilderness. Prepared by Shedd Aquarium, Integrated Lakes Management, and Openlands with assistance from The Field Museum, the Illinois Department of Natural Resources, the Illinois Natural History Survey, and the Forest Preserve District of DuPage County.

Cummings, K.S. and C.A. Mayer. 1992. Field Guide to Freshwater Mussels of the Midwest. Illinois Natural History Survey Manual 5. 194pp.

Stodola, Alison P. 2016. Survey for Freshwater Mussels in Somonauk Creek at the Somonauk Road (CH 10) Bridge in DeKalb County, Illinois. IDOT Sequence No. 19704. INHS/IDOT Statewide Biological Survey & Assessment Program, Illinois Natural History Survey, Champaign, IL 10pp.

Shasteen, D.K., S.A. Bales, and A.P. Stodola. 2013. Freshwater mussels of the Fox River basin in Illinois. Illinois Natural History Survey Technical Report 2013 (12), Champaign, Illinois, 21 pp. + appendix.

Implementation Agreement

Somonauk Road bridge replacement over Somonauk Creek

DeKalb County, Illinois.

A) The names and signatures of all participants in the execution of the conservation plan;

The Somonauk Road right-of-way at the project location is owned by the DeKalb County Highway Department and their duly authorized representative has signed below committing to the execution of this Conservation Plan as a part of the project.

B) The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the IDNR;

The DeKalb County Highway Department is solely responsible for completing this project through its designated consultants and contractors.

Construction start date: Construction will start as soon as mussel searches and relocations can be completed in the spring of 2017, which is dependent on water temperatures and water levels in the creek. It is hoped that this will occur by the end of April or early May 2017.

Construction completion date: August 25, 2017

IDNR will be notified of the time/location of the preconstruction meeting, the start of construction, and the completion of construction.

C) Certification 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;

See certification clause below.

D) Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;

See certification clause below.

E) Copies of any final federal authorizations for a taking already issued to the applicant, if any.

No federal permits for Take have been issued. The USACE Clean Water Act permit is attached as Appendix B.

CERTIFICATION: The DeKalb County Highway Department hereby certifies that it has the authority and funding to complete the project and to address the issues proposed in this Incidental Take Conservation Plan for the state-listed slippershell mussel. The DeKalb County Highway Department is in charge of construction and will assure that all applicable state, federal, and local laws will be adhered to during the completion of the project.

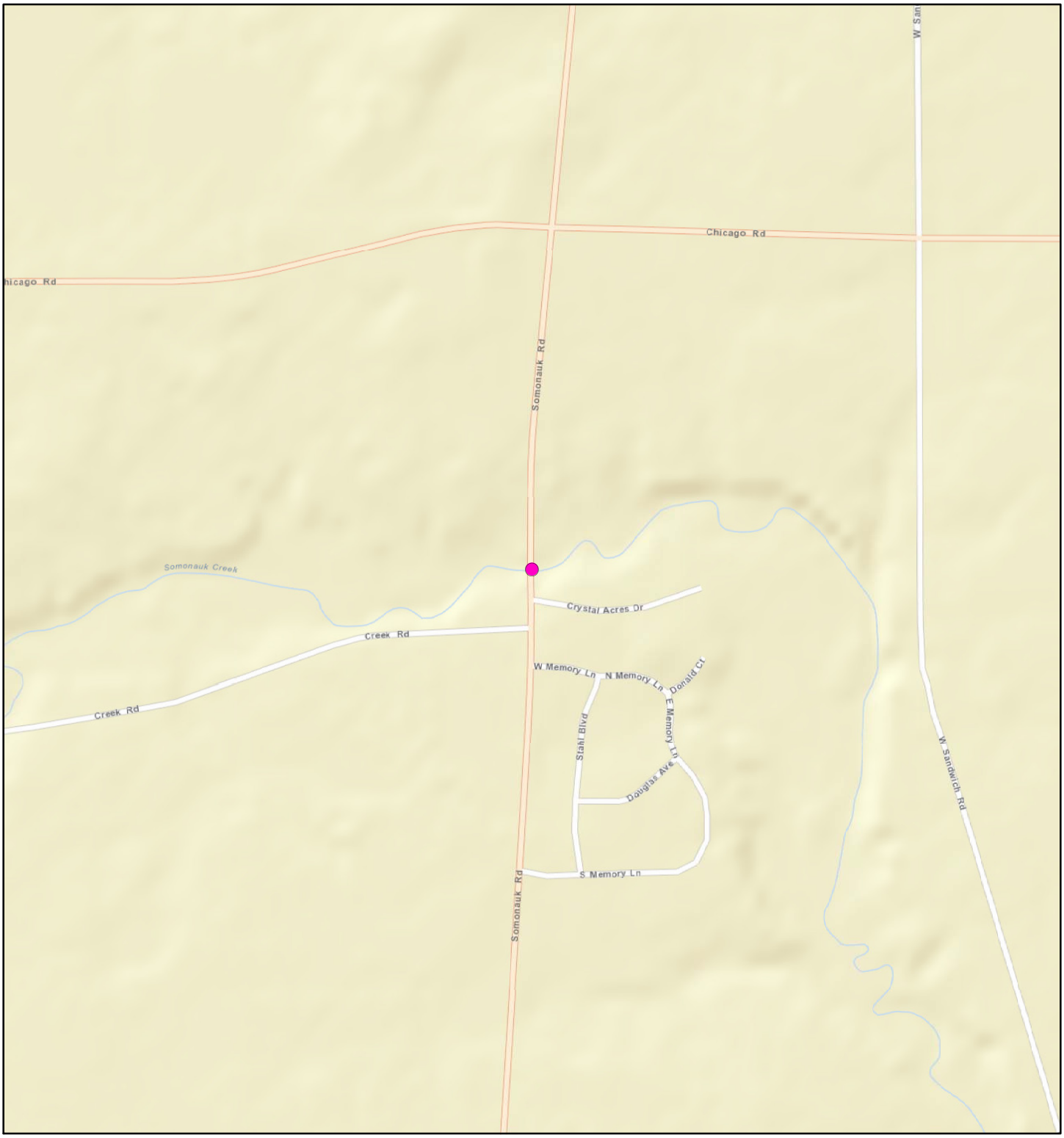
_____ DATE: _____

Nathan F. Schwartz, P.E. - County Engineer

CERTIFICATION: The DeKalb County Highway Department hereby certifies that it has the authority and funding to complete the project and to address the issues proposed in this Incidental Take Conservation Plan for the state-listed slippershell mussel. The DeKalb County Highway Department is in charge of construction and will assure that all applicable state, federal, and local laws will be adhered to during the completion of the project.

_____ DATE: 1/24/2017

Nathan F. Schwartz, P.E. - County Engineer



Scale:

0 1,000 Feet

Orientation:

Legend:

Project Location

Project Name:

Somonauk Road Bridge Replacement

Prepared for:

Chastain and Associates, LLC

Project Number: 16-0380

Date: 11/7/2016

Location Information:

T.34N.-R.5E., Section 3

Prepared by:

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

Exhibit Title:

Project Location

Exhibit:

1

Photograph 1:

View from north bank on east side of bridge.

Photograph 2:

View from north bank on west side of bridge.

Photograph 3:

View of south abutment and bridge from west side.

Photograph 4:

Overview of bridge from north bank, west side.

Project Number: 16-0380

Project Name:
Somonauk Road Bridge Replacement

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Plats of Survey

Exhibit:
3

THIS INDENTURE WITNESSETH, That the Grantor William E. Bark & wy Anna E. Bark his wife, Lillian Fraser & Wm Fraser her husband & Addie McInnes widow of the County of DeKalb and the State of Illinois for and in consideration of the sum of .... dollars ($160.00) in hand paid by the County acting by and through the Township Commissioner of Somonauk Township or on its behalf, the receipt whereof is hereby acknowledged, and the benefits resulting from the Maintenance of the public highway, herein referred to, doth .... by these presents, hereby grant, convey and dedicate to the County for the purpose of a public highway, a tract of land situated in the County of DeKalb and State of Illinois, and described as follows:-

That part of the S. ½ of Sec. 3, T. 37 N. R. 5 E. of the 3rd P. M. in the County of DeKalb and State of Illinois, described as follows:

Commencing at the S. E. cor. of Sec. 3 T. 37 N. R. 5 E. of the 3rd P. M. west along the south line of said Sec. 3 for a distance of 2770.5 ft. thence northerly along a line which forms anangle of 89° 55' to the right withe prolongation of the last described course for a distance of 28.8 ft. for a point of beginning.
Thence westerly along a line which forms an angle of 89° 55' to the left with a prolongation of the last described course for a distance of 34.5 ft. to a point thence northerly along a curve to the left having a radius of 17,155.7 ft. and a tangent which forms an angle of 90° 40' to the right with a prolongation of the last described course for a distance of 225.6 ft. to a point; thence northerly along a line tangent to the last described course for a distance of 319.5 ft. to a point; thence northerly along a curve to the right having a radius of 12,310.7 ft. and tangent to the last described course for a distance of 1214.0 ft. to a point, thence easterly along a line which forms an angle of 90° 00' to the right with the tangent to the last described course for a distance of 21.5 ft. to a point; thence southerly along a line which forms an angle of 87° 34' to the right with a prolongation of the last described course for a distance of 606.3 ft. to a point; thence southerly along a line which forms an angle of 91° 35' to the right witha prolongation of the last described course for a distance of 450.9 ft. to a point; thence easterly along a line which forms an angle of 97° 27' to the left with a prolongation of the last described course for a distance of 15.0 ft. to a point; thence southerly along a line which forms an angle of 91° 25' to the right with a prolongation of the last described course for a distance of 360.2 ft. to a point; thence southerly along a line which forms an angle of 4° 10' to the right with a prolongation of the last described course for a distance of 341.2 ft. to a point; thence westerly along a line which forms an angle of 88° 12' to the right a prolongation of the last described course for a distance of 2.5 ft. more or less to the point of beginning.

Containing 1 347/1000 Acres more or less.

And the Grantor..... further, as a part of this dedication, agree..... to remove any and all fences, enclosures, buildings and other obstructions from the above described tract and to completely vacate the same, within fifteen (15) days after notice in writing from the County Superintendent of Highways of DeKalb County or any other State, County, Township or district officials having authority as to public highways, and its or their representatives, engineers, agents, contractors and employees are hereby authorized to enter into and take full and complete possession of said tract, and any fences, enclosures, buildings or other obstructions remaining thereon, after the expiration of said fifteen (15) days, may be removed by them or either of them and the expense thereof the said Grantor..... agree..... to pay upon demand.

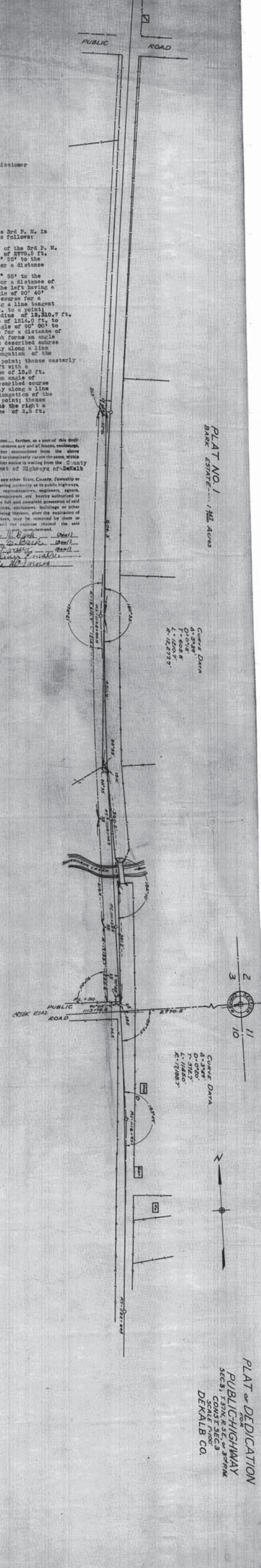
William E. Bark (Seal)
Anna E. Bark (Seal)
Wm Fraser (Seal)
Lillian Fraser
Addie McInnes

State of Illinois }
County of DeKalb } ss

I C. E. Hinsan a Notary Public in and for said County and State do hereby certify that William E. Bark & Anna E. Bark his wife, Lillian Fraser & Wm Fraser her husband & Addie McInnes widow personally known to me to be the same persons whose names subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act, for the uses and purposes therein set forth.

Given under my hand and notarial seal this 26th day of July A. D. 1931.

C. E. Hinsan
Notary Public



SECTION 3, TOWNSHIP 37 NORTH, RANGE 5 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DEKALB COUNTY, ILLINOIS.

LEGEND

- SECTION LINE
- QUARTER SECTION LINE
- QUARTER, QUARTER SECTION LINE
- PLATTED LOT LINES
- PROPERTY (DEED) LINE
- APL — APPARENT PROPERTY LINE
- CENTERLINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING EASEMENT
- PROPOSED TEMPORARY EASEMENT
- 129.32′ — MEASURED DIMENSION
- 129.32′ (COMP) — COMPUTED DIMENSION
- ( ) — RECORDED DATA
- 129.32′ → — MEASUREMENT CONTINUED TO NEXT PAGE
- ▨ — EXISTING BUILDING
- T 4 O N / 26 25 / 35 36 / R O T E — SECTION CORNER
- T 4 O N / 32 / 32 / R O T E — QUARTER SECTION CORNER
- ○ — IRON PIPE OR ROD FOUND   ○ REPLACED AFTER CONSTRUCTION
- + — CUT CROSS FOUND OR SET
- ● T1 T2 T3 — THESE STAKES REFERENCE FOUND OR SET MONUMENTATION. SET 5/8 INCH IRON ROD FLUSH WITH GROUND TO TIE FOUND IRON STAKE IDENTIFIED BY COLORED PLASTIC CAP BEARING SURVEYORS REGISTRATION NUMBER.
- ● BT1 BT2 BT3 — THESE STAKES, IN CULTIVATED AREAS, REFERENCE FOUND OR SET MONUMENTATION. BURIED 5/8 INCH IRON ROD 20 INCHES BELOW GROUND TO TIE FOUND IRON STAKE. IDENTIFIED BY COLORED PLASTIC CAP BEARING SURVEYORS REGISTRATION NUMBER.
- ■ — STAKING OF PROPOSED RIGHT OF WAY. SET 5/8 INCH REBAR.
- ■ M — STAKING OF PROPOSED RIGHT OF WAY IN CULTIVATED AREAS. BURIED 5/8 INCH METAL ROD 20 INCHES BELOW GROUND TO MARK FUTURE SURVEY MARKER POSITION IDENTIFIED BY COLORED PLASTIC CAP BEARING SURVEYORS REGISTRATION NUMBER.

GRAPHIC SCALE
FEET
0 20
SCALE: 1″ = 20′

BEARINGS AND COORDINATES ARE BASED ON NAD83 ILLINOIS EAST ZONE ILLINOIS STATE PLANE COORDINATE SYSTEM

PARCEL NUMBER	OWNER	PERMANENT INDEX NUMBER	TOTAL HOLDINGS ACRES	PART TAKEN ACRES	REMAINDER AREA ACRES	EASEMENT PROPOSED
001	VIRGIL & LOUISE BEUKELMAN	18-03-300-004	2.60 ACRES	0.240 ACRES	2.32 ACRES	0.038 ACRES
002	JERRY & CAROLE CRONIN	18-03-300-006	25.71 ACRES	0.104 ACRES	25.59 ACRES	0.016 ACRES
003	DONALD DESALVO	19-03-451-010	3.16 ACRES	0.257 ACRES	2.90 ACRES	-

I HEREBY CERTIFY that I have surveyed the above described property to locate the boundaries and corners thereof and that I found them as shown upon the adjacent Plat of Survey which is a true and correct representation of the Survey. Survey monuments were found or set at points as indicated thereon. Dimensions are given in feet and decimals of a foot unless otherwise specified.

Dated this 11th day of April, 2016.

JOHN P. MALBURG 2224 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS
Expires 11-30-16

CHASTAIN AND ASSOCIATES, LLC
345 Executive Parkway, Suite L4
Rockford, IL. 61107

____
John P. Malburg, I.P.L.S. 035-002224

PLAT OF HIGHWAY
IN SECTION 3
IN TOWNSHIP 37 NORTH,
RANGE 5 EAST OF THE 3RD P.M.
DEKALB COUNTY
VILLAGE OF SOMONAUK, ILLINOIS

SCALE: 1″= 20′   SHEET NO. 1 OF 1

ROUTE NAME: CO. HWY 10   SECTION: 15-00093-02-BR   COUNTY: DEKALB   JOB NO.:   RECORDING: RECORDED ON

Appendix A
INHS Museel Survey Report

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

AQUATIC SURVEY REPORT

Survey for Freshwater Mussels in Somonauk Creek at the Somonauk Road (CH 10) Bridge in DeKalb County, Illinois

IDOT Sequence No. 19704

Prepared by:
Alison P. Stodola

INHS/IDOT Statewide Biological Survey & Assessment Program

2016:88

27 July 2016

PROJECT SUMMARY

This report is submitted in response to a request from IDOT to INHS for a freshwater mussel survey in Somonauk Creek (Fox River drainage) at the Somonauk Road (CH 10) bridge (SN 019-3044; Section 15-00093-02-BR) in DeKalb County, Illinois. The mussel survey was conducted by INHS personnel on 15 July 2016.

During this survey, freshwater mussels were collected by hand-picking along a 300-yard stretch of the stream for 4 person hours. Twelve species of mussels were collected, including dead and relict shell for Slippershell, which is listed as state threatened in Illinois.

Approved By: Kevin Cummings, Further Studies Aquatics Group Coordinator-Malacologist

Surveys Conducted By: Alison P. Stodola, Assistant Aquatic Field Biologist
Rachel M. Vinsel, Collection Manager
Katherine Jodlowski, Hourly Assistant
Thomas Kochan, Hourly Assistant

Report Edited By: Mark J. Wetzel

GIS Layers: Janet L. Jarvis, GIS and Remote Sensing Specialist

University of Illinois
Prairie Research Institute
Illinois Natural History Survey
Statewide Biological Survey and Assessment Program
1816 South Oak Street
Champaign, Illinois 61820

Table of Contents

Cover Photo: Somonauk Creek at the Somonauk Road (CH 10) bridge (SN 019-3044), DeKalb County, Illinois (Latitude 41.70485°N, Longitude 88.65235°W). Photo is taken from downstream of the bridge, facing upstream (east), on 15 July 2016. Photo by A. P. Stodola, INHS.

INTRODUCTION

This report is submitted in response to a request made by Vince Hamer of IDOT to Wendy Schelsky of INHS, dated 28 December 2015 for a freshwater mussel survey in Somonauk Creek at the Somonauk Road (CH 10) bridge (SN 019-3044) crossing in DeKalb County, Illinois [IDOT Seq. No. 19704, INHS Project No. FS-845]. IDOT inquired to INHS about the status of mussels and their preferred habitat in Somonauk Creek because the Illinois Department of Transportation proposes to remove and replace the Somonauk Road (CH 10) bridge over Somonauk Creek.

In this report, we summarize the results of the freshwater mussel survey conducted in Somonauk Creek at the Somonauk Road (CH 10) bridge by INHS personnel on 15 July 2016.

PROJECT AREA

The Somonauk Road bridge (CH 10, SN 019-3044; Section 15-00093-02-BR) is located on the Somonauk Quadrangle Topographic map and occurs approximately 4.5 mi S of Hinckley, Illinois in DeKalb County, Illinois - in Township 37N, Range 5E, Section 3 at Latitude 41.70485°N, Longitude 88.65235°W (**Figure 1**).

Appendix 1 references an Arc-GIS shapefile with sampling point information for the stream crossing discussed in this report.

HABITAT CHARACTERIZATION

During our site visit on 15 July 2016, Somonauk Creek at the Somonauk Road (CH 10) bridge was approximately 13 yards wide and 1.5 feet deep (ranged from 1.5 to 3 feet deep), with flow of 0.5 ft/second. Substrate in the immediate project area was a mix of cobble, sand, gravel, and silt throughout, and defined riffle-run-pool segments were present at the site. The riparian zone was primarily forested on the northeast bank, forested with pasture on the northwest bank, and residential on the south banks. Land use in the immediate vicinity was row-crop agriculture, pasture, and residential.

BACKGROUND

Somonauk Creek is a mid-sized tributary to the lower portion of the Fox River in north-central Illinois. It flows southerly through DeKalb and LaSalle Counties before it joins the Fox River near Sheridan, Illinois. Land use in the Lower Fox River basin is primarily agriculture, but urban areas are increasing in this region (Shasteen et al., 2013).

Seventeen species of freshwater mussels have been reported from the Somonauk Creek drainage in Dekalb County, Illinois, including Slippershell (*Alasmidonta viridis*) and Spike (*Elliptio dilatata*) (INHS Mollusk Collection, accessed July 2016), both of which are listed as threatened in Illinois (IESPB, 2015) (**Table 1**). A live Slippershell was collected in 1997 from Shabbona Grove Road, approximately 5 miles upstream of the present survey location, and two records of dead Slippershell have been reported from Somonauk Creek in Dekalb County in 2011 and 2012,

both upstream and downstream of the present survey location. Relict shell for Spike was reported in 2011 at the Route 34 bridge site, which is approximately 8 miles downstream of the present survey location.

Slippershell are small mussels found in creeks and headwaters in sand, mud, or fine gravel, and their range extends throughout north-central Illinois, east to Ohio, north to Wisconsin, and southwest to Missouri (Cummings and Mayer 1992). Although listed as threatened in Illinois, Slippershell populations are believed to be stable or increasing throughout their range in Illinois (Douglass and Stodola, 2014).

Spike are found in medium to large rivers in gravel or mixed sand and gravel; they generally prefer riverine conditions with stronger flow (Cummings and Mayer, 1992). Spike are found throughout the Midwest but are becoming increasingly sporadic and isolated, particularly in Illinois (Douglass and Stodola, 2014).

There have been no previous freshwater mussel surveys in Somonauk Creek in the vicinity of the Somonauk Road (CH 10) bridge. The closest records for mussels from Somonauk Creek were reported from Creek Road, which is less than a mile upstream from the current survey location.

Nomenclature used for freshwater mussels discussed in this report follows Graf and Cummings (2007), with slight modifications and updates presented in the primary literature. The current status of threatened and endangered species discussed in this report are taken from the Illinois Endangered Species Protection Board (IESPB) (2015).

METHODS

A survey for freshwater mussels was conducted in Somonauk Creek at the Somonauk Road (CH 10) bridge crossing on 15 July 2016 at 1000 hours by INHS personnel A.P. Stodola, R.M. Vinsel, T. Kochan, and K. Jodlowski. Live mussels were surveyed by hand grabbing and visual detection (e.g., trails, siphons, exposed shell). Efforts were made to cover all available habitat types present at the site, including riffles, pools, slack water, and areas of differing substrates. We particularly focused on habitats that were most suitable to Slippershell (e.g., sand, gravel, and muck, per Douglass and Stodola, 2014). Personnel sampled for 4 person-hours in the area 200 yards upstream and 100 yards downstream of the bridge (**Figure 1**).

RESULTS AND DISCUSSION

Thirty-seven individuals representing twelve species of freshwater mussels were collected from Somonauk Creek in the area surveyed at the Somonauk Road (CH 10) bridge site by INHS personnel on 15 July 2016 (**Table 1; Figure 2**). We did not find live individuals of any mussels listed at the state or federal level as endangered or threatened, but we did collect fresh dead and relict shell for Slippershell (IESPB, 2015). These shells were deposited in the Illinois Natural History Mollusk Collection and are cataloged as INHS 85526. All other species collected during this survey are common inhabitants of Illinois streams (Cummings and Mayer, 1992; Cummings and Mayer, 1997; Tiemann et al., 2007). Habitat for the state-threatened Slippershell was

present in the project area, particularly in the area just upstream of the existing Somonauk Road (CH 10) bridge. We believe that Slippershell are likely to inhabit this section of Somonauk Creek, yet did not locate live individuals during our survey. We did not encounter live individuals or shell material for Spike, and habitat for this species was not present in the project area.

ACKNOWLEDGMENTS

INHS employees Rachel M. Vinsel, Katherine Jodlowski, and Thomas Kochan assisted in the field. Janet L. Jarvis (INHS) prepared the map in **Figure 1** and the associated shape file referenced in **Appendix 1,** and Mark J. Wetzel edited early drafts of the report.

LITERATURE CITED

Cummings, K.S., and C.A. Mayer. 1992. Field Guide to Mussels of the Midwest. Illinois Natural History Survey Manual 5. xiii +194 pp.

Cummings, K.S., and C.A. Mayer. 1997. Distributional checklist and status of Illinois freshwater mussels (Mollusca: Unionacea). Pp. 129-145, *in* K.S. Cummings, A.C. Buchanan, C.A. Mayer, and T.J. Naimo (eds.). Conservation and Management of Freshwater Mussels II: Initiatives for the Future. Proceedings of a UMRCC Symposium, 16-18 October 1995, St. Louis, MO. Upper Mississippi River Conservation Committee, Rock Island, IL. 293 pp.

Douglass, S.A., and A.P. Stodola. 2014. Status revision and update for Illinois' freshwater mussel Species in Greatest Need of Conservation. Illinois Natural History Survey Technical Report 2014(47). 159 pp.

Graf, D.L., and K.S. Cummings. 2007. Review of the systematics and global diversity of freshwater mussel species (Bivalvia: Unionoida). Journal of Molluscan Studies 73:291-314.

Illinois Endangered Species Protection Board (IESPB). 2015. Checklist of Endangered and Threatened Animals and Plants of Illinois. Illinois Endangered Species Protection Board, Springfield, Illinois. 18 pp. Published online at http://www.dnr.state.il.us/espb/index.htm.

Shasteen, D.K., S.A. Bales, and A.P. Stodola. 2013. Freshwater mussels of the Fox River basin in Illinois. Illinois Natural History Survey Technical Report 2013 (12), Champaign, Illinois, 21 pp. + appendix.

Tiemann, J.S., K.S. Cummings, and C.A. Mayer. 2007. Updates to the distributional checklist and status of Illinois freshwater mussels (Mollusca: Unionidae). Transactions of the Illinois State Academy of Science 100: 107-123.

Table 1. Freshwater mussels recorded from sites sampled in Somonauk Creek in DeKalb County, Illinois. Locations and dates are noted in column headings, and sites are arranged L to R from upstream-most to downstream-most in DeKalb County. Mussels collected at the Somonauk Road (CH 10) bridge (SN 019-3044; Section 15-00093-02-BR), DeKalb County, Illinois, by INHS personnel on 15 July 2016 are bounded by a black border. Data are from the INHS Mollusk Collection, accessed 26 July 2016. Number = live individuals, D = dead shell, R = relict shell. ST = Illinois Threatened

	Shabbona Grove; 1997	**Shabbona Grove; 2015**	**Creek Rd; 2012**	**Somonauk Rd; 2016**	**Pratt Road; 1997**	**Rt 34; 2011**
Actinonaias ligamentina				R		
Alasmidonta marginata				R		
Alasmidonta viridis - ST	1		D	D		D
Anodontoides ferussacianus	1	4	3	1	1	D
Elliptio dilatata - ST						R
Fusconaia flava			40	8		
Lampsilis cardium			2	D	R	2
Lampsilis siliquoidea			15	2	R	5
Lasmigona complanata			92	25	R	D
Lasmigona compressa			5	R	R	R
Lasmigona costata						D
Pleurobema sintoxia			2	D	R	R
Pyganodon grandis						1
Quadrula quadrula						1
Strophitus undulatus			D			R
Toxolasma parvum			9	R		R
Venustaconcha ellipsiformis		1	37	1		D

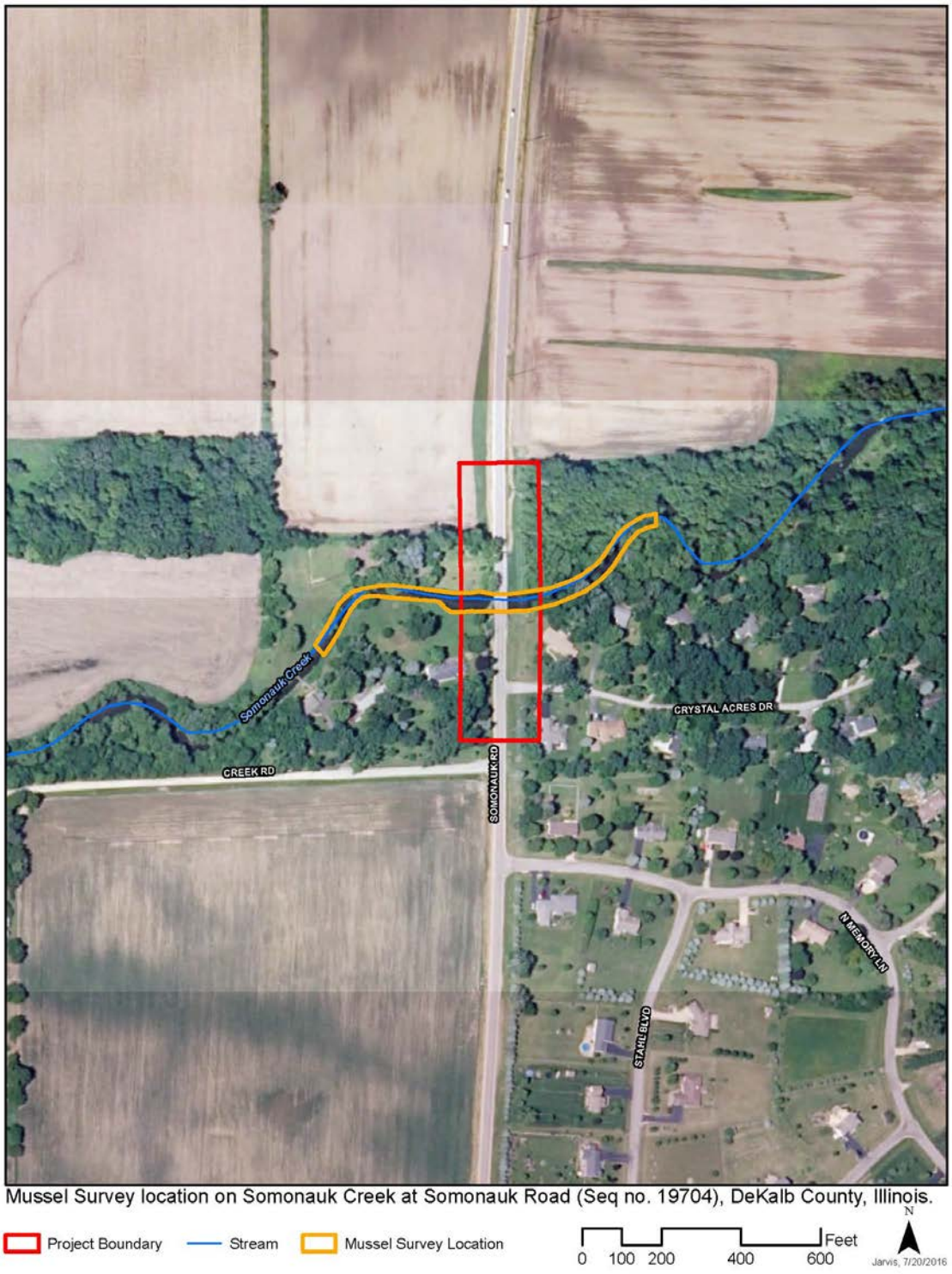


Figure 1. Map of Somonauk Creek project (IDOT sequence no. 19704) at the Somonauk Road (CH 10) bridge (SN 019-3044; Section 15-00093-02-BR) project site in DeKalb County, Illinois, where a survey for freshwater mussels was conducted by INHS personnel on 15 July 2016.

Figure 2. Live freshwater mussels collected in Somonauk Creek at Somonauk Road (CH 10) bridge, DeKalb County, Illinois, on 15 July 2016 during 4 person hours of sampling by INHS personnel. Clockwise from left (number collected): *Lampsilis siliquoidea* (2)*, Fusconaia flava* (8)*, Lasmigona complanata* (25)*, Venustaconcha ellipsiformis* (1)*,* and *Anodontoides ferussacianus* (1). Photo by A.P. Stodola, INHS.

Appendix 1

The appendix cover page references an ArcGIS shapefile < 19704_Mussel_Survey_GIS.zip > with sampling point information for the stream crossing for Somonauk Creek at Somonauk Road (CH 10) bridge, DeKalb County, Illinois (Latitude 41.70485°N, Longitude 88.65235°W), where a survey for freshwater mussels was conducted by INHS personnel on 15 July 2016.

The ArcGIS shapefile and this report were both submitted to IDOT via the IDOT Site Assessment Tracking System extranet website (Frostycap) on 27 July 2016.

Appendix B
USACE Nationwide Permit

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF

March 9, 2016

Operations Division

SUBJECT: CEMVR-OD-P-2016-0280

Mr. Nathan Schwartz, P.E.
Dekalb County Highway Department
1826 Barber Greene Road
DeKalb, Illinois 60115

Dear Mr. Schwartz:

Our office reviewed your application dated February 22, 2016, concerning the proposed bridge replacement project of Somonauk Road over Somonauk Creek, SW ¼ of Section 3, Township 37 North, Range 5 East, Dekalb County, Illinois.

Your project is covered under Nationwide Permit No. 14, as published in the enclosed Fact Sheet No. 7 (IL), provided you meet the permit conditions for the nationwide permits, which are also included in the Fact Sheet. The Illinois Environmental Protection Agency (IEPA) also issued Section 401 Water Quality Certification with conditions for this nationwide permit. Please note these additional conditions included in the Fact Sheet. The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for the decision, and the final decision.

This verification is valid until March 18, 2017, unless the nationwide permit is modified, reissued, or revoked. It is your responsibility to remain informed of changes to the nationwide permit program. We will issue a public notice announcing any changes if and when they occur. Furthermore, if you commence or are under contract to commence this activity before the date the nationwide permit is modified or revoked, you will have twelve months from that date to complete your activity under the present terms and conditions of this nationwide permit. If your project plans change, you should contact our office for another determination.

This authorization does not eliminate the requirement that you must still acquire other applicable Federal, state, and local permits. If you have not already coordinated your project with the Illinois Department of Natural Resources – Offices of Water Resources, please contact them at 217/782-3863 to determine if a floodplain development permit is required for your project. You may contact the IEPA Facility Evaluation Unit at 217/782-3362 to determine whether additional authorizations are required from the IEPA. Please send any electronic correspondence to Epa.401.docs@illinois.gov.

You are required to complete and return the enclosed "Completed Work Certification" form upon completion of your project in accordance with General Condition No. 30 of the nationwide permits.

The Rock Island District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the attached postcard and return it or go to our Customer Service Survey found on our web site at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. (Be sure to select "Rock Island District" under the area entitled: Which Corps office did you deal with?)

Should you have any questions, please contact our Regulatory Branch by letter, or telephone Trevor Popkin at 309/794-5329.

Sincerely,

Donna M. Jones, P.E.
Chief, Illinois/Missouri Section
Regulatory Branch

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s), of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

Transferee Date

Enclosures

Copy Furnished:

Mr. Mike Diedrichsen, P.E.
Office of Water Resources
IL Department of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271
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Mr. Steve Frerichs, P.E.
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120 W. Center Court
Schaumburg, Illinois 60195