

**Conservation Plan
for Incidental Taking of
Threatened Species**

**FAU 5208 (Orth Road) over Beaver Creek
Section No. 12-00089-00-BR
Job No. C-92-025-13
Sequence # 17445
Boone County, Illinois**

Prepared by:

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Conservation Plan for the State Threatened Spike Mussel (*Elliptio dilatata*) Inhabiting Beaver Creek under FAP 5208 (Orth Road) South of Timberlane, Boone County, Illinois

1. Description of the Impact Likely to Result from the Proposed Taking

a. Legal description of the project area

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. (See Location Map at end of report.)

The coordinates of the bridge are: latitude 42D 19M 39.38S, longitude 88D 51M 06.87S.

b. Biological data on the affected species

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 was found under the structure carrying Orth Road over Beaver Creek in 2007. 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. Description of incidental taking

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 and restored to its original configuration.

d. Anticipated adverse effects of the listed species

There is a record at the project site from 2007. Approximately four miles northeast in Beaver Creek one relict was found in 2011. If not relocated these mussels could be buried or crushed by construction activities.

2. Measures to Minimize and Mitigate Impacts

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

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

Suitable habitat for the spike mussel is located both upstream and downstream of the work area. After the work activities are completed the streambed and habitats will be controlled by natural processes, namely flooding. Due to these measures taken to minimize substrate disturbances, listed in Section C below, and the natural processes that will occur after construction, the mussels should move back into the area over time.

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

The spike mussels will be moved by a malacologist from the areas within the construction limits to suitable habitat as determined by the malacologist in the adjacent stream channel. This will prevent the mussels from being affected by construction activity.

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 Illinois Department of Transportation's Bureau of Design and Environment (BDE) Special Provisions entitled "National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction" and "Temporary Erosion Control" will be included in the contract documents.

Regular inspections to ensure proper working order and maintenance of 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.

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

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

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

3. Analysis of Project Alternatives

The following four alternatives have been evaluated:

a. Do nothing

The only 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.

b. Leave existing bridge in place and construct a new structure on offset alignment

With this alternative 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.

c. Rehabilitate the existing structure

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.

d. Construct a new structure on existing alignment

This 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.

4. Data and Information Regarding Survival of the Species after the Proposed Take Is Completed

Suitable habitat exists both upstream and downstream of the bridge site. Due to the small area affected by construction of the new bridge and the relocation of the mussels from areas to be affected by construction activities, it is expected that the species will continue to exist in this reach of Beaver Creek.

5. Implementing Agreement

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

Steve Rapp
Village President
Village of Timberlane

Richard A. Lundin
County Engineer
Boone County

b. The obligations and responsibilities of each of the identified participants in the conservation plan with schedules and deadlines for completion of activities in the conservation plan and reporting to IDNR

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

The Illinois Department of Transportation is responsible for tasking the Illinois Natural History Survey to conduct post-construction monitoring and coordinating post-construction monitoring results with the resource agency.

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.

The Illinois Natural History Survey is responsible for performing the relocation of mussels and post-construction monitoring of the mussels.

c. Assurance that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligation and responsibilities under the conservation plan

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 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.

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

The Illinois Department of Transportation, 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.

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

Not applicable since the spikel mussel is not a federally listed species.

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

Not applicable.