

**Incidental Take Submittal  
For the State Threatened Species  
Iowa Darter (*Etheostoma exile*)**

**Conservation Plan**

**1) Description of the Impact likely to result in the proposed taking**

**A) Introduction and Legal Description of Project Area**

The project is for the reconstruction of the Kishwaukee Valley Road bridge over the North Branch Kishwaukee River (Structure No. 056-3014) located in McHenry County, approximately 4 1/2 miles west of the City of Woodstock. The structure is located on Kishwaukee Valley Road (FAS 31) on the section line between Sections 5 and 8 (southeast quarter of Section 5, northeast quarter of Section 8) of T44N, R6E at latitude 42°-18'-46" N, longitude 88°-33'-11" W. A U.S.G.S. topographic map indicating the project location is attached. An aerial photograph with overlaid construction plans and the North Branch Kishwaukee River is also attached.

The project is for the removal and replacement of the existing structure over the North Branch Kishwaukee River. The existing structure is a two-span bridge containing a steel superstructure and consists of two spans and a center pier. The structure is 86 feet from back to back of the abutments, and 26 feet in width. The bridge has two 12-foot wide lanes of traffic, one in each direction. The bridge was constructed in 1953 at a width of 24 feet with no shoulders. The overall superstructure is in poor condition and is in need of immediate rehabilitation. The structure is currently restricted to one lane of operation because of the advanced deterioration on the southern fascia beam.

The new structure will consist of a two-span concrete girder bridge. The bridge will be widened to meet current standards from 24' to 40'. The profile of the new bridge will be raised 4 inches. The proposed span lengths will be longer than the existing to allow for the proposed abutments to be constructed behind the existing substructure. Riprap will be added to the embankment under the bridge. Temporary easements will be required from adjacent properties for construction. Construction is expected to last one year and is planned to begin in the Fall of 2009.

Work within the wetland that is located adjacent to the bridge will be required for widening of the shoulders, regrading of the ditch foreslopes, and channel regrading. This work will occur on both sides of the Kishwaukee Valley Road. Wetland impacts will occur within the existing right-of-way except for in the

immediate vicinity of the bridge, where a temporary construction easement will be required. Wetland impacts will occur for a distance of 550 feet in the northwest quadrant, 350 feet in the southwest quadrant, 250 feet in the northeast quadrant, and 550 feet in the southeast quadrant. The existing pier will not be completely removed but will instead be sawed off above the footing, leaving the below streambed portions of the piers in place. The construction of the new pier requires the driving of steel H-piles and will occur from a temporary construction platform placed on the roadway. Construction of the pier fascia wall will require concrete formwork to be lowered in from above and placed around the perimeter of the steel piles allowing for the concrete pouring operation. The overall in-stream work for pier construction is considered a short term operation and can be scheduled at the beginning or end of the construction timeframe to avoid the spawning season of the Iowa darter. A temporary haul road will not be required for construction.

Channel excavation is proposed, which will consist of regrading the island that has formed upstream of the existing pier from silt, and excavation of the channel banks on the downstream side of the structure for compensatory storage (due to fill in the floodplain requirements in the McHenry County Stormwater Management Ordinance). Work will occur from the same temporary construction platform placed on the roadway as the bridge piers. Temporary easements will be required from adjacent properties to perform the grading work.

The property located within the road and bridge right-of-way is owned by the McHenry County Division of Transportation (MCDOT). The adjacent property is used for agriculture and is owned by private landowners.

## **B) Biological Data on the Species**

Iowa darter (*Etheostoma exile*) is listed as a State Threatened Species by the Illinois Department of Natural Resources (IDNR) on the current (2004) Endangered and Threatened Species List. The fish was confirmed in the Kishwaukee River during data collections from surveys conducted in 1876-1905, 1960-1970, 1982-1986, and 1997-1998 (Retzer, 2005). The 2008 survey data provided by the Illinois Department of Transportation reports the fish present within the county as of October 10, 2007 ([http://www.dnr.state.il.us/espb/08/et\\_county\\_dec2008.pdf](http://www.dnr.state.il.us/espb/08/et_county_dec2008.pdf)).

The presence of the Iowa darter in the North Branch Kishwaukee River, in the vicinity of the project, is unknown. No studies have been conducted to determine if it is present.

The fish typically inhabits vegetated lakes, pools of headwaters, creeks, and small rivers (Page and Burr, 1991). Rook reports that the fish's habitat consists of clear, sluggishly vegetated streams and weedy portions of glacial lakes, marshes, and ponds (Rook.org). Fredrick Copes reports that the fish prefers a mud bottom

(Copes, 1986) while Beckman reports that the fish preferred colder streams and lakes with sandy bottoms (Beckman, 1952). This species is a darter of more northern ranges and prefers colder water (Beckman, 1952).

The range of the Iowa darter occurs between Saskatchewan to Quebec and southward to Colorado, Iowa, Illinois and Ohio (Eddy and Surber, 1947). Fishbase.org further clarifies it has occurring in St. Lawrence-Great Lakes, Hudson Bay and Mississippi basins from southern Quebec to northern Alberta in Canada and south to Ohio, Illinois, and Colorado in the U.S.

Populations in the United States are in jeopardy due to agricultural development and urbanization. Fishbase.org suggests that the species has declined because of habitat reduction due to forest clearing and drainage practices which have reduced habitat and warmed the remaining waters. Fishbase.org reports that the Iowa darter is now only abundant in non-agricultural areas.

Iowa darter's feed on drift organisms and invertebrates that are associated with aquatic vegetation, including midge larvae, mayfly larvae, and amphipods (Rook.org).

The Iowa darter is reported to spawn in sandy areas or beneath stream banks in April and May (Rook.org). Fredrick Copes reports that spawning can be extended from April 27 to July 25 (Copes, 1986).

### **C) Description of the Activities That May Result in Taking**

If the Iowa darter is present in the project vicinity, the potential for take would come from activities associated with the construction of a new bridge over the North Branch Kishwaukee River. These activities consist of the removal of one bridge pier, the placement of one bridge pier, regrading of the North Branch Kishwaukee River channel, and embankment work.

### **D) Explanation of the Anticipated Adverse Effects on the Listed Species**

The anticipated adverse effects include:

- 1) Short term erosion and sedimentation during construction may impact water quality.
- 2) If present, there is a potential for Iowa darter to be crushed by equipment in the river.
- 3) If present, short term disturbances due to increased noise and activities during construction would occur.

- 4) Continued degradation of habitat associated with surface runoff and salt spray from the bridge deck. This impact is minimal compared to surrounding agricultural runoff.

## 2) Measures to Minimize and Mitigate the Impact

### A) Plans to minimize the area, estimated number of individuals that will be taken, and the amount of habitat affected.

Minimization of impacts will occur through the timing of the construction. The project is scheduled to begin in the Fall of 2009 and work will continue into the winter. The overall in-stream work for pier construction and channel regrading is a short term operation and will be scheduled at the beginning or end of the construction timeframe in order to avoid the spawning season of the Iowa darter. Additionally, erosion and sedimentation will be minimized during winter road work once the ground is frozen.

Water quality impacts will be minimized through the use of erosion and sediment control during construction, and the placement of a turbidity curtain immediately downstream of the in-stream work. Current erosion and sediment control technologies will be used during construction, following McHenry County guidelines. These will include the use of super-silt fence on the ditch foreslopes to minimize runoff into the channel during construction. Super-silt fence is silt fence backed by 34" chain link fencing for stability. Erosion and sediment control inspections will occur weekly, and following a 0.5" rainfall. The construction contractor will be required to repair any deficiencies noted within one week. If it is determined that the design of the erosion and sediment control is insufficient, a new design will be implemented. Additionally, any conditions placed by the U.S. Army Corps of Engineers' and/or the State of Illinois permits for the protection of water quality will be strictly followed. X

A turbidity curtain (or similar technology) will be used within the North Branch Kishwaukee River during any in-stream work. The turbidity curtain will be placed immediately downstream of the work location. Actual re-grading will be conducted from a temporary construction platform located on the roadway. The equipment will reach down from the road to do the regrading.

Water quality impacts from construction will also be minimized due to the design of the project. The limits of construction include a very small area within the North Branch Kishwaukee River watershed. Adjacent roadwork will occur for a distance of no more than 550 feet in either direction. The proposed limits of construction represent the minimum area necessary in which to work and construct the new crossing over the North Branch Kishwaukee River. The footprint of the project, and therefore impacts to adjacent wetlands, has been minimized by increasing or tightening the slope of the highway embankment to 2:1. These design factors result in the minimization of wetland impacts and

therefore allow for the maximum amount of wetland available to filter runoff from the roadway.

The measures discussed above will reduce the amount of habitat that is affected to a minimal amount. Permanent loss of Iowa darter habitat is restricted to the area of the pier footing.

### **B) Plans for Management of the Area Affected That Will Enable the Continued Use of the Species**

The property and habitats of the area in question are partially under private ownership. The private ownership of this property prevents the development of active management plans. Any bare areas that have resulted from construction will be re-seeded with native plant species.

### **C) Description of All Measures to be Implemented to Minimize or Mitigate the Effects on the Species**

Below is a summary of the avoidance and minimization efforts described in Section 2A above. No compensatory mitigation is proposed.

#### *Construction*

- 1) Timing of the construction will minimize impacts. The in-stream work for pier construction will be scheduled at the beginning or end of the construction timeframe in order to avoid the spawning season of the Iowa darter. The construction work will not occur during spawning season. In addition, winter road work will result in minimal erosion once the ground is frozen.
- 2) Erosion and sediment control technologies will be used to minimize impacts. These will include the use of super-silt fence on the ditch foreslopes to minimize runoff into the channel during construction. Erosion and sediment control inspections will occur weekly, and following a 0.5" rainfall.
- 3) A turbidity curtain (or similar technology) will be used within the North Branch Kishwaukee River during any in-stream work. Re-grading will be conducted from a temporary construction platform located on the roadway.
- 4) The proposed limits of construction represent the minimum area necessary in which to work and construct the new crossing over the North Branch Kishwaukee River.
- 5) During construction, any Iowa darters that are located within the project vicinity are expected to avoid the area because of the noise associated with construction activity.

*Post-Construction*

1) Areas of temporary impacts, including wetlands and uplands, will be re-vegetated using native plants species.

**D) Plans for Monitoring the Effects of Measures Implemented**

There are no current plans for monitoring the North Branch Kishwaukee River. Population studies of the Iowa darter have not been done in the project area and its presence is not known. No comparisons could therefore be made to the follow-up data that was collected, rendering any determinations that monitoring data provided inconclusive. Additionally, the Iowa darter is secretive and hides amongst the vegetation, making detection difficult. Studies would be hampered by this behavior.

**E) Adaptive Management Practices That Will Be Used to Deal With the Changed or Unforeseen Circumstances That Affect the Effectiveness of Measures Instituted to Minimize or Mitigate the Effects of the Proposed Action on the Species.**

Erosion and sediment control inspections will occur weekly, and following a 0.5” rainfall. The construction contractor will be required to repair any deficiencies noted within one week. If erosion and sediment control appears to be insufficient, corrections in the design will be made.

**F) Verification That Adequate Funding Exists to Support and Implement All Mitigation Activities Described In the Conservation Plan.**

This project is authorized by MCDOT, and is being funded through the Highway Bridge Program (HBP) authorized by the federal Transportation Equity Act for the 21st Century.

**3) A description of alternative actions the applicant considered that that would not result in take and the reasons that each of those alternatives was not selected. (A “no-action” alternative shall be included in this description of alternatives.)**

Various bridge types and configurations were evaluated in an attempt to minimize impacts. The 2-span option was chosen because it resulted in the placement of a single pier in the waterway. This design raised the roadway profile, but minimized the in-stream work. The option of reusing the existing pier is not feasible due to the age and condition of the existing pier. The option of a single span (no pier) does not provide enough freeboard above the 100-year water surface elevation.

In order to minimize wetland impacts and thereby minimize long-term water quality impacts, the design includes 2:1 sideslopes protected by guardrail. This avoids the

necessity to obtain additional right-of-way and minimizes the amount of fill required that would impact wetlands.

Relocation of the Kishwaukee Valley Road bridge for a crossing of the North Branch Kishwaukee River at another location would not be practical or economically reasonable. Introducing a new stream crossing would result in more extensive environmental impacts.

The No-Action alternative is not practical. The Kishwaukee Valley Road bridge is currently unsafe and is restricted to one lane with a traffic signal at each end. This results in exposing the traveling public to safety hazards. The No-Action alternative would result in the continuation of this unsafe condition.

**4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival in the wild, the biotic community of which the species is part of, or the habitat essential to the species' existence in Illinois.**

The project will have minimal impact on the surrounding ecosystem. The project will result in the removal of a minimal amount of Iowa darter habitat, the amount being that of the substructure of the new bridge.

The project will impact 0.23 acres of wetlands, but only a very little portion of this wetland acreage currently acts to filter stormwater runoff from the roadway prior discharge into the North Branch Kishwaukee River. The wetlands associated on the road side of the ditches are acting to filter stormwater prior to its entering the ditches, but ditches will be replaced so this function will continue following construction. The portions of the wetlands on the far side of the ditches do not currently act as stormwater filters. Since only a small portion of the 0.23 acres of wetlands are providing a water quality function, the small wetland impacts are not expected to cause any effects.

No haul road or temporary fill adjacent to the bridge will be required because the construction of the bridge will occur from a temporary construction platform on the road.

Temporary, short term water quality impacts will be minimized through the use of super silt fencing and turbidity curtains.

No new long term ecosystem impacts will result because the project is the replacement of an existing structure and existing conditions will be maintained. It is unlikely that the temporary and permanent corridor impacts to the wetland habitats or water quality will jeopardize the continued existence of the species in Illinois.

**5) An implementing agreement, which shall include, but not be limited to:**

**A. Names of all participants in the execution of the conservation plan**

Mark Dammeyer, Resident Engineer, McHenry County Division of  
Transportation Engineer

**B. The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities in the conservation plan and a schedule for preparation of progress report to be provided to the Department.**

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

**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.**

The bridge is owned and the project is an undertaking by the McHenry County Division of Transportation. The County has the legal authority to conduct the work and accepts the responsibility of adhering to minimization and conservation measures described within this document.

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

McHenry County will apply for any Section 404 Clean Water Act permits from the U.S. Army Corps of Engineers, as well as the applicable State of Illinois Section 401 Clean Water Act permit, the Illinois Department of Natural Resources, Office of Water Resources' permit for work in a floodway, and McHenry County Stormwater permit. The County will adhere to all permit conditions. It is anticipated that permit conditions will include erosion and sediment control and other minimization measures.

**E. Copies of any federal authorizations for taking already issued to the applicant.**

The Iowa darter is a state threatened species and is not a federally protected species. No federal authorization is required.



## Literature Cited

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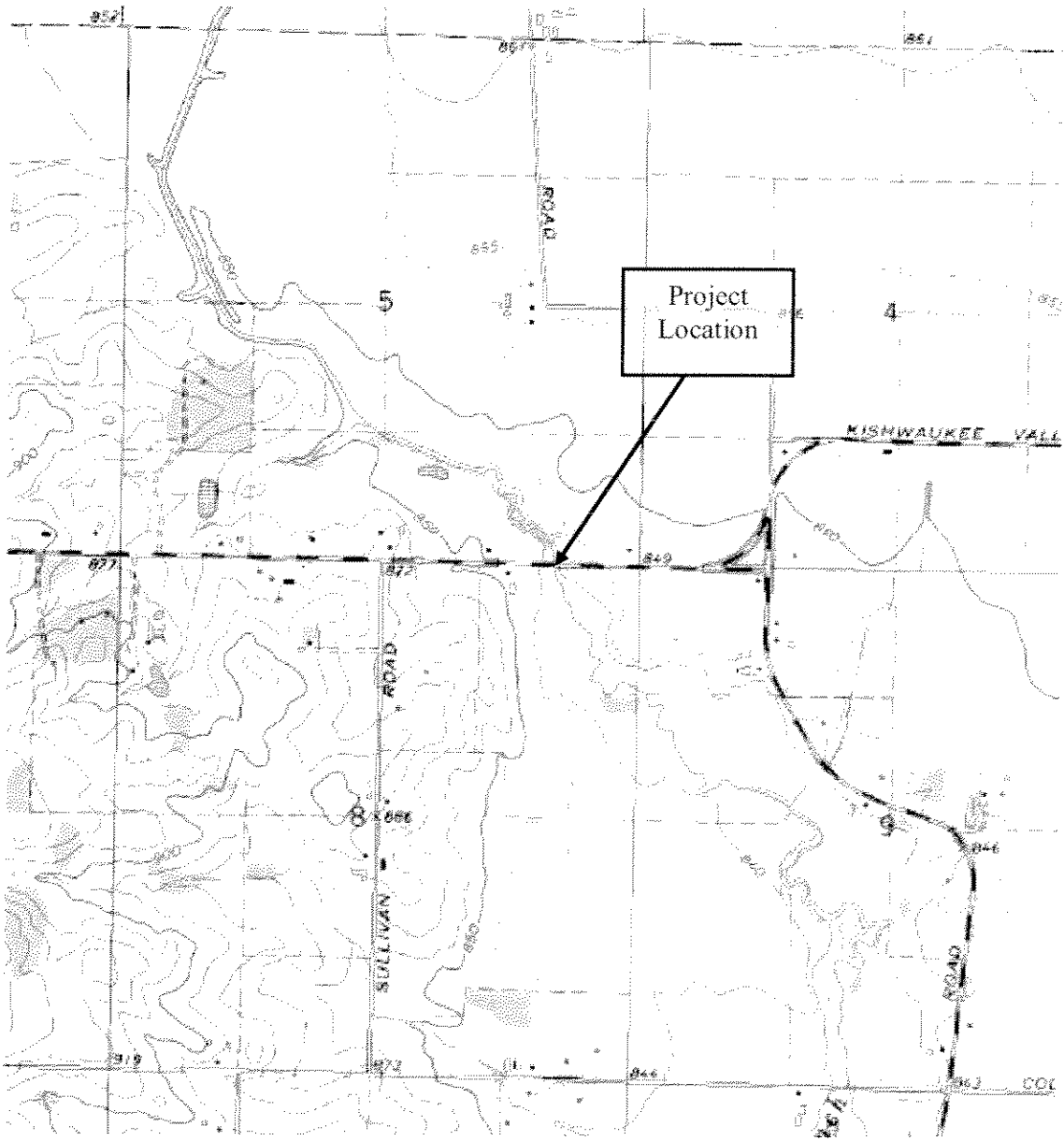


Exhibit 1: U.S.G.S. topographic map  
 Client/Project: McHenry County  
 Department of Transportation

Marengo North quadrangle  
 CTE AECOM