

CONSERVATION PLAN
FOR GREATER REDHORSE
AND RIVER REDHORSE

(Application for an Incidental Take Authorization)
Per 520 ILCS 10/5.5 and 17 Ill. Adm. Code 1080

DATE: October 11, 2017

PROJECT APPLICANT: Kendall County Forest Preserve
Attn: David Guritz, Director
110 West Madison Street
Yorkville, IL 60560

PROJECT NAME: Millbrook Bridge over the Fox River

COUNTY: Kendall

AREA OF IMPACT: 0.5 acres of the Fox River near Millbrook, IL

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) legal description, if available, or detailed description including street address and map of the area to be affected by the proposed action and indicia of ownership or control of affected property;

All work will be completed at the steel truss bridge over the Fox River, approximately 0.75 miles northwest of the Village of Millbrook in Kendall County (41.60675° N, 88.56198° W). The bridge is located approximately 250' upstream from Whitfield Road in the SW ¼, Sec 9, Twp 36N, Rng 6E, 3rd PM. The bridge is owned by the Kendall County Forest Preserve District.

B) biological data on the affected species including life history needs and habitat characteristics.

The Forest Preserve District is proposing to assume the presence of state listed River Redhorse and Greater Redhorse fish species. The IDNR has one observation from 1999 of the River Redhorse species occurring at the bridge. The IDNR 2012 Fox River Basin Survey did not recover any Redhorse species at this location. The IDNR has no record of the Greater Redhorse species from this location, but the fish are present upstream at

Yorkville. The stream conditions at this bridge are suitable habitat for the River Redhorse and Greater Redhorse, so it is assumed the species may be present.

The River Redhorse (*Moxostoma carinatum*) is a sucker species that inhabits deep pools over clean gravel or bedrock substrate with swift current. Adults are typically 18-26 inches in length. It feeds on small aquatic invertebrates such as small mollusks, snails and aquatic insects. This species spawns in May and June. In Illinois, the River Redhorse occurs only in the upper Illinois River basin (including the Fox River) and the Vermillion River basin of the Wabash River. Due to rare populations elsewhere in the Illinois, River Redhorse is state listed "Threatened".

The Greater Redhorse (*Moxostoma valenciennesi*) is a sucker species that inhabits sandy and rocky pools and runs of medium to large sized rivers and lakes. It requires clear water with little silt accumulation on lake and river bottoms. It feeds primarily on aquatic invertebrates such as insects, mollusks, and crustaceans, as well as some plant material. The Greater Redhorse spawns in May and June. This species of Redhorse is found in the upper Illinois River Basin, including the Fox River. Because of its limited distribution throughout the state, the Greater Redhorse is listed as "Endangered" in the state of Illinois.

C) description of project activities that will result in taking of an endangered or threatened species,

The existing steel bridge trusses at this location will be demolished. The concrete and stone abutments and piers will remain. Access to the channel below the bridge will be required for workers and equipment to complete the removal. All access will be from the west bank because the Forest Preserve has no access to the bridge from the east bank. The existing bridge has been closed to vehicles and pedestrians and cannot support the weight of the required equipment and workers.

Temporary cofferdams will be constructed to allow dewatering and control sediment during the in-stream work. The cofferdams will be constructed of non-erodible material (i.e. sand bags, prefabricated rigid barriers, or sheet piling) and shall be constructed to withstand expected high flows. The limits of the cofferdam will consist of the areas below the bridge spans to be removed and to allow access from the west bank. At no time will the cofferdam extend across the entire channel.

The cofferdams will be constructed in two phases to ensure that stream flow will be maintained at all times. Phase 1 will consist of a cofferdam extending from the west bank around the west span. Phase 2 will consist of a cofferdam extending from the east bank around the east two spans. During coffering of the east spans, a temporary stone causeway with culverts will be constructed from the west bank to the coffered area to allow access. The temporary causeway will be created by placing stone riprap fill (minimum RR3, 5" median size) with a coarse aggregate surface. Culverts will be provided through the causeway to maintain stream flow.

After placement of each cofferdam, the work area will be dewatered by pumping out the water behind the cofferdam. During pumping, the intake hose will be placed in a stabilized sump pit and the outlet discharged above the water line on a non-erodible energy dissipating surface.

Once dewatering has been completed, the steel trusses will be demolished and the debris removed from the coffered area. Equipment used during the construction will use timber mats or low ground pressure tires to access the dewatered areas in the channel.

All temporary materials used for the cofferdams will be removed to upland areas at the completion of construction. The duration of work is estimated to be four weeks.

A U.S. Army Corps of Engineers (USACE) 404 permit is required for the project. It is anticipated that the project will comply with the terms and conditions of the Nationwide Permit 33 for Temporary Construction, Access and Dewatering. A preconstruction notification will be submitted to the USACE for approval prior to the start of construction.

D) explanation of the anticipated adverse effects on listed species;

Adult fish, which do not swim out of harm's way, could be crushed by the equipment or materials used to construct the cofferdams and causeway. Fish could also become trapped behind the cofferdams in the area to be dewatered. If construction is completed around spawning times (May and June), incubating eggs may be buried or crushed by the same activities. The greatest impact to fish habitat could occur from siltation that covers the gravel channel bottom used for feeding or spawning.

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

The total area of temporary impact during construction is approximately 0.5 acres. This is the minimum area needed to construct cofferdams, construct the temporary causeway, and remove each span of the bridge. An estimated 1-2 individual fish of each species may be taken during the construction. All equipment, materials and debris will be removed from the channel following construction and the channel bottom restored. Therefore, there will be no permanent loss of habitat area.

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

Similar habitat exists both upstream and downstream of the project area. After work is complete, the streambed will be controlled by natural processes, namely flooding. If measures are taken to minimize substrate disturbance in the area around the bridge there will be no permanent habitat loss. The fish will resume using the area after construction is complete.

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

To avoid impacts to spawning fish, the work will not be scheduled during the species normal spawning time of April through June. The duration of work is estimated to be four weeks.

The Forest Preserve District will retain a qualified biologist to monitor the construction. The biologist will be present during the dewatering process to collect and relocate any fish that become trapped within the coffered areas. The fish will be released in suitable habitat upstream of the work area.

A stormwater pollution prevention plan will be prepared that includes erosion and sediment control best management practices in order to minimize siltation in the channel. The construction of cofferdams will help to contain any sediment displaced by the work and minimize the siltation of the channel area. Soil conserving practices including silt fence, seeding, and erosion control blanket, will be implemented in the upland areas to minimize the eroded soil entering the channel

The Forest Preserve District will mitigate the impacts through the acquisition and conservation of similar habitat in the Little Rock Creek area. The proposed acquisition is near the confluence of the Little Rock Creek and Fox River, approximately 2.5 miles upstream of the proposed construction site. The district is proposing to acquire a 135 acre property that includes 1.25 miles of stream corridor with suitable habitat that can support the listed redhorse species. Through the conservation of similar riverine habitat in a nearby tributary, the Forest Preserve will provide support for the continued presence of the listed species in the Fox River.

D) plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on endangered or threatened species;

The Forest Preserve District will retain a qualified biologist to conduct a fish survey at the project site two years following completion of the proposed project. Survey results will be sent to the IDNR within 60 days of completion of each survey.

E) adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted to minimize or mitigate the effects of the proposed action on endangered or threatened species;

During on-site work, the Forest Preserve will conduct daily inspections of the erosion and sediment control practices to ensure proper working order and maintenance. Additional inspections will be made immediately prior to and following events of heavy rain for the area as indicated in the stormwater pollution prevention plan. If eroded soil is observed leaving the limits of construction, additional soil conserving practices will be installed or measures taken to minimize soil erosion.

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.

The estimated cost for the bridge removal is \$300,000. This estimate includes funding for the demolition, implementation of erosion and sediment control measures, and retaining a qualified biologist for species monitoring. Kendall County Forest Preserve has appropriated the necessary funds to complete the project.

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.

Alternate one – No Action

The only alternative that does not result in the taking of the listed species is to leave the existing bridge in place. The bridge would continue in its deteriorated condition. Normal maintenance will not correct the structural deficiencies of the bridge. These deficiencies could lead to the collapse of the bridge and potential injury or loss of life, both human and to the subject fish species. Debris from failure of this bridge could also endanger the roadway bridge at Whitfield Road located only 250’ downstream. The “no-action” approach is not considered prudent because it poses an unacceptable safety hazard.

Alternate two – Bridge removal without in-stream work

Removal of the bridge trusses without in-stream work was investigated and determined to be unfeasible. Lifting the trusses with a crane is not practical due to the required crane length from the bank to the center of the middle span. Furthermore, trusses of this type cannot be cut apart and removed in pieces because the removal of one member can lead to the collapse of the entire truss. Therefore, the bridge trusses must be removed from the stream channel. This work will require a similar area of impact to the channel as the repair or replacement options. This alternate was removed from consideration because it provides no reduction in species impact.

Alternate three – Bridge repair

Repair of the existing bridge would consist of cleaning and painting the existing steel trusses, replacement of deteriorated steel members, replacement of the bridge bearings, and concrete encasement of the existing piers. During construction, temporary supports for the steel trusses will be constructed below the bridges at each span. The area of channel impacted by this alternate is equal to or greater than the removal alternate. The estimated cost for the bridge repair option is \$1,000,000. This alternative was not selected because of the higher cost and no reduction in species impact.

Alternate four – Bridge replacement

Replacement of the existing bridge with a smaller pedestrian only bridge was also considered. The estimated cost of the bridge replacement is \$1,400,000. To facilitate construction of the

new bridge, the existing bridge trusses and piers would be removed. The area of channel impacted by this alternate is equal to or greater than the removal alternate. This alternative was not selected because it has a higher cost and provides no reduction in species impact.

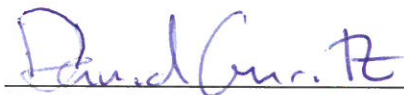
4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival of the endangered or threatened species in the wild within the State of Illinois, the biotic community of which the species is a part, or the habitat essential to the species existence in Illinois.

Suitable habitat for these fish species is present both upstream and downstream of the work area. Due to the small area of impact and the relocation of any fish trapped within the cofferdam, the potential taking at this location is not expected to affect the survival of this species in the Fox River.

It should be noted there are multiple populations of each species located within the Upper Illinois River Basin, which will not be affected by this project. Therefore, this project should not affect the survivability of the species in the wild in Illinois.

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

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



David Guritz, Director
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110 West Madison Street
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Date

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 Kendall County Forest Preserve District is responsible for securing the Incidental Take Authorization for state-listed species; securing all permits including NPDES, Section 404 and Office of Water Resources; inspection of the work; and contractor compliance with the contract documents. A progress report will be submitted to the IDNR within six months following project completion.

The duration of construction is estimated to be four weeks. A fish survey will be conducted at the project site two years following completion of the project. Survey results will be sent to the IDNR within 60 days of completion of the survey.

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 existing bridge is under the ownership of the Kendall County Forest Preserve District, which has the authority to complete the project and will ensure that all applicable state and federal laws will be adhered to during construction.

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

The Forest Preserve District will comply with the applicable state and federal regulations pertinent to the proposed project, including IDNR Office of Water Resources approval for floodway construction and the IL Historic Preservation Agency approval for historic properties impacts.

A Section 404 permit from the U.S. Army Corps of Engineers (ACOE) 404 is also required for the project. The project is designed to comply with the terms and conditions of the Nationwide Permit 33 – Temporary Construction, Access, and Dewatering. Written approval from the ACOE will be obtained prior to the start of work.

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

There is no evidence of federally listed threatened or endangered species present at this location. A federal authorization for a taking is not required.

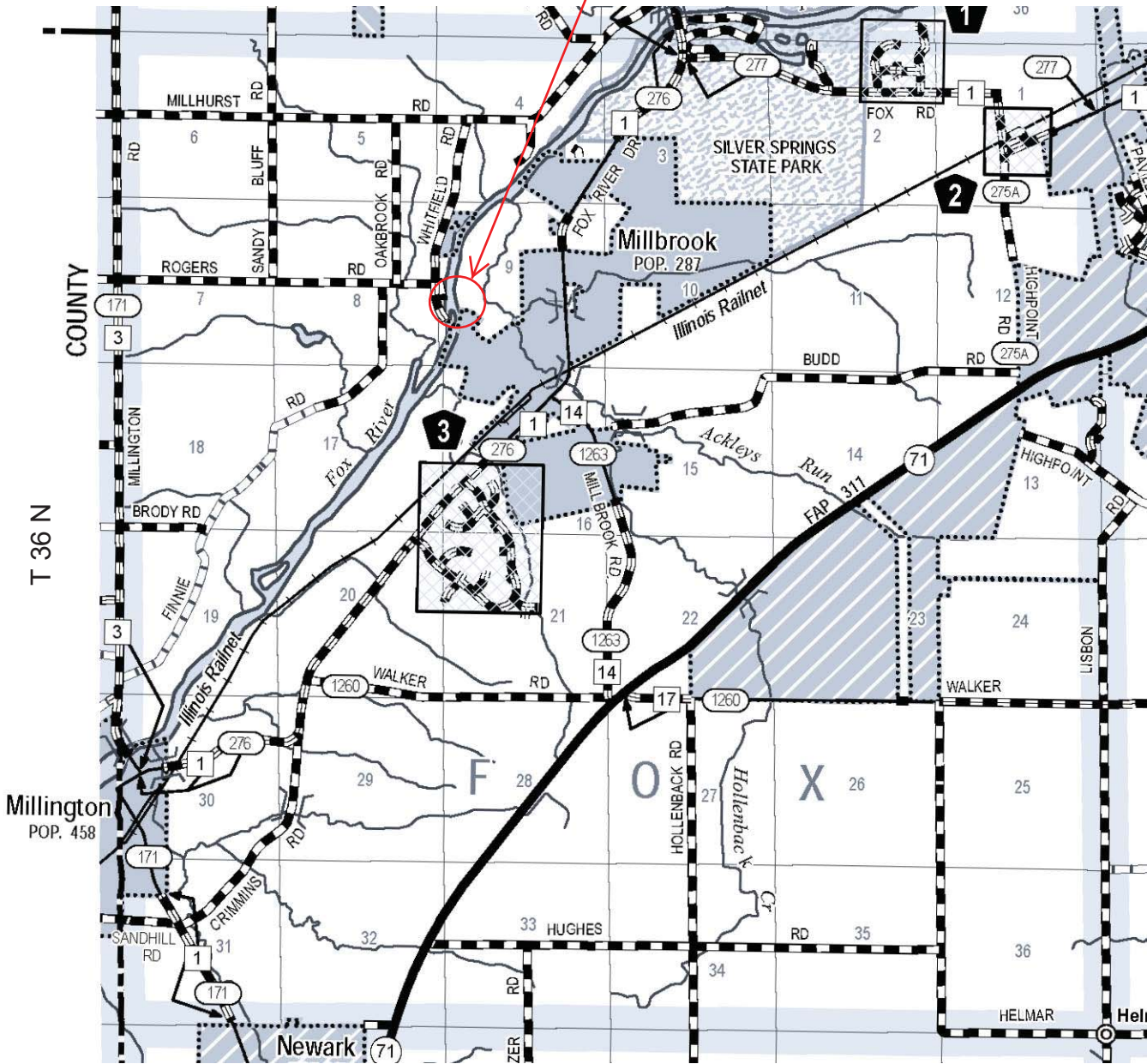
Attachments:

1. Location Map
2. Aerial Photograph
3. On-site Photo Log
4. Staging In-stream Work Sketch
5. Mitigation Site Description and Map

LOCATION MAP

Kendall County

Project Location
Millbrook Bridge



R 6 E, 3RD PM

Aerial Photo
Kendall County



Photo Log - May 11, 2017



Photo 1 - Looking East across South Bridge Fascia



Photo 2 - Looking West across South Bridge Fascia

Photo Log - May 11, 2017



Photo 3 - Looking East at West End of West Truss



Photo 4 - West Abutment

Photo Log - May 11, 2017



Photo 5 - Northwest from Center of Bridge



Photo 6 - Southwest from Center of Bridge

Photo Log - May 11, 2017



Photo 7 - Looking East at Beams under West Truss



Photo 8 - West Pier

Photo Log - May 11, 2017



Photo 9 - Northwest Side of West Pier



Photo 10 - North from Center of Bridge - Looking Upstream

Photo Log - May 11, 2017



Photo 11 - South from Center of Bridge - Looking Downstream



Photo 12 - East Pier

Photo Log - May 11, 2017



Photo 13 - East Side of East Pier



Photo 14 - Looking North along East Channel

Photo Log - May 11, 2017



Photo 15 - Northeast Shoreline



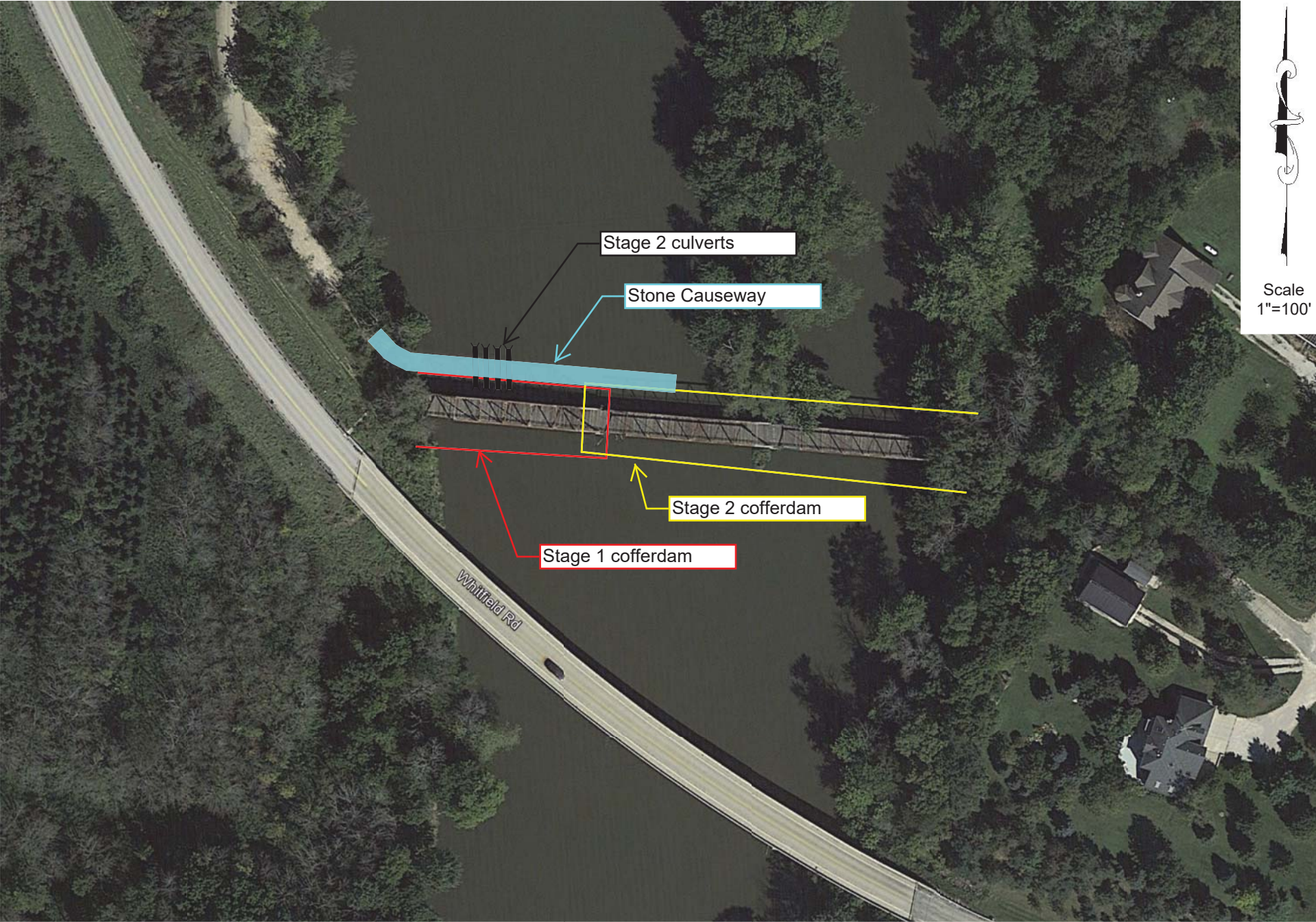
Photo 16 - Southeast Shoreline

Photo Log - May 11, 2017



Photo 17 - East Abutment

Millbrook Bridge
Staging and In-stream Work Sketch
9/28/2017



Scale
1"=100'

KENDALL COUNTY FOREST PRESERVE DISTRICT –
Little Rock Creek Acquisition Project – Maramech Forest Preserve Addition

Ecological Significance and Context

The proposed Little Rock Creek acquisition project is located near the Little Rock Creek confluence with the Fox River – Kendall County’s greatest natural resource – that has shaped both the ecological and cultural history of Kendall County.

- This section of Little Rock Creek proposed for acquisition is an IDNR “Class B” stream (scored within the top 5% for stream quality in Illinois)” and within the priority Lower Fox River system for conservation in Kendall County. Index of biotic integrity is 42/50 with 26 fish species known to occur from ongoing IDNR monitoring efforts, including:
 - Mottled Sculpin
 - Largescale Stoneroller
 - Shorthead Redhorse
 - Golden Redhorse
 - Quillback
 - Smallmouth Bass
- Protection of the Little Rock Creek corridor is essential to maintain the hydrology which supports these and other cold-water fish species.
- LRC is contiguous with the 92-acre Maramech Forest Preserve, an Illinois Dedicated Nature Preserve and northern flatwoods habitat containing one of the highest floristic diversity indices score and habitat quality of the Kendall County forest preserve system, including several documented State threatened and endangered species.

This area is unique in that it meets numerous County-wide acquisition priorities, preserves an important section of Little Rock Creek, adjoins to a regionally significant nature preserve area, and expands conservation lands around the Silver Spring State Park macro-site.

The Nature Preserves Commission’s Regional Biologist, Kim Roman, and IDNR Heritage Biology Specialists attest to the site’s importance:

“The Stevenson tract shares some of the same mesic and dry-mesic upland forest communities as Maramech Woods, and it would also serve to buffer the Nature Preserve, furthering its long-term protection and sustainability. Additionally, the Stevenson tract includes a stretch of Little Rock Creek, one of the highest quality streams in northeastern Illinois.The Illinois Nature Preserves Commission and Illinois Department of Natural Resources recommend its acquisition and protection.”

IDNR Stream Specialist, Steve Pescitelli, qualifies the area as *“in the top 5% of streams rated in Illinois and among the best in Northeastern Illinois.....Protection of the Little Rock Creek corridor is essential to maintain the hydrology.”*

The two main natural communities (terrestrial) in the uplands and floodplain areas are:

Dry-mesic upland forest – characterized as well drained, dominated by white oak and shagbark hickory, with some black oak and ironwood/hop hornbeam.

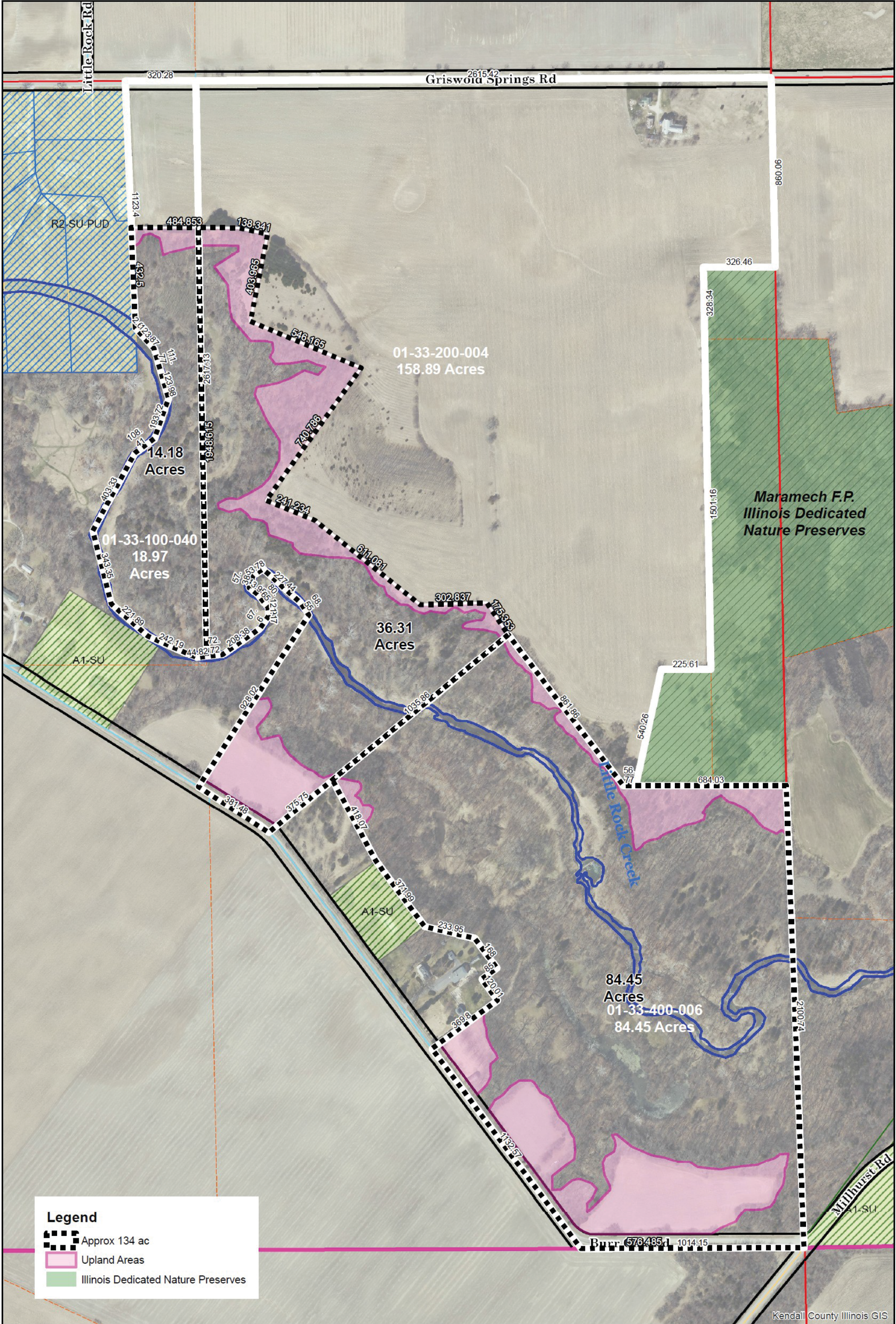
Mesic upland forest. – characterized with a higher moisture content due to hydrology, and north and east facing exposures in ravines and stream terraces. Canopy cover consists of white oak, red oak, and shagbark hickory along with sugar maple and basswood, and hackberry.

There are also elements of a seep/fen in need of management and restoration.

Proposed site use is primarily for resource-based conservation and passive recreation, with habitat protection and enhancement. Beyond immediate opportunities for passive recreation including bird watching, fishing, hiking, and conservation education - the area will act as buffer for the INAI site.

This acquisition is part of a mosaic of current and planned public and private open space conservation goals along Little Rock Creek (including INAI sites). Preservation increases the inventory, buffer areas, and opportunities for increasing contiguous habitat areas.

Map of Proposed Mitigation Site



Legend

- Approx 134 ac
- Upland Areas
- Illinois Dedicated Nature Preserves



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**01-33-100-040, 01-33-200-004 &
 01-33-400-006**
Little Rock Twp.
Kendall County Illinois



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