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

PROJECT APPLICANT: **Nicor Gas**

PROJECT NAME: **Nicor Dubuque Replacement Project 2017: Hampshire, IL to West Elgin, IL**

COUNTY: **Kane County**

AMOUNT OF IMPACT AREA: **4.133 acres (inclusive of wetland and stream impacts)**

PERPARED BY: **Applied Ecological Services, Weaver Consultants Group, and Nicor Gas**

SUBMITTAL DATE: **July 6, 2017**

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.*

If threatened or endangered species may be encountered within, or very near, a project footprint that may result in a "Take" of the specimen, an Incidental Take Authorization (ITA) is required from the IDNR's Office of Resource Conservation (ORC), which will result in a Conservation Plan for the species. "Take", as it pertains to animals, is defined in the Illinois Endangered Species Protection Act as to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Any person who violates any provision of this Act shall be guilty of a Class A Misdemeanor. Civil penalties also apply if violations of the Illinois Natural Areas Preservation Act occur.

As part of an EcoCAT Consultation, the Illinois Department of Natural Resources (IDNR) has raised concerns about the potential presence of four State-listed species in or near a proposed Nicor Gas pipeline project (Dubuque Line) in Kane County, Illinois. The proposed pipeline installation route will extend through portions of the City of Elgin, the Village of Pingree Grove, the Village of Hampshire, and unincorporated Kane County, Illinois. The project is located in Kane County, Township 41 & 42 North, Range 6-8 East, Sections 1, 5-8, 13, 14, 23, 24, 19-21, 25-30, 33-36, 31. A location map is included as **Map Exhibit 1**.

The project involves the replacement of 8 miles (42,000 linear feet) of 22" pipe with 30" pipe between Hampshire, IL and the west side of Elgin, IL. The ROW is within the communities of Elgin, Hampshire and Pingree Grove and also traverses two Kane County Forest Preserves (Burnidge and Hampshire). The work space is a combination of Nicor Gas owned property and multiple easements that are between 82.5 ft and 66 ft wide. New pipe will be buried with at least 5 ft of cover. The new 30" line needs to be placed in service by October 31st, 2017 to meet Nicor Gas' start of the heating season. The current plan is to start construction in mid-June, 2017 across the currently accessible ROW. Areas associated with the identified State-listed species will be surveyed prior to construction, and construction activities will not begin until the ITA has been issued.

The natural gas utility corridor is a combination of ROWs (owned by Nicor) and easements (owned by others). See **Appendix A** for a list of property owners with ownership or control of affected properties. Parcel lines are shown in the Nicor Gas construction design plan set included in **Appendix B**. In summary:

- If the list indicates Nicor Gas – Nicor Gas owns the property
- If it lists others – Nicor Gas has an easement agreement (the easement agreements have a variety of terms)
- The list groups the landowners into geographic areas generally situated between road crossings.
- The list provides the landowner and their address

Most of the pipeline under this replacement project occurs in agricultural fields. Portions of the pipeline run through residential areas. A few wetland and streams will be unavoidably affected. A wetland delineation has been performed. Photos of typical and key habitats occurring in the affected areas are in **Appendix C**.

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

The Conservation Plan has been developed to address the presence of the Common gallinule (*Gallunula galeata*), Yellow-headed blackbird (*Xanthocephalus xanthocephalus*), Blanding's turtle (*Emydoidea blandingii*), and Slippershell mussel (*Alasmidonta viridis*) to begin the process of obtaining an ITA. Below is a summary of the biological data concerning each of the aforementioned species.

Yellow-headed Blackbird

The Yellow-headed blackbird is sexually dimorphic in size and plumage with the male's mass being around 100 grams, nearly double the female, which is approximately 60 grams. Male Yellow-headed blackbirds are usually around 26 cm in length with females being 5 cm shorter (Twedt and Crawford 1995). Yellow-headed blackbirds have a saffron yellow head, neck and breast with black bodies with a

white patch at the bend of the wing. Females and juveniles have a duller plumage, dull black or brown, with a pale yellow primarily on the breast and the throat (Twedt and Crawford 1995). Both sexes have black bills and feet.

The Yellow-headed blackbird has a preference for prairie wetlands, but can also be found in freshwater wetlands dense with emergent vegetation along with mountain meadows and quaking aspen parklands during the breeding season. There are also a few scattered colonies that habituate forest edges and on larger lakes in mixed wood boreal forest (Audubon Minnesota 2014). Males prefer to establish territories in deeper water of freshwater marshes with dense stands of cattails and bulrushes, and tend to control areas in the center of the marsh further from the periphery. Yellow-headed blackbirds forage within wetlands and surrounding grasslands flying up to several kilometers to forage for food (Audubon Minnesota 2014). During the spring and fall migration, Yellow-headed blackbirds forage in open agricultural areas and will roost in emergent vegetation within wetlands at night. During the winter, flocks will gather in the thousands, often sex specific, and forage primarily in disturbed sites such as agricultural fields and ranchlands (Twedt and Crawford 1995). Yellow-headed blackbirds eat mostly aquatic insects throughout the breeding season and will eat cultivated grains and weed seeds during the rest of the year. During the breeding season, the female will build the nest herself in emergent vegetation that overhangs the water within a male's territory (Twedt and Crawford 1995). Egg laying begins 1-2 days after the nest is completed and clutch size ranges from 2-5 eggs with one egg laid per day. The female is the only one who incubates the eggs which typically lasts 12-13 days. Once the eggs have hatched, the fledglings will remain in the nest for 14 days (Twedt and Crawford 1995).

The Yellow-headed blackbird distribution is centered in the wetlands of the northern Great Plains, more specifically within the states of Nebraska, western Kansas, northwestern Oklahoma and Texas through Utah, Nevada, and eastern Oregon and Washington. There are populations broadly distributed from western Canada and south through Wisconsin, Minnesota, Iowa, northern Illinois and northwestern Indiana and Missouri.

Common Gallinule

The Common gallinule (also called Common moorhen) is a chicken-like marsh bird with a slate gray body, white flank stripes, white undertail coverts, and yellow-green legs. The most distinguishing characteristic is a red bill tipped with yellow and a red frontal shield. The Common gallinule has a total length is 12-15 inches with a wingspread of 20-23 inches. Males and females are similar in appearance. Juveniles are similar to adults but lighter in color and a brownish bill without red (INHS).

The Common gallinule is a territorial species that prefers deep, open marshes with cattails and sedges. They can also be found in ephemeral wetlands, ditches, swamps, oxbows, backwaters, and slow moving waters in sloughs and bayous. Currently there are no estimates of territory size or home range available. Nests are usually located on shallow platforms elevated just above water level among emergent plant species within 2 feet of water. Females lay eggs typically in May and June and may lay two clutches of 4-17 eggs with both parents incubating. Eggs hatch in 18-21 days with chicks leaving the nest upon hatching. Both parents care for the young. Chicks can feed themselves at one week; can fly at six weeks; and are full grown by ten weeks old. No information is available regarding survival rates or

average life spans. Common gallinules are omnivorous, feeding on seeds, grass, rootlets, water plants, snails, grasshoppers, various other insects, and worms (Bent 1926).

The Common gallinule was a common summer resident in marshes and large prairie sloughs throughout Illinois (IESPB 2006). The Common gallinule range is concentrated in the eastern half of the United States, ranging from southern Minnesota, southern Wisconsin, Southern Michigan, and southern Ontario south to Florida, Alabama, Mississippi, Louisiana and eastern Texas.

Blanding's Turtle

The Blanding's turtle is a semi-aquatic species that spends most of its time in wetland habitat but moves long distances over land to reach nesting locations or to move between wetland complexes. The Blanding's turtle habitat includes the clean waters of marshes, ephemeral wetlands, vegetated ponds, wet prairies, sedge meadows, oxbows, fens, and slow moving waters in sloughs and rivers. Adjacent uplands containing open grasslands or old fields in sandy soils are commonly used as nesting habitat. Blanding's turtles are primarily carnivorous, feeding on crayfish, snails, insects, crustaceans, worms, small fish, frogs, and aquatic plants. The turtle is a long-lived species. Individuals require 14 to 21 years to reach sexual maturity and can live up to 75 years. They typically have high adult survival rates, but low reproductive success and small clutch sizes. Females nest in late May and June and may lay one clutch of 3-17 eggs, when the air temperature and ground temperature is approximately 75°F (Henning and Hinz 2016). During this time, Blanding's turtles are quite mobile moving from wetland habitats to uplands in order to dig nests to lay eggs. Eggs incubate underground 49-128 days, depending on temperature and emerge in late August to October during mid-morning or afternoon (Henning and Hinz 2016). Nests are often depredated by raccoons, foxes, skunks, domestic dogs, and other small mammals. Reproductive success, as well as the survivorship of juvenile and adult turtles, is important for maintaining stable populations of this long-lived species (Congdon et al. 1983; Congdon et al. 1993). The turtles winter most often underwater, partially buried in soft substrate. In Illinois, Blanding's turtles emerge from hibernation in late March and April, but may emerge as early as February and return dormancy between mid-September and October when water temperatures drop to 50-55 °F (INHS).

The Blanding's turtle range is concentrated in the Great Lakes region, extending from southern Ontario and northwestern Pennsylvania, through Ohio, Indiana, Michigan, Illinois, Wisconsin, and southern Minnesota and is found in Nebraska, Iowa, and extreme northeastern Missouri.

Slippershell Mussel

The Slippershell mussel is a small mussel with a shell that measures up to 56 mm long, 36 mm high and 23 mm wide (Clarke 1981). The shell is yellowish-brown, marked with fine green rays and smooth with the exception of growth lines and beak sculpturing consisting of three to four ridges or loops. The shell has a square posterior end and rounded anterior end. The ventral margin is straight. Internally, the shell is silvery white. The cardinal teeth are triangular with one located in the right valve and two in the left valve and the lateral teeth are irregular and poorly developed.

Slippershell Mussels are typically found in sand, sandy mud, and gravel bottoms of creeks and headwaters of rivers and may occur as far down as the middle reaches. Habitat is dependent on the requirements of the host species, which includes the Johnny darter (*Etheostoma nigrum)* and the Mottled sculpin *(Cottus bairdi).* Slippershell mussels reproduce with the male releasing sperm into the water where it is then taken through the female's siphon for fertilization. Little is known about the development of Slippershell mussels, but they are most likely a long-term breeder, holding larvae internally for about a year (Oesch 1984). The larvae are then released into the water and attach to a fish host. The duration at which time the Slippershell mussel remains attached is unknown. Once the larvae develop, the adult form, the mussel drops off the host and buries into the substrate. Slippershell mussels are filter feeders and obtain nutrients by filtering algae, zooplankton, and debris out of the water.

The Slippershell mussel occurs as far north as southern Ontario and extends south to Alabama and from South Dakota and Kansas east to New York, Virginia and North Carolina. In the Great Lakes basin, it is found in Lake Michigan, Lake Huron, Lake St. Clair, and Lake Erie drainages (Clarke 1981).

Rusty Patched Bumblebee

The rusty patched bumblebee was listed as federally endangered species by USFWS on March 21, 2017, and as a result is automatically considered an Illinois State listed species. Our review of the information obtained from the United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) tool resulted in a "no effect" determination regarding the Rusty-patched bumble bee (Bombus affinis) **(Appendix H)**. Based on the resources reviewed, the Rusty-patched bumble bee was not noted as a federally-listed species within the project area. Additionally, no critical habitat is present within the Project Area. Therefore, we determined that the proposed activities will have no effect on the Rusty-patched bumble bee.

Habitat Suitability Assessment

A Habitat Suitability Assessment (HSA) was performed along the entire project corridor on April 6-7, 2017. The HSA identified suitable habitat for the four target species. See **Appendix D** for the results of the HSA. The maps provide several different habitat rankings - from not suitable to exceptionally suitable habitat. The maps helped Nicor Gas evaluate the sequence of the pipe installation and where to use the different installation methods (i.e. open cut, boring, or directional drilling) and other avoidance measures.

*C) **Description of project activities** that will result in taking of an endangered or threatened species, including practices and equipment 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.*

Construction Process

Before actual dirt moving activities commence, and after incidental take has been authorized, safety fence and erosion controls (mostly silt fence) will be installed on each side of the work space corridor. The topsoil will be pulled to one side of the corridor and segregated from the work area. Silt fence will be maintained in proper working order to prevent the flow of sediment into wetlands and streams near the Nicor Gas project site. When the depth of sediment accumulates against the silt fence barrier to a height where some seepage may be possible, then the silt fence barrier will be repaired, replaced, or supplemented with functional features as soon as possible.

In an effort to determine the best construction method to install the 8.0 miles of 30-inch diameter gas line within the allowable timeframe, a very thorough review of the available methods and their impacts on schedule, endangered species, and communities was completed. All of the following construction methods will be utilized during the construction of this project. The Nicor Gas Plan Set with construction details shows where each of these methods will be used and is provided in **Appendix B**.

Open Cut Method

The Open Cut method is accomplished using track excavators. The Open Cut method allows for the excavation of a new trench and the installation of a new 30" pipe in the trench. The trench sub-soil is stockpiled separately from the topsoil. The pipe is then laid in the trench and backfilled with the subsoil. The topsoil is spread back on top when the construction traffic is no longer in need of the area as a travel lane. This method historically delivers the best value and quality based on a myriad of factors. Open Cut is the typical method of installation for the pipeline industry and has been clearly identified as the best method for pipeline replacements in upland areas, as this allows the pipe to be inspected as it is placed in the ground and covered up. This method also provides for the greatest schedule certainty, as obstructions and placement issues are typically known prior to excavation. The Open Cut method is Nicor Gas' preferred method to ensure that damage to the pipe and its corrosion coating has not occurred during installation. This will help to ensure that the pipeline will provide safe, reliable gas service for many years in the future. Most of this project will utilize the Open Cut method.

Four drainage features situated within the project area will be open cut using the dam and pump method. As shown in the provided Nicor Gas construction design plans, should water be present in the drainage features at the time of the proposed activities, a temporary stream diversion will be placed around the drainage features using two, impermeable dam structures that will be installed across each drainage feature, below the normal water level and placed upstream and downstream of the trench. The identified drainage features have a discernable bed and bank, but not a discernable ordinary high water mark (OHWM); therefore, the OHWM is determined to be at the top of the bank and no work is proposed to be above this level within the drainage features.

In addition, water will be pumped out of each of the drainage crossings and into a filter bag placed in an upland area. Filtered water will be allowed to enter the stream downstream of the downstream dam via overland flow through a vegetated area. The effluent released will be visually clear and released at a non-erosive velocity. If the effluent is not clear, a settling structure will be built in an upland area to allow the sediment in the water to settle out, after which, the water will be pumped from the settling

structure into a filter bag. If necessary, a treatment train with anionic polymeric flocculants may be added to supplement a settling structure and/or filter bag. Silt fence will be installed along the sides of each of the drainage features to protect the adjacent wetlands and/or floodplains, if present.

During the pipeline installation activities, Nicor Gas will segregate and stockpile topsoil within the Nicor Gas easements and rights-of-way (ROWs). The underlying subsoil will be stockpiled in a separate location within the easements and ROWs. Following the completion of the proposed activities within the drainage features, the disturbed areas will be backfilled, with the excavated soils placed at their original depths, and will be graded to pre-existing elevations and contours. The disturbed areas at the project area will be seeded with appropriate seed mixtures and restored to original conditions in accordance with the Illinois Urban Manual, Nicor Gas' Stormwater Pollution Prevention Plan (SWPPP) dated September 2013, which can be provided for your review upon request, and the Best Management Practices (BMPs) incorporated within the enclosed Nicor Gas construction design plans.

Conventional Bore(ing)

Conventional Boring is a time tested method that is useful where state and local highways or other minor obstacles must to be crossed. It consists of the installation of large excavations on both sides of the obstacle to be crossed and then utilizes an auger to remove soil under the obstacle. This creates a void for the insertion of the new or replacement pipe. Although less invasive than Open Cut, this method is still considered much slower than Open Cut and is not feasible as distances approach 200 feet or more. Conventional boring will be used at certain stream crossings.

Horizontal Directional Drill (HDD)

Horizontal directional drilling will be used to install pipeline under streams and other sensitive areas to avoid open cut trenching. While HDD may be considered the least invasive construction method, it is the most time consuming, highest construction risk, and the most expensive option available. It consists of the excavation of a bore pit on either side of the obstacle to be crossed and then a drill rod is used to produce a pilot hole. The pilot hole is then reamed out to a diameter that is larger than the pipe that will be pulled through this void. The reaming process may take several runs, based on pipe diameter, to obtain the final dimension needed. This process utilizes drilling fluid to help hold the void open and aid in the removal of excess materials generated during the reaming operation. This drilling fluid is under pressure and can inadvertently come to the surface causing a "frac-out". This can have some potential risk to water quality. For habitat impact and Take estimates, we have assumed 20% of a construction area will be affected by a frac-out. A contingency plan (see **Appendix E**) will be utilized for the control and swift clean-up of any frac-outs. As the new pipe is pulled through this void, there is an increased risk of damage to the pipe's protective corrosion coating due to impingement upon injurious materials remaining underground.

The installation of a pipeline by HDD is highly affected by the soil conditions, and the presence of heterogeneous or rocky materials presents unique challenges. These conditions must be evaluated and accounted for during the planning of the proposed bore path. The effect of the bore path on the pipe must also be considered. The pipe has to be protected from overstressing (i.e. bent at a tight radius damaging the pipe) throughout the bore, and any deviation from the design path caused by rocks or

cobble can render the path useless. Nicor Gas performed soil boring(s) to identify the soil type, some of which are not favorable to boring. The pipe is at further risk as the coating can be damaged during installation due to the presence of injurious material in the bore path.

The risks associated with the HDD method include damage to the pipe coating/pipe integrity and collapse of the void space. In order to address the above issues, should they occur, the pipe would have to be replaced by: 1) re-drilling in a new bore path if ROW space, pipe materials and time are available, or 2) revert to the Open Cut method. The HDD method is feasible between distances of 900 ft and 3,000 ft and will be utilized at some locations on this project to avoid wetlands and the associated State-listed species.

Schedule

The 4+ month window from mid-June until the end of October has little flexibility as 1) each HDD will require 2.5 to 3 months to complete once the equipment is mobilized to the work sites, and those segments must then be tied into the adjacent segments, and 2) each Conventional Bore will require 1 to 2.5 months depending on the depth and accessibility to each side. Due to system demands for gas from this transmission line, the tie-in time is limited. The existing pipeline must remain in service and can only be accessed for a tie in with the new pipeline during a short two week window. Consequently, great care must be taken during construction to protect the existing 22" line that will remain in service. As per our Stormwater Pollution Prevention Plan requirements, restoration will occur in phases as work is completed. Areas that will require tie in between the new and existing pipe will not be restored until November.

*D) Explanation of the anticipated **adverse effects on listed species**;*

- *How will the proposed actions impact each of the species' life cycle stages?*
- *Describe potential impacts to individuals and the population. Include information on the species life history strategy (life span, age at first reproduction, fecundity, recruitment, survival) to indicate the most sensitive life history stages.*
- *Identify where there is uncertainty, place reasonable bounds around the uncertainty, and describe how the bounds were determined. For example, indicate if it is uncertain how many individuals will be taken, make a reasonable estimate with high and low bounds, and describe how those estimates were made.*

Take Estimates

Estimating Take is inherently very difficult due to the uncertainties of the number of individuals of the covered species present. A habitat assessment was conducted along the entire pipeline corridor and informed the current Take estimates. In addition, pre-construction presence/absence species surveys will be completed for all four species. However, we acknowledge that individuals could be missed during a survey. For example, a Common gallinule could be cryptically hiding out of view within dense thickets of emergent vegetation, or the smallest Slippershell mussels, having evolved to blend in to their stream bottom substrate, could be missed during a survey and presumed not present. In order to

address this, a qualified biologist will be present during construction in potential habitat areas to search for these species, minimize take, and report findings to the IDNR. In the face of these uncertainties, Nicor Gas is taking a conservative approach to estimating the number of potential Takes so that they are adequately covered should Take occur. According to State regulations, an applicant is to provide both an estimate of the number of individual Takes and the area of habitat affected. While it is very difficult to estimate Take, anticipated habitat impacts are much more accurate. Take numbers for the slippershell mussel were reduced after surveys of streams crossed by this project were completed and mussels, including the slippershell, were found only in Tyler Creek (Site 21) **(Appendix I)**.

The Habitat Suitability Assessment (**Appendix D**) ranked the habitat value of each wetland and stream according to their suitability for the species under review. A rank of "**3**" provides exceptional habitat. A rank of "**2**" provides suitable (moderate quality) habitat. Lastly, a rank of "**1**" provides marginal habitat. The quality of habitat was used to evaluate and estimate the likelihood of species presence, and therefore, the likelihood of Take. Slippershell mussel was presumed not present in wetlands, and Common gallinule, Yellow-headed blackbird, and Blanding's turtle were presumed not present in streams due to the absence of suitable habitat for these species. **Table 1** summarizes the habitat value for each of the individual species.

Table 1. Habitat Suitability Rank by Site

Site ID	Habitat Suitability Rank by Site			
	Slippershell Mussel (ALAVIR)	Common Gallinule (COGA)	Yellow-headed Blackbird (YHBL)	Blanding's Turtle (EMYBLA)
WETLAND SITES WITHIN CORRIDOR				
N003	0	2	2	3
N004	0	0	1	0
N005	0	1	2	2
N007	0	3	2	2
N008	0	2	2	1
N013	0	2	2	2
STREAM SITES WITHIN CORRIDOR				
N002	3	0	0	0
N006	2	0	0	0
N009	1	0	0	0
N011	1	0	0	0
N012	2	0	0	0
N014	2	0	0	0

Table 2 summarizes the Take range and estimated acres of habitat impacted, organized by species. The number of acres affected includes wetlands and the associated 150 ft buffers, as well as the streams with 20-foot upstream and 100-foot downstream buffers. These reflect unavoidable impact acreages

after avoidance and minimization measures have been implemented. If these measures result in zero acres of habitat impact, the amount of estimated Take is then zero.

Table 2. Estimate of Take and Acres of Habitat Impacted after Avoidance and Minimization

Site ID	Estimate of Take and Acres of Habitat Impacted							
	Slippershell Mussel (ALAVIR)		Common Gallinule (COGA)		Yellow-headed Blackbird (YHBL)		Blanding's Turtle (EMYBLA)	
	Number of Individuals	Acres of Habitat	Number of Individuals	Acres of Habitat	Number of Individuals	Acres of Habitat	Number of Individuals	Acres of Habitat
WETLAND SITES WITHIN CORRIDOR								
N003			0	0.000	0 - 1	0.250	0 - 1	0.250
N004			0	0.000	0	0.000	0	0.000
N005			0	0.000	2 - 6	2.375	1 - 4	2.375
N007			0	0.000	0	0.000	1 - 2	0.228
N008			0	0.000	0	0.000	0 - 1	0.271
N013			1 - 2	2.771	1 - 2	2.771	1 - 2	2.771
STREAM SITES WITHIN CORRIDOR								
N002	1 - 8	0.034						
N006	0	0						
N009	0	0						
N011	0	0						
N012	0	0						
N014	0	0						
TOTALS	1 - 8	0.034	1 - 2	2.771	3 - 9	5.396	3 - 10	5.895

Yellow-headed Blackbird

According to the timeline of the Nicor Gas pipeline project, construction in habitats that may support Yellow-headed blackbird will begin in mid to late-July, 2017 and will last until approximately October 31st. The Yellow-headed blackbird is a summer resident from mid-April to early October in northeast Illinois. Females will start constructing nests during late April/early May and egg laying will begin shortly after. Construction in habitat areas is set to start after crucial breeding time for this species which will reduce the potential effect on the survivorship of eggs, fledglings, and juveniles. According to Twedt and Crawford (1995), 3 to 6-day old nestlings have the highest mortality and would be more susceptible to the stressful conditions of construction. Male Yellow-headed blackbirds have an annual survival rate (ASR) of 58.5%, while females have an ASR of 75.3% (Twedt and Crawford 1995). The average lifespan of this species is approximately 1.9-2.1 years, and breeding begins the following spring from the time they hatch. It is unknown if any Yellow-headed blackbirds use the wetlands that will be impacted by construction. Pre-construction surveys to date (2 of 3 completed) have not detected any yellow-headed blackbirds in any potential habitat areas within or nearby the construction zone.

Activities that have the potential to take Yellow-headed blackbirds include both direct and indirect impacts. Land disturbance from open trenching has the potential to destroy nests and suitable habitat. Potential indirect impacts due to project traffic and staging of maintenance equipment within the

buffers may lead to nest abandonment. The life stages that are most at risk are eggs, nestlings, and newly-fledged young. However, potential impacts during breeding will be minimized because construction within habitat and buffer areas will not take place until after the peak breeding period for this species. Potential adverse effects to adults and fledged juveniles are not as great because they are able to flee; however, disturbing their normal behavior in this manner would still be considered a form of Take for these individuals. Note that Yellow-headed blackbird Take is not anticipated to occur in wetlands where the pipeline will be installed by boring or directional drilling, or where any work that will occur outside of a 150 ft buffer.

The location of this project in northeastern Illinois is at the edge of the species' range, and populations are naturally small. Given that, and the fact that construction will not occur in potential habitat areas until after the peak breeding period, we estimate that there may be a few individuals harassed and one nest incidentally taken. We estimate a Take of **3-9** individuals (**Table 2**). The source of take will primarily be from inadvertently destroying a nest occupied by a clutch of eggs or young and the disturbance of the female attending the nest and/or other adults disturbed by noise and construction proximity. Where Take of Yellow-headed blackbirds is presumed possible after avoidance and minimization measures (Sites N003, N005, and N0013), we estimate 3.60 acres (156,816 ft^2) of wetland habitat will be affected by open trenching (see **Table 3**). Wetland and habitat buffer impacts are temporary and disturbed areas will be restored in-kind or to better than original condition. Yellow-headed Blackbird has not been detected during the first two of three bird surveys of the potential habitat areas within the project site (**Appendix I**). Due to the marginal habitat quality, the Yellow-headed blackbird is presumed not to be present (no Take) at Site N004, but presence/absence surveys will confirm.

Common Gallinule

The Common gallinule arrives to its breeding territories in Illinois typically during mid-April to early May. In May, nests are constructed by both sexes using wetland emergent plants, and egg laying begins promptly after the nest is built (INHS 2017). The clutch size of Common gallinules is approximately 7-12 eggs, and incubation lasts 18-21 days (INHS 2017). Young gallinules will remain within parent's territories for 6 weeks after hatching. Construction in potential habitat areas is set to start after crucial breeding time which will reduce the potential effect on the survivorship of chicks hatching and the incubation process of un-hatched nests. Chicks have a high mortality rate during the first few days mostly due to predators and weather events, and after 40 days, an average of only 2.6 chicks survive (INHS 2017). It is unknown how many, if any, Common gallinule use the wetlands that will be impacted. Common Gallinule has not been detected during the first two of three bird surveys of the potential habitat areas within the project site (**Appendix I**).

Activities that may potentially take Common gallinule include both direct and indirect impacts. Land clearing activities have the potential to destroy nests and potential suitable habitat. Potential indirect impacts from project traffic and staging of maintenance equipment may lead to nest abandonment. The life stages most at risk are eggs and newly-hatched young. Young nestlings are precocious within one week of hatching. Adults and nestlings are able to flee; however, disturbing their normal behavior in this manner would still be considered harassment of these individuals. Note that a Common gallinule Take is

not anticipated to occur in wetlands where the pipeline is being rerouted around the wetland and the 150 ft buffer, nor in wetlands where pipeline will be installed by boring or directional drilling.

Because Common gallinule nests are conspicuous, it is probable that all nests will be identified during pre-construction surveys. We do not believe there will be any taking of this species, but in the interest of caution, estimate a Take of **1-2** individuals (**Table 2**). These individuals are adult birds who may be disturbed and frightened away from a nest, since both sexes incubate and tend the young. Where take of Common gallinule is presumed possible after avoidance and minimization measures (Site N0013), we estimate 1.81 acres (78,843.6 ft^2) of wetland habitat will be affected by open trenching (see **Table 3**). Wetland and habitat buffer impacts are temporary and disturbed areas will be restored in-kind or to better than original condition.

Blanding's Turtle

The Blanding's turtle is at risk specifically for adult and hatchling life stages. Eggs and nests are not believed to be at risk from this project. Mapping and subsequent field verification of soils within the project footprint indicates that there are no soils with a sandy component suitable for nesting. Many soils are silt loams. Nesting in Illinois begins in late May and early June. During this time Blanding's turtles are quite mobile moving from wetland habitats to uplands in order to dig nests and lay eggs. During this time, adult females can travel from surrounding sites and pass through the construction area to reach the wetland for refuge. In addition, normal breeding season movement places turtles at risk as they travel from wetland to wetland. Hatchlings emerge in late August to October and will use nearby wetlands for refuge, thus making them susceptible to Take if construction of the pipeline continues until the proposed date of October 31st.

The Blanding's turtle's life history strategy requires high juvenile survivorship (around 78%) and very high adult survival rates (around 94%) in order to maintain a viable population (Henning and Hinz 2016). With a delayed maturity and low reproductive output, a take of this species (especially a gravid female) can damage the local population. If the turtle is present on the site, it is uncertain how much Take may occur.

We estimate a Take of **3-10** individuals (**Table 2**). These include turtles missed during surveys to translocate from wetlands and 150 ft buffer area that will be open trenched or could be affected by a possible frac-out during HDD). Where Take of Blanding's turtle is presumed possible after avoidance and minimization measures (Sites N003, N005, N007, N008, and N0013), we estimate 4.099 acres (178,921.35 ft^2) of wetland habitat will be affected by open trenching or by the risk of frac-out by HDD(see **Table 3**). Wetland and habitat buffer impacts are temporary and disturbed areas will be restored in-kind or to better than original condition.

Slippershell Mussel

It is uncertain if the Slippershell mussel is present in the affected streams due to its dormant nature and camouflaged coloration. The site characteristics of most of the streams in the project area fit the mussels habitat requirements of creeks with mud and sand, so the possibility of the species presence is considered. Any trenching or the destruction of a creek/channel can result in the mortality of a mussel. Though unlikely, if appropriate fish hosts are killed during trenching, the possibility exists to take

Slippershell mussels during its larval stage. Another possible source of Take could be a result of sedimentation in a channel that is spanned by a temporary bridge crossing for construction vehicles. Pieces of mud may potentially fall from tires and equipment and into the water of the individual streams.

Lastly, the very act of mussel translocation is a taking of all individuals so moved. Firstly, disturbing them from their habitat is considered harassment, and secondly, some (or many) may not survive in their translocated habitat. Note that take is not anticipated in streams where the pipeline will be installed via conventional boring but some could occur with HDD.

After completing mussel surveys in all six streams crossed by the pipeline ROW, we reduced our estimate of take to **1-8** individuals (**Table 2**). These include Slippershells at Site N002 that are disturbed by handling and translocation and any missed mussels harmed by an HDD frac-out. No mussels or appropriate mussel habitat was found in any of the other stream crossing locations in the ROW (**Appendix I**). After avoidance measures at Site N002 (HDD), we estimate 0.034 acres (1,481 ft^2) of stream habitat and buffer habitat may be affected (see **Table 3**) by a frac-out. Stream and stream buffer impacts from frac-outs and from open cut of other streams (without appropriate habitat) are temporary and disturbed areas will be restored in-kind or to better than original condition.

*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).*
>
> *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.).*

Post-construction plans are in place to restore and monitor any wetlands and buffer areas impacted from the pipeline construction. Invasive species management will be another habitat improvement approach to ensure that the native plants have the ability to re-establish themselves. This will be done by spot spraying or hand applying herbicide to specific areas. Covered species will also be monitored after construction. Both bird species will be monitored for one year, and the Blanding's turtle and the slippershell mussel will be monitored for two years. If a species is not detected in a stream or wetland during pre-construction surveys or during construction, no post-construction monitoring will occur for that species at that location.

Construction handouts have been developed for each of the four species (**Appendix F**). These handouts provide identification and basic biological information, avoidance and minimization measures, and instructions to follow if a species is encountered during construction. The handouts will be posted in a prominent location, such as inside the construction trailer. Before construction begins, a qualified

biologist will train the construction personnel on these species and protocols to follow if a species is encountered.

Habitat Impact Estimates

Although avoidance and minimization efforts will be employed, some areas of suitable habitat will be unavoidable and affected by project activities. Only habitat that may support a covered species and Take that may occur is included (see **Table 1**). **Table 3** summarizes the acres of habitat (streams, stream buffers, wetlands, and wetland buffers) to be affected by pipeline replacement **after** avoidance and minimization measures such as pipeline rerouting, horizontal directional drilling (HDD), or conventional boring (CB) are in place. If a site is not thought to support a covered species (i.e. N004) or has been confirmed not to support a covered species (i.e. N006, N009, N011, N012, N014), the impact acreage is zero, even though land and wetland disturbance may occur. If construction will avoid a habitat or buffer area , the impact acreage is zero (e.g. buffers around N007 and N008). For Take estimates at HDD sites (N002, N007, and N008), we have assumed 20% of a construction area will be affected by a frac-out, should it occur. Buffers for these sites are not considered affected by a frac-out. **Table 4** summarizes the same, if no avoidance and minimization measures were employed and every wetland and stream were open trenched with no regard for species presence. The two tables illustrate that total acres impacted are nearly halved by utilizing avoidance and minimization measures.

Table 3. Impact Acres after Avoidance and Minimization Measures

Site ID	Construction Method	Habitat Impact Acres **after** Avoidance and Minimization Measures				
		Stream	Stream Buffer	Wetland	Wetland Buffer	Grand Total
WETLAND SITES WITHIN CORRIDOR						
N003	Reroute			0.000	0.250	0.250
N004	Open Cut			0.000	0.000	0.000
N005	Open Cut			1.790	0.585	2.375
N007	HDD			0.228	0.000	0.228
N008	HDD			0.271	0.000	0.271
				1.640	1.131	2.771
N013	Open Cut			(1.810)*	(0.961)*	(2.771)
STREAM SITES WITHIN CORRIDOR						
N002	HDD	0.015	0.019			0.034
N006	Conv. Bore	0	0			0
N009	Open Cut	0	0			0
N011	Open Cut	0	0			0
N012	Open Cut	0	0			0
N014	Open Cut	0	0			0
Grand Total		0.015	0.019	3.929 (4.099)*	1.966 (1.796)*	5.929 (5.929)

*Note: The proposed pipeline alignment (project ROW) may change through N013 (shift slightly north to make the alignment is straighter) and as a result impact more of the habitat (+0.17 ac) and less of the buffer (-0.17 ac).

Table 4. Impact Acres before Avoidance and Minimization Measures

Site ID	Construction Method	Habitat Impact Acres **before** Avoidance and Minimization Measures				
		Stream	Stream Buffer	Wetland	Wetland Buffer	Grand Total
WETLAND SITES WITHIN CORRIDOR						
N003	Open Cut			1.449	1.086	2.535
N004	Open Cut			0.000	0.000	0.000
N005	Open Cut			1.790	0.585	2.375
N007	Open Cut			1.140	0.644	1.784
N008	Open Cut			1.356	0.321	1.677
				1.640	1.131	2.771
N013	Open Cut			(1.810)*	(0.961)*	(2.771)
STREAM SITES WITHIN CORRIDOR						
N002	Open Cut	0.074	0.094			0.168
N006	Open Cut	0	0			0
N009	Open Cut	0	0			0
N011	Open Cut	0	0			0
N012	Open Cut	0	0			0
N014	Open Cut	0	0			0
Grand Total		0.074	0.094	7.375 (7.545)*	3.768 (3.598)*	11.310 (11.310)

*Note: The proposed pipeline alignment (project ROW) may change through N013 (shift slightly north to make the alignment is straighter) and as a result impact more of the habitat (+0.17 ac) and less of the buffer (-0.17 ac).

Species surveys, construction oversight, wildlife translocations, and follow-up site restoration and monitoring will be funded by Nicor Gas. Nicor Gas has a Senior Management approved Authorization For Expenditure (AFE), and this project is accounted for in Nicor Gas' 2017 Capital Budget.

*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, reducing the project footprint, or relocating species out of the impact area.*
- *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.*

In areas with open-cut trenching, the following precautions to avoid and minimize Take will be followed:

Yellow-headed blackbird & Common Gallinule

Construction in wetlands observed to support Yellow-headed blackbird and Common gallinule will not occur until after an ITA is obtained (mid-July at the earliest). This is after the peak of the breeding season and will minimize the risk of nest taking. During construction, a qualified biologist will be present on-site to search for birds and nests in or near the construction zone and determine if a take has

occurred. Best management practices will be in place for erosion control. Soil stockpiles and equipment may remain within the construction zone.

The IDNR's Office of Resource Conservation will be contacted at 847-608-3128 (Regional Office) or 217-557-8243 (ITA Coordinator) if a Common gallinule or Yellow-headed blackbird occupied nest is encountered in the work zone.

Blanding's turtle

During construction, exclusionary fencing will be used at trenches and excavations *at all times* during installation within areas of suitable habitat. These will be closed at the end of each work day to prevent turtles from entering the construction zones. When construction activities are to occur within the mapped habitat areas, trenches, excavations, and fencing will be inspected each morning throughout the duration of construction by trained personnel prior to work to check for trapped reptiles and amphibians.

If a Blanding's Turtle is encountered, all work will cease immediately. Construction personnel will not touch, move, or capture the turtle. The qualified biologist with a research/collection permit will capture and translocate the turtle to suitable habitat located outside of the construction zone. Appropriate turtle translocation areas will be agreed upon by Nicor Gas and the IDNR prior to construction. All turtles will be scanned for a microchip, and if no microchip is found one will be inserted. This will be coordinated with FPDKC. The IDNR's Office of Resource Conservation will be contacted at 847-608-3128 (Regional Office) or 217-557-8243 (ITA Coordinator) to report all turtle translocations. Construction can re-commence once the turtle is moved out of the construction zone.

Slippershell mussel

Before construction begins, qualified biologists will search for, capture, and translocate the mussels within construction areas. These mussels will be moved upstream of the project area to avoid any impacts from the construction. Appropriate translocation areas will be agreed upon by Nicor Gas and the IDNR before translocations occur. In the unlikely event that a Slippershell mussel is encountered during construction, all work will cease immediately. Construction personnel will not touch, move, or capture the mussel. The qualified biologist will capture and move the mussel to an approved translocation area outside of the construction zone. The encounter will be reported to the IDNR's Office of Resource Conservation at 847-608-3128 (Regional Office) or 217-557-8243 (ITA Coordinator). Construction can re-commence once the mussel is moved out of the construction zone.

In addition, the DNR ITA Program will be notified by email of any listed species found in the project area.

Site-Specific Avoidance and Minimization Measures

There are a total of six wetlands and six streams where precautionary measures will be in place to avoid or minimize impacts to species. Please refer to the maps in the Suitable Habitat Assessment (**Appendix D**) for aerial imagery of the affected areas ("Site ID") listed below in **Table 5**. A buffer (150 ft) was placed around wetlands with suitable to marginal habitat. The project has been planned to minimize construction, traffic, staging, and soil stockpiling within the mapped habitat and buffer areas to the

extent possible. Minimizing activities in the buffer areas will avoid visual and auditory indirect impacts to the bird species and help avoid turtles moving outside of wetlands. In addition, the pipeline will be rerouted around one exceptional quality wetland and its 150 ft buffer (N003 in Burnidge Preserve). Lastly, to the extent practicable, instead of open trenching, HDD or conventional boring will be used to install the pipeline beneath suitable or exceptional quality wetlands and streams. Pre-construction surveys completed to date indicate that neither bird species is present in any of the affected potential habitat areas. Slippershell mussel (and other mussels) were found only at N002 (Tyler Creek) during pre-construction surveys conducted in each stream crossing as well as the mapped buffer 20-ft upstream and 100-ft downstream of the corridor **(Appendix I)**.

Table 5. Avoidance and Minimization Measures at each Wetland or Stream

Site Code	Avoidance and Minimization Measures
WETLAND SITES WITHIN CORRIDOR	
N003	**Reroute north around wetland.** KCFPD approval is required before work can commence. Some of the work area may occur in the buffer. We are estimating 0.25 acres of buffer impact. If possible, Nicor Gas will shift the work area north out of the buffer (and proceed prior to obtaining ITA). If not possible, a qualified biologist will conduct daily turtle searches during construction in the area (and translocate found EMYBLA after obtaining the ITA). A qualified biologist has conducted pre-construction surveys (2 of 3) for EMYBLA and both birds and has found none.
N004	**Open Cut through small wetland.** Small and degraded: unlikely YHBL habitat. We assume YHBL is not present, but will conduct pre-construction presence/absence survey. If not present, construction activities will proceed prior to obtaining ITA. A qualified biologist has conducted pre-construction surveys (2 of 3) for both birds and has found none.
N005	**Open Cut through wetland.** Work area will be enclosed with silt fence at east and west end of wetland and buffer. Three hoop nets will be used to capture and translocate turtles. We assume COGA is not present, and YHBL is present for calculating Take. A qualified biologist has conducted pre-construction surveys (2 of 3) for EMYBLA and both birds and has found none. Construction will start in this wetland after obtaining the ITA because EMYBLA may be present. Daily turtle searches will be conducted during construction in the area and found EMYBLA will be translocated. Birds will not be monitored during construction if neither covered species is found during pre-construction surveys.
N007	**HDD under large wetland.** Construction disturbance (e.g. drill rig) will occur outside of buffer, thus, no bird impacts. Very unlikely, but possible, impact to EMYBLA from frac-out. Horizontal Directional Drill (HDD) Contingency plan and equipment to contain and clean up inadvertent returns will be readily available on site. HDD will begin prior to obtaining the ITA. As a precaution, two qualified inspectors will monitor the drilling alignment (project ROW) for frac-outs or EMYBLA during drilling. If a frac-out occurs, drilling will stop until the frac-out is cleaned up. If EMYBLA is found within the ROW, drilling will stop until the EMYBLA moves out of the ROW.
N008	**HDD under large pond.** Construction disturbance (e.g. drill rig) will occur outside buffer, thus, no bird impacts. Very unlikely, but possible, impact to EMYBLA from frac-out. Horizontal Directional Drill (HDD) Contingency plan and equipment to contain and

Site Code	Avoidance and Minimization Measures
	clean up inadvertent returns will be readily available on site. HDD will begin prior to obtaining the ITA. As a precaution, two qualified inspectors will monitor the drilling alignment (project ROW) for frac-outs or EMYBLA (in habitat areas) during drilling. If a frac-out occurs, drilling will stop until the frac-out is cleaned up. If EMYBLA is found within the ROW, drilling will stop until the EMYBLA moves out of the ROW.
N013	**Open Cut through wetland.** Exclusionary silt fencing will be installed around the entire right of way. No trapping will be needed. Will conduct pre-construction searches and daily turtle searches during construction in the construction area and translocate found EMYBLA after obtaining the ITA. For Take estimates, we are assuming birds (COGA and YHBL) are present and some Take (from harassment) may occur. A qualified biologist has conducted pre-construction surveys (2 of 3) for EMYBLA and both birds and has found none. Construction will start in this wetland after obtaining the ITA because EMYBLA may be present. Daily turtle searches will be conducted during construction in the area and found EMYBLA will be translocated. Birds will not be monitored during construction if neither covered species is found during pre-construction surveys.
STREAM SITES WITHIN CORRIDOR	
N002	**HDD under RR tracks and stream.** A pre-construction survey of this stream found a slippershell mussel (ALAVIR) and other mussels. Since ALAVIR is present, construction activities will wait until after the ITA is obtained. We will search and translocate mussels before construction (20 ft upstream to 100 ft downstream of work area).
N006	**Conventional boring under stream.** No risk of impact to stream or take of mussel (ALAVIR) from boring. Bridge will be constructed over this stream to allow for construction vehicles to pass. Mud from tires could fall into stream and impact habitat. Precautions will be taken to prevent mud from falling into stream. A pre-construction survey of this stream found no mussels or appropriate habitat. Construction will begin in this area prior to obtaining the ITA.
N009	**Open Cut through stream.** A pre-construction survey of this stream found no mussels or appropriate habitat. Construction will begin in this area prior to obtaining the ITA.
N011	**Open Cut through stream.** A pre-construction survey of this stream found no mussels or appropriate habitat. Construction will begin in this area prior to obtaining the ITA.
N012	**Open Cut through stream.** A pre-construction survey of this stream found no mussels or appropriate habitat. Construction will begin in this area prior to obtaining the ITA.
N014	**Open Cut through stream.** A pre-construction survey of this stream found no mussels or appropriate habitat. Construction will begin in this area prior to obtaining the ITA.

Mitigation

Nicor Gas will mitigate for potential impacts to the four listed species by supporting the Forest Preserve District of Kane County's (FPDKC) conservation efforts. Nicor Gas will complete $150,000 worth of habitat restoration project(s) selected by the FPDKC in their preserves that will benefit the Blanding's turtle as well as the yellow-headed blackbird and Common gallinule. Nicor Gas will also provide a $100,000 donation to the FPDKC Foundation to fund FPDKC's collaboration with the Urban Stream Research Center (run by DuPage County Forest Preserve District) to conduct research and possible

reintroduction of the Slippershell mussel. Other possible options include supporting Blanding's turtle captive rearing (i.e. Head Start program).

This mitigation is equivalent to approximately 2X the cost of restoring habitat impacted during this project. Impacts to 4.01 acres of wetland habitat at $19,000/ac (including maintenance and monitoring) (X2) is approximately $150,000. Four streams that are open cut through a 60-ft wide construction zone is 240 linear feet (lf), plus the partial potential impacts at two drilling sites may result in up to 24 feet of impacts (2 X 60' X 20%). Therefore, 264 linear feet (lf) of stream impacted at $190/lf (X2) is approximately $100,000. This mitigation is in addition to the restoration of the impacted habitat areas (see Habitat Restoration and Monitoring section below); thus, total mitigation is 3X the impacted areas.

*D) Plans for **monitoring** the effects of the proposed actions on endangered or threatened species, such as monitoring the species' survival rates, reproductive rates, and habitat before and after construction, include a plan for follow-up **reporting to IDNR**. Monitoring surveys should be targeted at reducing the uncertainty identified in Section 1.d.*

Habitat Restoration and Monitoring

During the pipeline installation activities, Nicor Gas will segregate and stockpile topsoil within the Nicor Gas easements and rights-of-way (ROWs). The underlying subsoil will be stockpiled in a separate location within the easements and ROWs. After the installation of the pipeline, all disturbed areas will be restored to original contours and the function of the removed herbaceous plants will be replaced. The excavated native soils will be returned to their original depths. The plant communities will be consistent with the species found on the undisturbed portions of each of the identified wetlands/drainage features, or for the identified wetland, drainage and buffer areas that exhibited low plant diversity, these areas will be enhanced with a more diverse plant community, including pollinator plant species.

A streambank stabilization seed mix with cover crop is proposed to be placed on all disturbed areas along the banks of the drainage features, and a tall mesic prairie seed mix is proposed to be placed on all disturbed areas within the natural-vegetated buffer areas. The existing streambeds within Eakin Creek Tributary A, and Tyler Creek and its associated tributaries generally consists of silt, a concrete erosion control mat (a tributary to Tyler Creek), and/or rocks with some limited low-quality wetland vegetation. The streambeds will be replaced with the excavated material with the exception of the concrete material. Gravel will be placed on the surface of the stream bed to minimize erosion, and a turf reinforcement mat will be set in place along the banks to help stabilize the area.

An emergent and/or an emergent shoreline seed mix with a temporary cover crop is proposed to be placed on the disturbed wetland areas, and a tall mesic prairie seed mix is proposed to be placed on all disturbed areas within the natural-vegetated wetland buffer areas. Nicor Gas will restore the wetlands and their associated buffers at a 1:1 ratio back to its pre-existing condition with equal or higher native

Floristic Quality Indexes (FQIs). An erosion control blanket will be placed on the seeded areas to help stabilize the area.

The restored areas will be monitored for a period of five years, or less if the performance criteria are satisfied prior to the end of this period. Although the planting plan is intended to enhance the wetland areas and buffers, Nicor Gas will not be able to control the negative offsite influences from the remaining wetland and buffer areas during restoration or beyond the 5-year monitoring period. Furthermore, the drainage features, wetlands, and associated buffers will be restored to pre-existing elevations, and 90% coverage will be established within the two-year monitoring period. The proper soil erosion and sediment control measures will be installed and left in place until 70% or more vegetation has been established.

Wildlife Monitoring

Wildlife monitoring will occur during the first two years after-construction. Details are as follows.

Yellow-headed blackbird & Common gallinule
Two years of post-construction monitoring using point counts is proposed in all potential habitat areas (see HSA maps in Appendix D) where these species were found during pre-construction surveys. Only one year of post-construction monitoring will occur in all potential habitat areas where these species were not found during pre-construction surveys.

Blanding's turtle
Translocated turtles will be scanned for microchips. A microchip will be inserted in turtles that do not already have one. This will be coordinated with the FPDKC and data will be provided to this agency for their records and research. Findings will add to the general pool of knowledge on the Blanding's turtle local range and seasonal movement. In addition, Nicor Gas will visually monitor turtle use of impacted habitat areas for two years using time and area constraint searches, basking searches, and nesting/habitat searches.

Slippershell Mussel
Post-construction surveys will be conducted in both the confirmed habitat areas and in the translocation areas for two years. In the potentially impact areas, the surveys will determine whether the mussels have recolonized these previously used areas. Within the translocation areas, surveys will reveal whether the mussel persists in these areas.

Reporting

Post-construction reports for species monitoring will be submitted each year surveys are conducted. Vegetation monitoring reports will be submitted in Years Two and Five after construction or sooner if performance standards are met.

*E) **Adaptive management practices** that will be used to deal with changed or unforeseen circumstances that may affect the endangered or threatened species.*

- *Adaptive management is a way to make decisions in the face of uncertainty by monitoring the uncertain element over time and adjusting to the new information. Adaptive management requires identifying objectives and uncertainties, thinking through a range of potential outcomes, developing triggers that will lead to different actions being taken, and monitoring to detect those triggers.*
- *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.*

If any new information is discovered before or during construction that may impact the effectiveness of this conservation plan, Nicor Gas will report to the IDNR with a description of the unanticipated circumstances or new information and propose modifications to the Conservation Plan. Since this would likely occur during or post construction, Nicor Gas will request a timely response from the IDNR in order to keep the project moving while work is being conducted in or in the vicinity of the covered species habitat.

Prior to any expected rain event, the following steps will be taken to contain any sediment within the project site. See the Plan Set in **Appendix B** for erosion and sediment control plan details.

- All soil piles and exposed soil areas in proximity to habitat areas will be surrounded by silt fence, as necessary.
- All open catch basins will be inspected to ensure they are properly protected with fabric and/or plastic sheeting.
- All silt fence and coconut rolls/eel logs will be inspected and repairs and/or additions will be made as necessary.

All equipment required to contain and clean up a frac-out will be available at the work site. This equipment includes the following:

- Heavy weight plastic clean gravel filled sand bags or eel logs;
- Several hard plastic buckets (5 gallon);
- Silt fence;
- Coconut rolls/eel logs;
- Vacuum truck;
- metal containment boxes;

See **Appendix E** for Nicor Gas' Directional Drilling Contingency Plan.

During key construction times, a qualified wildlife biologist will be on site or on call to ensure that if any uncertainties arise, there will be a professional opinion provided. In the event of an environmental variable (such as flooding, drought, or any other catastrophe), Environmental inspectors or the qualified wildlife biologist will assist Nicor Gas staff when unanticipated conditions arise to ensure that construction is complaint with permit conditions.

*F) **Verification that adequate funding exists** to support and implement all minimization and 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.*

As previously mentioned, Nicor Gas has a Senior Management approved Authorization For Expenditure (AFE) and this project is accounted for in Nicor Gas' 2017 Capital Budget.

*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.*

- *Consideration of **alternative actions** is an important tool in conservation planning as it allows for thinking of other options and evaluating the potential outcomes in terms of all relevant objectives. However, to be useful it requires creativity in developing alternatives and systematic analysis in evaluating the alternatives.*
- *In evaluating alternatives, describe the economic, social, and ecological tradeoffs of each.*

Three alternatives were evaluated: the preferred alternative, a reduced impact alternative, and a no action alternative.

Preferred Alternative: To replace approximately 8 miles of existing 22" 1959 steel pipe with 30" 2017 steel pipe within an existing pipeline corridor that will provide:

- Increased natural gas capacity that will allow for continued safe, reliable natural gas to our customers.
- Benefits of modern materials and technology for enhanced system integrity and to replace aging infrastructure

Installation of the 30" pipeline will be constructed using various approved installation methods including: Horizontal Direction Drilling (HDD), Conventional Bore and Open Trenching. Installation method along the route is based on existing conditions, type of terrain and impacts to the area. HDD and Bore will be utilized in sensitive areas to minimize disturbance. The existing 22" pipe is to be retired in place and filled with grout to minimize any impact to existing site conditions.

Entire length of pipeline corridor will be delineated with silt fence prior to any construction activity to maintain and minimize construction footprint and traffic. Environmental inspectors will be on site to ensure fencing is properly installed and maintained throughout construction.

Planned construction timeline is Mid-June 2017 to December 2017.

Reduced Impact Alternative study is not optimal. The alternative to HDD or Bore all sensitive areas has been reviewed with the following outcomes:

- Open excavation is the preferred method of install for large pipeline projects. Open exaction allows for Nicor Gas to visual inspect the gas pipeline during installation and allow for the proper backfill material to be used to avoid any damage to the coating of our pipeline.

- Existing pipe corridor is land locked with limited access to heavy construction equipment, open cut method allows construction pathway along ROW and within limits of ROW

- Construction window is very condensed with construction start in mid-June 2017 and goes through October 2017. Any bore option is time consuming and unobtainable to complete prior to 2017 heating season

- Contractor resources are limited. HDD bore equipment is extremely massive and with limited availability as well as the skilled labor to run the equipment

No Action Alternative is not optimal. On a continuous basis, Nicor Gas reviews its current infrastructure to identify key strategic improvements that are required within our gas system. The replacement of our 22" gas line with a 30" pipeline is a direct result of our foresight and strategic planning. With this replacement, Nicor Gas will continue to provide safe, reliable natural gas to our customers.

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.*

Nicor Gas's pipeline replacement project will have no lasting effect on the survival of the four covered species. The amount of habitat affected by the project is miniscule compared to the habitat available within each species' range. Furthermore, most habitats that will be impacted are low to moderate quality and the local populations of target species within these habitats is likely very small or absent. Though a few individuals may be taken, the mitigation measures will more than offset the losses from Take. Less than 4 acres of suitable wetland habitat and 270 linear feet of stream will be affected by project activities. Proposed mitigation is at least 3X the potential impacts. As a result, the habitat impacts and Take resulting from this project will not reduce the likelihood of survival of these species within the State of Illinois or the habitat upon which they depend.

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

A) 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.*

The signed implementing agreement is included as **Appendix G**.

List of Exhibits and Appendices

Exhibit 1 – Project Location Map

Appendix A – Address List for Dubuque Line Replacement

Appendix B – Dubuque Line Replacement Plan Set (selected sheets)

Appendix C – Site Photographs

Appendix D – Nicor Pipeline HSA Methods Memo

Appendix E – Nicor Gas Contingency Plan for Directional Drilling

Appendix F – Listed Species Fliers

Appendix G – Nicor Gas Implementing Agreement

Appendix H – Endangered Species Act (ESA) Section 7 Review

Appendix I – Pre-Construction Survey Results

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APPENDIX A

Address List for Dubuque Line Replacement

Appendix A. Property Owners

LINE SEGMENT	COUNTY	TOWNSHIP	SECTION	TAX MAP	PIN	DUBUQUE ROW PARCEL NUMBER	PLAN SHEET NUMBER	OWNER NAME 1	OWNER NAME 2	ADDRESS 1	ADDRESS 2	CITY	STATE	ZIP CODE	ORIENTATION
2	Kane	Hampshire	24	01-24	01-24-400-009	K-10A	44, 43, 42	Township of Hampshire	Hampshire Cemetery Trustees	P. O. Box 833		Hampshire	Illinois	60140	Ketchum to Rt 20
			24	01-24	01-24-100-008	K-10A		Forest Preserve District of Kane County	Hampshire Forest Preserve	1996 S. Kird Road / Suite 320		Geneva	Illinois	60134	Ketchum to Rt 20
3	Kane	Hampshire	24	01-24	01-24-200-004	K-11A	42, 41	Frank Mestek	Mestek II Family LP	4703 Lighthouse Lane		Naples	Florida	34112	Rt 20 to Rt 47
			24	24-Jan	01-24-200-005	K-11A		Hampshire East LLC	Real Estate Division	1751 W. Diehl Road / Unit A		Naperville	Illinois	60563	Rt 20 to Rt 47
			24	01-24	01-24-400-033	K-12A	41	Hampshire East LLC	Real Estate Division	1751 W. Diehl Road / Unit A		Naperville	Illinois	60563	Rt 20 to Rt 47
			24	01-24	01-24-400-034	K-12A		Hampshire East LLC	Real Estate Division	1751 W. Diehl Road / Unit A		Naperville	Illinois	60563	Rt 20 to Rt 47
			24	01-24	01-24-400-031	K-13A	40, 39	Hampshire East LLC	Real Estate Division	1751 W. Diehl Road / Unit A		Naperville	Illinois	60563	Rt 20 to Rt 47
			24	01-24	01-24-400-040	-		Rubina Mirza		2821 Virginia Avenue		Poplar Bluff	Missouri	63901	Rt 20 to Rt 47
	Kane	Rutland	19	02-19	02-19-300-001	K-13A	40, 39	Hampshire East LLC	Real Estate Division	1751 W. Diehl Road / Unit A		Naperville	Illinois	60563	Rt 20 to Rt 47
			19	02-19	02-19-300-002	K-14A	39, 38	Helen Schramm	Trust 101	43W916 US Highway 20		Hampshire	Illinois	60140	Rt 20 to Rt 47
			19	02-19	02-19-300-003	-		Helen Schramm	Trust 101	43W916 US Highway 20		Hampshire	Illinois	60140	Rt 20 to Rt 47
			19	02-19	02-19-300-004	K-15A	38, 37	Robert & Evelyn Conro	RG Conro Trust 1 & EG Conro Trust 1	43W708 US Highway 20		Hampshire	Illinois	60140	Rt 20 to Rt 47
			19	02-19	02-19-400-003	-		Glen Nissen	Trust	P. O. Box 459		Hampshire	Illinois	60140	Rt 20 to Rt 47
			30	03-30	02-30-100-013	K-15A	38, 37	Robert & Evelyn Conro	RG Conro Trust 1 & EG Conro Trust 1	43W708 US Highway 20		Hampshire	Illinois	60140	Rt 20 to Rt 47
			30	03-30	02-30-200-012	K-16A	37, 36	OSM Pingree Grove LLC		1145 S. Illinois Route 31 / Suite 1		Crystal Lake	Illinois	60014	Rt 20 to Rt 47
			30	03-30	02-30-200-007	K-17A	36, 35	OSM Pingree Grove LLC		1145 S. Illinois Route 31 / Suite 1		Crystal Lake	Illinois	60014	Rt 20 to Rt 47
4	Kane	Rutland	30	03-30	02-30-200-006	K-17A STATION 299	35	K. P. Poppen Family Trust	Linda Poppen Knight	751 Scott Drive		Elgin	Illinois	60123	Rt 47 to Rt 72
			29	02-29	02-29-100-001	K-17A	35, 34	K. P. Poppen Family Trust	Linda Poppen Knight	751 Scott Drive		Elgin	Illinois	60123	Rt 47 to Rt 72
			29	02-29	02-29-100-005	K-18A		DRH Cambridge Homes Inc		800 S. Milwaukee Avenue / Suite 250		Libertyville	Illinois	60048	Rt 47 to Rt 72
			29	02-29	02-29-200-009	K-18A	34, 33, 32	DRH Cambridge Homes Inc		800 S. Milwaukee Avenue / Suite 250		Libertyville	Illinois	60048	Rt 47 to Rt 72
			29	02-29	02-29-200-007	K-18A		DRH Cambridge Homes Inc		800 S. Milwaukee Avenue / Suite 250		Libertyville	Illinois	60048	Rt 47 to Rt 72
			29	02-29	02-29-100-008	K-20A	32, 31, 30	DRH Cambridge Homes Inc		800 S. Milwaukee Avenue / Suite 250		Libertyville	Illinois	60048	Rt 47 to Rt 72
			28	02-28	02-28-100-015	K-20A		DRH Cambridge Homes Inc		800 S. Milwaukee Avenue / Suite 250		Libertyville	Illinois	60048	Rt 47 to Rt 72
5	Kane	Rutland	28	02-28	02-29-426-001	-		Daniel Saraceno		1064 White Pine Trail		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			28	02-28	02-28-315-005	K-20A	30, 29	L. J. Morse Development Company LLC		128 S. Broadway		Aurora	Illinois	60504	Rt 72 to Damsich
			28	02-28	02-28-315-001	-		L. J. Morse Development Company LLC		128 S. Broadway		Aurora	Illinois	60504	Rt 72 to Damsich
			28	02-28	02-28-305-031	-		Cambridge Lakes Townhome Owners Associaton No 2		355 W. Dundee Road / Suite 110		Buffalo Grove	Illinois	60089	Rt 72 to Damsich
			28	02-28	02-28-330-003	-		Cambridge Lakes Townhome Owners Associaton No 3		750 W. Lake-Cook Road / Suite 190		Buffalo Grove	Illinois	60089	Rt 72 to Damsich
			28	02-28	02-28-330-002	K-20A K-21A	29, 28	Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			28	02-28	02-28-455-001	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			28	02-28	02-28-378-001	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			28 & 33	02-28 02-33	02-28-460-001	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			28 & 33	02-28 02-33	02-28-460-002	K-21A	28, 27	Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			28 & 33	02-28 02-33	02-28-460-003	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-201-020	K-21A	27	Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-201-031	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-226-004	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-226-011	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damisch
			33	02-33	03-33-227-002	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-227-001	K-22A	26, 25, 24	Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-229-011	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-229-001	K-22A	26, 25, 24	Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-230-013	K-22A		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			33	02-33	02-33-230-012	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			34	02-34	02-34-101-013	K-22A	26, 25, 24	Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			34	02-34	02-34-111-005	K-22A		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			34	02-34	02-34-101-012	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			34	02-34	02-34-110-002	-		Village of Pingree Grove		14N042 Reinking Road		Pingree Grove	Illinois	60140	Rt 72 to Damsich
			34	02-34	02-34-100-002	K-23A	24, 23	RFJ Pingree Creek LLC		1012 Hawthorne Lane		Geneva	Illinois	60134	Rt 72 to Damsich
			34	02-34	02-34-100-003	K-23A		RFJ Pingree Creek LLC		1012 Hawthorne Lane		Geneva	Illinois	60134	Rt 72 to Damsich

LINE SEGMENT	COUNTY	TOWNSHIP	SECTION	TAX MAP	PIN	DUBUQUE ROW PARCEL NUMBER	PLAN SHEET NUMBER	OWNER NAME 1	OWNER NAME 2	ADDRESS 1	ADDRESS 2	CITY	STATE	ZIP CODE	ORIENTATION
6	Kane	Rutland	34	02-34	02-34-100-003	K-23A	24, 23	RFJ Pingree Creek LLC		1012 Hawthorne Lane		Geneva	Illinois	60134	Damisch to McCornack
			34	02-34	02-34-100-004	K-23A		RFJ Pingree Creek LLC		1012 Hawthorne Lane		Geneva	Illinois	60134	Damisch to McCornack
			34	02-34	02-34-200-003	K-24A	23, 24	Nicor Gas	Dubuque ROW Parcel K-24A						Damisch to McCornack
			34	02-34	02-34-200-013	-		Michael Peterson		14N523 Highland Avenue		Elgin	Illinois	60124	Damisch to McCornack
			34	02-34	02-34-200-017	-		William & Mary Peterson	W. Peterson Trust No 1216961 M. Peterson Trust No 1216962	14N515 Highland Avenue		Elgin	Illinois	60124	Damisch to McCornack
			34	02-34	02-34-200-010	-		Brian & Jennifer Dougherty		14N362 McCornack Road		Elgin	Illinois	60124	Damisch to McCornack
			34	02-34	02-34-200-016	K-25A	22, 21	HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	Damisch to McCornack
			34	02-34	02-34-200-015	K-25A		HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	Damisch to McCornack
			34	02-34	02-34-476-016	-		HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	Damisch to McCornack
7	Kane	Rutland	34	02-34	02-34-476-026	K-25A	22, 21	Donald Miller		15374 Farm School Road		Durand	Illinois	61024	McCormack to Coombs
			34	02-34	02-34-200-005	-		HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	McCormack to Coombs
			35	02-35	02-35-300-006	K-27A	21, 20, 19	Nicor Gas	Dubuque ROW Parcel K-27A						McCormack to Coombs
			35	02-35	02-35-300-003	-		HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	McCormack to Coombs
			35	02-35	02-35-300-004	-		HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	McCormack to Coombs
			35	02-35	02-35-100-005	-		HPI-Elgin East LLC	Paquinelli Construction Co	535 Plainfield Road / Suite B		Willowbrook	Illinois	60527	McCormack to Coombs
			35	02-35	02-35-400-034	-		John & Elizabeth Fraccaro		9N680 Pueblo Peak		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-012	K-28AB		Scott Moore		14N200 Cody Court		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-011	K-28AB		Michael & Candice Moss	M & C Moss Revocable Trust	14N204 Cody Court		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-010	K-28AB		Eric & Michelle Anderson		14N201 Cody Court		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-05-454-009	K-28AB	19, 18	Jeffrey & Donna Commans		14N187 Cody Court		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-003	K-28AB		Gerald & Sharon Mueller	G Mueller Living Trust S Mueller Living Trust	14N190 Gunpowder Lane		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-002	K-28AB		Frank & Nancy Oliver		14N220 Gunpowder Lane		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-002	K-28AB		William & Cathy Nolte		14N179 Gunpowder Lane		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-454-002	K-28AB		Richard & Lauren McCaleb	R & L McCaleb Revocable Joint Trust	14N215 Gunpowder Lane		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-032	K-29A	18, 17, 16	Nicor Gas	Dubuque ROW Parcel K-29A						
			35	02-35	02-35-400-021	-		Judith Lepianka	Trust	39W192 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-025	-		James Hearley		39W183 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-026	-		Scot & Kristin Hendry		39W121 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-020	-		Jeffrey Seagren		39W168 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-014	-		Jeffrey Seagren		39W168 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-015	-		Christopher & Ana Lenz		39W136 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-016	-		William & Judith Crawford		39W116 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-018	-		Brett & Deborah Vence		39W100 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
			35	02-35	02-35-400-019	-		David & Beverly Saiz	D Saiz Trust B Saiz Trust	14N130 Hidden Knoll Road		Elgin	Illinois	60124	McCormack to Coombs
8	Kane	Rutland	35	02-35	02-35-400-033	K-29A	18, 17, 16	Nicor Gas	Dubuque ROW Parcel K-29A						Coombs to Madeline
			35	02-35	02-35-400-009	-		Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
			36	02-36	02-36-300-003	K-29A	18, 17, 16	Nicor Gas	Dubuque ROW Parcel K-29A						Coombs to Madeline
			36	02-36	02-36-300-005	K-30A	16, 15	Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
	Kane	Elgin	6	06-06	06-06-100-002	-		Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
			6	06-06	06-06-200-004	K-30AB		Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
			6	06-06	06-06-200-003	K-31A	15, 14	Nicor Gas	Dubuque ROW Parcel K-31A						Coombs to Madeline
			5	06-05	06-05-300-012	-		Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
			5	06-05	06-05-100-005	K-32A	14	Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
			5	06-05	06-05-300-001	K-33A	13	Nicor Gas	Dubuque ROW Parcel K-33A						Coombs to Madeline
			5	06-05	06-05-300-003	-		Forest Preserve District of Kane County	Burnidge Forest Preserve	1996 S. Kirk Road / Suite 320		Geneva	Illinois	60134	Coombs to Madeline
			5	06-05	06-05-502-002	C&NW RY UP RR	13	Union Pacific Railroad	Property Tax Department	1700 Farnam Street / 10th Floor South		Omaha	Nebraska	68102	Coombs to Madeline
			5	06-05	06-05-300-004	K-34A	13, 12	Nicor Gas	Dubuque ROW Parcel K-34A						Coombs to Madeline
			5	06-05	06-05-326-001	-		Randal Point Business Center Owners Association	Pancer Construction	2175 Point Boulevard / Suite 125		Elgin	Illinois	60123	Coombs to Madeline
			5	06-05	06-05-326-002	-		The Realty Associates Fund IX LP	TA Associates Realty	28 State Street / Floor 10		Boston	Massachusetts	2109	Coombs to Madeline
			5	06-05	06-05-199-003	-		PCUSIFII Randal Point 1 LLC		13600 Heritage Parkway / Suite 200		Fort Worth	Texas	76177	Coombs to Madeline
			5	06-05	06-05-100-003	-		Three Fires Council Inc	Boy Scouts of America	415 N. Second Street		St Charles	Illinois	60174	Coombs to Madeline
			5	06-05	06-05-400-001	K-35A	12	Nicor Gas	Dubuque ROW Parcel K-35A						Coombs to Madeline

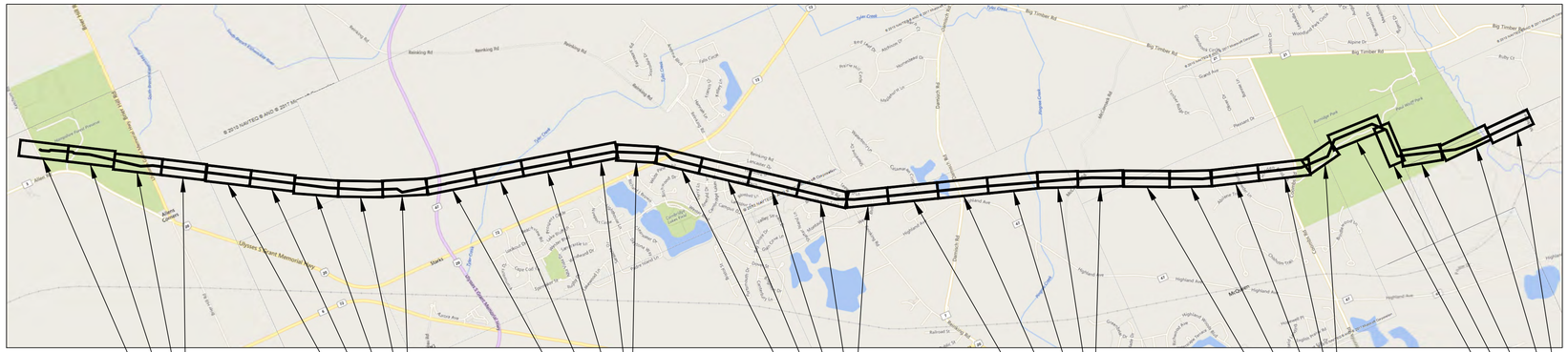
APPENDIX B

Dubuque Line Replacement Plan Set (selected sheets)

Coversheet provided,
other sheets available upon request

DRAWING -	SHEET	DESCRIPTION
DI-	001	LOCATION MAP & DRAWING INDEX
DI-	002	GENERAL CONSTRUCTION NOTES
DI-	003	RETIREMENT SITE PLAN
DI-	004	INSTALLATION SITE PLAN
DI-	005	ACCESS ROUTE PLAN & DETAILS
DI-	006	ACCESS ROUTE PLAN & DETAILS
DI-	007	ACCESS ROUTE PLAN & DETAILS
DI-	008	ACCESS ROUTE PLAN & DETAILS
DI-	009	BURNIDGE FOREST PRESERVE ACCESS AND TEMPORARY WORKSPACE
DI-	010	HAMPSHIRE FOREST PRESERVE ACCESS AND TEMPORARY WORKSPACE
DI-	011	STA. 0+00 TO STA. 10+00
DI-	012	STA. 10+00 TO STA. 23+00
DI-	013	STA. 23+00 TO STA. 36+00
DI-	014	STA. 36+00 TO STA. 49+00
DI-	015	STA. 49+00 TO STA. 62+00
DI-	016	STA. 62+00 TO STA. 72+00
DI-	017	STA. 72+00 TO STA. 76+00
DI-	018	STA. 76+00 TO STA. 88+00
DI-	019	STA. 88+00 TO STA. 101+00
DI-	020	STA. 101+00 TO STA. 114+00
DI-	021	STA. 114+00 TO STA. 127+00
DI-	022	STA. 127+00 TO STA. 138+00
DI-	023	STA. 138+00 TO STA. 152+00
DI-	024	STA. 152+00 TO STA. 166+00
DI-	025	STA. 166+00 TO STA. 179+00
DI-	026	STA. 179+00 TO STA. 191+00
DI-	027	STA. 191+00 TO STA. 205+00
DI-	028	STA. 205+00 TO STA. 218+00
DI-	029	STA. 218+00 TO STA. 231+00
DI-	030	STA. 231+00 TO STA. 244+00
DI-	031	STA. 244+00 TO STA. 257+00
DI-	032	STA. 257+00 TO STA. 270+00
DI-	033	STA. 270+00 TO STA. 283+00
DI-	034	STA. 283+00 TO STA. 296+00
DI-	035	STA. 296+00 TO STA. 309+00
DI-	036	STA. 309+00 TO STA. 322+00
DI-	037	STA. 322+00 TO STA. 335+00
DI-	038	STA. 335+00 TO STA. 348+00
DI-	039	STA. 348+00 TO STA. 361+00
DI-	040	STA. 361+00 TO STA. 374+00
DI-	041	STA. 374+00 TO STA. 386+00
DI-	042	STA. 386+00 TO STA. 400+00
DI-	043	STA. 400+00 TO STA. 413+00
DI-	044	STA. 413+00 TO STA. 418+63.69
DI-	045	PROPOSED MAINLINE VALVE INSTALLATION PLAN
DI-	046	STATION 299 FEED RETIREMENT PLAN
DI-	047	PROPOSED MAINLINE VALVE SECTIONS A-A, B-B, & C-C
DI-	048	PROPOSED MAINLINE VALVE TIE-IN PLAN & SECTIONS D-D, E-E, F-F & G-G
DI-	049	PROPOSED MAINLINE VALVE VALVE CROSS OVER DETAIL & SECTION H-H
DI-	050	PROPOSED MAINLINE VALVE FENCE DETAILS
DI-	051	TIE-IN DETAILS & FOREIGN LINE CROSSINGS
DI-	052	UNION PACIFIC RAILROAD AND TYLER CREEK CROSSING DETAIL STA. 5+00 TO STA. 19+00
DI-	053	COOMBS ROAD CROSSING DETAIL STA. 64+00 TO STA. 68+00
DI-	054	GUNPOWDER LANE CROSSING DETAIL STA. 81+00 TO STA. 85+00
DI-	055	STREAM SITE 14 CROSSING DETAIL STA. 138+00 TO STA. 143+00
DI-	056	CAMBRIDGE LAKES SUBDIVISION POND CROSSING DETAIL STA. 156+00 TO STA. 192+00
DI-	057	REINKING ROAD CROSSING DETAIL STA. 190+00 TO STA. 195+00
DI-	058	CAMBRIDGE LAKES DRIVE CROSSING DETAIL STA. 226+00 TO STA. 230+00
DI-	059	HIGHWAY 72 CROSSING DETAIL STA. 240+00 TO STA. 244+00
DI-	060	STREAM SITE 4 CROSSING DETAIL STA. 288+00 TO STA. 293+00
DI-	061	HIGHWAY 47 CROSSING DETAIL STA. 304+00 TO STA. 309+00
DI-	062	HIGHWAY 20 CROSSING DETAIL STA. 386+00 TO STA. 390+00
DI-	063	UNION PACIFIC RAILROAD CROSSING PERMIT
DI-	064	HYDROSTATIC TEST PROFILE (STA. 0+00 TO 110+00)
DI-	065	HYDROSTATIC TEST PROFILE (STA. 110+00 TO 230+00)
DI-	066	HYDROSTATIC TEST PROFILE (STA. 230+00 TO 350+00)
DI-	067	HYDROSTATIC TEST PROFILE (STA. 350+00 TO 418+63.69)
DI-	068	TESTING SCHEMATIC
DI-	069	BILL OF MATERIAL
DI-	070	SOIL BORES LOGS SB-01 THROUGH SB-03
DI-	071	SOIL BORES LOGS SB-04 THROUGH SB-06
DI-	072	SOIL BORES LOGS SB-07 THROUGH SB-09
DI-	073	SOIL BORES LOGS SB-10 THROUGH SB-11

NICOR GAS
CENTRAL TRANSMISSION
DUBUQUE LINE REPLACEMENT
30" REPLACEMENT
ELGIN, PINGREE GROVE, AND HAMPSHIRE, ILLINOIS
W.O. 108584/308584



DRAWING -	SHEET	DESCRIPTION
DI-	074	SURVEY BENCHMARKS
DI-	075	TYPICAL PIPELINE CONSTRUCTION DETAILS
DI-	076	TYPICAL PIPELINE CONSTRUCTION DETAILS
DI-	077	TYPICAL PIPELINE CONSTRUCTION DETAILS
DI-	078	TYPICAL WATERBODY & WETLAND CROSSING DETAILS
DI-	079	TYPICAL HYDROSTATIC TEST DISCHARGE DETAILS
DI-	080	TYPICAL HYDROSTATIC TEST DISCHARGE DETAILS
DI-	081	TYPICAL EROSION CONTROL NOTES AND DETAILS
DI-	082	TYPICAL EROSION CONTROL NOTES AND DETAILS
DI-	083	TYPICAL TRAFFIC CONTROL DETAILS
DI-	084	TYPICAL TEMPORARY CONCRETE BARRIER DETAILS
DI-	085	CORROSION PROTECTION AND TEST STATION DETAILS
DI-	086	TYPICAL PIPELINE MARKER DETAILS
DI-	087	TEST DATA
DI-	088	TEST DATA

N

LOCATION MAP

ELGIN, PINGREE GROVE, AND HAMPSHIRE, ILLINOIS
(NOT TO SCALE)

Call Before You Dig
JULIE
ILLINOIS ONE CALL SYSTEM
SIMPLY CALL 811

DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.

PREPARED BY:
ENengineering
28100 TORCH PARKWAY
WARRENVILLE, IL 60555
TEL 630-353-4000
FAX 630-353-7777
WWW.ENENGINEERING.COM

SEALED BY:

SIGNATURE

SEALED ON:

LICENSE EXPIRATION:

REV LEVEL	DATE	BY	DESCRIPTION	CK.	APP.
1	4/13/2017	EW	ISSUED FOR BID	PW	AJ
0	3/30/2017	EW	ISSUED FOR PRELIMINARY BID	PW	AJ
A	2/28/2017	EW	ISSUED FOR 30% REVIEW	CS	AJ

REVISIONS

PREPARED FOR: Nicor Gas

WORK ORDER NO. 108584/308584

NICOR JOB NO. PRIM404

ENE PROJECT NO. F730000.01

DUBUQUE LINE REPLACEMENT

30" REPLACEMENT
DUBUQUE LINE STATION 95 TO STATION 319
LOCATION MAP & DRAWING INDEX

DATE:	SCALE:	ENGINEER:	DRAWN BY:	CHECKED BY:	CORROSION:	APPROVED BY:	DRAWING NUMBER:	SHEET NO:	REV:
2/19/2017	AS NOTED	EW	MSE	JP	GK	AJ	DI-	001	1

APPENDIX C

Site Photographs

Appendix C- Site Photographs

Photo 1- Site N002, Stream crossing along railroad.

Photo 2 - Site N003, Open water wetland at Burnidge Forest Preserve.

Photo 3 - Site N004, Wetland at Hidden Knoll Rd.

Photo 4 - Site N005, Wetland complex east of McCornack Rd.

Photo 5 - Site N006, Stream between Highland Ave. and McCornack Rd.

Photo 6 - Site N007, Open water wetland north of Highland Ave.

Photo 7 - Site N008, Open water wetland west of Catamaran Circle.

Photo 8 - Site N009, Stream crossing west of Reinking Rd.

Photo 9 - Site N011, Tyler Creek Tributary/farm ditch north of Rt. 72.

Photo 10 - Site N012, Tyler Creek east of Rt.47.

Photo 11 - Site N013, Wetland west of Rt. 47.

Photo 12 - Site N014, Tributary of Tyler Creek.

APPENDIX D

Nicor Pipeline HSA Methods Memo

APPLIED ECOLOGICAL SERVICES
SPECIALISTS IN ECOLOGICAL SCIENCE, RESTORATION, MANAGEMENT, AND RESEARCH
120 W MAIN ST • WEST DUNDEE, IL 60118 • (847) 844-9385

Carl Dawes
Operations Manager, Environmental Practice Group
Weaver Consultants Group
1316 Bond Street, Ste 108
Naperville, IL 60563

April 26, 2017

RE: Habitat Suitability Assessment for Four Elements of Biodiversity for Proposed Natural Gas Pipeline Right of Way Development

Dear Mr. Dawes,

Applied Ecological Services (AES) has performed a comprehensive Habitat Suitability Assessment for four species (one freshwater mussel, one turtle, and two bird species) along an 8-mile long x 60-80-ft wide proposed Right of Way in Kane County (see locations in Appendix A, Results Map). The project area included the pipeline corridor and an additional ¼ mile wide assessment to account for specific life histories of the target species. Prior to field work, AES consulted Illinois Department of Natural Resources, Natural Heritage Division regarding proximity to any state or federally threatened species. AES also reviewed of all pre-existing spatial data (soils, geology, land use, LiDAR, aerial imagery, NWI data), sensitive species polygons provided by IDNR, and adequate life history information for each target species in order to develop maps highlighting all potential habitat areas for each species. These maps erred on the very conservative side, warranting field investigations for any area that supported open water, wetland emergent plants, or south and west facing slopes within the assessment area. The Elements of Biodiversity (EOB) are;

1. Slippershell mussel (*Alasmidonta viridis*);
2. Blanding's turtle (*Emydoidea blandingii*);
3. Common gallinule (*Gallinula galeata*); and
4. Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)

Using a custom-generated data collection sheet (Appendix B), the ESRI Collector Application on an iPad, and the desktop-generated potential habitat maps, AES field ecologists and wildlife biologists ground-truthed each potential habitat area. At each location, various data were collected, such as (for streams) bank condition, depth, channel width, substrate, in-stream geomorphic features, and cursory observations for mussel beds and aquatic invertebrates. In addition, the banks were searched 100 feet in either direction at each stream crossing to search for dead mussels/shells. In general, a 100'

downstream buffer was included and any slippershell mussels should be translocated from this area to address potential downstream impacts from construction. For wetland habitats in the study area we collected ratio of emergent vegetation to open water, configuration, dominant plant species, water depth (when possible), and associative fauna (birds, reptiles, and amphibians known to inhabit areas suitable for breeding EOB (turtle and 2 bird species). Using our professional experience with the EOB and our prior literature reviews, we made determinations of Habitat Suitability for each species at each location where data was collected (n=15). In general, a 150-ft buffer was placed around wetlands with suitable to exceptional habitat to address potential visual and auditory indirect impacts to the affected species and help avoid turtles moving outside of wetlands (e.g., nesting females).

Suitability was ranked as follows:

- 0 = Habitat polygon is NOT SUITABLE to sustain an autogenic population of the EOB and it is highly unlikely that the EOB will occur in this polygon.
- 1 = Habitat polygon is MARGINALLY SUITABLE and could potentially support an autogenic population (if the EOB present) but is degraded in some fashion that may impair ecosystem function enough to inhibit presence.
- 2 = Habitat polygon is SUITABLE to support an autogenic population of the EOB if present.
- 3 = Habitat polygon is EXCEPTIONALLY SUITABLE to support an autogenic population of EOB. SUITABLE habitats with historic records of current observations for an EOB are upgraded to this ranking.

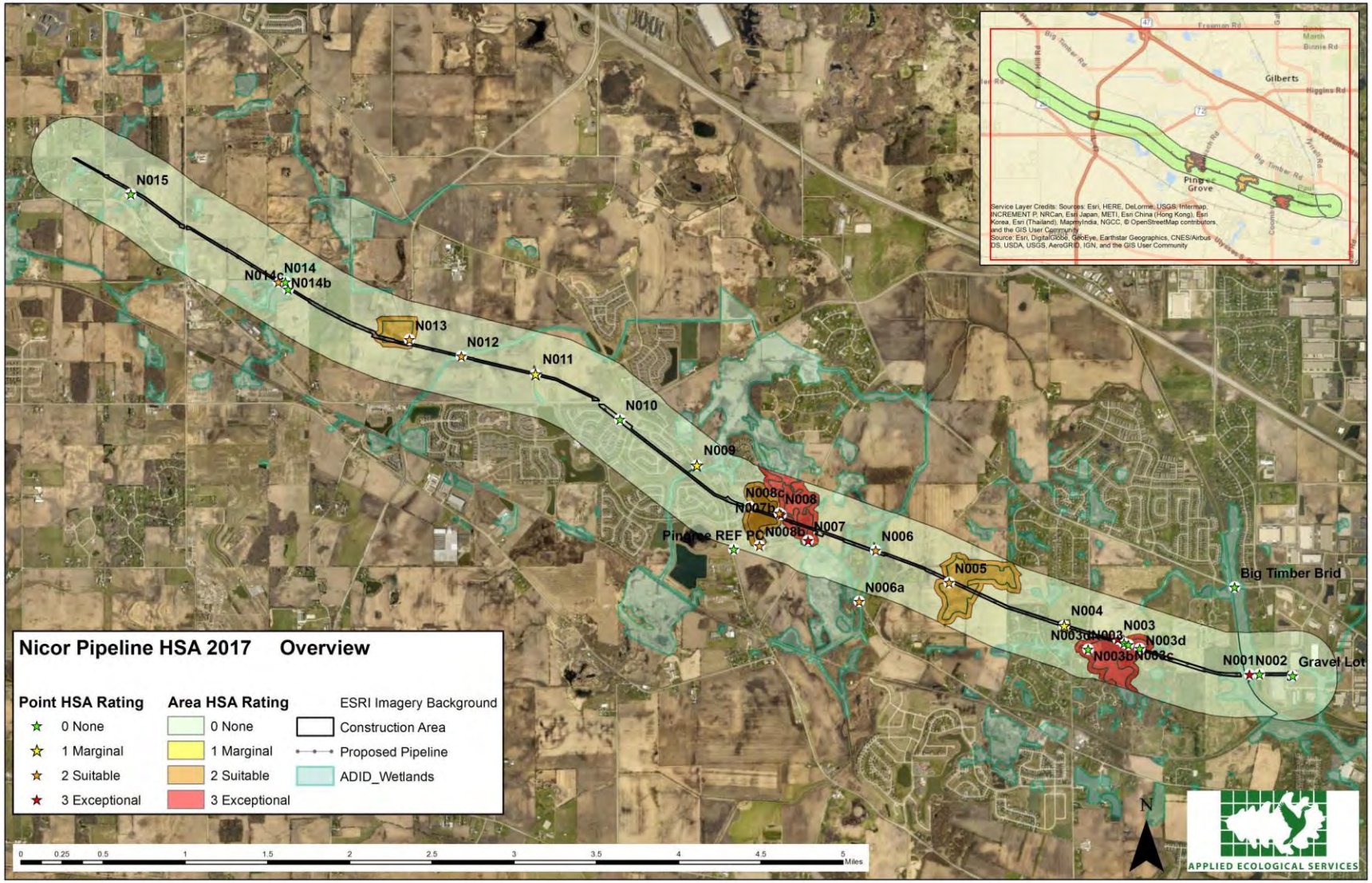
Each suitability ranking informs suggested avoidance measures for construction strategy as detailed in the Table 1.

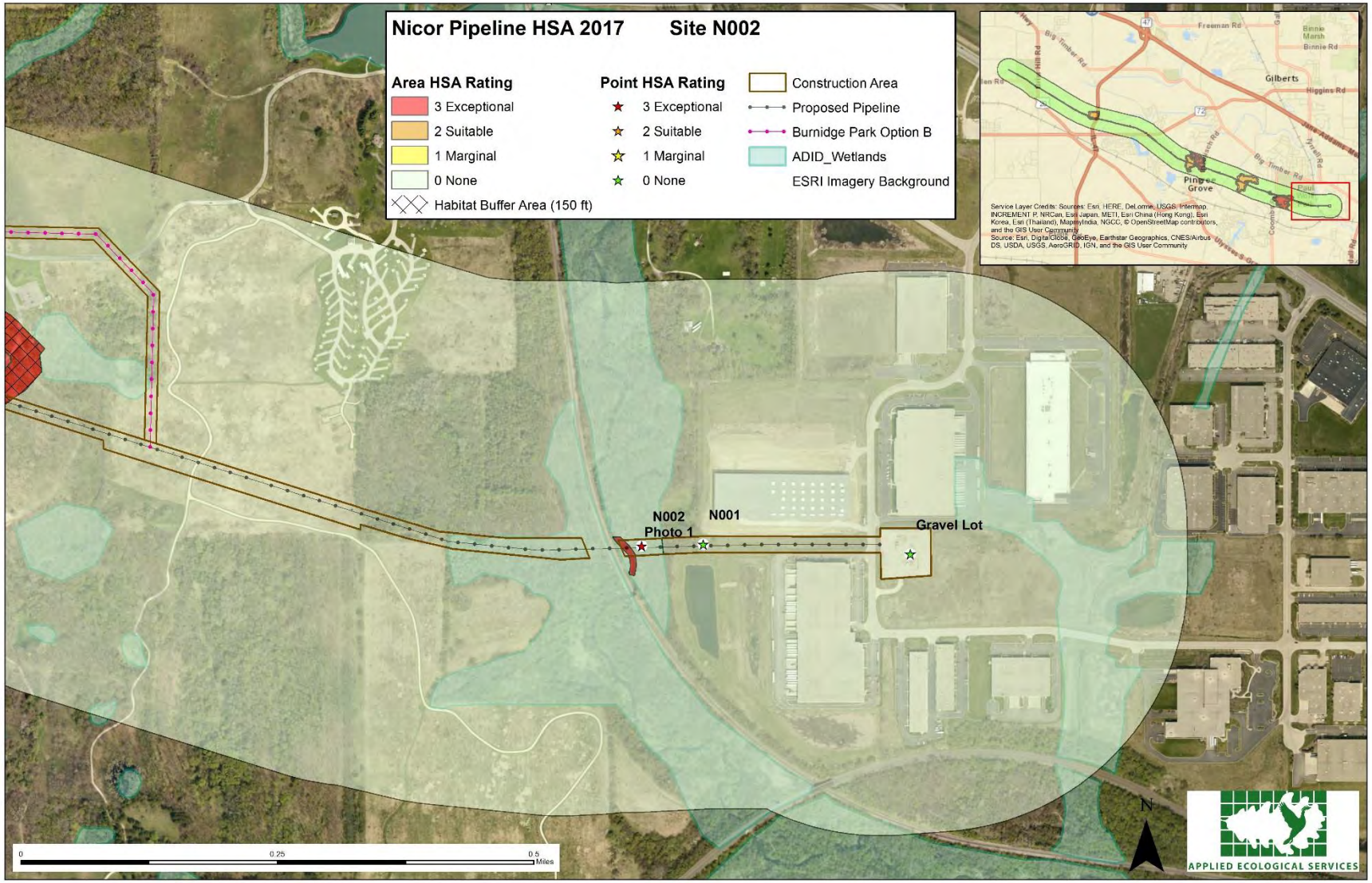
Table 1. Results of the Habitat Suitability Assessment

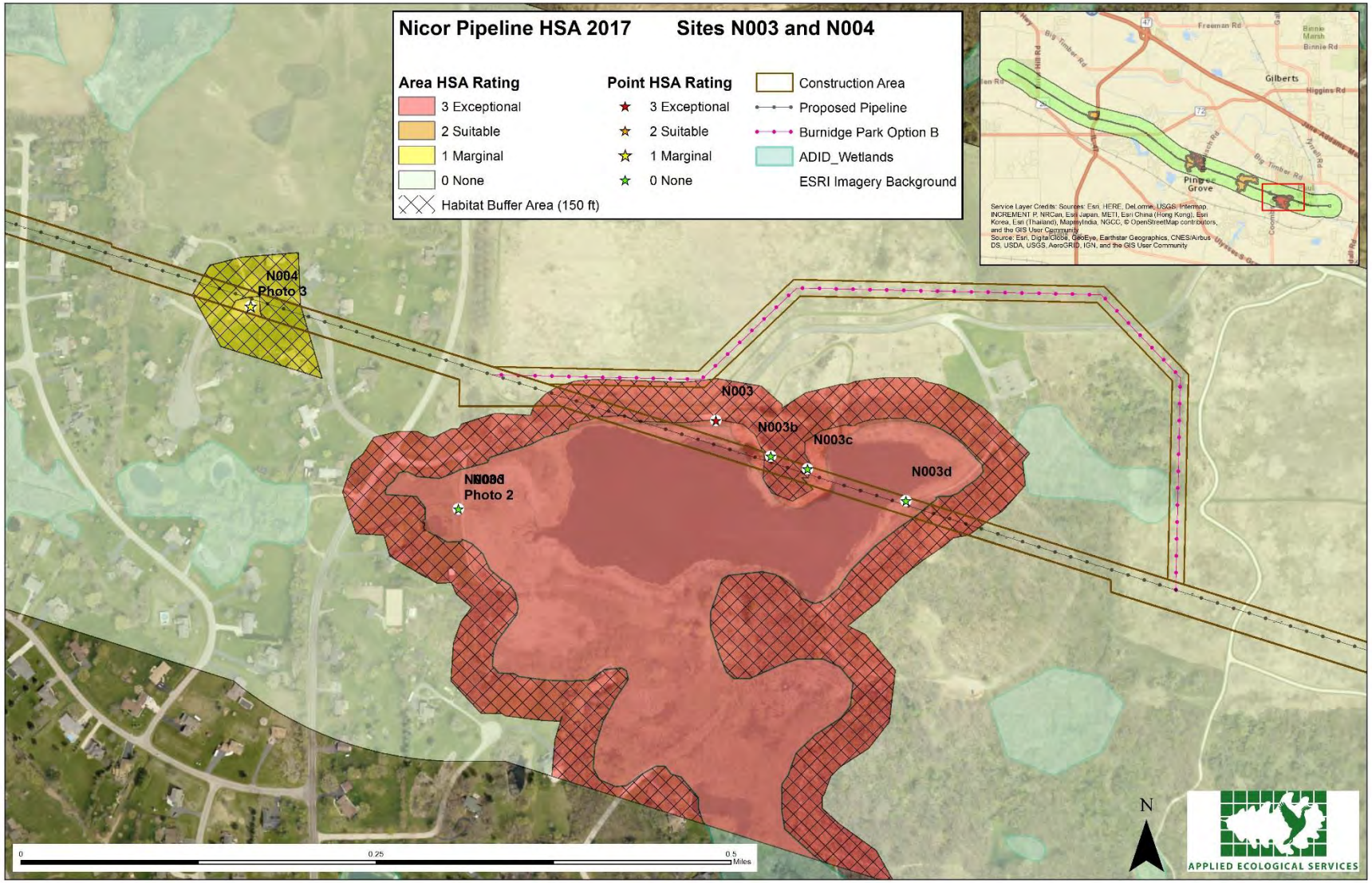
Site Code	Site Name	AES Notes & Avoidance Measure Recommendations	HSA RANK				
			Slippershell Mussel (ALAVIR)	Common Gallinule (COGA)	Yellow-headed Blackbird (YHBL)	Blanding's Turtle (EMYBLA)	Overall
WETLAND SITES WITHIN CORRIDOR							
N003	Pond/Wetland in Burnidge FP	Burnidge Forest Preserve Wetland - Reroute to north of wetland or HDD to avoid impacts. Active basking, nest searches and point count surveys recommended during construction oversight phase.	0	2	2	3	3 - Exceptional
N004	Wetland along Hidden Knoll Rd.	Small degraded wetland in neighborhood west of Coombs Road. Point count surveys recommended prior to construction phase.	0	0	1	0	1 - Marginal
N005	Wetland Complex east of McCormack Rd.	Large wetland complex among farm fields east of McCormack Rd. If surface trench method used, enclose with fence and three hoop nets for capture and translocation of turtles. Active basking, nest searches and point count surveys recommended during construction oversight phase.	0	1	2	2	2 - Suitable
N007	Wetland/Pond west of Damisch Rd.	Large open water wetland complex west of Damisch Road with exceptional habitat and associated species. Recommend HDD under wetland to avoid impacts. Active basking, nest searches and point count surveys recommended during construction oversight phase.	0	3	2	2	3 - Exceptional
N008	Pond/Wetland west of Catamaran Cir.	Large open water pond with wetland fringe on west and south banks. Recommend HDD under wetland to avoid impacts. Active basking, nest searches and point count surveys recommended during construction oversight phase.	0	2	2	1	2 - Suitable
N013	Wetland west of Hwy 47	Small wetland on west edge of Hwy 47 where corridor borders south edge. Install barrier fence along south edge of wetland and flanking east and west sides of wetland for exclusion only, no trapping. Active basking, nest searches and point count surveys recommended during construction oversight phase.	0	2	2	2	2 - Suitable
STREAM SITES WITHIN CORRIDOR							
N002	Tyler Creek Mainstem	Tyler Creek along RR tracks east of Burnidge Forest Preserve. Known reach for Slippershell Mussel. Recommend HDD under stream to avoid impacts. Survey and translocate mussels upstream prior to drilling or have frac-out plan and equipment ready at site.	3	0	0	0	3 - Exceptional
N006	Tyler Creek Tributary	Tyler Creek tributary. Substrate appears suitable. Survey and translocate mussels upstream prior to trenching. Or use HHD with frac-out plan and equipment ready at site.	2	0	0	0	2 - Suitable
N009	Tyler Creek Tributary	Trapezoidal channel tributary to Tyler Creek. Reach appears marginally suitable. Survey and translocate mussels upstream prior to trenching.	1	0	0	0	1 - Marginal
N011	Tyler Creek Tributary	Farm ditch tributary to Tyler Creek. Reach appears marginally suitable. Survey and translocate mussels upstream prior to trenching.	1	0	0	0	1 - Marginal
N012	Tyler Creek Mainstem	Tyler Creek Mainstem draining lake complex. Substrate appears suitable. Survey and translocate mussels upstream prior to trenching. Or use HHD with frac-out plan and equipment ready at site.	2	0	0	0	2 - Suitable
N014	Tyler Creek Tributary	Headwater stream tributary of Tyler Creek. Substrate appears suitable. Survey and translocate mussels upstream prior to trenching. Or use HHD with frac-out plan and equipment ready at site.	2	0	0	0	2 - Suitable

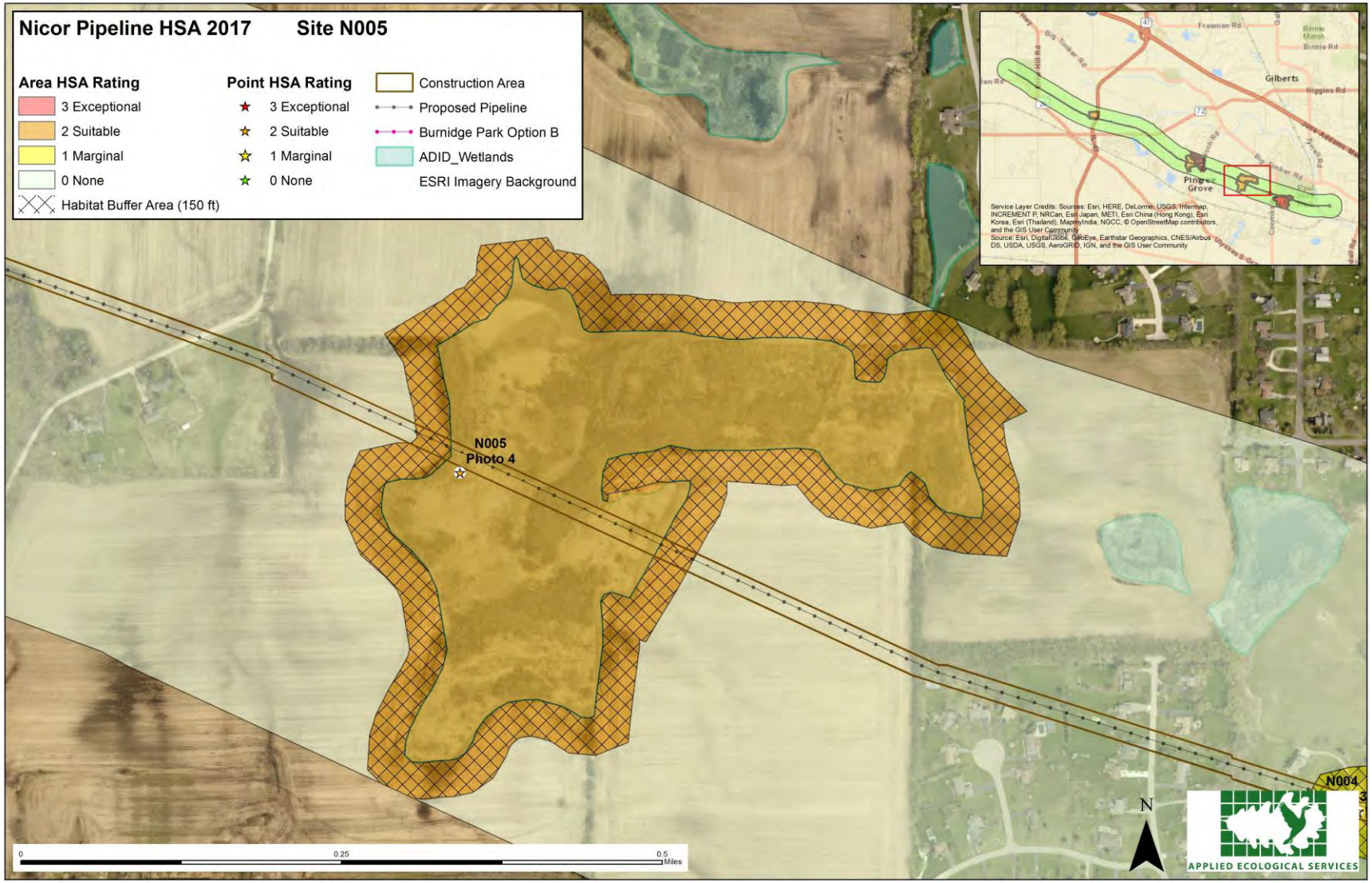
Appendix A.

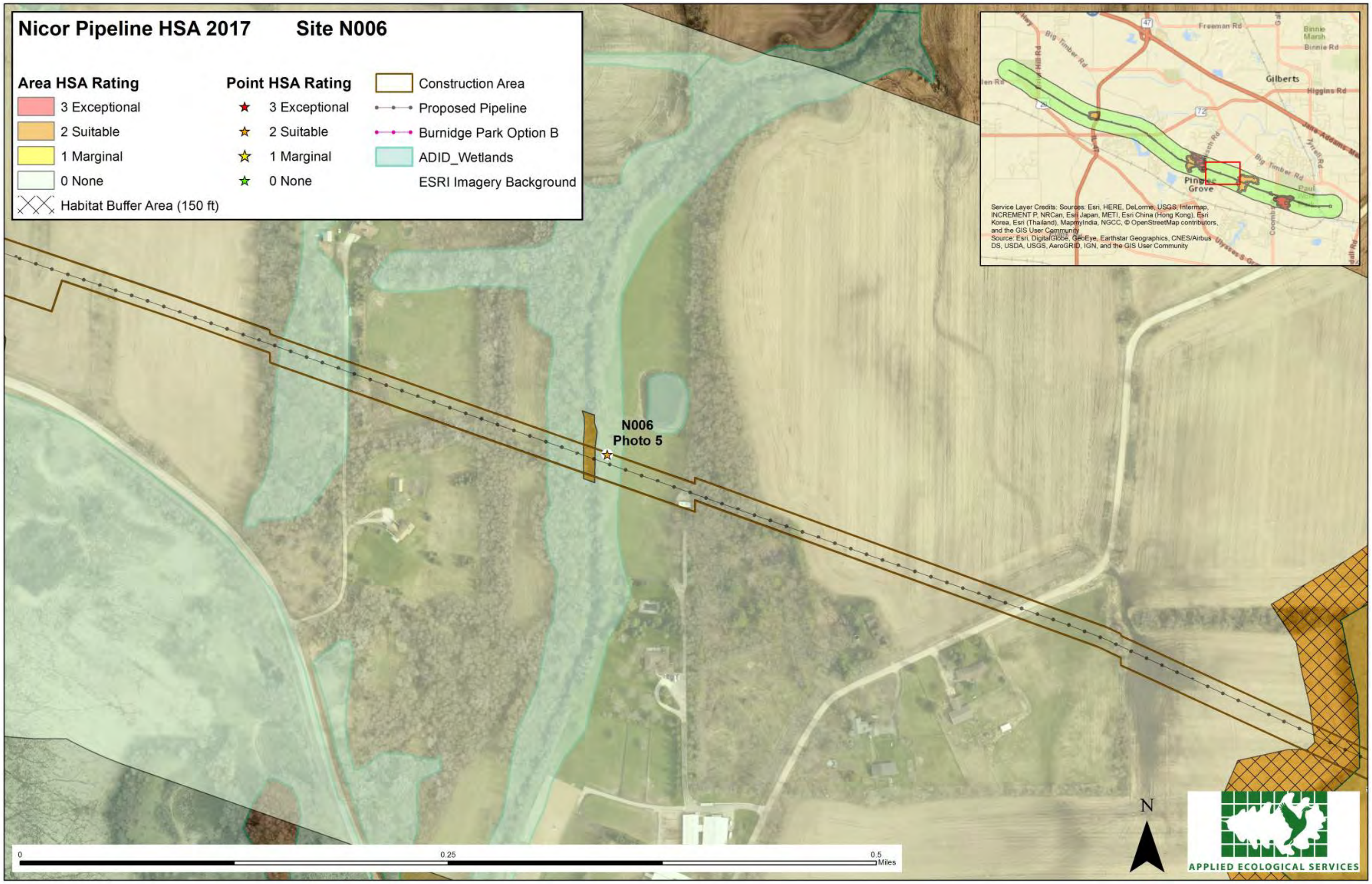
Results Maps of the Habitat Suitability Assessment

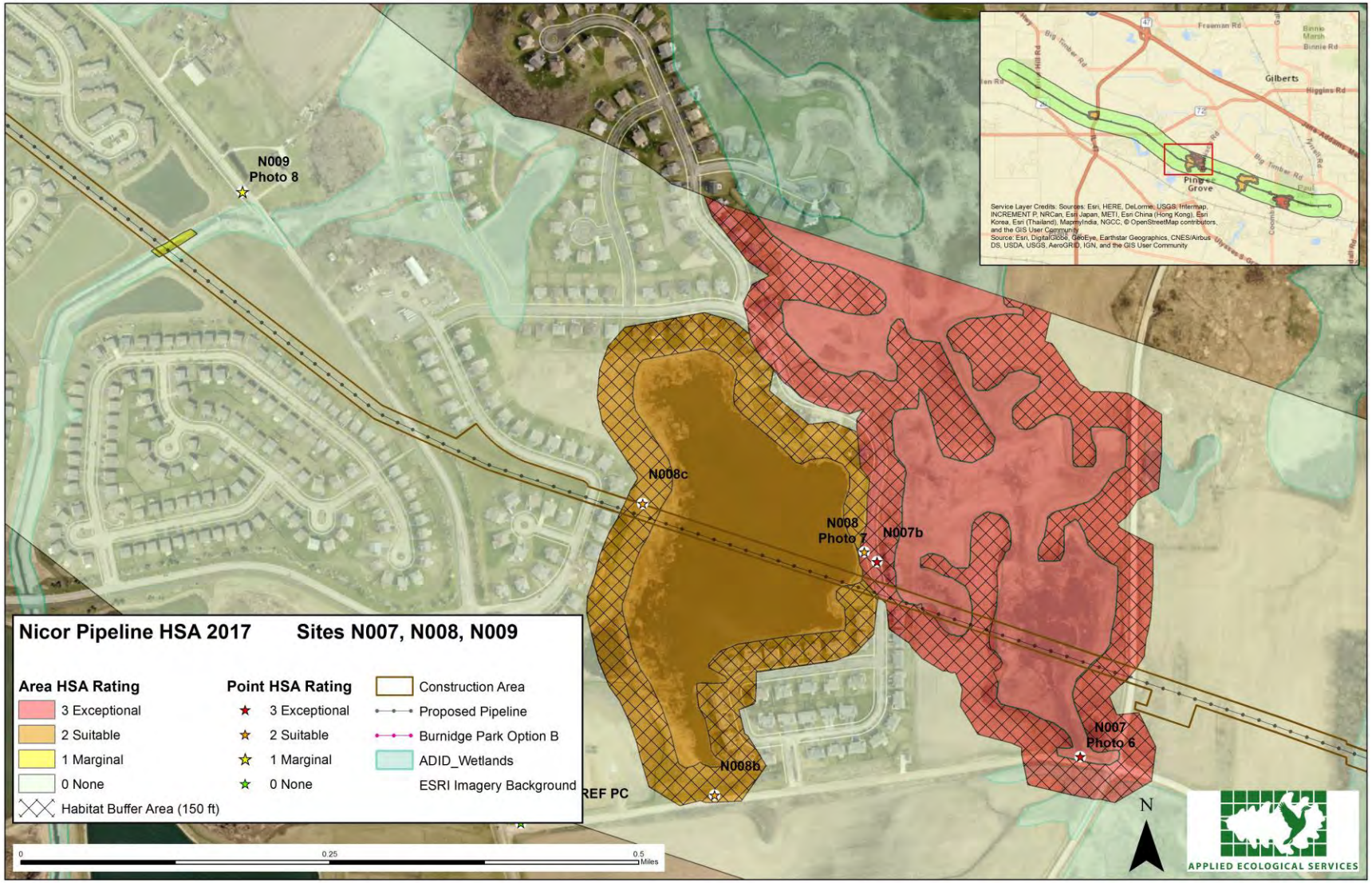

Nicor Pipeline HSA 2017 Overview
Point HSA Rating
0 None
1 Marginal
2 Suitable
3 Exceptional
Area HSA Rating
0 None
1 Marginal
2 Suitable
3 Exceptional
ESRI Imagery Background
Construction Area
Proposed Pipeline
ADID_Wetlands
0 0.25 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 Miles
N
APPLIED ECOLOGICAL SERVICES
N015
N014
N014c
N014b
N013
N012
N011
N010
N009
N008c
N008
N007b
N007
N008b
N006
N005
N006a
N004
N003
N003d
N003b
N003c
N001
N002
Big Timber Brid
Gilberts
Higgins Rd
Big Timber Rd
Pine Grove
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

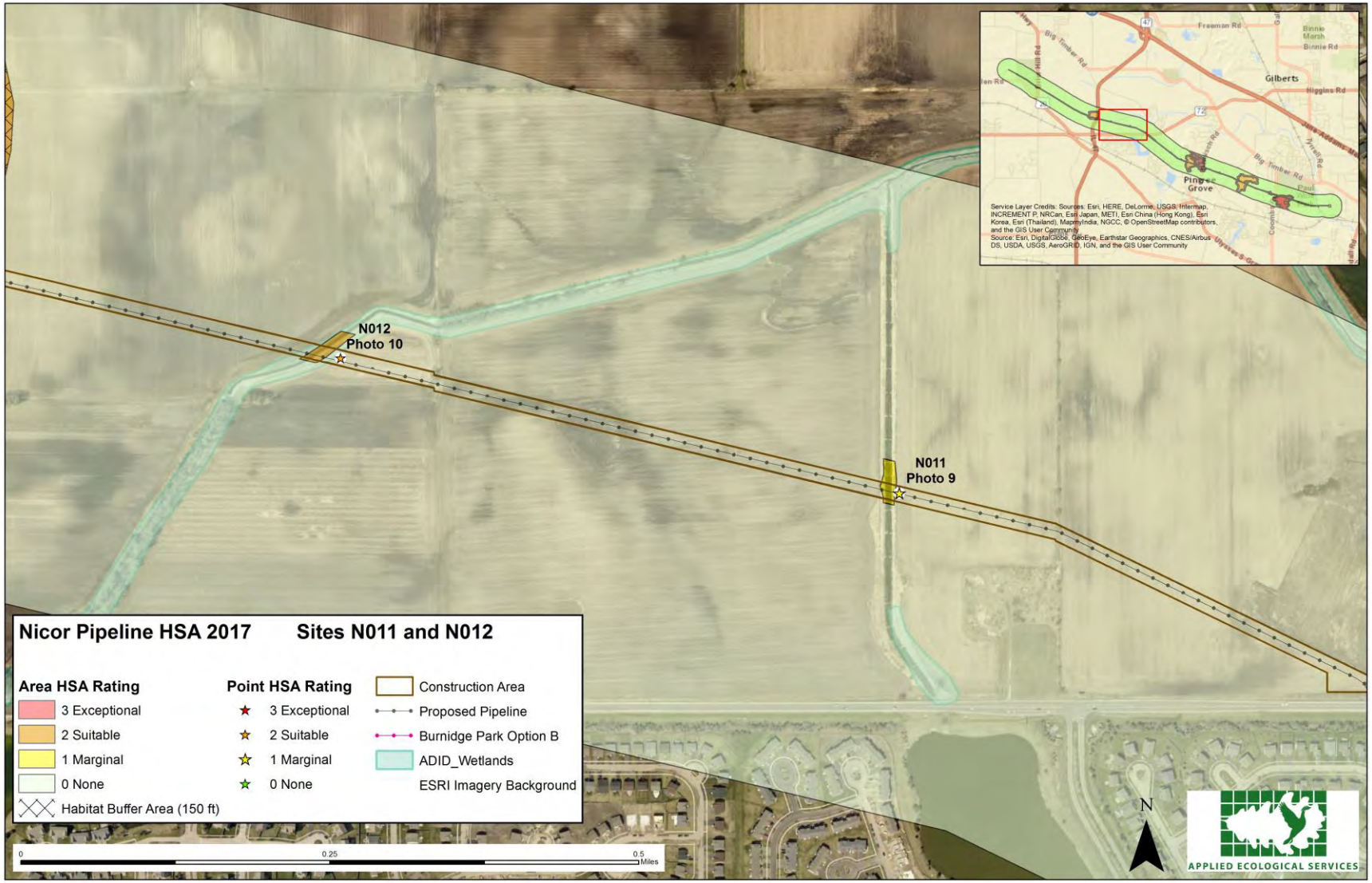

Nicor Pipeline HSA 2017
Site N002
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
N002
Photo 1
N001
Gravel Lot
0
0.25
0.5
Miles
N
APPLIED ECOLOGICAL SERVICES

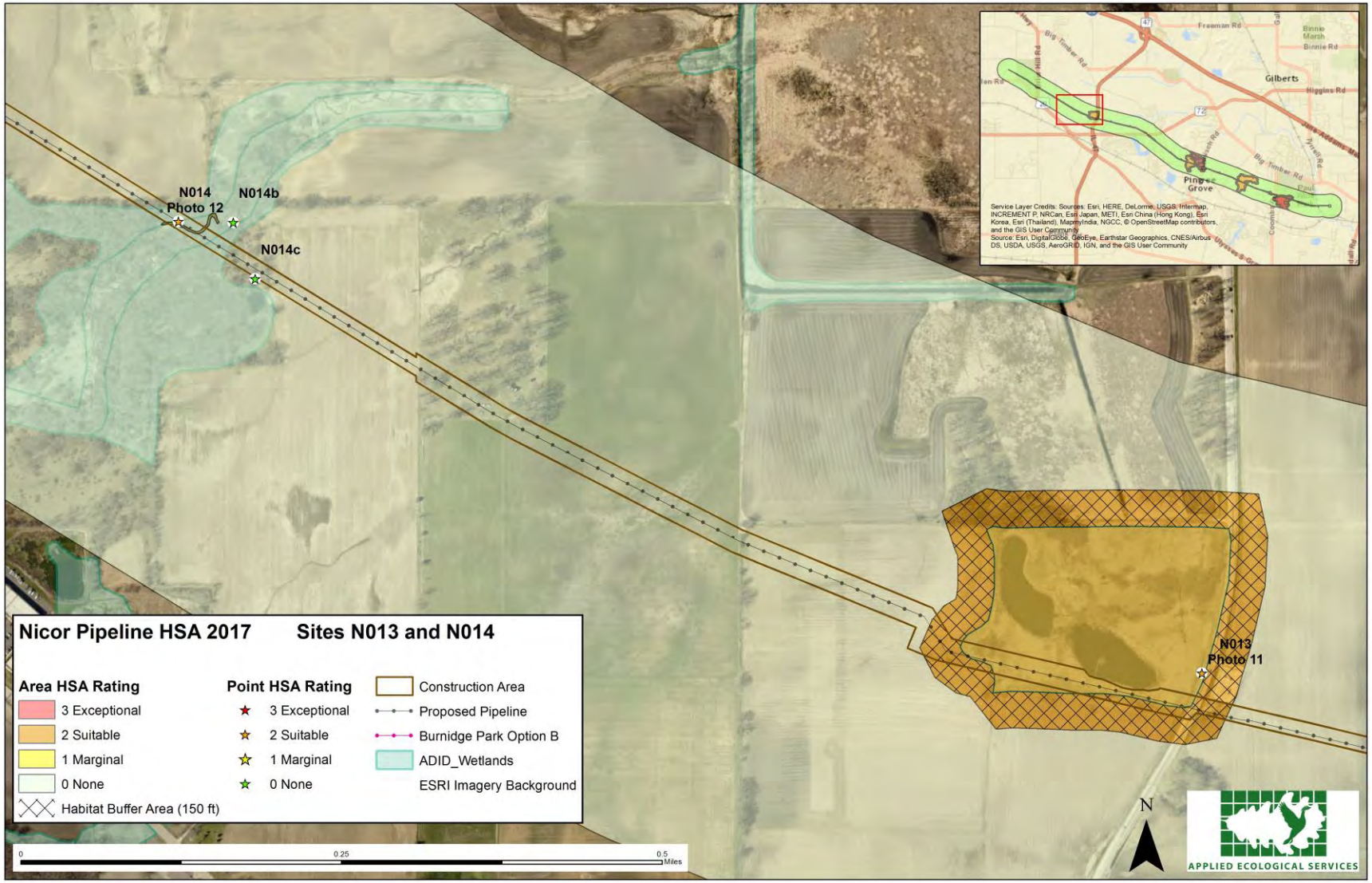

Nicor Pipeline HSA 2017 Sites N003 and N004
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
N004
Photo 3
N003
N003b
N003c
N003d
N003d
Photo 2
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Freeman Rd
Binnie Marsh
Binnie Rd
Gilberts
Higgins Rd
Big Timber Rd
Ping Grove
0
0.25
0.5
Miles
N
APPLIED ECOLOGICAL SERVICES


Nicor Pipeline HSA 2017 Site N005
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
N005
Photo 4
N004
N
0
0.25
0.5
Miles
Gilberts
Ping Grove
Freeman Rd
Binnie Rd
Higgins Rd
Big Timber Rd
APPLIED ECOLOGICAL SERVICES


Nicor Pipeline HSA 2017
Site N006
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
N006
Photo 5
0
0.25
0.5
Miles
N
APPLIED ECOLOGICAL SERVICES
Freeman Rd
Gilberts
Higgins Rd
Big Timber Rd
Pingree Grove
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


N009
Photo 8
N008c
N008
Photo 7
N007b
N007
Photo 6
N008b
REF PC
Nicor Pipeline HSA 2017 Sites N007, N008, N009
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
0
0.25
0.5
Miles
N
Gilberts
Pingree Grove
Freeman Rd
Higgins Rd
Big Timber Rd
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
APPLIED ECOLOGICAL SERVICES


N012
Photo 10
N011
Photo 9
Nicor Pipeline HSA 2017 Sites N011 and N012
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
0
0.25
0.5
Miles
N
APPLIED ECOLOGICAL SERVICES
Gilberts
Ping Grove
Freeman Rd
Binnie Rd
Higgins Rd
Big Timber Rd
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


N014
Photo 12
N014b
N014c
N013
Photo 11
Nicor Pipeline HSA 2017
Sites N013 and N014
Area HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Habitat Buffer Area (150 ft)
Point HSA Rating
3 Exceptional
2 Suitable
1 Marginal
0 None
Construction Area
Proposed Pipeline
Burnidge Park Option B
ADID_Wetlands
ESRI Imagery Background
0
0.25
0.5
Miles
N
Gilberts
Pingree Grove
Freeman Rd
Binnie Rd
Higgins Rd
Big Timber Rd
APPLIED ECOLOGICAL SERVICES

Appendix B.

Habitat Suitability Assessment Datasheet

Nicor Pipeline (17-0221)
HABITAT SUITABILITY ASSESSMENT DATA FORM

DATE: **INVESTIGATOR(S):**

SITE LOCATION ID: **GPS ID:** **PHOTOS:**

WEATHER:
AMBIENT TEMP: WIND (BWS code and direction):
PRECIPITATION RELATIVE HUMIDITY:

TARGET ELEMENT(S) OF BIODIVERSITY (EOB)

Community Components

Wetland:

% Emergent Vegetation _____ Species Composition _____

% Open Water _____ Depth_____ Configuration_____

Substrate-

☐ Saprists ☐ Clay ☐ Sand ☐ Gravel ☐ Bedrock ☐ Other_____Notes_____

Turtle Basking Locations ☐Yes ☐No

Upland:

Land Use _____ Plant Community _____ (dom spp) % Canopy_____

Tree Species Composition_____

Substrate/Soil _____

Suitable for Nesting Turtles ☐Yes ☐No Possible Corridor between Wetlands ☐Yes ☐No

Stream:

Depth_____ Width_____ Estimated Flow Rate_____ Notes_____

Bank Condition ☐ Stable ☐ Eroded ☐ Vegetated ☐ Bare

Floodplain Present ☐Yes ☐No

Composition_____Size_____

Geomorphic Process ☐ Wasting ☐ Accretion ☐ Bank Cutting ☐ Pool ☐ Riffle ☐ Run ☐ Other_____

Tree Species Composition_____

_____

Substrate/Soil _____

Potential Critical Habitat for Target Species Present?_____

_____

Nicor Pipeline (17-0221)
HABITAT SUITABILITY ASSESSMENT DATA FORM

Fauna:

Avifauna-

- ☐ Yellow-headed blackbird
- ☐ Common Gallinule
- ☐ Swainson's hawk

Other -

Herpetofauna -

- ☐ Blanding's turtle

Mammals-

- ☐ Muskrats
- ☐ Individuals Observed
- ☐ Dor
- ☐ Track
- ☐ Scat
- ☐ Other _____

Inverts-

NOTES:
(including critical habitat notes)

Survey Methods Employed_____ Signature _____Date_____

APPENDIX E

Nicor Gas Contingency Plan for Directional Drilling

I. Introduction

This Contingency Plan for Directional Drilling has been prepared for Nicor Gas line construction activities in the subject project corridor located within Nicor Gas easements and rights-of-way that extend northwestward from Nicor Gas Station 319 situated along Madeline Lane and approximately 290 feet north of Millennium Drive in the City of Elgin to Ketchum Road, approximately 770 feet north of Allen Road, in unincorporated Hampshire, Kane County, Illinois. The proposed pipeline installation route will extend through portions of the City of Elgin, the Village of Pingree Grove, the Village of Hampshire, and unincorporated Kane County, Illinois. The elements discussed in this plan are related to the Horizontal Directional Drilling (HDD) activities performed in the subject project corridor.

Horizontal Directional Drilling (HDD) is a construction method used to install pipelines through sensitive areas, such as stream crossings and wetlands. However, HDD may have indirect effects through the release of drilling fluids. This document provides a brief summary of HDD procedures and presents a plan to minimize impacts.

The following personnel are responsible for assuring that the requirements of this plan are identified and specified for work either by a Contractor or by Nicor Gas when a contracting firm is not utilized:

Primary Contact:	Claudia Macholz
Title:	Manager, Environmental Services
Work Phone:	630-388-2456
Secondary Contact:	Somali Tomczak
Title:	Senior Manager, Environmental Services
Work Phone:	630-983-8676 x 2837

If the project is being constructed by an outside Contractor, then the Contractor is responsible for the implementation of this plan. If the project is being constructed by Nicor Gas crews, the operating manager overseeing the work is responsible for implementation of this plan. A current copy of this plan will be maintained at the project site and made readily available to all who will work on the project.

II. General HDD Operating Procedures and Project Specific Measures

The typical horizontal directional drill consists of three main steps: drilling a pilot hole, back reaming and pulling of the pipe into the hole. The pilot hole involves drilling the entire length of the bore with a small diameter drill head. Once the drill path has been established a reamer is placed on the drill head and then is pulled back through the bore hole to widen the hole. Finally the pipe is attached to the drill head and pulled back through the bore hole.

The HDD portion of the project situated within the City of Elgin, the Village of Pingree Grove, the Village of Hampshire, and portions of unincorporated Kane County, including wetland, drainage features, floodplain areas, and associated buffers will be approximately 4,948 feet in length. The depth of the bore will be a minimum of 5 feet deep.

III. Drilling Fluids

Typically the drilling fluid is composed of water and clay particulates. The clay particulates consist of Bentonite. The main component of Bentonite is montmoillonite clay. This clay has a high shrink-swell capacity. Bentonite attracts water and bonds to it and therefore is capable of absorbing up to seven times its weight in water and swelling up to 18 times its dry volume. The Bentonite and water work together to lubricate and cool the drill head, seal and fill pore spaces surrounding the hole, prevent the drill hole from collapsing, and suspends the cuttings of the native soil and removes them.

In some cases other materials are added to the bentonite water mixture to aid in the drilling process. A copy of the Material Data Safety Sheets (MSDS) for these materials is kept on site.

During the HDD process, it is possible for drilling fluids to reach the surface by following a vertical fracture. This is commonly referred to as a frac out.

IV. Potential Impacts to Biological Resources

The release of drilling fluids from frac outs may surface in upland, wetland or aquatic areas. Frac outs in upland areas are typically easy to contain and therefore have only minor effects on the surrounding environment. When a frac out is observed in a wetland of any kind, directional boring will stop immediately, and the bore stem will be pulled back to relieve the pressure on the frac out. Frac outs in wetlands with no standing water will be contained using silt fence, eel logs and/or coconut rolls. A vacuum truck will be in the immediate vicinity to begin removing the bentonite material. In inundated wetland areas with two to three feet of standing water a containment box will be used to contain the frac out material. Once the box is set in place, sand bags or eel logs can be utilized if needed to prevent any material from seeping under the containment box. A vacuum truck will be used to remove the bentonite material from the containment box. Once the frac out has been contained drilling operations may continue.

Frac outs that occur in aquatic environments are more difficult to contain. The bentonite will readily disperse in the flowing water. When a frac out is observed in a river all drilling operations will cease and the bore stem will be pulled back to relieve pressure. The location of the frac out will be identified, and if possible, a containment box will be used to contain the frac out. Depending on the size and flow in a stream, a silt curtain may be utilized to capture any bentonite that would migrate downstream from a frac out. If not, it will be evaluated if the drill pressure can be reduced or can be halted over night to allow the area of the fracture to seal up. When boring continues the sight will be closely monitored. Vacuum trucks will be available to vacuum up the drilling fluids if possible.

V. On-Site Monitoring

During drilling operations, visual inspections along the bore path of the alignment shall take place at all times

VI. Field Response Plan

The HDD operator shall closely monitor drilling pressures. A complete and sudden loss of returns will be a signal to watch closely for possible surface frac outs. This plan uses the loss of returns or pressure and visual indications to trigger response and mitigation plans. In the event of a sudden loss in returns or a surface release, the HDD operator will cease operations to determine what actions need to be taken. In the case of an impact to a wetland or surface water, the Illinois Environmental Protection Agency will be notified immediately.

All equipment required to contain and clean up a frac out will be available at the work site. This equipment includes the following:

- Heavy weight plastic clean gravel filled sand bags or eel logs;
- Several hard plastic buckets (5 gallon);
- Silt fence;
- Coconut rolls/eel logs;
- Vacuum truck;
- metal containment boxes;

Prior to any expected rain event, the following steps will be taken to contain any sediment within the project site.

- All soil piles and exposed soil areas will be covered with plastic sheeting and surrounded by silt fence, as necessary.
- All open catch basins will be inspected to ensure they are properly protected with fabric and/or plastic sheeting.
- All silt fence and coconut rolls/eel logs will be inspected and repairs and/or additions will be made as necessary.

VII. Documentation

- The following information will be recorded in the Log Book:
    - Frac out start and stop times.
    - Frac out location
    - The volume/size of the frac out.
    - The materials used in the drilling mud.
    - The percent of materials used in the drilling mud (i.e., 1,000 gallons of water to 50 lb of bentonite).
- If possible, photographs will be taken to document the clean up procedures

APPENDIX F

Listed Species Fliers

Blanding's Turtle

Emydoidea blandingii

Photograph by Scott R. Ballard courtesy of IDNR

Environmental Precautions for the State Threatened
Blanding's Turtle as required by the
Illinois Department of Natural Resources

Prepared by Nicor Gas

Physical Description

ADULTS

- 6 to 11 inches
- Weigh up to 3 pounds
- Head, tail, and limbs are blue-black
- Underside of neck is yellow
- Underside of shell is yellow with brown or black splotches
- Upper shell is blackish and may be speckled with yellow and mottled with brown

JUVENILES

- Dark gray or greenish
- May NOT have the distinguishing yellow underside of neck

Habitat

- Prefer shallow, weedy ponds, marshes, rivers, and streams
- Mostly aquatic, but may move to land to bask in the sun and often travels over land to find nest sites, mates, or new habitat

Blanding's Turtle photo by Jim Harding

dnr.wi.gov

Active: Diurnally April to November. Mate in early spring and fall. Females lay eggs in June. Hatchlings emerge in August or September.

Hibernate: October to April in mud or debris on bottom of ponds and streams.

www.nps.gov

No construction will occur in potential habitat areas until Incidental Take Authorization (ITA) is obtained from the DNR.

Exception: HDD under Wetlands N007 & N008 (Sites 10-12):

- A construction personnel and ecologist will monitor the ROW for frac outs and Blanding's turtle.
- If a frac out occurs, drilling will stop until it is cleaned up.
- If a turtle is encounter, drilling will stop until it moves out of the ROW (50' around the center line)

During construction **in habitat areas**, the following precautions must be taken:

- Exclusionary fencing must be used at trenches and excavations *at all times* during installation.
- All trenches and excavations must be securely covered at the end of each day and construction area will be close off with exclusionary fencing
- Trenches, excavations, and fencing must be inspected each morning throughout the duration of construction by the on-site ecologist prior to work to check for trapped reptiles and amphibians.

What to do if a Blanding's Turtle is encountered:

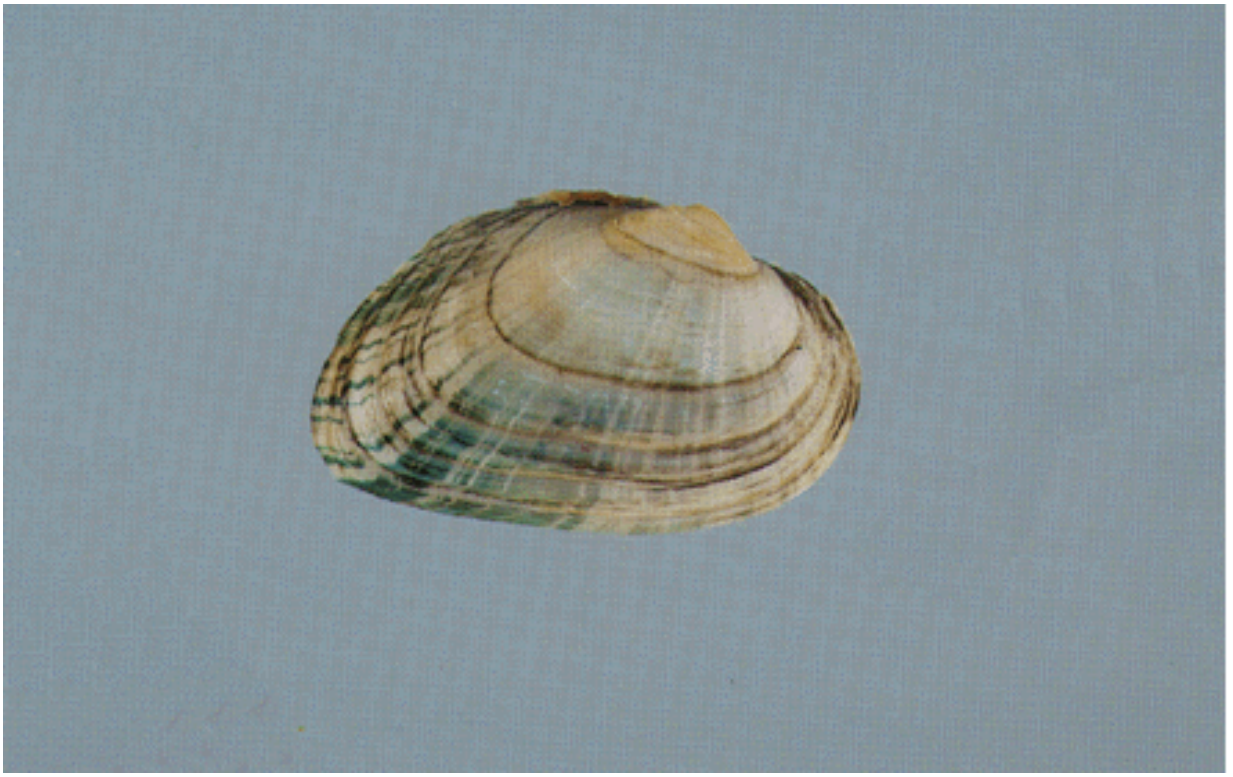
- Cease all work immediately.
- Do not touch, move, or capture the turtle.
- Contact your foreman.
- The foreman will notify the on-site inspector who will contact the on-site ecologist.
- The on-site ecologist will move the turtle out of the construction zone and contact the Illinois Department of Natural Resources (IDNR) Regional Office at 847-608-3128 or the Incidental Take Authorization (ITA) Regional Coordinator at 217-557-8243 to report the encounter.
- Work can resume after the turtle is moved.

"Take", as it pertains to animals, is defined in the Illinois Endangered Species Protection Act as to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Once contacted, ORC will give further instructions.

Any person who violates any provision of this Act shall be guilty of a Class A Misdemeanor. Civil penalties also apply if violations of the Illinois Natural Areas Preservation Act occur.

Slippershell Mussel

Alasmidonta viridis



Photograph courtesy of Illinois Natural History Survey

Environmental Precautions for the State Threatened
Slippershell mussel as required by the
Illinois Department of Natural Resources

Prepared by Nicor Gas

Physical Description

ADULTS

- Small, somewhat rectangular shell (usually about an inch)
- Moderately thick shell
- High posterior ridge
- Shell is smooth to rough
- Yellowish green with wavy green rays on the posterior half of the shell
- Poorly developed lateral teeth
- Length 1-1.5 inches

Photograph of Gary Peeples of US Fish and Wildlife Service

JUVENILES

- Thin shell in young individuals

Habitat

- Prefer creeks and the headwaters of large rivers.
- In sand, mud, or fine gravel.
- Suitable habitat for fish host species must be present in order for slippershell mussel reproduction to be successful.

Active: Long-term breeder, remain on fish host for weeks to months, and during this time the mussel transforms into the adult form and drops from the host fish.

During construction, the following precautions will be taken **in known habitat areas**:

- Use Horizontal Directional Drilling (HDD) methods to avoid the mussels
- Mussels in the pipeline ROW will be moved upstream before drilling.
- Have a frac-out contingency plan available for HDD and clean-up equipment and supplies readily available where HDD is used.

What to do if a Slippershell mussel is encountered **in any stream:**

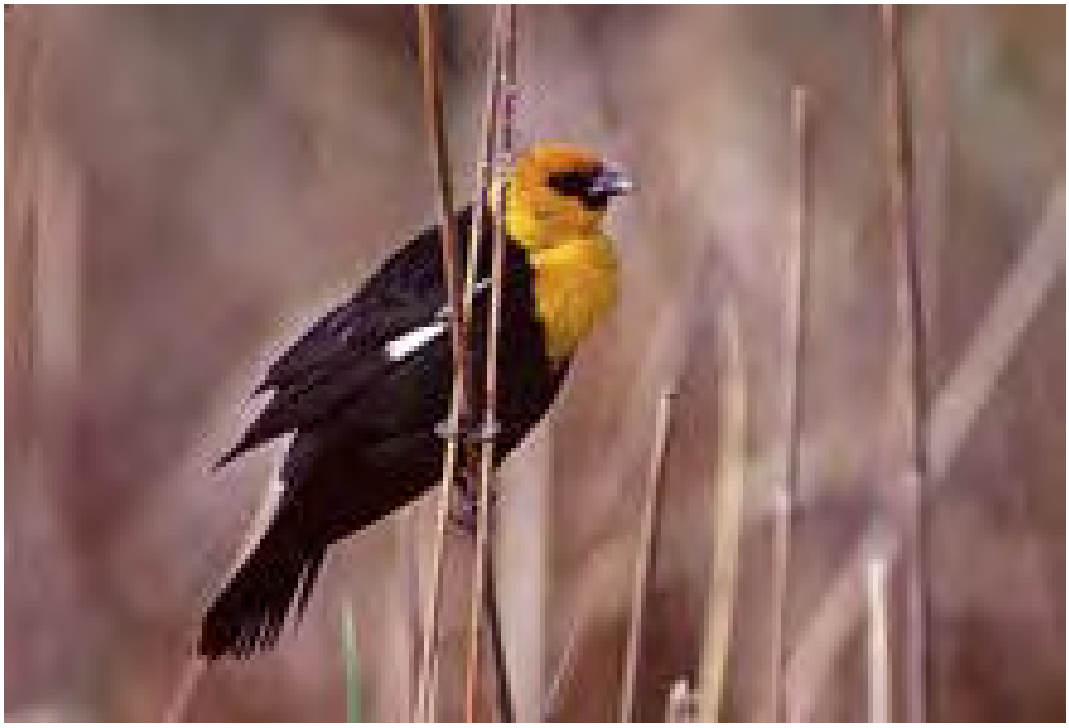
- Cease all work immediately
- Contact your foreman.
- The foreman will notify the on-site inspector who will contact the on-site ecologist.
- The on-site ecologist will move the mussel out of the ROW and contact the Illinois Department of Natural Resources (IDNR) Regional Office at 847-608-3128 or the Incidental Take Authorization (ITA) Regional Coordinator at 217-557-8243 to report the encounter.
- Work can resume after the mussel is moved.

"Take", as it pertains to animals, is defined in the Illinois Endangered Species Protection Act as to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Once contacted, ORC will give further instructions.

Any person who violates any provision of this Act shall be guilty of a Class A Misdemeanor. Civil penalties also apply if violations of the Illinois Natural Areas Preservation Act occur.

Yellow-Headed Blackbird

Xanthocephalus xanthocephalus



Photograph by A.B. Sheldon courtesy of IDNR

Environmental Precautions for the State Threatened
Yellow-Headed Blackbird as required by the
Illinois Department of Natural Resources

Prepared by Nicor Gas

Physical Description

ADULTS

- Robin-sized blackbird
- Has a yellow head and white patches on its wings
- Females are smaller and browner with most of the yellow confined to the throat and chest
- Female breast is streaked with white

Photograph by Greg Lavaty

JUVENILES

- Similar to adults
- First year males are duller than mature males with dark smudging on their yellow heads and less white on their wings

Photograph by Tom Grey

Habitat

- Prefer marshes, sloughs, and marshy borders of lakes, ponds, or streams. Abandoned or artificial flooded depressions with cattails often serve as nesting sites.
- Permanent water is essential
- Terrestrial, aquatic, and riparian
- Nests in thick stands of emergent vegetation over water, feeding in aquatic vegetation and also in upland fields and prairies.

Active: Arrives in Illinois in late April and breeds through August when flocks leave the marsh habitat. In breeding season, females forage close to the nests.

Construction will begin after ITA is obtain in wetland habitat areas where Yellow-headed blackbird has been found.

- No YHBB have been detected yet in or near the construction zone.

During construction in confirmed habitat areas, the following precautions must be taken:

- A qualified biologist will present on-site during construction to document if the species is disturbed.

What to do if a Yellow-Headed Blackbird is encountered (after obtaining the ITA):

- Contact your foreman.
- The foreman will notify the on-site inspector who will contact the on-site ecologist.
- The on-site ecologist will inspect the area for the YHBB.
- If presence is confirmed, he/she will contact the Illinois Department of Natural Resources (IDNR) Regional Office at 847-608-3128 or the Incidental Take Authorization (ITA) Regional Coordinator at 217-557-8243 to report the encounter.

What to do if a Yellow-Headed Blackbird is encountered (prior to obtaining the ITA)

- Stop work immediately.
- Contact your foreman.
- The foreman will notify the on-site inspector who will contact the on-site ecologist.
- The on-site ecologist will inspect the area for the YHBB.
- If presence is confirmed, he/she will contact the Illinois Department of Natural Resources (IDNR) Regional Office at 847-608-3128 or the Incidental Take Authorization (ITA) Regional Coordinator at 217-557-8243 to report the encounter.
- Work can resume if YHBB not found by ecologist or after consultation with the DNR.

"Take", as it pertains to animals, is defined in the Illinois Endangered Species Protection Act as to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Once contacted, ORC will give further instructions.

Any person who violates any provision of this Act shall be guilty of a Class A Misdemeanor. Civil penalties also apply if violations of the Illinois Natural Areas Preservation Act occur.

Common Moorhen

Gallinula chloropus

Photograph by Jim Rathert at USFWS

Environmental Precautions for the State Endangered
Common Moorhen as required by the
Illinois Department of Natural Resources

Prepared by Nicor Gas

Physical Description

ADULTS

- 12 to 15 inches
- Wingspread 20 to 23 inches
- Weigh 14 ounces
- Slate grey chicken-like bird
- Chicken-like red bill with yellow tip and red frontal shield
- Legs and feet are yellow-green
- White lines along flanks and white undertail coverts

JUVENILES

- Similar to adults but lighter in color and brownish bill without red

Habitat

- Prefer marshes, sloughs, and marshy borders of lakes, ponds, or streams. Abandoned or artificial flooded depressions with cattails often serve as nesting sites.
- Permanent water is essential
- Terrestrial, aquatic, and riparian

Photograph by Claude Nadeau

Active: Arrives in breeding grounds late April and nesting begins in early May. Nest is usually a shallow platform elevated slightly above water among emergent plants. Nests are abandoned late August.

Construction will begin after ITA is obtain in wetland habitat areas where Common Moorhen has been found.

- No YHBB have been detected yet in or near the construction zone.

During construction in confirmed habitat areas, the following precautions must be taken:

- A qualified biologist will present on-site during construction to document if the species is disturbed.

What to do if a Common Moorhen is encountered (after obtaining the ITA):

- Contact your foreman.
- The foreman will notify the on-site inspector who will contact the on-site ecologist.
- The on-site ecologist will inspect the area for the YHBB.
- the Illinois Department of Natural Resources (IDNR) Regional Office at 847-608-3128 or the Incidental Take Authorization (ITA) Regional Coordinator at 217-557-8243 to report the encounter.

What to do if a Common Moorhen is encountered (prior to obtaining the ITA)

- Stop work immediately.
- Contact your foreman.
- The foreman will notify the on-site inspector who will contact the on-site ecologist.
- The on-site ecologist will inspect the area for the Common Moorhen.
- If presence is confirmed, he/she will contact the Illinois Department of Natural Resources (IDNR) Regional Office at 847-608-3128 or the Incidental Take Authorization (ITA) Regional Coordinator at 217-557-8243 to report the encounter.
- Work can resume if the Common Moorhen not found by the ecologist or after consultation with the DNR.

"Take", as it pertains to animals, is defined in the Illinois Endangered Species Protection Act as to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Once contacted, ORC will give further instructions.

Any person who violates any provision of this Act shall be guilty of a Class A Misdemeanor. Civil penalties also apply if violations of the Illinois Natural Areas Preservation Act occur.

APPENDIX G

Nicor Gas Implementing Agreement

IMPLEMENTING AGREEMENT
Nicor Pipeline Replacement Project

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

This Conservation Plan will be implemented by Nicor Gas. Participants in the execution of the conservation plan are:

James Griffin, Vice President of Operations
Edward Vanscoit, Director Construction Operations – Large Pipe

Signatures are at the end of this document.

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;

Nicor will coordinate the construction of the pipeline and implementation of all avoidance, minimization, and mitigation measures.

Nicor's selected contractor will implement the construction plan that includes the avoidance and minimizations measures included in the Conservation Plan.

Nicor's environmental consultants will conduct species surveys, perform construction oversight (to help prevent take), and monitor site repairs (in-kind replacement), and conduct stream and wetland restoration.

Schedule and deadlines for completion of activities in the Conservation Plan:

June 2017 – Slippershell mussel surveys at five stream crossing locations identified in the Conservation Plan.

June 2017 – Bird surveys for the Common gallinule and Yellow-headed blackbird at wetland crossings identified in the Conservation Plan.

The schedule for construction activities, monitoring, and progress reports provided to the IDNR is as follows:

Year 0 (Construction and Restoration): June –October 2017

- **Late June.** Prior to obtaining ITA: begin construction in areas where no potential habitat for the four covered species was identified during the HSA or where none were found during pre-construction surveys.

- **Late August / Early September.** Obtain ITA. Begin construction in identified potential habitat areas starting with installation of silt fence. Search for Blanding's turtle daily in construction zones within identified habitat and buffer areas. Scan for and insert micro-chips if needed and translocate found turtles. Translocate Slippershell mussel at Tyler Creek crossing prior to horizontal directional drilling (HDD).
- **October 31.** Construction completed, site restoration may continue into Spring 2018 in some locations
- IDNR will be notified of the time/location of the preconstruction meeting, the start of construction, and the completion of construction.

Year 1: January-December, 2018

- Visual searches for Blanding's turtles; visual and auditory surveys for the Common gallinule and Yellow-headed blackbird; and a mussel survey in Tyler Creek.

Year 2: January-December, 2019

- May – October: Visual searches for Blanding's turtles; mussel survey in Tyler Creek; vegetation and stream monitoring in repaired and restored areas.
- December 31: Year 2 Monitoring Report due to IDNR.

Year 3: None

Year 4: None

Year 5:

- May – October: Vegetation and stream monitoring in repaired and restored areas, if needed.
- December 31: Year 5 Monitoring Report due to 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;

Nicor hereby certifies that it has the authority and funding to complete the construction project and to implement all proposed conservation measures included in this Conservation Plan for the four state-listed species covered by the Incidental Take Authorization.

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

Nicor is in charge of this project and assures that all applicable state, federal, and local laws will be adhered to during the completion of the project.

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

No federal authorizations for taking of listed species are needed or have been issued for this project.

Signature: Edward Vanscoit

Printed Name: EDWARD VANSCOIT

Date: 7/6/17

Signature: James Griffin

Printed Name: James Griffin

Date: 7/6/2017

APPENDIX H

USFWS Section 7 Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 216-4720 Fax:
http://www.fws.gov/midwest/endangered/section7/s7process/7a2process.html

In Reply Refer To: June 13, 2017
Consultation Code: 03E13000-2017-SLI-0312
Event Code: 03E13000-2017-E-01007
Project Name: Nicor Gas Pipeline Replacement - Dubuque Line; Hampshire, Pingree Grove, Elgin, Kane County, IL

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Please note! For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

For all other projects, continue the Section 7 Consultation process by going to our Section 7 Technical Assistance website at http://www.fws.gov/midwest/endangered/section7/s7process/index.html. If you are familiar with this website, you may want to go to Step 2 of the Section 7 Consultation process at http://www.fws.gov/midwest/endangered/section7/s7process/step2.html.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website

http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 216-4720

Project Summary

Consultation Code: 03E13000-2017-SLI-0312

Event Code: 03E13000-2017-E-01007

Project Name: Nicor Gas Pipeline Replacement - Dubuque Line; Hampshire, Pingree Grove, Elgin, Kane County, IL

Project Type: OIL OR GAS

Project Description: The Nicor Gas Project Area that is the subject of this request for a Regional Permit is located within Nicor Gas easements from Station 95, located west of Ketchum Road and approximately 770 feet north of Allen Road, to Station 319, located along Madeline Lane and approximately 290 feet north of Millennium Drive, in unincorporated Kane County, Illinois (42.076897°N/-88.407236°W). The purpose of the project is to install 7.9 linear miles of 30-inch diameter natural gas pipeline within existing Nicor Gas easements and temporary working easements at the Project Area. The proposed activities throughout the entire Project Area will involve the temporary disturbance of approximately 62.62 acres. The Project Area will be accessed from road rights-of-way, temporary work space, and existing Nicor Gas Easements within the Project Area.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.08611712241635N88.42841693398697W

Counties: Kane, IL

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat *(Myotis septentrionalis)*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9045

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *(Platanthera leucophaea)*	Threatened

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:

- Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html

Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

There are no critical habitats within your project area.

APPENDIX I

Threatened and Endangered Species Survey Results

APPENDIX I

Threatened and Endangered Species Survey Results

APPLIED ECOLOGICAL SERVICES
SPECIALISTS IN ECOLOGICAL SCIENCE, RESTORATION, MANAGEMENT, AND RESEARCH
120 W MAIN ST • WEST DUNDEE, IL 60118 • (847) 844-9385

Nicor Mussel Survey

Tyler Creek & Tributaries within the Nicor Dubuque Line ROW
Conducted by Applied Ecological Services, Inc.; Todd Polacek, Wayne Schennum, Kasey Clark
AES# 17-0247
June 15, 2017

Introduction

Nicor will be replacing eight miles (42,000 linear feet) of 22" pipe with 30" pipe between Hampshire, IL and the west side of Elgin, IL (Dubuque line) (Exhibit 1). The pipeline ROW crosses Tyler Creek and five of its branches or tributaries. Prior to the start of construction in late June, Nicor hired AES to conduct a survey for freshwater mussels (Unionidae) of all streams crossed within the project area.

Sites N002, N006, N009, N011, N012, N014 were sampled over two days, June 1 and 2, 2017 (Exhibit 2a-f). In general, all sites were marginal to very poor habitat condition (sedimentation/sloughing banks) with no Unionid mussels observed except Site N006 (Horse ranch) and Site N002, the railroad trestle, the latter of which was exceptional.

Materials & Methods

Beginning at the downstream end of the surveyed 180' reach transect (100' below Area of Direct Impact (ADI), 60' within the ADI and 20' upstream) field reconnaissance was conducted by the Team in early June 2017 during clear, stable flow conditions to maximize visual sightings of exposed mussels. Two biologists started in the stream on opposite banks on the downstream end of each sample reach while one biologist recorded findings and confirmed field identification bankside. Banks were scanned for muskrat/raccoon middens and washed up shells of dead mussels. All mussels found during this effort were identified to species, photographed, and noted as either recently dead (retaining nacre, appearing fresh) or relic (degraded by the elements, lacking nacre, peeled/crumbling shell) following methods in Douglas et al. (2016).

A number of plexiglass-bottom viewing tools were used (Reef Scope Underwater View Bucket, LureCraft Flogger) to view mussels at depth and in faster riffle reaches where turbulence and scour limited clear view. "Softer flow" edges of the riffles were sampled visually sans scope and as surveyors met in the middle on transect lines, view buckets were utilized. An effort was made to objectively sample all flow regimes within the reach and habitat substrates, with a special effort on highest quality habitat within the reach (See *Field Sketch Site N002* below for details of optimal habitat and additional findings).

Dead mussels or fragments were collected by hand, while live mussels were handled, photographed (the first few of a positive identification of that species) and returned to the same habitat and in as close of position as they were found. Dead mussels and fragments were taken bankside for ID and several were taken as voucher specimens, the rest were returned. The best/most easily identifiable voucher specimens for ID were retained.

Results

The results of the mussel survey at all six Nicor pipeline ROW crossings of Tyler Creek and its tributaries are given in the table below. Information includes the number of each species identified at each point, both live and dead. A habitat description for each sample point is provided below.

Table 1: Tyler Creek Mussel Survey

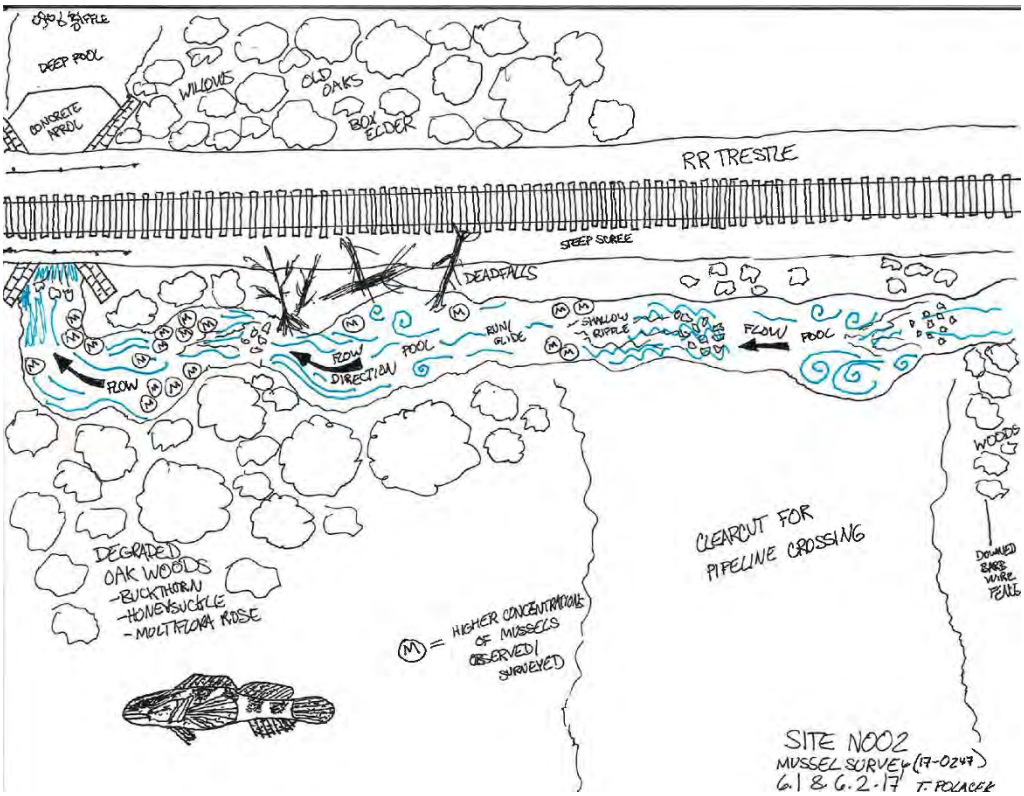
	Ellipse (*Venustaconcha ellipsiformis*)		Slippershell (*Alasmidonta viridis*)	
Location	live	dead	live	dead
N002	10	12	1	--
N006	--	--	--	--
N009	--	--	--	--
N011	--	--	--	--
N012	--	--	--	--
N014	--	--	--	--

Also observed: Mottled Sculpin (*Cottus bairdi*) and Mother's Day Caddisfly (Black caddis) (*Brachycentrus occidentalis*).

Habitat Descriptions:

N002: meandering mainstem; width 25 feet; riffle-and-pool structure; bottom type varies from sand and fine gravel to cobble; water clear and cold; lack of vascular aquatic vegetation; shoreline relatively stable; banks with narrow band of grasses and sedges; steep railroad tracks on west side with moderately stable rock ballast; stream shaded on downstream portion and under upstream road bridge, sunlit in center. Site N002 has substantial flow and gradient and water temperatures were cold to cool and probably highly oxygenated. (Exhibit 2b)

Image of site N002 looking upstream at the RR Trestle.



Field Sketch of site N002 habitat and findings

N006: channelized tributary to creek; width 18 feet; bottom mostly loose silt with some fine gravel and sand in center; very steep banks 10 feet above stream; very slow riffle structure; most of shoreline heavily wooded; Water meal (*Elodea*) and algae beds present; large woody debris frequent; broken outflow tile; cold water; abundant pea clams embedded in the silt and sand (Sphaeriidae); lower end of riffle with

stable bottom; minnows observed (shiners, bluntnose minnows); bank erosion due to agricultural runoff. (Exhibit 2c)

N009: channelized trapezoidal tributary to Tyler Creek; stream completely packed with dense beds of exotic Curly Pondweed (*Potamogeton crispus*); riffle-and-pool structure very poorly developed; bottom with 25 inches of silt and organic matter; bordered by belt of exotic reed canary grass (*Phalaris arundinacea*); level mowed lawn surroundings in residential development; filamentous algae on bottom; snails and pea clams abundant; moderately steep bank eroding. (Exhibit 2d)

N011: channelized tributary to Tyler Creek; width 25 feet; silt and mud bottom high in organic matter; no riffle-and-pool structure; bordered by belt of reed canary grass (also in stream and greatly reducing flow rate); surrounded by agricultural land on west, fallow field on east; erosion prevention mat installed on section planned for pipeline crossing. (Exhibit 2e)

N012: channelized mainstem of Tyler Creek; width 10 feet; one foot of silt on bottom and high organic load; highly incised channel with toe erosion and sloughing banks; narrow belt of reed canary grass on borders; depth 10 inches; water clear; entire stream open and sunlit with no woody vegetation within 400 feet; surrounded by row crops on north and former wetland, occasionally farmed, on south. (Exhibit 2e)

N014: channelized main stream of Tyler Creek; water 2 inches deep over silt bottom; stream only 2 feet wide no visible structure; border by mature oak savanna with dense invasive brush, e.g. common buckthorn (*Rhamnus cathartica*); limited herbaceous layer with heavy oak leaf litter; no instream vegetation. (Exhibit 2f)

Discussion

Tyler Creek for most of its length is a second order tributary to the Fox River in Elgin. Five of the six proposed Nicor pipeline locations (N006, N009, N011, N012, N014) are channelized parts of the mainstem or its tributaries. Habitat for mussels and other aquatic organisms is extremely poor or non-supportive at these sites. All have been completely altered by agricultural and some residential development. N006 has some small riffle development as the channel begins to meander in the new streambed. However, its depth and bottom type are shallow and silty, respectively, and still highly unsuitable for mussels. Site N002 is nearest the Fox River, and its habitat characteristics are ideal for mussels requiring clear cold water and rocky substrates. Its riffle-pool structure in its original channel and coarse bottom is an uncommon feature in today's residential and agricultural landscape. The only negative feature is the limited buffer on either side of the proposed crossing, particularly on the west side where a 15 – 20-foot-high very steep railroad embankment covered in rocky ballast could degrade the stream if it erodes.

Two highly significant mussel species were observed, identified and photographed (see Table 1). They are the Slippershell (*Alasmidonta viridis*) and Ellipse (Venustaconcha ellipsiformes) (see Photos 1-2). The Ellipse has a status listing as Uncommon, while it has been extirpated from OH, it is Threatened in IA and WI, it is a Species of Special Concern in IL and IN (INHS 4137). Live individuals were found only for the

Ellipse. The Slippershell (*Alismidonta viridis*), now listed as threatened and previously reported from stretch of stream where sample point N002 is located, was found (one live specimen below trestle riffle). The Slippershell and Ellipse are both small and have radiating green lines on their shells. The field and lab identification was based on the differences in shell shape and size. The Ellipse is larger and less inflated than the Slippershell (Badra 2007).

During the mussel investigation, AES staff identified two species which are characteristic of cold rocky bottom streams. They are the Mottled Sculpin (*Cottus bairdi*) and Mother's Day Caddisfly (*Brachycentrus occidentalis*). These species and the three mussels indicate the high-quality habitat of Tyler Creek at crossing N002.

Conclusion

Three State listed mussel species were found in and adjacent to the Nicor ROW crossing of Tyler Creek at the most downstream location (Site N002). Nicor will avoid impacting this stream by drilling under it using Horizontal Directional Drilling (HDD). In addition, as an extra precaution, Nicor will move mussels in and immediately downstream of the ROW to an appropriate habitat location upstream of the ROW. No other stream crossings on the above Table 1 list contain mussels or appropriate habitat in or adjacent to the ROW.

References

Badra, P.J. 2007. Special Animal Abstract for *Venustaconcha ellipsiformis* (Ellipse). Michigan Natural Features Inventory. Lansing MI.

Cummins, Kevin S. and Christine A Mayer. 1992. Freshwater Mussels of the Midwest. Champaign, IL: Illinois Natural History Survey, Manual 5.

Douglas, Sarah A., Christopher A. Phillips, and Michael J. Dreslik. 2016. Freshwater Mollusk Sampling Along the Southern I-294 Corridor. Illinois Natural History Survey – Prairie Research Institute.

Illinois Endangered Species Protection Board. 2015. Checklist of Illinois Endangered and Threatened Animals and Plants. Champaign, IL: Illinois Department of Natural Resources.

Illinois Department of Natural Resources. 2011. Illinois Wildlife Action Plan: Historical Occurrence and Present Status of Illinois Species in Greatest Need of Conservation. Champaign, IL: Illinois DNR.

Smith, Philip W. 1979. The Fishes of Illinois. Chicago, IL: University of Illinois Press.

Exhibits

Exhibit 1: Nicor Pipeline – Site Location Map

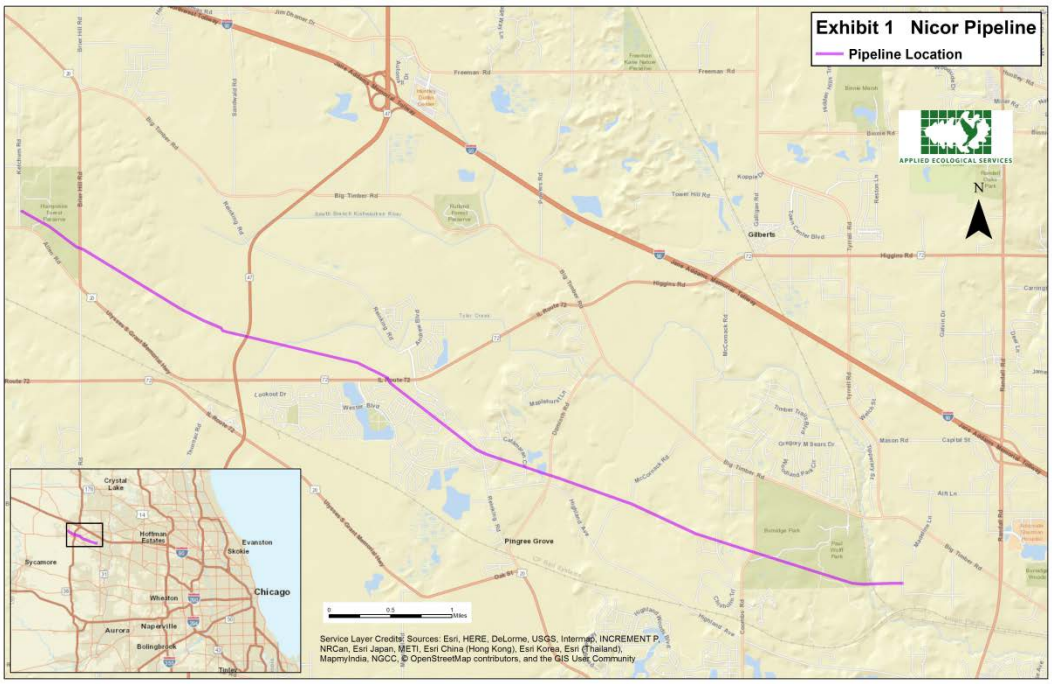


Exhibit 2a. Overview Habitat Suitability Assessment Map

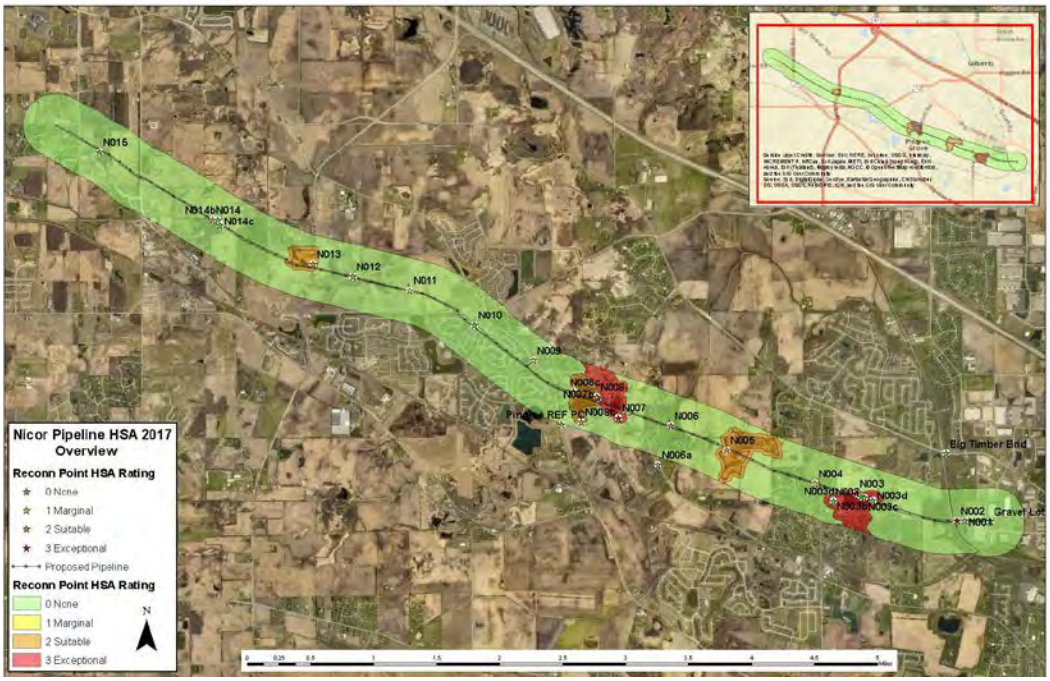


Exhibit 2b. N002 Habitat Suitability Assessment Map

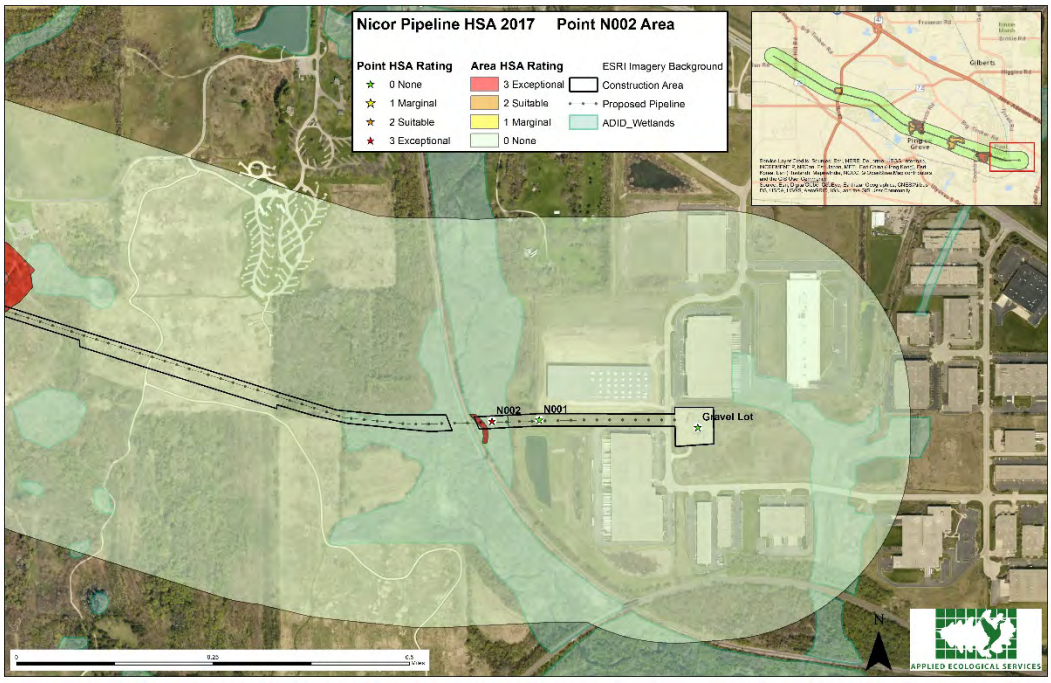


Exhibit 2c. N006 Habitat Suitability Assessment Map

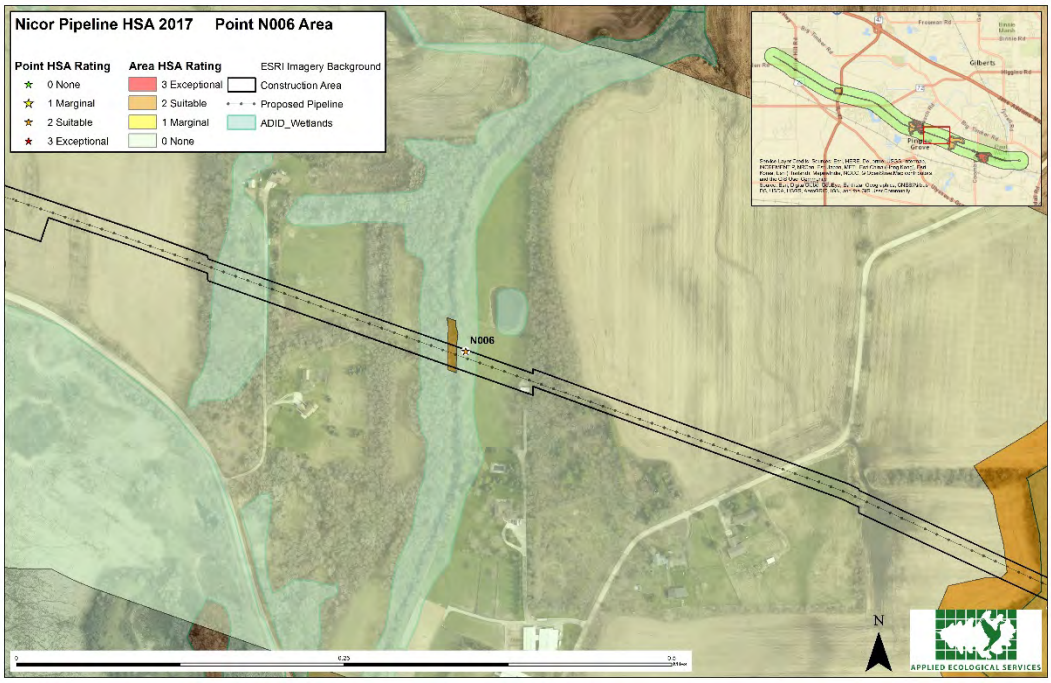


Exhibit 2d. N009 Habitat Suitability Assessment Map

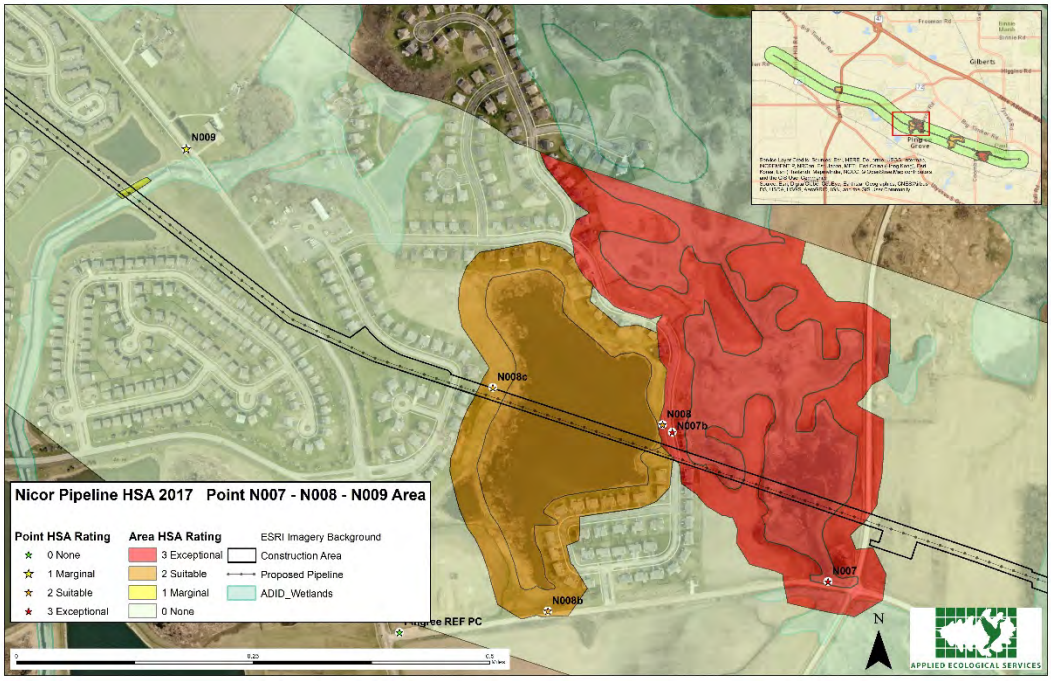


Exhibit 2e. N011 and N012 Habitat Suitability Assessment Map

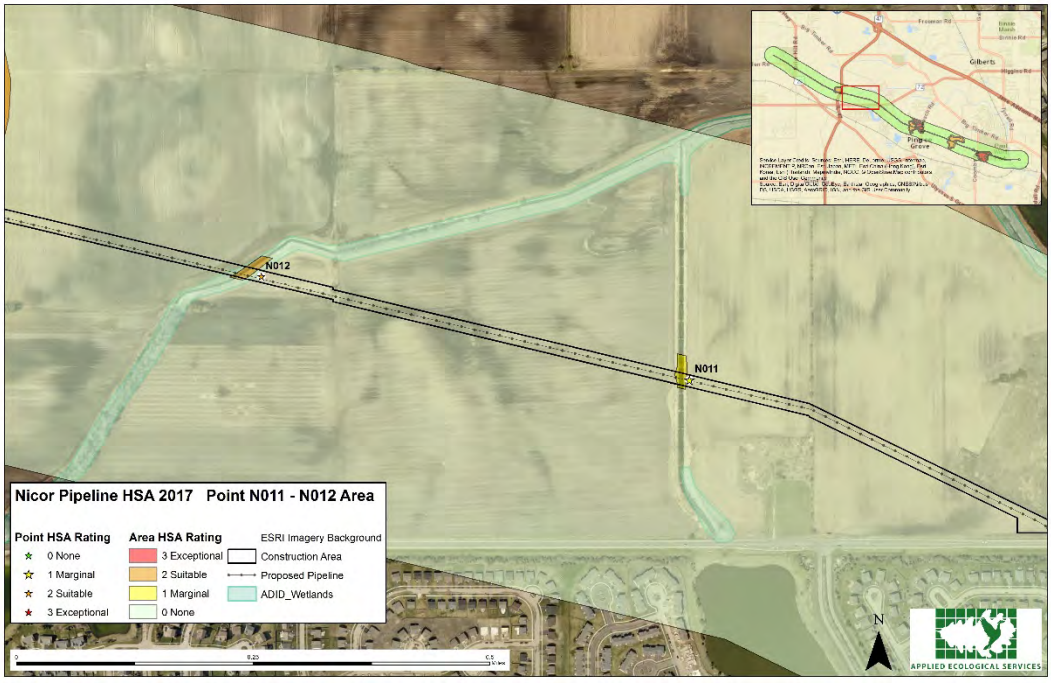
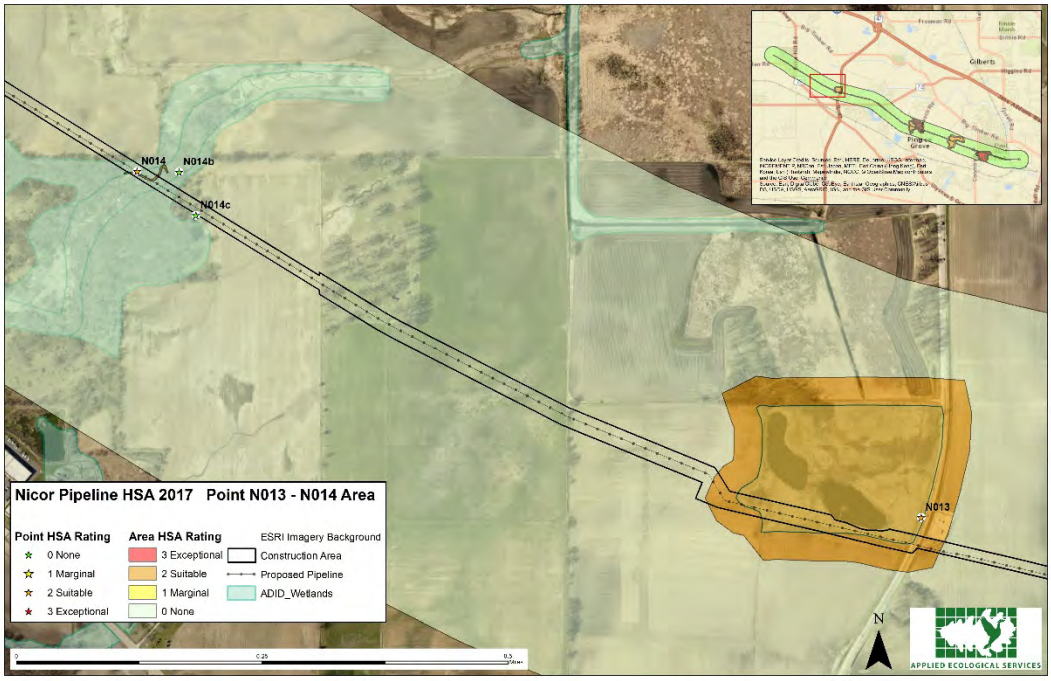


Exhibit 2f. N014 Habitat Suitability Assessment Map



Photos

Photo 1: Slippershell Mussel

Photo 2: Ellipse Mussel

From: William W. Stoll
Sent: Monday, June 19, 2017 2:42 PM
To: Kasey A. Clark
Subject: FW: Nicor project bird surveys

From: William W. Stoll
Sent: Thursday, June 15, 2017 9:35 AM
To: 'Skufca, Jenny'
Subject: Nicor project bird surveys

Jenny – As you requested in your email on Tuesday, below is a summary for our pre-construction bird surveys of the wetland habitat areas in the Nicor Dubuque line project area. We have also completed a mussel survey of all six streams / channels in the project area and only found mussels in Tyler Creek (N002 in Appendix D). We plan to submit our report from that study with the revised Conservation Plan.

Thanks,,
Bill

From: Ry L. Thompson
Sent: Wednesday, June 14, 2017 3:10 PM
To: William W. Stoll
Cc: Michael J. McGraw
Subject: RE: Nicor Conservation Plan

Bill,
To date I've completed two of the three Bird Surveys that Mike and I agreed would be necessary to adequately characterize the bird community at the wetland sites along the Nicor Pipeline Corridor.

These include:
1) Marsh Bird Surveys, conducted in the evening following the Great Lakes Marsh Monitoring Program protocols, and
2) Breeding Bird Surveys, conducted in the morning following the Ralph, et. al. point count protocols.

They've each been completed twice – June 5/6 and June 12/13 – at the following points:
**Burnidge Forest Preserve – Site 3 – 2 points
**Neighborhood Wetland (w. of Coombs Rd.) – Site 4 – 1 point
**Agricultural Wetland (e. of McCornack Rd.) – Site 5 – 2 points
**Wetland West of Damisch Rd. – Site 7 – 2 marsh bird/3 point counts
**Catamaran Circle Wetland – Site 8 – 1 point
**Hwy 47 Wetland – Site 13 – 1 point.

During the above surveys, no target species have been detected. One final set of surveys will be completed next week.

Thanks,
Ry

From: Ry L. Thompson
Sent: Monday, June 26, 2017 10:13 AM
To: William W. Stoll; Kasey A. Clark
Subject: RE: Mussel Report FINAL??

Bill,
I didn't find any of the species in the consultation (YHBL or CAGU), but I did have one individual male Least Bittern (LEBI) (IL State Threatened) on the final survey of the final morning. I was in the marsh at Burnidge, which is south of the new corridor through the prairie.
Ry

From: William W. Stoll
Sent: Monday, June 26, 2017 8:12 AM
To: Kasey A. Clark <kasey.clark@appliedeco.com>; Ry L. Thompson <ry.thompson@appliedeco.com>
Subject: RE: Mussel Report FINAL??

Thanks Kasey.

Ry – Did you find any of the species covered by the plan or any other listed species in your last bird survey?

Bill