

**TP1301 Transmission Line Rebuild Project  
Jackson County, Illinois**

**Timber Rattlesnake Conservation Plan**

**Prepared for:  
Illinois Department of Natural Resources**

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**WSP Project No. 325220171**

**May 2023**

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## Report Approval

Report Name: AIC TP1301 Transmission Line Rebuild Project Timber Rattlesnake Conservation Plan

Project Number: 325220171

Site: Line TP1301

Site Location: Jackson County, Illinois

We have reviewed and approve of the enclosed Conservation Plan for the above referenced project. Changes to this report shall be documented in writing and approved.

WSP Author Rebecca Porath Date: 05/05/2023

WSP Project Manager Stephen Stumne Date: 05/05/2023

WSP Technical Reviewer Matthew Basler Date: 05/05/2023



## CONTENTS

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1.	INTRODUCTION .....	1
2.	LIKELY IMPACTS.....	1
2.1	Purpose and Need.....	1
2.2	Area to be Affected.....	2
2.2.1	Location .....	2
2.2.2	Land Ownership/Control.....	3
2.2.3	Vegetation in Project Area and Vicinity .....	4
2.3	Biological Data on the Timber Rattlesnake.....	6
2.3.1	Species Description .....	6
2.3.2	Life History Needs.....	7
2.3.3	Habitat Characteristics .....	8
2.3.4	Population Status in the Project Area .....	10
2.4	Description of Project Activities.....	11
2.4.1	Activities with Potential for Incidental Take .....	11
2.4.2	Construction Sequence and Schedule.....	11
2.4.3	Project Elements.....	11
2.4.4	Permitting Reviews .....	13
2.4.5	Potential Impacts on the Timber Rattlesnake.....	14
3.	EFFORTS TO AVOID, MINIMIZE, AND MITIGATE IMPACTS.....	19
3.1	Avoidance and Minimization Measures .....	19
3.2	Mitigation Measures .....	21
3.3	Post Construction Monitoring.....	21
3.3.1	Species Presence Monitoring and Reporting .....	21
3.3.2	Revegetation Monitoring and Reporting.....	22
4.	ADAPTIVE MANAGEMENT PRACTICES .....	22
5.	CONSERVATION PLAN FUNDING .....	22
6.	PROJECT ALTERNATIVES.....	23
6.1	Preferred Alternative.....	23
6.2	No Action Alternative .....	23
6.3	Potential Route Alternatives.....	23
7.	IMPLEMENTING AGREEMENT.....	23
7.1	Signatories .....	23
7.2	Responsibilities and Schedules .....	24
7.3	Certification .....	25
7.4	Compliance with Federal, State, and Local Regulations .....	25
8.	REFERENCES .....	26



## **TABLES**

---

Table 1. Land Cover in the Vicinity of the Project Area .....	4
Table 2. Federal, State, and Local Permits with Reviews .....	13
Table 3. Dates that Timber Rattlesnakes are Expected to Occupy Summer Habitat in the Project Area..	14
Table 4. Summary of Permanent and Temporary Impacts Within or Adjacent to Timber Rattlesnake Potential Habitat .....	17
Table 5. Estimated Maximum Incidental Take of Individual Timber Rattlesnakes.....	18
Table 6. Summary of Proposed Mitigation.....	21

## **FIGURES**

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Figure 1. Locations of Timber Rattlesnake Conservation Plan Project Area and IDNR Records.....	A-1
Figure 2. Timber Rattlesnake Potential Habitat within a 3-mile Vicinity .....	A-2
Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 1 of 14).....	A-3

## **APPENDICES**

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Appendix A	Figures
Appendix B	IDNR Correspondence
Appendix C	Land Ownership or Control
Appendix D	Timber Rattlesnake Educational Pamphlet

## **LIST OF ABBREVIATIONS AND ACRONYMS**

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AIC	Ameren Illinois Company
BMP	Best Management Practice
EcoCAT	Ecological Compliance Assessment Tool
EO	Element Occurrence
FONSI	Finding of No Significant Impact
IDNR	Illinois Department of Natural Resources
IHPA	Illinois Historic Preservation Agency
ITA	Incidental Take Authorization
kV	kilovolt
mph	miles per hour
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
O&M	operations and maintenance
PLSS	Public Land Survey System
ROW	Right-of-way
SESC	Soil Erosion and Sedimentation Control
SNF	Shawnee National Forest
SWPPP	Storm Water Pollution Prevention Plan
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WSP	WSP USA Environment & Infrastructure, Inc.



# 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: Ameren Illinois Company

PROJECT NAME: TP1301 Transmission Line Rebuild Project

COUNTY: Jackson County, Illinois

AMOUNT OF IMPACT AREA: Approximately 9.0 acres permanent impact, approximately 47.2 acres temporary impact

## 1. INTRODUCTION

This Conservation Plan has been prepared in accordance with the requirements outlined in Title 17, Chapter I(c), Section 1080 of the Illinois Administrative Code (Incidental Taking of Endangered or Threatened Species). Section 1080 allows the Illinois Department of Natural Resources (IDNR) to authorize the incidental take of species listed as Endangered or Threatened by the State of Illinois following the preparation of an approved Conservation Plan. This Conservation Plan is written in support of Ameren Illinois Company (AIC)'s application for incidental take authorization (ITA) from IDNR for the timber rattlesnake (*Crotalus horridus*).

AIC is proposing to rebuild the TP1301 138-kilovolt (kV) Transmission Line between Grand Tower and West Frankfort in southern Illinois (proposed project). AIC would replace the existing 38 kV wooden H-frame structures with steel monopole structures due to age and condition of existing structures. The steel monopole support structures would eventually support a double circuit 345 kV/138 kV line. For the portion of the new double circuit line that is east of Fountain Bluff, the project would include acquiring an additional 25 feet of right-of-way (ROW) to the north of the existing line on Shawnee National Forest (SNF) lands only. In the future, when the line is replaced with a 345 kV line, additional ROW would be acquired on private lands, but that is not part of this project.

## 2. LIKELY IMPACTS

### 2.1 Purpose and Need

AIC has performed a field condition review of the existing 138 kilovolt (kV) wooden H-frame TP1301 transmission line (Line TP1301) that revealed the need for structure replacements. The existing poles are over 70 years old with significant pole top issues that cannot bear the load of fiber optic replacement cables, and the existing shield wire is rusting. By replacing the structures



in a non-emergency situation, the work can be managed to limit disturbance as much as possible (e.g., avoiding emergency work during wet periods). If one or more of the structures fail and the line goes down, it is much more difficult to minimize disturbance. Therefore, AIC has determined the best approach is to move forward with a portion of the ultimate configuration required in this area, which includes replacing the existing Line TP1301 138kV wooden H-frame line with steel monopole support structures capable of carrying a double circuit (138kV and 345kV lines). This project would only install the 138kV line but would include acquisition of additional ROW on SNF lands to support the future addition of a 345kV line. The wider ROW is required to keep vegetation a safe distance from the future 345kV line. Additional ROW will not be acquired on Fountain Bluff or on private lands at this time.

The purpose of the AIC TP1301 Transmission Line Rebuild Project is to improve power transmission system reliability and operating flexibility in the area needed due to age and condition of the existing line and continued electricity demands on the grid. The need for the project is to rebuild the existing 138kV wooden H-frame line with double circuit steel monopole support structures that are capable of bearing the load of fiber optic cables and address impacts related to acquisition of additional ROW width (east of Fountain Bluff on Shawnee National Forest [SNF] lands only) to support the future addition of a 345kV line.

Consultation with the IDNR (Appendix B), including an Illinois Ecological Compliance Assessment Tool (EcoCAT) review (#2207808) dated January 10, 2022, indicated that the timber rattlesnake, listed as threatened pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10), may potentially occur in the vicinity of the project west of Route 127. The Illinois Natural Heritage Database has records of this species occurring west of Route 127 in the vicinity of the project, but there are no records of the timber rattlesnake occurring within 5 miles of the project east of Route 127 (Illinois Natural Heritage Database 2022).

The EcoCAT review recommended that work within the approximately 11-mile stretch of transmission line between the West Substation at Powerplant Road and Illinois Route 127 should be done between the dates of November 1 and March 31. Alternatively, the review recommended that if work cannot be conducted between those dates, the applicant may assume the presence and potential adverse effects to the timber rattlesnake and seek an ITA pursuant to Part 1080 and Section 5.5 of the Illinois Endangered Species Protection Act to avoid potential liability. Because the applicant cannot ensure that work will be completed between November 1 and March 31, AIC is seeking an ITA from the IDNR for the timber rattlesnake for the portion of the project between the West Substation and Illinois Route 127 (project area) (see Figure 1 in Appendix A).

## **2.2 Area to be Affected**

### **2.2.1 Location**

The entire 17-mile-long Line TP1301 electric powerline ROW is located in Jackson County, Illinois. The line traverses northeast from the Fountain Bluff area in Jackson County across Oakwood Bottoms Greentree Reservoir and the Big Muddy River to a substation northwest of Carbondale. Approximately 4.75 miles of this line is in an existing special use permitted ROW within the SNF. This line provides reliability and energy transaction support for southern Illinois.



Because the Illinois Natural Heritage Database contains records of timber rattlesnake occurrence in the vicinity of the project west of Illinois Route 127, the project area for this conservation plan is limited to only approximately 11.7 miles of Line TP1301 ROW between the West Substation on Powerplant Road and Route 127 in Jackson County, Illinois (Figure 1).

The conservation plan project area is located in areas with the following legal land descriptions:

- Jackson County, Township 10 S, Range 3 W, Sections 4, 5, 6, and 7;
- Jackson County, Township 10 S, Range 4 W, Sections 12, 13, and 14;
- Jackson County, Township 9 S, Range 2 W, Sections 16, 17, 19, and 20; and
- Jackson County, Township 9 S, Range 3 W, Sections 24, 25, 26, 33, 34, and 35.

Within the project area, approximately 70 new steel monopole structures on concrete foundation would be placed in the same general vicinity as the existing structures and within the existing and previously disturbed 100-foot ROW. East of Fountain Bluff, this project includes acquisition of additional ROW on SNF lands for the future 345kV line for a total ROW width of 150 feet to keep vegetation at a safe and acceptable distance from the energized lines. Since the existing transmission line is colocated with another transmission line to the south, AIC is only needing to acquire an additional 25 feet of ROW to the north of the current easement and no tree removal is required on the south side of the line. The additional ROW width would result in approximately 9.0 acres of tree clearing within SNF in addition to sporadic tree trimming or removal required along access roads. The portion of the project within Fountain Bluff would maintain the same ROW width with replacement of only three existing structures (structures 1005, 1010, and 1016). The three existing wooden single circuit 138kV H-frame structures within Fountain Bluff would be replaced with new similar wooden 138kV H-frame structures directly embedded in the vicinity of the existing structures. AIC and its selected contractor will utilize equipment and construction methods to minimize surface disturbance to the greatest extent possible and are proposing to replace structures in late summer and fall when conditions are more likely to be dry.

Construction access would be along the existing transmission ROW and existing U.S. Forest Service (USFS) roads to the extent practicable with some improvements or modifications for equipment and material passage.

### **2.2.2 Land Ownership/Control**

The existing transmission line for this project is owned and operated by AIC. For the 4.75 miles of the line that cross SNF property, the special use permit authorizing use of forest lands for this and other transmission lines crossing SNF was issued on June 2, 2008. AIC is coordinating with SNF to amend the existing land use authorization (special use permit amendment). This permit amendment would ensure that operations and maintenance (O&M) activities for this powerline are in compliance with USFS regulations (USFS Special Uses Handbook 2709.11 and USFS Manual 2700). SNF will develop an Operation and Maintenance Plan as part of the permit amendment that will help provide the necessary oversight of project construction and future O&M of the utility line and ROW on national forest lands.

The remaining approximately 7 miles of ROW outside of SNF property is located along privately-owned lands. Appendix C includes a table summary indicating ownership or control of the private



properties in the project area. AIC has easement agreements for the transmission line ROW with each of the landowners and the terms of the individual easements vary. This project does not include acquisition of new ROW on private land and maintenance and construction activities would be completed under the existing easements with private landowners.

### 2.2.3 Vegetation in Project Area and Vicinity

Land cover within the vicinity of the project area, as classified by the National Land Cover Database (NLCD), is dominated by deciduous forest, woody wetlands, and cultivated crop field cover classes (Table 1) (Dewitz 2019). Access roads to the ROW are generally gravel, USFS roads, or narrow infrequently used single vehicle trails. Vegetation occurrence along single vehicle trails is typically herbaceous or somewhat scrubby with forest immediately bordering the ROW edge. A small number of proposed access roads across the project area have not been previously established and cross open/cleared areas in pasture, lawn, or otherwise herbaceous vegetation.

**Table 1. Land Cover in the Vicinity of the Project Area**

Land Classification	3-Mile Radius	
	Acres	Percent
Deciduous Forest	25,845.52	40.8%
Cultivated Crops	10,484.98	16.5%
Woody Wetlands	10,187.37	16.1%
Hay/Pasture	6,018.25	9.5%
Open Water	3,281.10	5.2%
Developed, Open Space	3,094.60	4.9%
Developed, Low Intensity	2,148.51	3.4%
Developed, Medium Intensity	871.81	1.4%
Mixed Forest	572.86	0.9%
Emergent Herbaceous Wetlands	310.27	0.5%
Developed, High Intensity	197.45	0.3%
Herbaceous	187.54	0.3%
Barren Land	130.56	0.2%
Shrub/Scrub	57.38	0.1%
Evergreen Forest	14.01	0.0%
<b>Total</b>	<b>63,402.22</b>	<b>100.0%</b>

Source: Dewitz 2019

The project area is located in the Interior River Valleys and Hills level III ecoregion, characterized by wide, flat bottomed, terraced valleys, and forested valley slopes, bluffs, and loess-covered hills along the Mississippi River floodplain. Wildlife habitats within the project area include upland deciduous hardwood forest surrounding upland prairie grasses and herbs, and deciduous bottomland floodplain forest surrounding palustrine emergent wetlands within the existing ROW.

Floristic surveys of the project area were conducted in the summer and fall of 2021 by a WSP USA Environment & Infrastructure, Inc. (WSP) botanist. The project area can be divided into three segments (Fountain Bluff, Oakwood Bottoms, and River Bluffs) based on different habitat and

landscape conditions, and a summary of plant communities encountered within each segment during the 2021 surveys is described below.

The westernmost portion of Line TP1301 through Fountain Bluff on SNF lands is characterized by sandstone cliffs with caves and rock houses, forested limestone slopes, mesophytic forest at the base of cliffs, occasional prairies along the limestone escarpment, and a small area of floodplain forest. A number of biogeographically disjunct and regionally uncommon plant species have been found within the isolated bluff. The forest is dominated by oak and hickory species within upland, dry-mesic to mesic soils, and includes black oak (*Quercus velutina*), white oak (*Quercus alba*), red oak (*Quercus rubra*), pignut hickory (*Carya glabra*), and bitternut hickory (*Carya cordiformis*). While floristic surveys were not conducted for this project within Fountain Bluff, Mohlenbrock and Wilson extensively studied the area, characterized plant communities, and produced a flora in the 1980's, and the following plant community descriptions are based on those characterizations (Mohlenbrock and Wilson 1985).

Along forested limestone slopes such as those crossed by project area access roads, canopy species like white ash (*Fraxinus americana*), Shumard oak (*Quercus shumardii*), eastern red cedar (*Juniperus virginiana*), chinquapin oak (*Quercus muhlenbergii*), and black walnut (*Juglans nigra*) are characteristic and commonly grow over shrubs including rusty haw (*Viburnum rufidulum*), pawpaw (*Asimina triloba*), and Carolina buckthorn (*Frangula carolinianum*). Old field and scrub-shrub upland species are present within the existing transmission line ROW.

The Oakwood Bottoms Greentree Reservoir segment is characterized by forested floodplain transected by levees and ditches. Pin oak (*Quercus palustris*) is the dominant canopy species but shagbark hickory (*Carya ovata*), cherrybark oak (*Quercus pagoda*), black willow (*Salix nigra*), and red maple (*Acer rubrum*) are also common (Phillippe 1996). Open, marshy areas dominate the cleared ROW corridor and several open-growing conservative species have been found in similar habitat in Oakwood Bottoms, including Arkansas managrass (*Glyceria arkansana*) and false pale managrass (*Torreyochloa pallida*). Land within the Oakwood Bottoms segment is almost entirely wetland; herbaceous marshland dominates the existing ROW and hardwood floodplain forest is almost exclusively found in the area proposed for the expanded ROW in SNF. Within the existing Line TP1301 ROW, herbaceous wetland species are dominant, including false aster (*Boltonia asteroides*), rough barnyardgrass (*Echinochloa muricata*), several species of beggarticks (*Bidens* spp.), sumpweed (*Iva annua*), rice cutgrass (*Leersia oryzoides*), false daisy (*Eclipta prostrata*), and a number of sedges (*Carex* spp.). Pin oak is the most common overstory species in forested areas within the proposed ROW expansion area in SNF, and it can mix in with shagbark hickory, American elm (*Ulmus americana*), red maple, bur oak (*Quercus macrocarpa*), overcup oak (*Quercus lyrata*), and sweetgum (*Liquidambar styraciflua*). In wetter areas, stands of bald cypress (*Taxodium distichum*), black willow, and swamp cottonwood (*Populus heterophylla*) are typical. Characteristic shrub species include green ash (*Fraxinus pennsylvanica*), possumhaw (*Ilex decidua*), and sugarberry (*Celtis laevigata*). The herb layer includes species found in the open ROW, as well as wood reedgrass (*Cinna arundinacea*), bishopweed (*Ptilimnium costatum*), trumpet creeper (*Campsis radicans*), blue skullcap (*Scutellaria lateriflora*), and false nettle (*Boehmeria cylindrica*).

The River Bluffs segment east of Oakwood Bottoms Greentree Reservoir includes unglaciated, rugged and mostly forested series of bluffs, hills, and ravines. This segment is characterized by deeply dissected forested loess bluffs underlain by limestone. Species-rich mesophytic forest is

the most common community encountered here, and trees like sugar maple (*Acer saccharum*), American elm, white oak, sycamore (*Platanus occidentalis*), and bitternut hickory are among the most abundant (Woods et al. 2006). Within this segment, the existing ROW is typified by disturbed old field upland while the forested proposed ROW expansion area in SNF is mostly mesophytic forest. Herbaceous ROW plant assemblages vary by topographic position and degree of local disturbance, but frequently observed species include wingstem (*Verbesina alternifolia*), perplexing ticktrefoil (*Desmodium perplexum*), bear's foot (*Smallanthus uvedalis*), pale Indian plantain (*Arnoglossum atriplicifolium*), tall goldenrod (*Solidago altissima*), common ragweed (*Ambrosia artemisiifolia*), and Japanese stiltgrass (*Microstegium vimineum*). Deciduous forest is typified by a canopy of sugar maple, American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), and white oak. Common midstory shrubs and trees include beech, sugar maple, pawpaw, spicebush (*Lindera benzoin*), and musclewood (*Carpinus caroliniana*). Characteristic species in the herb layer include hog peanut (*Amphicarpae bracteata*), maidenhair fern (*Adiantum pedatum*), Japanese stiltgrass, goldenseal, Canada waterleaf (*Hydrophyllum canadense*), wild ginger (*Asarum canadense*), beech fern (*Phegopteris hexagonaptera*), beech drops (*Epifagus virginiana*), and Christmas fern (*Polystichum acrostichoides*).

## 2.3 Biological Data on the Timber Rattlesnake

This Conservation Plan has been prepared in accordance with the Illinois Endangered Species Protection Act (520 ILCS 10/5.5 and 17 Ill. Adm. Code 1080) in support of an ITA application to the IDNR. The purpose of this Conservation Plan is to review the proposed project in sufficient detail to determine to what extent the proposed action may result in “incidental take” of the timber rattlesnake, which is a state-threatened species in Illinois.

As described in Section 2.1, consultation with the IDNR in January 2022, indicated that the timber rattlesnake, listed as threatened pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10), may potentially occur in the vicinity of the project west of Route 127 based upon nearby occurrence records.

The general discussion of life history needs and habitat for the timber rattlesnake included in this Conservation Plan is incorporated by reference from the Spire STL Pipeline Project Conservation Plan (Spire 2018).

### 2.3.1 Species Description

The timber rattlesnake is a large, venomous snake, averaging 36 to 60 inches in length. Despite its size, cryptic coloration allows it to be easily concealed. Two color variations are commonly found: a yellow phase, which has black or dark brown crossbands on a lighter background color of yellow, brown or gray, and a black phase, which has dark crossbands on a dark background. Black or dark brown stippling also occurs to varying degrees, to the extent that some individuals appear all black. Scales are keeled, giving this rattlesnake a rough-skinned appearance. The timber rattlesnake has a broadly triangular head with many small scales on the crown of the head bordered by a few large scales (NYDEC 2022). Like other members of the pit-viper family, the timber rattlesnake has a temperature-sensitive pit on either side of the face between and a little below the eye and nostril (IDNR 2022). This sensory organ is used to detect prey and potential

predators. Another feature distinctive of rattlesnakes is the rattle. When vibrated, the rattle makes a buzzing sound characteristic of a disturbed rattlesnake (NYDEC 2022c).

### **2.3.2 Life History Needs**

Timber rattlesnakes are distributed widely from New Hampshire southward through the Appalachian Mountains to northern Florida and westward along the Gulf Coast to eastern Texas, Oklahoma, and Kansas. In the Midwest, it is found as far north as Minnesota and Wisconsin within the Mississippi River drainage and in southern Illinois, Indiana, and Ohio (Ernst and Ernst 2003). Timber rattlesnakes are most commonly found in mature forest in rugged, hilly, sometimes rocky terrain, or along rock bluffs and forests surrounding river corridors or riparian areas.

#### **2.3.2.1 Summer Foraging**

Timber rattlesnakes are active from approximately April to October and are known to bask on rock ledges near winter dens (INHS 2022). They usually mate during late summer and early autumn, and sperm are stored in the oviduct until the following spring, when the eggs are then fertilized. After a gestation period of approximately three months, six to 10 young are born in late summer or early autumn. During the beginning and end of the summer foraging season (spring and early fall), timber rattlesnakes are diurnal, but during the heat of the summer they shift to a crepuscular and nocturnal cycle to prevent overheating (Ernst and Barbour 1989, Fitch 1982). Timber rattlesnakes forage in upland forests, as well as forest edges, successional habitats, and disturbed areas where rodents are abundant. On the Principia College campus in Elsah, Illinois, radio tracking data for 17 timber rattlesnakes from 2015 to 2017 showed that the snakes spent an average of 50 to 60 percent of their time foraging along old-field edges and the remaining time in mature closed canopy forests that they used for hunting, mating, and for transiting between foraging areas (Eckert 2017). The foraging behavior and hunting strategies may differ depending on prey availability, season, and body size. The timber rattlesnake's diet consists primarily of small mammals and birds; less common prey are insects, lizards, toads, and small snakes (Collins 1982, Wright and Wright 1957). A source of drinking water is required (Petersen and Fritsch 1986).

#### **2.3.2.2 Basking and Gestation**

After emergence from hibernation, timber rattlesnakes remain near the dens during cool and inconsistent spring weather and temperatures. As temperatures become warmer and more stable, males and non-gravid females may migrate to lowlands, pasture edges, the banks of streams and rivers, and brushy or wooded sites. The migration distance varies by sex and reproductive condition. Males migrate farther than non-gravid females, and gravid females remain close to dens. Migration distances range from 0.5 to one mile but may be up to five miles for males seeking mates. Timber rattlesnakes migrate back to dens in the fall for hibernation, in some cases utilizing the same routes. In contrast to the rest of the population, gravid females will occupy gestation sites throughout most of the active season. The movements of gravid snakes are not extensive because they do not forage during the later periods of gestation (Reinert et al. 1984).

### **2.3.2.3 Winter Hibernation**

Timber rattlesnakes are ectotherms and must hibernate below the frost line during winter months to survive. Weather conditions may dictate when timber rattlesnakes enter dens in the fall and emerge from dens in spring. During fall, den entry corresponds with the mean date of first frost and the time when ambient temperatures become too low for foraging (11°C). On the Principia College campus, snakes did not leave their dens until the average daily temperature exceeds approximately 16°C outside the den, and do not move into the woods until ground temperatures also exceed 16°C (Eckert 2017). Seasonal timing for such egress is usually in late March and extends through to early October, though snakes may actually reside near den entrances for one to two weeks prior to denning or just after emergence (Eckert 2017). Den ingress and egress may be affected in part by air and soil temperatures, but a high degree of conformity of denning dates suggests that innate biological rhythms may be partly responsible (Galligan and Dunson 1979, Martin 1992).

Adult timber rattlesnakes hibernate communally, and dens may be with other snake species. As described in Section 2.3.2.2, after den emergence in spring, timber rattlesnakes migrate approximately 0.5 to 1 mile (up to 5 miles in some cases) from their dens to summer ranges to forage, mate, and bask. They migrate back to dens in the fall, following chemical trails left from skin secretions of other individuals. Timber rattlesnakes move seasonally within summer ranges to breed and forage (Rudolph and Burgdorf 1997, Waldron et al. 2006).

### **2.3.3 Habitat Characteristics**

Timber rattlesnake habitat can be described in various ways as it relates to the species' seasonal activities. For the purposes of this Conservation Plan, timber rattlesnake habitat was divided into: summer foraging habitat, basking and gestating habitat, and winter hibernating habitat.

#### **2.3.3.1 Summer Foraging**

Summer foraging habitat includes upland forests and disturbed habitats, including edges of fields where prey is more abundant (INHS 2022; Brannan 2015a; Brannan 2015b). Summer foraging habitat, used by timber rattlesnakes during the peak of the active season, can range from 0.19 to 4 miles from winter dens, depending on a snake's sex and age. On the Principia College campus, snakes remained within 0.75-mile of their dens (Eckert 2017). This smaller dispersal distance could be due to a number of factors, such as the high quality of the nearby forested habitat, but is also likely due to the boundary effect of local roads (Eckert 2017).

Gravid females may move over smaller areas in summer than males and use areas that are rocky and open (Reinert 1984). On the Principia College campus, movement patterns (including rates of travel, routes and daily distance traveled) were shown to be influenced by size and sex of the snakes (Eckert 2017). Males and large snakes tended to move more with greater daily travel distances, particularly during mating season (Eckert 2017). Average home range exceeded 148 hectares (365.7 acres) for males and 26 hectares (64.2 acres) for females (Eckert 2017). In a study in Minnesota, canopy closure in summer habitat used by these females averaged less than 25 percent, and these areas had increased levels of downed woody debris and rock outcroppings (Reinert and Zapalorti 1988).

These areas presumably provided warmer ground temperatures needed for embryo development in gravid females. Adult males and non-gravid females have been found to use areas with greater than 50 to 60 percent canopy closure in mixed deciduous forest, thick leaf litter, and little downed woody debris or rocks (Brown and Greenberg 1992, Reinert 1984; Reinert and Zapalorti 1988). Vogt (1981) reported non-gravid females and males using mixed deciduous forests and agricultural fields within a distance of 1.5 miles of winter dens. Similarly, a more recent study showed males and non-gravid females using deciduous forests with greater than 58 percent canopy closure, as well as woodland edges along agricultural fields (Sajdak 1999). Young snakes used more open habitat than adult males, but not as open as gravid females used (Sajdak 1999).

#### **2.3.3.2 Basking and Gestating Habitat**

Basking sites have relatively open canopy and expanses of bedrock, scree, or exposed rock ledges. Gravid females may use these areas as gestating sites, if suitable (Martin 1989), but basking sites are more commonly used by transient and staging snakes that are moving toward or away from winter dens, or by pre-molt snakes, newborns, and snakes digesting a meal or attempting to heal from an injury. Basking sites are typically close to winter dens but can be found in other areas of a timber rattlesnake's home range.

The summer habitat of gravid females is more complex than non-gravid females and males due to the need for suitable gestation sites. These areas can be the den entrance itself, or at rock or grouping of rocks near the den. Common characteristics of gestation sites include sun exposure for at least part of the day, as well as protection from predators and inclement weather, including high temperatures in mid-summer. Since gravid females rarely travel far from the den, adequate gestation sites need to be within close proximity. A single den could have several gestation sites associated with it, and gravid females from two or more dens may share the same gestation site.

Martin (1989) found that when birthing occurred away from the den, snakes used gestation sites within 0.02 to 0.78 mile of the den, with a mean distance of 0.10 mile. Additionally, snakes that used the den opening as gestation sites often had alternative sites within 0.06 to 0.19 mile (Martin 1989).

#### **2.3.3.3 Winter Hibernating Habitat**

A hibernaculum, or den, is usually located in a rocky area of cliffs, ledges, or talus slopes, with cracks and fissures in the rock where the snakes can retreat below the frost line for the winter (Brown 1993). Dens are typically located on south and west facing slopes, which allow for warmer surface temperatures and perhaps shallower denning (Martin 1989). Den sites can be shared with other snake species including bullsnakes or gopher snakes (*Pituophis* sp.), racers (*Coluber* sp.), and milk snakes (*Lampropeltis* sp.) (Oldfield and Moriarty 1994). During fall ingress, timber rattlesnakes typically return to the same den from which they dispersed in the spring and use this den year after year (Walker 2000). However, some snakes have been found to use multiple dens within the same area (Adams 2005). A telemetry study in Wisconsin determined that once in the den, some snakes remained within 23 feet of the den entrance, while others moved 64 feet from the entrance. Berg et al. (2005) found evidence of snake movement within the den throughout the winter, with deepest penetration into the den occurring during December and January, and movements toward the den entrance occurring in late March to early April.

### 2.3.4 Population Status in the Project Area

The timber rattlesnake is listed as threatened in Illinois and has a large range in the eastern U.S., although occurrences are declining according to various citations within NatureServe (2022), which generalizes declines at a rate of 10 percent per year, and a global abundance over 100,000, while being considered highly vulnerable.

Generally, habitat destruction and fragmentation threaten the timber rattlesnake the most, whether from road mortality, timber harvesting, or urban sprawl. Poaching and/or illegal hunting may contribute to population declines as well. Snake fungal disease has been documented in Johnson County, Illinois (Smaga et al. 2021), and may become a significant threat to timber rattlesnake populations in southern Illinois in the next 30 years (Lorch et al. 2016). These threats, coupled with a generally low reproductive rate (breeding only every 2-3 years, while only becoming reproductive after the age of 6 or more) and high juvenile mortality, could lead to a rapid decline in population numbers (MNDNR 2009). Adult and juvenile (neonate) survival and lifetime adult fecundity or reproductive output is unknown for wild timber rattlesnakes in southern Illinois (Brandon et al. 2006). However, the low fecundity of the species demonstrates that the loss of any reproductive female may significantly reduce the ability of the population to remain viable (Bielema 2000).

Within the project area, timber rattlesnakes would be expected and have been documented within the westernmost portion of SNF along Fountain Bluff where the mix of oak-hickory forest, and non-forested areas sit upon mountainous rock outcroppings. They have also been documented within Oakwood Bottoms Greentree Reservoir in SNF lands (Vukovich 2021). Timber rattlesnakes are notoriously difficult to study and vary in their life histories across their range. To date, no study has measured the population size and current status of timber rattlesnakes in the SNF and in southern Illinois (Vukovich 2021).

A review of the Illinois Natural Heritage Database determined that no known timber rattlesnake dens or hibernacula exist within 5 miles of the project area. The IDNR provided the applicant with timber rattlesnake element occurrences (EOs) within Jackson County, Illinois, and Public Land Survey System (PLSS) sections that contain EO records are shown on Figure 1 (Illinois Natural Heritage Database 2022). However, very limited information is available regarding the size and distribution of the local timber rattlesnake population in the vicinity of the project. Although there are known occurrence records dating back decades, intensive and long-term mark-and-recapture studies have not been conducted.

For the purposes of this Conservation Plan, it was assumed timber rattlesnakes could occupy any deciduous forest, mixed forest, and woody wetland habitats in the vicinity of the project area that is contiguous with Illinois Natural Heritage Database EOs of the species, as shown in Figure 2. Timber rattlesnake “Potential Habitat” was classified as “High Potential” if it is within a PLSS section that contains an Illinois Natural Heritage Database EO and as “Medium Potential” if it is forested habitat contiguous to sections that contain EOs (Figure 2).

As shown in Figures 2 and 3, Line TP1301 crosses approximately 7.4 miles of Potential Habitat, and preferred access routes for the project cross approximately 11.0 miles of Potential Habitat within the project area between the West Substation and Route 127. There is approximately 29,221 acres of timber rattlesnake Potential Habitat (13,042 acres of which is considered High



Potential Habitat) within a 3-mile radius of the Line TP1301 project (Figure 2). This area may include numerous timber rattlesnake home ranges.

Due to the absence of Illinois Natural Heritage EOs for den or hibernacula sites within 5 miles and den suitability is generally limited to rocky bluffs and outcrops, it is assumed there may be up to two dens in proximity to the project area, one in the Fountain Bluff area on the west side and one in the forested bluffs east of the Big Muddy River floodplain. To derive the number of individuals assumed in one den, historical records of communal denning from around the U.S. indicate that dozens (NYDEC 2022) and up to 100+ snakes (St. Louis Zoo 2022) had once been observed denning together, but lower numbers had been noted more recently as the population of snakes has declined over time. When combined with the Principia College's observations of snakes emerging from known dens in the area (11 captures in 2015 with an additional five captures in 2017; Eckert 2017), an average of 25 snakes per den was considered a conservative estimate. For the purposes of this Conservation Plan, it was estimated that each den could hold of up to 25 timber rattlesnakes for a maximum of 50 timber rattlesnakes in proximity to the project area.

## **2.4 Description of Project Activities**

### **2.4.1 Activities with Potential for Incidental Take**

Because the timber rattlesnake has been confirmed to be present in forested habitats in the vicinity of the project area, construction of the proposed project may result in incidental take of this species.

### **2.4.2 Construction Sequence and Schedule**

Construction activities and infrastructure may have the potential to alter the habitat for the timber rattlesnake and to affect individuals of this species. Changes in habitat can result from both construction activity as well as seasonal timing. Construction activities will generally take place over an 18-month period starting in fall of 2023, based on the restrictions identified through the forest areas. The outage is based on other project needs/service in the larger AIC service area. Construction would progress linearly from one end of the transmission line to the other. Up to 10 to 15 workers would be on site at each structure location at a time. Applicable Federal (including Center for Disease Control), State and local guidelines in place at the time of construction would be followed. The workers would be skilled in transmission line and foundation construction work. The typical construction workweek would be 5-7 days per week and 8-12 hours per day. Up to twenty construction vehicle/ATV trips could be required for the work each day.

### **2.4.3 Project Elements**

Within the project area, AIC would replace approximately 70 existing wooden single circuit 138kV H-frame structures with new double circuit steel monopole structures secured to poured concrete foundations in the same general vicinity as the existing structures (see Figure 3). In addition, three existing wooden single circuit 138kV H-frame structures located on Fountain Bluff would be replaced with new similar wooden 138kV H-pole structures directly embedded in the same general vicinity as the existing structures. The remaining structures on Fountain Bluff would remain in place for the purposes of this project.

Steel monopole structures would be 110 to 160 feet tall on concrete pier foundations that vary in diameter from 7 feet to 12 feet and depths of 30 feet to 50 feet. The maximum construction disturbance area for each replaced structure should be no more than 100 x 200 feet (0.46 acre). Each existing wood pole structure would be pulled from the existing hole using a digger derrick truck, and the old holes backfilled with clean gravel or dirt. Structure locations are depicted in Figure 3.

Structure hauling, spotting, removal, and replacement work would be completed during the outage to minimize trips to the area. Restoration activities would be completed after the outage. Trees would be removed when approved by USFS and while following U.S. Fish and Wildlife Service (USFWS) guidelines to minimize impacts to listed bats.

The holes for the new concrete foundations would be drilled, steel rebar cage and anchor bolt cages installed, and then filled with concrete. Excavated material would be disposed of at the direction of USFS. The installation for each structure foundation location is anticipated to take 2-4 days. Concrete foundations will be required to cure (strengthen) for a period of about 10-28 days before additional erection of the steel monopole and related construction can proceed.

The new steel monopoles, associated appurtenances, and associated hardware will be hauled and staged on the ROW near their foundation location. The steel monopoles will generally have sections assembled on the ground and raised and set onto the foundations by the use of utility cranes or crane trucks. Hardware and insulators would then be installed, followed by new conductors and wires being strung.

The old wooden H-structures, hardware, wires and conductors would be removed. The old poles would be pulled from the existing holes using line truck (digger derrick). The holes would be backfilled with clean gravel and dirt or using excavated soil from the foundation holes. If used, construction mats would be removed. As necessary, crews would reseed the ROW and ingress/egress access routes.

The following vehicles would be used during construction: utility line trucks (digger derricks), utility cranes and crane trucks, utility bucket trucks, concrete trucks, drill rig, track hoe, Marooka dump trucks, bull dozers, skid steers, log skidders, and side by side ATVs. Tracked vehicles and ATVs will be used where appropriate to minimize equipment and vehicles needed on site and to reduce the amount of surface disturbance, leveling pads needed, and rutting during construction. Additional equipment may be necessary, such as water tanks and concrete pump trucks, depending on the foundation design and required installation method. Generally, track equipment can work on more uneven terrain than rubber tire equipment, but a level surface is needed for the equipment outriggers. Each outrigger would require a 2- to 3-foot level area.

Once ground-disturbing activities are complete, AIC would return the site to original contours and revegetate the disturbed areas.

#### **2.4.3.1 Permanent and Temporary Access**

Construction access to the structures would be initiated from existing USFS roads and the existing transmission line ROW to the extent practicable. No new access roads would be needed but existing access roads may require some trimming or tree removal to facilitate construction of the proposed project. Ingress/egress access is shown in Figure 3. Leveling may be necessary to accommodate the equipment. The preferred leveling method would be to grade the high side of



the access roads where needed and in locations marked on site. Graded areas along the access routes would be stabilized after construction to reduce cutting/erosion. Clean fill could be used at approval of USFS. AIC’s standard erosion BMPs along with those required by USFS would be addressed during construction.

Constructability field reviews are planned with the USFS to identify locations within the planned access routes that require widening (tree removal) and grading/leveling. Tree trimming and brush removal (less than 4 inches in diameter) may also be required in select locations to accommodate equipment width of 12 feet and height of 13 feet. Trees would be assessed in the field with USFS and will also be evaluated for potential sensitive species prior to removal.

**2.4.3.2 Location of Construction Staging Areas**

Construction materials would be stored at a laydown yard on private property (not on USFS land) in the vicinity of the West Substation under agreement with a private landowner until sited along the existing transmission line ROW. Staging areas within USFS property, if utilized, would be identified/coordinated with USFS prior to construction and would be restored to pre-construction conditions after construction is complete and material and equipment have been demobilized from the site.

**2.4.4 Permitting Reviews**

The Applicant will comply with federal, state, and local regulations. A list of required permits, approvals and consultations, and administering agencies for the project is provided in Table 2.

**Table 2. Federal, State, and Local Permits with Reviews**

Agency or Organization	Permit/Approval	Documentation/Status
U.S. Forest Service	Special Use Permit Amendment	In progress
	National Environmental Policy Act (NEPA) documentation for activities on SNF lands	Complete – Finding of No Significant Impact (FONSI) <sup>1</sup> signed on April 27, 2023
U.S. Fish and Wildlife Service (USFWS), Southern Illinois Sub-Office	Section 7, Endangered Species Act, Bald and Golden Eagle Act, and Migratory Bird Treaty Act consultation	Complete – Biological Assessment <sup>1</sup> signed by USFWS and USFS on February 10, 2023
U.S. Army Corps of Engineers (USACE), St. Louis District	Clean Water Act, Section 404 and Section 10 (Nationwide Permit [NWP 57 and/or other nationwide permits as determined appropriate by the USACE])	Section 404 and Section 10 consultation in progress
Illinois Department of Natural Resources (IDNR)	State Protected Species Consultation	Complete – EcoCAT Review in Appendix B
	Incidental Take Authorization for the timber rattlesnake	In progress
IDNR Office of Water Resources	Individual permit may be required.	In progress



Agency or Organization	Permit/Approval	Documentation/Status
Illinois Environmental Protection Agency	CWA, Section 401 Water Quality Certification (automatic authorization under NWP-57)	In progress
	General National Pollutant Discharge Elimination System (NPDES) permit	Storm Water Pollution Prevention Plan (SWPPP) in progress
Illinois Historic Preservation Agency (IHPA)	Section 106, National Historic Preservation Act (NHPA) clearance	In progress

<sup>1</sup> AIC TP1301 Transmission Line Rebuild Project Environmental Assessment, FONSI, and Biological Assessment are available online at <https://www.fs.usda.gov/project/shawnee/?project=63640>

## 2.4.5 Potential Impacts on the Timber Rattlesnake

### 2.4.5.1 Seasonal Activities

Dates that timber rattlesnakes are expected to occupy summer habitat are included in Table 3, which summarizes some egress and ingress dates from the literature.

**Table 3. Dates that Timber Rattlesnakes are Expected to Occupy Summer Habitat in the Project Area**

Region	Egress	Ingress	Source
Western Virginia	April 18 – May 12	October 1-October 21	Martin 1992
Northeastern New York	May 7-May 21	September 14-October 1	Brown 1992
Central Connecticut	Mid-April through Early May	Mid-September through Late October	Hammerson and Lemieux 2001
Eastern West Virginia	May 7-May 16	September 24-October 3	Martin 2002

Based on Table 3 and discussions with IDNR biologists, timber rattlesnakes are conservatively expected to occupy summer habitat in the project area between approximately March 16 and November 15. Therefore, effects to timber rattlesnakes could occur during this time as a result of tree clearing (if tree clearing occurs during this time), construction, maintenance, and restoration of the project. Avoidance of effects resulting from other types of construction and maintenance conducted during winter hibernation are discussed in the following paragraphs.

### 2.4.5.2 Incidental Mortality

Due to the cryptic coloration and behavior of timber rattlesnakes, incidental mortality could occur during construction due to the presence of construction equipment and open trenches, and the possibility of death associated with vehicle or equipment movement, falls, or entrapment. Personnel awareness training, daily employment of environmental inspectors during construction, and isolation of the workspace (using silt fencing as needed), would abate these possibilities for incidental mortality.

### **2.4.5.3 Habitat Alteration**

Alterations or effects to dens (regardless of when impacts occur) could render them useless for hibernation, and due to high site fidelity, could result in mortality of all associated individuals. Therefore, it is important to protect the structural integrity of dens. Recent IDNR timber rattlesnake surveys have detected the presence of likely dens. The IDNR Species Recovery Specialist has agreed to coordinate with AIC to identify potential habitat areas that should be avoided to the extent possible within the project area. If dens are confirmed within the project area, specific avoidance measures would be implemented to ensure no effects would occur to jeopardize the structural integrity of the dens.

Timber rattlesnakes forage primarily along forest edges and travel among the forest edges within proximal interior forested habitat. During construction of the project, habitat availability for prey species would be temporarily reduced, decreasing the foraging potential for rattlesnakes by limiting the locations and abundance of prey. It is assumed construction would increase fragmentation between any requisite habitat areas.

### **2.4.5.4 Disruption of Behavioral Patterns**

Construction and operation of the project could affect short-term and long-term behavioral patterns of timber rattlesnakes. Avoidance and minimization measures designed to reduce or eliminate possibility for incidental mortality could lead to aberrations in daily activities such as basking, foraging, and traveling. Isolation of the workspace through silt fencing would form a temporary physical barrier (or a deterrent at minimum) to this normal movement, possibly preventing or impeding access to preferred basking, gestating, or foraging areas, as well as egress and ingress to the nearby dens. Presence of an environmental inspector will abate many of these effects by facilitating a process that would allow snakes to be transported across the workspace to allow continued movement or travel on the other side, if necessary.

Movement pathways to and from the species' various requisite habitat types could be altered by construction noise, vibrations, or habitat conversion, potentially inhibiting the ability of snakes to access or find these habitats during or after construction. Although, it is unknown whether or not timber rattlesnakes cross the existing transmission line ROW or access routes, it is reasonable to assume a low amount of harm or harassment could result from the project being a temporary and permanent barrier to movement. The reduction in potential habitat availability also may affect predator/prey interactions by altering or blocking habitat for rattlesnake prey. A lack of prey could reduce the amount of food available and increase stress for rattlesnake individuals during hunting. Temporary and permanent potential increases in artificial lighting during and after construction, if needed, also may deter snakes from utilizing surrounding habitat. Construction activities will likely continue past October 31, as necessary. Although no hibernacula are known within 5 miles of the project, it is reasonable to assume that noise and vibration as a result of the construction activities conducted after October 31 could result in disturbance to hibernating timber rattlesnakes if they occur in the vicinity.

### **2.4.5.5 Summary of Potential Impacts**

For the purposes of this Conservation Plan the term "temporary impacts" will be used to identify short-term impacts to timber rattlesnake Potential Habitat areas during project construction activities. "Permanent impacts" will identify impacts that will last for the life of the project.



Timber rattlesnakes present within the project area during summer months may be incidentally killed by heavy equipment and felling of trees during forest clearing for the expanded ROW in SNF (Reinert et al. 2011), however survival rates of rattlesnakes within tree removal areas suggest that harvesting does not reduce overall fitness of rattlesnakes (MacGowan et al. 2017). The Illinois Natural Heritage Database does not have records of timber rattlesnake dens or hibernacula in the project area. If timber rattlesnake sites/dens become known within the project area, these sites would be protected through guidance from the SNF Forest Plan and IDNR. To minimize direct effects on timber rattlesnakes, tree clearing work is proposed to occur between November 16 and March 15 when the snakes are more likely to be in hibernation.

Indirect effects may include increasing sunlight to the forest floor through forest clearing for the expanded ROW and where sidewall trimming is needed along access roads. More sunlight or increased ROW width may increase basking areas within the project area and may improve thermal habitat for rattlesnakes (Clifford et al. 2020). Impacts to prey species may indirectly affect rattlesnake movements and population characteristics post implementation (Beaupre and Douglas 2012, MacGowan et al. 2017). Invasive plants may become more dominant with increased ROW width, contributing to a loss of rattlesnake basking area, as well as rattlesnake prey habitat. Ongoing ROW management would minimize the potential establishment of invasive species. Furthermore, AIC would restore disturbed areas following construction activities with soil, cover crop and/or perennial mix, as allowed by landowners, to allow for native vegetation establishment that would more easily out-compete invasive establishment for vital resources.

Overall, permanent impacts to timber rattlesnake Potential Habitat would include clearing of approximately 9.0 acres of forested land for the new ROW (see Table 4 and Figure 3). Clearing would occur within Medium Potential Habitat with minimal tree trimming/cutting occurring along access roads within High Potential Habitat. Approximately 36,606 acres of forested land exists within a 3-mile radius of the project area (Table 1; Dewitz 2019) and approximately 29,221 acres (80 percent) of that is considered timber rattlesnake Potential Habitat. Therefore, tree felling within the project area would represent only 0.03 percent of the surrounding forested Potential Habitat.

Timber rattlesnakes are easily identifiable, and as some project work would occur during the active season, on-site personnel would be educated about the timber rattlesnake and instructed to contact IDNR immediately if encountered in the project area. Fliers with photos of adult and juvenile timber rattlesnakes, and life-history information, would be distributed to construction personnel (see Appendix D). Due to the abundance of available habitat in the vicinity, restoration activities, and the temporary nature of impacts associated with construction activities, the proposed project may adversely impact individuals, but is not likely to result in a loss of viability in the region, nor cause a trend toward federal listing for timber rattlesnakes. Table 4 summarizes the temporary and permanent impacts to the timber rattlesnake Potential Habitat.



**Table 4. Summary of Permanent and Temporary Impacts Within or Adjacent to Timber Rattlesnake Potential Habitat**

Impact Type	Activities/Infrastructure	Estimated Impact		
		Medium Potential Habitat <sup>1</sup>	High Potential Habitat <sup>1</sup>	Total <sup>2</sup> Potential Habitat
Permanent	Forest clearing for new transmission line ROW and trimming along access routes	9.0 acres	Minimal Impact	9.0 acres
Temporary Disturbance Adjacent to Potential Habitat	Construction disturbance <sup>3</sup> areas within existing ROW	18.3 acres	1.4 acres	19.7 acres
	Length and area of proposed access routes outside of existing ROW <sup>4</sup>	5.3 miles 13.2 acres	2.1 miles 5.2 acres	7.5 miles 18.3 acres
	Area of proposed access routes within existing ROW	8.8 acres	0.4 acres	10.2 acres
<b>Total<sup>2</sup> Temporary Disturbance</b>		<b>40.3 acres</b>	<b>6.9 acres</b>	<b>47.2 acres</b>

<sup>1</sup> Timber rattlesnake “Potential Habitat” was classified as High Potential if it is within a PLSS section that contains an Illinois Natural Heritage Database record and as Medium Potential if it is forested habitat contiguous to sections with records.

<sup>2</sup> Totals may not equal sum of individual values due to rounding.

<sup>3</sup> Construction disturbance includes workspaces for the installation and/or removal of transmission line structures within existing ROW. As described in Section 2.4.3, area of disturbance for each construction disturbance site is approximately 0.46 acres.

<sup>4</sup> Area and length of proposed access routes outside of existing ROW includes proposed route on expanded ROW.

#### **2.4.5.6 Direct Take**

The Illinois Endangered Species Act (520 ILCS Part 10) defines take 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.

It was first assumed that all timber rattlesnakes known and assumed to be present are evenly distributed throughout their known habitat. As described in Section 2.3.4 (Population Status in the Project Area), it is assumed that approximately 29,221 acres of (forested) summer habitat (13,042 acres of High Potential Habitat) is within 3 miles of the project ROW. Project tree-clearing on new ROW within Medium Potential Habitat areas (see Figure 3) will permanently remove approximately 9.0 acres (only 0.03 percent) of this habitat and could result in direct injury or death of a timber rattlesnake(s).

The project area within timber rattlesnake Potential Habitat also includes construction disturbance areas at structure installation and/or removal sites and access routes within the existing Line



TP1301 ROW (Table 4; Figure 3). Temporary construction activities in these areas or movement of construction equipment along access routes also could result in injury or death of a timber rattlesnake as previously discussed in this Conservation Plan. Assuming proportional effects to timber rattlesnakes, distributed across the estimated population of approximately 50 individuals (as described in Section 2.3.4 as 25 timber rattlesnakes per each of two assumed dens in the vicinity of the project), it is expected that a maximum of two timber rattlesnake could be wounded or killed during tree clearing and construction activities based on the following formula (Spire 2018):

$$50 \text{ timber rattlesnakes} \times 0.0266 \text{ (or 2.66\% mortality rate)} = 1.33 \text{ timber rattlesnakes (rounded to 2)}$$

However, based on the implementation of active avoidance and minimization measures (including personnel education/training, active monitoring, seasonal tree clearing, and workspace exclusion [as needed]), the estimate of one timber rattlesnake being wounded or killed during tree clearing and construction is expected and could potentially be completely avoidable.

It is also assumed the approximately 50 timber rattlesnakes estimated to occupy the known summer habitat could encounter the project during or after construction. However, the project's effects would need to significantly impair (e.g., 50 CFR 17.3) normal behavioral patterns (such as breeding, feeding, and sheltering) to such a level that take through harm or harassment is reasonably expected to occur. Therefore, it was assumed that only a portion of the timber rattlesnakes in the timber rattlesnake Potential Habitat would reasonably experience effects, and others would remain unaffected. It was subjectively estimated that 25 percent of the entire estimated population of 50 timber rattlesnakes (i.e., 13 individuals) would experience take through harm and harassment within summer habitat. Incidental take from harm or harassment would likely only have temporary effects on fecundity and is not likely to result in mortality.

Construction activities will likely continue past October 31, when timber rattlesnakes are hibernating. Although no known hibernacula occur within 5 miles of the project area, there are Illinois Natural Heritage Database EOs in the vicinity and it is reasonable to assume that the species must hibernate nearby and that noise and vibration as a result of construction conducted after October 31 could result in disturbance to hibernating timber rattlesnakes. Again, it was assumed only a portion of the timber rattlesnakes in the nearest den(s) would reasonably experience potential effects, and others would remain unaffected. It was subjectively estimated that an additional 25 percent of the estimated population of the nearest dens would experience take through harm and harassment (i.e., 13 individuals hibernating within two assumed dens). Incidental take from harm or harassment would likely only have temporary effects on fecundity and is not likely to result in mortality.

Estimated incidental take of individual timber rattlesnakes is summarized in Table 5.

**Table 5. Estimated Maximum Incidental Take of Individual Timber Rattlesnakes**

Form of Incidental Take	Estimated Maximum Number of Individual Timber Rattlesnakes
Injury or Death	1
Harm or Harassment	26
Total	27



### **3. EFFORTS TO AVOID, MINIMIZE, AND MITIGATE IMPACTS**

Project impacts pertain to the potential for direct mortality and habitat alteration during construction activities. The following practices will be implemented to avoid, minimize, and mitigate impacts to the timber rattlesnake.

#### **3.1 Avoidance and Minimization Measures**

The project has been routed in open areas and was colocated along existing transmission and access and service road corridors, where practical, to avoid impacts to forests. Replacing Line TP1301 within the existing ROW will further reduce effects to the forest or other land uses, including through the contiguous forest adjacent to sections with known timber rattlesnake EOs, thereby minimizing new fragmentation to other relatively undisturbed tracts of interior forest.

AIC anticipates employing the following measures in portions of the project area within Potential Timber Rattlesnake Habitat to avoid and minimize adverse effects to timber rattlesnakes:

- Seasonal tree clearing – As discussed in Section 2.4.5.1, timber rattlesnakes are assumed to be active between April 1 and October 31. Tree clearing during construction will occur within Potential Timber Rattlesnake Habitat between November 16 and March 15 in accordance with IDNR recommendations, with USFWS guidelines to limit impacts to roosting bats, and with the Biological Assessment associated with this project. Therefore, tree clearing will avoid the active season for timber rattlesnakes. Future routine vegetation mowing or tree clearing in the project area will occur between November 15 and March 31 adjacent to timber rattlesnake Potential Habitat. Trees would be removed following review and approval by USFS and USFWS. Tree removal and trimming would be limited to only that which is necessary to clear access routes and establish the wider ROW required for this line.
- Construction monitoring – AIC will develop a timber rattlesnake monitoring protocol that will be implemented on the project ROW and access routes by an environmental inspector during construction activities that occur outside of the November 15 through March 15 denning period. The monitoring protocol will identify contact information and channels of communication for responsible parties that the environmental inspector will coordinate with to complete barrier repairs, to stop work within 100 feet from locations where rattlesnakes are encountered, to deploy a qualified IDNR biologist to remove rattlesnakes within the workspace, to adapt monitoring techniques, to submit briefings to AIC, and to facilitate necessary modifications to construction practices or BMPs.
  - Obstructive barriers – During biological monitoring, the environmental inspector will coordinate with the IDNR species recovery specialist to assess timber rattlesnake habitat, such as rocky outcrops and bluffs with southern facing slopes and potential den sites, within the construction areas and determine potential need for exclusion fencing based on habitat suitability. Based on these assessments, structure replacement areas and other active construction areas will be isolated



- with silt fence, as needed, to deter snakes from entering the workspace. Silt fencing will be removed upon completion of project construction activities.
- Within the timber rattlesnake Potential Habitat, obstructive barriers and active construction workspaces will be inspected for rattlesnakes each morning prior to work. If any breaches are found in the obstructive barriers, construction work would not commence in those areas until repairs are completed and the surrounding workspace is re-inspected for timber rattlesnakes. Likewise, if the construction contractor recognizes the presence of a timber rattlesnake in active construction workspaces, construction will be halted within a 100-foot distance around the timber rattlesnake and the environmental inspector will be notified to implement the timber rattlesnake monitoring protocol, which would involve contacting a qualified IDNR biologist to remove the rattlesnake from the workspace.
  - Construction equipment, including cabin areas and engine compartments, would be inspected each morning prior to work for timber rattlesnakes that could be utilizing these areas as heat sources.
  - The environmental inspector will conduct tailgate safety meetings or briefings and sensitivity/safety sessions as needed.
- Education – Construction personnel will be briefed and provided educational pamphlets (see Appendix D) on the possibility of encountering timber rattlesnakes in the project area, the system used to mark avoidance areas, travel restrictions for equipment and vehicles and how to report sightings to the environmental inspector, and the importance of avoiding taking of timber rattlesnakes. Personnel awareness training will include strict avoidance policies and procedures to be followed during chance encounters.
  - Protection of Hibernacula – There are no Illinois Natural Heritage Database EOs consisting of hibernacula or dens within 5 miles of the project area (Illinois Natural Heritage Database 2022); however, AIC will coordinate and meet with the IDNR Species Recovery Specialist to identify potential habitat areas that should be avoided to the extent possible.
  - Vegetation Maintenance – Operational vegetation maintenance of AIC’s permanent ROW may be conducted on a frequency of approximately once every three years to maintain an herbaceous to low scrub-shrub cover state. Routine vegetation mowing will be completed between November 15 and March 31, outside of the time when snakes are actively foraging and basking away from dens, which would further abate the risk of incidental mortality.
  - Equipment operators and drivers shall be on the lookout for rattlesnakes on the road as they travel to and from the ROW. Retain a driving speed of 15 mph or less and contact the IDNR Species Recovery Specialist to move snakes if necessary.
  - Crews and equipment must remain on access roads within the ROW corridor when moving from structure to structure to minimize the likelihood of snakes being run over.
  - Project construction and BMPs will adhere to Soil Erosion and Sedimentation Control (SESC) permit requirements.
  - Disturbed areas would be reseeded to preconstruction conditions using a seed mix approved by the USFS or appropriate private landowner.



### 3.2 Mitigation Measures

AIC proposes to offset unavoidable impacts to the timber rattlesnake through a contribution in the amount of \$61,200 to The Conservation Fund for the management and recovery of affected species. The funds provided to the Conservation Fund will be utilized for the protection of timber rattlesnakes subject to IDNR review prior to the implementation of conservation programs. Contributions would be based on project impacts of the 25-foot additional ROW easement within forested timber rattlesnake Potential Habitat.

Based on appraisals of recreational tracts (non-tillable areas with soils that may be subject to erosion and/or flooding) in Jackson County provided by AIC Realty Department, the mean land value for similar lands in Jackson County is \$6,800/acre. To offset the permanent alteration of 9.0 acres of forested timber rattlesnake Potential Habitat, AIC will commit to \$61,200 of monetary mitigation (see Table 6).

**Table 6. Summary of Proposed Mitigation**

Impact Area	Impact Acres	Mitigation Ratio	Mitigation Acres	Mitigation Cost per Acre	Mitigation Value
Permanent <sup>1</sup> Potential Habitat (tree clearing within new ROW easement)	9.0	1:1	9.0	\$6,800	\$61,200

<sup>1</sup> Habitat will be altered within the 25-foot new ROW (tree clearing), but the ROW will remain vegetated and undeveloped and therefore suitable as basking areas.

### 3.3 Post Construction Monitoring

The main goals of post-construction monitoring will be to: 1) detect the presence of the state-listed species covered by this Conservation Plan, and 2) ensure that the previously disturbed areas are restored. AIC will conduct post-construction monitoring and associated reporting.

#### 3.3.1 Species Presence Monitoring and Reporting

Monitoring would be conducted to document the presence of timber rattlesnakes in the project area post-construction. Once the line is operational and post-construction vegetation restoration is considered successful, AIC would only have access within the permanent ROW, unless landowner permission outside of this ROW is granted.

Monitoring for timber rattlesnakes that is restricted to the maintained permanent ROW would focus on visually searching for the species within the ROW and along forest edges, just outside the permanent ROW. Monitoring will be conducted 2 and 7 years post-construction (Spire 2018).

Monitoring will use the most recent agency protocols for presence/absence surveys for the timber rattlesnake. Surveys will be conducted by qualified surveyors, and annual post-construction reports would be provided to the IDNR Conservation Plan liaison by December 31 of each year that monitoring is completed. The reports would provide the results of monitoring activities.

### **3.3.2 Revegetation Monitoring and Reporting**

AIC would conduct post-construction monitoring to document restoration and revegetation of the ROW and other disturbed areas as detailed in the site-specific Storm Water Pollution Prevention Plan (SWPPP).

AIC would provide a copy of all post-construction revegetation monitoring reports to the IDNR Conservation Plan Liaison upon request.

## **4. ADAPTIVE MANAGEMENT PRACTICES**

Adaptive management practices would be used to respond to changed or unforeseen circumstances that affect the measures used to avoid, minimize, and mitigate potential effects of the project to the species (timber rattlesnake) covered in this Conservation Plan.

AIC proposes the following adaptive management practices:

- Daily tailgate meetings or briefings held by construction contractors actively working within the timber rattlesnake Potential Habitat would include a brief discussion on any modifications that could be necessary for construction practices or avoidance measures while working in areas.
- The construction and the environmental team will routinely monitor the implementation and effectiveness of the avoidance, minimization, and mitigation measures within this document in protecting the state-threatened timber rattlesnake.
- If changed or unforeseen circumstances arise that reduce the effectiveness of the minimization measures described in this Conservation Plan, AIC will coordinate with the IDNR to determine if additional measures are warranted.
- If an incidental take of any state-listed species is observed, it will be immediately reported to the appropriate IDNR contact.

## **5. CONSERVATION PLAN FUNDING**

Ameren Corporation is the parent of AIC, which provides services to electric and gas customers across central and southern Illinois. As a large utility, Ameren has adequate financial backing to support and implement mitigation activities described in this Conservation Plan. The costs of mitigation activities will be incorporated into the overall project budget. Therefore, no specific financial instruments such as bonds, certificates of insurance, or escrow accounts will be required to implement the Conservation Plan.



## 6. PROJECT ALTERNATIVES

### 6.1 Preferred Alternative

As described in more detail in Section 2.4 (Description of Project Activities), the Preferred Alternative is to replace the existing 138kV wooden H-frame structures with steel monopole structures due to age and condition of existing structures. The steel monopole support structures would eventually support a double circuit 345kV/138kV line. The existing TP1301 138kV line is colocated with another transmission line immediately south of Line TP1301. For the portion of the new double circuit line east of Fountain Bluff, the project would include acquiring an additional 25 feet of ROW to the north of the existing line on SNF lands only.

### 6.2 No Action Alternative

Under the No Action Alternative, Line TP1301 would not be rebuilt within the project area, and the demands for power transmission to the grid would not be met. Impacts associated with the project would not occur. The No Action Alternative would not satisfy the project purpose and need; therefore, AIC rejected this alternative and continued to develop action alternatives that would satisfy the purpose and need in a manner that would result in minimal environmental impacts.

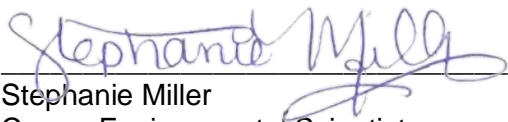
### 6.3 Potential Route Alternatives

Avoiding negative natural resource and community impacts is a priority for AIC. Alternatives to reroute the existing Line TP1301 ROW such that it would avoid suitable timber rattlesnake habitat would have resulted in environmental impacts similar to the proposed action because the existing line would still need to be removed from the area, which would have required construction equipment and ground disturbance activities of similar magnitude. In addition, new ROW easements would need to have been identified, negotiated, and acquired. Rerouting this portion of the line would have increased the overall length of the line, increased the overall cost, and resulted in new and likely greater environmental and landowner impacts. As a result, these alternatives were not fully developed.

## 7. IMPLEMENTING AGREEMENT

### 7.1 Signatories

The following individuals are responsible for the execution of this Conservation Plan.

  
Stephanie Miller  
Career Environmental Scientist  
Ameren Services

05/08/2023

Date

## 7.2 Responsibilities and Schedules

AIC is the developer and will be the long-term owner/operator of the project. The Applicant, successor, or a designee of the Applicant has the responsibility to acquire all necessary permits for construction and operation of the project, including the ITA. The Applicant will have the responsibility of complying with the terms of the ITA during both construction and operation of the transmission line rebuild project.

Stephanie Miller, Career Environmental Scientist for Ameren Services, will serve as the Conservation Plan Coordinator and will be responsible for the implementation of the BMPs, mitigation measures, and restoration activities as described in this Conservation Plan. Ms. Miller will be the IDNR liaison and inform IDNR of adaptive management measures necessary to comply with the Conservation Plan. Responsibilities include the following:

- responsible for training and education of construction crews
- responsible for providing biological monitor(s) and timber rattlesnake exclusion services at AIC's expense
- adaptive management; responsible for coordinating changes in construction activities and consultation with IDNR in response to unforeseen circumstances that may occur
- IDNR liaison; responsible for the preparation and submission of semi-annual IDNR progress reports

Contact information for the Conservation Plan Coordinator is as follows:

Stephanie Miller

Ameren Services

Address: 1901 Choteau Avenue, MC602, St. Louis, MO 63103

Email: smiller6@ameren.com

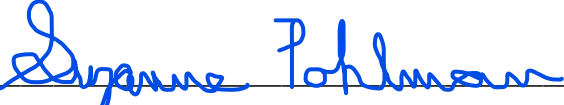
Phone: 314-242-9275

A post-construction monitoring report will be provided to the IDNR upon completion of construction activities. The report would include a description of when project activities were completed, BMPs that were implemented, pre-and post-construction photographs of habitat areas, an inventory of any timber rattlesnake individuals observed during construction activities, and any additional measures taken to further reduce potential impacts to this species.



### 7.3 Certification

I hereby certify that the participant listed in Section 7.1 has the legal authority to carry out their respective obligations and responsibilities under the Conservation Plan.

  
\_\_\_\_\_

Suzanne Pohlman  
Manager, Transmission Project Management  
Ameren Transmission Company

5/8/23

\_\_\_\_\_   
Date

### 7.4 Compliance with Federal, State, and Local Regulations

The Applicant will comply with all pertinent Federal, State, and local regulations that govern the proposed project and will provide copies of authorizations that could affect the terms and conditions of any ITA issued by the IDNR for this project.

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# Appendix A

## Figures

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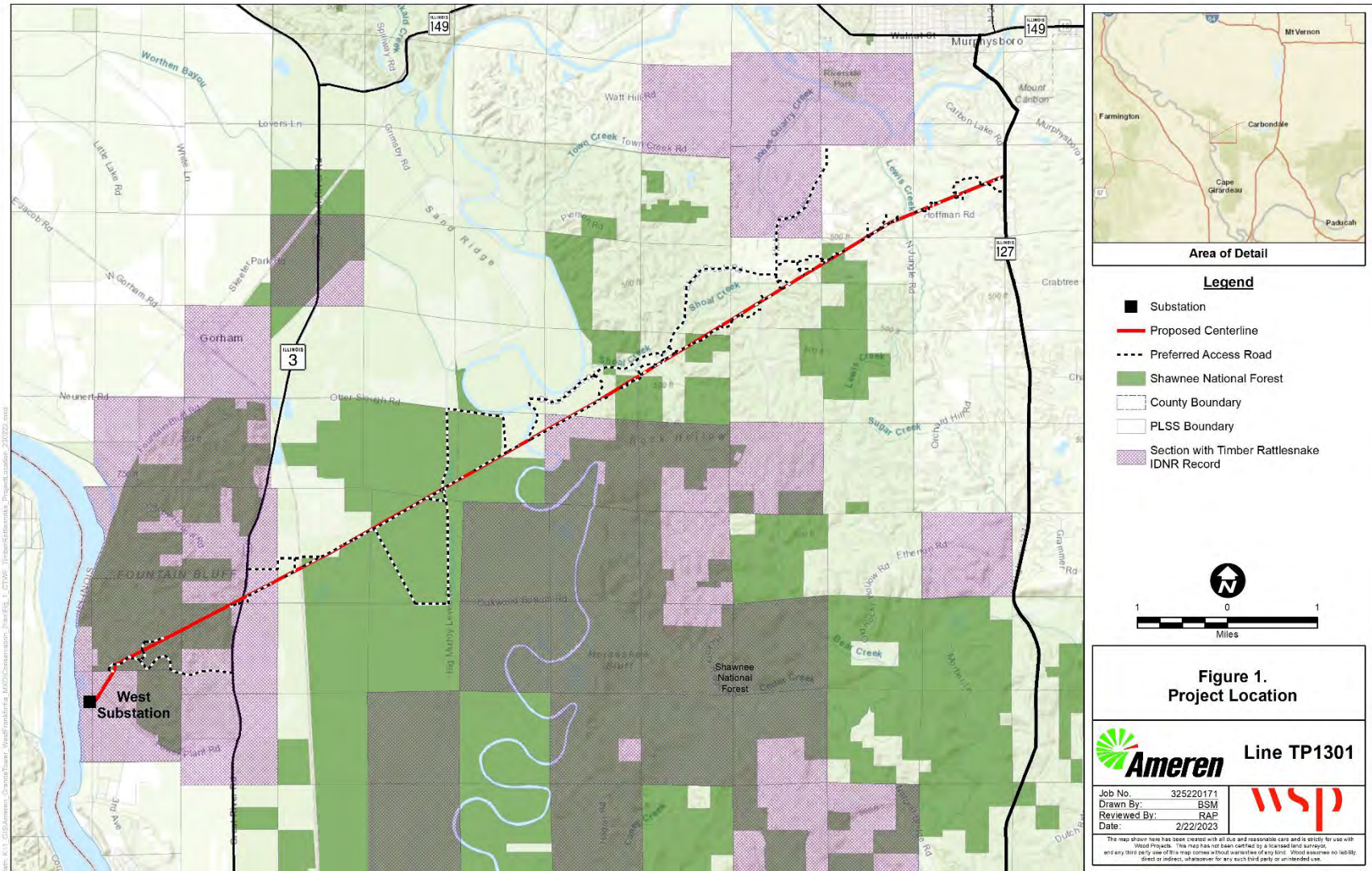


Figure 1. Locations of Timber Rattlesnake Conservation Plan Project Area and IDNR Records

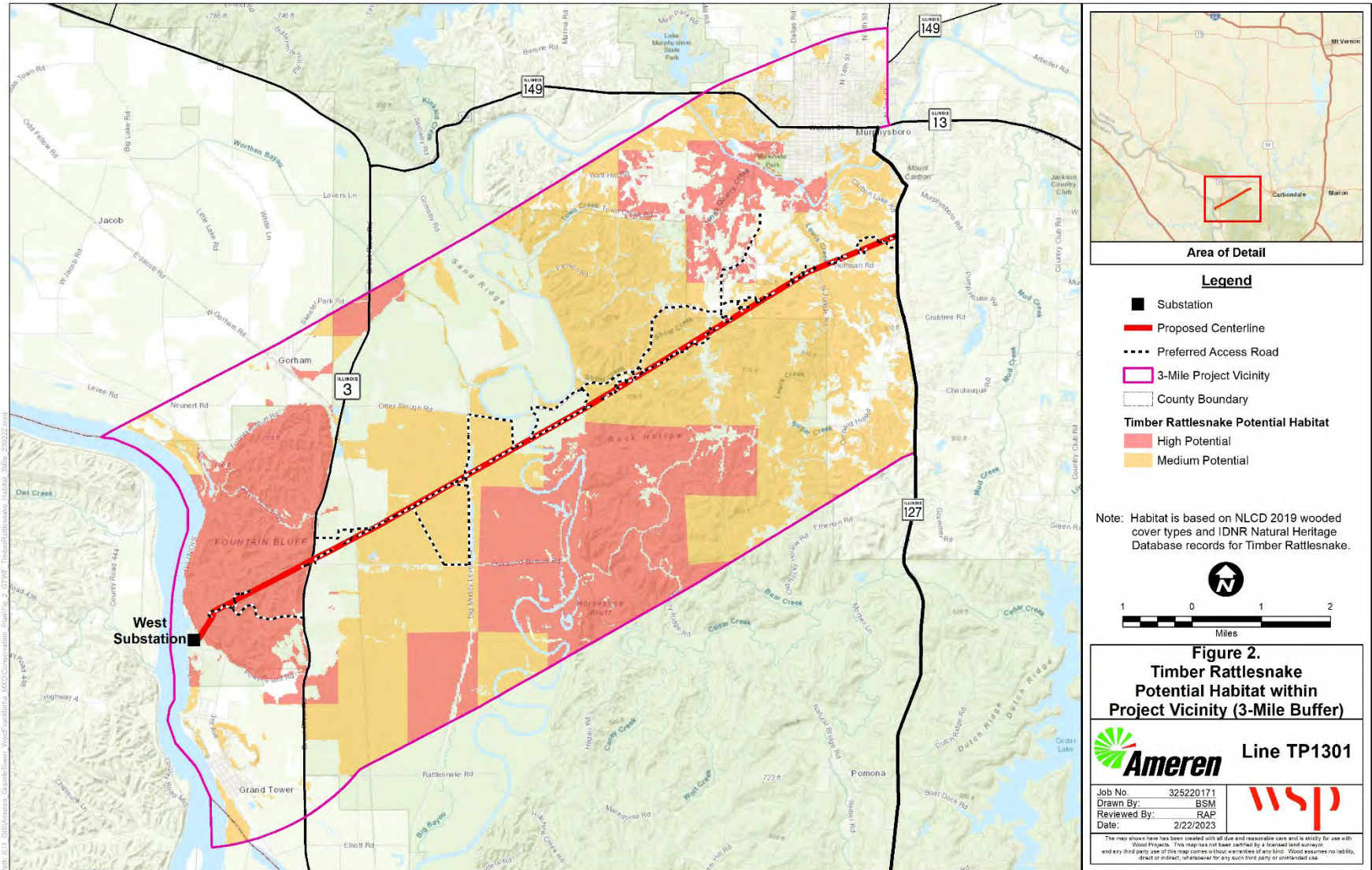


Figure 2. Timber Rattlesnake Potential Habitat within a 3-mile Vicinity

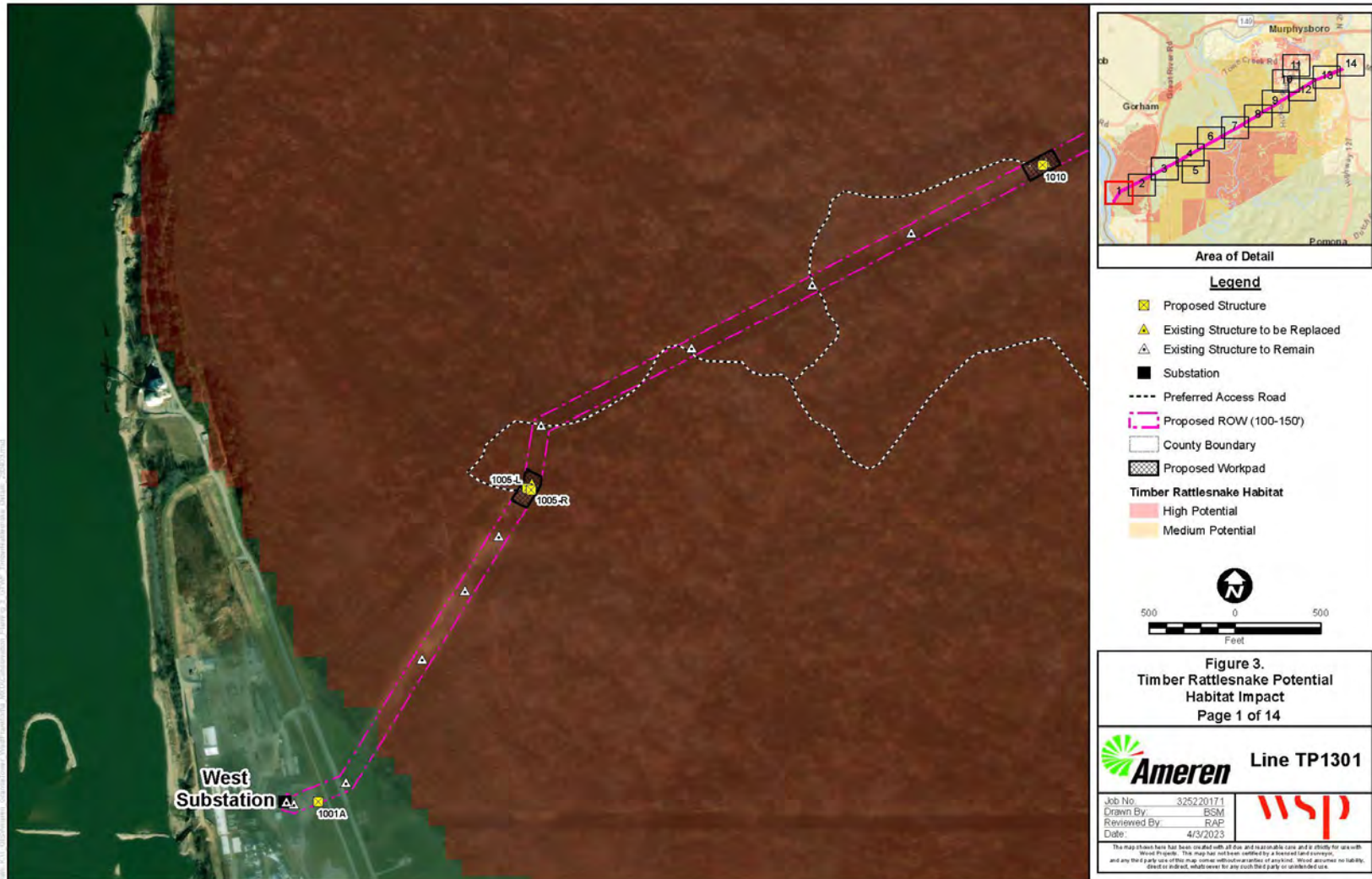


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 1 of 14)





Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 2 of 14)

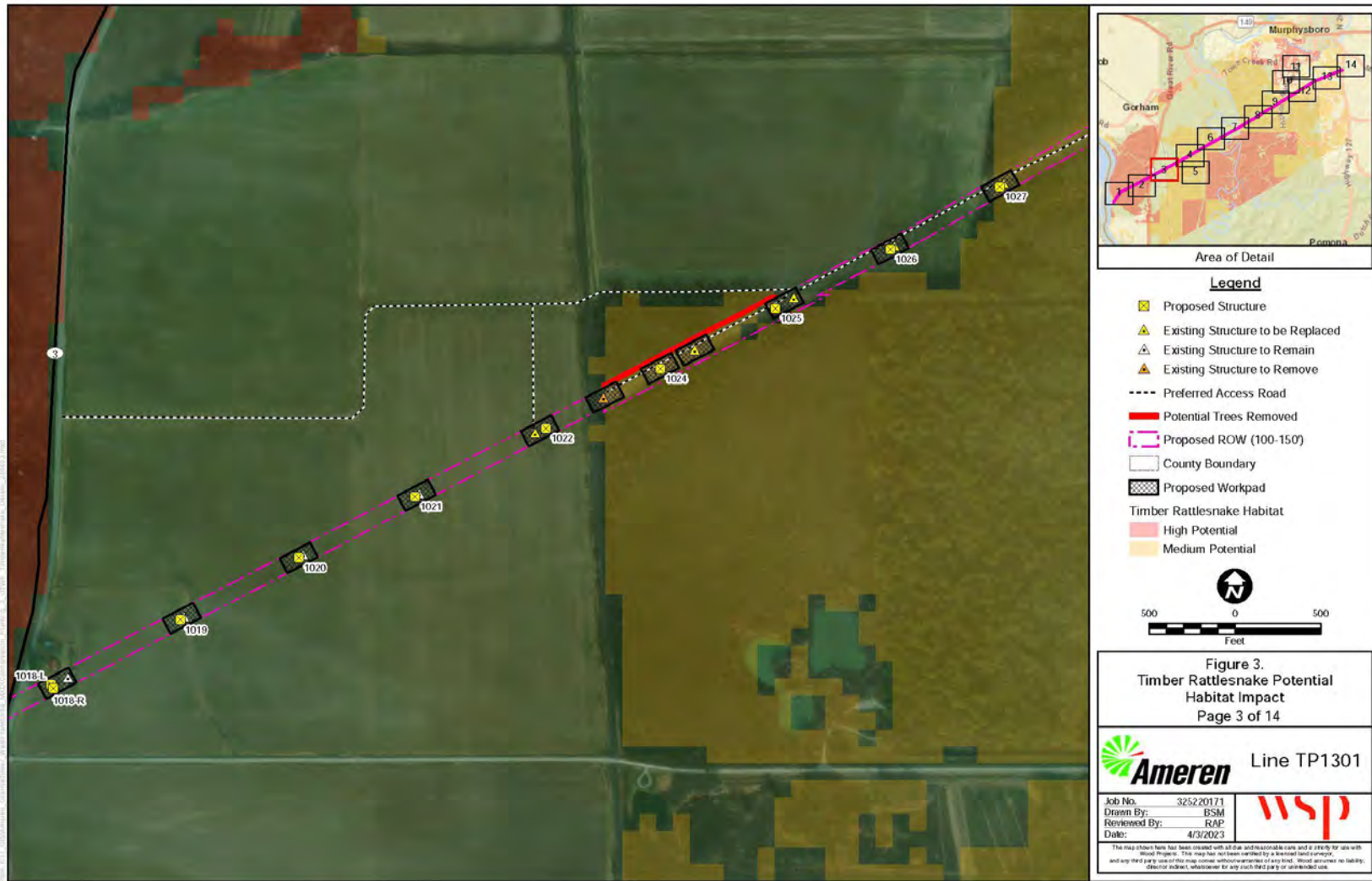


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 3 of 14)



Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 4 of 14)



Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 5 of 14)

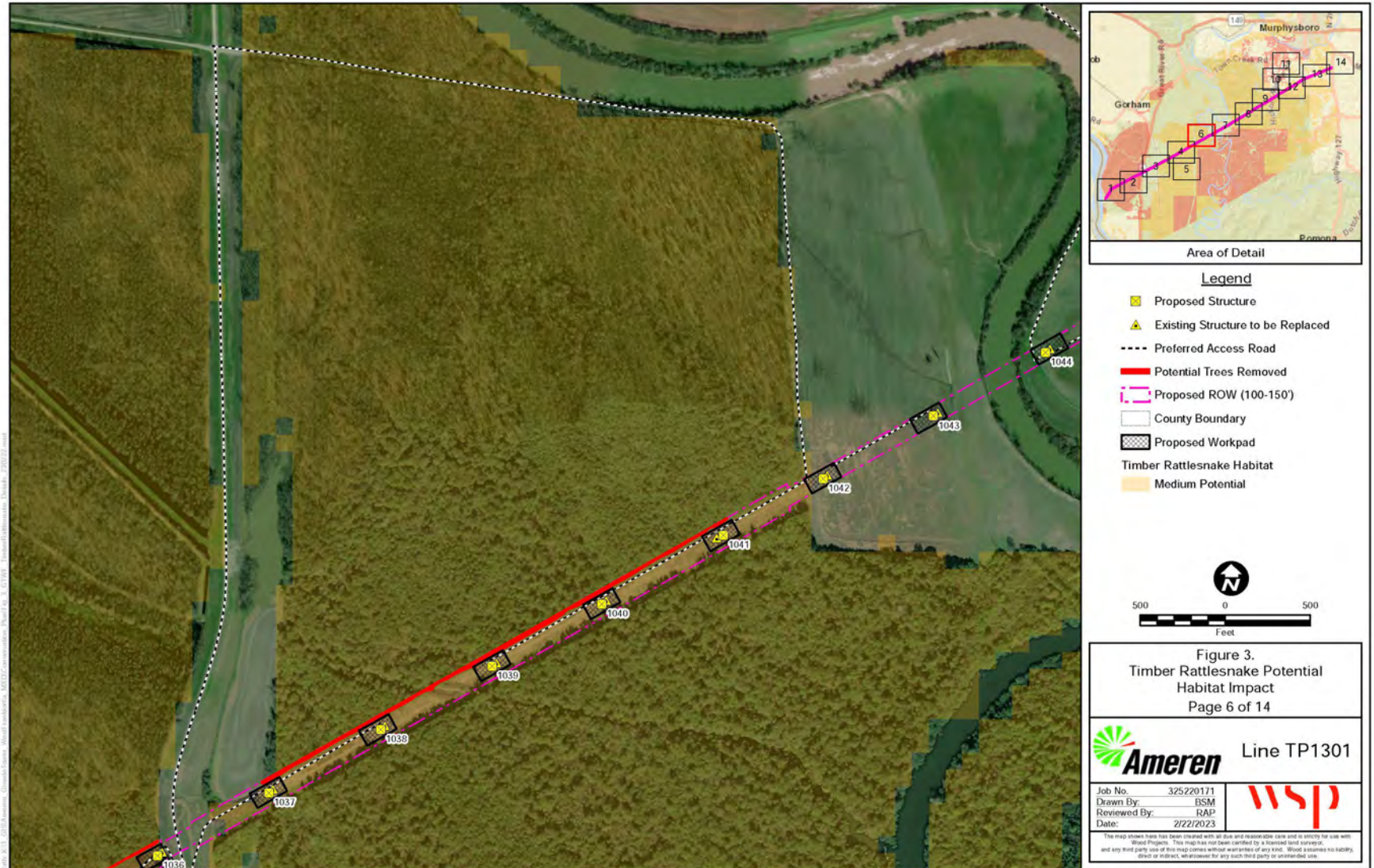


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 6 of 14)



Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 7 of 14)

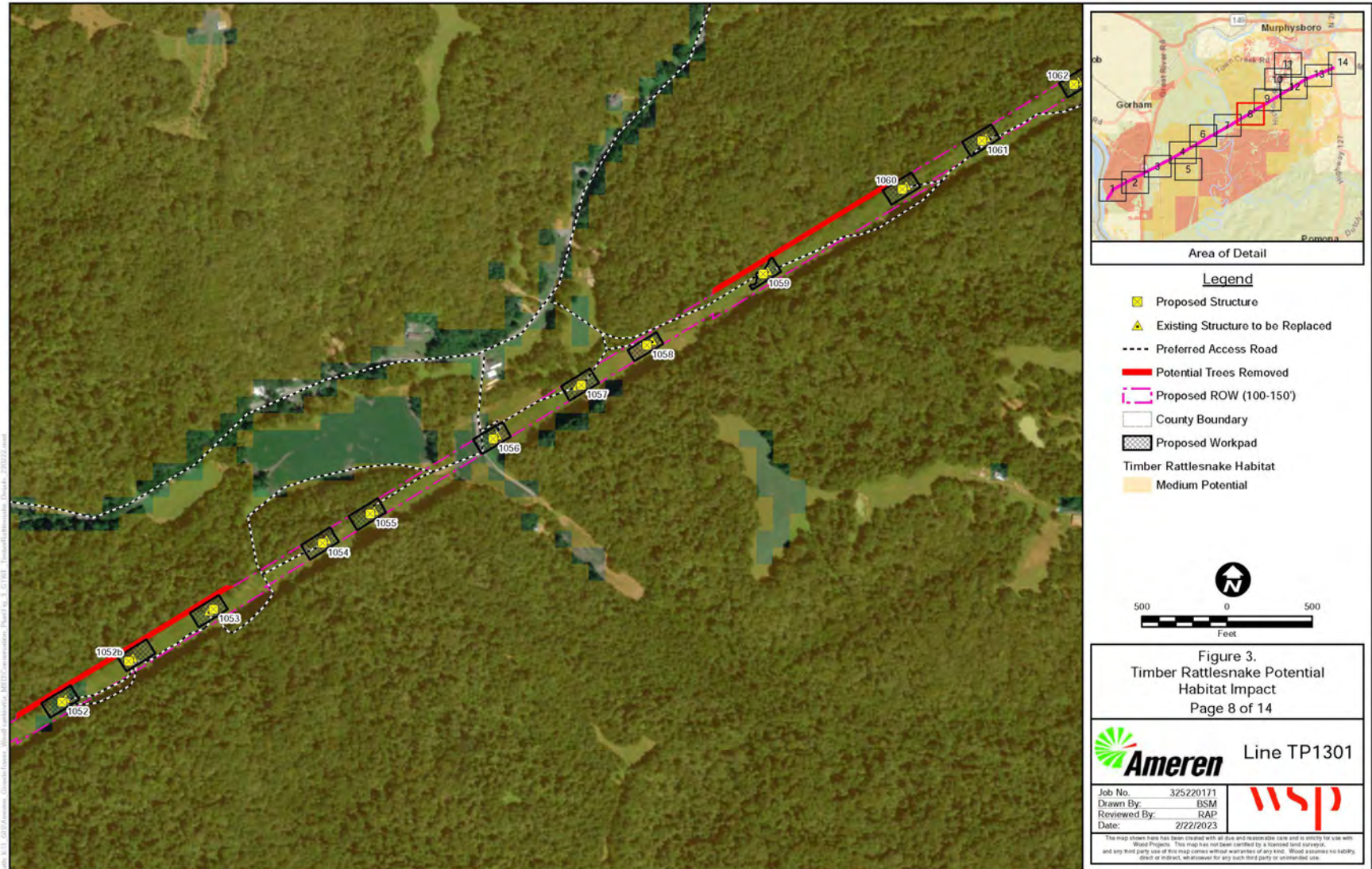


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 8 of 14)

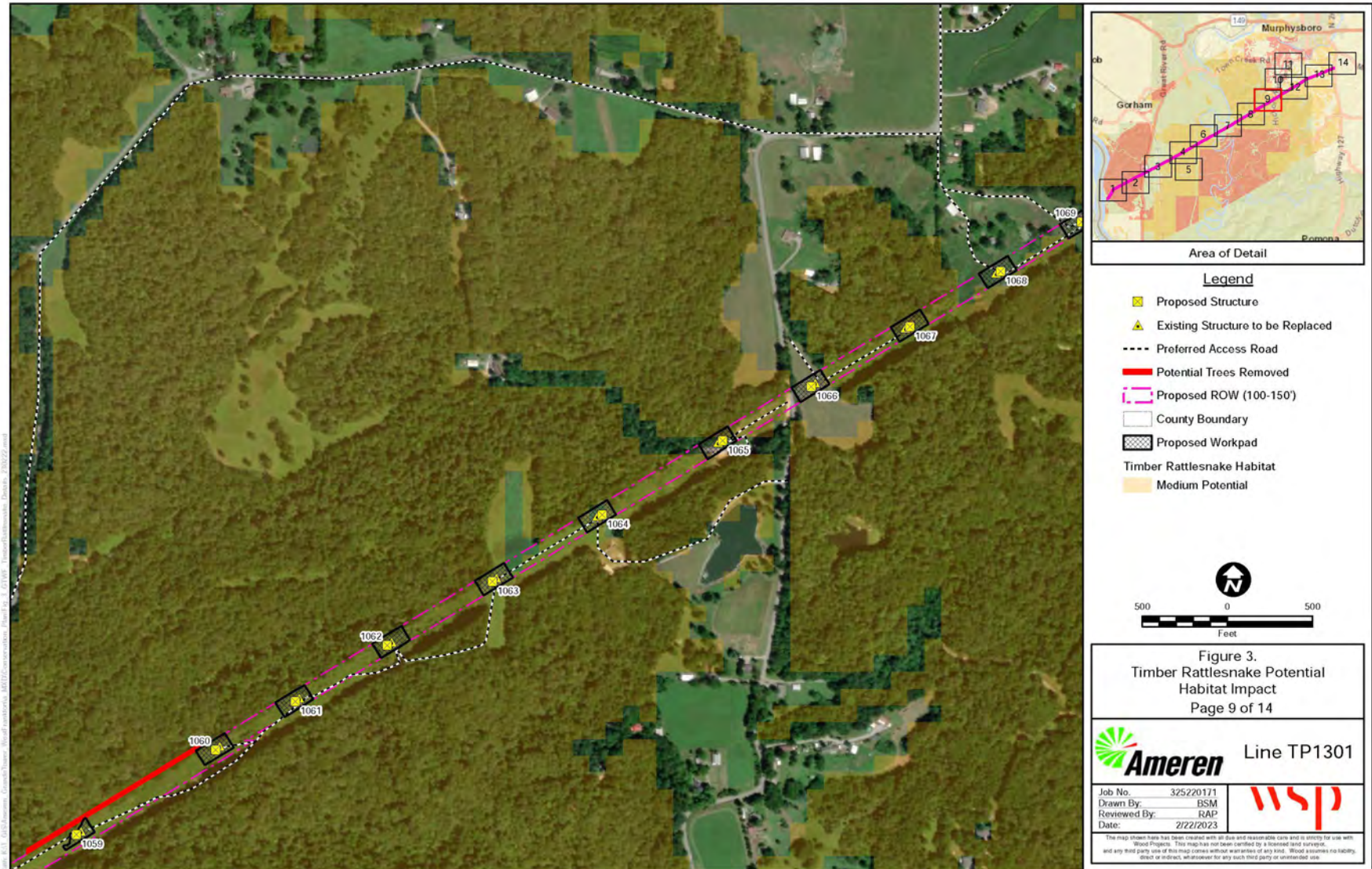


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 9 of 14)



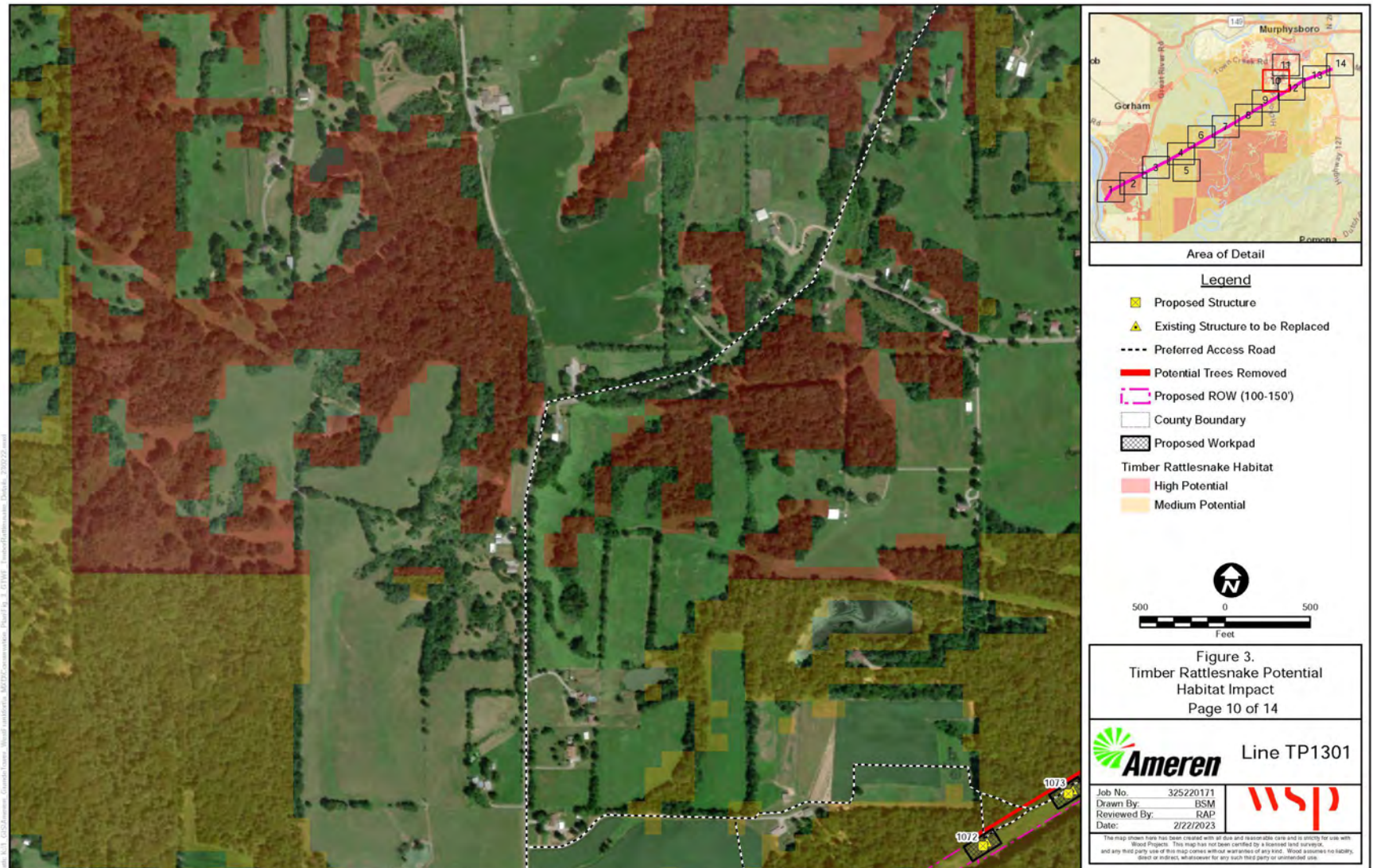
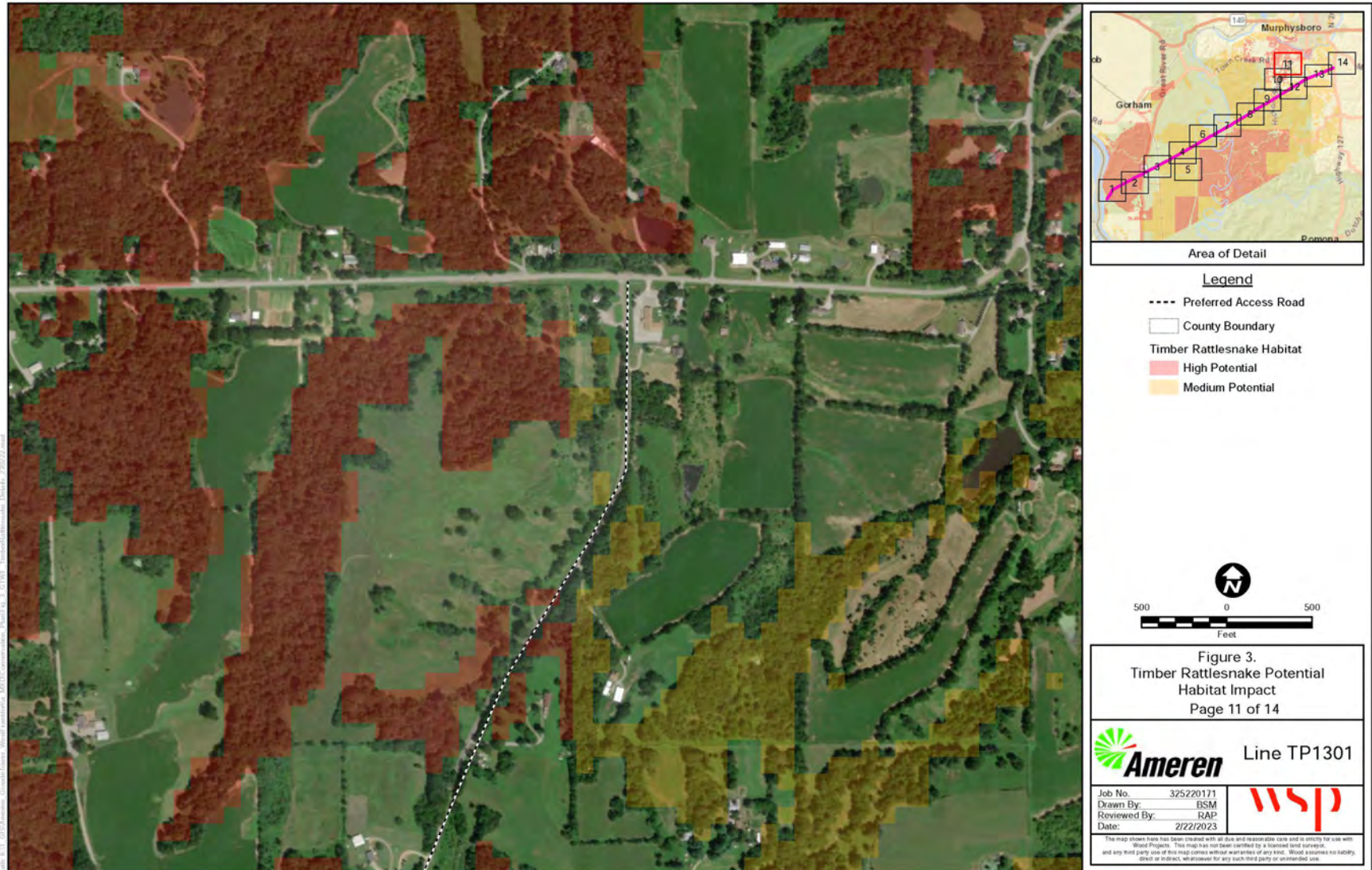


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 10 of 14)



**Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 11 of 14)**



Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 12 of 14)

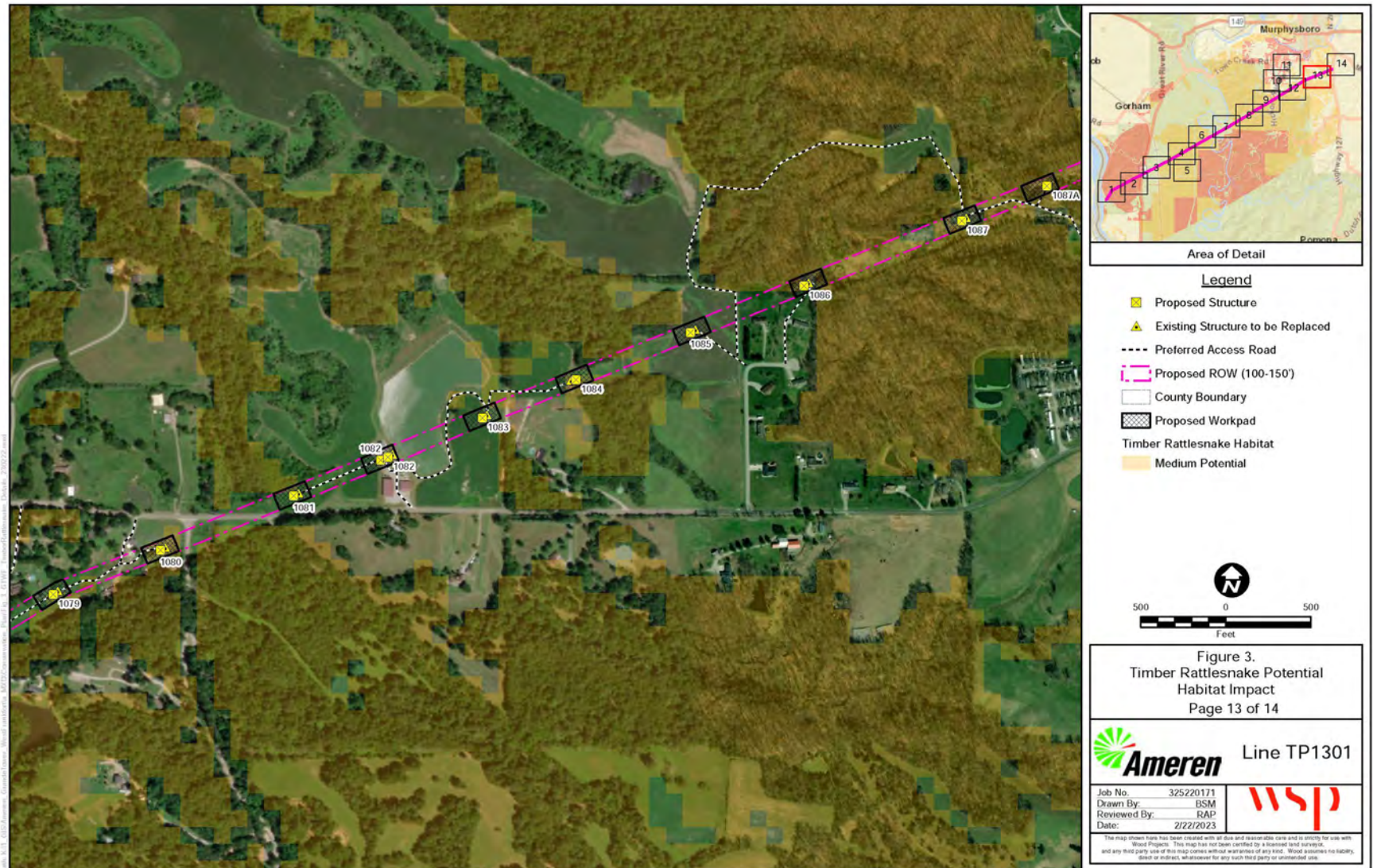


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 13 of 14)

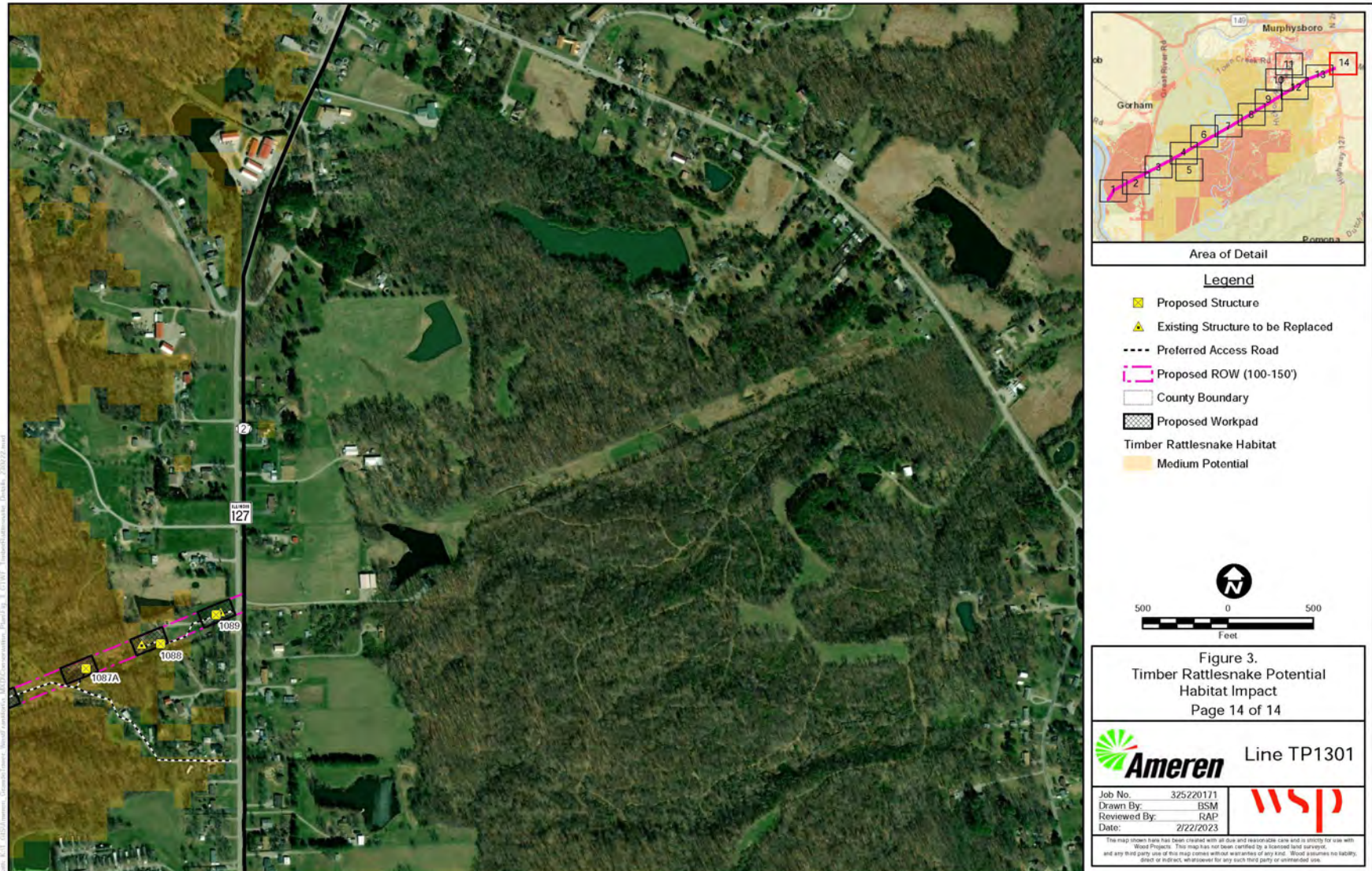


Figure 3. Project Activities within Timber Rattlesnake Potential Habitat Areas (Sheet 14 of 14)



# **Appendix B**

## **IDNR Correspondence**



**Applicant:** Stephanie Miller  
**Contact:** Stephanie Miller  
**Address:** 15933 Clayton Rd #110  
Ballwin, MO 63011

**IDNR Project Number:** 2207808  
**Date:** 12/13/2021  
**Alternate Number:** 2009964

**Project:** [REDACTED] Transmission Line  
**Address:** West Main Street, Carbondale

**Description:** Rebuild of 36 mile long existing transmission line with 138 kV wooden H-frame structures to a double circuit 345 kV/138 kV line with steel monopole support structures due to age and condition of existing structures. The new double circuit line would include acquiring an additional 25 feet of ROW to the north of the existing line, which will require some tree clearing. Access roads for construction are still being finalized, but would utilize existing paths and low water stream crossings to the extent practicable. The work is expected to occur over an 18-month period planned for fall of 2023 – fall of 2024, based on permit restrictions.

### Natural Resource Review Results

#### Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Colp Bottoms INAI Site  
Little Grand Canyon - Cedar Creek INAI Site  
Mississippi River - Grand Tower INAI Site  
Bigclaw Crayfish (*Orconectes placidus*)  
Cluster Fescue (*Festuca paradoxa*)  
Dull Meadow Beauty (*Rhexia mariana*)  
Indiana Bat (*Myotis sodalis*)  
Indiana Bat (*Myotis sodalis*)  
Indiana Bat (*Myotis sodalis*)  
Indiana Bat (*Myotis sodalis*)  
Indiana Bat (*Myotis sodalis*)  
Indiana Bat (*Myotis sodalis*)  
Indiana Bat (*Myotis sodalis*)  
Loggerhead Shrike (*Lanius ludovicianus*)  
Northern Long-Eared Myotis (*Myotis septentrionalis*)  
Northern Long-Eared Myotis (*Myotis septentrionalis*)  
Northern Long-Eared Myotis (*Myotis septentrionalis*)  
Spring Ladies' Tresses (*Spiranthes vernalis*)  
Sturgeon Chub (*Macrhybopsis gelida*)  
Timber Rattlesnake (*Crotalus horridus*)  
Western Sand Darter (*Ammocrypta clarum*)

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

#### Location



IDNR Project Number: 2207808

The applicant is responsible for the accuracy of the location submitted for the project.

County: Franklin

Township, Range, Section:

7S, 2E, 25  
 7S, 2E, 26  
 7S, 2E, 27  
 7S, 2E, 28  
 7S, 2E, 32  
 7S, 2E, 33

County: Jackson

Township, Range, Section:

10S, 3W, 4  
 10S, 3W, 5  
 10S, 3W, 6  
 10S, 3W, 7  
 10S, 4W, 12  
 10S, 4W, 13  
 10S, 4W, 14  
 8S, 1W, 25  
 8S, 1W, 26  
 8S, 1W, 33  
 8S, 1W, 34  
 8S, 1W, 35  
 9S, 1W, 4  
 9S, 1W, 5  
 9S, 1W, 6  
 9S, 1W, 7  
 9S, 2W, 10  
 9S, 2W, 11  
 9S, 2W, 12  
 9S, 2W, 15  
 9S, 2W, 16  
 9S, 2W, 17  
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 9S, 2W, 20  
 9S, 3W, 24  
 9S, 3W, 25  
 9S, 3W, 26  
 9S, 3W, 33  
 9S, 3W, 34  
 9S, 3W, 35

County: Williamson

Township, Range, Section:

8S, 1E, 1  
 8S, 1E, 11  
 8S, 1E, 12  
 8S, 1E, 14  
 8S, 1E, 15  
 8S, 1E, 16  
 8S, 1E, 19  
 8S, 1E, 20  
 8S, 1E, 21  
 8S, 1E, 30  
 8S, 2E, 5  
 8S, 2E, 6





*IDNR Project Number: 2207808*





**IL Department of Natural Resources**  
**Contact**  
Adam Rawe  
217-785-5500  
Division of Ecosystems & Environment

**Government Jurisdiction**  
IL Environmental Protection Agency  
Water Quality Certification Program  
1021 North Grand Ave. East  
P.O. Box 19276  
Springfield, Illinois 62794

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**Disclaimer**

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

**Terms of Use**

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.
2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

**Security**

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

**Privacy**

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.



## Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271  
www.dnr.illinois.gov

JB Pritzker, Governor  
Colleen Callahan, Director

January 10, 2022

Stephanie Miller  
Wood PLC  
15933 Clayton Rd  
#10  
Ballwin, MO 63011

**RE: [REDACTED] Transmission Line  
Consultation Program  
EcoCAT Review #2207808  
Franklin, Williamson, and Jackson Counties**

Dear Ms. Miller:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code Part 1075*.

The proposed action consists of rebuilding 36 miles existing transmission line stretching from [REDACTED], IL. This will include replacing existing wooden "H" frame structures with steel reinforced monopoles. This will include expanding the existing Right-of-Way by 25 linear feet.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

State Listed Species

**Bigclaw Crayfish** (*Faxonius placidus*)  
**Cluster Fescue** (*Festuca paradoxa*)  
**Dull Meadow Beauty** (*Rhexia mariana*)  
**Loggerhead Shrike** (*Lanius ludovicianus*)  
**Spring Ladies' Tresses** (*Spiranthes vernalis*)  
**Sturgeon Chub** (*Macrhybopsis gelida*)  
**Timber Rattlesnake** (*Crotalus horridus*)

Illinois Natural Areas Inventory Sites

**Colp Bottoms**  
**Little Grand Canyon-Cedar Creek**  
**Mississippi River- Grand Tower**

State and Federally Listed Species

**Indiana Bat** (*Myotis sodalis*)  
**Northern Long-eared Bat** (*Myotis septentrionalis*)

Transmission Line. Consultation #2207808

Due to the project scope and proximity to protected resources the Department recommends the following actions be taken to avoid adversely impacting listed species in the vicinity of the project:

**Indiana Bat, Northern Long-eared Bat**

1. The Department recommends no tree work occur between April 1 and October 31.
2. If these dates cannot be accommodated, a bat habitat assessment should be conducted by a qualified biologist to determine if suitable habitat trees are present. Suitable habitat includes but is not limited to:
  - a. Trees of greater than 3" DBH with exfoliating bark, cracks or crevices.
  - b. Trees that are dead, dying, broken, or damaged, with slabs or plates of loose or peeling bark on the trunk or limbs.
  - c. Tree species such as shagbark and shellbark hickory, bitternut hickory, green ash, American elm, slippery elm, eastern cottonwood, silver maple, sugar maple, white oak, red oak, post oak, and shingle oak.
3. Trees fitting these descriptions should be flagged and/or clearly marked and left undisturbed from April 1 to October 31.
  - a. Unsuitable trees may be cut at any time.
  - b. Suitable trees may be cut within the April 1 to October 31 timeframe if a qualified biologist determines the trees are not occupied by listed bats and upon further coordination with the Department.
  - c. Coordination with the U.S. Fish and Wildlife Service may be necessary for this species and is separate from state regulations due to its federal status.
4. Alternatively, the applicant may pursue an Incidental Take Authorization pursuant to Part 1080 and Section 5.5 of the *Illinois Endangered Species Protection Act*. However, the Department may not issue such an Authorization until after the Service has determined whether a Habitat Conservation Plan and Incidental Take Permit are required pursuant to Section 10 of the federal *Endangered Species Act*. Visit the link below for information on the ITA process:

[Incidental Take Authorizations - Species Conservation \(illinois.gov\)](#)

**Timber Rattlesnake**

*The Department has records of this species occurring west of Route 127 in Jackson County, IL. The Department does not have any recent or viable records east of Route 127.*

1. All work within the 11 miles stretch between the substation at Powerplant road and Illinois Route 127 should be done between the dates of November 1<sup>st</sup> and March 31<sup>st</sup>.
2. Alternatively, the applicant may assume the presence and potential adverse effects to the Franklin's Ground Squirrel and seek an Incidental Take Authorization (ITA) pursuant to Part 1080 and Section 5.5 of the *Illinois Endangered Species Protection Act* to avoid potential liability. Visit the link below for information on the ITA process:

[Incidental Take Authorizations - Species Conservation \(illinois.gov\)](#)

**State Listed Plants**

Pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/], state-listed plant species belong to the landowner and their fate resides with the landowner's conservation decisions.

- a) Express permission from the landowner should be obtained before construction companies/crews take listed plants.
- b) A qualified biologist should survey the site for listed species, and measures should be taken to mitigate impacts.

**Future Right of Way Maintenance**

1. The Department recommends that the areas identified in the section titled "Timber Rattlers" be scheduled for vegetation maintenance between the dates of November 1<sup>st</sup> and March 31<sup>st</sup>.
2. Areas where state listed plants have been identified should be mowed or spot treated with herbicide only.

Given the above recommendations are adopted the Department has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

*In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.*

Consultation on the part of the Department is closed unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal and should not be regarded as a final statement on the project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

Transmission Line. Consultation #2207808

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

If temporary or permanent lighting is required, the Department recommends the following lighting recommendation to minimize adverse effects to wildlife:

- All lighting should be fully shielded fixtures that emit no light upward.
- Only “warm-white” or filtered LEDs (CCT < 3,000 K; S/P ratio < 1.2) should be used to minimize blue emission.
- Only light the exact space with the amount (lumens) needed to meet facility safety requirement.
- If LEDs are to be used, avoid the temptation to over-light based on the higher luminous efficiency of LEDs.

If erosion control blanket is to be used, the Department also recommends that wildlife-friendly plastic-free blanket be used around wetlands and adjacent to natural areas, if not feasible to implement project wide, to prevent the entanglement of native wildlife.

Please contact me with any questions about this review.

Sincerely,



Bradley Hayes  
Acting Manager, Impact Assessment Section  
Division of Real Estate Services and Consultation  
Office of Realty & Capital Planning  
Illinois Department of Natural Resources  
One Natural Resources Way  
Springfield, IL 62702  
Bradley.Hayes@Illinois.gov  
Phone: (217) 782-0031

CC  
Heather Osborn  
Scott Ballard  
Stephen Tillman  
Ben Snyder



# **Appendix C**

## **Land Ownership or Control**



Structure	AIC Parcel Number	Owner	USFS Owned	Address	City	State	Zip Code
1061, 1062	13-24-400-005-077	JAROS KENNETH		1300 SHOAL CREEK RD	MURPHYSBORO	IL	62966
1054, 1055	13-25-100-004-077	JOHNSON BONNIE L		1971 SHOAL CREEK RD	MURPHYSBORO	IL	62966
1054, 1055	13-25-100-005-077	TRUST #143		1403 WALNUT	MURPHYSBORO	IL	62966
1056, 1057	13-25-100-007-077	TRUST #143		1403 WALNUT	MURPHYSBORO	IL	62966
1058	13-25-100-015-077	WALKER NAOMI LEE		1673 SHOAL CREEK RD	MURPHYSBORO	IL	62966
1059, 1060	13-25-200-001-077	USA	USFS				
1048, 1049	13-26-300-001-077	HEINE DANIEL L		968 BIG MUDDY LEVEE RD	GORHAM	IL	62940
1050, 1051	13-26-400-002-077	HEINE DANIEL L		968 BIG MUDDY LEVEE RD	GORHAM	IL	62940
1052, 1053, 1052B	13-26-400-003-077	USA	USFS				
1035, 1036, 1037	13-33-400-001-077	FOREST SERVICE	USFS				
1041	13-34-100-001-077	FOREST SERVICE	USFS				
1044, 1045	13-34-200-003-077	HEINE ALICE		968 BIG MUDDY LEVEE RD	GORHAM	IL	62940
1042, 1043	13-34-200-004-077	HEINE ALICE		968 BIG MUDDY LEVEE RD	GORHAM	IL	62940
1038, 1039, 1040	13-34-300-001-077	FOREST SERVICE	USFS				
1046, 1047	13-35-100-001-077	HEINE ALICE		968 BIG MUDDY LEVEE RD	GORHAM	IL	62940
1087	14-16-100-006-077	ALOHA FARMS, LLC		1240 CEDAR COURT	CARBONDALE	IL	62901
1087A	14-16-276-014-077	JOHNSON CARL		145 MOTO-X-LN	MURPHYSBORO	IL	62966
1088, 1089	14-16-276-023-077	BROWN JAMES DANIEL		10107 OLD HIGHWAY 13	MURPHYSBORO	IL	62966
1081, 1082	14-16-300-001-077	ALOHA FARMS, LLC		1240 CEDAR COURT	CARBONDALE	IL	62901





Structure	AIC Parcel Number	Owner	USFS Owned	Address	City	State	Zip Code
1083	14-16-300-002-077	ALOHA FARMS, LLC		1240 CEDAR COURT	CARBONDALE	IL	62901
1084, 1085	14-16-300-027-077	ALOHA FARMS, LLC		1240 CEDAR COURT	CARBONDALE	IL	62901
1086	14-16-401-006-077	BARTA FRANCES C		193 SPRING VALLEY	MURPHYSBORO	IL	62966
1077	14-17-400-007-077	BURKE ANNA MARIE		66 S NEW THOMPSON LAKE RD	CARBONDALE	IL	62901
1080	14-17-400-033-077	CLOVER GARY		1336 HOFFMAN RD	MURPHYSBORO	IL	62966
1078, 1079	14-17-400-035-077	CLOVER GARY D		1336 HOFFMAN RD	MURPHYSBORO	IL	62966
1069	14-19-200-003-077	VARNER KENNETH R		2006 ROBLEE AV	MURPHYSBORO	IL	62966
1071	14-19-200-022-077	PIERSON DAVID A		1303 TOLLING FIELDS	JACKSON	MO	63755
1070	14-19-200-023-077	MORTHLAND IMOGENE		1603 GRACE	MURPHYSBORO	IL	62966
1063, 1064	14-19-300-003-077	GOBIN JUANETTA Y		1308 AVA RD	MURPHYSBORO	IL	62966
1065, 1066, 1067	14-19-300-007-077	ANDRESS CAROL I		10259 HICKORY RIDGE RD	MURPHYSBORO	IL	62966
1068	14-19-400-009-077	VARNER KENNETH R		2006 ROBLEE AV	MURPHYSBORO	IL	62966
1073, 1074	14-20-100-002-077	FOREST SERVICE	USFS				
1072	14-20-100-004-077	FOREST SERVICE	USFS				
1075, 1076	14-20-100-008-077	WELTER EDWARD		RR 2 BOX 268	GOLCONDA	IL	62938
1010	16-12-400-001-077	USA	USFS				
1005-L, 1005-R	16-13-100-001-077	AMEREN ENERGY GNRTG CO		PO BOX 66149 (MC 210)	SAINT LOUIS	MO	63166
1030, 1031, 1032, 1033	17-04-100-001-077	USA	USFS				
1034	17-04-200-001-077	USA	USFS				
1026, 1027, 1028, 1029	17-05-200-002-077	HUTHMACHER TRUST		455 N MAIN	DECATUR	IL	62525

AIC TP1301 Transmission Line Rebuild Project  
 Timber Rattlesnake Conservation Plan



<b>Structure</b>	<b>AIC Parcel Number</b>	<b>Owner</b>	<b>USFS Owned</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
1021, 1022	17-05-300-001-077	HUTHMACHER TRUST		455 N MAIN	DECATUR	IL	62525
1024, 1025	17-05-300-002-077	USA	USFS				
1019, 1020	17-06-400-004-077	KUNCE H		1307 N 14TH	MURPHYSBORO	IL	62966
1018-L, 1018-R	17-06-400-008-077	BOULTON JAMES L		8030 HWY 3	GRAND TOWER	IL	62942
1016	17-07-100-001-077	USA	USFS				



# **Appendix D**

## **Timber Rattlesnake Educational Pamphlet**

# CAUTION - TIMBER RATTLESNAKE

## MAY BE ENCOUNTERED IN THIS CONSTRUCTION AREA



**STATUS:** State Threatened, it is a **CRIMINAL ACT** to handle a protected species. State-listed species may not be handled without the appropriate permits pursuant to the Illinois Endangered Species Protection Act.

**IDENTIFYING CHARACTERISTICS:** Small asymmetrical head scales; elliptical pupil; pit between eye and nostril; back with jagged dark bands; rattle or button on tail tip; back scales strongly keeled; anal scale not divided. Back gray, light yellow, or greenish white with 20-25 black, jagged crossbars or blotches. Sometimes an orange or rust stripe down midback. Head clearly larger than slender neck. Dark stripe behind each eye. Tail tip uniformly black in adults. Belly pink, white, cream, or gray, with dark stippling toward sides.

**Length:** 36-60 inches

**HABITAT:** Heavy forest along rocky outcrops and bluffs.

**ACTIVE PERIOD:** April through October, often seen sunning on rock ledges near winter dens. Forages during summer in upland forests and some border and disturbed habitats where rodents are abundant.

### **WHAT TO DO IF A SNAKE IS ENCOUNTERED**

If any snake is found on this construction site, the following procedures need to be followed:

**Immediately stop construction** in the surrounding area.

**Do not touch the snake.** If determined to potentially be a timber rattlesnake, a worker should watch the snake at a respectable distance. If possible, monitor the snake's location until WSP or IDNR staff arrive. If the snake moves or becomes hidden from view, personnel should mark the spot they first saw the snake and the last spot it was seen.

**Immediately contact WSP** personnel who will then contact the Illinois Department of Natural Resources (IDNR) to report the presence of the snake.

### **CONTACT INFORMATION:**

**Primary Contact:** Steve Stumne, WSP Project Manager  
**314-541-4222**

**Secondary Contact:** Stephanie Miller, Ameren  
Environmental **314-242-9275**

**IDNR Species Recovery Specialist:** Scott Ballard, **618-694-3398 or 618-559-4377**



If WSP personnel are unavailable, contact IDNR (Scott Ballard) directly to report the presence of the snake, and he will safely remove it from the area.

**ALL snake species must be afforded respect and should not be harassed or persecuted.**