

Sand Ridge to Lancaster 69 kV Rebuild (RUS 1091) and Platteville Tap 69 kV Project (RUS 1019)

Environmental Assessment

Prepared for:



Rural Utilities Service
United States Department of Agriculture

Submitted by:



August 2017

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Abbreviations and Acronyms

APE	Area of Potential Effects
ATC	American Transmission Company
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CHC	Cardinal Hickory Creek
CFR	Code of Federal Regulations
dBA	Decibels (A-weighted scale)
DPC	Dairyland Power Cooperative
DTE	DTE Energy Services
EA	Environmental Assessment
EMF	Electric and magnetic fields
END	Wisconsin State Endangered Species
EO	Executive Order
ER	Endangered Resources
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
GHG	Greenhouse Gas
HSS	Historic Standing Structure
IEPA	Illinois Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ILDNR	Illinois Department of Natural Resources
IHPA	Illinois Historic Preservation Agency
IHRPA	Illinois Historic Resources Protection Act
ITC	International Transmission Holding Corporation
kV	kilovolt
LE	Illinois State Endangered Species
LT	Illinois State Threatened Species
MBTA	Migratory Bird Treaty Act
MVAC	Mississippi Valley Archaeology Center
MW	megawatt
NERC	North American Electric Reliability Corporation
NHI	Natural Heritage Inventory
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NPC	Noise Pollution Clearing House
NRCS	Natural Resource Conservation Service
PEM	palustrine emergent (wetland)
PFO	palustrine forested (wetland)
PSS	palustrine scrub shrub (wetland)
ROW	right-of-way
RUS	Rural Utilities Service, U.S. Department of Agriculture
SC	Wisconsin State Special Concern Species
SHPO	State Historic Preservation Office
T/E	Threatened and Endangered

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TCSB	Temporary Clear Span Bridge
THR	Wisconsin State Threatened Species
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WDNR	Wisconsin Department of Natural Resources

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1.0 Project Description

1.1 Proposed Project

Dairyland Power Cooperative (DPC), a not-for-profit generation and transmission cooperative headquartered in La Crosse, Wisconsin, intends to seek financial assistance from the U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS) to rebuild 35.93 miles of 69 kilovolt (kV) transmission line in southern Wisconsin and northwest Illinois. The Lancaster to Sand Ridge (N-153) 69 kV segment is 28.72 miles and will be rebuilt with 477 ACSR conductor. The Platteville Tap (N-196) 69 kV transmission line is 7.21 miles and will be rebuilt with a 4/0 ACSR conductor. For the purposes of this Environmental Assessment (EA), these two 69 kV rebuilds are collectively referred to as “the Project”. The Lancaster to Sand Ridge Project is included in Dairyland’s 2016-2018 Construction Work Plan. The Platteville Tap project was included in Amendment 1 to the Work Plan which was adopted by DPC’s Board of Directors on March 17th, 2017.

With Dairyland’s request for financing assistance from the USDA RUS, the proposed Project becomes a federal action subject to review under the National Environmental Policy Act (NEPA) of 1969, the National Historic Preservation Act (NHPA) of 1966, and all applicable federal environmental laws and regulations. This EA was prepared to analyze potential impacts to the natural and human environments associated with the proposed Project in accordance with 7 Code of Federal Regulations (CFR) Part 1970, RUS’ Environmental Policies and Procedures, and 40 CFR Parts 1500-1508, the regulations promulgated by the Council on Environmental Quality for implementing the NEPA. This EA also addresses other laws, regulations, executive orders (EOs), and guidelines promulgated to protect and enhance environmental quality including, but not limited to, the Endangered Species Act, the Farmland Protection Policy Act, the Clean Water Act, and EOs governing floodplain management, protection of wetlands, and environmental justice.

The north end of the N-153 transmission line begins at the Lancaster Transmission Substation, located approximately 7.5 miles west-northwest of the City of Platteville in Grant County, Wisconsin and traverses generally south-southeast to the Menominee Distribution Station located in Menominee, Jo Daviess County, Illinois (Figure 1 – Appendix A). The south end of the N-196 transmission line begins at the Platteville substation located southwest of the City of Platteville and traverses generally west to where it will connect with the N-153 transmission line (Figure 1 - Appendix A).

Construction of the Project will result in temporary construction impacts for temporary access routes (26.63 miles) and material laydown areas. Temporary access routes will be cleared to a maximum of a 20-foot width where required using grading (dozing), brush and tree clearing, and tree side-trimming techniques and restored after construction.

Permanent impacts for the Project include the installation of 462 wood transmission structures with an approximate 300 to 400 foot span between structures. The Project will utilize the existing 80-foot right-of-way (ROW), 40 feet on either side of the 69 kV transmission centerline. The transmission structures will not be replaced at their current locations; rather structure locations will be selected based on engineering and environmental factors including soil conditions, slope, and maximum span length between transmission structures, and terrain.

Individual elements of the N-153 rebuild that will be analyzed within this EA include:

- 24.55 miles of existing N-153 ROW that will be rebuilt beginning at the DPC substation in Lancaster, Grant County, Wisconsin and extending to the International Transmission Holdings Corporation's (ITC) Sand Ridge substation in Jo Daviess County, Illinois (Referred to as "N-153 Existing" on Figure 1 – Appendix A and all subsequent Figures);
- One reroute, consisting of new ROW 3.74 miles long, starting just east of the intersection of Bennett Lane and Quarry Road and proceeding east along Quarry Road for 0.98 mile before turning south along Stanton Road for 2.73 miles, then turning east for 0.30 mile until it meets up with the existing N-153 transmission line (Referred to as "N-153 New ROW A" on Figure 1 -Appendix A and all subsequent Figures);
- A second reroute consisting of new ROW 0.43 mile long starting near Kirkwood Road. The route runs 0.08 mile southeast and then turns southwest for 0.35 mile until it meets back to the existing N-153 transmission line (Referred to as "N-153 New ROW B" on Figure 1 – Appendix A and all subsequent figures); and
- A collective length of 3.11 miles of existing N-153 alignment that will be retired because of the new ROW described above (Referred to as "N-153 Retirement A and B" on Figure 1 – Appendix A and all subsequent figures).

These elements will be collectively referred to as the N-153 Route within this document unless they are specifically called out for analysis purposes.

Individual elements of the N-196 rebuild that will be analyzed within this EA include:

- 5.7 miles of existing ROW along the N-196 route that will be rebuilt (Referred to as N-196 Existing" on Figure 1 – Appendix A and all subsequent figures);
- Construction of 1.51 miles of new ROW extending from the existing LN196 alignment and connecting with the first reroute associated with the N-153 rebuild (Referred to as N-196 New ROW" on Figure 1 -Appendix A and all subsequent figures);
- A 6.46-mile section of the existing N-196 alignment that will be retired because of the new ROW described above (Referred to as "N-196 Retirement" on Figure 1 – Appendix A and all subsequent figures).

These project elements will be collectively referred to as the N-196 Route within this document unless they are specifically called out for analysis purposes.

All sections of current transmission line easement that are retired as a result of this project will be quitclaimed by DPC and returned to the landowner.

The Project has been designed to avoid resources such as wetlands, surface waters, sensitive habitats, protected species and historic or cultural areas to the extent possible. Potential impacts on soil and surface water resources will be minimized and avoided by using erosion and sedimentation control best management practices (BMP) during construction.

1.2 Schedule

Project construction is scheduled to start in September of 2017 with a targeted completion in early 2019. Construction phasing will reflect any avoidance measures required to protect sensitive resources including threatened and endangered species, surface waters, and wetlands.

1.3 Project Location

The Project is located in Grant County, Wisconsin, and Jo Daviess County, Illinois as shown in Figure 1 – Appendix A. Table 1-1 presents the township, range, and section for all proposed construction areas of the Project.

Table 1-1: Project Location

State	County	Township	Range	Sections
Wisconsin	Grant	1N	1W	6, 7, 17, 18, 19, 20, 29, 30, 32
Wisconsin	Grant	2N	1W	19, 30, 30, 31, 32
Wisconsin	Grant	2N	2W	2, 11, 12, 13, 24
Wisconsin	Grant	3N	1W	7, 17, 18, 20, 21
Wisconsin	Grant	3N	2W	6, 7, 8, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 27, 28, 34, 35
Wisconsin	Grant	3N	3W	1
Wisconsin	Grant	4N	3W	36
Illinois	Jo Daviess	29N	1W	17, 19, 20, 30, 31
Illinois	Jo Daviess	28N	1W	6
Illinois	Jo Daviess	28N	2W	1, 12

1.4 Project Design and Construction Methods

The project will be constructed with new single and H-frame wood structures that will be approximately 60 to 80 feet tall with a span of approximately 300 to 400 feet between structures. The typical design characteristics associated with the transmission structures are shown in Appendix D.

Approximately 462 single transmission structures will be installed for the Project. Access to the structures will be via local roadways, existing trails, and along the edges of agricultural fields. All disturbed areas around structures and access routes will be reclaimed after installation of the Project.

1.4.1 Access Routes and Material Laydown Areas

Access routes for the Project have been identified; construction will primarily follow 26.89 miles of existing maintenance routes used by DPC’s maintenance crews since the early 1950’s and temporary access (Figure 5 - Appendix A). The total length of off ROW access for the Project is 26.89 miles. The total length of access within the existing and new ROW is 21.79 miles. The majority of the access routes do not require any grading or vegetation clearing and construction equipment will be driven across low-lying vegetation, existing field roads or existing trails. However, there are areas where grading (dozing) and vegetation clearing or trimming will be necessary.

Temporary disturbance, such as vehicle parking and temporary storage of materials used for construction, will occur along existing ROW and/or at existing substations.

Access routes will be between 12 and 16 feet wide, clearing at corners could be up to a 20-foot width. Damage to vegetation and crops and soil compaction is possible. DPC will compensate landowners for damage resulting from construction. Appropriate stormwater management and erosion control practices will be used along access routes that require grading or dozing due to the existing topography. Following construction, access to the transmission line for routine maintenance will follow the existing and any newly established access routes.

Temporary Clear Span Bridges: In some cases, temporary clear span bridges (TCSBs) may be required to access structure locations on opposite sides of a stream or river. TCSBs are required when heavily-forested areas occur on either side of a surface water body making it difficult to access a structure location without crossing the surface water body. As a result, 12 TCSBs will be required to access structure locations for construction. The locations of the TCSBs are provided in Figure 5 (Appendix A). Prior to construction, DPC will obtain the necessary permits from the Wisconsin Department of Natural Resources (WDNR) and the Illinois Department of Natural Resources (ILDNR – if waterway is deemed a public waterway). Installation and maintenance of the TCSB will be in accordance with permit conditions. A diagram showing the typical design characteristics associated with DPC's TCSB design is demonstrated in Appendix D.

Culvert Reinforcement: To avoid possible damage to existing culverts, DPC may temporarily place a reinforcing structure over farm lane culverts. Existing farm lane culverts are shown on Figure 5 (Appendix A). Structures will be placed on the farm lane and will not require the placement of fill in wetland or waterways.

Matting: To avoid impacts on wetlands crossed by access routes (both in ROW and outside ROW) during the time when the ground is not frozen, DPC will install construction matting over 10 wetlands, totaling 940 linear feet and 0.46 acre wetlands identified along access routes. The construction matting will be placed on top of the existing vegetation and will be removed upon the completion of construction. The locations of the matting are provided on Figure 5 (Appendix A).

1.4.2 Transmission Structures

DPC is proposing to replace the existing single-pole wood structures with new single-pole wood structures that will be approximately 60 to 80 feet tall with a span between structures of approximately 300 to 400 feet that is similar to the existing span. The typical design characteristics associated with the transmission structures are shown in Appendix D.

Permanent impacts associated with construction of the transmission line will be limited to the footprint of the transmission structures. The average footprint of each pole within a given transmission structure location will result in up to 12 square feet of disturbance. A total of 453 permanent transmission structures will be placed along the routes. Of the 453 permanent transmission structure locations proposed for the Project, 308 will be monopole configurations, 134 will be two-pole configurations, 10 will be three-pole configurations, and one will be a four-pole configuration resulting impact from all poles within all transmission structure locations is approximately 7,320 square feet (0.17 acre) of permanent ground disturbance.

ROW and Ground Preparation: The existing ROW is 80-feet-wide. DPC will prepare the ROW by removing brush from areas where the transmission structures will be installed. The majority of the work will take place within the Project ROW. Once the trimming and clearing has been completed, the survey crew will conduct a final structure siting survey for each structure along the route.

Transmission structures are generally designed for installation at existing grades. Typically, transmission structure sites with a slope of five percent or less will not be graded or leveled. At sites with a slope of more than five percent, working areas will be graded level or fill will be brought in to create level work pads. In some cases, construction mats may be used to create a level work pad where grading is impractical. DPC prefers to leave the leveled areas and working pads in place for use on future maintenance activities if the landowner permits. If the landowner does not want to leave the leveled area

in place, the area will be graded back to its original condition to the extent feasible and all imported fill will be removed from the site.

Structure Installation: Construction will start with crews transporting structures, insulators, and insulator hardware from the staging areas to the individual structure sites. Physical construction of the new transmission line will begin by auguring a hole for the structure.

Structures that have been assembled on the ground will then be erected using a mobile crane. The structures will be directly embedded in soil. Depending on soil conditions, metal culvert pipes may be used as a permanent casing to hold the hole open. The excess excavated material and/or crushed stone and clean fill will be used to fill excess space in the hole or culvert pipe. Excess spoil materials not used as backfill around new structures may be removed from the site depending on the wishes of the landowner. Seeding and mulching combined with the use of silt fences or fiber roll perimeter controls will be used to stabilize the material disposal sites if excess spoil removal from the site is not practicable.

Angular structures and some tangent structures may require more than one pole and will have down guys and anchors.

Structure Removal along Route Segments that will be Retired: Construction will start with crews transporting structures, insulators, and insulator hardware. The old wire and poles will be removed and will be properly disposed or recycled.

Wire (Conductor) Stringing: Following structure installation, several reels of wire will be placed in the cradles, the wire run through a series of sheaves that support and apply tension to the wire while it is being pulled into place by a winch. The wires will then be properly "sagged" to maintain pre-determined wire tension that meets National Electric Safety Code (NESC) standards.

Conductor and Structure Stabilization: The final construction operation is to "clip-in" the conductor. This step involves removing the stringing sheaves and replacing them with clamps, which attach and secure the conductors to the insulator strings. The construction operation will be essentially complete once the wire has been clipped in.

Reclamation: Disturbed areas around the newly installed structures will be seeded and mulched per landowners requests. Stabilization of the structure locations will be achieved when a uniform perennial vegetation cover has been established with a density of at least 70 percent cover.

2.0 Purpose and Need for the Project

In March 2016, DPC completed a transmission study of the Sand Ridge – Lancaster 69 kV Study Area, which includes portions of Grant County, Wisconsin, and Jo Daviess County, Illinois (Appendix B). The Sand Ridge-Lancaster line, the N-153 is a 69 kV line located in the southern portion of DPC’s service territory. The transmission line connects DPC’s Lancaster substation to ITC-Midwest’s Sand Ridge substation and serves Scenic Rivers Energy Cooperative and Jo-Carroll Energy load as well as an Alliant Energy substation.

Recent generation retirements at Alliant Energy’s Nelson Dewey power plant (200 megawatt [MW]) and DTE Energy Services (DTE) Stoneman power plant (56 MW), both in Cassville, Wisconsin, have increased power flow on local transmission lines. The potential for the N-153 transmission line to experience a thermal overload will increase with the recent generation retirements. The need for this Project is to mitigate thermal overloads and potentially retire the existing operating guide that is in place to protect the line from overload. In addition, the N-153 Sand Ridge – Lancaster 69kV transmission study reviewed the age and condition of the N-196 from Lancaster to Platteville 69kV transmission line. This line was constructed in 1949 and is in very poor condition and does not have a shield wire. This line is currently operated normally open and the Platteville substation is served from the American Transmission Company (ATC) system resulting in yearly tariff costs to DPC of approximately \$150,000.

The transmission study reviewed five options to address the potential thermal overload of the N-153 line and address the age and condition concerns of the N-196 that serves Platteville. The study recommended a proposed alternative that will address the thermal overloads by rebuilding the N-153 line with 477 ACSR conductor. Included in the proposed alternative is a new tap line from the N-153 to the Platteville tap and rebuilding the N-196 line with 4/0 ACSR conductor to address age and condition issues with the existing N-196 line to the Platteville substation. The new tap to Platteville will be a mix of new ROW and existing ROW. Once complete, DPC will be able to serve the Platteville substation from the DPC transmission system resulting in yearly tariff savings that are currently paid to ATC.

There are no terminal upgrades at Lancaster or Sand Ridge recommended as part of this plan. The following table includes a list of facilities included in the proposed plan.

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Table 2-1: Proposed Project Facilities

Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Lancaster – Sand Ridge, N-153 69kV Rebuild - Referred to as “N-153 Existing”	477 ACSR	24.55 miles	2018
Lancaster – Sand Ridge, N-153 69kV on new ROW – Referred to as “N-153 New ROW A and B”	477 ACSR	4.17 miles	2018
Lancaster – Platteville, N-196 Rebuild – Referred to as “N-196 Existing”	4/0 ACSR	5.7 miles	2018
Lancaster – Platteville N-196 69kV on new ROW – Referred to as “N-196 New ROW”	4/0 ACSR	1.51 miles	2018
New 3-way switch at Platteville Tap	N/A	1	2018
Retire Sections of N-153 – Referred to as “N-153 Retirement A and B”	N/A	3.11 miles	2018
Retire Section of N-196 – Referred to as “N-196 Retirement”	N/A	6.46 miles	2018

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3.0 Alternatives to the Proposed Project

3.1 Overview

The Transmission Study describes the analysis that was performed to identify the long-term transmission requirements in the Sand Ridge-Lancaster Area. Five alternatives (including the proposed Project) were examined in the study area as potential options for replacing DPC's transmission lines in the area. All of the alternatives are a combination of 69kV rebuild and new 69kV line construction. The analysis included load flow analysis, reliability analysis, and economic analysis of each of the alternatives. The decision to select the "preferred alternative" was based on cost, exposure miles, future load-serving ability, and cost per megawatt of load growth. The preferred alternative would solve the existing overload and low voltage problems and would be a long-term solution for transmission requirements in the area.

The proposed Project alternative is approximately 35.93 miles in length, and part of the line goes through difficult terrain where access roads and erosion control will be an issue. The line and temporary access roads also cross the Platte River, Blakely Branch, Little Platte River, Blockhouse Creek, McAdam Branch, Sinsinawa River, Little Menominee River, Roundtree Branch, Whig Branch, 42 unnamed tributaries and associated wetlands. A total of 12 locations have been identified where these streams and rivers will be crossed with temporary clear span bridges if necessary with no impact to the waterways. Tree clearing may need to be scheduled in the winter to deal with northern long eared bat (*Myotis septentrionalis*) restrictions within the section of the N-153 alignment within Illinois. Impact to the northern long eared bat in Wisconsin have been deemed not significant through consultation with the WDNR. However, there may be the need for an Incidental Take Permit from the WDNR for the State Threatened Blanchard's Cricket Frog (*Acris blanchardi*). Field studies for the cricket frog will occur in May/June 2017. Purpose of the new ROW along N-153 line (4.17 miles) will be to move the ROW from difficult terrain and locate it along road ROW. The purpose of the new ROW along the N-196 line (1.51 miles) is to establish a new interconnection with the N-153 line and allow part of the N-196 line to be retired. The biggest impact of the new ROW will be new tree clearing and minor impacts to agricultural operations. New ROW will create new visual impacts to local residences. The cost of developing the preferred alternative is approximately \$10,536,150. This alternative represents the lowest cost alternative for a solution that meets the overall purpose and need of the Project. This lower cost is primarily attributed to the removal of the ATC tariff associated with the Platteville Substation by 2018.

3.2 Alternatives Evaluated and Dismissed

As part of the Sand Ridge – Lancaster 69 kV transmission study report completed by DPC in March, 2016 (Appendix B), five alternatives to the preferred option were considered in order to meet the overall purpose and need for the Project described above. Each of these five alternatives are described below:

Alternative 1: Lancaster to Sand Ridge N-153 Rebuild w/ 477 ACSR Conductor

- This alternative includes rebuilding the Sand Ridge-Lancaster N-153 line with a 477 ACSR conductor. The proposal will follow existing ROW but delays the rebuild of the N-196 along its existing ROW to Platteville until 2024. The Platteville substation will be served from the DPC system starting in 2024.
- This alternative is approximately 27 miles long that follows existing ROW and will have the same environmental impacts as the proposed alternative along the existing N-153 alignment. This alternative does not propose the additional 1.51 miles of new ROW used

to connect the N-196 to the N-153 alignment because the N-196 69kV transmission line rebuild is delayed until 2024. The 4.17 miles of new ROW along the N-153 rebuild is proposed as part of this alternative.

- Since this alternative does not include rebuilding N-196 until 2024 it will result in additional payments to ATC of \$147,294 in 2018 increasing to \$216,364 by 2032. The cost of developing Alternative 1 is approximately \$12,156,174. The additional cost of this alternative in comparison to the proposed alternative is primarily attributed to the additional tariff payments to ATC between the current date and 2024. The additional costs associated with rebuilding the N-196 line in 2024 are not included in this alternative's overall cost. This option was dismissed from consideration due to economic reasons.

Alternative 2: Rebuild N-196 and Connect to N-153

- Alternative 2 will include rebuilding N-196 and connecting to the N-153. The section of the N-153 from the Lancaster substation to the point where the N-196 connects with the N-153 near the Harrison substation will be retired in this alternative and will require approximately five miles of new ROW to connect the N-153 line to the N-196. This alternative will then rebuild the remaining 17 miles of the N-153 line to reach the Sand Ridge substation. Platteville will be served from the DPC system in this alternative.
- This alternative is approximately 36 miles in length. The Lancaster-Platteville (N-196) route is similar in topography and construction issues as the portion of the LN153 which extends from the Lancaster substation to the Harrison substation. This alternative will require approximately 5 miles of new ROW between the N-153 line and the Platteville substation located south of the city of Platteville, Wisconsin. The primary route will follow county and local roads, paralleling road ROW where possible. Impacts from the new ROW will require additional tree clearing and minor impacts on agricultural operations. Other constraints may include height restrictions from a local airport. New ROW will also create new visual impacts to local residences. Winter clearing may be required to minimize impacts to the northern long eared within the section of the N-153 alignment located in Illinois. Impact on the northern long eared bat in Wisconsin have been deemed not significant through consultation with the WDNR. However, there may be the need for an Incidental Take Permit from the WDNR for the State Threatened Blanchard's Cricket Frog.
- The cost of developing Alternative 2 will be approximately \$11,476,813.
- In addition, the DPC load in the Galena area is not subject to any ITC or ATC tariffs, as DPC has a contiguous transmission path back to DPC generation. This path utilizes the Lancaster to Sand Ridge N-153 69kV transmission line. If a section of the N-153 line is proposed to be retired, as with this alternative, the entire Galena area load will be added to the ITC or ATC tariff. This makes this alternative not viable for consideration due to additional tariff costs thereby not meeting the overall Project purpose and need.

Alternative 3: Rebuild N-153 in Existing ROW (listed as Alternative #4 within the DPC Sand Ridge to Lancaster 69kV Area Study [Appendix B])

- Alternative 3 is similar to the proposed alternative. This alternative is a rebuild of the N-153 following the existing ROW. This proposed alternative also recommends a new Platteville tap. In Alternative 3 the tap line to the N-153 line and rebuild of the N-196 will be delayed until 2024. In 2024, a 6.46 mile section of the existing N-196 will be retired. This alternative will serve Platteville from the DPC transmission system in 2024 and result in tariff savings from 2024 and beyond.
- This option will have the same environmental impacts as the proposed alternative; however, delaying the rebuild of N-196 until 2024 resulted in this alternative being dismissed from further review because it does not meet the overall purpose and need for the Project.
- The cost of developing Alternative 3 is approximately \$11,564,857. The difference in cost of this alternative as compared to the cost of proposed alternative is a result of a delay in the removal of the ATC tariff associated with the Platteville Substation by 2024. This alternative was dismissed from further review due to these economic differences.

Alternative 4: Rebuild N-153 with 477 ACSR Conductor, Retire N-196 (listed as Alternative #5 within the DPC Sand Ridge to Lancaster 69kV Area Study [Appendix B])

- Alternative 4 is similar to Alternative 1 with a rebuild of the N-153 with a 477 ACSR conductor. Instead of rebuilding the N-196 in 2024, Alternative 4 retires this line. Platteville is served from the ATC transmission system with no emergency backup in this alternative. Retiring the N-196 will cause problems for the Scenic Rivers Energy Cooperative.
- This alternative will have the same environmental impacts as Alternative 1 with the additional impact of retiring the N-196 line. Impacts on the retired segment will be minor due to the existing ROW and access roads. Winter tree clearing may be required to minimize impacts to the northern long eared bat within the section of the N-153 alignment located in Illinois. Impact on the northern long eared bat in Wisconsin have been deemed not significant through consultation with the WDNR. However, there may be the need for an Incidental Take Permit from the WDNR for the State Threatened Blanchard's Cricket Frog.
- This alternative does not include rebuilding N-196 which will result in additional payments to ATC of \$147,294 in 2018 increasing to \$216,364 in 2032. The cost of developing Alternative 4 is approximately \$14,762,630. This alternative was eliminated from further consideration due to economic reasons and because it does not meet the overall purpose and need of the Project.

Alternative 5: Cardinal – Hickory Creek Alternative to address thermal overload concerns in the Sand Ridge – Lancaster N-153 transmission line

- The Cardinal – Hickory Creek (CHC) 345kV line will be constructed, with an expected in-service date between 2020 and 2022. The CHC line will connect the Dubuque, Iowa area (Hickory Creek substation) to the Madison, Wisconsin area (Cardinal substation). The new 345kV line will have a midpoint substation at Montfort in the Eden substation

area. Contingencies were run in this case to review line loading on Sand Ridge to Lancaster N-153 transmission line with the CHC line in-service. Results of the contingency analysis demonstrated reduced single contingency flows on the N-153; however, it is still above its existing summer rating for several contingencies.

- This alternative was dismissed from further consideration because it does not meet the overall purpose and need of the Project in that it does not conclusively address the thermal overload concern for the N-153 and because it does not address the poor condition of the N-196 line.

3.3 No Action Alternative

Under the No Action Alternative, the Project will not be rebuilt; the existing transmission line will remain in service, and the potential for the Sand-Ridge-Lancaster N-153 line to experience thermal overload will increase. Additionally, under the no action alternative the concerns regarding the age and condition of the Lancaster to Platteville N-196 line will have to be addressed thru maintenance. The N-196 line is operated normally and Platteville is served from the ATC system, resulting in yearly tariff costs to DPC from \$147,294 in 2018, rising to \$216,364 by 2032. DPC is obligated to ensure reliable electricity to our customers and we cannot ignore the potential thermal overloads of the N-153 and concerns over age and condition of the N-196 line. If RUS funding is not available then DPC will have to evaluate outside financing for the project.

4.0 Affected Environment and Environmental Consequences

The following sections describe the existing human and natural environments potentially affected by the Project and the resulting environmental consequences and mitigation measures.

4.1 Land Use

4.1.1 *Affected Environment*

4.1.1.1 General Land Use

The land use within the existing and new ROW Project area consists primarily of agricultural land with rural farmsteads. Wetland areas, privately-owned forest segments, and rural residential development are scattered throughout the Project area (Figure 5 – Appendix A). Approximately 85% of the N-153 Route will be rebuilt within existing ROW and 79% of the N-196 Route will be rebuilt within existing ROW. The Project crosses multiple roadways including town roads, county highways, two US highways (USH 151 and USH 20) and one State Trunk Highway (STH 11). Rural farmsteads and residences are widely scattered within the vicinity of the Project corridor, with heavier concentrations of development along STH 11 and near the communities of Platteville, Wisconsin and Menominee, Illinois.

A total of three residences and two farm buildings are located within either existing or new ROW for the proposed project. One farm building located at 3691 Schuster Avenue, Town of Harrison, WI, is located in the N-153 Retirement A ROW of the Project. The location of this farm building is shown on page 8 of Figure 5 (Appendix A). One residence is located within the ROW of the N-196 Retirement section of the N-196 Route along County Trunk Highway B. The address of this residence is 3400 County Road B, Town of Harrison, Wisconsin. The location of this residence is shown on page 43 of Figure 5 (Appendix A). One residence is located within the N-196 new ROW portion of the N-196 Route along Stanton Road. The address of this residence is 6285 Stanton Road, Platteville, WI. The location of this residence is shown on page 42 of Figure 5 (Appendix A). One residence and one farm building are located along the N-153 new ROW A portion of the N-153 Route on Quarry Road. There is no listed address for the residence, however, the tax identification for the parcel is 020005010010 per Grant County Tax Parcel records. The address of the property on which the farm building is located is 3776 Quarry Rd., Town of Harrison, Wisconsin. The location of this residence and farm building are shown on page 48 of Figure 5 (Appendix A). The location of the buildings in relation to the proposed transmission line meet state and federal (RUS and NESC) electric safety guidelines.

The closest schools to the Project are St. Joseph's Catholic School, located less than one mile west of the N-153 Route, and UW Platteville, and located less than 0.5-mile from N-196 Route.

The N-153 Route is in the South Lancaster, Potosi, Ellenboro, Harrison, Paris, Smelser, and Hazel Green townships in Grant County, Wisconsin, and Menominee Township in Jo Daviess County, Illinois. The N-196 Route is in South Lancaster, Potosi, Ellenboro, Harrison, and Platteville townships in Grant County, Wisconsin. Both routes will cross land that is zoned agricultural (Figure 4 – Appendix A).

The Jo Daviess County Comprehensive Plan was reviewed to identify mapped existing land use and future land use for the Project area. Current land use for Jo Daviess County within the Project area is primarily rural, consisting of: farmland related uses including farmsteads and farm buildings; pasture and grazing land; timber lands; and, other rural open space land uses (Jo Daviess County 2012a). Land use in Grant County is similar with municipalities acknowledging the importance of protecting their agricultural land (Grant County 2009).

4.1.1.2 Important Farmland, Prime Forest Land, Prime Rangeland

The Project construction corridor and access routes cross prime farmland, farmland of statewide importance, as well as potential prime farmland if drained, and prime farmland if protected from flooding or not frequently flooded during the growing season (USDA, NRCS <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>). The total acreage crossed by the various elements of the proposed Project for each of these classifications is provided in Table 4-1 below.

Table 4-1: Acreage of Prime Farmland, Farmland of Statewide Importance, Potential Prime Farmland if Drained, and Prime Farmland if Protected from Flooding Crossed by Various Elements of the Proposed Project

Farmland Classification / Proposed Project Element	Acreage
Prime Farmland	
N-153 Existing	64.0
N-153 New ROW A	13.9
N-153 New ROW B	1.25
N-153 Retirement A	1.1
N-153 Retirement B	1.2
LN196 Existing	16.9
N-196 New ROW	4.0
N-196 Retirement	10.8
Farmland of Statewide Importance	
N-153 Existing	66.3
N-153 New ROW A	18.8
N-153 New ROW B	0.9
N-153 Retirement A	7.8
N-153 Retirement B	1.2
LN196 Existing	15.8
N-196 New ROW	5.5
N-196 Retirement	11.0
Potential Prime Farmland if Drained	
N-153 Existing	1.5
N-153 New ROW A	0
N-153 New ROW B	0
N-153 Retirement A	0.8
N-153 Retirement B	0
LN196 Existing	0.5
N-196 New ROW	0
N-196 Retirement	0
Prime Farmland if Protected from Flooding	
N-153 Existing	1.1

Table 4-1: Acreage of Prime Farmland, Farmland of Statewide Importance, Potential Prime Farmland if Drained, and Prime Farmland if Protected from Flooding Crossed by Various Elements of the Proposed Project (continued)

Farmland Classification / Proposed Project Element	Acreage
N-153 New ROW A	0
N-153 New ROW B	0
N-153 Retirement A	0
N-153 Retirement B	0
LN196 Existing	0
N-196 New ROW	0
N-196 Retirement	0

The N-153 Route ROW contains 79 acres of prime farmland, 86 acres of farmland of statewide importance, 1.5 acres of prime farmland if drained, and 1.1 acres of prime farmland if protected from flooding or not frequently flooded during the growing season representing approximately 60% of the proposed corridor combined. The N-196 Route ROW contains 20.9 acres of prime farmland, 21.3 acres of farmland of statewide importance, and 0.5 acre of prime farmland if drained, representing approximately 61% of the proposed corridor combined. The ROW of the existing N-153 Route to be retired contains 2.3 acres of prime farmland, 9.0 acres of farmland of statewide importance, and 0.8 acres of prime farmland if drained. The ROW of the existing N-196 Route to be retired contains 10.8 acres of prime farmland, and 11.0 acres of farmland of statewide importance. Proposed access routes contain 11.25 acres of prime farmland and 19.35 acres of farmland of statewide importance. The totals for access routes are not provided in Table 4-1 because permanent impacts to prime farmland or farmland of statewide importance are not anticipated due to Project access.

Information on Prime Forest Land and Prime Rangeland for the proposed Project was not found through available resources referenced for this EA. This does not mean that Prime Forest Land is not present along the proposed Project. Considering the different agricultural uses within the area, it is anticipated that there is no Prime Rangeland found along the proposed Project.

The majority of the proposed Project is within existing ROW and crosses agricultural land. Adjacent to the N-153 and N-196 lines are scattered tracts of forested areas. The N-153 new ROW A & B portions of the proposed Project do not cross forested land. Only the N-196 new ROW portion of the proposed Project cross forest lands that must be cleared to establish the new ROW. The total acreage of forested land that will be cleared in the N-196 new ROW is 3.0 acres.

For utility programs, due in part to applicant eligibility requirements and design policies, it is RUS policy that the requirement to complete the NRCS-CPA-106 Farmland Conversion Impact Rating for Corridor Type Projects form does not apply to electric transmission lines or proposals for utility distribution, collection, or telecommunication networks where the objective is to connect existing populations.

4.1.1.3 Formally Classified Land

There are no formally classified lands (e.g. public lands) crossed by the proposed Project.

4.1.2 *Environmental Consequences*

Proposed Action Alternative

Impacts on land use resulting from construction, operation, and maintenance of the Project will not be significant. Temporary impacts associated with the Project will be limited to those occurring during construction. Landowners may be temporarily restricted from accessing the ROW during construction activities at each transmission structure location and along construction access routes.

Construction of the transmission line is expected to take approximately 15 months. Landowners will be notified prior to the start of construction. Temporary effects associated with construction will be short term and limited to the disturbance at each transmission structure and temporary access routes. DPC will utilize existing roads and trails to access structure locations during construction. No permanent access routes will be constructed for the proposed transmission line. Areas of temporary disturbance will be revegetated and returned to pre-existing conditions after construction.

Permanent impacts associated with construction of the transmission line will be limited to the footprint of the transmission structures. The average footprint of each pole within a given transmission structure location will result in up to 12 square feet of disturbance. A total of 453 permanent transmission structures will be placed along the routes. The resulting impact from all poles within all transmission structure locations is approximately 7,320 square feet (0.17 acre) of permanent ground disturbance.

The N-153 Existing, N-153 Retirement A & B, N-153 New ROW A & B, N-196 Existing, and N-196 Retirement portions of the proposed Project are comprised of cleared ROW so there will be no forested land impact. Tree clearing along access routes will be minimal and consist only of clearing along edges as needed to access the project during construction. The N-196 New ROW project will cross approximately 3,200 linear feet of forested land. The ROW will be approximately 80 feet wide resulting in approximately 3.0 acres of clearing.

The transmission line will be designed to comply with state and federal electric safety codes. The residence at 3400 County Road B, Harrison Township, is located within existing ROW on the N-196 Retirement portion of the proposed Project. The residence will experience only temporary disturbances associated with construction equipment while the line is being deconstructed. The same will be experienced by the farm operation (building) located at 3691 Schuster Avenue, Town of Harrison, WI, which is located in the N-153 Retirement A portion of the Project. The residence at 6285 Stanton Road, Platteville, Wisconsin is located within the proposed ROW on the N-196 New ROW portion of the proposed Project. The residence with the tax parcel identification of 020005010010 along Quarry Road is located within the proposed ROW on the N-153 New ROW A portion of the proposed Project. The farm building at 3776 Quarry Rd., Town of Harrison, Wisconsin is located within the proposed ROW on the N-153 NEW ROW A portion of the proposed Project. The location of these buildings in relation to the proposed transmission line are within state and federal (RUS and NESC) electric safety guidelines. Landowners owning property that is crossed by the proposed transmission line route will be permitted to continue using their land in the same manner that they currently do, although height restrictions concerning the use of tall equipment under the new transmission line will apply.

The Project is not expected to significantly impact current land use or future land use and should not result in changing zoning from agricultural use. Transmission lines are generally compatible with agricultural land uses because farming operations can still take place within the Project ROW and the only permanent impact is that associated with the footprint of the transmission structure.

N-153 69 kV Rebuild (Sand Ridge to Lancaster)
Transmission Line Project

Impacts on prime farmland, farmland of statewide importance, potential prime farmland if drained, and prime farmland if protected from flooding will not be significant and will be limited to the footprint of the structure foundations. The total number of existing and proposed structures within each of these farmland classifications is provided in Table 4-2.

Table 4-2: Existing and Proposed Structures Located in designated Farmland Classifications within each Project Element of the Proposed Project

Farmland Classification / Proposed Project Element	Existing Transmission Structures	Impact (ft ²)**	Proposed Transmission Structures*	Impact (ft ²)	Net Increase / (Decrease) Impact (ft ²)
Prime Farmland					
N-153 Existing	85	1,020	122	1,464	444
N-153 New ROW A	0	0	20	240	240
N-153 New ROW B	0	0	1	12	12
N-153 Retirement A	3	36	0	0	(36)
N-153 Retirement B	0	0	0	0	0
LN196 Existing	25	300	25	300	0
N-196 New ROW	0	0	6	72	72
N-196 Retirement	15	180	0	0	(180)
<i>Proposed Project Structure Totals</i>	128	1,536	174	2,088	552
Farmland of Statewide Importance					
N-153 Existing	89	1,068	130	1,560	492
N-153 New ROW A	0	0	36	432	432
N-153 New ROW B	0	0	1	12	12
N-153 Retirement A	7	84	0	0	(84)
N-153 Retirement B	1	12	0	0	(12)
LN196 Existing	20	240	28	336	96
N-196 New ROW	0	0	9	108	108
N-196 Retirement	17	204	0	0	(204)
<i>Proposed Project Structure Totals</i>	134	1,608	204	2,448	840
Potential Prime Farmland if Drained					
N-153 Existing	3	36	2	24	(12)
N-153 New ROW A	0	0	0	0	0
N-153 New ROW B	0	0	0	0	0
N-153 Retirement A	1	12	0	0	(12)
N-153 Retirement B	0	0	0	0	0
LN196 Existing	0	0	1	12	12
N-196 New ROW	0	0	0	0	0
N-196 Retirement	0	0	0	0	0
<i>Proposed Project Structure Totals</i>	4	48	3	36	(12)

Table 4-2: Existing and Proposed Structures Located in designated Farmland Classifications within each Project Element of the Proposed Project (continued)

Farmland Classification / Proposed Project Element	Existing Transmission Structures	Impact (ft ²)**	Proposed Transmission Structures*	Impact (ft ²)	Net Increase / (Decrease) Impact (ft ²)
Prime Farmland if Protected from Flooding					
N-153 Existing	0	0	0	0	0
N-153 New ROW A	0	0	0	0	0
N-153 New ROW B	0	0	0	0	0
N-153 Retirement A	0	0	0	0	0
N-153 Retirement B	0	0	0	0	0
LN196 Existing	0	0	0	0	0
N-196 New ROW	0	0	0	0	0
N-196 Retirement	0	0	0	0	0
<i>Proposed Project Structure Totals</i>	0	0	0	0	0

** (ft²) = square feet

A total of 174 transmission structures are proposed to be placed within prime farmland, 204 structures in farmland of statewide importance, and three structures within prime farmland if drained for the proposed Project. This represents a net increase of 65 structures within prime farmland as compared to the existing condition, a net increase of 70 structures proposed within farmland of statewide importance, and a net decrease of one structure proposed within potential prime farmland if drained. The impact from this proposed increase of structures will be minimized by the proposed removal of 18 structures from prime farmland and 25 structures from farmland of statewide importance from retirement portions of the N-153 and N-196 Routes. The average size of each transmission line structure is approximately 12 square feet. Based upon this there will be a total impact of 2,088 square feet to prime farmland as a result of the proposed Project. That represents a net increase of 552 square feet of impact as compared to the existing condition. There will be a total impact 2,448 square feet to farmland of statewide importance which represents a net increase of 840 square feet as compared to the existing condition. There will be a total impact of 36 square feet to prime farmland if drained which represents a net decrease of 12 square feet as compared to the existing condition.

On the retirement portions of the proposed Project, a total of 18 poles will be removed in prime farmland and 25 in farmland of statewide importance representing 516 square feet that can be returned to agricultural use.

Construction of the proposed Project will not negatively affect existing utilities. The Project is being constructed to provide reliable service to DPC customers.

No Action Alternative

If the proposed project is not built, none of the impacts to land use mentioned above will occur.

4.1.3 Mitigation and Monitoring

In addition to those described in the BMPs in Appendix E, the following minimization measures will be employed to reduce potential impacts on land use:

- The removal of landscaping will be avoided whenever possible.

- Access to all residences will be maintained during construction.
- Residents will be notified of construction activities prior to the start of construction.
- Disturbed areas will be reseeded per landowner requests.

Because the impact to land use by the proposed Project are considered not significant, there are no mitigation or monitoring measures proposed.

4.2 Floodplains

4.2.1 Affected Environment

Federal Emergency Management Agency (FEMA) floodplain data were obtained and assessed (<https://gdg.sc.egov.usda.gov/>). A summary of the acreage of 100-year floodplain and 100-year floodway within each of the proposed Project elements is provided in Table 4-3. The 100-year floodplain is defined as the elevation on the terrain surrounding a river system in which a flood that, statistically, has a 1-percent chance of reaching in any given year. A regulatory floodway lies within the 100-year floodplain and is defined as the channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Floodplain data are shown on Figure 4 (Appendix A).

Table 4-3: FEMA Floodplain (acres) within Project ROW

Project Element	100-Year Floodplain Acreage within ROW	100-Year Floodway Acreage within ROW
N-153 Existing	11.4	0
N-153 New ROW A	0	0
N-153 New ROW B	0	0
N-153 Retirement A	0	0
N-153 Retirement B	0	0
N-196 Existing	4.2	0.2
N-196 New ROW	0	0
N-196 Retirement	1.4	0

The Project ROW for N-153 Route is proposed within 11.4 acres of 100-year floodplain, all of which is within the N-153 Existing ROW portion of the Project. The N-196 Route ROW is proposed within approximately 4.2 acres of 100-year floodplain and 0.2 acre of 100-year floodway. The portion of N-196 Route ROW that will be retired is within 1.4 acres of 100-year floodplain. The proposed access routes for the Project are located within 1.8 acres of 100-year floodplain and 0.02 acre of 100-year floodway.

4.2.2 Environmental Consequences

Proposed Action Alternative

The environmental consequences to floodplains associated with the proposed Project are attributed solely to the placement of transmission line structures within them. The existing land surface within the ROW for the proposed Project will not be changed. Therefore, the impact to the floodplain because of the proposed project are not significant. Table 4-4 summarizes the number of transmission line structures that currently exist along the N-153 and N-196 alignments and the number of structures that are proposed within the elements of the proposed Project.

Table 4-4: FEMA Floodplain (acres) within Project ROW

Project Element	Number of Structures in 100-Year Floodplain		Number of Structures in 100-Year Floodway	
	Existing	Proposed	Existing	Proposed
N-153 Existing	7	8	0	0
N-153 New ROW A	n/a	0	n/a	0
N-153 New ROW B	n/a	0	n/a	0
N-153 Retirement A	0	n/a	0	n/a
N-153 Retirement B	0	n/a	0	n/a
N-196 Existing	4	3	1	1
N-196 New ROW	n/a	0	n/a	0
N-196 Retirement	0	n/a	0	n/a

There is no additional mapped 100-year floodplain within the N-153 New ROW A and B and the N-196 New ROW portions of the Project portions. Due to the N-196 Retirement portion, the acreage of ROW within the 100-year floodplain in the N-196 Route will decrease by 1.4 acres. There will be no change in the amount of ROW within 100-year floodway.

A total of 11 transmission structures will be placed in 100-year floodplain for the proposed Project. Eight proposed structures will be located along the N-153 Existing portion of the Project while three will be located along the N-196 Existing portion of the Project. A total of seven structures are located within the current N-153 alignment and four are located within the current N-196 alignment. Therefore, there is no net increase or decrease in transmission structures placed within the 100-year floodplain for the proposed Project. Disturbance in floodplains will be limited to the area needed for the structures and will result in up to 132 total square feet of permanent disturbance (approximately 12 square feet at each structure location). This is the same amount of disturbance (footprint) of transmission structures within the 100-year floodplain within the current N-153 and N-196 alignments.

In Grant County, none of the structures being removed or constructed for N-153 Route are within a floodplain. There are four existing structures on the N-196 Route that will be removed and three that will be constructed within floodplains within Grant County. In Jo Daviess County, there are seven existing structures located in the N-153 Route that will be removed and eight that will be constructed within floodplains.

Lynda Schweikert, Grant County Zoning administrator, was contacted regarding county permits that would be required prior to construction of the Project and she determined that floodplain permits may be needed on the Project for any work within a 100-year floodplain. Shoreland zoning will apply to those areas within 300 feet of a stream; however, only those within 75 feet of a stream will require a permit. (Email Communication, 12/7/2016 -Appendix F). According to shoreland zoning rule, this 75-foot setback can be expanded based on the slopes encountered along the waterway. A total of 115 structures are within 300 feet of a stream, however only those that fall within the regulated setback will require a shoreland zoning permit. Further consultation with Grant County will be required to clarify the number of structure locations that fall within the required setback. Any required permit applications will be submitted prior to construction and/or deconstruction for work in a floodplain or within the required setback of a stream.

Eric Tison, Jo Daviess County Planning and Development Administrator, was contacted on December 7, 2016 regarding county permits that would be required prior to construction of the Project. Mr. Tison was unaware of any permits that will be needed from Planning and Development but recommended contacting Steve Keeffer, County Engineer. Steve Keeffer was contacted on December 14, 2016; however, a response has not been received. It is anticipated that a Special Flood Hazard Area permit application will need to be completed and submitted for any structures proposed to be located within the 100-year floodplain in Jo Daviess County.

During construction, ground cover and soils will be temporarily disturbed. Effects resulting from the removal of groundcover and soils in floodplains will be temporary in nature and the area not occupied by the transmission structures will be reclaimed and revegetated to pre-construction conditions. Potential floodwater displacement could occur where structures are placed in floodplains. Based on the low volume of potential floodwater displacement, impacts on flooding are not anticipated.

Upon completion of construction, existing transmission structures will be removed from their current location within 100-year floodplains. The disturbed area associated with the removal of the existing structures will be revegetated and graded to pre-construction conditions so that water flow is not impeded during flooding events.

Based on preliminary engineering, construction of the Project will require approximately 0.74 mile of temporary access in 100-year floodplains. The use of temporary access may require improvement, dirt work, or gravel amendments. Thus, approximately 1.8 acres of 100-year floodplains may be temporarily impacted by the use of or construction of access routes. Any grading or improvement to access roads within the 100-year floodplain will be restored to pre-construction conditions. Therefore, no permanent impact to 100-year floodplain due to access road improvement is anticipated.

With implementation of the mitigation measures described below, it is not anticipated that construction or operation of the Project will have a significant impact on 100-year floodplains.

No Action Alternative

If the proposed project is not built, no new impacts to 100-year floodplain will occur. However, the 11 structures currently existing along the N-153 and N-196 alignments will remain. There is a net -neutral impact to 100-year floodplain when comparing the proposed Project to the No-Action Alternative.

4.2.3 Mitigation and Monitoring

In addition to those described in the BMPs in Appendix E, the following measures will be employed to reduce potential impacts to floodplains:

- DPC will coordinate with the United States Army Corps of Engineers (USACE), ILDNR, Illinois Environmental Protection Agency (IEPA), WDNR, and local authorities for approval of structure locations within the 100-year floodplain.
- DPC will follow all floodplain development requirements as outlined in Title 10 of the Jo Daviess County Code of Ordinances.
- DPC will consult with regulatory agencies regarding all permits listed in Section 6 of this EA.
- DPC will preserve existing natural vegetation to the extent practicable.

- DPC will restore temporary ground disturbance within 100-year floodplains caused by construction activities by revegetating the area impacted to pre-construction conditions.

Because the level of impact to the 100-year floodplain is considered net neutral when comparing the existing alignment impacts to those of the proposed project, and the level of impact to the 100-year floodplain is considered not significant for the proposed Project, there are no mitigation or monitoring measures proposed.

4.3 Wetlands

4.3.1 *Affected Environment*

DPC's environmental consultant conducted wetland and waterway mapping as part of the biological work conducted for the Project. Wetlands within the Project area were identified using on-site identification and delineation methodologies outlined in the USACE Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (USACE 2010). Prior to initiating field surveys, pre-existing wetland information was referenced from the National Wetland Inventory (<https://www.fws.gov/wetlands/Data/State-Downloads.html>) for JoDaviess County and the Wisconsin Wetland Inventory (<http://dnr.wi.gov/topic/wetlands/inventory.html>) for Grant County..

The Project is located within a region that is generally well drained, and the majority of wetlands within the Project area are seasonally flooded basins, riparian floodplain, or wet meadows in low lying agricultural areas used for crops or pasture. Dominant species commonly identified within flooded basin wetlands included Barnyard grass (*Echinochloa crusgalli*), Beggar's Ticks (*Bidens sp.*), Smartweed (*Polygonum sp.*), Stinging Nettle (*Urtica dioica*), and Tall Fescue (*Festuca arundinacea*). Most of the riparian wetlands occurred along the Little Menominee River and typically consisted of water cress (*Nasturtium officinale*), sedges (*Carex sp.*), Dark Green Bulrush (*Scirpus atrovirens*), Redtop Grass (*Agrostis gigantea*), Rice Cut Grass (*Leersia oryzoides*), and Kentucky Blue Grass (*Poa pratensis*). Many of these wetlands were degraded by reed canary grass; however, a few of them, especially within some of the riparian wetlands, included more diverse sedge meadow/wet meadow components. The open water bodies associated with wetlands were typically dammed ponds in cattle pastures.

Wetlands were delineated during biological surveys conducted in October 2015, July through August 2016, and November 2016. The characteristics of each delineated wetland is summarized in Table C-1, Appendix C. All field data sheets from biological surveys conducted for the Project are included in Appendix C. A total of 44 individual wetlands were identified within the Project area.

Table 4-5: Total number of Wetlands along Project ROW and / or Access Roads

Project Element	Total Number of Wetlands in ROW	Total Number of Wetlands in Access Roads
N-153 Existing	23	5
N-153 New ROW A	2	
N-153 New ROW B	1	
N-153 Retirement A	1	
N-153 Retirement B	1	
N-196 Existing	5	2
N-196 New ROW	1	
N-196 Retirement	5	1

Of the 44 identified wetlands, 33 are classified as palustrine emergent (PEM) wetlands and one wetland is classified as palustrine forested obligate (PFO) wetland. This forested wetland occurs along an access road, not along existing ROW or new ROW. The remaining wetlands are mixed communities, seven of which are classified as PEM with a shallow open water component, one is classified as PEM/ palustrine shrub scrub (PSS) and two are classified as PEM/PFO. No transmission line structures will be placed in wetlands as a result of this Project. Copies of results from the Biological Resources Survey for the Project are included as Appendix C.

A total of 10 wetlands will be crossed by construction access, either within the established transmission line ROW's or within access routes. A summary of wetland crossings by the Project is provided in Table 4-6.

Table 4-6: Wetlands Crossed by Proposed Project ROW identified by Project Element

Figure 5, Appendix A, pg. #	Wetland #	Project Element	Location	Wetland Classification/ (NWI/WWI)	Construction Matting Crossing
Grant County, Wisconsin					
4	W26a	N-153 Existing	ROW	Wet Meadow/Shallow Open Water	
6	W38a	N-153 Existing	ROW	Wet Meadow/Farmed Wet Meadow	
9	W47a	N-153 Retirement A	ROW	Wet Meadow	
13	W134a	N-153 Existing	Access Rd	Wet Meadow Wet	
19	W212a	N-153 Existing	ROW	Meadow/Shallow Open Water	
19	W215a	N-153 Existing	Access Rd	Wet Meadow	Construction Matting if ground not frozen
19	W216a	N-153 Existing	ROW	Wet Meadow (PEM 1C)/ Shallow Open Water	Construction Matting if ground not frozen
19, 20	W220a	N-153 Retirement B / New ROW B	ROW	Wet Meadow	Construction Matting if ground not frozen
21	W236a	N-153 Existing	ROW	Wet Meadow (PEM 1C)/ Shallow Open Water	Construction Matting if ground not frozen
23	W270a	N-153 Existing	ROW	Sedge Meadow/ Shallow Marsh/ Wet Meadow (PEM 1C)	Construction Matting if ground not frozen
23, 24	W272a	N-153 Existing	ROW	Sedge Meadow/Wet Meadow/Wooded Swamp (PEM 1C)	
26	W289a	N-153 Existing	ROW	Wet Meadow	
26	W290a	N-153 Existing	ROW	Wet Meadow/ Sedge Meadow	
26	W292a	N-153 Existing	ROW	Wet Meadow/ Sedge Meadow	
27	W294a	N-153 Existing	Access Rd	Wet Meadow	
26	W294b	N-153 Existing	ROW	Wet Meadow	
26	W296a	N-153 Existing	ROW	Wet Meadow	Construction Matting if ground not frozen

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Table 4-6: Wetlands Crossed by Proposed Project ROW identified by Project Element (continued)

Figure 5, Appendix A, pg. #	Wetland #	Project Element	Location	Wetland Classification/ (NWI/WWI)	Construction Matting Crossing
9	W85a	N-153 New ROW A	ROW	Wet Meadow	
10	W102a	N-153 New ROW A	ROW	Wet Meadow	
3	N-196-W1	N-196 Retirement	ROW	Wet Meadow (Dammed Pond)	
3	N-196-W2	N-196 Retirement	ROW	Wet Meadow/ Shallow Open Water	
3	N-196-W3	N-196 Retirement	ROW	Wet Meadow	
3	N-196-W27	N-196 Retirement	ROW	Wet Meadow	Construction Matting if ground not frozen
45	N-196-W4	N-196 Retirement	ROW/ Access Rd	Wet Meadow/ Shallow Marsh/ Hardwood Swamp (E2Kg)	Construction Matting if ground not frozen
39	N-196-W5	N-196 Existing	ROW	Sedge Meadow/ Wet Meadow	
39	N-196-W6	N-196 Existing	Access Rd	Wet Meadow	
37	N-196-W9	N-196 Existing	ROW	Wet Meadow	
37	N-196-W10	N-196 Existing	Access Rd	Wet Meadow	Construction Matting if ground not frozen
37	N-196-W11	N-196 Existing	ROW	Wet Meadow	
36	N-196-W12	N-196 Existing	ROW	Wet Meadow	
35	N-196-W7	N-196 Existing	ROW	Wet Meadow	
46	N-196-W8	N-196 New ROW	ROW	Wet Meadow	
Jo Daviess County, Illinois					
28	W295a	N-153 Existing	Access Rd	PEM	
26	W1	N-153 Existing	ROW	PEM	
29	W2	N-153 Existing	ROW	PEM/PSS	
29	W3	N-153 Existing	ROW	PEM	
29	W4	N-153 Existing	ROW	PEM	
30	W5	N-153 Existing	ROW	PEM/PUB	
32	W6	N-153 Existing	ROW	PEM/PUB	

Table 4-6: Wetlands Crossed by Proposed Project ROW identified by Project Element (continued)

Figure 5, Appendix A, pg. #	Wetland #	Project Element	Location	Wetland Classification/ (NWI/WWI)	Construction Matting Crossing
32	W333a	N-153 Existing	Access Rd	PEM	
34	W7	N-153 Existing	ROW	PEM	
34	W8	N-153 Existing	ROW	PEM	
34	W9	N-153 Existing	ROW	PEM	
34	W10	N-153 Existing	ROW	PEM	Construction Matting if ground not frozen

4.3.2 Environmental Consequences

Proposed Action Alternative

Construction equipment will cross 10 individual wetland features along all elements of the proposed Project. Seven wetlands will be crossed within the established transmission line ROW's for the Project. Two wetlands will be crossed within access roads that lead to the Project ROW. One wetland will be crossed both within the ROW and along an access route. Crossing these wetlands will be done by placing protective construction matting down over their surfaces prior to equipment traveling over them. This protective measure will be employed when the ground is not sufficiently frozen to support the weight of construction equipment without creating tire ruts to the wetland's surface. When the wetland's surface is sufficiently frozen, construction equipment will pass over them without placing construction matting first.

Permanent impacts on wetlands within the ROW or along access routes will not result from construction activities. Approximately 0.46 acre of temporary wetland impact, if construction matting is necessary, is anticipated due to access roads (both in- and off-ROW) for the Project. A General Wetland Disturbance Permit for Utilities from the WDNR is anticipated to cover temporary wetland impacts described above.

Wetland impacts in Illinois will be permitted through the ILDNR Statewide Permit 4 (Aerial Utility Crossings) and Statewide Permit 13 (Temporary Construction Activities). No permanent wetland impact will occur as a result of this Project. However, a Section 404 permit with the USACE is anticipated for impacts associated with the placement of construction matting within wetlands. Any clearing of vegetation within wetland areas will not require any grubbing of stumps and will not be completed by mechanical means. A permitting consultation will be completed with both the USACE St. Paul and Rock Island District Regulatory Programs.

No Action Alternative

If the proposed project is not built, the impacts on wetlands mentioned above will not occur.

4.3.3 Mitigation and Monitoring

The Project has been designed to avoid wetlands to the extent practicable. No pole structures will be placed within wetlands therefore; construction of the Project will not result in permanent fill of wetlands. Potential impacts on the ten wetlands, totaling 940 linear feet and 0.46 acre identified on access roads (both on and off ROW) will be minimized through the placement of construction matting if the ground is not completely frozen. Temporary impacts to wetlands within close proximity to construction activities will be further minimized by implementing erosion and sediment control measures in areas of steep terrain.

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Such measures include grading disturbed areas and seeding with an appropriate seed mix, silt fence installation and laying of erosion control matting. Other erosion and sediment control BMP's are outlined in Appendix E.

Because the impacts to wetlands by the proposed Project are considered not significant, there are no mitigation or monitoring measures proposed.

4.4 Water Quality

4.4.1 Affected Environment

Waterways within the Project area were identified through field reconnaissance conducted in October 2015, and July through August and November 2016. Pre-existing information on waterways were referenced prior to initiating field reconnaissance (USGS, <https://datagateway.nrcs.usda.gov/>; WDNR, <http://dnr.wi.gov/maps/gis/datahydro.html>). The waterway crossings are summarized within Table 4-7.

Table 4-7: Waterways Crossed by Proposed Project ROW identified by Project Element

Figure 5, Appendix A, Page #	Waterway	Project Element	Location	WDNR 24K Designation	Resource Description	Proposed TCSB or Existing Culvert Crossing
Grant County, Wisconsin						
1	R4a	N-153 Existing/ N-196 Retirement	ROW	Intermittent	UNT* to Boice Creek	
2	R17a	N-153 Existing	ROW	Intermittent	UNT to Platte River	
4	R27a	N-153 Existing	ROW	N/A	UNT to Platte River – tributary to R27b	
4	R27b	N-153 Existing	ROW	Intermittent	UNT to Platte River	
6	R38a	N-153 Existing	ROW	Perennial	Platte River	
6	R39a	N-153 Existing	ROW	Intermittent	UNT to Platte River	
7	R43a	N-153 Existing	ROW	Perennial	Blakely Branch	
8	R47a	N-153 Existing	ROW	Intermittent	UNT to Platte River	
9	R47b	N-153 Existing	ROW	Intermittent	UNT to Platte River	
9	R47c	N-153 Existing	ROW	N/A	UNT to Platte River	
9	R47d	N-153 Existing	ROW	N/A	UNT to Platte River	
11	R124a	N-153 Existing	ROW	N/A	UNT to Platte River	
12	R131a	N-153 Existing	Access Rd	Intermittent	UNT to Little Platte River	TCSB
13	R134a	N-153 Existing	ROW	Perennial	Little Platte River	
13	R135a	N-153 Existing	ROW	Perennial	Blockhouse Creek	

Table 4-7: Waterways Crossed by Proposed Project ROW identified by Project Element (continued)

Figure 5, Appendix A, Page #	Waterway	Project Element	Location	WDNR 24K Designation	Resource Description	Proposed TCSB or Existing Culvert Crossing
15	R158a	N-153 Existing	ROW	N/A	UNT to McAdam Branch	
15	R159a	N-153 Existing	ROW	Perennial	McAdam Branch	
19	R214a	N-153 New ROW A	ROW	Intermittent	Sinsinawa River	
19	R216a	N-153 Existing/N-153 New ROW A	ROW	Intermittent	Sinsinawa River	
20	R219a	N-153 Existing/N-153 New ROW A	ROW	Intermittent	UNT to Sinsinawa River	
23	R267a	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	
23	R272a	N-153 Existing	ROW	Perennial	Little Menominee River	
24	R277a	N-153 New ROW A	ROW	Perennial	Little Menominee River	
24	R279a	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	
24	R279b	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	
25	R279c	N-153 Existing	Access Rd	Intermittent	UNT to Little Menominee River	Existing 3 ft. diameter culvert
24	R283a	N-153 Existing	ROW	Perennial	Little Menominee River	TCSB
24	R284a	N-153 Existing	ROW	Perennial	Little Menominee River	
26	R287a	N-153 Existing	ROW	Perennial	Little Menominee River	
26	R288a	N-153 Existing	ROW	Perennial	Little Menominee River	
26	R290a	N-153 Existing	ROW	Perennial	Little Menominee River	
26	R293a	N-153 Existing	ROW	Perennial	Little Menominee River	
26	R293b	N-153 Existing	ROW	N/A	UNT to Little Menominee River	
27	R294a	N-153 Existing	Access Rd	Intermittent	UNT to Little Menominee River	Existing 4 ft. diameter steel culvert
27	OW295a	N-153 Existing	Access Rd	Intermittent	Shallow Open Water (PUBGh)	
27	R295a	N-153 Existing	Access Rd	Intermittent	UNT to Little Menominee River	Existing 2 ft. diameter steel culvert
3	LN196-R3	N-196 Retirement	ROW	N/A	UNT to Platte River	
4	LN196-R1	N-196 Retirement	ROW	Intermittent	UNT to Platte River	

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Table 4-7: Waterways Crossed by Proposed Project ROW identified by Project Element (continued)

Figure 5, Appendix A, Page #	Waterway	Project Element	Location	WDNR 24K Designation	Resource Description	Proposed TCSB or Existing Culvert Crossing
4	LN196-R2	N-196 Retirement	ROW	N/A	UNT to Platte River	TCSB
5	LN196-OW1	N-196 Retirement	ROW	N/A	Shallow Open Water (PUBGh)	
5	LN196-R4	N-196 Retirement	ROW	Intermittent	UNT to Platte River	
5	LN196-R5	N-196 Retirement	ROW	Intermittent	UNT to Platte River	
5	LN196-R6	N-196 Retirement	ROW	N/A	UNT to Platte River	
35	LN196-R13	N-196 Existing	ROW	Intermittent	UNT to Little Platte River	TCSB
36	LN196-R22	N-196 Existing	ROW	Perennial	Roundtree Branch	
36	LN196-R23	N-196 Existing	ROW	N/A	UNT to Roundtree Branch	
37	LN196-R12	N-196 Existing	ROW	Perennial	Little Platte River	
37	LN196-R21	N-196 Existing	ROW	N/A	UNT to Roundtree Branch	TCSB
37	LN196-R20	N-196 Existing	ROW	Perennial	Roundtree Branch	
37	LN196-R18	N-196 Existing	Access Rd	Perennial	Roundtree Branch	TCSB
37	LN196-R19	N-196 Existing	ROW	Perennial	Roundtree Branch	
39	LN196-R11	N-196 Existing	ROW	N/A	UNT to Whig Branch	
39	LN196-R10	N-196 Existing	ROW	Intermittent	UNT to Whig Branch	
39	LN196-R9	N-196 Existing	ROW	Perennial	Whig Branch	
39	LN196-R8	N-196 Existing	Access Rd	Intermittent	UNT to Whig Branch	TCSB
40	LN196-R14	N-196 Existing	ROW	Intermittent	UNT to Whig Branch	TCSB
42	LN196-R15	N-196 New ROW	ROW	N/A	UNT to Platte River	Existing Steel Culvert (diameter not measured)
43	LN196-R26	N-196 Retirement	ROW	Intermittent	UNT to Blakely Branch	
43	LN196-R27	N-196 Retirement	ROW	N/A	UNT to Lee Branch	TCSB
43	LN196-R28	N-196 Retirement	ROW/ Access Rd	N/A	UNT to Lee Branch	TCSB
43	LN196-R29	N-196 Retirement	ROW/ Access Rd	N/A	UNT to Lee Branch	TCSB
45	LN196-R7	N-196 Retirement	ROW	Perennial	Platte River	
45	LN196-R24	N-196 Retirement	ROW	Intermittent	UNT to Platte River	
46	LN196-R16	N-196 New ROW	ROW	N/A	UNT to Blakely Branch	

Table 4-7: Waterways Crossed by Proposed Project ROW identified by Project Element (continued)

Figure 5, Appendix A, Page #	Waterway	Project Element	Location	WDNR 24K Designation	Resource Description	Proposed TCSB or Existing Culvert Crossing
46	LN196-R17	N-196 New ROW	ROW	Intermittent	Blakely Branch	
45	LN196-R46	N-196 Retirement	Access Rd	Intermittent	UNT to Platte River	Existing 18 in. steel culvert
Jo Daviess County, Illinois						
26	S-1	N-153 Existing	ROW	Perennial	Little Menominee River	
29	S-3	N-153 Existing	ROW	Perennial	Little Menominee River	
29	S-4	N-153 Existing	ROW	Perennial	Little Menominee River	
29	S-5	N-153 Existing	ROW	N/A	UNT to Little Menominee River	TCSB
30	S-7	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	
30	R316a	N-153 Existing	Access Rd	Intermittent	UNT to Little Menominee River	Existing 5 ft. diameter iron culvert
31	S-8	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	
32	S-9	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	
32	R328a	N-153 Existing	Access Rd	Intermittent	UNT to Little Menominee River	Existing 6 ft. diameter steel culvert
33	S-11	N-153 Existing	ROW	Intermittent	UNT to Little Menominee River	

* UNT Unnamed Tributary

Table 4-3 gives the locations and identifies the waterways that will be crossed by the Project. For specific stream characteristics at each crossing location, please refer to Table C-2, Appendix C. Field data sheets completed for each waterway crossing are also provided in Appendix C.

For named waterways, the existing N-153 Route crosses the Sinsinawa River (intermittent), Little Platte River (perennial), Little Menominee River (perennial), Platte River (perennial), McAdam Branch (perennial), Blockhouse Creek (perennial), Blakely Branch (perennial), and unnamed intermittent streams. The N-196 Route crosses Roundtree Branch (perennial), Whig Branch (perennial), Little Platte River (perennial), Blakely Branch (intermittent), and unnamed intermittent streams. The N-196 Retirement segment crosses Platte River (perennial) and unnamed intermittent streams. The N-153 New ROW crosses the Sinsinawa River, the Little Menominee River, and unnamed intermittent streams. The N-196 New ROW crosses the Blakely Branch and unnamed intermittent streams. The access roads cross unnamed intermittent streams and the Roundtree Branch (perennial). No structures for the Project will be placed within the banks of any perennial or intermittent waterways.

One of the identified waterbodies, the Illinois section of the Sinsinawa River, is on the Illinois 303(d) list of impaired waters for sedimentation and siltation (IEPA 2016). In Wisconsin, the Platte River and the Little Platte River are both listed on the 303(d) impaired waters list for total phosphorus (WDNR 2016). None of the waterways crossed by the Project or retirement portions are considered Trout streams by regulatory agencies.

Three principal types of aquifers provide water in northwestern Illinois and southwestern Wisconsin: sand and gravel, shallow bedrock, and deep bedrock. In the Project area in Illinois, groundwater occurs in deep-bedrock sandstone aquifers (Cambrian-Ordovician), carbonate-rock aquifers (Silurian-Devonian) and other rock aquifers (USGS 2000). These aquifers lie at depths greater than 500 feet (ISWS 2016). Numerous deep bedrock community supply wells service Jo Daviess County (ISWS 2016). In the Project area in Wisconsin, groundwater occurs in the sand and gravel aquifers, the deep-bedrock sandstone aquifers (Cambrian-Ordovician), and crystalline rock (Precambrian) aquifers (USGS 2000).

4.4.2 Environmental Consequences

Proposed Action Alternative

No structures for the Project will be placed within the banks of any perennial or intermittent waterways. Impacts on water quality from the proposed Project are not considered significant.

Temporary ground-disturbing construction activities and operation of construction vehicles adjacent to waterways involve some risk to water quality such as sediments reaching surface waters during construction if ground disturbance results from excavation, grading, and construction traffic. Temporary impacts are also anticipated at 12 waterbodies that will be crossed along the access routes to allow construction equipment to access the existing ROW and pole locations. These waterbodies will be crossed with the use of a TCSB to allow construction equipment to access the existing ROW. TCSBs will span each identified waterbody and be stabilized to prevent collapse. In addition, waterbodies crossed along access routes with an existing culvert will be temporarily reinforced with reinforcing structures to protect the integrity of the culvert and allow for the even distribution of construction equipment weight.

Impacts on surface waters are unlikely as Project-specific mitigation measures provided in DPC's Field Guide for Transmission Line Construction and Maintenance Activities (DPC, 2016, Appendix E) and permit conditions specified within the construction stormwater permit (to be completed prior to construction) will be properly implemented and maintained. Impact on surface water quality following completion of construction activities is not anticipated because proper restoration of all disturbed areas will be completed following construction. TCSB's will be removed and access routes that do not cross waterbodies will be utilized for operation and maintenance purposes. Permits for each TCSB will be obtained from the WDNR under the authority of Chapter 30 of the Wisconsin Administrative Code. The TCSB's located in Jo Daviess County, Illinois will be reviewed under the ILDNR Statewide Permit No. 13 - Temporary Construction Activities for Utility Crossings.

A fisheries biologist for the WDNR has reviewed waterways that will be crossed in Wisconsin along the project alignment. It was concluded that of the waterways crossed by the proposed project, none are classified as trout streams (Email correspondence, Sims, 2/14/2017 – Appendix F).

It is not anticipated that construction, operations, and maintenance of the Project would result in significant impacts to surface or groundwater quality.

No Action Alternative

If the proposed project is not built, none of the environmental consequences to water quality mentioned above will occur.

4.4.3 Mitigation and Monitoring

The Project has been designed to avoid waterbodies to the extent practical. Although the Project will cross waterbodies within the ROW and along the access roads, direct impact will be avoided or minimized

using TCSBs and construction matting. To further reduce the potential for impact to surface waters and groundwater to occur, equipment fueling and lubricating would occur off site, and the following construction practices would help prevent and/or contain accidental spills, soil erosion, and sedimentation:

- DPC would plan, install, and maintain erosion control measures and revegetate and stabilize disturbed soil adjacent to waterways. An environmental inspector will be employed during construction activities to monitor the effectiveness of erosion control BMP's, and recommend changes if additional BMP's are necessary.
- Spill prevention, control, and countermeasures would be implemented as detailed in a Spill Prevention plan.
- Once construction has been completed, construction areas, and access roads would be cleared of debris and disturbed ground cover and soil would be returned to pre-construction conditions and revegetated so that erosion would not occur.

As impacts to water quality from the proposed project are not considered significant, no mitigation measures will be proposed.

4.5 Coastal Areas

The Project is not located within any coastal zones or Coastal Barrier Resources System Units. Impacts to these resources will not occur.

4.6 Biological Resources

4.6.1 *General Fish, Wildlife, and Vegetation Resources*

4.6.1.1 Affected Environment

Vegetation

The Project is located within the Driftless Area ecoregion. The Driftless Area ecoregion is characterized by pasture and cropland on flatter uplands, woodlands and forest on steeper slopes and ravines. Livestock and dairy farming are major land uses and have had a major impact on stream quality. Corn, soybeans, feed grains, and hay are principal crops.

The vegetation of the Driftless Area is transitional between the mixed forests of North Central Wisconsin and the oak savannas of Iowa. Upland hardwood forests consist primarily of Red Oak (*Quercus rubra*), White Oak (*Quercus alba*), Bitternut Hickory (*Carya cordiformis*), Shagbark Hickory (*Carya ovata*), Sugar Maple (*Acer saccharum*), and Black Cherry (*Prunus serotina*). Low areas support forests dominated by American Elm (*Ulmus americana*), Eastern Cottonwood (*Populus deltoides*), River Birch (*Betula nigra*), Green Ash (*Fraxinus americana*), Silver Maple (*Acer saccharinum*), and Willow (*Salix sp.*). Savanna communities of Bur Oak (*Quercus macrocarpa*) and bluestem grasses (*Poa sp.*) grow in some areas, particularly on sandy soils; however, the grasslands have largely been converted for cropland or colonized by forests.

Based on the National Land Cover Database (USGS, NLCD – https://www.mrlc.gov/nlcd11_data.php), the Project crosses developed land (open space, low intensity), barren land, deciduous forest, shrub/scrub, grassland/herbaceous, pasture/hay, cultivated crops, and emergent herbaceous wetlands. A summary of the distribution of land cover types crossed by the Project is provided in Table 4-8.

Table 4-8: National Land Cover Database Cover Types within ROW expressed as Acreage and Percentage of ROW

NLCD Land Cover Type	N-153 Existing (acreage / % of ROW)	N-153 New ROW A	N-153 New ROW B	N-153 Retirement A	N-153 Retirement B	N-196 Existing	N-196 New ROW	N-196 Retirement
Developed, Open Space	25.7 / 10.7	19.9 / 52.6	0.1 / 2.3	2.7 / 10.2	0.7 / 14.0	13.2 / 23.6	3.6 / 24.4	15.1 / 23.9
Developed, Low Intensity	2.2 / 1.0	3.9 / 10.3		0.2 / 0.8		1.2 / 2.1		0.3 / 0.5
Barren Land	0.3 / 0.1							
Deciduous Forest							3.0 / 20.3	
Shrub/Scrub	0.4 / 0.2					0.6 / 1.0		0.4 / 0.6
Grassland/Herbaceous	1.5 / 0.6					0.3 / 0.5		1.2 / 1.9
Pasture/Hay	103.2 / 43.0	3.2 / 8.5	2.0 / 45.7	10.9 / 41.3	2.0 / 40.0	18.2 / 32.9	1.3 / 8.8	24.2 / 38.2
Cultivated Crops	102.9 / 42.8	10.7 / 28.3	2.1 / 47.9	12.5 / 47.3	2.1 / 42.0	21.8 / 38.9	6.8 / 46.2	21.3 / 33.6
Emergent Herbaceous Wetlands	3.9 / 1.6	0.1 / 0.3	0.18 / 4.1	0.1 / 0.4	0.2 / 4.0	0.6 / 1.0	0.04 / 0.3	0.8 / 1.3
Totals	240.1 / 100.0	37.8 / 100.0	4.38 / 100.0	26.4 / 100.0	5.0 / 100.0	55.9 / 100.0	14.7 / 100.0	63.3 / 100.0

The percentages cited in Table 4-8 are consistent with the land cover observed during biological fieldwork performed in July through August, and November 2016. The majority of the N-153 and N-196 routes is comprised of open space, pastureland, or cropland. The open space acreage within each of the routes is comprised primarily of cleared ROW within forested community. A total of 3.0 acres of forest will be cleared for new ROW on the N-196 route.

The States of Wisconsin and Illinois regulate activities including the transport, possession, and introduction of certain designated invasive species, as defined under state laws. During biological surveys in October 2015, July through August, and November, 2016, invasive species were identified and mapped within the Project area. Many invasive species/noxious weeds were found to be widespread throughout the Project area, in disturbed habitats, including active and fallow pasture, road and trail sides, and edges of cultivated fields, as well as occurring within portions of naturally forested land and wetland areas. Only areas where invasive species were found existing in a monoculture or large colony were mapped in the field. The prevalence of invasive species along the Project made the mapping of each individual occurrence impractical.

The most widely distributed species include Common Ragweed (*Ambrosia artemisiifolia*) and Giant Ragweed (*Ambrosia trifida*; native species classified under the Illinois noxious weed law); Canada Thistle (*Cirsium canadense*), Garlic Mustard (*Alliaria petiolata*), Wild Parsnip (*Pastinaca sativa*), Multiflora Rose (*Rosa multiflora*), Common Buckthorn (*Rhamnus cathartica*), exotic bush honeysuckles (*Lonicera* sp.), White Mulberry (*Morus alba*) and Reed Canary Grass (*Phalaris arundinacea*). In addition, localized infestations of the invasive species Japanese Hops (*Humulus japonicas*) and Japanese Hedge Parsley (*Torilis japonica*) were identified, and their locations mapped, within the Project.

Fish and Wildlife Resources

Based on the habitat present along the Project ROW and access routes, fisheries and wildlife resources include a range of species groupings (birds, mammals, fish, reptiles, amphibians, and insects), both resident and migratory. The majority of the Project area consists of agricultural lands and deciduous forests. Commonly occurring species are likely those compatible with the edges of agricultural lands and

heavily forested areas, which may include, white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), northern short-tailed shrew (*Blarina brevicauda*), fox squirrel (*Sciurus niger*), house sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*) (UIUC 2013). Agricultural fields within the ROW found along portions of the proposed Project closest to the Mississippi River may provide migratory stopover habitat for waterfowl such as Canada goose (*Branta canadensis*). Field edges and forested areas may provide shelter, breeding and foraging habitat for songbirds; upland game birds, and small mammals.

4.6.1.2 Environmental Consequences

Proposed Action Alternative

Vegetation

Proposed construction activities will involve excavation and grading in limited areas around each proposed transmission structure. These activities will temporarily disturb herbaceous vegetative cover and agricultural crops. Equipment access also has the potential to disturb vegetation.

Permanent impacts to vegetation will occur within the footprint of each structure and where anchors for down guys are placed in the ground. A total of 462 transmission line structures will be constructed under the proposed Project. Currently, the existing N-153 and N-196 lines are made up of 450 transmission line structures. Assuming a total of 12 square feet of permanent impact at each individual transmission line structure, a total of 5,544 square feet of permanent impact to existing vegetation will occur because of the proposed Project. Both the N-153 and N-196 transmission lines, as they currently exist in the field, have permanently impacted 5,400 square feet of vegetation. The net gain of permanent impact to vegetation due to structure placement is 44 square feet.

Only the N-196 new ROW portion of the proposed Project cross forest lands that must be cleared to establish the new ROW. The total acreage of forested land that will be cleared in the N-196 new ROW is 3.0 acres. Trimming of some trees on the edges of ROW and along access roads prior to construction may be necessary for construction equipment access.

The State of Wisconsin regulates invasive species under the invasive species rule (Wis. Adm. Code Ch. NR 40). Illinois regulates invasive weeds under the Illinois Exotic Weed Act (525 ILCS 10), and both states additionally designate several species as noxious weeds. Most species identified as noxious/invasive are designated so in both states. Based on a field and desktop review of the Project, a number of invasive plant species and/or noxious weeds are known to occur or may potentially occur within the vicinity of the Project. During biological surveys in October 2015, July through August and November, 2016, a number of noxious weeds and restricted invasive species (NR 40) were identified within the Project area. These included common ragweed, giant ragweed, Canada thistle, multiflora rose (*Rosa multiflora*), common buckthorn, exotic bush honeysuckle (*Lonicera tatarica*, *L. X bella*), autumn olive (*Elaeagnus umbellata*), white mulberry, and Japanese hops. Due to the disturbed nature of the existing ROW, and extensive use of surrounding lands for pasture and agricultural production, invasive species and weeds are afforded numerous areas of disturbed ground and ample means of dispersal, both along the Project corridor and between the Project and the adjacent landscape.

Invasive species identified within the Project area are likely to spread into disturbed areas that may result from Project activities that create open soil, and that may result in transport of propagules such as seeds, stem fragments, rhizomes, and roots to new sites. Invasive species and weeds could also be dispersed into disturbed areas by other means unassociated with Project activities, such as by livestock, private

vehicles, or wildlife. With ample means of dispersal, and the creation of areas of disturbed soils related to project construction activities, there is a high likelihood for invasive species to be introduced, spread, or to maintain their existence in appropriate sites within the Project area.

Fish and Wildlife Resources

General temporary construction-related impacts on wildlife species is related to habitat disturbance and human activities (primarily noise and vehicle traffic), while permanent impacts are those associated with the conversion of forest habitats to open or scrub-shrub areas in areas designated for tree clearing or dozing. Indirect impacts on wildlife include those associated with increased human activity and noise. Noise impacts, specifically, will be localized and temporary. Construction of the Project likely will result in the temporary displacement of or stress on animals in areas adjacent to construction and cause movement of some wildlife away from the Project area. During clearing and dozing activities, more mobile wildlife species (e.g., larger mammals, birds, and reptiles) can avoid the construction area, and many are expected to leave the area during construction.

There is minimal potential for long-term displacement of wildlife and loss of habitat from the proposed Project because most the Project is already disturbed habitat along existing ROW. Given the small size of the impacted footprint and the minimally invasive construction methods, no major impacts to fish and wildlife resources are anticipated.

There will be no significant impact to fish and aquatic invertebrates as a result of the proposed project. Any potential impact to these species will be avoided using TCSB's at locations where construction access is crossing waterbodies along the proposed ROW.

No Action Alternative

Under the No Action Alternative, no changes to the existing conditions will occur and no effects to general fish, wildlife and plant species will occur.

4.6.1.3 Mitigation and Monitoring

Vegetation

In addition to those described in the BMPs in Appendix E, the following minimization and monitoring measures will be employed to reduce potential impacts to vegetation:

- Disturbed areas will be restored by re-grading, seeding, and/or mulching as necessary per landowner's preferences.
- Monitoring will take place until 70 percent (or greater if requested by the landowner) of the original cover is attained or applicable permit conditions are otherwise satisfied.

Construction matting will be used in areas where significant rutting (>12 inches) is expected due to heavy rains, and in environmentally sensitive areas such as wetlands where soil moisture conditions remain high during most of the year. DPC will maintain its existing ROW in accordance with their National Pollution Discharge Elimination System Permit for Pesticide Application Point Source Discharges General Permit. DPC will re-seed the areas disturbed by construction with a warm season native mix with a cover crop as recommended by the ILDNR and WDNR. An invasive species management plan will be implemented, that will include appropriate protocols to prevent the spread of invasive species; minimize the areas of exposed soil suitable for colonization by noxious weeds and invasive species; and ensure BMPs are implemented throughout the Project. Key BMPs include cleaning of contaminated soil and debris from equipment after leaving infested areas; using only certified weed-free mulch and other

materials; implementing appropriate erosion control measures on a timely basis; and ensuring construction staff are trained in BMPs. Site restoration activities should keep pace with Project construction on an ongoing basis. Early detection of invasive species is an important component to achieve control.

Fish and Wildlife Resources

DPC will work with regulatory agencies to identify the appropriate time of year to work in areas that may present potential risks to terrestrial or aquatic species and develop appropriate minimization measures such as those to control erosion and prevent sedimentation in water bodies. Monitoring will occur until permit conditions are met.

Any potential impact to fish and aquatic invertebrate species will be avoided using TCSB's at locations where construction access is crossing waterbodies along the proposed ROW. Permits for these TCSB's will be obtained from the WDNR and the ILDNR.

There is no significant impact to biological resources resulting from the proposed project. Therefore, no mitigation is proposed.

4.6.2 Threatened and Endangered Species, and Migratory Bird Treaty Act

4.6.2.1 Affected Environment

DPC's environmental consultant completed the following actions to determine the potential for federal and/or state species to occur along the proposed Project ROW and access routes:

- DPC's consultant reviewed the U.S. Fish and Wildlife Service (USFWS) Illinois and Wisconsin County List for the Distribution of Federally-listed threatened, endangered, proposed and candidate species potentially present in Jo Daviess and Grant counties (USFWS 2012a, 2012b);
- A certified Endangered Resources (ER) Review was completed in April of 2016 and submitted to the WDNR and approved (deemed complete) by the WDNR for those portions of the proposed Project located in Grant County, Wisconsin. This certified review was amended in December, 2016. A letter was provided by the WDNR in April of 2016 which documents appropriate actions to be taken to avoid impact to potential Threatened and Endangered (T/E) species. An email from the WDNR giving final concurrence with the results of the amended certified review was provided on December 19, 2016;
- A review of potential T/E species for those portions of the proposed Project was completed on March 8, 2016 for Jo Daviess County using the ILDNR Ecological Compliance Assessment Tool (EcoCAT). This review was amended on July 27, 2016. A letter was provided by the ILDNR on April 20, 2016 which documents appropriate actions to be taken to avoid impact to potential T/E species. An email from the ILDNR giving final concurrence with the results of the amended review was provided on July 29, 2016.

The consultant utilized the data gathered via the steps outlined above and WDNR / ILDNR documentation and on-site observations made during the biological field surveys in October 2015, July through August 2016, and November 2016 to assess potential impact to T/E species. The results of the WDNR amended certified review, provided after the November 2016 field surveys, did not require further field assessment. The results of these reviews are provided in Table 4-9. Additionally, although not federally listed, the Bald

Eagle is federally protected under the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Act and was considered as part of this review. Based on DPC's experience in the region, it is known that the portion of the Project in Jo Daviess County, Illinois is within the range of the Indiana bat (*Myotis sodalis*). The entire Project is within the known range of the Northern Long Eared Bat. Although it is not anticipated that the Project will cross or impact habitat associated with the other federally-listed species listed in Table 4-9; final consultation with the USFWS is required.

The certified ER review completed and submitted to the WDNR for review provided information regarding state threatened (THR), endangered (END) and special concern (SC) species in the Project area. For State listed species, one SC insect, one THR fish, one SC fish, one END amphibian, one THR mammal, one THR aquatic invertebrate (mussel), one SC reptile, one END plant, seven SC plants, one bat hibernaculum (SC), and three natural communities were identified in the Project area.

Federally-listed species which could potentially occur within Grant County, Wisconsin, based on the county list maintained by the USFWS include; one Experimental Bird population, three END aquatic invertebrates (mussels), three THR plants, one END insect, one Proposed END insect, and one THR mammal. Those state-listed and federally-listed species which require follow-up action are identified in Table 4-2 below.

The EcoCAT ER review completed for the portion of the Project in Jo Daviess County, Illinois provided information regarding species listed as state endangered (LE) and state threatened (LT). Based upon the review of these data and further consultation with the ILDNR, two LT plants, one LT mammal, and two Illinois Natural Area Inventory sites are potentially found within the vicinity of the Project area.

Federally-listed species which could potentially occur within Jo Daviess County, Illinois, based on the county list maintained by the USFWS include; two END aquatic invertebrates (mussels), two THR plants, one Proposed END insect, one END mammal, one THR mammal, and one END terrestrial invertebrate (snail).

Those state-listed and federally-listed species which require follow-up action are identified in Table 4-9 below.

Table 4-9: Analysis of Potential Habitat Suitability for Federally Protected and State Listed Species along Project ROW and Access Routes

Species	County	Status	Preferred Habitat	Project Area Evaluation
Federal Species				
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Jo Daviess Grant	Protected under the Bald and Golden Eagle Act	Associated with riparian and lacustrine habitats (forested areas along rivers and lakes), especially during the breeding season. Important year-round habitat includes wetlands, major waterbodies, and spring spawning streams, ungulate winter ranges, and open water areas.	Review of the WDNR National Heritage Inventory (NHI) Database and the Biotics 5 Database with the ILDNR have shown no known Bald Eagle nests to occur within 1,000 feet of the proposed Project centerline.
Whooping Crane (<i>Grus americanus</i>)	Grant	Non-essential experimental population	Open wetlands and lakeshores	No known records within proposed Project Area as per USFWS review (7/28/2016)

Table 4-9: Analysis of Potential Habitat Suitability for Federally Protected and State Listed Species along Project ROW and Access Routes (continued)

Species	County	Status	Preferred Habitat	Project Area Evaluation
Northern wild Monkshood (<i>Aconitum noveboracense</i>)	Grant	Federally Threatened	Shaded to partially shaded cliffs, algific talus slopes, or on cool streamside sites	Areas of potential habitat observed within the Project area. No field observations of species noted along Project ROW. No known records within proposed Project Area as per USFWS review (7/28/2016)
Mead's Milkweed (<i>Asclepias meadii</i>)	Grant	Federally Threatened	Upland tallgrass prairie or glade/barren habitat	No areas of habitat observed within the Project area. No field observations of species noted along Project ROW. All the Mead's milkweed sites in Wisconsin area reintroduction attempts and occur on protected conservation lands. No known records within proposed Project Area as per USFWS review (7/28/2016)
Prairie bush clover (<i>Lespedeza leptostachya</i>)	Jo Daviess Grant	Federally Threatened	Dry to mesic prairies with gravelly soils	Areas of potential habitat observed within the Project area. No field observations of species noted along Project ROW. No known records within proposed Project Area as per USFWS review (7/28/2016 and 2/7/2017)
Eastern prairie fringed orchid (<i>Platanthera leucophaea</i>)	Jo Daviess	Federally Endangered	Mesic to wet prairies	Areas of potential habitat observed within the Project area. No field observations of species noted along Project ROW. No known records within proposed Project Area as per USFWS review (2/7/2017)
Spectaclecase (<i>Cumberlandia monodonta</i>)	Grant	Federally Endangered	Mississippi River	No areas of critical habitat observed within the Project area. No known records as per USFWS review (7/28/2016)
Higgins Eye pearl mussel (<i>Lampsilis higginsii</i>)	Jo Daviess Grant	Federally Endangered	Mississippi River and Rock River	No areas of critical habitat observed within the Project area. No known records within proposed Project Area as per USFWS review (7/28/2016 and 2/7/2017)
Sheepnose (<i>Plethobasus cyphus</i>)	Joe Daviess Grant	Federally Endangered	Shallow areas in larger rivers and streams	Areas of potential habitat observed within the Project area. No known records within proposed Project Area as per USFWS review (7/28/2016 and 2/7/2017)
Iowa Pleistocene snail (<i>Discus macclintocki</i>)	Jo Daviess	Federally Endangered	North facing algific talus slopes	No areas of habitat observed within the Project area. No known records within proposed Project Area as per USFWS review (2/7/2017).
Hine's Emerald dragonfly (<i>Somatochlora hineana</i>)	Grant	Federally Endangered	Spring fed wetlands, wet meadows, and marshes; calcareous streams & associated wetlands overlying dolomite bedrock	Areas of potential habitat observed within the Project area. No field observations of species noted along Project ROW. No known records as per USFWS review (7/28/2016)
Indiana bat (<i>Myotis sodalis</i>)	Jo Daviess	Federally Endangered	Caves, mines (hibernacula); dead, dying tree snags/trees with exfoliating bark (roosting)	Project area is within the range of the Indiana bat. Areas of potential habitat observed within the Project Area. Further consultation with USFWS necessary prior to construction.

Table 4-9: Analysis of Potential Habitat Suitability for Federally Protected and State Listed Species along Project ROW and Access Routes (continued)

Species	County	Status	Preferred Habitat	Project Area Evaluation
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	Jo Daviess Grant	Federally Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods.	Areas of potential habitat observed within the Project area. See State Species - No known records within proposed Project Area as per USFWS review (2/7/2017).
State Species				
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	Jo Daviess Grant	State Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods.	Records for the state and federally-threatened northern long-eared bat exist in the Project vicinity in Illinois. The ILDNR recommends no tree clearing from April 1 through October 14 to avoid "take." If this cannot be accommodated, a bat habitat assessment is recommended to identify potential roost trees. Those trees should not be cut during April 1 through October 14. If potential roost trees must be cleared during the recommended restriction, a presence/absence survey should be conducted. In Wisconsin, this project is more than 150 feet from a known maternity roost tree and is more than ¼ mile from a known hibernaculum. The Wisconsin portion can proceed without federal or state restrictions.
Blanchard's Cricket Frog	Grant	State Endangered	Ponds, lakes, and a variety of habitats along and adjacent to streams and rivers including, marshes, fens, sedge meadows, low prairies, and exposed mud flats.	Suitable habitat for the Blanchard's cricket frog is present within the Project area. Observation of species presence was confirmed at one location along the Project ROW. As a result, time of year restrictions apply; or cricket frog breeding call surveys must be conducted at suitable habitat locations crossed by the Project Routes. An incidental take permit for the species has been applied for through the WDNR Bureau of Natural Heritage Conservation
Ozark Minnow	Grant	State Threatened	Small to medium streams of low gradient	Assume that this fish species is present and avoid impacts to this species and its preferred habitat by implementing erosion and runoff prevention measures during the project to avoid take by conducting work outside of its spawning season of May to early August or conduct surveys. Impact to the species will also be avoided by clear spanning all stream crossings with TCSB's so that there will be no passage issues for the species.
Elipse	Grant	State Threatened	Platte River	Erosion and runoff prevention measures must be implemented during the course of the project to avoid take of this species

4.6.2.2 Environmental Consequences

Proposed Action Alternative

A total of seven federally-listed species have ranges in Jo Daviess County, Illinois. A total of nine federally-listed species have ranges within Grant County, WI. Additionally, although not federally listed, the bald eagle is federally protected under the MBTA and Bald and Golden Eagle Act and therefore considered as part of this analysis. Of the federally-listed species, there were no areas of suitable habitat and/or no field observations of species noted along the Project ROW for Whooping Crane (*Grus americanus*), Northern Wild Monkshood (*Aconitum noveboracense*), Mead's Milkweed (*Asclepias meadii*), Prairie Bush Clover (*Lespedeza leptostachya*), Eastern Prairie Fringed Orchid (*Platanthera leucophaea*), Spectaclecase (*Cumberlandia monodonta*), Higgin's Eye Pearly mussel (*Lampsilis higginsii*), Sheepnose (*Plethobasus cyphus*), Iowa Pleistocene Snail (*Discus macclintocki*), and Hine's Emerald Dragonfly (*Somatochlora hineana*). Therefore, the proposed project will not impact these species. A review of known records for federally-listed species was completed for Grant County by the Twin Cities Ecological Services Field Office of the USFWS. This review for Jo Daviess County, was requested and was received by the Rock Island Field Office of the USFWS.

The proposed Project is within the range of the Northern Long-Eared Bat. In Wisconsin, the Wisconsin NHI database, from which the information provided above was obtained, lists all current Northern Long-Eared Bat roost sites and hibernacula in Wisconsin. The NHI database contains verified survey results from the WDNR, USFWS and private organizations. The NHI database was consulted for this project, and per USFWS's 4(d) rule, the WDNR determined that this Project is more than 150 feet from a known maternity roost tree and is more than ¼ mile from a known hibernaculum. Therefore, the WDNR concluded that this project can proceed without federal or state restrictions for this species. In Illinois, to avoid take of the species the IDNR recommends seasonal tree clearing restrictions. DPC will not conduct tree clearing from April 1 – October 14 in order to avoid disturbance to the species. Additionally, the entire portion of the proposed project in Illinois follows existing ROW. The extent of DPC's tree clearing operations in Illinois will be limited to just what is needed to maintain the ROW. Minor clearing may be needed for access roads; however, because these are along existing farm lanes, clearing is not anticipated to be significant.

The portion of the proposed Project within Illinois is within the range of the Indiana Bat. Minor clearing may be needed for access roads; however, because they are existing farm lanes, clearing is not anticipated to be significant. However, as potential habitat for the Indiana Bat may exist within the vicinity of the proposed Project in Illinois, DPC will avoid any potential of take for this species by performing any necessary clearing from October 15 through March 31 of the calendar year. Through informal consultation (USFWS, 2/7/2017 – Appendix F), the USFWS indicated that potential habitat for the species may occur and that they can not concur that the project will have no effect on the Indiana Bat. Further consultation with the USFWS will be necessary prior to the start of construction activities.

One Wisconsin state-listed species, Blanchard's Cricket Frog, has been recorded within the Project area. DPC's consultant conducted a habitat suitability assessment of the Project in 2016 for Blanchard's Cricket Frog. Blanchard's Cricket Frogs were heard calling during the assessment at one location along the proposed Project, and suitable habitat was observed at 18 locations along the Project ROW within Wisconsin. Blanchard's Cricket Frog Breeding Call surveys will be conducted in 2017 at these locations according to the Blanchard's Cricket Frog Species Guidance Document

(<http://dnr.wi.gov/files/PDF/pubs/er/ER0666.pdf>). A meeting was held between the applicant and the WDNR Bureau of Natural Heritage Conservation where the specifics of a Species Conservation Plan for their review in consideration of issuing an incidental take authorization was discussed (Meeting Notes 2/22/2017, Appendix F). The Species Conservation Plan has been submitted to the Wisconsin Department of Natural Resources Bureau of Natural Heritage Conservation for review. .

Review of the WDNR NHI Database and the Biotics 5 Database with the ILDNR indicate that no known Bald Eagle nests occur within 1,000 feet of the proposed Project centerline. Documentation of the review by ILDNR is included in Appendix F. The WDNR NHI database was accessed by the DPC consultant on January 13, 2017. The USFWS has reported through informal consultation that no known occurrences of Bald Eagle nest sites have been recorded within 1,000 feet of the Project alignment (USFWS, 7/28/2016, 2/7/2017 – Appendix F).

The Project alignment and its surrounding area was also reviewed for potential impact to the Rusty Patched Bumble Bee (*Bombus affinis*). The high potential zones for the species, as published by the USFWS are shown on Figure 7. The Project alignment does not intersect any high potential zones for the species. Based on this and guidance documents published by the USFWS, no further coordination with the USFWS is necessary for this Project.

Through informal consultations, USFWS has also made recommendations under the MBTA. Specifically, if migratory birds are known to nest on any existing structures or habitat which may be disturbed by construction, activities should begin and be completed before the initiation of the breeding season or after the breeding season has concluded. The general recommendation is that any habitat disturbance occur before May 1 or after August 30 to minimize potential impacts to migratory birds. Although it is impractical to halt construction activities throughout this period. Certain activities such as tree clearing, which represent the most significant damage to potential bird habitat can be scheduled, for the most part, outside of the breeding season. It is also important to note that the amount of vegetation clearing associated with this project is minimal as most of the alignment is located on previously cleared ROW.

In addition USFWS recommends the applicant to follow guidelines set by the Avian Power line Interaction Committee (APLIC) to reduce collisions and electrocutions from transmission lines. This project does not represent a significant impact to migratory birds from potential collisions because the majority of the conductor sag falls below the level of surrounding trees where the line traverses forested habitat.

No Action Alternative

No changes to existing conditions would occur under the No Action Alternative. The existing ROW will continue to be maintained as open ROW and seasonal tree clearing restrictions will continue to be followed.

4.6.2.3 Mitigation and Monitoring

DPC will incorporate the protective measures recommended by the USFWS, ILDNR, and WDNR for avoiding and minimizing impacts to the identified federal and state listed species listed in Table 4-9.

In addition, DPC would also follow the BMPs outlined in DPC's Field Guide for Transmission Line Construction and Maintenance Activities Manual, Appendix E) for erosion and sediment control and protection of waterbodies and wetlands.

Potential impact to the Northern Long-Eared Bat will be mitigated by DPC not performing necessary tree clearing activities between April 1 through October 14 along proposed Project ROW and access routes in Illinois.

Potential impact to the Indiana bat will be mitigated by DPC performing any necessary clearing between October 15 through March 31 of the calendar year along proposed Project ROW and access routes in Illinois.

Presence / absence surveys for the Blanchard's Cricket Frog will be performed at the 18 locations along the proposed Project ROW in Wisconsin where potential habitat for the species was determined to exist. Where the species is found to be present, DPC will mitigate potential impact to the species by employing seasonal construction limitations and setback distances recommended by the WDNR. DPC has applied for an incidental take permit / authorization from the WDNR in case of situations where avoidance measures cannot be employed effectively and there is potential to take an individual of the species. DPC will also mitigate impact to the species by providing on-site monitoring by a biologist trained to identify the species in the field at locations where species is known to be present during construction activities.

4.7 Historic and Cultural Properties

4.7.1 *Affected Environment*

DPC's environmental consultant conducted a Phase I Archaeological Reconnaissance Survey and Cultural Resources Investigation (Phase I Reconnaissance Survey) for compliance with Section 106 of the NHPA, the Illinois State Illinois Historic Resources Preservation Act (IHRPA [20 ILCS 3420, as amended, 17 IAC 4180]) and other applicable state regulations and permitting requirements.

In July, October, and November 2016, personnel from the Mississippi Valley Archaeology Center (MVAC) conducted a Phase I archaeological survey of the Sand Ridge-Lancaster 69kV transmission line for DPC in Grant County, Wisconsin. This project includes the N-153 transmission 69 kV line that connects DPC's Lancaster substation to ITC-Midwest's Sand Ridge substation (twenty-five miles) and the N-196 69kV line from Lancaster to Platteville (nine miles). Collectively the N-153 and N-196 is the proposed Sand Ridge to Lancaster 69kV Project. This project would be replacement of existing transmission lines, with a one mile section being a new build. The GIS shape files for the exact pole locations were provided to MVAC by DPC prior to the archaeological survey and since this was the only ground disturbance for the pole placements, these were the only areas surveyed although areas between poles were surveyed in plowed fields whenever possible. MVAC was able to use hand held GPS units to locate the proposed pole locations. Both pedestrian survey and shovel testing were employed.

DPC retained AECOM Technical Services, Inc. (AECOM) to provide cultural resources services for the Illinois portion of the Project, from the Menominee Distribution Station to the Illinois/Wisconsin state line (the Project Area). AECOM's Phase I Reconnaissance Survey was initiated to assess the presence or absence of cultural resources in the Project Area. For the purposes of this investigation, cultural resources include both archaeological sites and historic standing structures. The direct Area of Potential Effects (APE) for the Phase I Reconnaissance Survey was determined as the 80-foot wide ROW. The indirect APE for Historic Standing Structures (HSS) in the surrounding area was determined on a case-by case basis, since indirect effects were not anticipated.

The IHPA guidelines call for 15 meter (49.21 feet) intervals between shovel test surveys transects. Therefore, coverage of the entire ROW width required two lateral survey transects. Field methods involved shovel tests placed at a 15-meter interval (where possible due to terrain/land-use), off-set from the existing transmission line poles. The excavated sediments were screened through 1/4-inch hardware mesh. Shovel tests were hand-excavated and generally measured 16 by 16-inches (in) (40 by 40 centimeters [cm]). Shovel tests in undisturbed contexts were excavated to culturally sterile Pleistocene deposits.

In areas where the ROW crossed agricultural fields exhibiting good visibility (exceeding 30 percent), the standard IHPA pedestrian survey transect interval method (5 meter-wide transects) was applied. At the time of the survey, the ground surface visibility of the agricultural fields varied from 30 percent to nearly 100 percent, depending upon the individual field. Close interval pedestrian survey was employed around all find spots. Based on the consultant's research, there are nine previously-recorded archaeological sites located within a 1.0-mile radius of the Project Area.

4.7.2 Environmental Consequences

In Wisconsin, no evidence of the five previously recorded sites was discovered within the current project area. The new site discovered will not be affected by construction activities. Therefore, no further work is recommended for this project.

Based on the results of this Phase I Archaeological Reconnaissance Survey and Cultural Resources Investigation in Illinois, one new prehistoric find spot (isolated find) was discovered and recorded. No historic finds or sites were found as a result of the survey. No HSS, or any buildings or structures, were found in the Project Area as a result of the survey. There are no previously recorded architectural resources located within one mile of the Project Area. As the Project involves the replacement of existing wooden power poles and lines of similar construction and height, it is AECOM's opinion that there will be no indirect (visual) impacts to any structural resources located near the Project Area.

The isolated find has been assigned a state site number of 11JD808. As a result of AECOM's analysis, the isolated find contains little potential for contributing further knowledge toward our understanding of regional prehistory. For this reason, the find is not considered historically significant and no further archeological work is recommended. Therefore, the find is recommended not eligible for the NRHP. Given the results of the Phase I Archaeological Reconnaissance Survey and Cultural Resources Investigation, no further cultural resources fieldwork or analyses are recommended prior to construction of the Project and Project clearance is recommended.

In Wisconsin, five vaguely recorded previously recorded sites, 47GT84, 47GT86, 47GT87, 47GT88, and 47GT90 are located along the project area, just west of Platteville. These sites all have arbitrary boundaries defined from what appears to be former landowner descriptions, or were mapped by quarter/quarter sections and/or landform descriptions. The project overlaps these sites at the very western or very southern edges of the sites. No evidence of these sites were found within the current project area. One new site, 47GT790, a stone foundation, was discovered. This stone foundation of unknown date is located on a steep hill above a creek. DPC will not disturb this site during construction, as wires for the transmission line will only span over this site area. Therefore, it should not be impacted by the project.

4.7.3 Mitigation and Monitoring

In order to protect cultural resources that may be discovered during construction activities, DPC conducted a Phase I Reconnaissance Survey of the Project Area. However, in the unlikely event that human remains or cultural resources are discovered during construction, DPC has developed an unanticipated discovery procedure. In the event of discovery of cultural resources, all work will be immediately suspended and DPC will contact the RUS and the IHPA. In the event of discovery of human remains, all work will be immediately suspended and DPC will contact the local law enforcement agency. If the local law enforcement agency determines that the remains are not modern, DPC will contact the RUS and the IHPA.

DPC will also employ BMPs as listed in Appendix E.

4.8 Aesthetics

4.8.1 Affected Environment

Approximately 85% of the N-153 Route will be rebuilt within the existing 69 kV transmission line route which consists of maintained ROW containing single-pole wood structures. Approximately 79% of the N-196 Route will be rebuilt within the existing 69kV transmission line route. These existing single-pole wood structures will be replaced with single-pole, two-pole, three-pole and four-pole wood and metal structures. New siting of ROW for the proposed Project is approximately 5.7 miles (see Section 2.0) which consists of a mix of land use types but is primarily agricultural. There are designated scenic areas or Byways along the proposed transmission route.

There are 44 residences and / or farm buildings located less than 500 feet from the centerline of the proposed project. These are summarized in Table 4-10.

Table 4-10: Residences Located within 500 Feet of Proposed Project Centerline

Project Element	Figure 5, Appendix A, pg. #	Number	Approximate Distance from Proposed Centerline (Ft)	Building Type	Visual Break
N-153 Existing	1	1	280	Farm	
N-153 Existing	1	2	220	Residential	
N-153 Existing	3	3	340	Residential	
N-153 Existing	7	4	60	Farm	
N-153 Retirement A	8	5	10	Farm	
N-153 New ROW A	9	6	60	Farm	
N-153 New ROW A	9	7	200	Farm	
N-153 New ROW A	9	8	60	Farm	
N-153 New ROW A	10	9	70	Residential	
N-153 New ROW A	10	10	280	Farm	
N-153 New ROW A	10	11	170	Farm	
N-153 Existing	11	12	340	Residential	Yes
N-153 Existing	11	13	300	Farm	
N-153 Existing	14	14	160	Farm	
N-153 Existing	14	15	160	Farm	
N-153 Existing	17	16	170	Farm	
N-153 Existing	18	17	160	Farm	
N-153 Existing	19	18	260	Farm	
N-153 Existing	20	19	120	Farm	
N-153 Existing	21	20	180	Farm	
N-153 Existing	22	21	100	Farm	

Table 4-10: Residences Located within 500 Feet of Proposed Project Centerline (continued)

Project Element	Figure 5, Appendix A, pg. #	Number	Approximate Distance from Proposed Centerline (Ft)	Building Type	Visual Break
N-153 Existing	29	22	460	Farm	
N-153 Existing	29	23	440	Farm	
N-153 Existing	30	24	340	Farm	
N-153 Existing	31	25	120	Farm	
N-153 Existing	32	26	220	Farm	
N-153 Existing	32	27	400	Farm	
N-153 Existing	34	28	220	Residential	
N-196 Existing	35	29	120	Residential	
N-196 Existing	35	30	60	Farm	
N-196 Existing	36	31	200	Residential	
N-196 Existing	36	32	240	Residential	
N-196 Existing	36	33	280	Public Works	
N-196 New ROW	42	34	20	Residential	
N-196 Retirement	43	35	0	Residential	
N-196 Retirement	44	36	340	Residential	Yes
N-196 Retirement	45	37	440	Residential	Yes
N-196 New ROW	46	38	200	Farm	
N-196 New ROW	46	39	80	Farm	
N-153 New ROW A	47	40	100	Residential	
N-153 New ROW A	47	41	50	Farm	
N-153 New ROW A	48	42	20	Residential	
N-153 New ROW A	48	43	0	Farm	
N-153 New ROW A	48	44	260	Farm	

4.8.2 Environmental Consequences

Proposed Action Alternative

Visual impacts will not be significant because approximately 85% of the N-153 route and 79% of the N-196 route will be constructed on existing ROW. The transmission line structures for the proposed Project will generally be taller, ranging from 60 to 80 feet in height. The overall spacing of the structures will be comparable to the current layout, which can vary greatly depending upon engineering and land use constraints.

A total of 44 residences, farm buildings, and a public works facility are located within 500 feet of the centerline of various project elements of the overall Project (2015 USDA Farm Service National Aerial Imagery Program).

A total of three residences and two farm buildings are located within the ROW for the proposed project. One farm building. Located at the address of 3691 Schuster Avenue, Town of Harrison, WI, is located 10 feet from the N-153 Retirement A ROW centerline of the Project. The location of this farm building is

shown on page 8 of Figure 5 (Appendix A). One residence is located within the ROW of the N-196 Retirement section of the N-196 Route along County Trunk Highway B immediately adjacent to the transmission centerline. The address of this residence is 3400 County Road B, Town of Harrison, Wisconsin. The location of this residence is shown on page 43 of Figure 5 (Appendix A). One residence is located within the N-196 New ROW portion of the N-196 Route along Stanton Road approximately 20 feet from the proposed centerline. The address of this residence is 6285 Stanton Road, Platteville, WI. The location of this residence is shown on page 42 of Figure 5 (Appendix A). One residence and one farm building are located along the N-153 new ROW A portion of the N-153 Route on Quarry Road. There is no listed address for the residence, however, the tax identification for the parcel is 020005010010 per Grant County Tax Parcel records. This residence is approximately 20 feet from the proposed centerline. The address of the property on which the farm building is located is 3776 Quarry Rd., Town of Harrison, Wisconsin. This farm building is immediately adjacent to the proposed centerline. The location of this residence and farm building are shown on page 48 of Figure 5 (Appendix A).

A total of 14 residences and farm buildings located less than 500 feet from the centerline of the Project, occur in new ROW. A total of four residences and farm buildings are located less than 500 feet from portions of the project that will be retired. A total of 26 residences, farms, and public works facilities are located within 500 feet of existing alignment that will be rebuilt under the proposed project. Of these 26 residences occurring along existing transmission alignments, only one is visually screened from the transmission line by a forest community. However, after construction, the Project will not be out-of-character with the aesthetic character of the existing landscape. For 26 of the 44 residences, farm buildings and public works facility, the transmission line is already present in the landscape.

When considering the project in its entirety, 14 new residences and farm buildings will be aesthetically impacted while four will have the transmission line removed from their viewshed. Therefore, the proposed project has only a net gain of 10 residences and farm buildings that will be aesthetically impacted by the proposed Project when compared to what existing along the current alignments.

No Action Alternative

If the proposed Project is not built, the visual impact to the 14 residences and farm buildings located within 500 feet of proposed new ROW of the Project will not occur. However, the visual impact to four residences along the proposed retirement elements of the Project will not be alleviated.

4.8.3 Mitigation and Monitoring

The Project design minimizes impacts to a level that is not significant by locating the majority of the Project ROW within an already disturbed corridor. In addition, to further minimize potential visual effects, existing undisturbed trees, shrubs, and native vegetation will be preserved to the extent possible to maintain visual contrast in the landscape.

As the aesthetical impact resulting from the proposed Project are considered not significant, no mitigation or monitoring measures are proposed.

4.9 Air Quality

4.9.1 Affected Environment

The Project area is not within a nonattainment area for any measured pollutant (<http://www3.epa.gov/airquality/greenbook/ancl.html>). A nonattainment area is an area for which air quality measurements do not meet National Ambient Air Quality Standard (NAAQS) criteria.

The Project area is subject to air pollutants from mobile sources that include vehicles that travel on public roads in the vicinity of the Project, as well as vehicles used for ongoing ROW maintenance. Due to dissipation by wind, pollutants from these sources do not attain high enough concentrations to warrant measurement or to result in degradation to sensitive resources.

Corona-related ozone and nitrogen oxide emissions are the primary air quality concerns related to transmission line operation. The concentration of ozone caused by corona is a few parts per million near the conductor and is not measurable at any distance from the conductor.

The atmospheric buildup of CO₂ and other Green House Gases (GHGs) is largely the result of human (anthropogenic) activities, such as the burning of fossil fuels (USEPA 2013). Of the total amount of United States GHGs emitted in 2010, approximately 87% were energy-related, and 91% of those energy-related gases were CO₂ from the combustion of fossil fuels (http://www.eia.gov/energy_in_brief/greenhouse_gas.cfm). Global carbon emissions from fossil fuels have significantly increased since 1900. In addition to carbon, combustion of fossil fuels also produces other air pollutants, such as nitrogen oxides, sulfur dioxide, volatile organic compounds, and heavy metals, which negatively affect human health, along with air and water quality.

4.9.2 Environmental Consequences

Proposed Action Alternative

Temporary and localized impacts to air quality will occur as a result of the Proposed Action alternative. Impacts will occur as a result of emissions from engine exhaust (criteria pollutants and GHGs) and fugitive dust generation during soil disturbance and tree clearing activities (where required) and will primarily occur during construction, though ongoing maintenance of the ROW will require tree clearing to maintain an open ROW. No new sources of air pollutants will be introduced. Temporary impacts will be minimized by the implementation of mitigation measures (see below).

No Action Alternative

None of the impacts to air quality described above will occur as a result of the No Action Alternative.

4.9.3 Mitigation and Monitoring

In addition to those described in the standard DPC construction BMPs in Appendix E, the following mitigation measures will be employed to reduce potential impacts to air quality:

- Water will be applied to alleviate dust nuisance generated by construction activities.
- If water proves to be ineffective as a dust suppressant, soil binders will be used.

4.10 Socioeconomic Impact Assessment/Environmental Justice

4.10.1 Socioeconomic

4.10.1.1 Affected Environment

According to the U.S. Census Bureau, in 2015 Jo Daviess County had a total estimated population of 22,086. U.S. Census demographics from 2014 for Jo Daviess County show a 50.5 percent male and a 49.5 percent female distribution of the predominantly (97.8 percent) white population. Per capita income in Jo Daviess County is \$29,477, approximately 1.8 percent lower than the statewide average of \$30,019 (U.S. Census Bureau 2013- <https://www.census.gov/geo/maps-data/data/tiger.html>). April 2016 unemployment in Jo Daviess County was 5.8 percent according to the U.S. Department of Labor: Bureau

of Labor Statistics (Federal Reserve Economic Data 2016a). The April 2016 Illinois average for unemployment was 6.6 percent (U.S. Bureau of Labor Statistics 2013, 2016b).

In 2015 Grant County had a total estimated population of 51,489. U.S. Census demographics from 2014 for Grant County show a 51.9 percent male and a 48.1 percent female distribution of the predominantly (96.8 percent) white population. Per capita income in Grant County is \$22,343, approximately 19.9 percent lower than the statewide average of \$27,907 (U.S. Census Bureau 2013-<https://www.census.gov/geo/maps-data/data/tiger.html>). April 2016 unemployment in Grant County was 3.8 percent according to the U.S. Department of Labor: Bureau of Labor Statistics (Federal Reserve Economic Data 2016c). The April 2016 Wisconsin average for unemployment was 4.4 percent (U.S. Bureau of Labor Statistics 2013, 2016d).

The Jo Daviess County Sheriff's office is located in the City of Galena and provides public safety services throughout the county (Jo Davies County). There are seven emergency medical service/ambulance providers that serve Jo Daviess County. There is one hospital located in Jo Daviess County: Midwest Medical Center, Galena.

The Grant County Sheriff's office is located in Lancaster, and provides public safety services throughout the county (Jo Davies County). There are 19 emergency medical service/ambulance providers that serve Grant County. There is one hospital located in Grant County: Grant Regional Medical Center, Lancaster.

4.10.1.2 Environmental Consequences

Proposed Action Alternative

No significant impacts to social and economic resources are expected to result from the proposed Project. DPC anticipates that one crew of 15 construction workers will be needed for construction of the Project. The construction crews will not be local. Revenue, therefore, will likely increase for some local businesses, such as restaurants, gas stations, grocery stores, and hotels because of an increase in the number of out-of-town workers in the area. Other local businesses, such as gravel suppliers, hardware stores, welding and machine shops, and heavy equipment repair and maintenance service providers, will also likely benefit from construction of the Project. The existing businesses and public services will be adequate to support the Project because of the small size of the construction crews and the short duration of the construction activities. If the proposed Project is constructed, the potential for future thermal overload to the N-153 and N-196 transmission line will be decreased thereby increasing the reliability of power supply to local residences and businesses.

Given the relatively small size of the construction crews needed for construction of the Project, no significant impacts to emergency health care facilities or law enforcement services are anticipated.

No Action Alternative

None of the anticipated benefits of the Proposed Action, which would include a temporary increase in use of businesses by the construction crew mobilized to the area, and increasing the reliability of the local power supply would occur under the No Action Alternative. However, any potential stressors placed on local public services or infrastructure as a result of the presence of construction crews would occur under the no action alternative.

4.10.1.3 Mitigation and Monitoring

No significant effects to the local socioeconomic environment will result from construction of the proposed Project. Therefore, no mitigation or monitoring is offered.

4.10.2 Environmental Justice

4.10.2.1 Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, states that “each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The analysis pursuant to this executive order follows guidelines from the Council on Environmental Quality (CEQ), Environmental Justice Guidance under the National Environmental Policy Act (CEQ 1997).

The CEQ guidelines state that minority populations should be identified where “... (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis” (CEQ 1997).

In compliance with the CEQ guidelines, the minority and economic aspects of the Project were evaluated on a regional basis, comparing data for the block groups in the Project to the average data for Jo Daviess and Grant counties and the states of Illinois and Wisconsin. Minority and low-income data were assembled at the census tract level. Data were analyzed for each block group that the Project will cross. It should be noted that the census tract crossed by the Project encompasses a much larger area than the Project, so the actual population located adjacent to the Project is smaller than what is shown for the census tract. The socioeconomic data shown by the census tract are expected to be representative of the population located in proximity to the transmission line. Table 4-11 shows the census data for the block groups crossed by the Project, Census Tract 202 in Jo Daviess County and 9606, 9608, 9609, 9610, 9611, and 9612 in Grant County (U.S. Census Bureau 2013- <https://www.census.gov/geo/maps-data/data/tiger.html>). Consistent reliable data on per capita income were not available for the individual census tracts.

Table 4-11: Census Data

Location	Population	Race Percentages		Per Capita Income	Population Below Poverty Level
		Caucasian	Minority		
State of Illinois	12,859,995	77.3%	22.7%	\$30,019	14.4%
Jo Daviess County	22,086	97.6%	2.4%	\$29,477	10.7%
Jo Davies County, Census Tract 202	4,821	96%	4.0%	--	7.0%
State of Wisconsin	5,771,337	86.7%	13.3%	\$27,907	13.2%
Grant County	51,489	96.6%	3.4%	\$22,343	15.0%
Grant County, Census Tract 9606	3,784	98.9%	1.1%	--	10.2%
Grant County, Census Tract 9608	3,037	98.3%	1.7%	--	5.7%
Grant County, Census Tract 9609	4,245	94.3%	5.7%	--	38.6%
Grant County, Census Tract 9610	7,749	95.2%	4.8%	--	14.7%
Grant County, Census Tract 9611	4,462	98.7%	1.3%	--	9.0 %
Grant County, Census Tract 9612	4,335	98.4%	1.6%	--	10.6%

Per the data, minority populations are less than 2.5 percent of the population in Jo Daviess County and comprise 4 percent of the total population within the census tract crossed by the Project. Per capita income in Jo Daviess County is lower than that of the state of Illinois. Poverty levels in Jo Daviess County Census Tract 202 are lower than those reported for the state of Illinois.

Minority populations are less than two percent of the population in Grant County and are generally lower than the average minority population within the state of Wisconsin. There are higher populations of minorities in Grant County Census Tracts 9609 and 9610. Census Tract 9610 also has the highest total population out of the tracts crossed by the Project. Per capita income in Grant County is lower than that of the state of Wisconsin. Poverty levels in Grant County are higher than those reported for the state of Wisconsin. Grant County Census Tract 9609 (Platteville) has the highest minority population and the highest population below the poverty level at 38.6%.

4.10.2.2 Environmental Consequences

Proposed Action Alternative

The percentages of minority populations in the census tracts that are crossed by the proposed Project are lower than those found in the states of Illinois and Wisconsin overall; however, percentages of population below the poverty level are lower in comparison to that found in the state of Illinois; and vary between higher and lower in comparison to that found in the state of Wisconsin. Due to the remote location and lack of residential or commercial land use within the vicinity of the Project, as well as siting most of the proposed Project within existing ROW, no significant environmental justice impacts are anticipated.

No Action Alternative

No significant impacts to the environmental justice aspects of the local population will occur under the no action alternative.

4.10.2.3 Mitigation and Monitoring

No significant impact to environmental justice resulting from construction of the Project are anticipated. Therefore, no mitigation or monitoring is offered.

4.11 Miscellaneous Issues

4.11.1 Affected Environment

4.11.1.1 Noise

Noise is defined as unwanted sound. It may consist of a variety of sounds of different intensities across the entire frequency spectrum. Noise is measured in units of decibels on a logarithmic scale. Because human hearing is not equally sensitive to all frequencies of sound, certain frequencies are given more “weight.” The A-weighted decibel (dBA) scale corresponds to the sensitivity range for human hearing.

Noise levels capable of being heard by humans are measured in dBA. Table 4-12 shows noise levels associated with common everyday sources.

Table 4-12: Common Noise Sources and Levels (Source: NPC [2011])

Sound Pressure Level (dBA)	Typical Sources
100–105	Leaf blower
100–104	Circular Saw
84–89	Vacuum Cleaner
76–83	Garbage disposal
68–73	Inside car, windows closed, 30 MPH
55–65	Normal conversation
50	Background music
40	Living room
28–33	Quiet Room

N-153 69 kV Rebuild (Sand Ridge to Lancaster)
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The primary land use in proximity to the Project is rural agricultural land and forest land; residences and farms are scattered throughout.

Sources of noise in proximity to the Project include the equipment noise from agricultural operations, and residential activities, and noise generated by cars and trucks along local roadways and STH 11, 20 and 151 in the Project area.

4.11.1.2 Transportation

Transportation corridors in proximity to the Project consist of two-lane highways and local public roads. Forty-six total road crossings are located along the proposed project routes, including 40 in Wisconsin and six in Illinois. Table 4-13 summarizes all of the roads crossed by the Project.

Table 4-13: Road Crossings

Proposed Project Element	County	Road	Traffic Count ¹	Traffic Year ¹	Point Location ¹
LN153 Existing	Grant County	Bishop Lane			
		Church Road			
		Clay Hollow Road			
		Cliff Lane			
		County Hwy H	2300	2010	East of Slaats Road
		County Highway O	670	2010	East of Stanton Road
		County Road B			
		Hill Road			
		Hyview Road			
		Kirkwood Road			
		Louisberg Road			
		Model Road			
		Morgan Road			
		Platte Road			
		Quarry Road			
		Red Dog Road			
		Sinsinawa Road			
		State Highway 11	3400	2010	East of County Road Z
Substation Road					
US Highway 151	11100	2010	North of Bluffview Lane		
LN153 New ROW A	Grant	Shuster Avenue			
		Stanton Road			
LN153 Retire ROW A	Grant	Shuster Road			
LN196 New ROW	Grant	Stanton Road			
		Stanton Road			
LN196 Rebuild	Grant	Fountain Bluff Lane			
		Harrison Road			
		Pine Lane			
		Southwest Road			
		Stumptown Road			

Table 4-13: Road Crossings (continued)

Proposed Project Element	County	Road	Traffic Count ¹	Traffic Year ¹	Point Location ¹
LN196 Retire	Grant	County Road B			
		Henry Road			
		Platte Road			
		Red Dog Road			
LN153 Existing	Jo Daviess County	N. Menominee Road	550	2010	Near Transmission Line Crossing
		N. Sand Ridge Road			
		US Highway 20 (North Crossing)	275	2013	West of Intersection with North Menominee Road
		US Highway 20 (South Crossing)	9100	2015	West of Intersection with North Menominee Road
		W. Belken Lane			
		W. Creek Valley Road	75	2010	East Creek Valley road East of Intersection with W. Creek Valley Road

¹ Shaded areas indicate that no data are available. Data obtained from the Wisconsin Department of Transportation Interactive Traffic Count Map at <https://trust.dot.state.wi.us/roadrunner/> (accessed 1/18/2017) and the Illinois Department of Transportation Average Daily Traffic Counts GIS Application at <http://www.gettingaroundillinois.com/gai.htm?mt=aadt> (accessed January 18, 2017)

CFR Title 14 Part 77.9 states that any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the Federal Aviation Administration (FAA):

- Any construction or alteration exceeding 200 feet above ground level.
- Any construction or alteration:
 - Within 20,000 feet of a public use or military airport that exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet.
 - Within 10,000 feet of a public use or military airport that exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet.
 - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface
- Any highway, railroad or other traverse way that has a prescribed adjusted height that will exceed the above-noted standards.
- When requested by the FAA.
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

The closest airport to the LN153 Route is the Lancaster Municipal Airport located approximately 4,578 feet from the north end of the Project northeast of the intersection of Airport Road and STH 61 in Lancaster, Wisconsin (FAA, <https://airports-gis.faa.gov/public/OnlineHelp/contents/downloadarp.html>). The closest airport to the LN196 Route is the Platteville Municipal Airport located approximately 18,430

feet from the east end of the Project in Platteville, Wisconsin (FAA, <https://airports-gis.faa.gov/public/OnlineHelp/contents/downloadarp.html>).

4.11.2 Environmental Consequences

4.11.2.1 Noise

Proposed Action Alternative

Audible noise from an overhead electric transmission line can be produced by corona from the breakdown, or ionization, of air within a few centimeters or less immediately surrounding conductors. It occurs when the electric field intensity, or surface gradient, on the conductor exceeds the breakdown strength of air. Usually some imperfection, such as a scratch on the conductor or a water droplet, is necessary to cause corona. Corona from transmission lines can create buzzing, humming, or crackling. Measures such as carefully handling the conductor during construction to avoid nicking or scraping or otherwise damaging the surface and using hardware with no sharp edges or points are typically adequate to control corona. Corona effects are expected to be low enough that no objectionable audible noise will result outside the ROW.

Corona-related ozone and nitrogen oxide emissions are the primary air quality concerns related to transmission line operation. The concentration of ozone caused by corona is a few parts per million near the conductor and is not measurable at any distance from the conductor.

The construction of the Project will result in audible noise from the transmission line and temporary short-term noise increases in areas where construction and staging are taking place. Post construction, the audible noise effects from the transmission line and inspection and maintenance activities will be insignificant because of their short duration and infrequency.

The audible noise generated during construction will be caused by foundation construction, assembly and erection of the transmission line poles, and noise generated by construction equipment such as auguring machines, cranes, heavy machinery, and trucks.

Typical equipment associated with transmission line construction and the associated noise levels at full power are shown in Table 4-14. Shaded areas indicate reference noise levels.

Under peak conditions during construction, with the noisiest construction equipment operating simultaneously, the highest average expected noise level is estimated to be 89 dBA-equivalent sound level at a reference distance of 50 feet (DOE 2002).

Noise from heavy machinery during construction of the transmission line may create a short-term nuisance to nearby residents. DPC will mitigate the nuisance by ensuring that construction vehicles and equipment are maintained in proper operating condition and equipped with manufacturer's standard noise control devices or better (e.g., mufflers or engine enclosures).

Table 4-14: Construction Equipment Noise Levels

Equipment	Typical Noise Levels 50 feet from Source (dBA) ¹
Rural area during daytime ¹	40
Residential area during daytime	50
Normal conversation at 6 feet	55–65
Trucks	75
Air compressor	81
City traffic	80
Backhoe	78
Concrete mixer	79
Mobile crane	81
Bulldozer	85
Grader	85
Rotary drilling rig	79
Peak combined equipment ³	89
Lawn mower	90

Note: shaded areas indicate reference noise levels.

¹Source: DOT (2006) except as noted.

²DOE (2002) No Action Alternative

No Action Alternative

The no action alternative will not result in any noise impacts to the surrounding environment listed above.

4.11.2.2 Transportation

Proposed Action Alternative

Effects to transportation resulting in construction of the Project are not expected to be significant and will be temporary in nature. Construction crews will use public roadways and up to 25.63 miles of private and public access routes to access structure locations, and to string conductor along the 69 kV transmission line route. A small construction crew consisting of approximately 15 to 20 people for the transmission line will be required. It is not anticipated that construction equipment or labor transportation will have a significant impact on traffic volumes or flow on local roadways or state highways. Any increases in traffic will be short-term in nature and will be limited to the construction period near individual transmission structures. No road closures or traffic delays are anticipated.

Based on review of the Wisconsin Department of Transportation Projects and Studies Webpage (<http://www.nonoise.org/library/household/index.htm>) there is one project planned in Grant County, Wisconsin. The Highway 61 Project is proposed in Lancaster Wisconsin and is currently in the planning stage. Construction is not planned to start until spring 2019 and should not be impacted by this project.

Based on review of the Illinois Department of Transportation Projects Webpage (<http://www.idot.illinois.gov/projects/US20-Freeport>) two projects are in the planning stage in Jo Daviess County, Illinois. Neither of these projects are within the immediate vicinity of the project and significant impacts are not anticipated.

The closest airport to the LN153 Route is the Lancaster Municipal Airport located approximately 4,578 feet from the north end of the Project northeast of the intersection of Airport Road and Hwy 61 in Lancaster, Wisconsin. The closest airport to the LN196 Route is the Platteville Municipal Airport located approximately 18,430 feet from the east end of the Project in Platteville, Wisconsin DPC will use the FAA

Notice Criteria tool to determine whether the new transmission structures will require DPC to file a notice to construct with the FAA (FAA 2016). Dairyland will submit applications to the FAA for both airports. Dairyland will work with the FAA to insure compliance with their height restrictions.

Construction, operation, and maintenance of the transmission line will have no significant effects on transportation or access in the Project area.

No Action Alternative

The no action alternative will not result in any impacts to transportation listed above.

4.11.3 Mitigation and Monitoring

4.11.3.1 Noise

The proposed Project is in a rural agricultural area with scattered residences and farms. Significant impacts resulting from construction noise are not anticipated. Impacts associated with the generation of corona are not anticipated; therefore, no mitigation measures are proposed.

4.11.3.2 Transportation

In addition to the BMPs described in Appendix E, the following minimization measures will be employed to reduce potential impacts to transportation:

- Roadway crossings will be maintained in a condition that will prevent tracking of sediment onto the roadway.
- Mud tracked onto paved roadways will be shoveled or swept off the road daily.
- Road crossings resulting from stringing operations will be discussed with the appropriate transportation organization and, if required, personnel will be enlisted to assist with public safety and to ensure minimal disruption to traffic flow.
- The contractor will be required to make necessary provisions for conformance with federal, state, and local traffic safety standards using traffic control, signage, and hazard cones as necessary to minimize the obstruction and to provide for the smooth flow of traffic around or through the construction area.
- The contractor will not utilize state or county road/highway ROW for parking.

Significant impacts associated with the disruption to local transportation are not anticipated; therefore, no mitigation measures are proposed.

4.12 Human Health and Safety

4.12.1 Affected Environment

4.12.1.1 Electromagnetic Fields and Interference

The majority of the proposed Project is located in existing ROW and the area experiences electromagnetic characteristics and interference associated with 69 kV transmission lines. All DPC facilities are designed, constructed, operated, and maintained to meet or exceed applicable standards of design and performance set forth in the National Electrical Safety Code.

Electrical characteristics associated with transmission lines and substations are those associated with electric and magnetic fields (EMF), corona, audible noise, and radio and television interference. EMF is described below. Corona on transmission line conductors can generate noise at the frequencies at which radio and television signals are transmitted. This noise can interfere with receiving signals and is called

"radio interference" and "television interference," depending on the frequency within which it occurs. Radio reception in the AM broadcast band (535 to 1605 kilohertz) is most often affected with what is commonly referred to as static. FM radio reception is rarely affected. Only radio receivers very near to transmission lines have the potential to be affected by radio interference. Corona can affect the reception of the video (picture) portion of a television signal. Television interference caused by corona appears as three bands of "snow" on the television screen. Television interference at the edge of the ROW due to corona primarily occurs during rain or snow.

Voltage on any wire (conductor) produces an electric field. The intensity of the electric field is proportional to the voltage of the transmission line. The flow of electrical current on a wire produces a magnetic field. The intensity of the magnetic field is proportional to the current flow through the conductors. EMF extends outward from the conductor and decrease rapidly with distance from the conductor. There is no federal, Wisconsin State or Illinois State standard for transmission line EMF.

Additional EMF information can be found on the National Institute of Environmental Health Sciences website, <<http://www.niehs.nih.gov/health/topics/agents/emf/>>.

Landowners in proximity to electric transmission lines/substations are often concerned that new transmission lines or substations will affect their radio or television reception. This is a legitimate concern, not only related to transmission lines, but for distribution and communications lines as well. It is DPC's general experience that when the radio or television receiver is located outside the ROW, that very few problems with radio or television reception are encountered. However, DPC is committed to taking all reasonable steps to assure area landowners that the Project will not interfere with radio or television reception. In cases where there is a demonstrable effect from the transmission line on reception, very often simple corrective steps, such as checking line hardware for loose or defective hardware and repairing or replacing these is sufficient to solve the problems. In a very limited number of cases, it has been necessary to take more extensive corrective steps such as relocating individual television or radio antenna systems or installing systems where none previously existed. In most cases, however, it is possible to entirely avoid radio and television interference by appropriate routing steps and by post-construction adjustments of line hardware.

A review of the Federal Communications Commission's (FCC) Antenna Structure Registration (FCC 2013 <http://wireless2.fcc.gov>) found 27 antenna structures near the proposed project. A listing of these structures and their distance from the proposed Project centerline are provided in Table 4-15. Detailed information on each tower summarized in Table 4-15 can be found in Appendix G.

Table 4-15: Antenna Structures, Type and Distance from the Proposed Project Centerline

Antenna Structure FCC Registration Number	Type of Antenna	Distance from the Proposed Centerline (feet)	Distance from the Proposed Centerline (miles)
1063800	Communication	110.11	0.02
1047758	Communication	3353.85	0.64
1226560	Communication	12121.02	2.30
1058226	Communication	19070.55	3.61
1239117	Communication	19705.68	3.73
1219918	Communication	25981.62	4.92
1009645	Radio	26404.32	5.00
1009643	Radio	26475.78	5.01
1009644	Radio	26712.29	5.06
1009642	Radio	26808.05	5.08
1017691	Communication	29938.14	5.67
1009837	Communication	42851.35	8.12
1206852	Communication	44968.43	8.52
1259125	Communication	63003.51	11.93
1259165	Communication	272.62	0.05
1230580	Communication	5595.84	1.06
1054123	Communication	9493.61	1.80
1035433	Radio	9753.36	1.85
1035434	Radio	9797.06	1.86
1250333	Communication	29303.25	5.55
1047770	Communication	30140.49	5.71
1033964	Communication	30156.49	5.71
1211065	Communication	33063.74	6.26
1205802	Communication	31120.46	5.89
1210349	Communication	32385.05	6.13
1062478	Communication	34477.18	6.53
1059746	Communication	34506.90	6.54

4.12.1.2 Environmental Risk Management

The WDNR Bureau for Remediation and Redevelopment Tracking System database (WDNR, 2016 <http://dnr.wi.gov/topic/Brownfields/botw.html>) and the Illinois Environmental Protection Agency Site Remediation Program database (ILEPA, 2017 <http://epadata.epa.state.il.us/land/srp/>) were reviewed for recorded releases of hazardous materials to the environment within the proposed Project corridors. The databases include (but is not limited to) the following contamination data:

- investigations and cleanups of contaminated soil and/or groundwater;
- spills;
- Superfund sites

A total of five sites have been recorded within these databases within proximity to the proposed Project. Specifics regarding each of these five sites can be found in Appendix H. Four of the sites are recorded in Grant County, Wisconsin and one site was recorded in Jo Daviess County, Illinois. The location of each

of these sites are shown on Figure 6 (Appendix A). Table 4-16 lists those sites that were identified in proximity of the proposed Project:

Table 4-16: Summary of Sites in Proximity of the Proposed Project that Pose Environmental Risk Concerns

Name of Site	County, State	Distance from the Proposed Centerline (feet)	Site Status
322001271 Moor Property	Grant County, WI	3,062	Closed (1995)
222558633 St. Joseph Church & School	Grant County, WI	1,808	Closed (2012)
322002378 Harrison Town Garage	Grant County, WI	264	Closed (1998)
322001711 Lancaster Airport	Grant County, WI	5,030	Closed (1993)
ILD052436003 East Dubuque Nitrogen Fertilizers	Jo Daviess County, IL	886	Active

4.12.2 Environmental Consequences

4.12.2.1 Electromagnetic Fields and Interference

Proposed Action Alternative

There will be no health impacts resulting from the construction and operation of the Project; either through the effect on air quality or because of the electromagnetic or electrostatic characteristics are nonexistent. Sources of EMF in the proximity to the Project include both the existing N-153 69kV transmission line and the existing N-196 69kV transmission line and several distribution lines. Since the N-153 and N-196 single-circuit 69kV transmission lines will be rebuilt primarily within their existing ROW's, the Project will not be introducing a new source of EMF in the area. Many studies of EMF have been conducted but none has identified a mechanism by which EMF can cause disease. Considerable research has been devoted to this subject over the past 30 years. More information and questions and answers can be found on the website for The National Institute of Environmental Health Sciences: (<http://www.niehs.nih.gov/health/topics/agents/emf/>). Information can also be found on the Wisconsin Public Service Commission web site (<http://psc.wi.gov/utilityInfo/electric/construction/emf.htm>).

The potential for injuries or mortality from a variety of accidental causes involving the transmission line is a valid consideration with any high voltage facility. DPC's transmission line design is in accordance with the NESC and designed to minimize the possibility of injury from either inadvertent causes or ill-advised tampering by the public. There exists a possibility of human hazards despite all attempts to educate the public and design tamper-proof facilities. However, this hazard will be no greater for the transmission line than presently exists from existing similar facilities in the area.

Any interference risk the proposed Project presents to the local communication signal is considered not significant. There are two FCC registered antennas located near the project. The first is a communication tower owned and operated by the applicant, DPC. This tower is located on the Lancaster substation, the northernmost end point for the proposed Project, and is only 110 feet from the proposed centerline. DPC has experienced no interference with communication signal from this tower due to operation of the existing N-153 69kV transmission line. Therefore, no interference is anticipated as a result of the proposed Project.

The second is a communication tower owned and operated by the U.S. Cellular Corporation and is located approximately 270 feet from the centerline of the proposed Project. As with the previous tower,

DPC has received no information from the owner of this tower detailing any interference with its signal. Therefore, no interference is anticipated as a result of the proposed Project.

The radio transmission towers that operate in the area are found at the approximate distances of 1.8 and 5.0 miles from the centerline of the proposed Project. It is DPC's general experience that when the radio or television receiver is located outside the ROW, that very few problems with radio or television reception are encountered.

No Action Alternative

The concerns regarding electromagnetic fields and interference from the proposed action alternative, albeit insignificant, are still a concern under the no action alternative because the current N-153 and N-196 transmission lines are in operation.

4.12.2.2 Environmental Risk Management

Proposed Action Alternative

None of the five sites recorded within the referenced databases are found within the ROW of the proposed Project. However, two sites are found in close proximity to the Project (Figure 6 – Appendix A). These include site 322002378 Harrison Town Garage, found 264 feet from the proposed centerline, and site ILD052436003 East Dubuque Nitrogen Fertilizers, found 886 feet from the Sand Ridge substation located at the southern terminus of the proposed project.

The potential risk of these sites is not considered significant because construction activities of the proposed Project in these areas do not include significant excavation or pumping of groundwater. However, there is a potential for small amounts of soil from drill cuttings due to placement of transmission structures and dewatering of drill holes to be either discharged on the site or transported from the site. Coordination with the WDNR and /or the IEPA may be necessary if either soil or groundwater is to be discharged on or transported from the sites.

No Action Alternative

The no action alternative will not result in any concerns regarding environmental risk listed above.

4.12.3 Mitigation and Monitoring

DPC will continue to communicate with landowners adjacent to the ROW on the safe operation of equipment near a transmission line. Because no additional impacts to human health and safety are anticipated, no mitigation measures are proposed. This Project is in a rural agricultural area with scattered residences and significant impacts resulting from construction noise are not anticipated. Impacts associated with the generation of corona are not anticipated and there will be no impact to radio and television interference; therefore, no mitigation measures are proposed.

The potential risk from known sites reported to have releases of hazardous waste is not considered significant because construction activities of the proposed Project in these areas do not include significant excavation or pumping of groundwater. However, soil and / or groundwater monitoring for contamination may be required following coordination with site representatives with the WDNR and the IEPA regarding the Harrison Town Garage and East Dubuque Nitrogen Fertilizer sites.

5.0 Cumulative Effects

CEQ regulations define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.70). Also, cumulative impacts are those “which when viewed with other reasonably foreseeable or proposed agency actions have cumulatively significant impacts” (40 CFR 1508.25(a) (2)).

Cumulative impacts occur when the effects of an action are added to the effects of other actions occurring in a specific geographic area and timeframe. The cumulative impact analysis follows CEQ’s guidelines: Considering Cumulative Effects under the National Environment Policy Act (CEQ, 1997). The steps associated with the analysis include requirements that the assessor:

- Specify the class of actions for which effects are to be analyzed.
- Designate the appropriate time and space domain in which the relevant actions occur.
- Identify and characterize the resources to be assessed.
- Determine the magnitude of effects on the receptors and whether those effects are accumulating.

5.1 Energy Projects

Past and present energy activities that have occurred within the analysis areas described in this EA include construction of new transmission, renewable energy projects, generation retirements, operation and maintenance of existing utility lines and renewable energy facilities. The Stoneman and Nelson Dewey generation retirements has increased reliance on local transmission in the study area. It is also the reason for the rebuild of the N-153 line due to overloads and constraints on the system.

Private development of renewable energy projects including wind and solar projects is ongoing in both Wisconsin and Illinois. Twenty miles southwest of Platteville, Wisconsin, a new wind farm is being developed by EDP Renewables. DPC will purchase 98 MW’s from the Wind Block Wind Farm. The line will tap into ATC’s existing transmission system. The wind farm has to go thru state and local permitting. The project will have no effect on DPC’s transmission system. DPC is also building a 1 MW solar facility in Scenic River Cooperative’s service area. This site is approximately 25 miles north of this project and will no cumulative effect.

The Cardinal-Hickory Creek 345 kV transmission line could potentially be routed thru the project area. The 345 kV project has two potential routes by Lancaster and Platteville, Wisconsin. Federal and state EIS’s will be prepared for the project. RUS is the lead federal agency for the federal EIS, with the Wisconsin Public Service Commission having jurisdiction over the state siting process.

6.0 Summary of Mitigation

A number of mitigation measures will be implemented to minimize the impact of rebuilding the two transmission lines. During construction erosion control measures will be implemented and areas that are disturbed will be revegetated and restored. Wetland and waterway areas have been surveyed and mapped. Matting will be used for crossing wetland areas and temporary bridges will be used for crossing streams and waterways. Biological surveys have identified an endangered frog along parts of the right-of-way. A permit for an incidental take has been filed with the WDNR and a mitigation plan has been developed and will be implemented during construction. Tree clearing activities will follow the guidelines for the Indiana Brown Bat and Northern Long-Eared Bat. Following construction Dairyland's ROW agents will meet with each land-owner to settle damages and ensure the right-of-way and access roads have been restored.

7.0 Coordination, Consultation, and Correspondence

DPC consulted with federal, state, and local agencies to solicit comments regarding potential impacts associated with the Project. DPC sent consultation letters to the resource management agencies listed in the table below. Copies of the consultation letters sent to resource management agencies and responses received to date are provided in Appendix F.

Table 7-1: Federal, State and Local Agency Consultation Summary

Agency	Letter Sent/Initial Consultation date	Date Received by Agency	Received Comments	Nature of Comments
Grant County Conservation, Sanitation, and Zoning Department	6/28/2016	6/30/2016	7/28/2016 12/7/2016	Shoreland and Floodplain Zoning
Illinois Department of Natural Resources	3/8/2016 (EcoCat Database Entry), 4/6/2016, 6/28/2016 1/11/2017	3/8/2016 4/6/2016 6/30/2016 1/11/2017	4/20/2016 7/27/2016 1/12/2017	Illinois Endangered Species Act Northern Long-eared Bat, Bald Eagles
Illinois Department of Agriculture	6/28/2016	6/30/2016	7/8/2016 7/29/2016	Illinois Farmland Preservation Act
Wisconsin Natural Resource Conservation Service	6/28/2016	6/30/2016	7/6/2016, 8/22/2016	Farmland Protection Policy Act
Wisconsin Department of Trade and Consumer Protection	6/28/2016	7/1/2016	7/28/2016	Agricultural Impact Statements
Illinois Environmental Protection Agency	6/28/2016	6/30/2016	N/A	No comments received
Jo Daviess County INRCS Elizabeth Field Office	6/28/2016	7/5/2016	7/28/2016	USDA-NRCS easements, CRP lands and prime farmland
Jo Daviess County Building and Zoning	6/28/2016, 12/7/2016, 12/14/2016	7/1/2016	7/28/2016	County Permits, Special Flood Hazard Area permits
US Army Corps of Engineers St. Paul District	6/28/2016	7/5/2016	N/A	None Received
US Army Corps of Engineers Rock Island District	6/28/2016	6/30/2016	N/A	None Received
US Fish and Wildlife Service – Twin Cities Field Office (Grant County)	6/28/2016 7/28/2016	6/30/2016 7/28/2016	7/28/2016	Endangered Species Act, Migratory Bird Treaty Act
US Fish and Wildlife Service – Rock Island Field Office (Jo Daviess County)	6/28/2016	7/1/2016	2/7/2017	Endangered Species Act, Migratory Bird Treaty Act
Wisconsin Department of Natural Resources	3/30/2016 6/28/2016 12/19/2016 1/30/2017	3/30/2016 7/1/2016 12/19/2016 1/30/2017	4/5/2016 12/19/2016 2/14/2017	Certified Endangered Resources Review, Trout Stream Classification,

Table 7-1: Federal, State and Local Agency Consultation Summary (continued)

Agency	Letter Sent/Initial Consultation date	Date Received by Agency	Received Comments	Nature of Comments
Wisconsin Department of Natural Resources	2/22/2017	2/22/2017	2/22/2017	Meeting notes regarding Incidental Take Authorization permit for Blanchard's Cricket Frog
Peoria Tribe of Indians Oklahoma	6/28/2016	7/1/2016	3/17/2017	No objections. Contacts given for unplanned arch discoveries.
Forest County Potawatomi Community Natural Resources	6/28/2016	6/30/2016	N/A	None received
Jo Daviess County Soil and Water Conservation District	6/28/2016	7/5/2016	7/6/2016	Soil and Water Conservation District Act
Wisconsin State Historical Preservation Office	Archeological Report Submittal		2/19/2017	SHPO Comment and Consultation on a Federal Undertaking – No historical properties will be affected
Illinois State Historical Preservation Office	Archeological Report Submittal		Response not received to date.	

In addition to those consultations listed above, DPC will also be consulting with the following resource management agencies or state and local jurisdictions when the following permits are applied for:

- WDNR Utility General Permit for Wetland Disturbance (WDNR-GP3-2013)
- WDNR Pollutant Discharge Elimination System Construction Site Stormwater Runoff Notice of Intent
- USACE Section 404 Permit for Wetland Disturbance (Part of Joint Application in Wisconsin)
- USACE Nationwide Permit 12-Utility Line Activities (401 Water Quality Certification)
- ILDNR Statewide Permit 4-Aerial Utility Crossings
- ILDNR Statewide Permit No. 13-Temporary Construction Activities
- IEPA Construction Stormwater Permit
- Jo Daviess County-Special Flood Hazard Areas Permit
- Grant County Shoreland and Floodplain Zoning Permits
- USFWS Section 7 Informal Consultation

DPC will correspond directly with the agencies listed above and will make permit applications directly with said agencies. Agencies consulted with and responses received are provided in Appendix F.

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9.0 List of Preparers

Name	Title
<i>U.S.D.A. Rural Utility Service</i>	
<i>Dairyland Power Cooperative</i>	
Chuck Thompson	Manager – Siting and Regulatory Affairs
Joleen Trussoni	Siting and Regulatory Affairs Coordinator
Josh Baures	Engineer
<i>Stantec Consulting Services Inc.</i>	
Brian Karczewski	Stantec Project Manager
Kathy Melland	NEPA and Resource Specialist
Stacey Parks	NEPA and Resource Specialist
Terry VanDeWalle	NEPA and Resource Specialist

10.0 Conclusion

The Project is not expected to result in unmitigated impacts to environmental, social, or cultural or historical resources. The Project has been designed to avoid homes and would not impact wetlands, surface waters, or protected species. Construction of the Project would require that approximately 8 structures be placed in a 100-year floodplain resulting in up to 96 total square feet of permanent disturbance (approximately 12 square feet at each structure location). DPC has submitted a Special Flood Hazard Area permit application to Jo Daviess County. Potential impacts to soil and surface water resources would be minimized and avoided by using erosion and sedimentation control BMPs during construction

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Appendix A Project Figures

Figure 1	Project Location and Topography
Figure 2	NRCS Soil Survey Data
Figure 3	Wisconsin and National Wetland Inventories
Figure 4	Local Zoning and Land cover
Figure 5	Field Collected Data
Figure 6	Potential Environmental Risks
Figure 7	Rusty Patched Bumble Bee High Potential Zones

Appendix B DPC Sand Ridge to Lancaster 69 kV Area Transmission Study

Appendix C Biological Survey Report

Appendix D Typical Transmission Structure / TCSB Design

Appendix E DPC Best Management Practices

Appendix F Agency and Tribal Consultation

Appendix G Communication Tower Specifications

Appendix H Phase 1 Reconnaissance Database Information

Appendix I Newspaper Advertisements