



David Reinhart <comments@cardinalhickorycreekeis.us>

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## Ice Age Trail Alliance's comments on CHC line

1 message

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**Kevin Thusius** <kevin@iceagetrail.org>

Wed, Nov 13, 2019 at 7:53 AM

To: "comments@CardinalHickoryCreekEIS.us" <comments@cardinalhickorycreekeis.us>

Please confirm receipt.

Thank you,

Kevin Thusius

Director of Land Conservation



### Ice Age Trail Alliance

2110 Main Street, P.O. Box 128, Cross Plains, WI 53528

608-798-4453 x 224 (p) • 800-227-0046 (p) • 608-798-4460 (f)

11/13/2019

SWCA Mail - Ice Age Trail Alliance's comments on CHC line

Working since 1958 to create, support and protect the Ice Age National Scenic Trail

Please join or renew today at [www.iceagetrail.org](http://www.iceagetrail.org)

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 **IATACommentsReFinalEIS-Nov13,2019.pdf**  
427K



November 13, 2019

SWCA Environmental Consultants  
Attn: Cardinal-Hickory Creek EIS  
80 Emerson Lane, Suite 1306  
Bridgeville, PA 15017

Comments emailed on November 13, 2019 to: [comments@CardinalHickoryCreekEIS.us](mailto:comments@CardinalHickoryCreekEIS.us)  
SUBJECT: Ice Age Trail Alliance's comments regarding ATC's proposed Cardinal-Hickory Creek Transmission line

The Ice Age Trail Alliance strongly opposes the outcome of the Final Environmental Impact Statement for the Cardinal-Hickory Creek 345-kV Transmission Line Project due to its impact on the Ice Age National Scenic Trail

**THE IMPACTS:** There are three separate simulations identified as viewpoints 3, 4 & 5 on page 368 in the EIS that are identified as having a "moderate" impact on the Ice Age Trail and Ice Age Complex (page 371).

Additionally, the assessment of viewpoint 2 on page 366 misses the mark when the EIS states:

"Future segments of the Ice Age NST are planned for this location; therefore, there would be minor impacts to future segments of the Ice Age NST from the C-HC Project at this location. Impacts would be minor because the visual character represented in the existing viewshed would not be substantially altered by the C-HC Project given that there is an existing transmission line in this viewshed."

This is partially because, in December, the Alliance will own additional land on Stagecoach Road that would allow for the development of the Ice Age Trail at viewpoint 2. Furthermore, the existing transmission line is significantly lower than - and the tower significantly less visible than - the proposed transmission line. I have included two photos below taken from the parcel the Alliance will own by the end of 2019. The negative impact to the Ice Age Trail in this location will be significant.

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*1 - Looking southwest from new IATA property. Transmission lines will be on the left of the photo.*



*2- Looking east from new IATA property. Transmission lines will be on the right of the photo.*

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Furthermore, the EIS clearly states on page 371 that there will be moderate and “long-term major adverse impact to scenic resources” at the various viewpoints 3, 4 and 5 – see Figures 3.11-15, 3.11-16, and 3.11-17. These impacts are summarized on page 400, Section 3.11.3.1. The EIS also states the impact to tourism, specifically as it relates to the Ice Age National Scenic Trail on page 434.

Also, as a property owner along the proposed transmission line, the Ice Age Trail Alliance is concerned about the loss of property value. Both federal and state funding have been used to acquire this property and the impact on these properties from the transmission lines will clearly have a negative impact on the public’s interest in these lands.

In summary – as stated in several locations within the EIS – the proposed Cardinal-Hickory Creek transmission line would have a significant long-term negative impact on the Ice Age National Scenic Trail and on the publicly-funded properties owned by the Ice Age Trail Alliance on Stagecoach Road.

**MITIGATION:** Despite major negative impacts to the Ice Age NST and to the Ice Age Trail Alliance-owned property, the EIS does not adequately address mitigating impacts of the proposed transmission line.

Previously, both the National Park Service and Ice Age Trail Alliance have requested burying the transmission line between Cleveland Road and County Highway P. On page 66, the EIS states that to avoid impacts to the Ice Age Trail and Cross Plains Complex, it would require burying 11.4 miles of buried transmission line. *Using this distance greatly overexaggerates* the desired goal of *minimizing impacts from the most impacted viewpoints: 2, 3, 4 & 5*. The distance between Cleveland Road, along US-14, then Stagecoach, along Section X to County Highway P is only 2.4 miles. With some further analysis, that distance could be reduced to 1.9 miles the lines could be re-elevated behind the hills south of Stagecoach Road. If there had been a detailed study of the option of burying the lines in this location, and, minimizing nearly all impacts to the Ice Age National Scenic Trail, it is likely that study would have showed a significantly lower cost for burying the lines. The EIS falls woefully short in this area.

Furthermore, the Ice Age Trail Alliance and its partners at the National Park Service, Wisconsin Department of Natural Resources and Dane County all hold land in this area for the purpose of protecting the Ice Age Trail and the world renown glacial/Driftless Area margin. To that end, these partners have spent more than \$7.5 million to acquire lands for the preservation of land and the public’s use of said land. The EIS states there will be an impact to tourism, yet offers no plans for

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proper mitigation of the area's economy. The EIS also falls woefully short in addressing how the impacts of the transmission lines will impact these public lands and how those impacts will be mitigated. Had a detailed analysis of burying lines along the 2.4-mile section of the transmission line between Cleveland Road and County Highway P, the study would have likely revealed a proportionally lower cost when factoring-in the negative costs associated with the loss to tourism and land values.

Since the EIS only discussed the cost of burying the transmission lines and did not include any mitigation costs, the numbers look lopsided and don't present a compelling argument for the costs of burying the lines. However, when ALL factors are considered, the cost of burying the line would surely be a value worth consideration provided the overall cost of the proposed \$500M transmission line project.

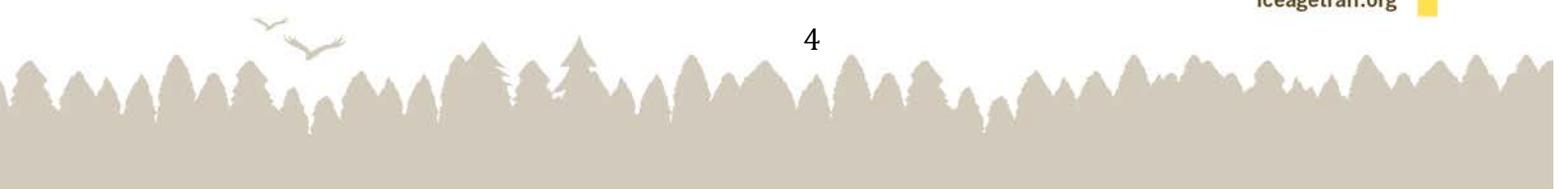
**SUMMARY:** In their Record of Decision, the Rural Utilities Service should seek to minimize the negative impacts to the Ice Age National Scenic Trail by burying up to 2.4 miles of the proposed Cardinal-Hickory Creek transmission line between Cleveland Road and County Highway P, or, at minimum, the RUS should require a comprehensive study to determine all the impacts and costs of burying the transmission line in the area that most impacts the Ice Age Trail. Finally, if none of the above are considered, the RUS should require mitigating the negative impacts of the transmission line by acquiring other conservation lands or providing funding for the acquisition of land for protection of new sections of the Ice Age Trail in this area.

Respectfully submitted,

Kevin Thusius  
Director of Land Conservation  
Ice Age Trail Alliance

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David Reinhart &lt;comments@cardinalhickorycreekeis.us&gt;

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**Draft Compatibility Determination for the Cardinal-Hickory Creek Project**

1 message

**Kerri Johansen** <Johannsen@iaenvironment.org>

Tue, Nov 26, 2019 at 12:44 PM

To: "comments@CardinalHickoryCreekEIS.us" &lt;comments@cardinalhickorycreekeis.us&gt;

Cc: Nathaniel Baer &lt;Baer@iaenvironment.org&gt;, Michael Schmidt &lt;schmidt@iaenvironment.org&gt;

Attached please find joint comments on the U.S. Fish and Wildlife Service's draft compatibility determination regarding the Cardinal-Hickory Creek transmission line from the Iowa Environmental Council, Iowa Audubon, Minnesota Center for Environmental Advocacy, Fresh Energy, Clean Grid Alliance, and Center for Rural Affairs. We appreciate the opportunity to provide feedback.

**Kerri Johansen***Energy Program Director* | Iowa Environmental Council

Cell: 515-473-0123 | Office: 515-244-1194 x208

[www.iaenvironment.org](http://www.iaenvironment.org)

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 **NGO letter re compatibility determination fnl.pdf**  
138K

November 26, 2019

**By Electronic Mail**

SWCA Environmental Consultants  
Attn: Cardinal-Hickory Creek EIS  
80 Emerson Lane, Suite 1306  
Bridgeville, PA 15017  
[comments@CardinalHickoryCreekEIS.us](mailto:comments@CardinalHickoryCreekEIS.us)

**RE: Draft Compatibility Determination for the Cardinal-Hickory Creek Project**

Dear SWCA Environmental Consultants and U.S. Fish & Wildlife Service:

We are writing to support the major findings and conclusions of the draft compatibility determination for the Cardinal-Hickory Creek Transmission Line Project (Project) to use a portion of the Upper Mississippi River National Wildlife and Fish Refuge (Refuge) for realignment of utility right-of-way.

We have evaluated the options for the Project to cross the Mississippi River since 2013, early in the siting and routing process. We are familiar with the major studies evaluating routing options and Mississippi River crossing options, including the Alternative Crossings Analysis, Macro-Corridor Study, and federal Final Environmental Impact Statement as well as routing studies filed with the Iowa Utilities Board and Public Service Commission of Wisconsin. We agree with the major outcome of each study, which finds that the use of existing transmission right-of-way through the Refuge to Cassville, Wisconsin is the preferable crossing option.

The specific route proposed through the Refuge would shift this existing right-of-way slightly and, so doing, would consolidate several land uses in a single area, including the Project, a service road, a ferry landing and parking lot, and a privately-owned agricultural field. This option is known as the Nelson-Dewey right-of-way or crossing, which we support. By consolidating these land uses and removing the utility right-of-way in a more naturalized area of the Refuge (Stoneman right-of-way), the Project can reduce habitat fragmentation and provide benefits to the Refuge. Use of existing transmission right-of-way to co-locate the Project also prevents introduction of a new transmission crossing in the Refuge or elsewhere over the River.

We appreciate that the draft compatibility determination recognizes these benefits and would allow the Project to move forward using the Nelson Dewey right-of-way. The determination states that, for example, "Restoration of the Stoneman right-of-way would result in reduced habitat fragmentation and restoration of larger contiguous blocks of habitat." *Draft Compatibility Determination* at 14. The determination further states that "Over the long-term (30 to 50 years), a net reduction in habitat fragmentation would occur on the floodplain of the Turkey River. A more contiguous array of habitats would exist on the floodplain as a result of realigning the right-of-way." *Id.*

The Project is critical to expanding the use of renewable energy in the Midwest region, which offers a range of important environmental and economic benefits. The relationship of the Project to renewable energy and many of the resulting benefits are identified in the Final Environmental Impact Statement, to which the draft compatibility determination is included as an appendix.

The route for the Project – including the use of the Refuge to cross the Mississippi River – has been studied exhaustively. We appreciate the work of the U.S. Fish & Wildlife Service to require and conduct a robust analysis of the impacts and benefits to the Refuge of this right-of-way, and we support the draft conclusion that the use is compatible. We encourage the U.S. Fish & Wildlife Service to issue a timely final compatibility determination that, consistent with the draft compatibility determination, supports use of the Refuge for the Nelson Dewey right-of-way realignment and allows the Project to proceed with this preferable crossing option for the River as part of the overall route.

Sincerely,



Kerri Johannsen  
Energy Program Director  
Iowa Environmental Council  
505 Fifth Ave., Suite 850  
Des Moines, IA 50309



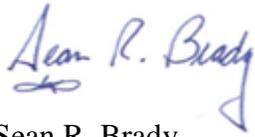
Douglas C. Harr  
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Johnathan Hladik  
Policy Director  
Center for Rural Affairs  
145 Main Street, PO Box 136  
Lyons, NE 68038



David Reinhart &lt;comments@cardinalhickorycreekeis.us&gt;

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**National Audubon Society Comments**

1 message

**Greenberger, Sarah** <Sarah.Greenberger@audubon.org>

Tue, Nov 26, 2019 at 4:11 PM

To: "comments@CardinalHickoryCreekEIS.us" &lt;comments@cardinalhickorycreekeis.us&gt;

Cc: "dennis.rankin@wdc.usda.gov" &lt;dennis.rankin@wdc.usda.gov&gt;

Evening,

Attached please find a letter from the National Audubon Society joining comments submitted by the Environmental Law & Policy Center (ELPC), the Driftless Area Land Conservancy (DALC), the Wisconsin Wildlife Federation (WWF), the National Wildlife Refuge Association (NWRA) regarding the draft compatibility determination for the proposed crossing of the Upper Mississippi National Wildlife and Fish Refuge by the new Cardinal-Hickory Creek 345-kilovolt transmission line.

Thank you,

Sarah Greenberger

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**Sarah Greenberger**

Senior Vice President, Conservation Policy

w: 202.600.7989

c: 202.379.8402

**National Audubon Society**[1200 18th St. NW, Suite 500](#)

Washington, D.C. 20036

[www.audubon.org](http://www.audubon.org)

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 **Upper Miss Refuge Commets.pdf**  
33K



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**COMMENT ON DRAFT COMPATIBILITY DETERMINATION  
UPPER MISSISSIPPI NATIONAL WILDLIFE AND FISH REFUGE  
CARDINAL-HICKORY CREEK HIGH-VOLTAGE TRANSMISSION LINE**

The National Audubon Society submits this letter in order to join and incorporate by reference the full comments submitted by the Environmental Law & Policy Center (ELPC), the Driftless Area Land Conservancy (DALC), the Wisconsin Wildlife Federation (WWF), the National Wildlife Refuge Association (NWRA) regarding the draft compatibility determination for the proposed crossing of the Upper Mississippi National Wildlife and Fish Refuge (“the Refuge”) by the new Cardinal-Hickory Creek 345-kilovolt transmission line (“CHC Project”).

We agree that contrary to the draft Compatibility Determination, the CHC project (1) cannot meet the requirements for a “compatible use” under the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. § 668dd-668ee; and (2) cannot be justified as merely a “realignment” or “minor extension or expansion” of an existing transmission line right-of-way. We agree that allowing the CHC Project to proceed through the Upper Mississippi Refuge sets a dangerous precedent that could be used to enable construction of new infrastructure that would expand or extend to additional Refuge land in perpetuity.

That is contrary to both the letter and spirit of the 1966 and 1997 statutes. And so like our colleagues from the ELPC, DALC, WWF and NWRA, we urge that the draft Compatibility Determination be withdrawn, and that the joint Application for Transportation and Utility Systems and Facilities on Federal Lands from applicants ITC Midwest and Dairyland Power Cooperative be denied.

Thank you for the opportunity to join the comments of our colleague organizations.

Sincerely,

Sarah Greenberger  
Senior Vice President, Conservation Policy  
National Audubon Society



David Reinhart <comments@cardinalhickorycreekeis.us>

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## Compatibility Determination - Utilities' comment

1 message

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**Lauren Azar** <lauren@azarlawllc.com>  
To: comments@cardinalhickorycreekeis.us

Fri, Nov 22, 2019 at 6:57 AM

**Lauren Azar**  
Azar Law LLC  
[lauren@azarlawllc.com](mailto:lauren@azarlawllc.com)

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 **Utilities' Comment on Compatability Determination FINAL.pdf**  
61K

## MEMORANDUM

TO: [comments@CardinalHickoryCreekEIS.us](mailto:comments@CardinalHickoryCreekEIS.us)

FROM: Dairyland Power Cooperative, American Transmission Company LLC and ITC Midwest LLC (Utilities)

RE: Cardinal-Hickory Creek - Draft Compatibility Determination

DATE: November 22, 2019

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The Utilities appreciate the ability to comment on the United States Fish and Wildlife Service's (USFWS) Draft Compatibility Determination as set forth in Appendix J of the Final Environmental Impact Statement (FEIS). The Utilities are in full support of the Draft Compatibility Determination and the analysis provided therein.

The FEIS sets forth the statutory authority for issuing rights of way (ROW) for powerlines within national refuges<sup>1</sup>. Specifically, the National Wildlife Refuge System Administration Act authorizes the Secretary of Interior, acting through the USFWS, to

“permit the use of, or grant easement in, over, across, upon, through or under any areas within the system for purposes such as but not necessarily limited to, powerlines, . . . whenever he determines that such uses are compatible with the purposes for which these areas area established.”

(Emphasis added) 16 U.S.C. § 668dd(d)(1). To implement this statutory authority, the USFWS created rules setting forth the requirements for approving powerlines in refuges. See 50 C.F.R. 29.21-8.

The Draft Compatibility Determination primarily focuses on the provisions of 50 C.F.R. §§ 26.41 and 29.21 for evaluating compatibility of a refuge crossing for the Cardinal-Hickory Creek project (Project). The Utilities note that, like in the FEIS, the USFWS could include within the Final Compatibility Determination the USFWS's authority to grant an easement for powerlines under 16 U.S.C. § 668dd(d)(1).

Also, page 1 of the Draft Compatibility Determination states that “[t]he Project would also include two optical ground wire shield wires for lightning protection and protective relay communications.” The term “protective relay” in this context is ambiguous and technology and its uses are changing all of the time. Optical ground wires (OPGWs) have other uses, such as the ability to send transmission system condition information required for operating the transmission

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<sup>1</sup> “The USFWS is authorized to approve permits and issue easements for utilities under 16 U.S.C. 668dd(d)(1)(b).” FEIS § 1.5.2

system. Accordingly, the Utilities believe it would be appropriate to remove the words “protective relay” before the word “communications” on page 1 of the Compatibility Determination.

Lastly, while Upper Mississippi National Wildlife and Fish Refuge’s Comprehensive Conservation Plan (CCP) does not mention “transmission” specifically, it does anticipate the possible need for a right-of-way for a “utility or highway project.” CCP, p. 160.



David Reinhart <comments@cardinalhickorycreekeis.us>

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## Wisconsin's Green Fire comments on final EIS for CHC

1 message

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**Wisconsin's Green Fire** <wigreenfire@gmail.com>

Tue, Nov 26, 2019 at 7:57 PM

To: comments@cardinalhickorycreekeis.us

Hello, please accept our comments on the final EIS. Thank you for your consideration.

Sincerely,

Nancy Larson  
Communications Coordinator

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<http://wigreenfire.org>

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 **WGF CHC federal EIS comment 2019-11-26 final.pdf**  
784K



November 26, 2019

To: USDA Rural Utilities Service Commission

Re: Wisconsin's Green Fire: Voices for Conservation comments on the final federal Environmental Impact Statement (FEIS), application for building the Cardinal-Hickory Creek (CHC) high voltage transmission line (hvtl).

**I. INTRODUCTION:** Wisconsin's Green Fire: Voices for Conservation (WGF) is an independent nonpartisan organization. WGF supports the conservation legacy of Wisconsin by promoting science-based management of its natural resources. Members represent extensive experience in natural resource management, environmental law and policy, scientific research, and education. Members have backgrounds in government, non-governmental organizations, universities and colleges and the private sector. More information about WGF can be found at [www.wigreenfire.org](http://www.wigreenfire.org).

**II. ENVIRONMENTAL RULES, Federal EIS process for the proposed CHC, Permits:**

The American Transmission Company (ATC), International Transmission Company, ITC Holdings, and Dairyland Power Cooperative, hereafter referred to as "the Applicants", have proposed construction of the CHC 345 kV hvtl from Dubuque County, Iowa to Middleton, Wisconsin. The proposed CHC would extend over 100 miles. The proposed CHC is subject to federal Environmental Impact Statement (EIS) review through the U.S. Department of Agriculture and Wisconsin review through the Wisconsin Public Service Commission (PSC). An EIS for the project is directed by the Wisconsin Environmental Policy Act (WEPA), s. 1.11 Wis. Stats., and the National Environmental Policy Act (NEPA). The final federal EIS (FEIS) has been prepared and comments are being solicited. The proposed CHC area is referred to as "the analysis area" in the FEIS. The FEIS is available at <https://www.rd.usda.gov/publications/environmental-studies/impact-statements/cardinal-%E2%80%93-hickory-creek-transmission-line>

The Rural Utilities Service Commission (RUS) is serving as the lead federal agency for NEPA review of the CHC. The U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and U.S. Environmental Protection Agency (USEPA) are cooperating federal agencies. The National Park Service is serving as a participating agency. Several agencies will use the FEIS to inform decisions about funding, authorizing, or permitting various components of the proposed CHC Project. RUS will evaluate whether or not to provide financial assistance for Dairyland Power Cooperative's portion of the project. The USFWS will evaluate the Applicants' request for a right-of-way (ROW) easement and a Special Use Permit to cross the Upper

[wigreenfire.org](http://wigreenfire.org)

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Mississippi River National Wildlife and Fish Refuge. The USACE will review a ROW request and permit applications as required by Section 10 and Section 408 of the Rivers and Harbors Act and Section 404 under the Clean Water Act. RUS regulations (7 CFR 1970.5 (b)(3)(iii)) require the Applicants to “develop and document reasonable alternatives that meet their purpose and need while improving environmental outcomes.” (FEIS Executive Summary).

NEPA requires agencies to assess the direct, indirect, and cumulative impacts of the alternatives carried forward for detailed analysis. Potential impacts were identified and evaluated for each aspect of the natural and built environments in the FEIS. Potential impacts to the resources listed are disclosed in the following Sections of the FEIS: geology and soils (3.2), vegetation, including wetlands and special status species (3.3), wildlife, including special status species (3.4), water resources and quality (3.5), air quality and climate change (3.6), noise (3.7), transportation (3.8), cultural and historic resources (3.9), land use, including agriculture and recreation (3.10), visual quality and aesthetics (3.11), socioeconomics and environmental justice (3.12), public health and safety (3.13), and the Upper Mississippi River National Wildlife and Fish Refuge (3.14).

**WGF comment: The RUS has not followed all portions of NEPA regarding the proposed CHC because the RUS has not specifically and thoroughly assessed the direct, indirect, and cumulative temporary and long term impacts of the alternatives carried forward for detailed analysis in the FEIS concerning the proposed CHC.**

**PERMITS:** Section 404 of the Clean Water Act (CWA) established a permit program for the discharge of dredged or fill material into wetlands. This permit program is jointly administered by the USACE and the USEPA. The USACE will need to determine which method for obtaining a Section 404 permit applies to the CHC Project: authorization under a Nationwide Permit (NWP), authorization under a regional general permit, or issuance of an individual permit. The USACE’s evaluation of a Section 10 permit and Section 14 permission under the Rivers and Harbors Act and a Section 404 permit under the CWA involves multiple analyses, including: 1) evaluating the CHC impacts in accordance with NEPA, 2) determining whether the CHC Project is contrary (Section 10 and possibly Section 14) to the public interest, and 3) in the case of the Section 404 permit, determining whether the CHC complies with the requirements of the CWA. The issuance of a ROW easement would require an application to the USACE Real Estate branch that demonstrates the project has no viable alternative except to use public lands and has a demonstrated need. The CHC would be reviewed to determine if it is consistent with Mississippi River Project purposes, consistent with the Mississippi River Project Master Plan, and meets

applicable laws and guidance. **WGF requests the RUS and the USACE thoroughly address the need for granting these federal permits and easements for the proposed CHC.**

**III. PUBLIC TRUST LANDS AND WATERS affected by proposed CHC:** The preferred or alternate routes of the proposed CHC would run through southwest Wisconsin's Driftless Area unique ecoregions and sensitive scenic landscapes, and would affect the ecologic, recreational, cultural, agricultural, tourism, and economic resources along either proposed route. Refer to the FEIS for specific proposed route alternatives. According to the U.S. Department of Agriculture, "the Driftless Area's diversity of habitat provides critical habitat for dozens of species of concern in the Wisconsin State Wildlife Action Plans, and has been cited as one of North America's most important resources." (U.S. Department of Agriculture, Regional Conservation Partnership Program, Investing in Wisconsin-2016, "Driftless Area-Habitat for the Wild and Rare").

**A. PUBLIC TRUST SURFACE WATERS: Public trust surface waters in Wisconsin** that would be crossed are identified in Section 3.5.1.1 of the FEIS. Waters designated by the Wisconsin Department of Natural Resources (WDNR) as Outstanding Resource Waters or Exceptional Resource Waters (WAC Chapter NR 102.10 and Chapter NR 1.02.11) are surface waters that provide outstanding recreational opportunities, support valuable fisheries and wildlife habitat, have good water quality, and are not significantly impacted by human activities. There are approximately 89 Outstanding Resource Waters and Exceptional Resource Waters within the Wisconsin portion of the CHC analysis area, including 10 that are within 150 feet of, or crossed by, the proposed CHC under one or more of the alternatives (FEIS Section 3.5.1.4).

These Wisconsin surface waterways include: the Mississippi, Galena, Grant, Little Platte, Platte, Pecatonica, and Sugar Rivers; the Beetown, Bonner, Dodge, Furnace, McCartney, Mill, Mineral Point, Moore, Mounds, Sudan, and Whig Branches; East Branch of the Pecatonica and West Branch of the Sugar Rivers; Badger Hollow, Black Earth, Blockhouse, Boice, Deer, Garfoot, Gordon, Laxey, Martinville, Mill, Lowery, Otter, Pigeon, Rattlesnake, Vermont, and White Hollow Creeks; East and West Branches of Blue Mounds Creek; and Fryes Feeder. The CHC analysis area also includes Black Hawk, Cox, Halverson, and Twin Valley Lakes in Iowa County, and Stewart Lake in Dane County, Wisconsin. Additional surface waters found throughout the CHC analysis area include scattered small farm ponds, retention basins, and sediment basins (FEIS Section 3.5.1.1).

The USACE defines traditional navigable water as a regulated Water of the United States (WUS). Section 10 of the Rivers and Harbors Act of 1899 (33 CFR 322) requires authorization from USACE for the construction of any structure in or over traditional navigable WUS. This includes

transmission lines. The Mississippi River in Iowa and Wisconsin and the Pecatonica River in Wisconsin are the two traditional navigable WUS in the analysis area. At the Mississippi River in Cassville, Wisconsin, a rebuild and relocation of the existing transmission line crossing to accommodate the new 345-kV CHC line and Dairyland's 161-kV transmission line would be needed.

**WGF comment: The RUS has not thoroughly evaluated both the temporary construction and permanent impacts to these public trust traditional navigable Waters of the United States and other surface waterways in the FEIS.**

**B. TROUT STREAMS:** Designated trout streams in the Wisconsin CHC analysis area are numerous. Trout generally require cold water streams with low sediment loads, stable and consistent flow, high diversity of aquatic habitat, and good water quality. Trout streams provide recreational opportunities and are an important environmental and economic resource. There are approximately 198 Class I and II trout streams in the CHC analysis area (FEIS Section 3.5.1.4). Sixty-eight of the streams are considered Class I trout streams. Class I trout streams are typically smaller streams with high-quality trout fishing, can support naturally reproducing trout populations, and do not require stocking from a hatchery. These high-quality Class I trout streams are most often associated with headwaters and the uppermost reaches within a watershed. Approximately 130 streams in the CHC analysis area are Class II trout streams. Class II streams may support some natural reproduction of trout but are not capable of maintaining a sustainable trout population without restocking from a hatchery. Class II streams have good survival and carry-over of adult trout, often producing some larger-than average fish. Two Class I trout streams and 18 Class II trout streams are within 150 feet of the CHC proposed alternatives.

**WGF comment: The RUS has not thoroughly evaluated both temporary construction and permanent impacts to these important public trust trout streams in the FEIS. The RUS has not fully addressed the major concerns of potential impacts to trout streams and introduction of invasive species in the FEIS.**

Sediment in trout streams is an issue when it covers invertebrate food production areas and trout spawning redds by preventing adequate oxygen exchange. Even a very fine layer of silt can prevent eggs from receiving adequate oxygen for embryo development, potentially decreasing annual recruitment. The most critical times are from early October when spawning begins until mid-April when the eggs begin to hatch.

There is also the potential to introduce aquatic invasive species by crossing heavy equipment through the many streams and rivers along the lengthy proposed corridor. Species such as the New Zealand mud snail, zebra mussels, Eurasian water milfoil and *Myxobolus cerebralis* (a

parasite fatal to salmonids) have all been known to "hitchhike" from one water body to another by inadequate cleaning of boats, waders and other equipment.

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**C. WETLANDS:** Wetlands are relatively scarce in the Driftless Area and for that reason, the significance of wetland functional values is higher. Plant communities should be surveyed using methods such as the DNR's Timed Meander and Floristic Quality Assessment methods. Assessment should be done using DNR's Rapid Wetland Assessment Methodology, v. 2. (<https://dnr.wi.gov/topic/wetlands/methods.html>) Wetland functional values include floristic integrity; human use values which includes natural scenic beauty, endangered and threatened species, cultural and other uses; wildlife and aquatic life habitat; floodplain and water quality functions; shoreline anchoring; and groundwater processes.

**WGF comments: The FEIS does not thoroughly address wetland functional values, as well as the potential impacts to these values. A thorough assessment would evaluate direct, secondary and cumulative impacts. All wetlands potentially impacted have not been identified, surveyed and assessed; and direct, indirect, and cumulative impacts have not been adequately addressed in the FEIS.**

According to the FEIS, potential impacts to wetlands from the CHC would include fill activities from structure construction, tree clearing, and construction of access roads and staging areas. Wetland fill activities due to structure placement and associated grading, and construction activities are considered permanent impacts resulting in wetland loss. Wetlands within the CHC ROW and adjacent areas may be indirectly impacted by construction, operation, and maintenance activities. Indirect impacts are changes in wetland quantity or quality that are reasonably foreseeable due to the direct or permanent impact to wetlands such as permanent fill or tree clearing in forested wetlands. According to the FEIS, indirect impacts of the CHC likely include increased sediment deposition in nearby wetlands, alteration of long-term wetland hydrology, and residual effects resulting from fragmentation of wetland habitats that span the ROW. Fragmenting wetland habitats can affect adjacent areas by increasing edge habitat and altering light regimes, ultimately driving changes in wetland species composition and function. With respect to species composition, noxious weeds and other invasive species would also potentially be introduced and spread through ground disturbances and transfer by equipment (FEIS Section 3.1, Table 3.1-4; Section 3.3.1.2, Table 3.3-1).

**WGF Comment: The following FEIS statement is not an adequate treatment of wetland impacts: "all unavoidable impacts to wetlands, whether temporary or permanent, will be discussed with the USACE, Iowa DNR, and WDNR prior to construction to determine the**

**permitting requirements and conditions necessary for construction activities involving wetland impacts.”**

**D. PUBLIC TRUST LANDS:** Public trust lands on the proposed CHC routes as identified in the FEIS include federal and state lands (FEIS Sections 3.10.1.3, 3.10.3.1 - 3.5 and 3.7; and Section 3.10.1.4.3). Federal management: Upper Mississippi River National Wildlife and Fish Refuge and Ice Age National Scenic Trail. State management: Blue Mound Governor Dodge State Parks; Trails Military Ridge and Pecatonica; Blackhawk Lake Recreation Area; Remnant Fishery Habitat Little Platte River; Otters Creek Fishery Area; Black Earth Creek Wildlife Area, Thompson Memorial Prairie, Erbe Grassland Preserve, Pleasant Valley Conservancy, Ridgeway Pine Relict, Wyoming Oak Woodland and Savanna, Ihm Driftless Area, Thomas Driftless Area; Military Ridge Prairie Heritage Area; Southwest Wisconsin Grassland and Stream Conservation Area. The FEIS states that proposed CHC routes would cause major temporary and permanent impacts to public trust lands including creating a new transmission line ROW and clearing of wooded areas which will change the character of the affected areas (FEIS Section 3.10.3.4, Table 3.10-34 and Table 3.10-35).

**WGF comment: The FEIS does not fully address the major concerns of potential adverse cumulative impacts from the proposed CHC to the public trust lands, specifically habitat fragmentation and degradation.**

#### **IV. NATURAL ECOSYSTEM COMMUNITIES affected by proposed CHC routes and Management**

**Implications:** According to the FEIS, all land cover types, except open water, would be permanently impacted as a result of the CHC (FEIS Section 3.10.3.1 and Table 3.10-30). The proposed CHC routes would fragment and impact rare ecosystem communities of the Driftless Area in Iowa and Wisconsin, and land cover types would be temporarily and permanently impacted as a result of the CHC (Sections 3.2.1, 3.2.1.4, 3.3; Wisconsin Department of Natural Resources Natural Heritage Inventory working list. <https://dnr.wi.gov/topic/nhi/wlist.html>). These rare natural ecosystems include pine relicts, grasslands of dry and dry-mesic, sand, and mesic or tallgrass prairie, and r algific talus slopes. Algific talus slopes are known only in the southwestern corner of the Driftless Area. They are unique and very sensitive ecosystems that have been protected to date due to the rarity of their existence. Four algific talus slopes have been identified in the CHC analysis area (FEIS Section 3.2; Iowa Geologic and Water Survey 2010; Wisconsin natural ecosystem communities. WDNR <https://dnr.wi.gov/topic/EndangeredResources/Communities.asp?mode=detail&Code=CTFORO16W!>).

**A. Water Drainageways:** The unglaciated Driftless Area exhibits a classically branched stream pattern and steep slopes. Coldwater streams are concentrated in this area, and contain relatively few fish species dominated by trout and sculpins. Coolwater communities also occur in these areas and contain a moderately diverse fish fauna with a mix of coldwater and warmwater species. Hardwater springs are also associated with the Driftless Area. These springs are critical sources of groundwater for the cold and coolwater communities and habitat for several rare species. Wetlands are mainly associated with groundwater springs, seeps and coldwater streams, although floodplain forest and emergent marsh are major wetland types associated with larger stream systems like the Mississippi River. Southern sedge meadows are commonly associated with groundwater systems. They are considered vulnerable in Wisconsin due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors. High quality emergent marshes and floodplain forests are associated with large river systems and are increasingly rare due to the invasion and dominance of non-native species. (Wisconsin natural ecosystem communities. Wisconsin Department of Natural Resources <https://dnr.wi.gov/topic/EndangeredResources/Communities.asp?mode=detail&Code=CTFORO16W1>).

**WGF comment: The suggested mitigation efforts proposed in the FEIS resulting from habitat fragmentation and ensuing impacts of the CHC are inadequate for these sensitive and rare waterway drainages in the Driftless Area.**

**B. Southwest Wisconsin Grassland and Stream Conservation Area (SWGSCA):** SWGSCA is a WDNR landscape based initiative to work with a diverse group of partners to enhance functioning grassland, savanna, and stream ecosystems in southwest Wisconsin. SWGSCA is one of the best grassland conservation opportunities in the upper Midwest, and areas targeted for conservation in the 473,900 acre SWGSCA overlap with the CHC analysis area (FEIS Section 3.10.1.4.2). SWGSCA contains numerous prairie remnants of tallgrass prairie and oak savanna, and contains exceptional populations of grassland birds which are in serious decline across their range. The overall success of SWGSCA depends on coordinated work with many partners and private landowners, many of whom have been protecting and managing grasslands, farmlands, streams, and prairies in this area for years. Maintaining working farms on areas of prime agricultural land is a priority listed for SWGSCA (South West Wisconsin Grassland and Stream Conservation Area. Wisconsin Department of Natural Resources. Webpage <https://dnr.wi.gov/topic/Lands/grasslands/swgrassland.html> ).

The proposed CHC would cause land fragmentation, habitat damage and disruption from construction and maintenance of the line (FEIS Table 3.10-34 and Table 3.10-35). The Wisconsin

DNR considers the Military Ridge Prairie Heritage Area within SWGSCA to be of utmost priority for landscape-scale grassland protection and management. The area has been identified by the Nature Conservancy as critical for the protection of Midwest prairie remnants and area-sensitive species, including endangered and threatened grassland birds (The Nature Conservancy: The Places We Protect <http://nature.org/ourinitiatives/regions/northamerica/unitedstates/wisconsin/placesweprotect/priority-area-military-ridge-prairie-heritage-area.xml> ).

**WGF comment: The proposed CHC would have cumulative impacts on the ecological health of the Driftless Area, including SWGSCA and Military Ridge Prairie Heritage Area. Habitat fragmentation and temporary and long term ensuing impacts to these areas have not been adequately addressed in the FEIS.**

**C. Conservation Lands:** Several conservation easements and parcels managed for land conservation occur within the CHC analysis area (FEIS Section 3.10.1.4.4 and Section 3.10.2.3.2). These lands include private conservation easements or those associated with agency conservation programs. Conservation lands are managed to maintain and enhance the health and diversity of habitats by working with landowners and organizations to protect and preserve areas through land management practices. Significant investments have been made in terms of funding and time by many government agencies and groups over the years for conservation of Driftless Area prairie lands and water resources. These groups include U.S. Department of Agriculture's Natural Resources Conservation Service, U.S. Fish and Wildlife Service, Farm Service Agency and Farm Bill programs, Wisconsin DNR, The Nature Conservancy, The Prairie Enthusiasts, Pheasants Forever, Driftless Area Land Conservancy, Trout Unlimited, and others.

**WGF requested that the FEIS economic evaluation include the value of conserved lands and the public and private investments to accomplish land and water conservation in the CHC analysis area. WGF requested that RUS include these economic conservation investments and present market value of the lands in the FEIS. This requested economic evaluation has not been thoroughly conducted.**

The US Natural Resource Conservation Service program contains Conservation Reserve Program (CRP) lands. CRP lands are managed for environmental enhancements that reduce soil erosion, protect the Nation's ability to produce food and fiber, reduce sedimentation in streams and lakes, improve water quality, establish wildlife habitat, and enhance forest and wetland resources. Impacts to CRP lands in the proposed CHC analysis area would primarily be financial, as each transmission structure could require that 0.1 acre be removed from the CRP contract. Additional impacts could result if the proposed project interferes with these CRP practices or causes land parcels to be removed from the contract (FEIS Section 3.10.2.3.2). A specific

concern related to management is that prescribed burning and other restoration activities are likely to be restricted within the CHC analysis area. Land trusts, natural areas managers and others need to include regular prescribed burning regimes to support rare fire-dependent ecosystems. If this management action is restricted, important wetland, savanna and prairie areas will be degraded and these areas may not be eligible for CRP payments. Within the proposed CHC analysis area, CRP lands are present and potential CRP sites are located.

**WGF comment: The RUS has not thoroughly evaluated or addressed the potential adverse impacts to CRP lands in the FEIS.**

**V. UPPER MISSISSIPPI RIVER NATIONAL FISH and WILDLIFE REFUGE:** The Refuge is described in the Refuge's Comprehensive Conservation Plan as an invaluable natural legacy in a complex geopolitical landscape, and a national scenic treasure. The Refuge interfaces with four states, 70 communities, and two USACE districts, and is part of the National Scenic Byways designated by the U.S. Secretary of Transportation. The Refuge has 3.7 million annual visits, the most of any national wildlife refuge. Recreational uses include hunting, fishing, wildlife observation and photography, boating, camping, and beach-related uses. Hunting for big-game, upland game, and migratory waterfowl are common. Fishing is very popular, and several fishing tournaments are hosted annually in the Refuge. The Refuge was designated a Globally Important Bird Area by the American Bird Conservancy in 1997, and is an important habitat for migratory birds, fish, and other wildlife, as well as many species of plants. The Refuge contains diverse wildlife with 306 known species of birds, 119 known species of fish, 51 known species of mammals, and 42 known species of mussels. Up to 40% of the North American continent's waterfowl use the Mississippi River flyway during migration, up to 50% of the world's canvasback ducks use the Refuge during fall migration, and up to 20% of the eastern United States population of tundra swans use the Refuge during fall migration. One hundred sixty-seven active bald eagle nests have been identified in the Refuge in recent years, and a peak of 2,700 bald eagles use the Refuge during spring migration. Approximately 5,000 heron and egret nests in up to 15 colonies have been located in the Refuge. Federally Endangered whooping cranes have been found using the Refuge (FEIS Sections 3.10.1.3.6 and 3.14.1).

The Refuge is managed and administered by the USFWS, and Refuge management actions are coordinated with other Federal, state, tribal, local, and private entities. No use for which the USFWS has authority to regulate may be allowed unless it is determined by the USFWS to be compatible. A compatible use is defined in 50 CFR 25.12(a) as, "a proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose(s) of the national wildlife refuge."

Refuge managers completed a written draft compatibility determination for the proposed CHC (FEIS Appendix J). Refuge managers are recommending approval for the proposed CHC to cross the Refuge at Cassville, Wisconsin. According to the USFWS this use is considered a minor realignment of an existing right-of-way to meet safety standards, and is consistent with 50 CFR 26.21 (c) which permits the use of replacement habitat to ensure no net loss of habitat quantity or quality. The Applicants agree to replace with like habitat and afford permanent protection by the Refuge a parcel which matches the acres and/or value impacted as part of the right-of-way realignment, to the satisfaction of the Refuge manager. Refuge managers have said this could help reduce the overall impact of the CHC infrastructure by moving the right-of-way to areas already affected, and thus reduce habitat fragmentation. Refuge managers have said habitat fragmentation can have a negative impact on certain species' ability to thrive and reproduce, and the proposed CHC construction could impact vegetation in the Refuge (<https://www.wpr.org/wisconsin-environmental-groups-voice-concerns-over-federal-review-cardinal-hickory-creek-line>).

**WGF requests the USFWS reconsider the draft compatibility determination, and fully consider the cumulative impacts from the proposed CHC to the Refuge, specifically habitat fragmentation and degradation.**

**PERMITS and MITIGATION:** A Special Use Permit from the USFWS prior to construction on Refuge managed or owned lands would be needed. Under NEPA and the National Wildlife Refuge Improvement Act of 1997, major actions affecting the quality of the human environment require full consideration of potential impacts, public involvement, and an interdisciplinary approach to decision-making that considers a reasonable range or alternatives. The USFWS has authority and trust responsibility under the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act. USFWS would need to grant an easement across its lands within the Refuge for the proposed CHC.

In addition to the USFWS and USACE permit application processes, the Applicants have developed a project-specific preliminary Federal mitigation plan (FEIS Appendix I). This preliminary mitigation plan would need to be deemed acceptable by the USFWS and USACE prior to the issuance of any permits. Mitigation is only required for certain wetland areas proposed to be filled. It is not required for the majority of adverse environmental impacts expected to occur including impacts to upland habitats and wildlife, degraded but not filled wetlands, areas invaded by non-native species, irreversible losses to rare communities and loss of restoration potential.

**WGF requests the RUS, USFWS, and USCAE thoroughly consider the issuance of the required federal permits and their impacts to the Refuge. Environmental concerns for the Refuge are extensive. Numerous temporary and permanent impacts to the Refuge are unavoidable. WGF contends that suggested mitigation actions resulting from habitat fragmentation and ensuing impacts of the CHC are inadequate for the Refuge.**

**VI. PUBLIC TRUST WILDLIFE SPECIES affected by proposed CHC routes:** There are numerous endangered, threatened, and special concern wildlife species who inhabit the biodiverse lands of the proposed CHC (Wisconsin Department of Natural Resources Natural Heritage Inventory working list. <https://dnr.wi.gov/topic/nhi/wlist.html> ; Wisconsin Wildlife Action Plan: Habitats. Wisconsin of Natural Resources. [https://dnr.wi.gov/files/pdf/pubs/nh/nh0983\\_4\\_0-3.pdf](https://dnr.wi.gov/files/pdf/pubs/nh/nh0983_4_0-3.pdf)). WDNR conducted an Endangered Resources desktop review within the analysis area and a surrounding 2-mile buffer, and identified records of 16 state endangered species and 24 state threatened species.

RUS, in consultation with USFWS, identified eight species that are Federally listed as threatened or endangered that may occur in the CHC analysis area whooping crane, northern long-eared bat, rusty patched bumble bee, Hine's emerald dragonfly, Iowa Pleistocene snail, Higgin's eye pearly mussel, sheepsnose mussel, and spectacle case mussel. It was determined that 117 special status species have been: 1) previously documented, 2) are likely present, or 3) are not known to occur, but for which suitable habitat is present within the CHC analysis area (FEIS Section 3.4.1.3.1 and Table 3.4-1).

All of the proposed CHC routes cross a variety of terrain, vegetative communities, and habitat types used by the resident and migratory wildlife species. Construction and maintenance of any chosen alternative would result in long-term adverse impacts to habitats. Potential construction-related impacts common to all wildlife groups would include the loss, degradation, and/or fragmentation of breeding, rearing, foraging, and dispersal habitats; collisions with and crushing by construction vehicles; loss of burrowing animals and burrows; increased invasive species establishment and spread; and increased noise/vibration levels (FEIS Sections 3.3 and 3.4). Some of the endangered, threatened, and special concern wildlife species and potential impacts to their habitat from construction of the proposed CHC are discussed below.

**WGF comments: Potential adverse impacts to the wildlife species who may occupy the CHC analysis area should be thoroughly evaluated before federal permits required for construction are granted.**

**Pollinators and other insects:** 11 bumblebee species including the federally Endangered rusty-patched bumble bee; State Endangered regal fritillary butterfly, Ottoe skipper, and Silphium borer moth; State Endangered Attenuipyga vanduzeei leafhopper, red-tailed prairie leafhopper; and State Threatened Issid planthopper.

**Potential or Probable CHC Affects to Pollinators:** Direct impacts to pollinators and other insects could occur during active construction due to habitat degradation. Indirect impacts could result from construction through the removal of host plants and modification of suitable habitat, or from ongoing maintenance activities such as mowing or herbicide application that prevent a given species' host plant from regrowth within the maintained ROW. Impacts to insects or their habitat are considered moderate and long term (FEIS Section 3.4).

Electric and magnetic fields associated with high-voltage power lines are suspected to affect honey bees. Several studies suggest that honey bees located underneath high-voltage electrical wires show elevated levels of aggression and have lower productivity (Wojcik, V.A. and S. Buchmann. 2012. A review of pollinator conservation and management on infrastructure supporting rights-of-way. *Journal of Pollination Ecology- Cholula Special Issue: 7(3) 2012: 16-26*). The evidence strongly indicates that exposure of honey bees to electric and magnetic fields could lead to colony level stress and lower productivity at the colony level. Impacts to honey bees from electric and magnetic fields is considered moderate and long-term (FEIS Section 3.4).

The federally Endangered rusty-patched bumble bee has been identified in 8 of the 11 townships in Iowa County, Wisconsin in the proposed CHC analysis area (FEIS Section 3.4). The USFWS prepared a Biological Opinion for the rusty-patched bumble bee. The USFWS determined "that construction and operation of the proposed CHC is not likely to jeopardize the continued existence of the rusty patched bumble bee. No critical habitat has been designated for this species; therefore, none will be affected." (FEIS Appendix G).

**Reptiles: Turtles:** State Endangered ornate box turtle; Species of Special Concern with protected status Blanding's turtle, with Blanding's turtle populations found in 6 of 16 Iowa County, Wisconsin township/ranges in the proposed CHC analysis area. Eleven species of turtle occupy the Refuge, including Blanding's, painted, snapping, common map turtles, smooth and spiny softshells, Ouachita and false map turtles. **Snakes:** All the following Species of Special Concern: timber rattlesnake, North American blue-racer, black ratsnake, bull (gopher) snake, plains garter snake (FEIS Sections 3.3 and 3.4).

**Frogs:** Blanchard's Cricket Frog populations have been identified in 8 of 11 Iowa County, Wisconsin township/ranges in the proposed CHC analysis area; pickerel frog populations have been recorded in 8 of 16 Iowa County, Wisconsin township/ranges. Nine species of frog and

one toad species are known in the Refuge. Bullfrogs, boreal chorus frogs, and spring peepers are commonly found in and near wetland and open water habitats (FEIS Sections 3.3 and 3.4).

**Potential or Probable CHC Effects on Reptiles and Amphibians:** The state-listed reptiles and amphibians with potential to occur within the CHC analysis area use a variety of habitat types. Direct impacts would occur if these habitats remain occupied during construction. Indirect impacts include permanent modification of suitable habitat, and degradation of suitable habitat through ongoing maintenance activities, including herbicide application. Reptile and amphibian species that shelter underground would be susceptible to being crushed by construction equipment. Potential construction impacts on reptiles would be long term and moderate. Impacts from operation and maintenance of the proposed CHC on reptiles would be long term and minor. Amphibians would be affected by any changes in water quality. Other impacts include erosion from ground disturbing activities, and spills or construction equipment hazardous material leakage. Areas of ground disturbance would be restored to the extent possible upon completion of construction activities. If restoration activities are successful, potential erosion would be minimized, however, if restoration activities are not successful, erosion could continue throughout the life of the CHC operation and maintenance, which would contribute to long-term impacts on water quality for amphibian species. In accordance with WDNR avoidance and minimization measures, reptile exclusion fencing would be installed in areas during the appropriate season where habitat is likely to support rare turtles, snakes, or salamanders (FEIS Section 3.4).

**Fish:** 4 State Endangered species including bluntnose and crystal darters, goldeye, and pallid shiner; 6 State Threatened species recorded within 2 miles of the proposed CHC including black buffalo, blue sucker, Ozark minnow, paddlefish, river redhorse, and shoal chub. One-hundred nineteen fish species are known to use the Refuge including common sport fish such as walleye, sauger, white bass, large and smallmouth bass, channel catfish, northern pike, bluegill, and crappies, as well as non-sport fish such as sturgeon and paddlefish.

**Other aquatic species:** 3 State Endangered mussel species including butterfly, Higgin's-eye, and yellow and slough sandshell; 5 State Threatened mussel species have been recorded within 2 miles of the proposed CHC including ellipse, fawnsfoot, monkeyface, rock pocketbook, and wartyback. These mussel species can be found in a variety of stream types and differing micro-habitats within perennial waters. There are 39 species of mussel considered present within the Refuge (FEIS Section 3.4).

**Potential or Probable CHC Effects on Fish and Other Aquatic Species:** According to the FEIS, all aquatic sites would be spanned, and construction equipment would be kept out of flowing

stream channels and active drainages to the extent possible to avoid directly impacting fish and other aquatic species' habitat. Water withdrawal activities for construction would be scheduled to avoid spawning seasons, if possible. The Applicants would coordinate water withdrawal activities with the WDNR, therefore, impacts to state-listed fish and other aquatic species or their habitats are considered minor and temporary (FEIS Section 3.4).

According to the FEIS, there are no anticipated impacts to federally listed mussel species or their habitats. Although the Hine's emerald dragonfly is considered potentially present within the CHC analysis area, through coordination with the USFWS and WDNR it was determined it is likely absent from the analysis area, therefore, there are no anticipated impacts to the Federally Endangered Hine's emerald dragonfly. The USFWS provided locations for potential suitable habitat for the Federally Endangered Iowa Pleistocene snail within the CHC analysis area. During field surveys by the Applicants, no suitable habitat was found. Direct effects to the Iowa Pleistocene snail are not anticipated. Vegetation removal may indirectly affect sensitive habitats. (FEIS Section 3.4.2.3.1 and Table 3.1-4).

**WGF comments: Construction on the scale of the proposed CHC would have profound impacts on aquatic species. WGF requests that all potential adverse impacts to the aquatic dependent species who occupy the CHC analysis area be thoroughly evaluated before any required federal construction permits are granted.**

**Mammals:** State Endangered northern long-eared bat, State Threatened eastern pipistrelle, big brown and little brown bats, and Species of Special Concern Franklin's ground squirrel, prairie and woodland voles. The American badger is a Wisconsin non-game protected species and an iconic mammal of the Driftless Area, which may experience population effects due to habitat disruption and degradation. Species typically dependent on wetland and open water habitats include muskrat, mink, beaver, and river otters. Other mammals likely present in the proposed CHC analysis area include white-tailed deer, coyote, red fox, raccoon, opossum, skunk, cottontail rabbit, red and gray squirrels, and numerous species of small burrowing rodents (FEIS Section 3.4.1.2.1).

**Potential or Probable CHC Affects to Mammals:** According to the FEIS, potential impacts to mammals from the proposed CHC would result in long-term adverse impacts to habitats. Potential construction-related impacts would include the loss, degradation, and/or fragmentation of breeding, rearing, foraging, and dispersal habitats; collisions with and crushing by construction vehicles; loss of burrowing animals and burrows; increased invasive species establishment and spread; and increased noise/vibration levels (FEIS Sections 3.3 and 3.4).

**WGF comments: The FEIS inadequately considers adverse potential habitat impacts to mammals who occupy the proposed CHC analysis area. Several of these mammal species are habitat specialists, dependent on high quality grassland and/or undisturbed aquatic ecosystems.**

**BAT impacts from the proposed CHC routes:**

To date, White Nose Syndrome (WNS; *Pseudogymnoascus destructans*) is conservatively estimated to have killed more than seven million hibernating bats in 25 U.S. states and six Canadian provinces. Bat population declines of >80 % in the northeastern U. S. have recently been reported (Reynolds, H.T. et al. 2015. Modeling the environmental growth of *Pseudogymnoascus destructans* and its impact on the white-nose syndrome epidemic. *J Wildl Disease* Vol. 51, No. 2, pp. 318-331.). WNS is present in cave dwelling bats in Wisconsin (White Nose Syndrome. Wisconsin Department of Natural Resources. <https://dnr.wi.gov/news/Weekly/Article/?id=4254> ). A bat hibernation cave approximately 0.3 miles from the proposed CHC route is monitored by the DNR for WNS (Stanfield, J.D. personal observation 8 Dec 2018. in: To PSC of Wisconsin – Scoping Input to EIS for Docket 5-CE-146. Application for building the Cardinal-Hickory Creek (CHC) High Voltage Transmission Line (HVTL)). All efforts to protect bats and reverse population declines are critically important. Any efforts to reduce or eliminate additional compensatory and/or additive mortality should be employed. The proposed CHC routes would increase bat mortality (FEIS Section 3.4).

The State listed bat species hibernate in caves, mines, and human-made structures during the winter. During the summer they forage in and near forested areas, over water, and other riparian habitat. They roost in trees and human-made structures singly or in colonies. The proposed CHC analysis area contains suitable roosting and foraging habitat for the State Endangered northern long-eared bat within the forested areas. Clearing of trees would be required under all alternatives. Direct mortality could result from clearing occupied roost trees. Tree removal activities during the “pup season,” the time of year when juveniles are unable to fly and therefore maternity colonies are most sensitive would have profound population affects. Removal of roosting and foraging habitat can degrade the existing suitable habitat within the analysis area. Direct long term impacts to all the State listed bat species could occur if occupied roosts are felled. Indirect moderate impacts could result from permanent modification of suitable roosting and foraging habitat. Modification to foraging habitat could result in changes to insect prey abundance and variety, degrading its quality (FEIS Section 3.4).

Noise associated with construction, maintenance, and operation of the proposed CHC may cause an indirect effect on bats. Construction and maintenance noise and increased human activity may indirectly disrupt bats and cause them to flush from daytime roosts or potentially leave the area. Auditory disruption from the corona generated by the energized transmission line may potentially cause indirect effects for bats. Electric corona results when high-voltage lines ionize the air around the lines. This air also then becomes a conductor and an audible hissing sound can be heard. Corona is more prevalent near sharp corners in the line, nicks or scrapes in the line, when snow/rain/frost is on the line, or around bird flight diverters (Avian PowerLine Interaction Committee, [APLIC 2012] Webpage <https://www.aplic.org/>). To minimize adverse impacts to the northern long-eared bat, the Applicants have stated they will implement species specific environmental commitments (FEIS Table 3.1-4).

**WGF comments: The FEIS inadequately considers adverse impacts to the State Endangered northern long-eared bat, and State Threatened eastern pipistrelle, big brown and little brown bat populations, especially in light of recent deleterious impacts to cave-dwelling bats from the fungal disease White Nose Syndrome. Construction impacts on the scale of the proposed CHC would have profound effects on the State listed bat species. WGF requests that all potential adverse impacts to bat species be thoroughly evaluated before any required federal construction permits are granted. WGF requests that the Applicants be required to implement and follow species specific environmental commitments.**

**Birds** are dependent on lands in the proposed CHC analysis area during winter, migration, and nesting seasons. The proposed CHC would affect important bird nesting habitat. **Confirmed nesting species:** State Endangered peregrine falcon and yellow-throated warbler; State Threatened Henslow's sparrow, Acadian flycatcher, upland sandpiper, Bell's vireo, red-shouldered hawk, and cerulean, hooded, and Kentucky warblers; Species of Special Concern grasshopper, lark, and vesper sparrows, bobolink, dickcissel, eastern meadowlark, Northern bobwhite, eastern whip-poorwill, common nighthawk, red-headed woodpecker, prothonotary warbler, and American woodcock. Federally protected bald eagles had over 121 confirmed nests in 2018 in the 4 Wisconsin counties along the proposed CHC routes. Over 160 species of songbird have been documented within the Refuge (FEIS Section 3.4.1.2.2). These confirmed nesting data are part of the long-term Wisconsin Breeding Bird Atlas Survey II (Wisconsin Breeding Bird Atlas II. Season 4 preliminary results and trends. <https://ebird.org/atlaswi/news/season-4-preliminary-results-and-stats>). Data are collected by trained observers and entered into a world-wide database (eBird Status and Trends. <https://ebird.org/science>). These data are significant, and should be considered when making decisions about important bird nesting habitat in the Driftless Area.

**Potential or Probable CHC Affects to Birds:** According to the FEIS, potential impacts to birds from the proposed CHC would result in long-term adverse impacts to habitats. Potential construction-related impacts would include the loss, degradation, and/or fragmentation of breeding, rearing, foraging, and dispersal habitats; collisions with and crushing by construction vehicles; loss of burrowing animals and burrows; increased invasive species establishment and spread; and increased noise/vibration levels (FEIS Sections 3.3 and 3.4).

Additional impacts to bird species outside the ROW would occur and would include disturbance from noise, changes in behavior, nest abandonment, and changes to habitat use. Noise-related construction activities could affect nesting, roosting, and foraging activities. Raptors would be especially susceptible to noise disturbance early in the breeding season, when it can cause nest abandonment and failure. Habitat loss may occur for forest-dwelling bird species, causing temporary displacement of local populations during construction and a permanent loss of habitat within the ROW. Forest fragmentation occurs when linear corridors are cleared through large contiguous tracts of woodland habitat. Woodland nesting birds may experience a loss of habitat or decreased nesting success as construction and maintenance activities may result in altered vegetation characteristics, availability of preferred food sources, increased nest competition, nest parasitism, or predation (FEIS Sections 3.3 and 3.4).

**WGF comments: The FEIS inadequately considers adverse potential habitat impacts to birds who occupy the proposed CHC analysis area. Several of these vulnerable bird species are habitat specialists, dependent on high quality grassland, and/or undisturbed forest and/or aquatic ecosystems.**

**Whooping cranes** are a Federally listed Endangered species. Whooping cranes in Wisconsin are part of the Nonessential Experimental Population (Whooping Crane Eastern Partnership [WCEP] 2018, Federal Register USFWS 2001). The FEIS includes the recent known observations of whooping cranes and their use of the Refuge within the CHC analysis area. The FEIS discounted whooping crane use on the Refuge as uncommon, and stated the proposed CHC would likely not affect the whooping crane population (FEIS Section 3.4.1.3.1). However, whooping cranes themselves are uncommon. There is only an estimated WCEP population as of May 1, 2018 of 102 individual birds (WCEP 2018).

Whooping cranes have been confirmed in 2018 in northeast Iowa, western Wisconsin, central and southcentral Wisconsin using wetland stopover habitat. Whooping cranes migrate from the southern United States to nesting grounds between March and May, and begin migration back to their wintering grounds in September. During migration they use wetland stopover habitat

along their migration corridor, completing migration in 2 to 4 weeks (WCEP 2018). Whooping cranes recently used the Refuge as likely wetland stopover habitat.

Three 2 year old whooping cranes spent summer 2019 in Sauk County, Wisconsin for the first time, in a wetland area northeast and just outside the proposed CHC analysis area. Researchers see the Eastern Flyway population, which includes the cranes in Wisconsin, as “critically important” because it is key to bringing the species out of its endangered status via natural reproduction. The three Sauk County cranes practiced making nests over the summer, a precursor activity to pair bonding and breeding behavior.

The International Crane Foundation (ICF) is “cautiously optimistic” about whooping crane natural reproduction trending upwards. After many years of seeing no whooping cranes hatched and raised by their own species in the wild in Wisconsin, ICF recorded two wild-hatched fledglings in 2017, five in 2018 and three in 2019. Whooping cranes produced naturally in the wild have outnumbered the parent-reared birds raised in captivity in the last two years. Also, 11 captive birds raised at ICF were released into the wild in 2017, 4 were released in 2018, and 2 were released in 2019. Natural reproduction is key to having a self-sustaining population that overcomes any natural deaths. There would need to be at least 10 wild-hatched whooping cranes each year to achieve this population goal

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Whooping cranes can experience direct impacts through collision with transmission lines or structures during their migration. With an endangered species population of only 102 birds, every individual is critical to the population. Whooping crane wetland stopover habitat, or potential nesting habitat, in the proposed CHC analysis area may be adversely modified by construction or degraded during construction (FEIS Section 3.4.1.3.1).

**WGF comments: For the reasons stated above, the FEIS evaluation of whooping crane impacts is not adequate. WGF identifies the need to evaluate potential impacts to the Wisconsin whooping crane population. WGF requests that RUS and USFWS consult available current pertinent research, studies, observations, other data and resources to provide an accurate assessment of whooping crane use of the proposed CHC analysis area and the Upper Mississippi River National Wildlife and Fish Refuge.**

**VII. AVIAN AND BAT impacts from the proposed CHC routes:** Birds are critically important, as they provide key ecosystem services through pollination, and insect and weed-seed control for the agribusiness and forest products industries. Over the past 40 years grassland bird populations have been steadily declining in Wisconsin, resulting in many being listed as state Species of Greatest Conservation Need. Almost all are classified as such because habitat suitable for their survival has decreased, been degraded, or fragmented below their tolerance and ability to adapt and sustain viable populations (Wisconsin Breeding Bird Atlas II. [https://wsobirds.org/images/atlas/SSS\\_Threatened\\_Grassland\\_Birds.pdf](https://wsobirds.org/images/atlas/SSS_Threatened_Grassland_Birds.pdf) ).

Creating and maintaining habitat for grassland birds is imperative to their survival. The Bird Conservation Area (BCA), within the SWSGCA, was created to maintain sustainable breeding populations of grassland birds (South West Wisconsin Grassland and Stream Conservation Area. Bird Conservation Area, description and map. Wisconsin Department of Natural Resources. <https://dnr.wi.gov/topic/Lands/grasslands/swgrassland.html> ). The entire BCA, and the birds who depend on this habitat in the Driftless Area, would be affected by the proposed CHC due to habitat reduction, degradation, and/or fragmentation.

Winter is an extreme survival period for birds. Data sets of expert winter bird observations reveal the crucial nature of quality winter habitat for birds in the proposed CHC analysis area (Christmas Bird Count, Wisconsin Society of Ornithology. <https://wsobirds.org/christmas-bird-count> ). A recent study found that southwest Wisconsin forests have warmer microclimates that help songbirds survive winter weather. Fragmented forests are less effective at dampening climate extremes, and increase bird mortality (Forest 'islands' offer refuge to wintering birds. University of Wisconsin News. February 2017. TYRRELL, K. WEBPAGE <https://news.wisc.edu/forest-islands-offer-refuge-to-wintering-birds/> ). The proposed CHC would create forest and other habitat fragmentation (FEIS Section 3.1.2.2).

**WGF comments: The FEIS has not included a robust evaluation of habitat fragmentation and its potential adverse effects on grassland nesting birds or winter bird survival in the proposed CHC analysis area. The proposed CHC would weaken existing microclimates and threaten winter bird survival in the proposed CHC analysis area.**

Mortality events would occur to all wildlife species along the proposed CHC routes. Bat and bird mortality from the proposed CHC routes would occur. The proposed CHC would present the potential for avian collisions with the transmission line, particularly for larger species and in areas of dense bird congregations, such as migrating waterfowl corridors in the Mississippi Flyway (APLIC 2012; FEIS Section 3.4). Under high wind, fog, or poor light conditions, avian collisions with the transmission line may occur. Migratory waterfowl would be especially

susceptible to transmission line collisions where the proposed transmission lines are near migration staging areas and natural flight corridors such as the Mississippi River (FEIS Section 3.4). Colocating with existing transmission line creates only an incremental elevation in existing collision risk, whereas construction of a new and separate ROW creates a new collision risk on the landscape (APLIC 2012). Electrocutions of large avian species, particularly raptors, have been known to occur from contact with energized lines. Electrocutions are primarily due to the close vertical or horizontal separation of conductors and other equipment often found in distribution lines (APLIC 2012).

The APLIC has developed several guidance documents that contain conservation measures for reducing impacts to bird and bat populations. Estimated impacts to birds from powerline collisions may number from 8 to 57 million bird deaths annually based on recent sensitivity analysis and a meta-review of studies (Loss S.R. et al. 2014. Refining estimates of bird collision and electrocution mortality at power lines in the United States. PLoS One 9(7). <https://doi.org/10.1371/journal.pone.0101565> ).

Design standards for the proposed CHC would meet avian-safe guidelines as outlined by APLIC. The Applicants would develop a project specific Avian Protection Plan to minimize avian electrocution risk. Electrocution impacts from operation of the line would be permanent. The proposed CHC project-specific Avian Protection Plan would also include an eagle management plan to ensure that impacts to eagles were minimized. Eagle nest surveys would be conducted prior to construction activities, and the Applicants would coordinate with the appropriate agencies to minimize impacts to nearby nesting eagles (FEIS Section 3.4.1.2.5 and Table 3.1-4; Appendix I, CHC Project Federal Mitigation Plan).

**WGF comments: The FEIS has not included a robust evaluation of potential adverse impacts to the Federally Endangered whooping crane population from avian transmission line collisions or electrocutions within the proposed CHC analysis area, especially on the Refuge. WGF requests the RUS and USFWS conduct this evaluation for the whooping crane in the proposed CHC analysis area.**

In addition to direct impacts, birds, bats, and other species are impacted by the indirect effects of transmission and distribution lines. The proposed CHC would increase these indirect mortality effects for all species. These indirect effects include the introduction of barriers to movement, habitat fragmentation, site avoidance or abandonment, disturbance, loss of population vigor, behavioral modification, creation of suboptimal or marginal habitats, loss of refugia, and intraspecific and interspecific competition for resources. Most of these indirect effects are difficult to quantify, difficult to separate from other impacts, and for the most part

have not been quantitatively tested, critically reviewed, and published in refereed journals (Manville, A.M. II. 2013. Anthropogenic-related bird mortality focusing on steps to address human caused problems. Invited, peer-reviewed white paper for Anthropogenic Panel 5th International Partners in Flight Conf. August 27, Snowbird, UT.Div Mig Bird Mgt, USFWS, pp 1–16. and Manville, A.M. 2016. Chapter 20: Impacts to Birds and Bats Due to Collisions and Electrocutions from Some Tall Structures in the United States: Wires, Towers, Turbines, and Solar Arrays—State of the Art in Addressing the Problems.

[http://www.electronicsilentspring.com/wp-content/uploads/2016/01/chp\\_10.1007\\_978-3-319-22246-2\\_20.pdf](http://www.electronicsilentspring.com/wp-content/uploads/2016/01/chp_10.1007_978-3-319-22246-2_20.pdf) ).

**WGF comments: the FEIS inadequately addressed indirect mortality. WGF requests the RUS and USFWS thoroughly consider direct and indirect avian and bat mortality from the proposed CHC. WGF requests that the Applicants be required to implement and employ robust conservation measures to reduce impacts to bird and bat populations.**

#### **VIII. TOURISM and OUTDOOR RECREATIONAL OPPORTUNITIES affected by the proposed CHC:**

Wisconsin's tourism industry accounted for \$20.6 billion of Wisconsin's economy and supported 195,255 jobs in 2017 (Tourism is Big Business for Wisconsin Communities. S. Klett Jul 27 2018 Superior Telegram, <https://www.superiortelegram.com/opinion/columns/4478123-tourism-big-business-wisconsin-communities> ). Tourism and recreation could be negatively affected by the proposed CHC (FEIS Sections 3.10.2.3.3, 3.11, and 3.12; Table 3.12-8). The Driftless Area's tourism supports robust local economies comprised of hundreds of outdoor recreation based small businesses whose economic livelihoods would be affected in the CHC analysis area (The Driftless Explorer, A Free Travel Guide to the Area [https://issuu.com/newspublishinginc./docs/driftless\\_explorer\\_for\\_website\\_lowe](https://issuu.com/newspublishinginc./docs/driftless_explorer_for_website_lowe) ). The Driftless Area's tourism and recreational pursuits thrive on clean air, clear water and natural ecosystems. Many people participate in extensive outdoor recreational opportunities including hiking, biking, birding, skiing, hunting, trout fishing, camping, car touring, and other pursuits (<https://dnr.wi.gov/topic/Lands/Grasslands/documents/swgscatour.pdf>). The Military Ridge State Trail attracts more than 3000 bike riders per year. Feeding, photographing, and watching birds is a \$32 billion/year U.S. recreational industry (Carter, E. 2013. Birding in the United States: demographic and economic analyses. USFWS Rep 2011–1:1–16). Many people come to the Driftless Area, especially the SWGSCA and the Refuge, specifically for birding. Recreational areas would be negatively affected by the CHC (FEIS Section 3.10.1.3). Impacts to recreation areas would include disruption of activities from construction and movement of construction materials and workers. Impacts to recreational users would include industrial noise from construction activities, increase in traffic from construction vehicles, equipment and

workers, dust from construction activities, wildlife disruption, and view shed enjoyment. Permanent impacts to recreation areas and recreational users would occur in limited areas within the proposed CHC analysis area. Recreational opportunities and pursuits would no longer be permitted in the footprints of the towers and substation.

**WGF comments: The FEIS does not include a robust or thorough economic evaluation of potential adverse impacts to the tourism and recreation opportunities within the proposed CHC analysis area. WGF requests the RUS conduct this evaluation.**

**IX. NEED for the proposed CHC:** The purpose of an EIS is to identify potential environmental impacts, including cost, need, and other economic impacts. An EIS examines whether a project is in the public interest, and examines potential impacts to the land, flora, fauna, and water resources. It also evaluates if there are viable alternatives (WEPA/NEPA Code of Federal Regulations s.1506.1, FEIS Executive Summary).

**WGF comment: The FEIS did not establish need, cost-effectiveness, public benefits, or public savings to electric ratepayer, and thus the proposed CHC project is not necessary. All electric ratepayers in Wisconsin would pay for the proposed CHC through increased costs on their electric bills. Clean energy, energy conservation and local, decentralized, renewable energy generation is available without the proposed CHC.**

The trend of decreasing electricity use is the result of the increasing use of non-transmission alternatives (NTAs), which cost far less than capital utility additions, and are twice as effective at reducing CO<sub>2</sub> (EIA Form 861 <https://www.eia.gov/electricity/data/eia861/> Table 4. Assessment of Electric Demand and Supply Conditions, Monthly Non-Coincident Peak Demands, MW, WI PSC Strategic Energy Assessment 2024). The Department of Energy recently determined that 50% of electricity generation associated CO<sub>2</sub> reduction realized since 2005 resulted from NTAs. (<https://www.eia.gov/todayinenergy/detail.php?id=37392> ). Cost effective and environmentally effective NTAs include pole replacements, targeted load management, energy efficiency rebates to affected areas, and adding community solar to prolong the lifespan of transformers and conductors where possible.

**WGF comment: The FEIS does not adequately consider alternatives to building the proposed CHC. The FEIS dismisses several different options for substituting the proposed CHC by evaluating these options individually rather than performing a comprehensive review of a combination of these alternatives that would be significantly less expensive and have less environmental impact (FEIS Executive Summary). These options include low-voltage, distributed energy, and/or energy efficiency alternatives.**

Wisconsin PSC staff engineers used an unbiased economic analysis and found that the proposed CHC would not deliver economic benefits to all Wisconsin ratepayers in 8 of 11 future scenarios they evaluated. They determined that over the next 20 years, approximately 20% of Wisconsin transmission lines will be rebuilt and/or have their lifespans extended with NTAs, and rebuilding these older lines would double the amount of power each can transport. PSC staff engineers developed an alternative to the proposed CHC entitled the Base with Asset Renewal Alternative (BWARA). The BWARA alternative provides all of the essential features the proposed CHC is said to provide at a cost of only \$900,000, which is roughly 0.3% of the lowest cost estimate for the CHC including financing over 40 years. BWARA calls for making scheduled rebuilds of seven existing smaller scale transmission line components a few years ahead of schedule. These rebuilds would deliver matching reliability and economic benefits, and leave \$65 million to spend on NTAs. BWARA would out-perform the proposed CHC under any examined future scenario if the unspent millions were invested in NTAs (Surrebuttal Testimony of Alexander J. Vedvik, *“Using the CBM methodology, the base with asset renewal produced gross energy cost savings to Wisconsin transmission customers of approximately \$2.02 million. Using the APC methodology, the base with asset renewal produced gross energy cost savings to Wisconsin transmission customers of approximately \$18.94 million.”* CHC technical hearings before the Wisconsin Public Service Commission, Docket 5-CE-146).

**WGF supports any of the NTAs proposed by Wisconsin PSC staff in the final Wisconsin EIS, especially the Base With Reliability Assets Alternative (BWARA) coupled with optimized NTAs, and more energy efficiencies and local power generation.**

**X. Conclusion:** The proposed Cardinal-Hickory Creek high voltage transmission line would have many temporary and permanent adverse cumulative impacts to the lands, waters, species, and quality of life in the Driftless Area (FEIS Section 4.4: Cumulative Impacts on geology/soils, wildlife, water, Refuge, visual quality/Aesthetics; Section 4.5: Unavoidable Adverse Impacts on wetlands, floodplains, air quality/noise, cultural/historic resources, land use, and visual quality/aesthetics). The FEIS devotes only 13 pages of a 618 page document to these important sections.

Wisconsin’s Green Fire: Voices for Conservation requests that the RUS, USFWS, and USACE fully investigate and report on all aspects of the proposed CHC, evaluate non-transmission



alternatives, and recommend actions which best serve the needs of Wisconsin citizens into the future.

Thank you for the opportunity to provide these comments on the final federal Environmental Impact Statement. If you have questions about these comments, please contact Kerry Beheler, co-chair WGF Energy Policy Work Group at [kerry.beheler@gmail.com](mailto:kerry.beheler@gmail.com).