Badger Coulee 345 kV Transmission Line Project

Construction and Mitigation Plan (CMP)

Segment 1

CMP Amendment 1 – Minor Route Adjustment 1 (Segment 1)

Badger Coulee 345 kV Transmission Line Project

ATC has prepared this amendment to the CMP for the Minor Route Adjustment (MRA) for Segment 1. This document outlines the changes in environmental impacts due to the proposed shift in project ROW as part of the MRA in comparison to the original alignment detailed in the CMP. The MRA extends from structure 135862 to the Cardinal Substation (see Environmental Access Plan (EAP) pages 1-2 of 52).

A. Environmental Access Plan

An EAP for the MRA is attached. This EAP shows the location of wetlands and waterways, pole locations, temporary clear span bridge (TCSB) crossings, construction access, and other pertinent information.

Construction will require access through wetland A-W3 along the new ROW alignment and from off-ROW to the west. This access route will also require a TCSB crossing at waterway A-R1. This access route differs from the original alignment in the CMP in that no access is required through wetland A-W2 and a TCSB crossing is not needed at A-R1a. Additionally construction of the MRA alignment will not require wire setup areas within wetland A-W2.

As shown on the EAP, the MRA will require three new structures in wetlands. Two structures are required in wetland A-W3 (structures 135858 and 135857) and one structure in wetland AO-W1 (135856). No structures will be needed within wetland A-W2. The original alignment required a total of five structures in wetlands (structures 135858 and 135857 in A-W3, and 135859 and 252 in wetland A-W2, and 135856 in wetland AO-W1). In addition, up to 10 temporary poles will be placed in wetlands on both sides of USH 14 between structures 135857 and 135856 to protect the crossing of a distribution line, USH 14, a railroad and an existing transmission line during wire stringing.

A limited amount of forested wetland clearing in new ROW will be required along the MRA (0.33 acre). This amount of clearing is 0.38 acre less than the original alignment described in the CMP (0.71 acre).

Construction access along the MRA is presented on the EAP. Construction matting may be used to facilitate access and minimize impacts in wetlands. The table below identifies anticipated footprint of matting in each wetland for the MRA as compared to the original alignment.

Wetland Identifier	Square footage of mats (original CMP alignment)	Square footage of mats (MRA alignment)
A-W2*	129,920*	0
A-W3	45,120	44,500
AO-W1	3,000	3,000
AO-W2	2,200	2,200

* This included matting in adjacent off-ROW areas for two wire set up areas and an access route.

Additional measures to minimize wetland and waterway impacts along Segment 1 are outlined in other sections of this CMP (e.g. *Invasive Species Management Plan* and *Wetland Restoration and Revegetation Plan*).

B. Photographs of Pre-Construction Site Conditions (Wetlands and Waterways)

Photographs of wetland A-W3 were previously provided in the CMP for Segment 1. A photo of the general location of the proposed TCSB across waterway A-R1 is shown below.

Photo 1. View of waterway A-W1 facing east (photo taken in August 2015).

C. Waterway Impacts

As discussed above, one TCSB crossing at A-W1 will be required for the MRA. Final plan and cross-sectional view of the TCSB crossing is attached. General Condition #51 of the utility permit indicates the TCSBs should incorporate measures to minimize soil reaching the waterways. As shown on the plan, silt fence will be attached to the bridge sides and fabric laid between the deck layers or to accomplish this purpose, or a similar protection measure will be implemented.

Clearance Waiver

General Condition #46 of the WDNR utility permit indicates: *All bridges across navigable waterways shall either maintain a clearance of not less than 5 feet, or comply with requirements of s. NR 320.04 (Wis. Admin. Code)*. Wis. Admin. Code Chapter NR 320.04(3) indicates the department may allow less than 5 feet of navigation clearance when all of the following apply:

- The waterway is known to have little or no navigation or snowmobile use;
- The waterway is not anticipated to have navigational use by other than lightweight craft;
- The owner provides a portage over or around the bridge or culvert; and
- The reduced clearance would not be detrimental to the public interest.

The Applicants would allow a portage over or around the bridge if necessary; however given the stream dimensions and other characteristics at these this crossing, it is unlikely this waterway is utilized by watercraft. The Applicants believe the other conditions specified in Wis. Admin. Code Chapter NR 320.04(3) are met and therefore, a five-foot clearance is not required.

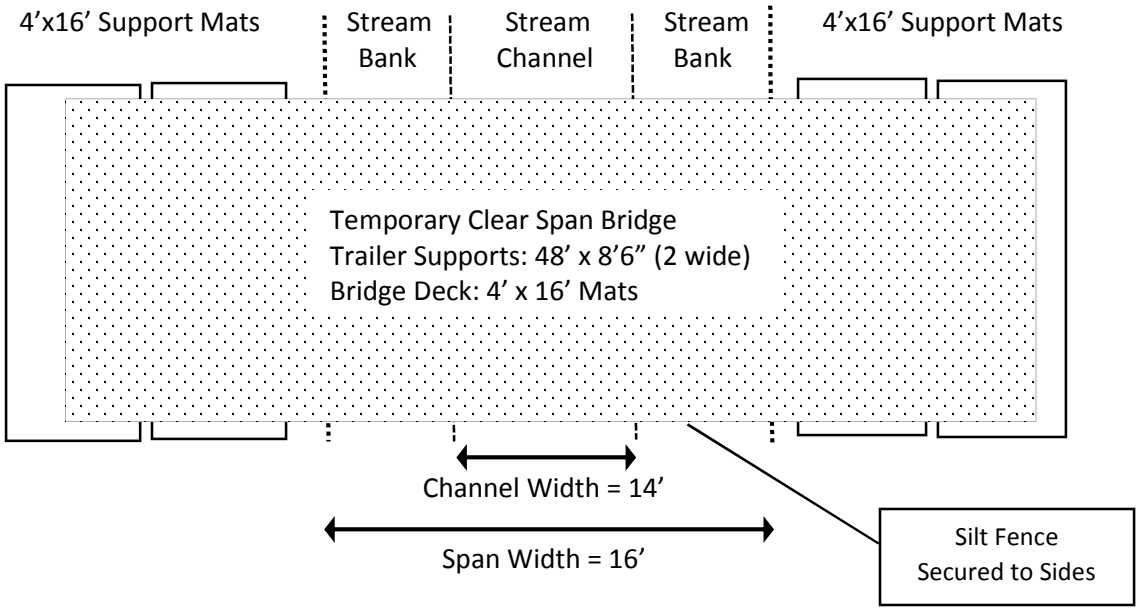
Fishery Waiver

General Condition #44 of the WDNR utility permit indicates that: *All bridges must be placed and removed in compliance with timing restrictions, unless authorized by the local DNR fisheries biologist. For trout streams and navigable tributaries to those trout streams, placement and removal is prohibited from September 15 through May 15, annually. On all other waterways, placement and removal of the bridges is prohibited from March 1 through June 15, annually*. Waterway A-R1 is a tributary to Black Earth Creek, which is classified as a trout stream. The Applicants are working with Mr. Kurt Welke, the Dane County Fisheries Manager to request a waiver of the September 15 through May 15 timing restriction on the waterway. His response will be provided to the Office of Energy when it is received.

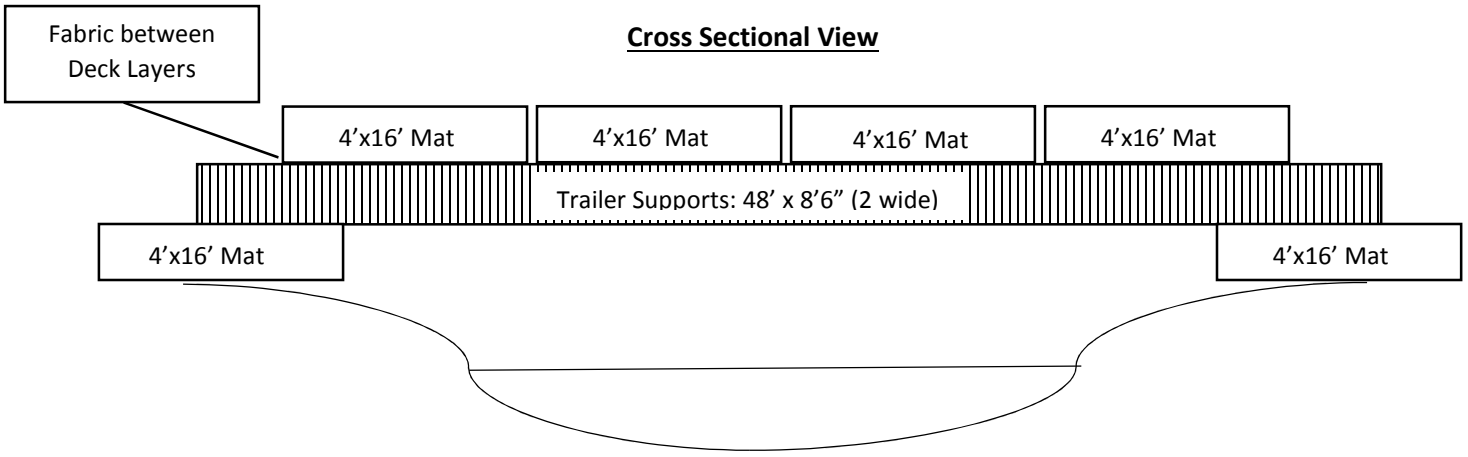
Badger Coulee
Temporary Clear Span Bridge Typical Drawing

Segment: 1 (Minor Route Adjustment)
Waterway: A-R1
Nearest Structure: 135857 - 135858

Plan View



Cross Sectional View



Depth of Water = 1'
Clearance to Water = 2'

- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

CONSTRUCTION and MITIGATION PLAN

Badger Coulee 345 kV Transmission Line Project – Segment 1

American Transmission Company LLC, by its corporate manager, ATC Management Inc. (ATC); Dairyland Power Cooperative (DPC); Northern States Power Company, a Wisconsin corporation (NSPW); SMMPA Wisconsin, LLC (SMMPA Wisconsin), and WPPI Energy (WPPI) (the Applicants) were granted a Ch. 30.025 utility permit by the Wisconsin Department of Natural Resources (WDNR) for work in and adjacent to wetlands and waterways for the Badger Coulee 345 kV Transmission Line Project (Permit #IP-WC/SC-2015-N20001 through N20273)(Attachment 3). This permit requires the Applicants prepare a Construction and Mitigation Plan (CMP) for work in wetlands and waterways for WDNR approval prior to beginning work in these features (General Conditions #9 and 11). As the Project Construction Manager, ATC has prepared this CMP for Segment 1 which outlines construction methods and procedures which will be followed to minimize impacts to these features. Segment 1 is located in Dane County and is 19.9 miles long.

The components of this CMP follow those outlined in General Condition #11 of the WDNR utility permit.

A. Environmental Access Plan

An Environmental Access Plan (EAP) for Segment 1 is provided in Appendix A. This EAP shows the location of wetlands and waterways, pole locations, temporary clear span bridge (TCSB) crossings, construction access, and other pertinent information.

Field work was conducted in 2012 to delineate wetlands and characterize other natural resource features along the majority of Segment 1; however, access to the entire corridor was not available. The project corridor was subsequently re-evaluated during site walk downs and additional field visits in 2015. One new wetland was identified (D-W1a, EAP map page 38) and the boundaries of several wetlands were slightly adjusted during these subsequent evaluations. The adjusted boundaries are shown on the EAP and a description summarizing the rationale for boundary adjustment is provided in Appendix B. In addition, waterway A-R1a was added to the EAP (EAP map page 1). This waterway occurs close to, but outside of the project ROW, and will require a TCSB crossing for off-ROW access.

As shown on the EAP, this segment of the project will construct five new structures in wetlands along Segment 1; one less than was assumed in the utility permit. They are structures 135859 and 252 in wetland A-W2, 135858 and 135857 in wetland A-W3 and 135856 in wetland AO-W1 (all occur on EAP map page 1). All but structure 252 in wetland A-W2 and structure 135856 in wetland AO-W1 were approved in the utility permit. Structure 252 occurs about 450 feet south of the Project ROW along an existing 138 kV transmission line corridor and will be installed as part of this Project. During final design, structure 135856 was shifted north from wetland AO-W2 into wetland AO-W1 (the structure in AO-W2 was approved in the utility permit). In addition, up to 10 temporary poles will be placed in wetlands on both sides of USH 14 between structures 135857 and 135856 to protect the crossing of a distribution line, USH 14, a railroad and an existing transmission line during wire stringing (EAP map

page 1). These temporary poles are needed from a public safety perspective and to protect existing equipment (e.g., transmission line and distribution line) in case the wires fall during stringing. These ten poles will be directly embedded into the ground surface which will result in approximately 0.02 acre of temporary wetland fill. The poles will be removed and the area restored to existing grade with topsoil replacement when complete. Revegetation of the disturbed areas will follow the Revegetation and Monitoring Plan (Attachment 2). Attempts to minimize the number of temporary poles in wetlands will be made; however complete avoidance of wetlands is unlikely due to the wetlands position on either side of the road in the transmission line ROW.

Up to three TCSBs will be required along Segment 1 (Appendix A). The TCSBs are required over waterways A-R1a and AO-R2 (both on EAP map page 1), and D-R2 (EAP map page 24). The TCSB over D-R2 was approved in the WDNR utility permit while the other crossings were not. The crossing over A-R1a will be required for off-ROW access associated with a wire set-up area and the crossing over AO-R2 is required due to a structure location shift from the preliminary design. The applicants will attempt to gain alternate access from private property owners to eliminate the need for some of these TCSBs; however at this point it is assumed all three TCSBs will be required.

A limited amount of forested wetland clearing in new ROW will be required along Segment 1 (0.63 acre). This clearing will be required in wetlands A-W2 and A-W3 (EAP map page 1). This amount of clearing along this segment is slightly less than in the 0.76 acres assumed in the Joint Application.

Construction access along Segment 1 is presented on the EAP (Appendix A). Access through wetlands has been avoided where feasible (i.e. D-W1, D-W3 and A-W1), or minimized by utilizing adjacent roads (D-W2). However, access through other wetlands along this segment is necessary due to the configuration of these wetlands. (Note: *While most construction equipment will be limited in wetlands where access is not shown, small-track vehicles or all-terrain vehicles <u>may</u> still be used to pull the conductor through these portions of wetlands).*

Construction matting may be used to facilitate access and minimize impacts in wetlands. The table below identifies anticipated footprint of matting in each wetland.

Wetland Identifier	Square footage of mats
D-W1a	1,800
A-W2*	129,920*
A-W3	45,120
AO-W1	3,000

Wetland Identifier	Square footage of mats
AO-W2	2,200

* This includes matting in adjacent off-ROW areas for two wire set up areas and an access route.

Additional measures to minimize wetland and waterway impacts along Segment 1 are outlined in other sections of this CMP (e.g. *Invasive Species Management Plan* and *Wetland Restoration and Revegetation Plan*).

B. Photographs of Pre-Construction Site Conditions (Wetlands and Waterways)

Pre-construction photographs of wetlands and waterways along the Segment 1 ROW are provided in Appendix C.

C. Waterway Impacts

As discussed above, up to three TCSB crossings will be required along Segment 1. Final plan and cross-sectional view drawings for each TCSB crossing are provided in Appendix D. General Condition #51 of the utility permit indicates the TCSBs should incorporate measures to minimize soil reaching the waterways. As shown in Appendix D, silt fence will be attached to the bridge sides and fabric laid between the deck layers or similar method to accomplish this purpose or similar protection will be implemented.

The approved route or off-ROW access along Segment 1 crosses numerous waterways identified in the WDNR 24K hydrology layer that do not have defined bed and banks based primarily on field observations from 2012 and 2015 (some off-ROW crossings were not observed in the field but were evaluated with Pictometry). These features are shown on the EAP (labelled as "non-regulated-WDNR confirmed [pending]") and recent photos are presented in Appendix E. We are requesting WDNR concurrence that these features would not be considered navigable and therefore not subject to provisions of Chapter 30 (Wis. Stats.).

During construction of concrete foundations, water is often pumped into the borehole to maintain the integrity of the excavation. Suitable surface waters adjacent to the ROW may be used as a source of this water. Several waterways along this segment may be utilized for withdrawals; however, a final determination has not been made at this time. If surface water withdrawals are required, they will meet the following conditions outlined in the Utility Structure, Bridge and Wetland General Permit (WDNR-GP3-2013):

- Pump intakes and discharges shall be placed to prevent impacts to fisheries, wildlife, and their habitat; and

- Pump intakes and discharges shall be placed to prevent the disturbance, removal and scour of bed material.

In addition, water withdrawals from public waterways must avoid placement of a structure on the bed of the waterway unless prior authorization under ch. 30.12 (Wis. Stats.) is granted from the WDNR. The WDNR will be notified if surface water withdrawals occur along this Segment.

Clearance Waiver

General Condition #46 of the WDNR utility permit indicates: *All bridges across navigable waterways shall either maintain a clearance of not less than 5 feet, or comply with requirements of s. NR 320.04 (Wis. Admin. Code)*. Wis. Admin. Code Chapter NR 320.04(3) indicates the department may allow less than 5 feet of navigation clearance when all of the following apply:

- The waterway is known to have little or no navigation or snowmobile use;
- The waterway is not anticipated to have navigational use by other than lightweight craft;
- The owner provides a portage over or around the bridge or culvert; and
- The reduced clearance would not be detrimental to the public interest.

The Applicants would allow a portage over or around a bridge if necessary; however given the stream dimensions and other characteristics at these three crossings, it is unlikely these waterways are utilized by watercraft. The Applicants believe the other conditions specified in Wis. Admin. Code Chapter NR 320.04(3) are met at each waterway crossing and therefore, a five-foot clearance is not required at any of the three TCSB locations.

Fishery Waiver

General Condition #44 of the WDNR utility permit indicates that: *All bridges must be placed and removed in compliance with timing restrictions, unless authorized by the local DNR fisheries biologist. For trout streams and navigable tributaries to those trout streams, placement and removal is prohibited from September 15 through May 15, annually. On all other waterways, placement and removal of the bridges is prohibited from March 1 through June 15, annually*. As discussed above, TCSBs will be required in three locations. Waterway D-R2 is classified as a warm water stream, and A-R1a and AO-R2 are tributaries to Black Earth Creek, which is classified as a trout stream. The Applicants requested a waiver of the March 1 through June 15 timing restriction on D-R2 and the September 15 through May 15 timing restriction on A-R1a and AO-R2 from Mr. Kurt Welke, the Dane County Fisheries Manager. His response will be provided to the Office of Energy when it is received and included in Appendix F.

D. Endangered Resources Plan

ATC worked with the WDNR to develop a Certified Endangered Resources (ER) Review as part of the Joint Application. The Certified ER Review identified and summarized endangered resources known to occur along each proposed segment. Upon receiving the ordered route, the Certified ER has been amended in coordination with DNR as construction details have been developed. The amendment table

identified which state-listed species have required follow-up actions and the specific areas along Segment 1 where measures are needed to avoid and minimize direct or indirect impacts to state-listed species. Furthermore, the amendment table identified voluntary measures recommended to avoid and minimize impacts to other sensitive state-listed species or resources (e.g. natural communities). The amendment table serves as a communication and coordination tool to be used among the Applicants, WDNR, and construction contractor(s). For federally listed species, the Applicants are preparing a Biological Evaluation/Assessment in coordination with the USFWS that will outline a determination of affects for federally listed species that may occur along Segment 1, as well as the necessary conservation measures to protect them. Where necessary, specific areas and protection measures will be documented on the EAP for state- and federally listed species known or assumed to be present along the segment.

E. Invasive Species Management Plan

Plant communities and dominant vegetation within the Segment 1 ROW were documented during field evaluations in 2012, and site walk downs and additional field visits in 2015. The general location and density of invasive species defined in *Wis. Admin Code* Ch. NR 40 within the ROW were identified during these assessments.

Segment 1 is located primarily along existing transmission line ROW, the majority of which traverses agricultural fields. Woodlands, quarry lands, wetlands, and residential lots are also present along the ROW. Portions of Segment 1 located outside of existing transmission line ROW also primarily traverse agricultural fields.

Agricultural lands consist primarily of corn and soybean row crops as well as hayfields. Invasive species were commonly observed within the existing ROW of the agricultural lands and were located primarily along the fence lines and boundaries between fields. Eurasian cool season grasses, such as smooth brome (*Bromus inermis*), were dominant along field edges. Commonly observed "Restricted" invasive species along agricultural fields and road ROW include common buckthorn (*Rhamnus cathartica*), invasive honeysuckle shrubs (*Lonicera* spp.), wild parsnip (*Pastinaca sativa*), Canada thistle (*Cirsium arvense*), and plumeless thistle (*Carduus acanthoides*). "Restricted" invasive species observed in scattered populations include spotted knapweed (*Centaurea stoebe*) within a few sandy open areas, and multiflora rose (*Rosa multiflora*) and autumn olive (*Elaeagnus umbellata*) along fence lines and tree lines.

Scattered woodlands are present along the ROW and are primarily degraded woodlots on land that is unsuitable for farming. In general, the woodlands are degraded and have a dense understory of common buckthorn and invasive honeysuckle shrubs. "Restricted" invasive tree species identified as present within the woodlands and along wooded edges include black locust (*Robinia pseudoacacia*) and Siberian elm (*Ulmus pumila*). Garlic mustard (*Alliaria petiolata*, "Restricted") was observed as scattered to common within most of the wooded areas. Dame's rocket (*Hesperis matronalis*) is also present at a few locations.

Wetlands observed along this segment consisted primarily of farmed wetlands and degraded wet meadow communities dominated by reed canary grass (*Phalaris arundinacea*) (Appendix B). Invasive honeysuckle shrubs were commonly observed along wetland edges.

Location-specific BMP's have not been developed for Segment 1 because the invasive species encountered were typically commonly found throughout the landscape and no isolated pockets of other invasive species were identified. Location-specific BMPs may be implemented if ATC encounters a localized population of an invasive species other than those discussed here during future field visits.

The following general BMPs will be utilized during construction along Segment 1 to comply with *Wis. Admin Code* Ch. NR 40. The intent of these practices is to limit the spread of invasive species.

<u>General BMP's</u>

- Construction equipment and material
    - Minimize soil disturbance and utilize gravel roads or established equipment access paths to the extent practicable.
    - To the extent practicable, avoid localized populations of invasive species through construction timing and alternate access.
    - When working in areas infested with invasive species, clean obvious mud and plant material from construction matting and equipment.
- Managing soil and vegetative material
    - Avoid movement of invasive material to non-infested areas. If possible, invasive material should be left within the ROW. For example, when clearing areas dominated by honeysuckle or buckthorn shrubs, cut material should be left in generally the same place and not spread off-site or to uninfested areas.
    - If infested soil or vegetative material must be transported from the ROW, transport to a designated area for appropriate disposal. Prior to transporting material, manage the load to limit potential spread to uninfested areas.
    - Manage stockpiles onsite to prevent the spread to adjacent areas.
- Restoration and landscaping
    - Seed mixes have been developed for the Project and will be installed in accordance with the Revegetation and Monitoring plan (Attachment 2).
    - Revegetate disturbed soils as soon as possible with an appropriate temporary cover crop to minimize invasive species establishment. As appropriate, a perennial seed mix shall be installed during the appropriate seeding window. In areas where topsoil has been segregated and stored on-site or removed (e.g., agricultural fields), the segregated

topsoils or new topsoil should be respread around the installed pole foundation with minimal mounding. Note that approximately six inches of mounding is needed for caisson foundations and 12 inches for direct embed to prevent a depression subsequent to soil setting.

- Aquatic invasive species
    - Water may be withdrawn from waterways for foundation construction. All equipment used for withdrawing water (i.e. mats, pumps, hoses, vehicles, boats, turbidity curtains, machinery, etc.) will be adequately decontaminated/disinfected for aquatic invasives. Decontamination/disinfection can be accomplished by allowing equipment to dry thoroughly for at least 5 days or by utilizing an appropriate method identified in NR 329.04, prior to being used in non-infested waters of the state.

F. Wetland Compensatory Mitigation Plan

As compensation for unavoidable impacts to wetlands as part of the Project, the applicants propose wetland compensatory mitigation. Segment 1 of the Badger Coulee project occurs within Dane County, within both the Rock River and Lower Wisconsin Bank Service Areas (BSA). Impacts to wetlands were avoided within the Rock River BSA, however, unavoidable permanent impacts to wetlands occur within the Lower Wisconsin BSA. The total wetland impacts and proposed compensatory mitigation acres for Segment 1 are identified in the attached Mitigation Summary Table (Appendix G).

Permanent Impacts

Permanent impacts due to structure placement in wetland have been minimized to a total of 0.01 acre. These impacts are to degraded fresh wet meadow wetland within the project corridor. Permanent conversion of shrub-carr wetland within the project corridor is limited to 0.56 acre. Permanent conversion of wooded (hardwood) swamp totals 0.63 acre.

Mitigation Credits

The applicants propose the use of the Wisconsin in-lieu fee program, Wisconsin Wetland Conservation Trust (WWCT) to compensate for wetland impacts. Credits required for compensation are available for this project, as confirmed in a conversation with the in-lieu fee coordinator on August 20, 2015. The applicants propose a mitigation ratio of 1.45:1 for impacts to wet meadow from permanent structure placement, 0.5:1 for permanent conversion of shrub carr wetland and 0.5:1 for permanent conversion of wooded (hardwood) swamp. At these ratios, a total of 0.61 credits are required to compensate for the unavoidable wetland impacts to Segment 1 of the Badger Coulee project.

G. Wetland Restoration and Revegetation Plan

A general summary of wetland community characteristics within the Segment 1 ROW is presented in Appendix B. This characterization is based on field observations from 2012 and 2015. In summary, the

wetlands are farmed or are degraded communities dominated by reed canary grass and/or weedy hydrophytic species. Construction within wetlands shall comply with the project Erosion Control Plan (ECP). Revegetation of wetlands is presented in the project specific Revegetation and Monitoring Plan (Attachment 2). A summary of wetland restoration and revegetation guidelines for Segment 1 is provided below.

Restoration / Revegetation

- Restoration within wetland areas will include removal of all construction-related materials (e.g. timber matting) and the restoration of significant ruts and depressions.
- The ROW will be restored to pre-existing topography as much as practicable.
- Areas with significant rutting in wetlands will be repaired using hand tools, back dragging, or other appropriate means to restore topography while minimizing additional disturbance.
- Wetland areas where disturbance is minimal, as anticipated along matted access routes, will generally be allowed to revegetate naturally. These locations will be monitored to determine if supplemental seeding is necessary.
- A temporary cover crop may be installed over disturbed soils following ground disturbance. A project-specific permanent native wetland seed mix may be installed within disturbed wetland areas that have a native component but are not high quality wetlands (see Revegetation and Monitoring Plan for seed mixes and installation specifications, Attachment 2).
- Farmed wetlands will not be re-seeded due to their current land use.

Other /Miscellaneous

- Fertilizers will not be used within 100 feet of wetlands, streams and rivers.
- Cover such as erosion blankets or other weed-free devices may be applied after seeding and final restoration has occurred in wetland areas disturbed by the construction activities. All erosion control measures utilized will conform to WDNR Technical Standards.
- Soil erosion and sedimentation control measures installed will be maintained until the disturbed areas are permanently stabilized.

H. Wooded Riparian and Wetland Management Plan

Less than one acre of wooded wetlands and only a few narrow wooded riparian corridors will be impacted by construction along Segment 1.

In general, the entire ROW width will be cleared for safe construction equipment access in wooded areas. In riparian areas, efforts will be made to retain low-growing vegetation on/near stream banks for erosion control, where it currently exists. In areas where a TCSB will be installed, the amount of clearing will be kept to a minimum, which will minimize the impacts to riparian corridors.

Trees cut in wetland areas will generally be removed from the wetland and windrowed or chipped in upland areas. Some of the woody vegetation that is cleared may remain in the wetland areas. This

includes lop and scatter of tree limbs and thin scatter of wood chips, and vegetation fragments resulting from mowing the shrub and sapling layer. Wood left in the wetland will be scattered in a manner that it does not impede vegetation growth, water flow or alter the bottom elevation of the wetland.

Areas disturbed by construction will be restored as described in the *Wetland Restoration and Re-Vegetation Plan* section.

I. Final Sequencing and Scheduling Plan

Segment 1 will be the initial transmission line segment constructed for this project, with clearing anticipated to begin as early as January 2016. The following summarizes the anticipated timing of construction along this segment:

- ROW Clearing – Jan. - Feb. 2016
- Structure Foundations – June - Aug. 2016
- Install Structures – July - Sept. 2016
- Install Conductor – Dec. 2016 - Mar. 2017

ROW cleanup and restoration is scheduled to occur in the spring following completion of construction, although actual dates for restoration will be weather dependent. Permanent restoration within any given area will be properly implemented within 30 days of final construction. If restoration is delayed due to weather or soil conditions, the area will be protected until permanent restoration can be completed.

J. Post-Construction Monitoring Plan

Wetland and waterway monitoring will be required for this project. Weekly monitoring will occur during and after construction until disturbed areas are stabilized and annual post-construction monitoring will be conducted as discussed below.

In accordance with Condition #38 of the WDNR utility permit, ATC will conduct frequent monitoring (e.g., weekly and after a significant rainfall event) of erosion and sediment controls during and after construction, which may include areas within and adjacent to wetlands and waterways. This monitoring will occur until the areas are stabilized as defined in Condition #38 of the utility permit.

ATC will also conduct annual post-construction monitoring of the portions of wetlands and waterways impacted by construction, as outlined in Condition #70 of the utility permit. This monitoring shall continue for a minimum of 5 years after construction unless compliance is achieved and documented earlier. Refer to the Revegetation and Monitoring Plan (Attachment 2) for more detail regarding wetland and waterway monitoring, and the associated reporting.

Badger Coulee 345 kV Transmission Line Project

Segment 1 CMP

Appendix B

Wetland Summary Table

Appendix B. Wetland Summary Table
ATC / NSPW - Badger Coulee 345 kV Transmission Line Project

Wetland ID	EAP Map Page	Structures in Wetland	Community Description / Observations	Photo Number
AO-W2	1	None	Degraded wet meadow within depressional area of mesic woods. Dominated by reed canary grass with giant goldenrod, jewelweed, common horsetail, panicled aster, calico aster, and various sedges. Common buckthorn is common, Canada thistle and wild parsnip scattered, invasive honeysuckle shrubs common at woodland edges. Scattered box elder and planted white pine along wetland perimeter. Areas of concrete fill near southern portion of feature with cottonwood canopy.	1, 2
			Wetland extended southwest from previous investigation to include depressional area dominated by wet meadow species, apparent saturation and hydric soil.	
AO-W1	1	135856	Degraded wet meadow dominated by reed canary grass with Canada thistle, Canada goldenrod, and sawtooth sunflower common. Gray dogwood present near northern perimeter.	3
A-W3	1	135858, 135857	Part of a large wetland complex. Feature is primarily disturbed wet meadow within existing ROW; dominated by reed canary grass with stinging nettle and jewelweed common; river bulrush, Canada thistle, and willow shrub species are present. Area dominated by invasive honeysuckle shrubs within northeast length of feature. Hardwood swamp components with box elder and black willow canopy, reed canary grass dominated understory. Eastern hardwood swamp component also dominated by invasive honeysuckle shrubs and garlic mustard. Shrub-carr component at south end of feature along Hwy 14 dominated by sandbar willow and dogwood species, Canada goldenrod, giant goldenrod, riverbank grape, panicled aster, and reed canary grass. Associated with waterways A-R1 and AO-R1.	4, 5, 6

Appendix B. Wetland Summary Table
ATC / NSPW - Badger Coulee 345 kV Transmission Line Project

Wetland ID	EAP Map Page	Structures in Wetland	Community Description / Observations	Photo Number
A-W2	1	135859, 252	Disturbed wet meadow community that is part of a large wetland complex beyond the ROW. Separated from A-W3 by a gravel access road. Feature dominated by reed canary grass with stinging nettle and jewelweed common. Canada thistle present and invasive honeysuckle shrubs common along perimeter of ROW. Small hardwood swamp component in northwest corner with box elder and cottonwood canopy, invasive honeysuckle and common buckthorn common in the shrub layer, reed canary grass dominated understory.	7, 8
A-W1	1	None	Open water pond. Wetland does not extend beyond pond perimeter. No emergent vegetation observed, duckweed cover on water surface. Upland berm to south dominated by crown vetch, giant goldenrod, and common milkweed. Remainder of perimeter with willow species, box elder, cottonwood, and invasive honeysuckle shrubs. Reed canary grass common throughout.	9
D-W3	11	None	Farmed wetland planted to corn in 2015. Wetland associated with Kalscheur Pond and degraded wet meadow to the west of the ROW. No apparent crop stress in 2015 although saturation and inundation observed in previous years. Scattered yellow nut sedge and foxtail species observed within corn rows. Located in low area of landscape in relation to adjacent farm fields.	10
D-W2	13	None	Feature consists of degraded wet meadow, farmed wetland, and shrub-carr communities. Degraded wet meadow located in a swale and associated with the banks of waterway D-R1; dominated by reed canary grass with stinging nettle, giant ragweed, water smartweed, Canada goldenrod, panicled aster, and wild parsnip common. Scattered shrubs and saplings present within wet meadow community including willow species, box elder, invasive honeysuckle species, and cottonwood. Some upland inclusions associated with bermed areas along the banks of the waterway. Farmed wetland south of D-R1 planted to corn. Farmed wetland north of D-R1 lacking corn in 2015 with evidence of saturation/inundation and dominance by yellow nut-sedge.	12, 13
			Shrub-carr community extended at north end of feature since 2012 investigation. Located in depressional area between quarry lands to west and farm field to east. Dominated by sandbar willow and box elder saplings; common buckthorn scattered; sparse herbaceous layer with reed canary grass, sedges, water smartweed, common dandelion, and garlic mustard.	11

Appendix B. Wetland Summary Table
ATC / NSPW - Badger Coulee 345 kV Transmission Line Project

Wetland ID	EAP Map Page	Structures in Wetland	Community Description / Observations	Photo Number
D-W1a	20	None	Feature added in 2015. Degraded wet meadow located in the corner of a farm field; area not farmed. Depressional feature dominated by reed canary grass with evidence of ponding.	14, 15
D-W1	24	None	Farmed wetland within subtle depression. Sourthern 1/3 planted to alfalfa with no apparent crop stress in 2015. Northern 2/3 of feature planted to corn; corn stunted and approximately 1-2 feet shorter than corn within adjacent upland. Standing water observed in spring 2015 and crop stress observed in previous years. Located in lower lying area of overall cropped landscape. Moderate slopes to west and east and subtle slopes to north and south.	16

Badger Coulee 345 kV Transmission Line Project

Segment 1 CMP

Appendix C

Photographs of Wetlands and Waterways

Wetland Photographs

Appendix C. Photographs of Wetlands - Chronological from South to North

Photo 01. AO-W2 vE of west central ROW (July 2015)

Photo 02. AO-W2 vS at NW portion of ROW (July 2015)

Photo 03. AO-W1 vE from west side of degraded wet meadow (July 2015)

Photo 04. A-W3 vS of shrub-carr at south end (July 2015)

Photo 05. A-W3 vN from south end (July 2015)

Photo 06. A-W3 vE at west end (July 2015)

Photo 07. A-W2 vSW hardwood swamp component at ROW edge (July 2015)

Photo 08. A-W2 vS degraded wet meadow (July 2015)

Photo 09. A-W1 vN open water pond (July 2015)

Photo 10. D-W3 vS farmed wetland (July 2015)

Photo 11. D-W2 vS shrub-carr community extension (July 2015)

Photo 12. D-W2 vN northern half of wetland (July 2015)

Photo 13. D-W2 vN from far south end (July 2015)

Photo 14. D-W1a vS (July 2015)

Photo 15. D-W1a vN of degraded wet meadow (July 2015)

Photo 16. D-W1 vW from E edge of farmed wetland (July 2015)

Waterway Photographs

Appendix C. Photographs of Waterways - Chronological from South to North

Photo 01. AO-R2 vW from east end of ROW (July 2015)

Photo 02. AO-R1 vN south end of waterway (July 2015)

Photo 03. A-R1 vE west end within A-W3 (July 2015)

Photo 04. A-R1a vN (July 2015)

Photo 05. D-R2 vN at northern extent (July 2015)

Photo 06. D-R2 vN near northern extent (July 2015)

Photo 07. D-R2 vS in central portion (July 2015)

Photo 08. D-R1 vSW within D-W2 (July 2015)

Badger Coulee 345 kV Transmission Line Project

Segment 1 CMP

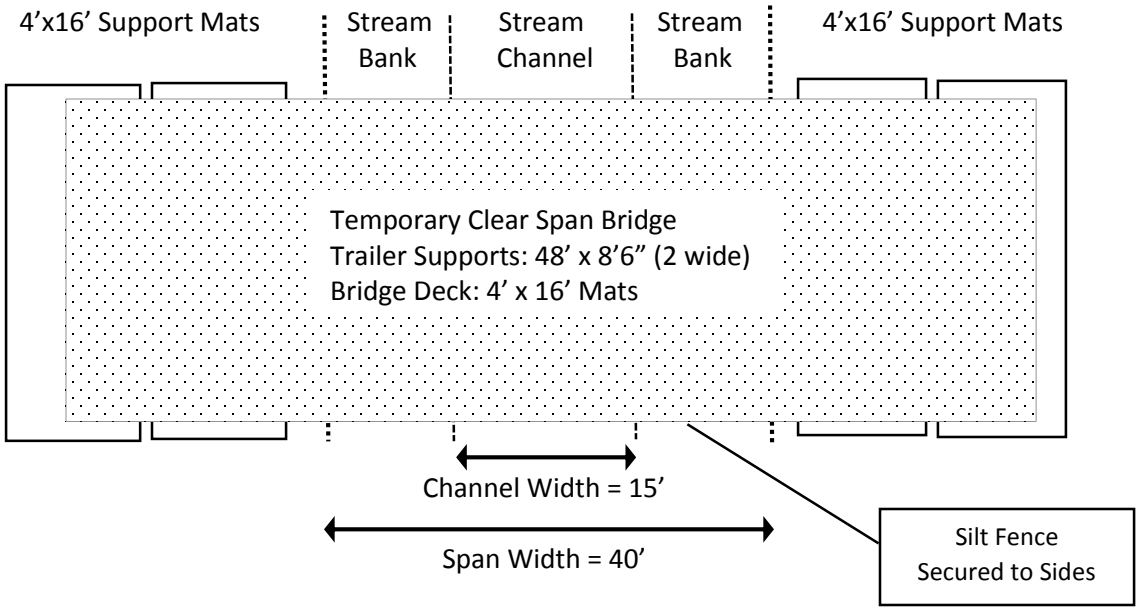
Appendix D

TCSB Plan and Profile Figures

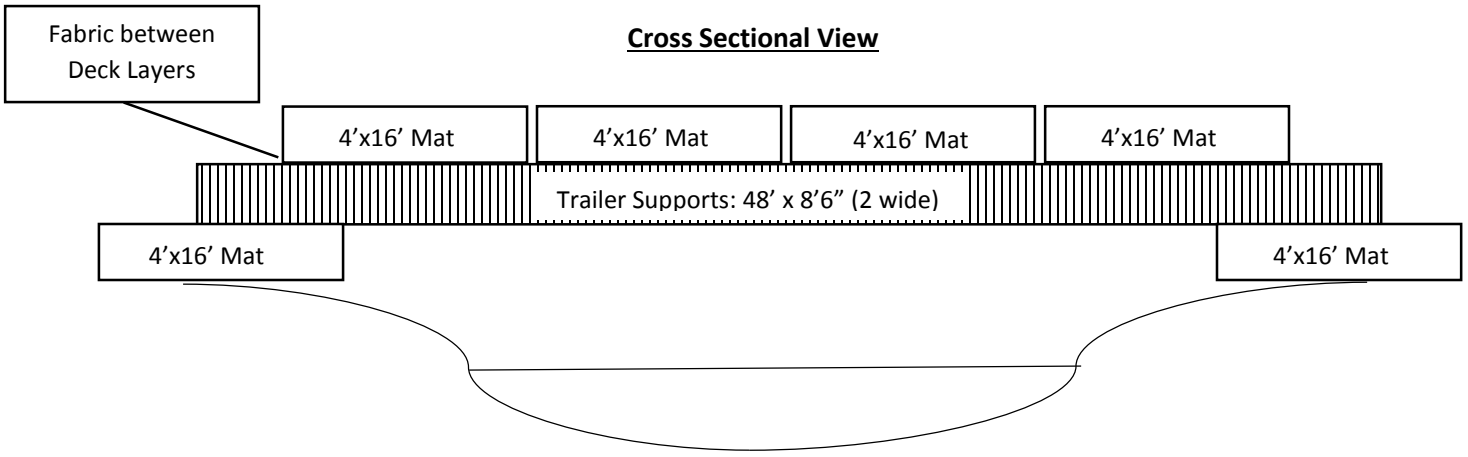
Badger Coulee
Temporary Clear Span Bridge Typical Drawing

Segment: 1
Waterway: AO-R2
Nearest Structure: 135156

Plan View



Cross Sectional View



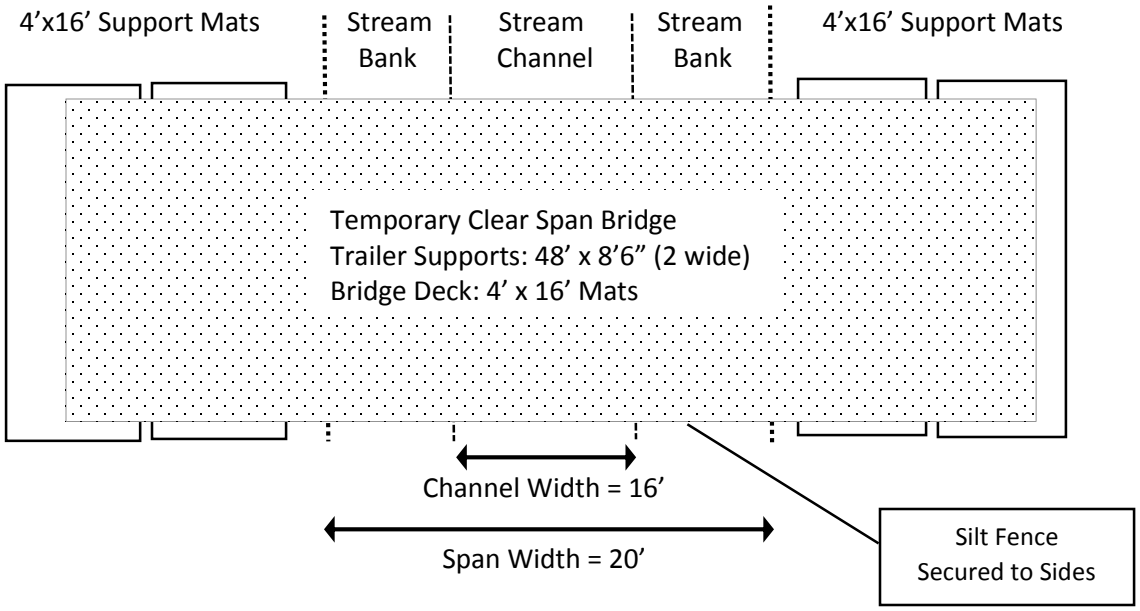
Depth of Water = 2'
Clearance to Water = 5'

- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

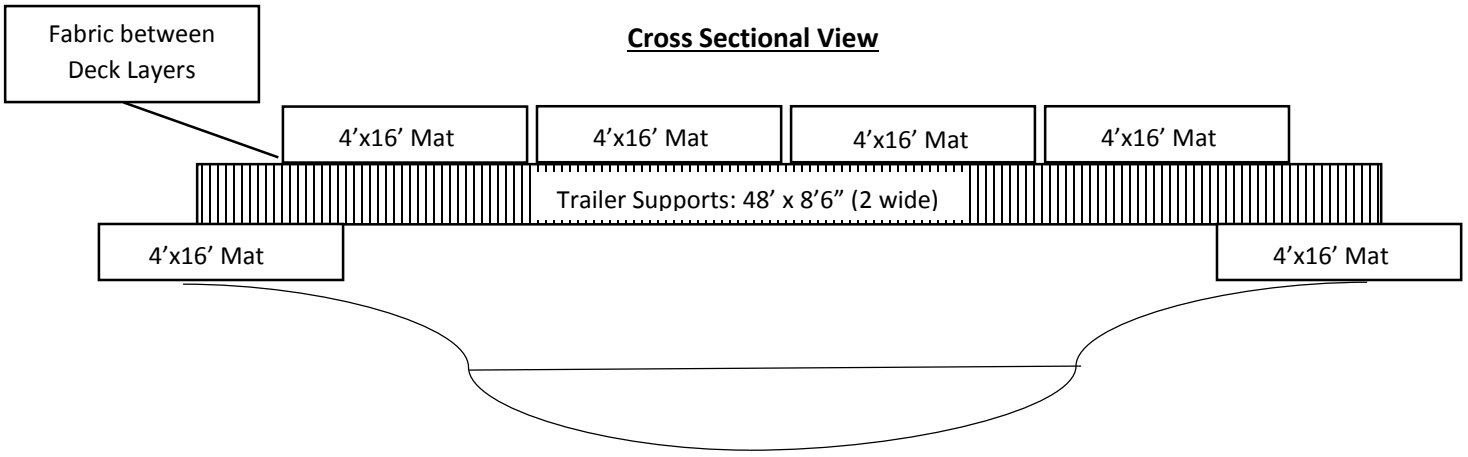
Badger Coulee
Temporary Clear Span Bridge Typical Drawing

Segment: 1
Waterway: A-R1a
Nearest Structure: 135859

Plan View



Cross Sectional View



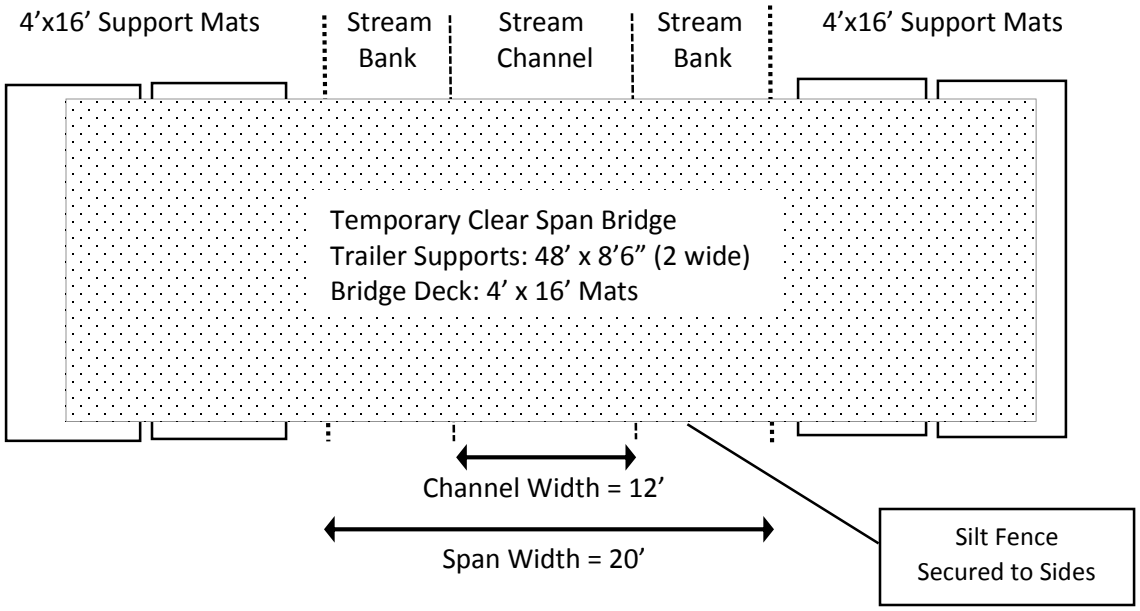
Depth of Water = 1'
Clearance to Water = 2'

- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

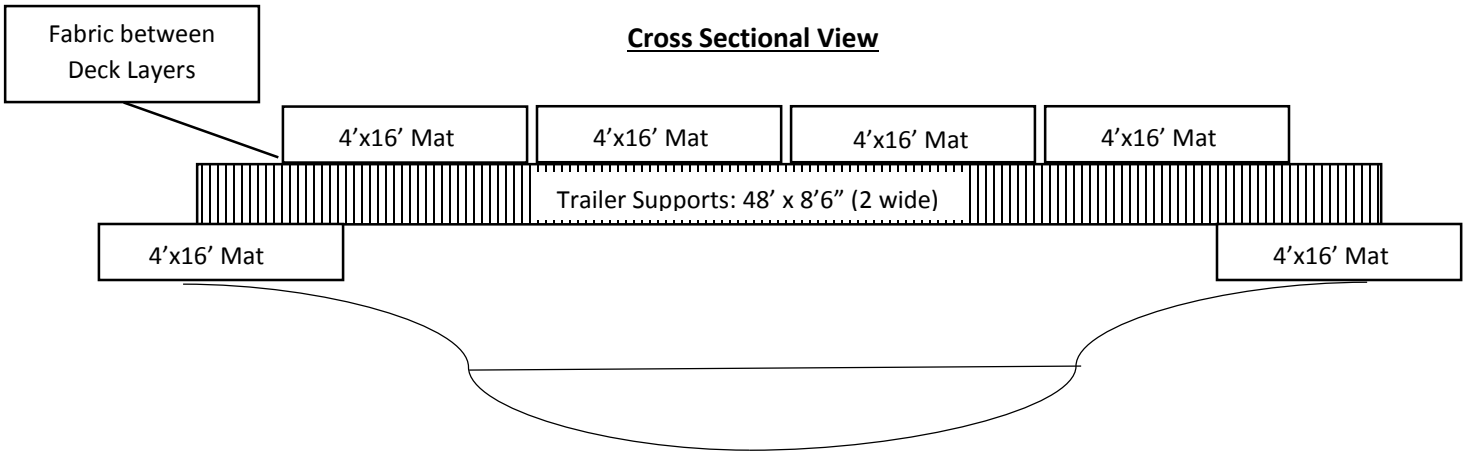
Badger Coulee
Temporary Clear Span Bridge Typical Drawing

Segment: 1
Waterway: D-R2
Nearest Structure: 135900

Plan View



Cross Sectional View



Depth of Water = No Water Present
Clearance to Water = 5'

- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Badger Coulee 345 kV Transmission Line Project

Segment 1 CMP

Appendix E

Photographs of Mapped Waterways Requiring a Navigability Decision

Appendix E. Photographs of Mapped Waterways Requiring a Navigability Decision - Chronological from South to North

Photo 01. Off-ROW feature E of STR 135863 (from Pictometry)

Photo 02. Feature N of STR 135867 along Bronner Rd (Aug 2015)

Photo 03. Feature S of STR 135871 (Apr 2015)

Photo 04. Feature S of STR 135874 (Apr 2015)

Photo 05. Feature N of STR 135879 (Apr 2015)

Photo 06. Feature SW of STR 135894 (Apr 2015)

Photo 07. Off-ROW feature by farmhouse W of STR 135898 (from Pictometry)

Photo 08. Off-ROW feature W of STR 135899 (Apr 2015)

Photo 09. Feature N of STR 135906 (Apr 2015)

Photo 10. Off-ROW feature W of STR 135907 (from Pictometry)

Photo 11. Feature S of STR 135910 (Apr 2015)

Photo 12. Feature S of STR 135913 (Apr 2015)

Photo 13. Feature E of STR 135921 (Apr 2015)

Photo 14. Off-ROW feature W of STR 135928 (from Pictometry)

Photo 15. Feature N of STR 135929 (Nov 2014)

Photo 16. Off-ROW feature E of STR 135931, ford present (from Pictometry)

Photo 17. Feature N of STR 135937 (Apr 2015)

Badger Coulee 345 kV Transmission Line Project

Segment 1 CMP

Appendix F

Approved Waivers of Seasonal Limitations for TCSBs

AMERICAN TRANSMISSION COMPANY®

MAILING ADDRESS: P.O. BOX 47 ▪ WAUKESHA, WI 53187-0047
STREET ADDRESS: N234 W2000 RIDGEVIEW PARKWAY COURT ▪ WAUKESHA, WI 53188-1022
262-506-6700 ▪ Toll Free: 866-899-3204 ▪ Fax: 262-506-6124 ▪ www.atcllc.com

September 3, 2015

Mr. Kurt Welke
Fisheries Biologist – Dane County
Wisconsin Dept. of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

RE: Request for Seasonal Waivers – Temporary Clear Span Bridge Construction
Badger Coulee 345 kV Transmission Line Project, Segment 1
Utility Permit #IP-WC/SC-2015-N20001through N20273

Dear Mr. Welke:

American Transmission Company LLC, by its corporate manager, ATC Management Inc. (ATC) respectfully requests your review and consideration of granting waivers for the seasonal restrictions normally associated with construction and removal of three temporary clear span bridges (TCSB) along Segment 1 of the Badger Coulee 345 kV Transmission Line Project. Completed Waiver Request Forms are attached, for your convenience.

Construction activities along Segment 1 of this project are preliminarily scheduled to begin in January 2016 and extend through approximately March 2017. Restoration will follow during the spring months, and the bridges will be removed once restoration is complete. During this time, the ATC's contractor will need to construct and utilize three TCSBs. One TCSB is located in the Town of Springfield (T08N, R08E), and two are within the Town of Middleton (T07N, R08E), all in Dane County. One of the bridges has received a Ch. 30 permit from the Department (D-R2) while permit applications for the other two waterway crossings (A-R1a and AO-R2) will be filed by ATC in the near future. Characteristics of these waterways are listed in Table 1 and their locations are indicated on the attached figure. Photographs of each feature are also attached. Waterway D-R2 is considered to be warm water while the other two waterways are tributaries to Black Earth Creek, a cold water stream.

Seasonal waivers are being requested to minimize limitations on the contractor and maximize flexibility so the contractor will be able to adequately address construction limitations in the most sensitive areas of the project.

Should you have questions or concerns, please feel free to contact me at (262) 506-6788.

Sincerely,

Nayo Parrett
Sr. Environmental Project Manager

Enclosures
Cc: Ben Callan

Table 1. Waterways For Which a Waiver of Seasonal Restrictions is Requested
Segment 1 - Badger Coulee 345 kV Tranmission Line Project

Permit #IP-WC/SC-2015-	Stream Designation	Waterway (UnNamed Tributary)	Appears on WDNR 24K hydro layer? (Y/N)	Location						Morphometry
				County	Town	T / R	QQ	Q	Sect.	
N20268	D-R2	UNT to Sixmile Creek	Y	Dane	Springfield	8N, 8E	SE	SW	5	water depth = dry bank height = 5 ft top of bank width = 20 ft
---	A-R1a	UNT to Black Earth Creek	N	Dane	Middleton	7N, 8E	NW NE	SW SW	8	water depth = 1 ft bank height = 1 ft top of bank width = 16 ft
---	AO-R2	UNT to Black Earth Creek	Y	Dane	Middleton	7N, 8E	NW	SE	8	water depth = 2 ft bank height = 5 ft top of bank width = 40 ft

FIGURES

APPENDIX 1

Request for Waiver of Construction Season Limits in Waterway General Permits

This checklist shall be used to request a waiver from the time period restrictions and/or fish passage requirements for applicable projects that qualify for WDNR-GP12-2015. The completed waiver request may be submitted with the application where the applicant seeks a waiver from the applicable statewide general permit conditions that place fisheries based restrictions on the project. The signature of the Department Fisheries Biologist on this checklist only waives the time period and/or fish passage restrictions and does not constitute a permit, approval, or other concurrence with the proposed project.

Applicant Name: ATC

Proposed Project: Badger Coulee 345 kV Transmission Line Project

Project Location: SE ¼, SW ¼, Section 5, Town 8 N, Range 8 (E)/W

Name of Waterbody: UNT to Sixmile Creek, D-R2

County of Waterbody: Dane

FOR DNR USE ONLY

The applicant listed above has consulted with me about their proposed project in navigable waters. Based on their project description, plans and other existing information available to me, I find that:

- ☐ there is suitable habitat at or near the proposed project, or
- ☐ there may be an impact on spawning fish or spawning activities.

Or

- ☐ there is no suitable habitat at or near the proposed project, or
- ☐ there will be no impact on spawning fish or spawning activities.

Consequently, the time period restrictions of the applicable statewide general permit are/are not (circle one) necessary to protect fish spawning for the proposed project and I approve/disapprove (circle one) this waiver.

Signed by:

_____ _____

Department Fisheries Biologist Date

APPENDIX 1

Request for Waiver of Construction Season Limits in Waterway General Permits

This checklist shall be used to request a waiver from the time period restrictions and/or fish passage requirements for applicable projects that qualify for WDNR-GP12-2015. The completed waiver request may be submitted with the application where the applicant seeks a waiver from the applicable statewide general permit conditions that place fisheries based restrictions on the project. The signature of the Department Fisheries Biologist on this checklist only waives the time period and/or fish passage restrictions and does not constitute a permit, approval, or other concurrence with the proposed project.

Applicant Name: ATC

Proposed Project: Badger Coulee 345 kV Transmission Line Project

Project Location: NW NE ¼, SW SW ¼, Section 8, Town 7 N, Range 8 (E)/W

Name of Waterbody: UNT to Black Earth Creek, A-R1a

County of Waterbody: Dane

FOR DNR USE ONLY

The applicant listed above has consulted with me about their proposed project in navigable waters. Based on their project description, plans and other existing information available to me, I find that:

- ☐ there is suitable habitat at or near the proposed project, or
- ☐ there may be an impact on spawning fish or spawning activities.

Or

- ☐ there is no suitable habitat at or near the proposed project, or
- ☐ there will be no impact on spawning fish or spawning activities.

Consequently, the time period restrictions of the applicable statewide general permit are/are not (circle one) necessary to protect fish spawning for the proposed project and I approve/disapprove (circle one) this waiver.

Signed by:

_____ _____

Department Fisheries Biologist Date

APPENDIX 1

Request for Waiver of Construction Season Limits in Waterway General Permits

This checklist shall be used to request a waiver from the time period restrictions and/or fish passage requirements for applicable projects that qualify for WDNR-GP12-2015. The completed waiver request may be submitted with the application where the applicant seeks a waiver from the applicable statewide general permit conditions that place fisheries based restrictions on the project. The signature of the Department Fisheries Biologist on this checklist only waives the time period and/or fish passage restrictions and does not constitute a permit, approval, or other concurrence with the proposed project.

Applicant Name: ATC

Proposed Project: Badger Coulee 345 kV Transmission Line Project

Project Location: NW ¼, SE ¼, Section 8, Town 7 N, Range 8 (E)/W

Name of Waterbody: UNT to Black Earth Creek, AO-R2

County of Waterbody: Dane

FOR DNR USE ONLY

The applicant listed above has consulted with me about their proposed project in navigable waters. Based on their project description, plans and other existing information available to me, I find that:

- ☐ there is suitable habitat at or near the proposed project, or
- ☐ there may be an impact on spawning fish or spawning activities.

Or

- ☐ there is no suitable habitat at or near the proposed project, or
- ☐ there will be no impact on spawning fish or spawning activities.

Consequently, the time period restrictions of the applicable statewide general permit are/are not (circle one) necessary to protect fish spawning for the proposed project and I approve/disapprove (circle one) this waiver.

Signed by:

_____ _____

Department Fisheries Biologist Date

PHOTOGRAPHS

D-R2, photo date July 2015

AO-R2, photo date July 2015

A-R1a, photo date August 2015

STATE PRIORITY CORRIDORS

EXISTING ATC OR XCEL TRANSMISSION LINES
- Substation
- 69 kV
- 69 kV Underground
- 138 kV
- 161 kV
- 345 kV

OTHER EXISTING TRANSMISSION LINES
- Substation
- 69 kV
- 161 kV

Approved Hampton-Rochester-La Crosse 345 kV Transmission Project

- Interstate, US or State Highway
- Approximate Gas Pipeline
- Railroad
- State/County Trail

The information presented in this map document is advisory and is intended for reference purposes only. Applicants' owned and operated facility locations are approximate. Data Sources: ATC, WDNR, WDOT, PSCW, FAA, Xcel Energy, DPC, County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery along routes: ATC, Spring 2012 and 2013. Outer Imagery NAIP 2010.

PROJECT RELATED DATA

N1 Segment N — Northern Route (Segments A, D, E, G, H, J, K, M, N, P, P-East)

Segment O — Southern Route (Segments B-North, B, C, F, G, I, J, L, M, O)

- Sub-Segment Node
- Route Segment ID
- Sub-Segment ID

△ Conceptual Pole Locations in or Within 50' of a Wetland*

* Proposed Poles are APPROXIMATE and are subject to change. Final pole placement will not be determined until detailed engineering is complete for the ordered route.

- Off Right-of-Way Construction Access
- Briggs Road Substation

NRCS SOIL SURVEY DATA
- Non-Hydric Soils
- Hydric Soils
- Possible Hydric Inclusions
- SaA → Soil Mapping Unit

WETLANDS
- Delineated Wetlands
- AreaA → Wetland ID
- 100 Year Floodplain
- 500 Year Floodplain
- WI Wetland Inventory
- ElKa → Wetland Code

- Temporary Clear Span Bridge
- Delineated Waterway
- AreaA → Waterway ID
- WDNR Stream
- Open Water
- County Boundary
- City/Village/Town Boundary

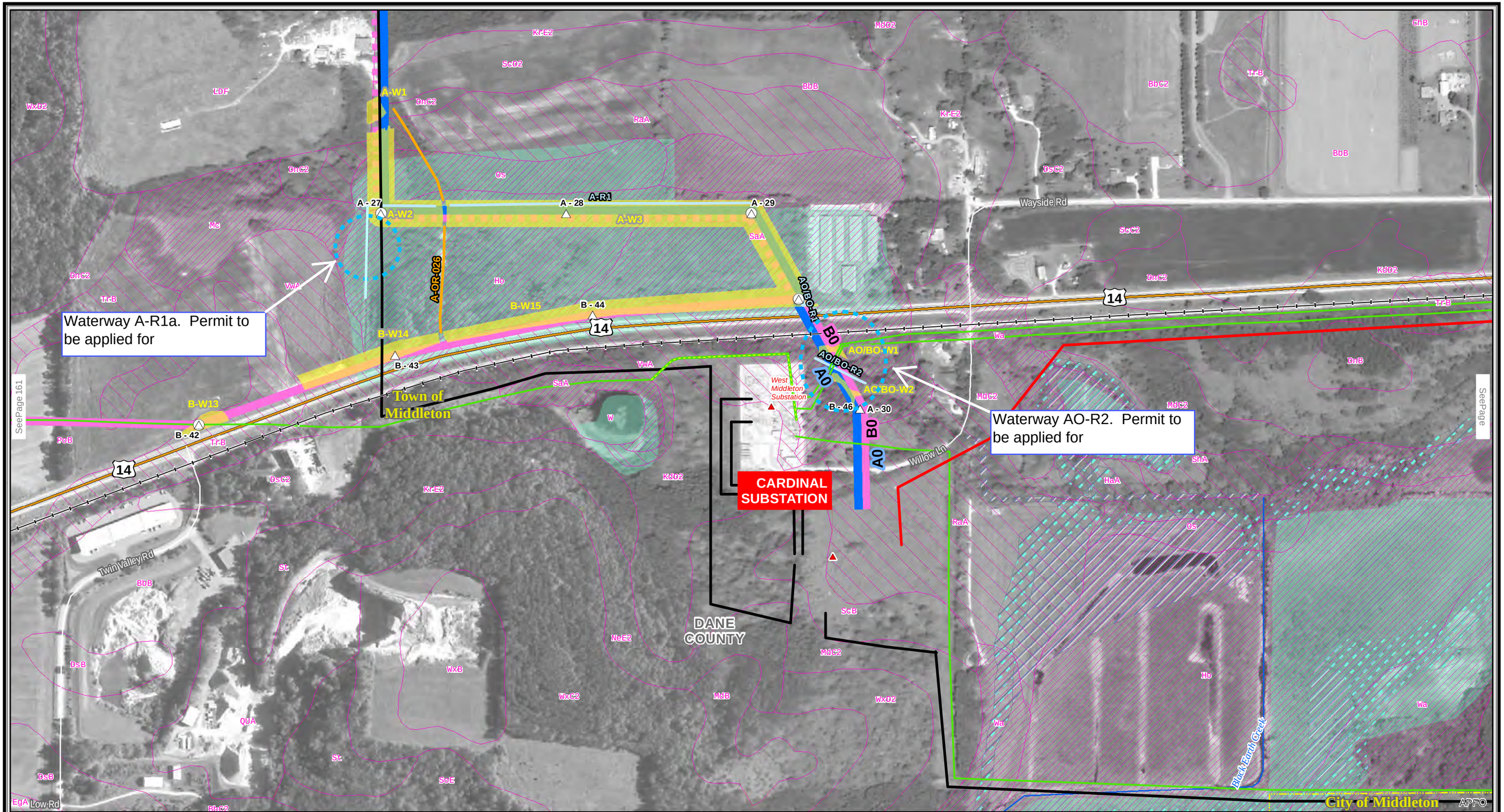
0 200 400 Feet

APPENDIX A FIGURE 4A ENVIRONMENTAL FEATURE AND ACCESS PLAN Northern Route - Segment D

BADGER COULEE TRANSMISSION LINE PROJECT

OCTOBER 2013	MAP A4-A156	PAGE 156 OF 166

APPENDIX A FIGURE 4A-ENVIRONMENTAL FEATURES AND ACCESS PLAN NORTHERN ROUTE



STATE PRIORITY CORRIDORS

EXISTING ATC OR XCEL TRANSMISSION LINES
- Substation
- 69 kV
- 69 kV Underground
- 138 kV
- 161 kV
- 345 kV

OTHER EXISTING TRANSMISSION LINES
- Substation
- 69 kV
- 161 kV

Approved Hampton-Rochester-La Crosse 345 kV Transmission Project

- Interstate, US or State Highway
- Approximate Gas Pipeline
- Railroad
- State/County Trail

The information presented in this map document is advisory and is intended for reference purposes only. Applicants' owned and operated facility locations are approximate. Data Sources: ATC, WDNR, WDOT, PSCW, FAA, Xcel Energy, DPC, County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery along routes: ATC, Spring 2012 and 2013. Outer Imagery NAIP 2010.

PROJECT RELATED DATA

N1 Segment N — Northern Route (Segments A, D, E, G, H, J, K, M, N, P, P-East)

Segment O — Southern Route (Segments B-North, B, C, F, G, I, J, L, M, O)

- Sub-Segment Node
- Route Segment ID
- Sub-Segment ID

△ Conceptual Pole Locations in or Within 50' of a Wetland*

* Proposed Poles are APPROXIMATE and are subject to change. Final pole placement will not be determined until detailed engineering is complete for the ordered route.

- Off Right-of-Way Construction Access
- Briggs Road Substation

NRCS SOIL SURVEY DATA
- Non-Hydric Soils
- Hydric Soils
- Possible Hydric Inclusions
- SaA → Soil Mapping Unit

WETLANDS
- Delineated Wetlands
- Area A → Wetland ID
- 100 Year Floodplain
- 500 Year Floodplain
- WI Wetland Inventory
- EKa → Wetland Code

- Temporary Clear Span Bridge
- Delineated Waterway
- Area A → Waterway ID
- WDNR Stream
- Open Water
- County Boundary
- City/Village/Town Boundary

N

0 200 400 Feet

APPENDIX A FIGURE 4A ENVIRONMENTAL FEATURE AND ACCESS PLAN Northern Route - Segment A

BADGER COULEE TRANSMISSION LINE PROJECT

OCTOBER 2013	MAP A4-A163	PAGE 163 OF 166

APPENDIX A FIGURE 4A-ENVIRONMENTAL FEATURES AND ACCESS PLAN NORTHERN ROUTE

Parrett, Nayo

From: Welke, Kurt I - DNR <Kurt.Welke@wisconsin.gov>
Sent: Tuesday, September 08, 2015 12:33 PM
To: Parrett, Nayo
Cc: Callan, Benjamin S - DNR
Subject: RE: Badger Coulee TCSB waiver request

External Email - Use Caution

The attached pdf forms DO NOT allow checking off

However, I find

☐ there is no suitable habitat at or near the proposed project, ***AND***
☐ there will be no impact on spawning fish or spawning activities.
Consequently, the time period restrictions of the applicable statewide general permit ***are not necessary to protect fish*** spawning for the proposed project ***and I approve*** These waivers:
D-R2
A-R1a
AO-R2

Signed by:

Kurt Welke

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Kurt Welke
Phone: 608-273-5946
Kurt.welke@wisconsin.gov

From: Parrett, Nayo [mailto:nparrett@atcllc.com]
Sent: Friday, September 04, 2015 2:16 PM
To: Welke, Kurt I - DNR
Cc: Callan, Benjamin S - DNR; Parrett, Nayo
Subject: Badger Coulee TCSB waiver request

Hello Kurt- Please find attached a request for waivers of seasonal limits for three TCSBs associated with the Badger Coulee 345 kV Transmission Line Project. Please feel free to contact me with questions or if additional information is needed.

Have a good weekend!

Thanks,

Nayo

Badger Coulee 345 kV Transmission Line Project

Segment 1 CMP

Appendix G

Project Wetland Impacts and Compensatory Mitigation Acres

Summary of Project Wetland Impacts and Compensatory Mitigation Acres for Badger Coulee - updated 11/10/15

Watershed (BSA)[1]	Wetland Cover Types[2]	Permanent Impacts (acre)[3]					Temporary Impacts (acre)[4]			Total Credits[5] Permanent + Temporary Impacts
		Structure Impacts [A]	Conversion [A,B]	Mitigation Ratio (structure)	Mitigation Ratio (conversion)	Total Credits Needed	Matting	Mitigation Ratio	Total Credits Needed	
Lower Wisconsin (LW)	Wet Meadow (Degraded)	0.01	-	1.45	-	0.02	-	-	-	**0.02**
	Shrub Carr	-	0.56	-	0.5	0.28	-	-	-	**0.28**
	Wooded (Hardwood) Swamp	-	0.63	-	0.5	0.32	-	-	-	**0.32**
	SUBTOTAL	**0.01**	**1.19**			**0.61**	**0.000**	**0.000**	**0.000**	**0.61**
TOTAL	**TOTAL**	**0.01**	**1.19**			**0.61**	**0.000**	**0.000**	**0.000**	**0.61**

Notes/Assumptions:

1 Bank Service Areas are based on Guidelines for Wetland Compensatory Mitigation in Wisconsin, Version 1, August 2013.

2 Wetland cover types are based on Eggers and Reed, 2011, Wetland Plants and Plant Communities of Minnesota and Wisconsin, Third Edition.

3 Permanent wetland impacts include transmission structure placement in wetlands and permanent conversion of wooded or shrub wetlands (within new ROW).

4 There are no high-quality or difficult to replace (DTR) wetlands along this segment, therefore no temporary impacts that will require mitigation.

5 Total wetland credits are based on replacement ratios of 1.45:1 for permanent structure impacts, 0.25:1 for permanently converted shrub wetlands, and 0.5:1 for permanently converted wooded wetlands . The ILF program will be used which has a base ratio of 1.45:1 for permanent (structure) wetland impacts.

A Impact acreages provided by Stantec Environmental.

B Scrub-shrub conversion impacts provided as requested by Corps of Engineers.