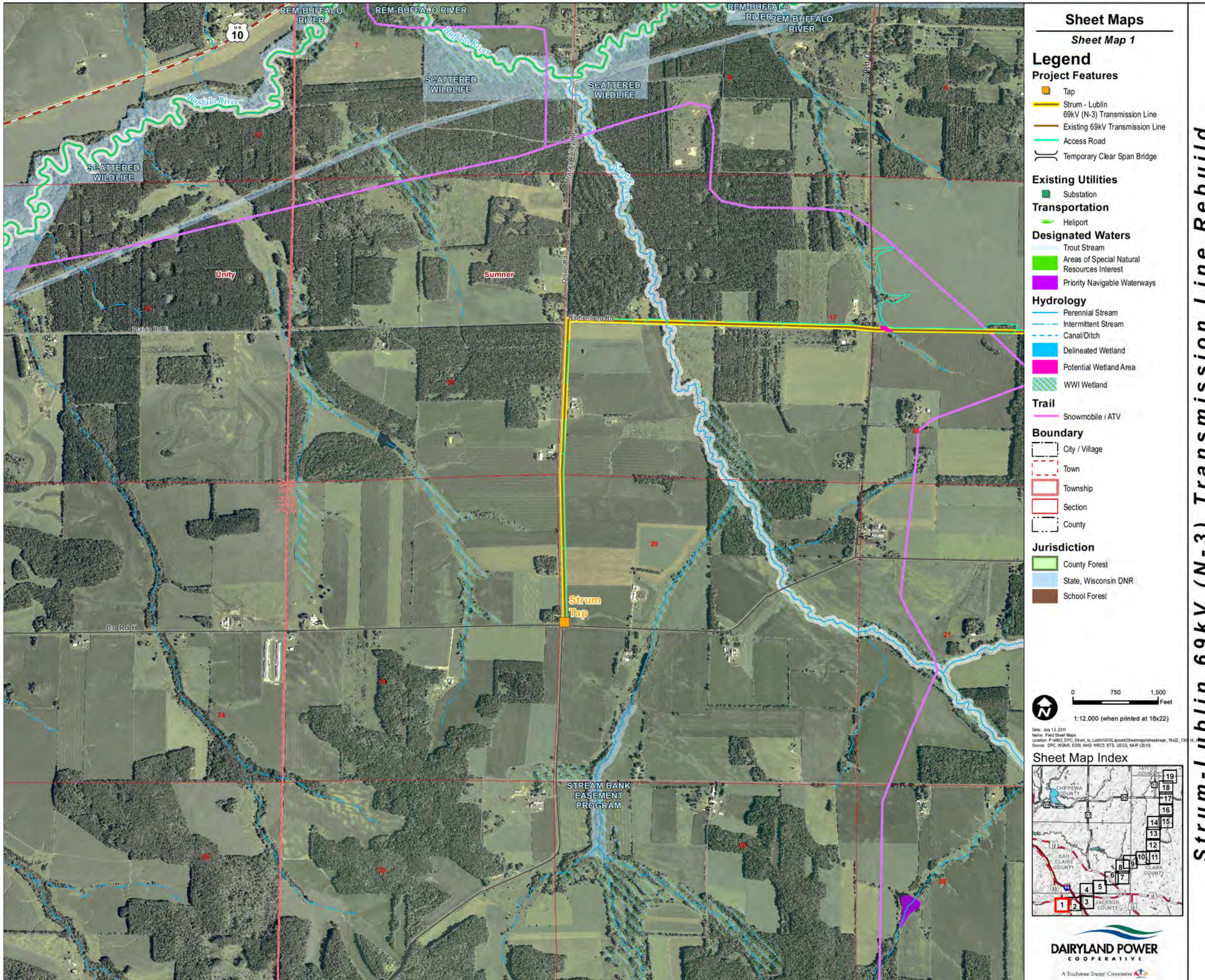
Appendix A:
Sheet Maps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State, Wisconsin DNR
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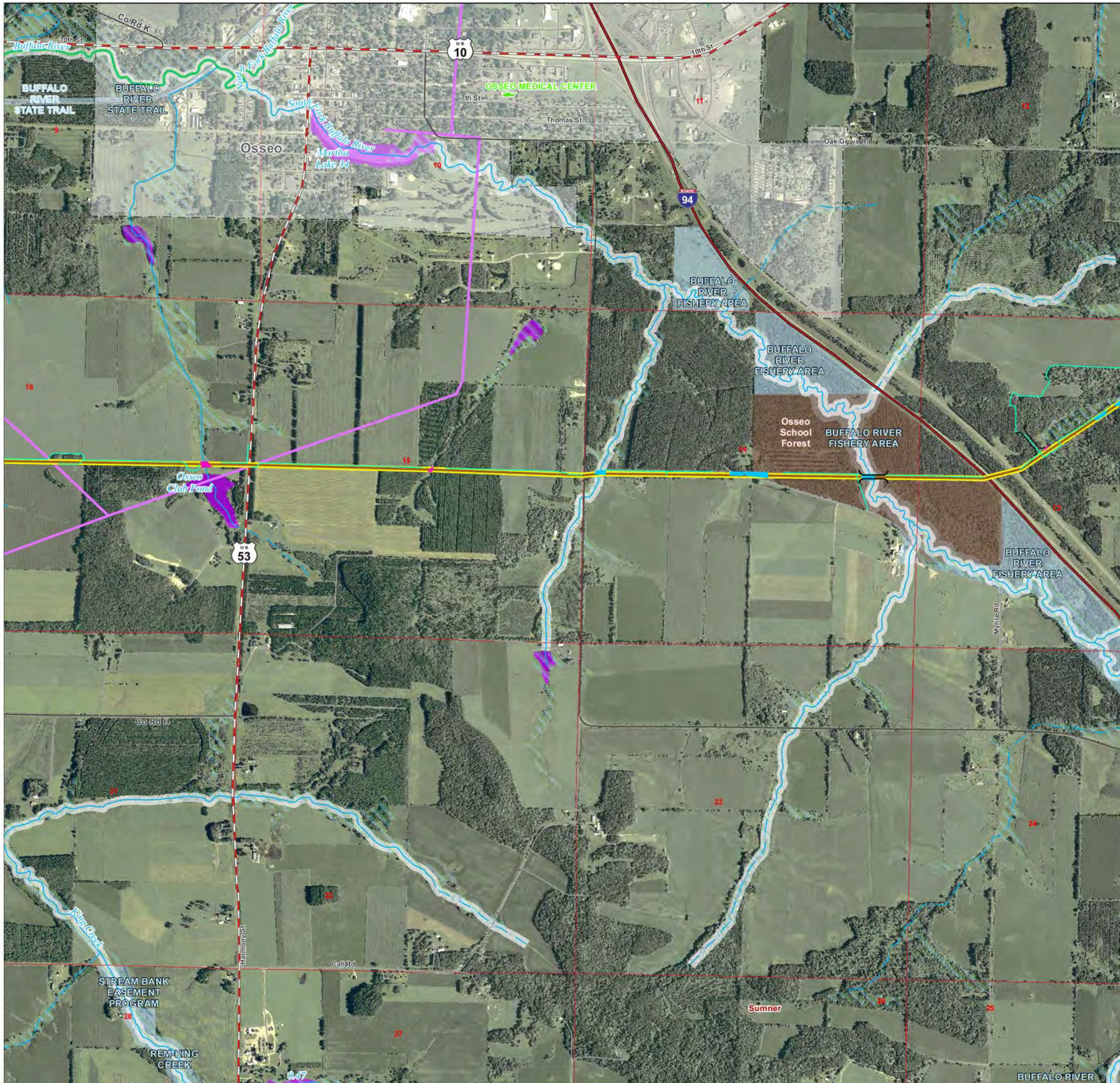
REM-BUFFALO RIVER
SCATTERED WILDLIFE
Buffalo River
Unity
Sumner
Strum Tap
Co Rd H
STREAM BANK EASEMENT PROGRAM



Sheet Maps

Sheet Map 2

Legend

Project Features

- Tap
- Strum - Lublin 69kV (N-3) Transmission Line
- Existing 69kV Transmission Line
- Access Road
- Temporary Clear Span Bridge

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- Intermittent Stream
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- Delineated Wetland
- Potential Wetland Area
- WWI Wetland

Trail

- Snowmobile / ATV

Boundary

- City / Village
- Town
- Township
- Section
- County

Jurisdiction

- County Forest
- State, Wisconsin DNR
- School Forest

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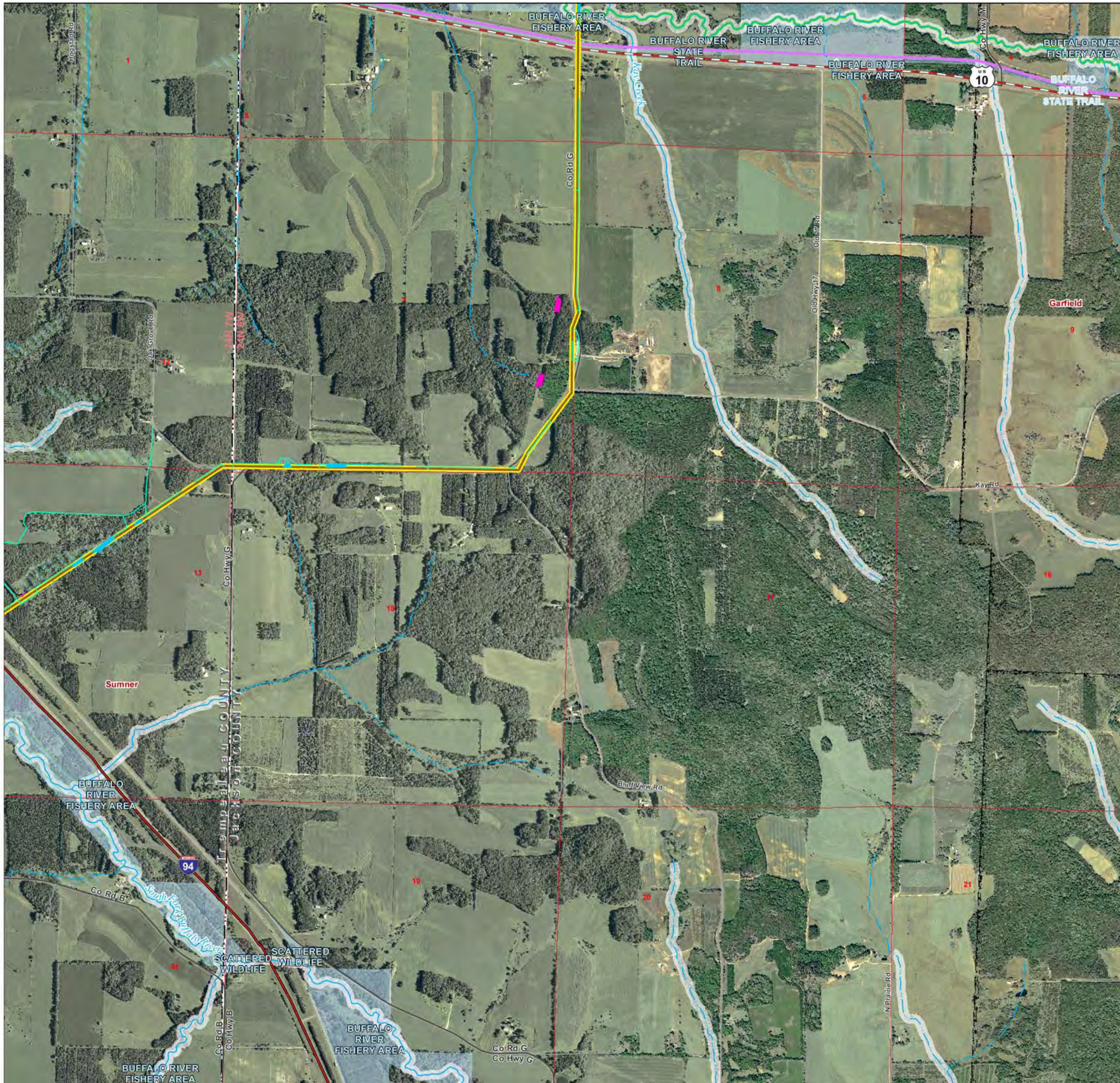
DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 3

Legend

Project Features

- Tap
- Strum - Lublin 69kV (N-3) Transmission Line
- Existing 69kV Transmission Line
- Access Road
- Temporary Clear Span Bridge

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Hydrology

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- Delineated Wetland
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Trail

- Snowmobile / ATV

Boundary

- City / Village
- Town
- Township
- Section
- County

Jurisdiction

- County Forest
- State, Wisconsin DNR
- School Forest

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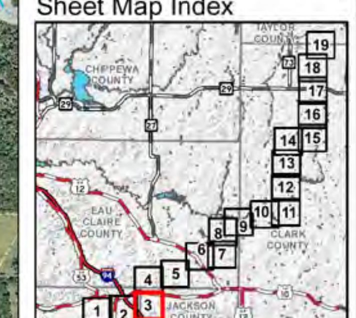
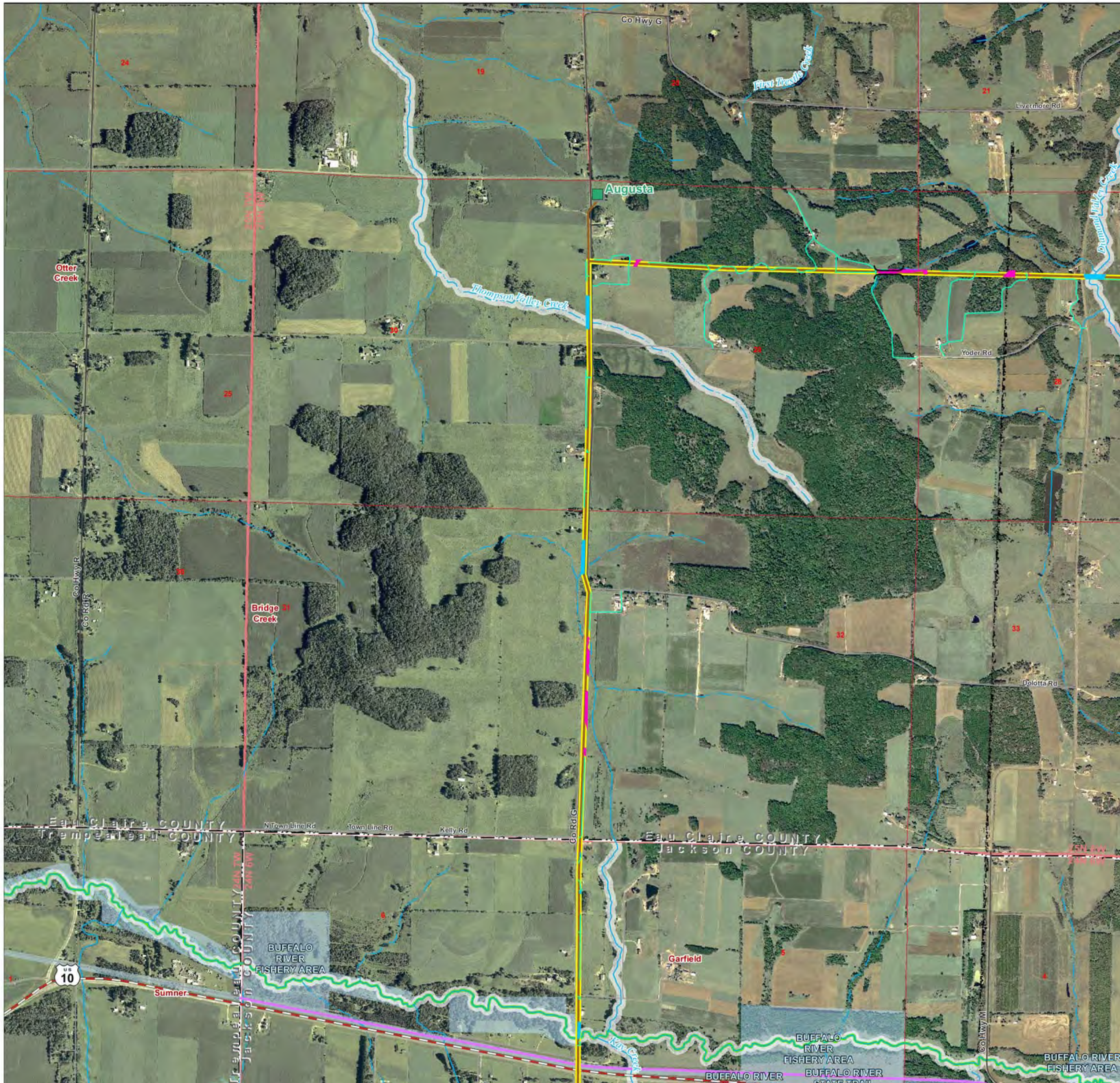


DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 4

Legend

Project Features

- Tap
- Strum - Lublin 69kV (N-3) Transmission Line
- Existing 69kV Transmission Line
- Access Road
- Temporary Clear Span Bridge

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- Delineated Wetland
- Potential Wetland Area
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Boundary

- City / Village
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Jurisdiction

- County Forest
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- School Forest

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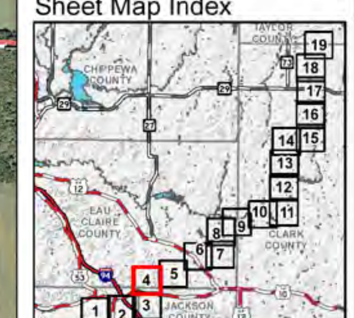

DAIRYLAND POWER COOPERATIVE

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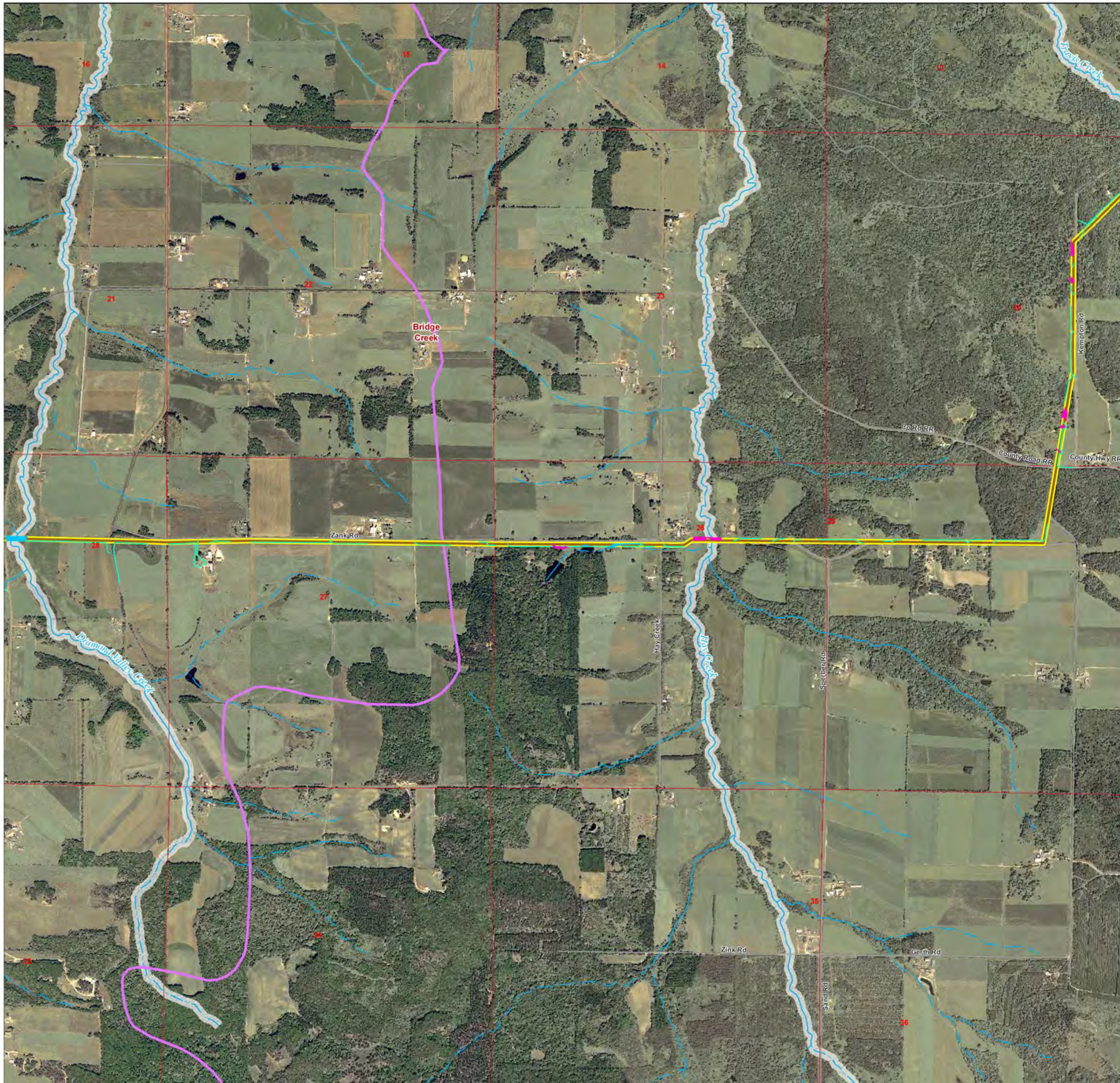
Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 5

Legend

Project Features
- Tap
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- County Forest
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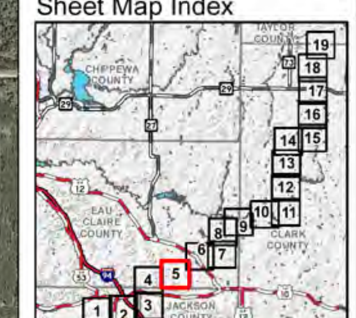
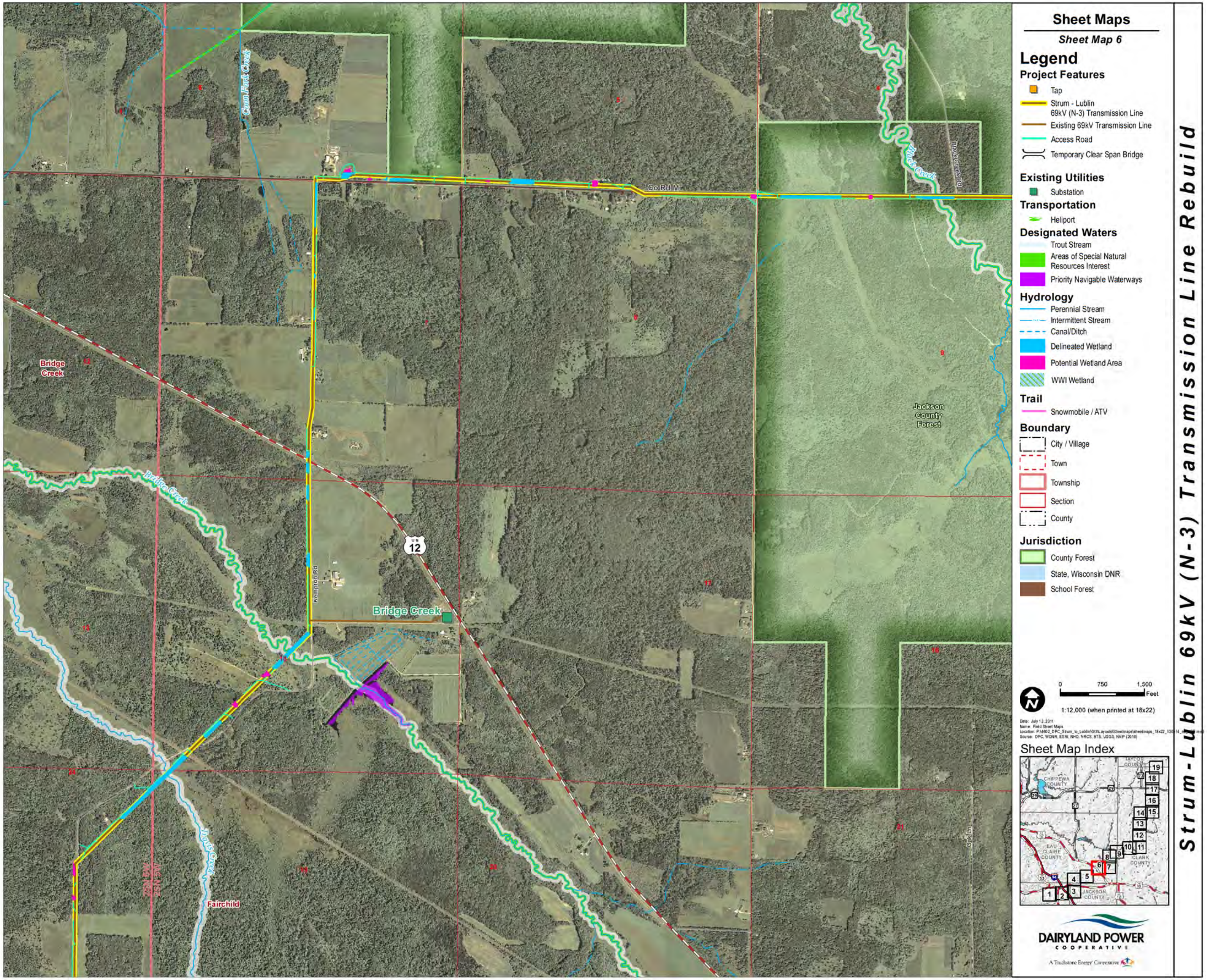


DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild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A Touchstone Energy Cooperative
Strum-Lublin 69kV (N-3) Transmission Line Rebuild
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Bridge Creek
Kempton Rd
Jackson County Forest
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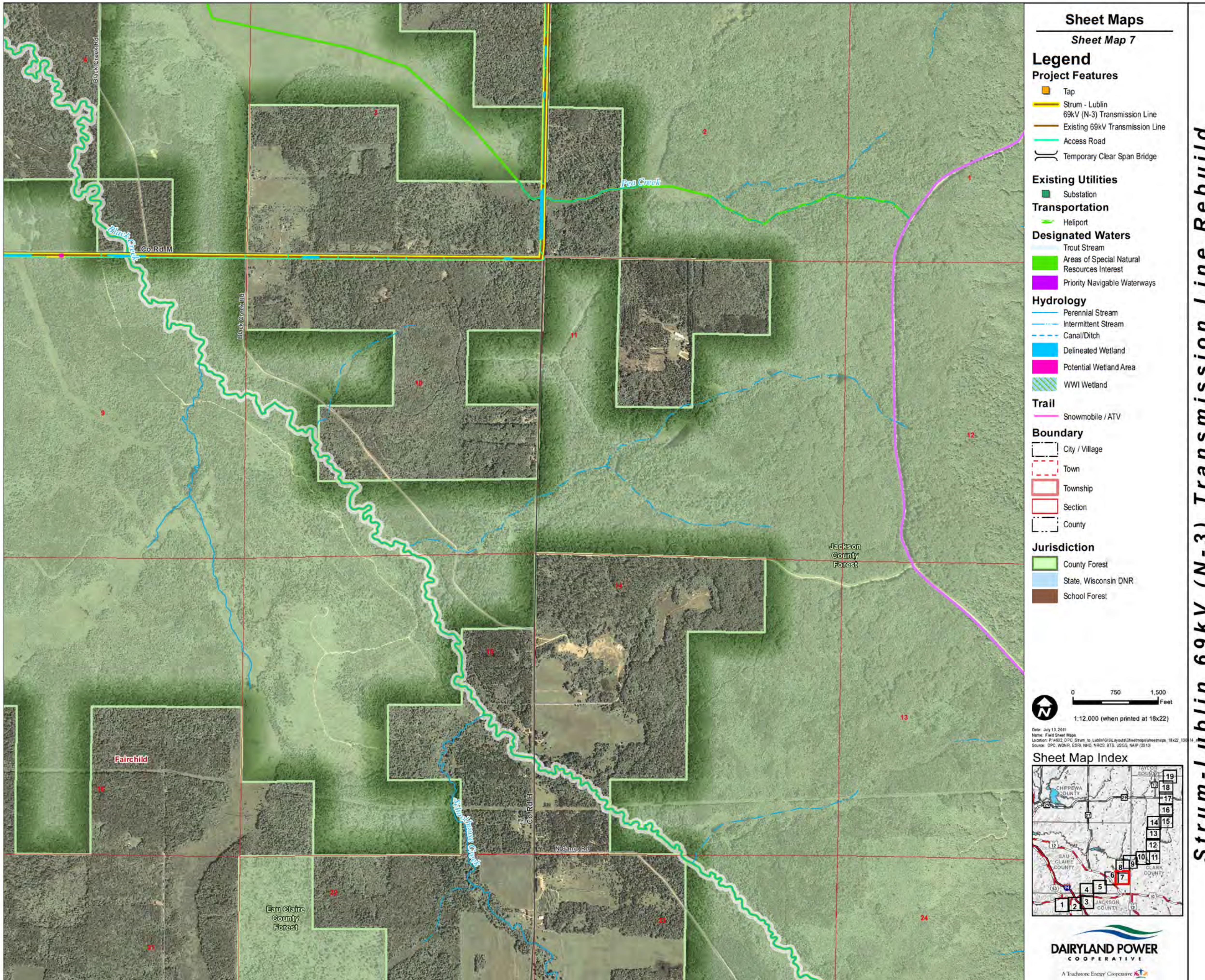

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A Touchstone Energy Cooperative
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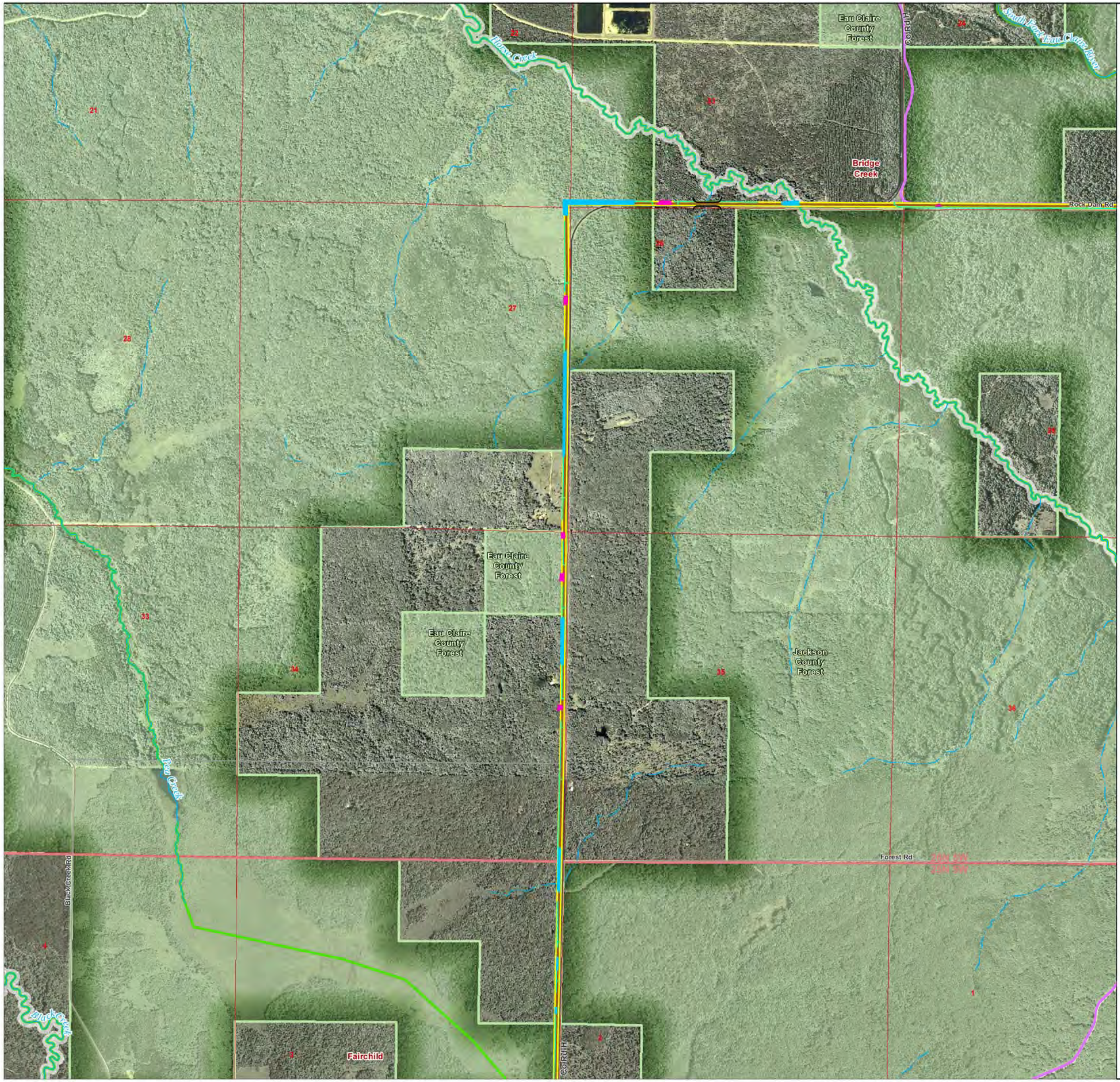
Black Creek
Pea Creek
Jackson County Forest
Fairchild
Eau Claire County Forest
N Gano Rd

Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 8

Legend

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- Tap
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- City / Village
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- County Forest
- State, Wisconsin DNR
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DAIRYLAND POWER COOPERATIVE

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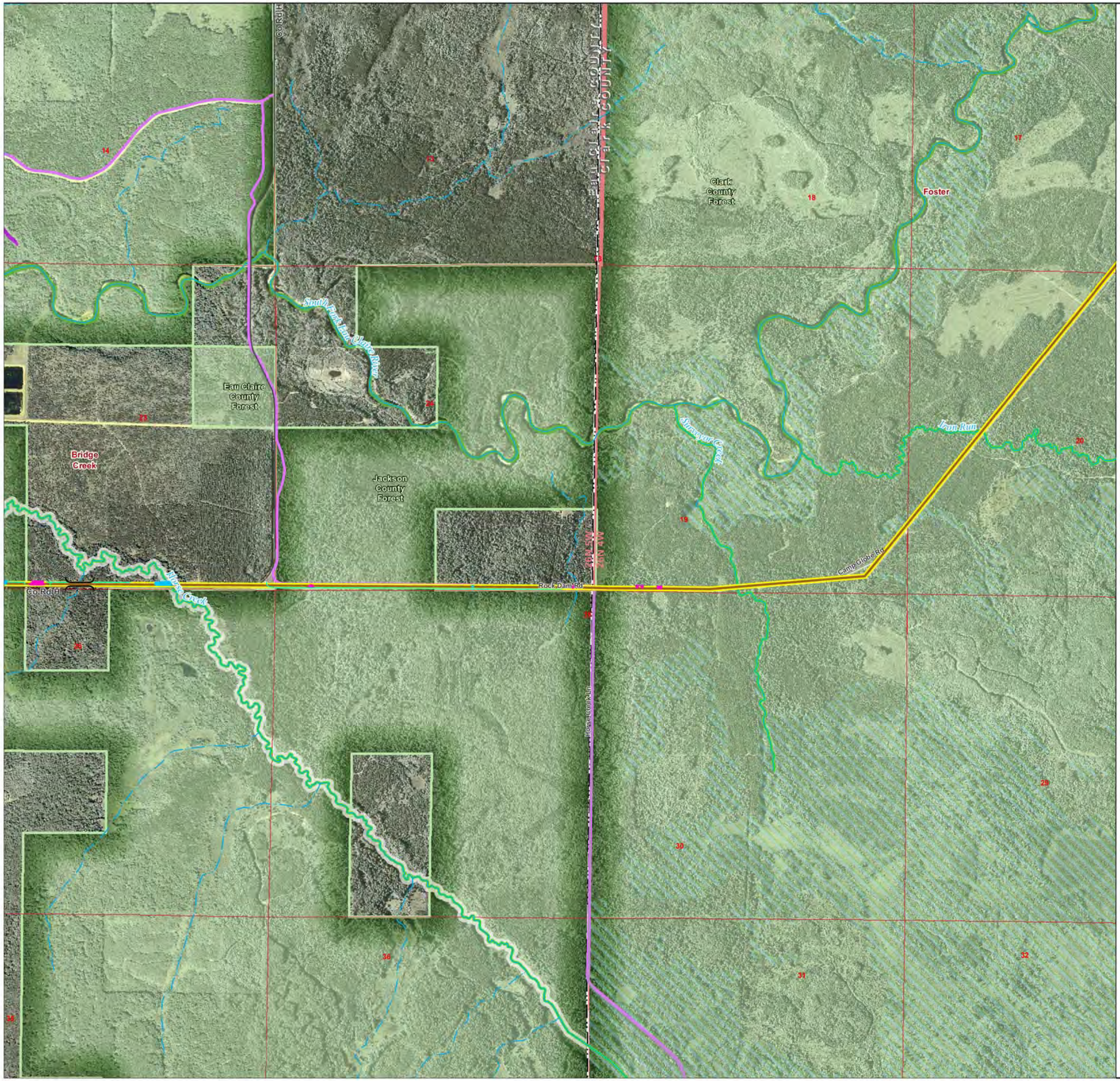

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Sheet Map 9

Legend

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- Snowmobile / ATV

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- City / Village
- Town
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- Section
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- County Forest
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DAIRYLAND POWER COOPERATIVE

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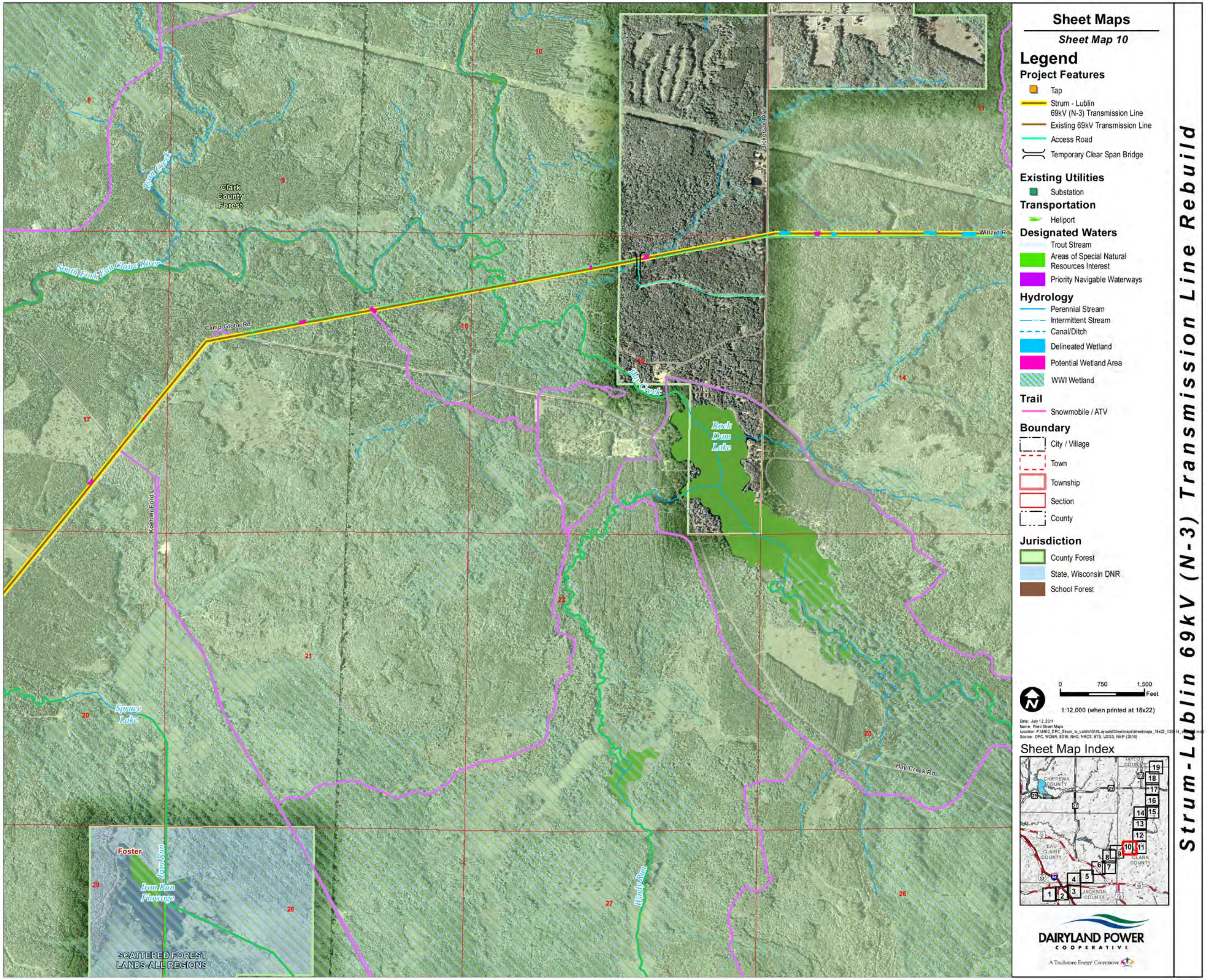
Strum-Lublin 69kV (N-3) Transmission Line Rebuild



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A Touchstone Energy Cooperative
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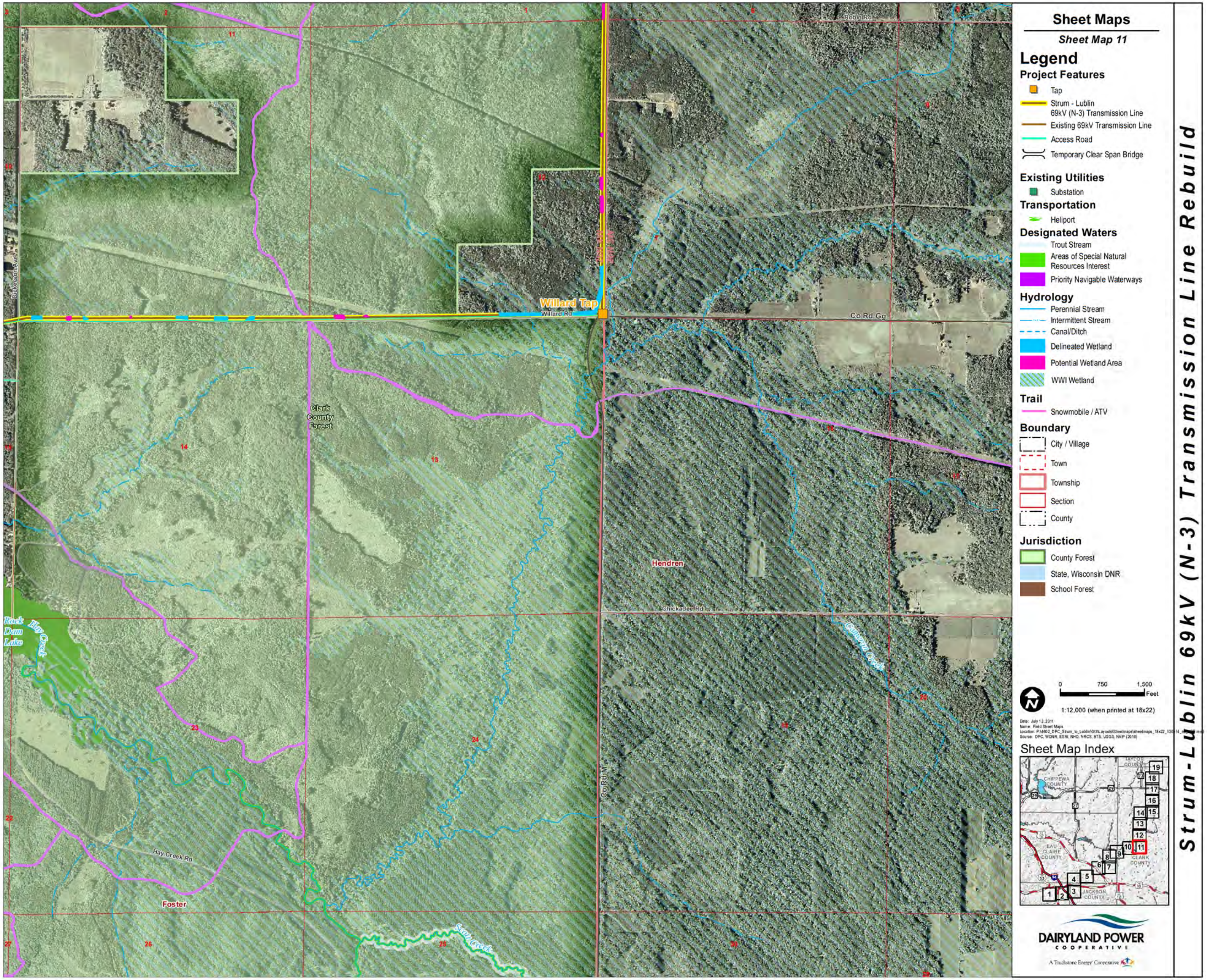
South Fork Eau Claire River
Camp Globe Rd
Willard Rd
Rock Dam Lake
Hay Creek Rd
Spruce Lake
Foster
Iron Run
Iron Run Flowage
SCATTERED FOREST LANDS-ALL REGIONS



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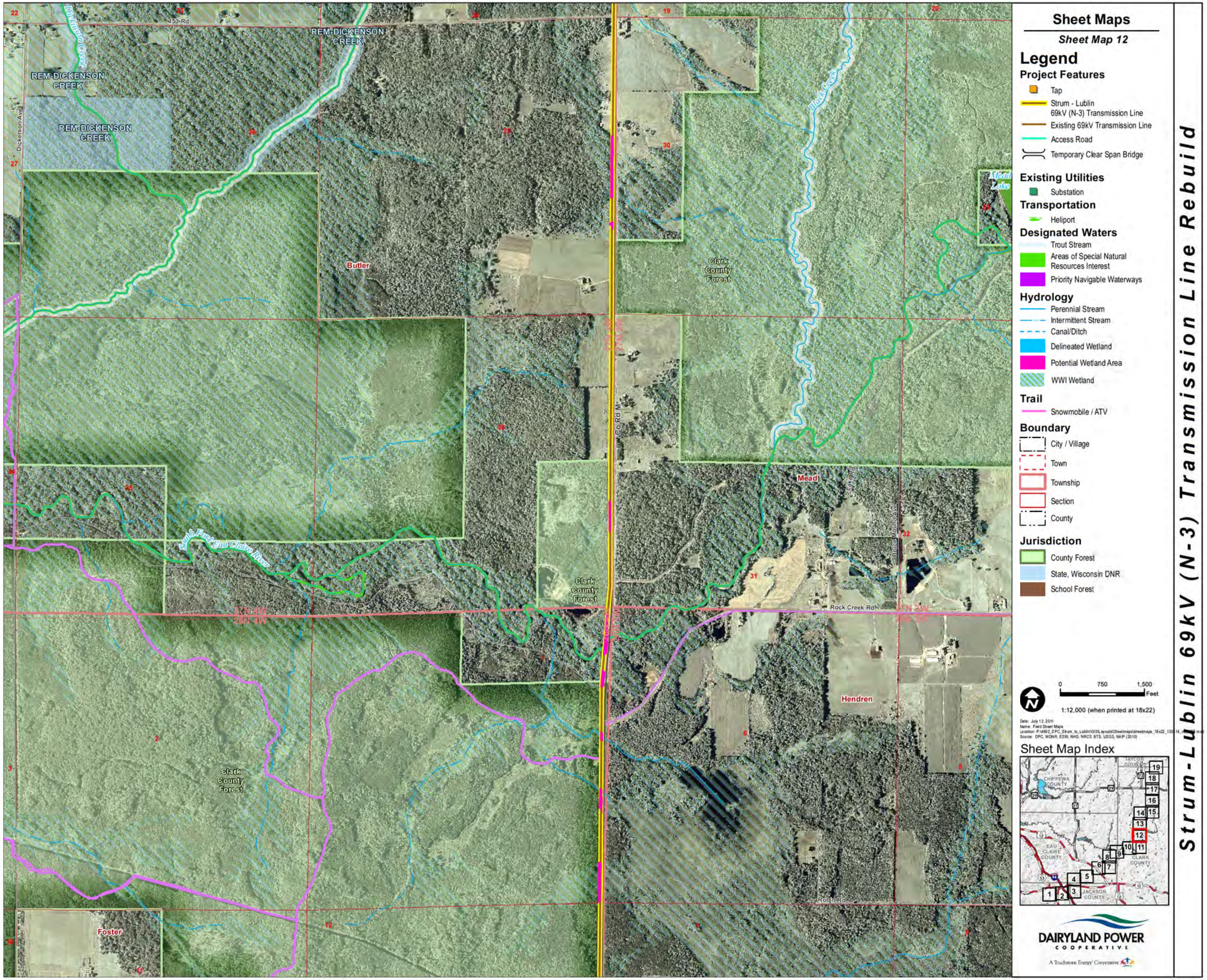
Willard Rd
Co Rd Gg
Clark County Forest
Hendren
Chickadee Rd
Co Rd M
Hay Creek Rd
Foster
Rock Dam Lake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WWI Wetland
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City / Village
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CHIPPEWA COUNTY
TAYLOR COUNTY
EAU CLAIRE COUNTY
CLARK COUNTY
JACKSON COUNTY
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A Touchstone Energy Cooperative
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REM-DICKENSON CREEK
REM-DICKENSON CREEK
REM-DICKENSON CREEK
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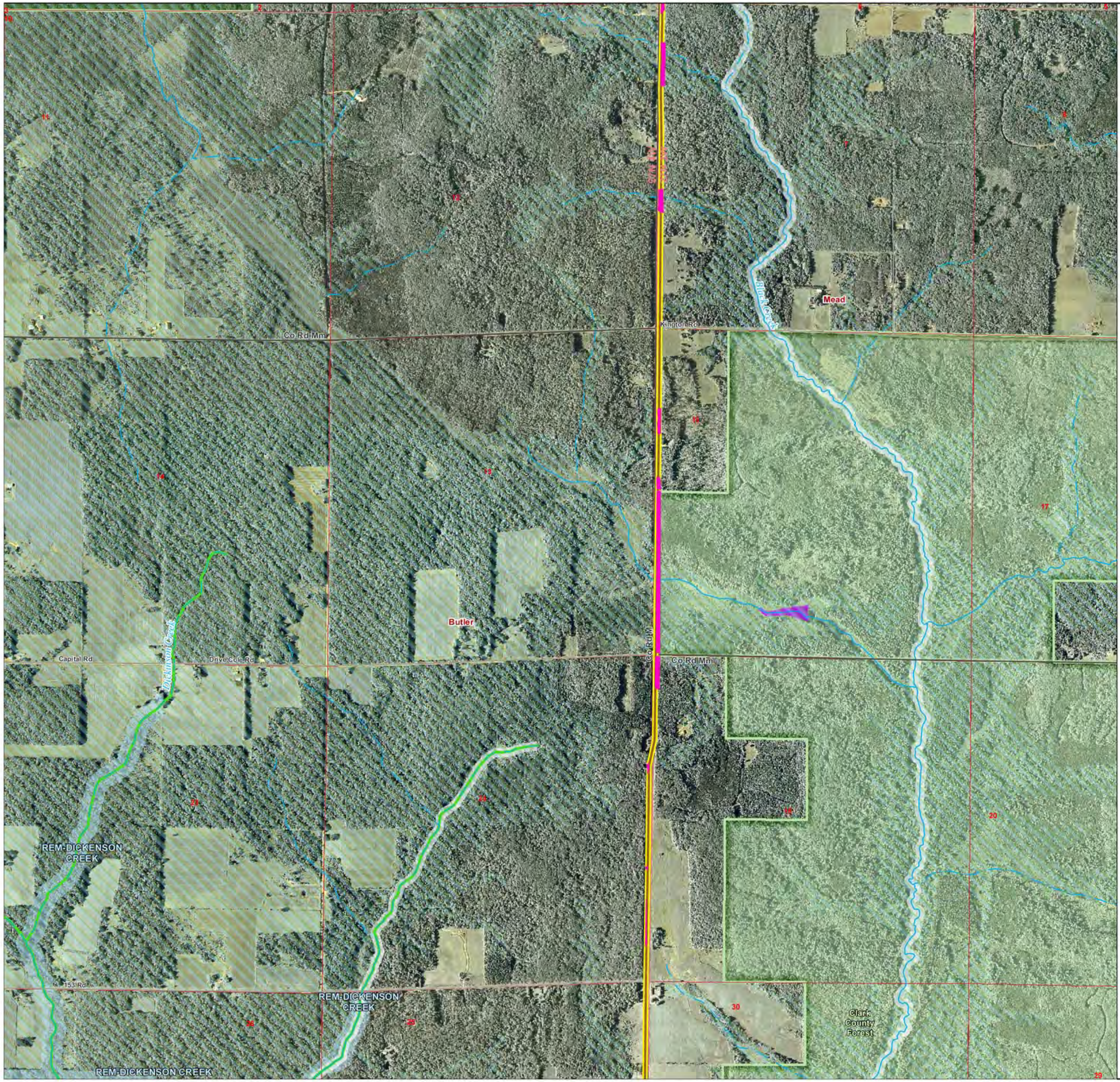
Clark County Forest
Clark County Forest
Clark County Forest
Mead
Hendren
Foster
Rock Creek Rd
South Fork Eau Claire River



Sheet Maps

Sheet Map 13

Legend

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- Existing 69kV Transmission Line
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- Delineated Wetland
- Potential Wetland Area
- WWI Wetland

Trail

- Snowmobile / ATV

Boundary

- City / Village
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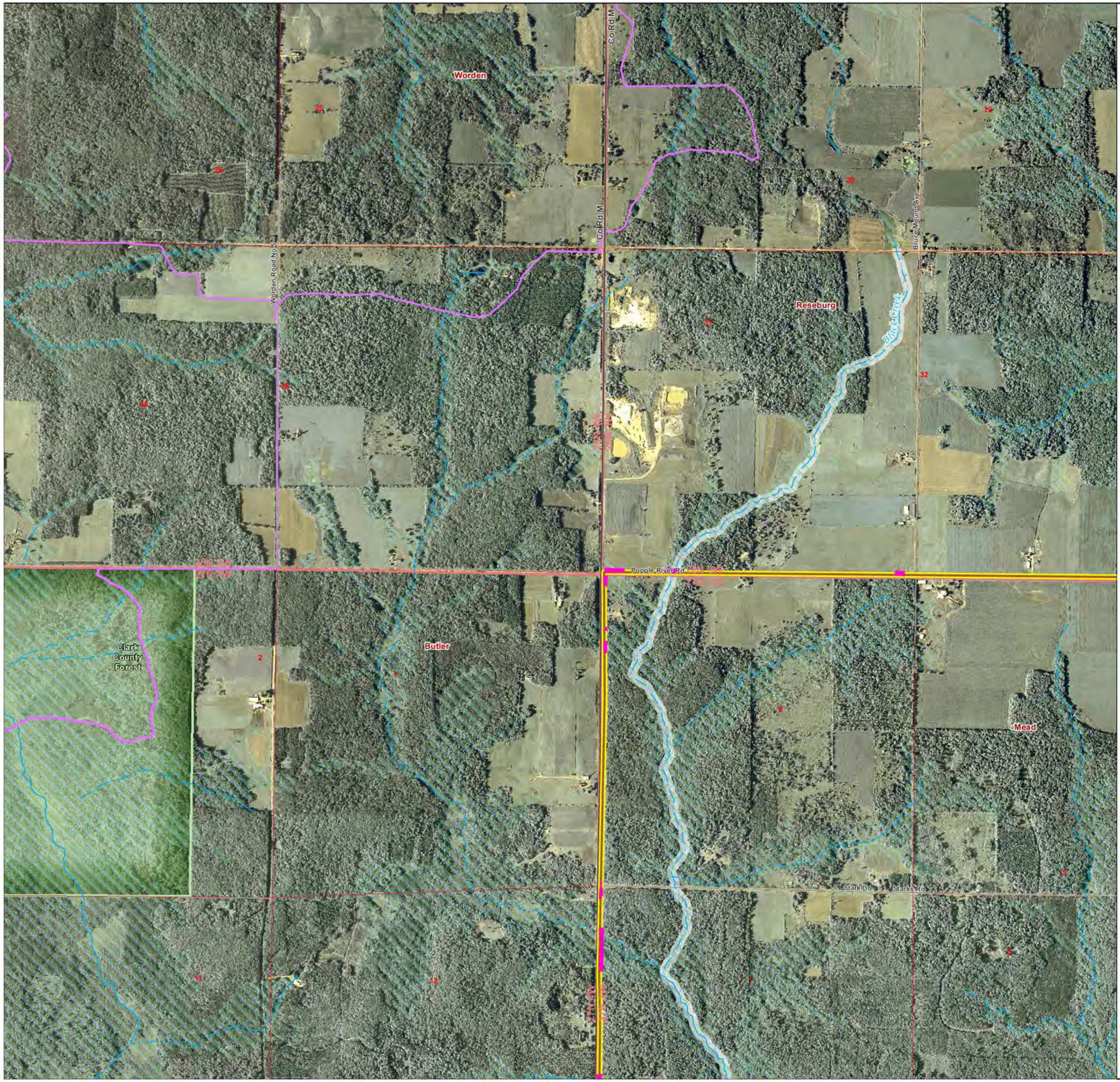
DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 14

Legend

Project Features
- Tap
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- Town
- Township
- Section
- County

Jurisdiction
- County Forest
- State, Wisconsin DNR
- School Forest

0 750 1,500 Feet

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DAIRYLAND POWER COOPERATIVE

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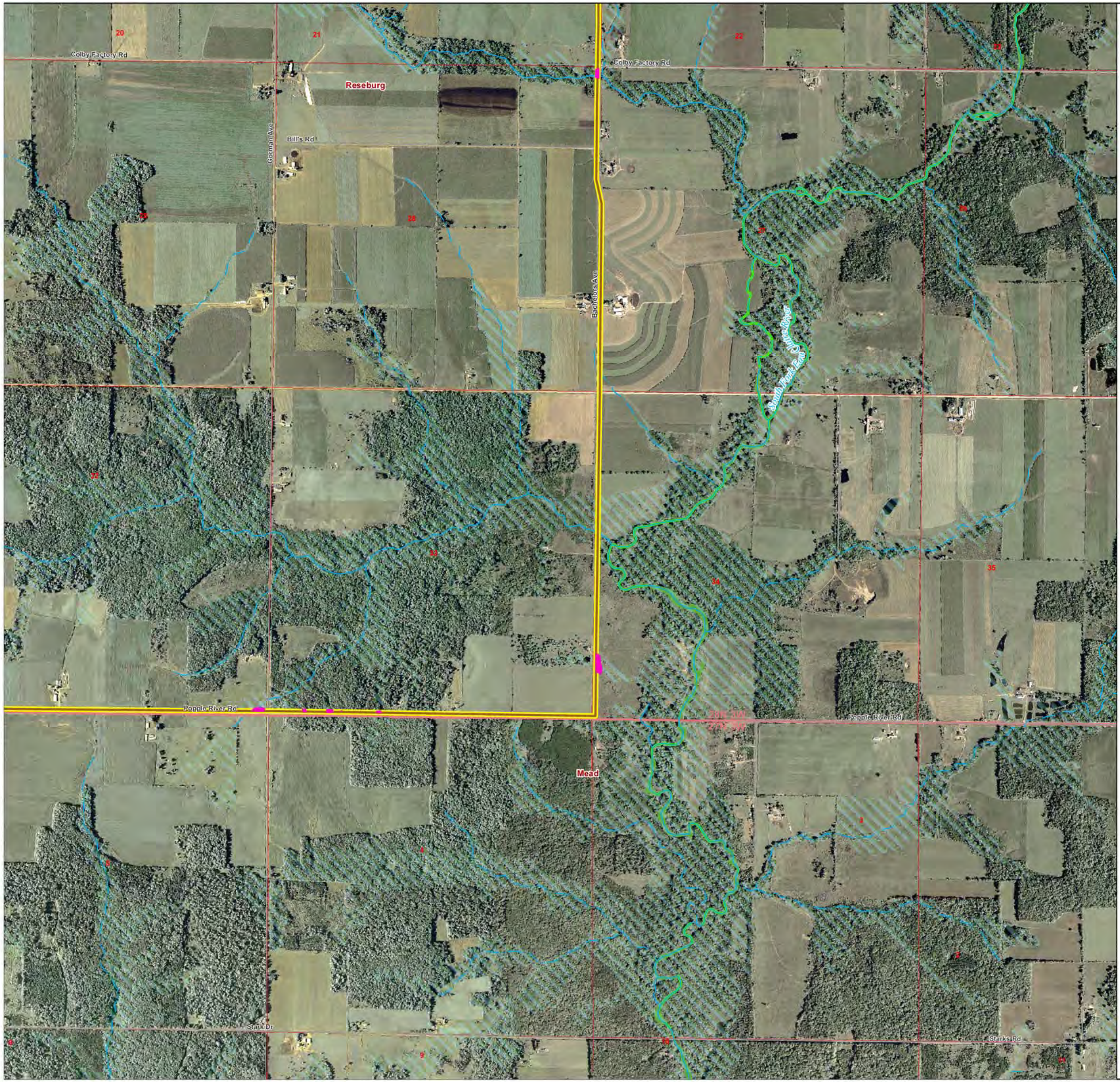
Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 15

Legend

Project Features

- Tap
- Strum - Lublin 69kV (N-3) Transmission Line
- Existing 69kV Transmission Line
- Access Road
- Temporary Clear Span Bridge

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Transportation

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Designated Waters

- Trout Stream
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Hydrology

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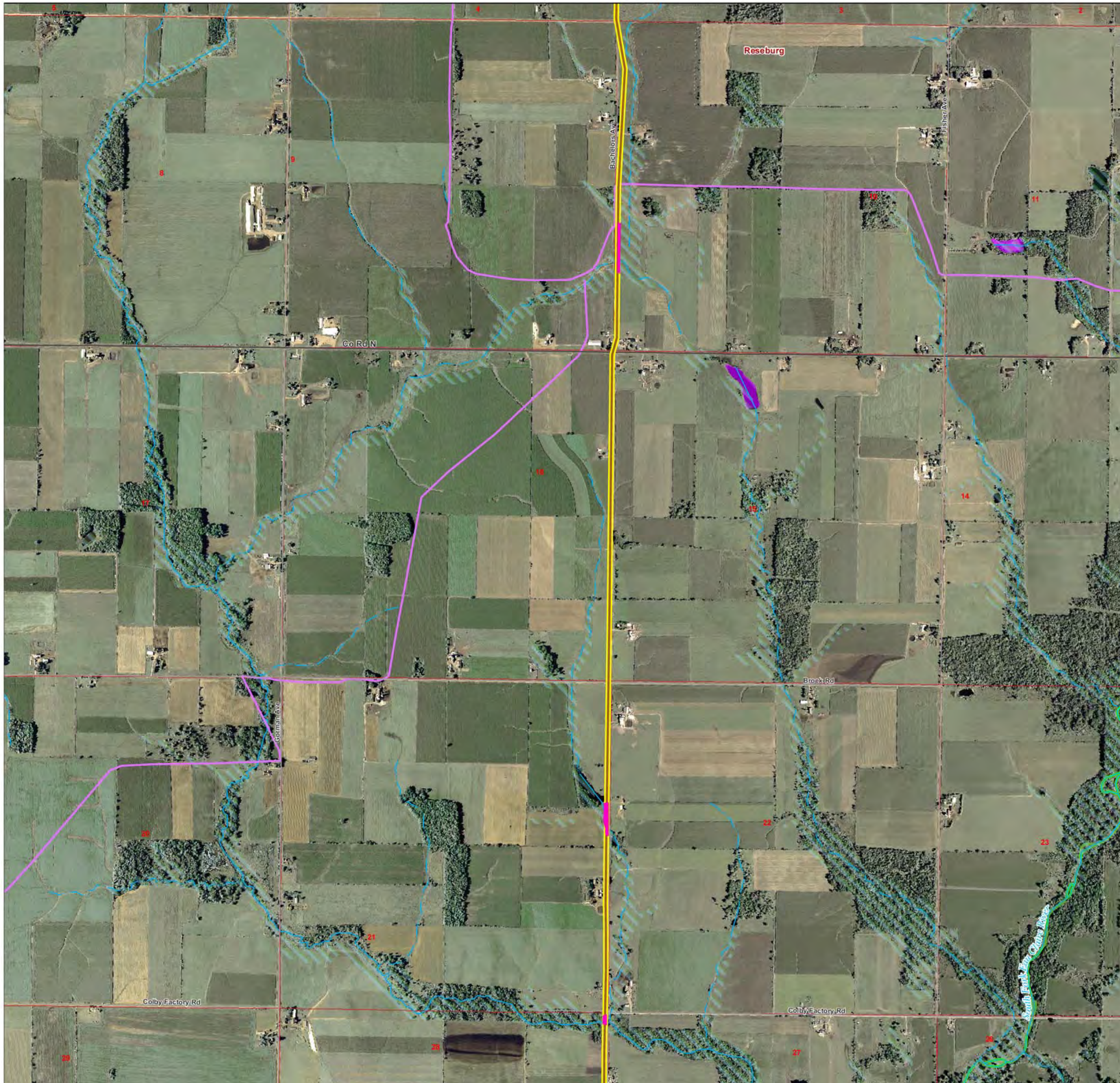
DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild



Sheet Maps

Sheet Map 16

Legend

Project Features

- Tap
- Strum - Lublin 69kV (N-3) Transmission Line
- Existing 69kV Transmission Line
- Access Road
- Temporary Clear Span Bridge

Existing Utilities

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Transportation

- Heliport

Designated Waters

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- Areas of Special Natural Resources Interest
- Priority Navigable Waterways

Hydrology

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- Canal/Ditch
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Trail

- Snowmobile / ATV

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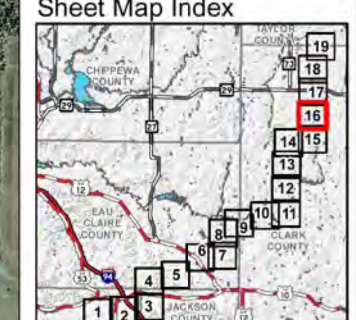


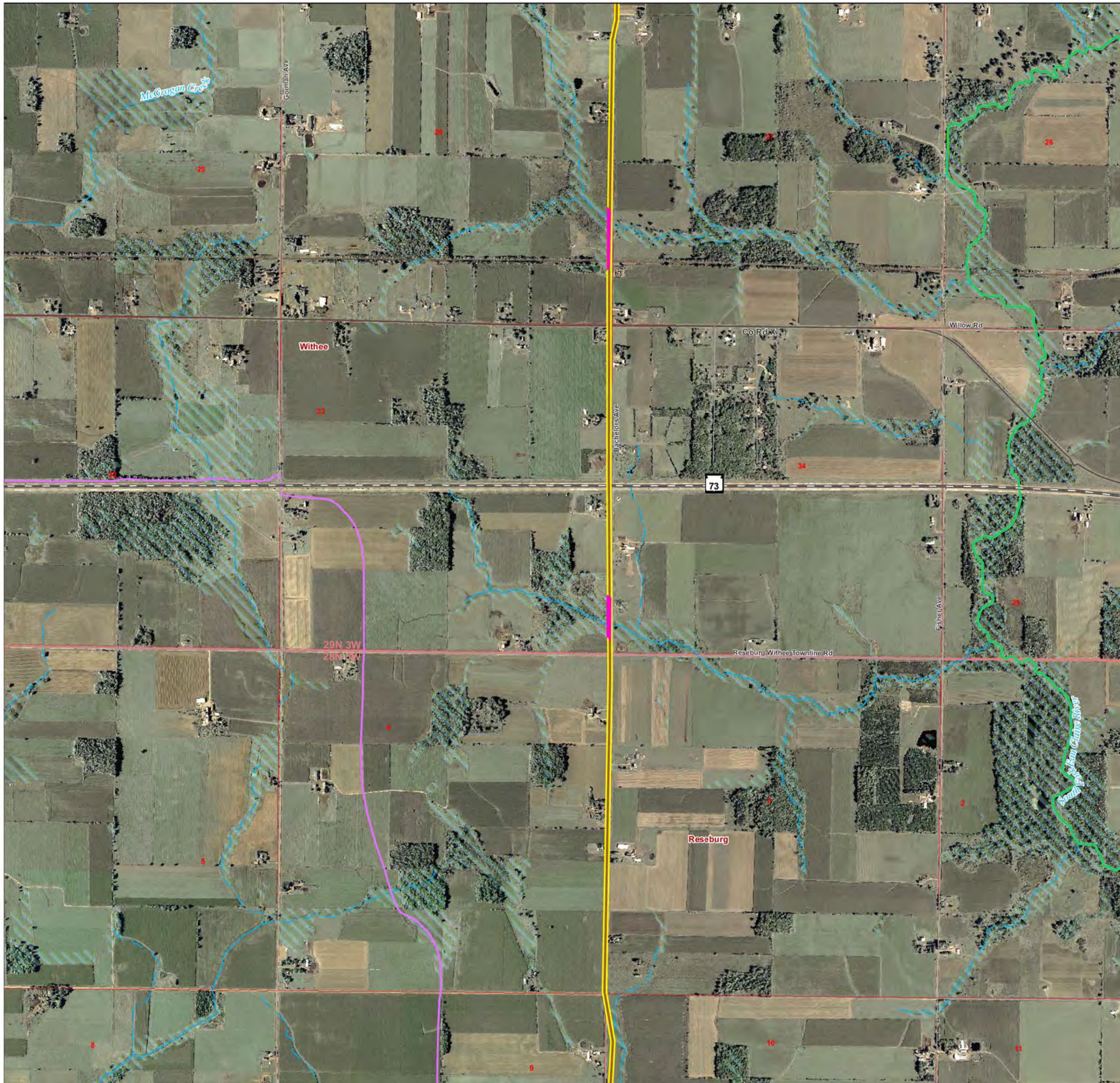
DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild

Sheet Maps

Sheet Map 17



Legend

Project Features
- Tap
- Strum - Lublin 69kV (N-3) Transmission Line
- Existing 69kV Transmission Line
- Access Road
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Existing Utilities
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Jurisdiction
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- State, Wisconsin DNR
- School Forest

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Source: DPC, WDNR, ESRI, NHD, NRCS, BTS, USGS, NAIP (2010)

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DAIRYLAND POWER COOPERATIVE

A Touchstone Energy Cooperative

Strum-Lublin 69kV (N-3) Transmission Line Rebuild

Appendix B:
Standard DPC Best Management Practices

Manual for Transmission Lines and Substation Construction and Maintenance Activities

Volume I – Best Management Practices
Volume II –Permits

Prepared for

DAIRYLAND POWER
COOPERATIVE
A Touchstone Energy® Cooperative

Prepared by

HDR

HDR Engineering, Inc
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INTRODUCTION

Dairyland Power Cooperative (Dairyland) is a generation and transmission cooperative based in La Crosse, Wisconsin that provides wholesale electrical energy to 25 member cooperatives and 20 municipalities who deliver the energy needs to over 500,000 people.[1] Dairyland's service area comprises 62 counties in Illinois, Iowa, Minnesota, and Wisconsin (Figure 1). Dairyland owns and operates over 3,000 miles of transmission line, over 200 distribution and transmission substations, numerous communication sites, and generation and utility properties.

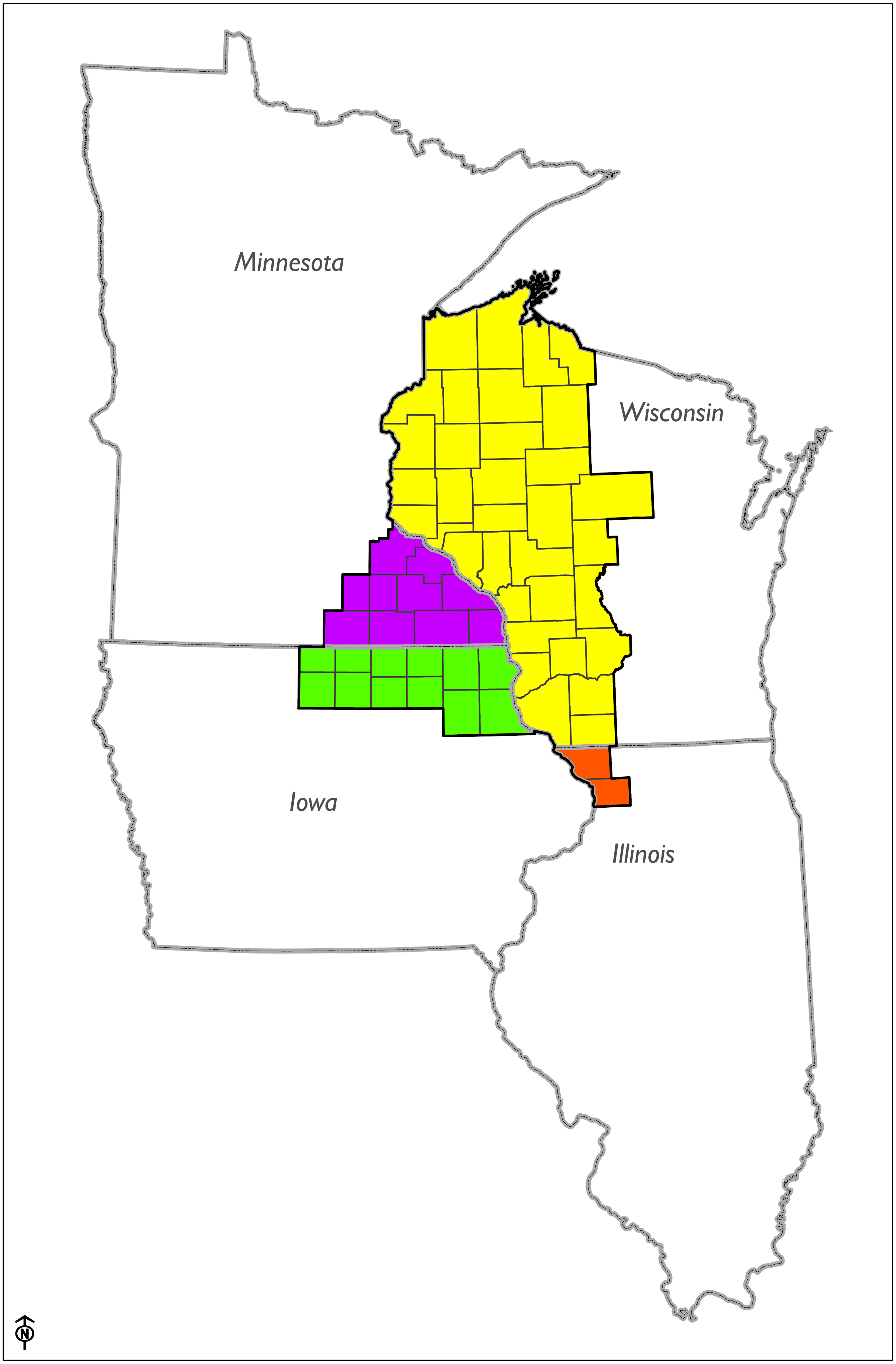
Dairyland is committed to the preservation and protection of precious natural resources. This best management practice (BMP) manual and field guide were created in acknowledgement of that commitment. This manual will provide Dairyland staff, consultants, and contractors with a comprehensive source for BMPs related to earth disturbing activities during construction, repair, and maintenance work associated with transmission lines, substations, and other cooperative projects. The associated field guide is a water-proofed version of this manual, which summarizes key erosion and sediment control points for use by field crews. Federal and state environmental permit information was also included in this document for reference. These practices and procedures, when properly implemented, will minimize or prevent erosion and sediment pollution from adversely affecting sensitive resources, such as, streams, ponds, lakes, wetlands, and natural vegetative.

Erosion and sediment control measures are generally recognized as a necessary component of large construction projects. It is equally important to note that those same measures apply to all earthmoving activity, regardless of size or scope. The smallest transmission line repair activity could change water temperature in nearby trout streams or transport noxious weeds across property lines if crucial BMPs are not applied where required. BMPs are, in fact, required in some form for all activities to preserve sensitive resources, regardless of the project size.

Erosion and sediment control measures apply to all earth moving activities – small or large

This BMP manual provides a comprehensive reference source for BMPs for construction activities and environmental compliance/permit policies and procedures. This manual must be periodically updated to reflect changes in BMPs in regulatory policy and in enforcement trends affecting and/or influencing the activities of Dairyland.

[1] McWilliams, John M, MBA, PE. *Dairyland Power Cooperatives' Methane Digester Project, AgSTAR National Conference*. Madison, Wisconsin, 2006.



Legend

Illinois
Minnesota
Iowa
Wisconsin

Figure 1
Dairyland Power Cooperative
Service Area

Map Document: (N:\gisproj\DPC\41569\map_docs\mxd\SOILS\ServiceArea.mxd)
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All individuals working on construction projects are responsible for complying with permit requirements and the associated BMPs as designed and detailed in this manual and further specified by the Project Manager within site plans. If questions arise concerning environmental requirements, the Project Manager should interpret compliance requirements. If the Project Manager is not available or able to resolve an issue, Dairyland's Manager, Siting and Regulatory Affairs should be notified. Some construction projects may require additional local environmental permits that could contain additional requirements that may be more restrictive than those identified in this manual. Compliance with local permit requirements is mandatory.

This manual is presented in two volumes. Volume I contains BMPs necessary to protect sensitive resources from erosion and sediment transport in stormwater runoff when constructing transmission lines, access roads, substations, other utility-related improvements, or when conducting maintenance operations in or around sensitive resources. Volume II contains a comprehensive list of federal and state permits required for construction and maintenance activities.

VOLUME I

1.0 BEST MANAGEMENT PRACTICE

Best management practices (BMPs) are structural, nonstructural, and managerial techniques recognized as the most effective and practical means to control non-point source pollutants, yet are compatible with the productive use of the resource to which they are applied[2]. For the purpose of this manual, BMPs presented here are specific to controlling erosion and preventing the transport of sediment-laden stormwater off construction and maintenance sites.

This volume contains the following sections:

- Planning
- Construction Activities
- Erosion Control
- Sediment Control
- Vegetative Stabilization
- Stormwater Treatment
- General Operations
    1. Residential Areas
    2. Highway and Road Crossings
    3. Wetland Crossings
    4. Stream Crossings
- Pollution Prevention Management Measures
- General Provisions

Best Management Practices are actions taken to prevent or reduce detrimental impacts to the environment while maintaining the natural characteristics of the environment.

[2] National Safety Council. *Environmental Health Center Glossary*. 2005. www.nsc.org/ehc/glossary.htm. Retrieved July 7, 2006.

1.1 PLANNING

Planning for the cooperative's construction and maintenance-related activities is a crucial part of the successful execution of projects. This step forces the Project Manager to think through factors linked to protecting sensitive resources, such as BMPs, scheduling, right-of-way (ROW) plan and profile, cultural resources, site preparation, and project-related permits. The significance of scheduling, development of site plan and profile, identification of cultural resources, and site preparation are discussed in detail below. BMPs and project-related permits will be addressed in later sections of this manual.

1.1.1 Scheduling

The purpose of a schedule of construction or maintenance activities is to reduce potential impacts to sensitive resources. The schedule serves as a means to incorporate all activities related to a given project. The following steps are useful when completing a construction schedule[3]:

Anticipating problems will allow you to plan for these factors and make them easier to deal with.

1. Outline all land disturbing activities.
2. List BMPs needed to contain sediment and reduce erosion.
3. List required permits, agency review period, and requirements.
4. Combine the outline and lists in a logical order to set up an effective schedule.

The appropriate scheduling and sequencing of construction activities is a cost-effective way to help accomplish the goal of protecting sensitive resources by reducing the amount of land cleared, providing needed controls and restoring vegetation in an efficient and effective manner.

1.1.2 Plan and Profile

A plan and profile is a valuable visual aid tool for negotiators, appraisers, and attorneys involved in acquisition transactions. It also helps property owners understand why and how their properties are being affected. The preparation of the ROW plan and profile should begin following completion of the preliminary survey.

The plan and profile should include the owner's names, tract numbers, legal descriptions, land lines and property lines, section corners and ties to the corners, stations, and offsets at each property line and turn point, project centerline from which can be derived new ROW and easements, area of the tract to be purchased less that portion previously designated as public

[3] James Worth Bagley College of Engineering Mississippi State University. *Chapter 4 – Best Management Practice Standards*. 2006. http://www.abe.msstate.edu/Tools/csd/p-dm/all-chapters/chapter4/chapter4/con-seq.pdf Retrieved July 13, 2006.

ROW, limits of construction, width of new roadway, grade changes, and any other design or construction details as warranted. The plan and profile also notes topographical items that affect the project, such as buildings, underground cisterns/septic tanks, permanent yard and farm appliances, sidewalks, paved or unpaved driveways, trees/hedges/shelterbelts, waterlines/steams/lakes, fences, or above and below ground utilities.

1.1.3 Cultural Resources

The cultural resource management (CRM) process is designed to provide federal and state agencies the information necessary to determine whether a project has the potential to affect significant archaeological sites, buildings, structures, places, or objects. The federal rules identify significant properties as those that are eligible for listing on the National Register of Historic Places (NRHP) and that are governed by Section 106 of the National Historic Preservation Act (NHPA).

At a local level, the CRM process provides similar information that addresses state historic preservation laws and local ordinances. Cultural resource surveys done early in the project planning process provide an opportunity to anticipate future cultural resource obligations and remain in compliance with federal and state laws that govern the treatment of these properties. Areas of high potential for cultural resources and potentially significant historic properties can be avoided or minimized through early identification.

1.1.4 Site Preparation

The preparation of a site is a step-by-step process that includes analysis of drainage, soils, vegetative cover, and most importantly, potential environmental concerns. Steps may vary depending on the region, state, or town, but those are universal site preparation issues that must always be considered.

Site Particulars

- ***Disturb and then restore more small areas, rather than few large areas***
- ***Leave as much undisturbed vegetation as possible***
- ***Minimize the time of disturbance***
- ***Break up slope lengths and flow concentrations, and minimize slope exposure time***

1.2 CONSTRUCTION ACTIVITIES

Construction activities consist of projects that involve the disturbance or movement of earthen material. These projects include, but are not limited to, building and maintaining access roads, constructing substations, erecting transmission towers or poles, and constructing other cooperative improvements.

All activities must be scheduled and executed to minimize the exposure of soil to erosion and provide ways to prevent sediment from leaving the project site. Installation of temporary control measures that will contribute to the control of erosion and sediment must be carried out prior to and concurrent with construction activities. This document provides erosion and sediment control BMPs necessary to assist with that requirement.

1.2.1 Access Roads

Access roads are temporary or permanent travel ways to provide safe, fixed routes of travel for moving equipment and supplies.[4] Grading of these roads represents one of the largest land disturbing activities associated with construction and maintenance of transmission lines.

BMPs are described and drawings are provided in Section 1.3: Erosion Control and Section 1.4: Sediment Control.

Photo 1.0: Access Road

Detail Sheet 1 shows typical sections of access road design associated with the transmission line projects.

[4] USDA NRCS. *Conservation Security Program – Glossary*. 2006. http://csp.sc.egov.usda.gov/GlossaryText.aspx Retrieved July 17, 2006.

Photo 1.0: Substation

1.2.2 Substation

Substations are an assemblage of equipment within a fenced area that switch, change, or regulate voltage in electric transmission and distribution systems used to transform voltages for delivery of electricity to homes and businesses.[5] Substation construction requires stripping of topsoil, excavation of additional material, and placement of impervious surfaces which all aid in the transport of sediment-laden stormwater. Stormwater treatment systems, such as detention ponds or infiltration basins, are required on sites 1 acre or greater as part of National Pollutant Discharge Elimination System (NPDES) permit Stormwater Pollution Prevention Plan (SWPPP). In addition to the NPDES requirements, presented in detail in Volume II, most substations are also obligated to have an Environmental Protection Agency (EPA) required spill prevention control and countermeasure (SPCC) plan. SPCC plans ensure that facilities put in place containment and other countermeasures that would prevent hazardous spills that could reach navigable waters.[6] This manual includes a pollution prevention management measures section (Section 1.8), which does not take the place of an SPCC plan, but provides information on how to report, contain, and clean up small spills.

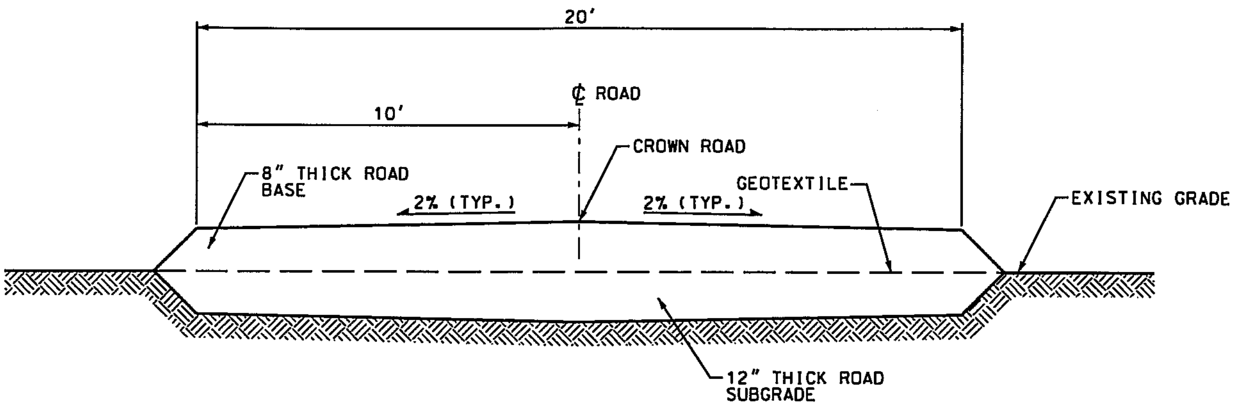
1.2.3 Maintenance

Maintenance is an important part of the operation and management of transmission lines and substations. Maintenance may include clearing of vegetation for access roads, removal of silt/sediment for stormwater treatment facilities and/or replacement of the poles and towers of transmission lines.

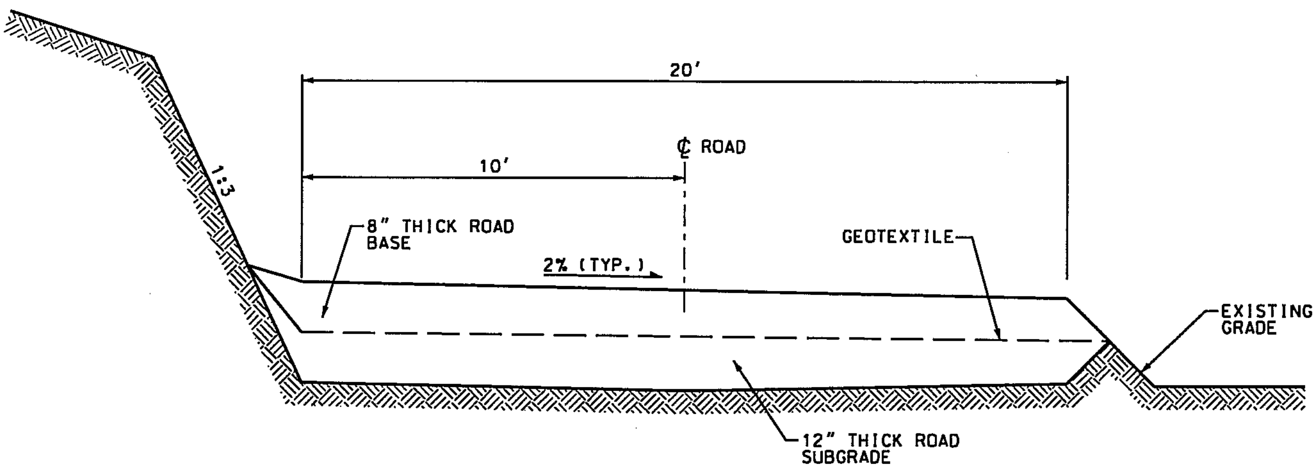
Future sections include BMPs designed to assist in curtailing erosion and controlling on-site sediment release during these maintenance activities. These BMPs should be used where applicable on all Dairyland projects.

[5] Alameda Power & Telecom. *Power Industry Glossary*. 2006. www.alamedapt.com/electricity/glossary.html Retrieved July 17, 2006.

[6] U.S. EPA. *Oil Program: Spill Prevention, Control and Countermeasures.* 2006. http://www.epa.gov/oilspill/spcc.htm Retrieved July 17, 2006.



TYPE 1



TYPE 2

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	ACCESS ROAD TYPICAL SECTIONS	DATE JULY 2006
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		FILE:	

1.3 Erosion Control

Erosion control is any action taken or item used as part of a project or as a separate action to minimize the destructive effects of wind and water on surface soil.[7] Importantly, erosion is a naturally occurring phenomenon.[8] Accelerated erosion as a result of construction-related activities is a widespread problem affecting the environment. The problem is two-fold. First, erosion transports the most fertile part of the soil horizon. This in turn reduces the ability to vegetate areas without the aid of fertilizers. Second, the soil material that is transported ends up in sensitive resource areas, such as lakes, streams, and wetlands. Transported soil has the potential to change the entire ecology of the system. Material deposited into a stream that supports salmon has the potential to clog interstitial spaces between streambed gravel, causing juvenile salmonids to lose their source of cover and food.[9] The NPDES permit program and local permitting agencies mandate that erosion be controlled, and sediment contained, on all project sites greater than 1 acre.

Photo 1.0: Construction Erosion

Photo 1.0: Natural Erosion

BMPs are a useful tool designed to assist in controlling construction and maintenance-related soil erosion. Use of the following BMPs will control erosion:

- Preservation of Existing Vegetation
- Topsoil Segregation
- Mulch, Blankets, and Mats
- Slope Breakers
- Directional Tracking and Tillage
- Soil Binders
- Streambank Stabilization

Fact sheets developed by the California Stormwater Quality Association and the Minnesota Metropolitan Council are

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[7] New York State DOT. *Design Definitions – E.* 2004. www.dot.state.ny.us/design/dictionary/dictionare.html Retrieved July 18, 2006.
[8] Peter Donovan. *Photo* http://managingwholes.com/photos/erosion/pictures/slide07.htm Retrieved July 18, 2006.
[9] Kris Background. *Stream Conditions: Sediment and Salmonid Habitat.* http://www.krisweb.com/stream/sediment.htm Retrieved July 18, 2006.

provided for each BMP at the end of this volume. Some installation details have also been included.

1.3.1 Preservation of Existing Vegetation

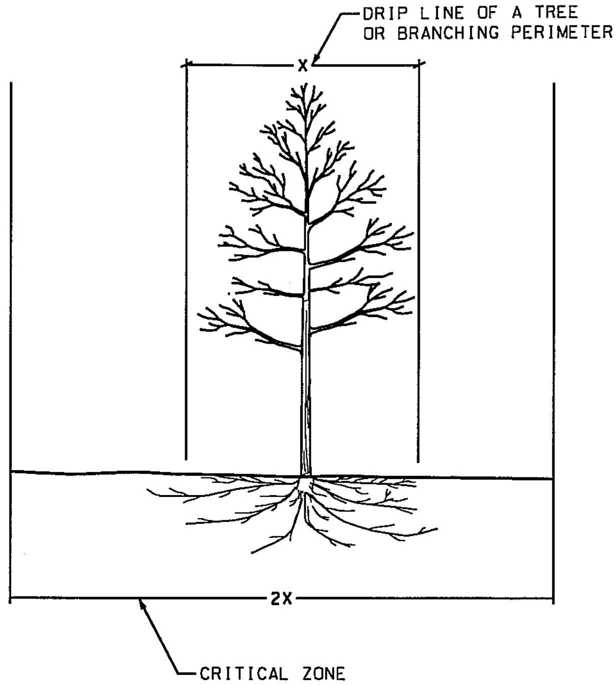
Preserving natural vegetation provides buffer zones and stabilized areas, which help control erosion, protect water quality, and enhance aesthetic benefits.[10] This BMP minimizes the amount of bare soil exposed to erosive forces.

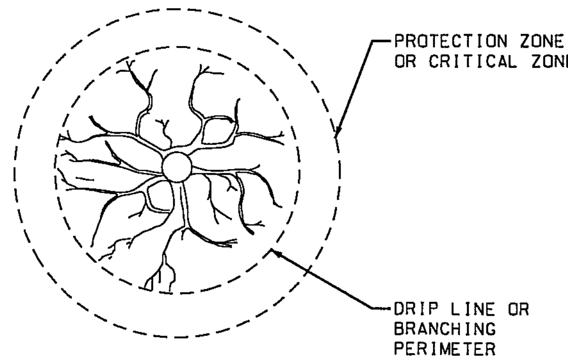
Preserving vegetation is beneficial in the following areas: floodplains, buffers, wetlands, streambanks, steep slopes, and other sensitive resource areas where it might be difficult to establish, install, or maintain erosion control devices.

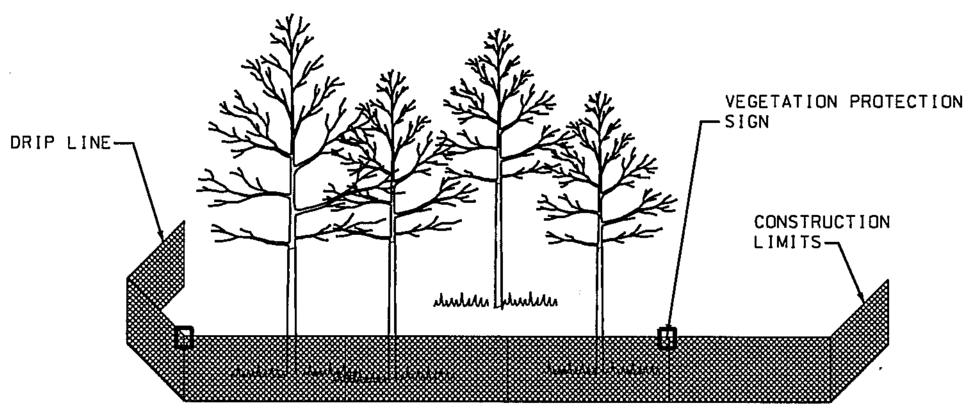
Identify vegetation to be preserved during the planning process. Vegetation to be preserved should then be delineated, in the field and on design drawings, with orange temporary construction fencing (Detail Sheet 2 and Fact Sheet 1).

Photo 1.0: Minimal Footprint

[10] Idaho Department of Environmental Quality. *Catalog of Stormwater BMPs for Cities and Counties*. 2006. http://www.deq.state.id.us/water/data_reports/storm_water/catalog/old_version/stormwater_catalog_bmp3.pdf Retrieved July 13, 2006.







FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE
OR CONSTRUCTION LIMITS AS SPECIFIED. PRIOR TO ANY CONSTRUCTION.
WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
PLACE PROTECTION SIGNS ALONG FENCE AT 20' INTERVALS.

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	PRESERVATION OF EXISTING VEGETATION		DATE JULY 2006
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1.3.2 Topsoil Segregation

Topsoil segregation is the act or process of separating or setting apart the topsoil from the subsoil during construction.[11] Topsoil is that part of the soil profile, typically the A1 horizon, containing material, which is usually more fertile, better structured than underlying layers, and is the most important part of the soil with respect to growth of crops and pastures and its loss or degradation represents the most serious aspect of soil erosion.[12]

Remove topsoil from the land in a separate layer and replace on the backfill area or, if not utilized immediately, segregate in a separate pile from other soil. If topsoil will not be placed on the backfill areas in a short time period, maintain a successful cover of quick growing plant to avoid deterioration (Section 1.5). Other means may be used so that the topsoil is preserved from wind and water erosion, remains free of any contamination by other acid or toxic material, and is in a usable condition for sustaining vegetation.

Photo 1.0: Fertile Topsoil

1.3.3 Mulch, Blankets, and Mats

Photo 1.0: Mulch Application

Mulch, blankets, and mats are usually organic materials, which provide a protective cover over exposed soil and, if seeded, assist with the establishment of new vegetation. Use these measures when disturbed soils may be difficult to stabilize, including the following situations[13]:

- Bare or exposed soil
- Steep slopes, generally steeper than 1:3 (vertical:horizontal)
- Slopes where the erosion potential is high
- Disturbed areas where plants are slow to develop

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[11] Plant Moron. *Photo*. http://planetmoron.typepad.com/planet_moron/2006/05/spring_planting.html Retrieved July 26, 2006.
[12] Northern Rivers Private Forestry Development Committee. *Glossary*. 2006. http://www.privateforestry.org.au/glos_o-z.htm Retrieved July 26, 2006.
[13] California Department of Transportation. *Geotextiles, Mats, Plastic Cover and Erosion Control Blankets: Caltrans Stormwater Quality Handbook – Construction Site Best Management Practices Manual*. 2003. http://www.dot.ca.gov/hq/construc/stormwater/SS-07.pdf Retrieved July 5, 2006.

- Channels with flows exceeding 1 meter/second (3.3 feet/second)
- Channels to be vegetated
- Stockpiles
- Slopes adjacent to water bodies and other sensitive resources

Mulch is any material, such as straw, sawdust, leaves, plastic film, or pine bark, that is spread on the surface of the soil to protect the soil and plant roots from the effects of raindrops, soil crusting, freezing, and evaporation.[14] Refer to Fact Sheet 2 for more information on different types of mulches, tackifiers, and installation methods.

Erosion blankets, fabrics, or mats are similar to mulches in that their primary goal is to protect the soil from erosive forces.[15] However, these materials are better equipped to handle exposed soils on steeper slopes.

Table 1 provides information on different service applications as per the Minnesota DOT for erosion control blankets or fabrics. The recommendations prescribed in Table 1 are also applicable in Illinois, Iowa, and Wisconsin. Refer to Fact Sheet 2, which incorporates installation details.

Where applicable, per the necessary service application and the intended use, incorporate mulch, blankets, and mats in all projects to protect bare soil.

Photo 1.0: Erosion Control Blanket Application

[14] Trinity Trudy's Stormwater World. *Stormwater Vocabulary Words*. 2006. http://www.trinity-trudy.org/coolstuff/vocab.htm Retrieved July 26, 2006.
[15] Soil Erosion Online. *Photo*. http://www.soilerosiononline.com/html/0105/pageFeature02010205.html Retrieved July 11, 2006.

Table 1
Erosion Fabric Categories [16]

Category	Service Application	Use	Acceptable Types
1	Very Temporary	• Flat areas • Around drain outlets • Along roadway shoulders, lawns, and mowed areas	Straw or wood fiber with rapidly degradable netting on one side
2	One Season	• Slopes 1V:3H and steeper that are less than 50 feet long • Ditches with gradients 2 percent or less • Flow velocities less than 5 feet/second	Straw or wood fiber with netting on one side
3	One Season	• Slopes 1V:3H and steeper that are more than 50 feet long • Ditches with gradients 3 percent or less • Flow velocities less than 6.5 feet/second	Straw or wood fiber with netting on two sides
4	Semi-Permanent	• Ditches with gradients 4 percent or less • Flow velocities less than 8 feet/second • Flow depth 6 inches or less	Straw, coconut, and wood fiber with netting on two sides
5	Semi-Permanent	• Ditches with gradients 8 percent or less • Flow velocities less than 15 feet/second • Flow depth 8 inches or less	Coconut fiber with netting on two sides

[16] Minnesota Pollution Control Agency. *Protecting water Quality in Urban areas: Best Management Practices for Dealing with Stormwater Runoff from Urban, Suburban and developing Areas of Minnesota*. Minneapolis, Minnesota, 2000.

1.3.4 Slope Breakers[17]

Slope breakers, also known as "thank you Ma'am," are constructed of materials, such as soil, silt fence, staked hay or straw bales, or sand bags, are berms along slopes which are intended to reduce runoff velocity and divert water off the construction ROW. Slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbodies, wetlands, and road crossings at the spacing specified in Table and Figure 2. If necessary, closer spacing should be used.

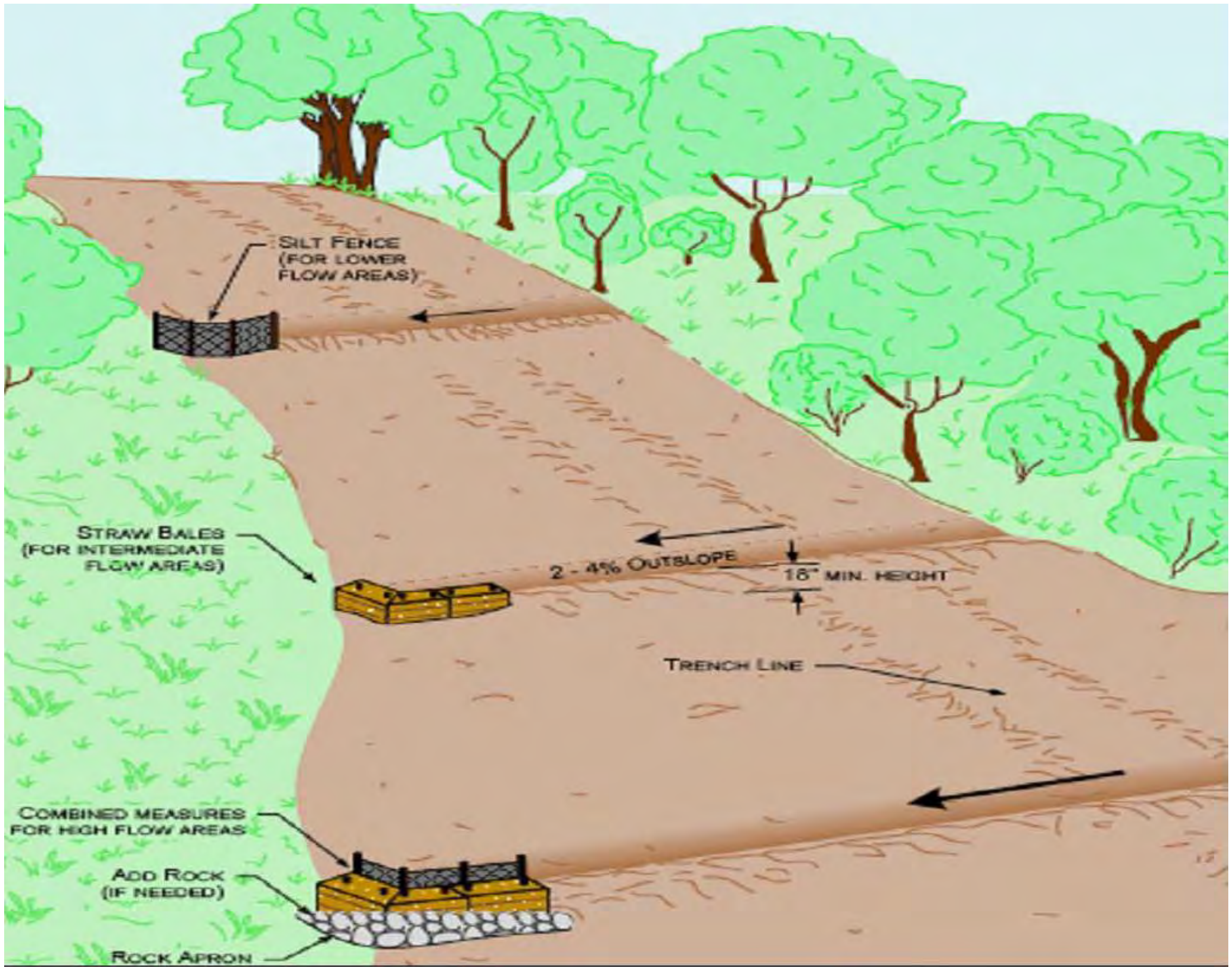
Direct outfall of each slope breaker to a stable, well-vegetated area and position to prevent sediment discharge into wetlands, waterbodies, or other sensitive resources.

Table 2
Slope Breaker Spacing

Percent Slope	Spacing (feet)
5-15	300
> 15-30	200
> 30	100

17 Federal Energy Regulatory Commission. *Upland Erosion Control, Revegetation, and Maintenance Plan*. July 2006. http://www.ferc.gov/industries/gas/enviro/uplndctl.pdf Retrieved July 11, 2006.

Figure 2
Slope Breaker Diagram



1.3.5 Directional Tracking and Tillage

Photo 1.0: Vehicle Tracking

Directional tracking involves driving a tracked vehicle up and down a slope, creating horizontal grooves and ridges, which slows sheet runoff and helps to prevent rills from forming.[18] This process, although it seems nominal, assists in preventing erosion along slopes.

Use directional tracking on all applicable projects.

1.3.6 Soil Binders

Soil binding is a process applying and maintaining polymeric lignin sulfonate soil stabilizers or emulsions materials to the soil surface to temporarily prevent water-induced erosion of exposed soils on construction sites. Soil binders typically provide dust, wind, and soil stabilization (erosion control) benefits in conditions where the Contractor cannot contain or curtail wind erosion (Fact Sheet 3).

Use soil binders on all applicable projects where the use of conventional dust control methods prove unsuccessful.

1.3.7 Streambank Stabilization

Streambank stabilization is a vegetative or mechanical method of preventing erosion or deterioration of the banks of waterways[19]. Stream stability is an active process, and while streambank erosion is a natural part of this process, we have often accelerated this erosion by altering the stream system.[20]

Photo 1.0: Riprap Armor

Refer to BMPs previously discussed for ways to address erosion control and sediment control as most if not all are applicable. In addition, review Fact Sheet 4 for more information or ideas. Practices that stand out are as follows:

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[18] Wisconsin Department of Natural Resources. *Temporary Grading Practice for Erosion Control*. July 2006. http://dnr.wi.gov/org/water/wm/nps/pdf/stormwater/techstds/erosion/Temporary%20Grading%20Practices%20For%20Erosion%20Control%20_1067.pdf Retrieved July 13, 2006.

[19] Retrieved October 13, 2006 from http://www.ci.tuscaloosa.al.us/index.asp?NID=588

[20] NC State University, Department of Biological and Agricultural Engineering. *Stream Notes: Volume I Number 2*. http://www.bae.ncsu.edu/programs/extension/wqg/sri/erosion5.PDF Retrieved October 13, 2006.

- Preservation of existing vegetation
- Mulch, blankets, and mats
- Riprap armoring
- Biologs and tree revetment
- Hydroseeding

Advantages of installing streambank stabilization practices are as follows[21]:

- Stabilizes eroding banks and reduces downstream sedimentation.
- Low cost, in terms of materials, installation, and maintenance.
- Can be installed at any time when water levels are low enough to allow construction (willow posts are installed when they are dormant).
- Enhances self-establishment of native vegetation in a very short time after construction. Vegetation can be added at the next planting season using willow posts, grasses, or other suitable vegetation.
- Will enhance or improve aquatic habitat by increasing diversity.
- Provides for minimal disturbance of existing vegetation on the streambank.

Photo 1.0: Biologs and Tree Revetment

[21] University of Illinois at Urbana Champaign. *Streambank Stabilization in Illinois*. http://www.wq.uiuc.edu/Pubs/Streambank.pdf Retrieved October 13, 2006.

1.4 SEDIMENT CONTROL

1.4.1 Silt Fence

Silt fence consists of geotextile fabric attached to support posts that are entrenched into the ground and are designed to serve as a temporary barrier to retain sediment on construction sites.

Place silt fence around staging areas, stockpiles, and trees to protect from damage. In addition, place silt fence at the downstream side of access roads to protect streams and ditches. Silt fence shall be either machine-sliced or hand-installed into the soil (Detail Sheet 3). Hand-installed silt fence shall have edges buried or weighted down by sand bags (Fact Sheet 5).

Photo 1.0: Silt Fence

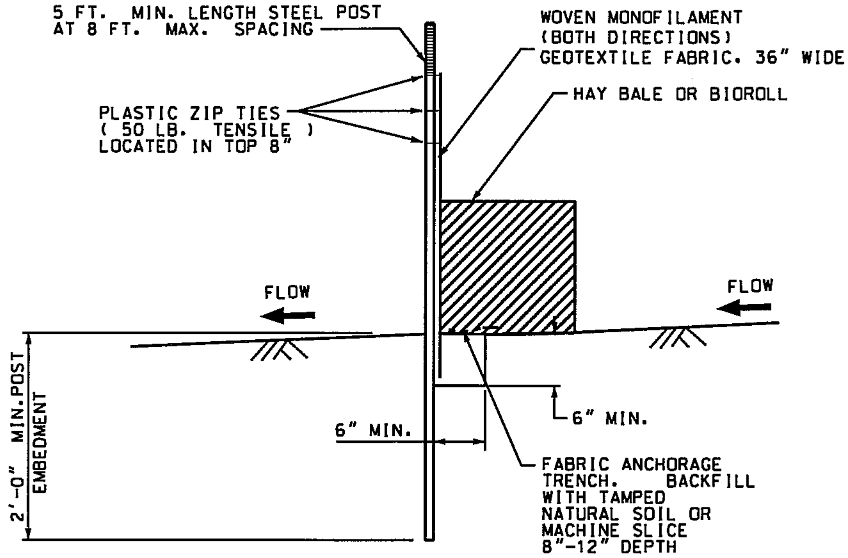
1.4.2 Silt Curtains

Silt curtains, similar to silt fence, are a temporary barrier of geotextile material used to contain sediments within a defined zone in the aquatic environment.[22] Silt curtains are used when construction occurs in a water body, along a stream bank, or shoreline to prevent sediment stirred up during construction from migrating out of the work area and into the rest of the water body.[23]

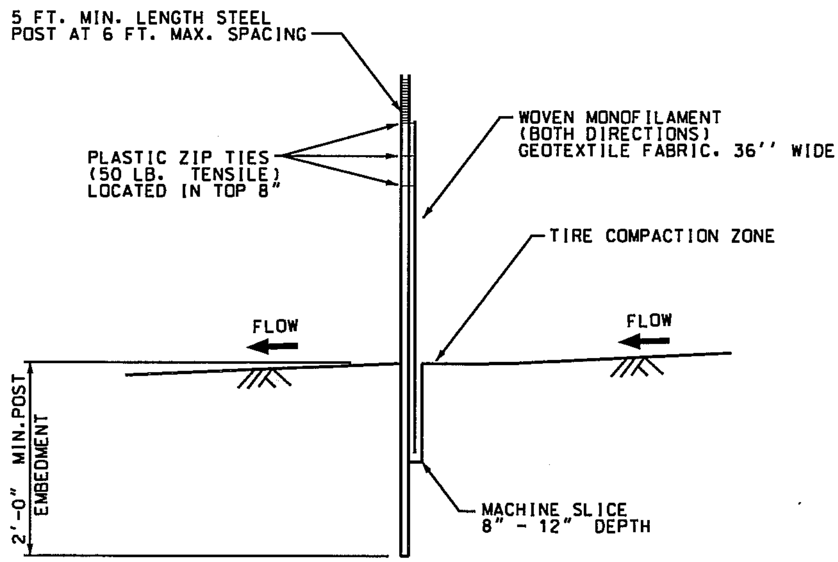
Photo 1.0: Silt Curtain

Place silt curtains at the perimeter of a project site in a river or pond to localize sediment release. In rivers and streams, silt curtains must be placed parallel to the flow direction in rivers or streams (Detail Sheet).

[22] Cornell University. *EIS*. July 2006. www.utilities.cornell.edu/EIS/Glossary.htm Retrieved July 12, 2006.
[23] University of Iowa. *Runoff Documents*. July 2006. http://dhn.iihr.uiowa.edu/runoff/documents/Flotation%20Silt%20Curtain.htm Retrieved July 10, 2006.



HEAVY DUTY



MACHINE SLICED

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	SILT FENCE		DATE JULY 2006
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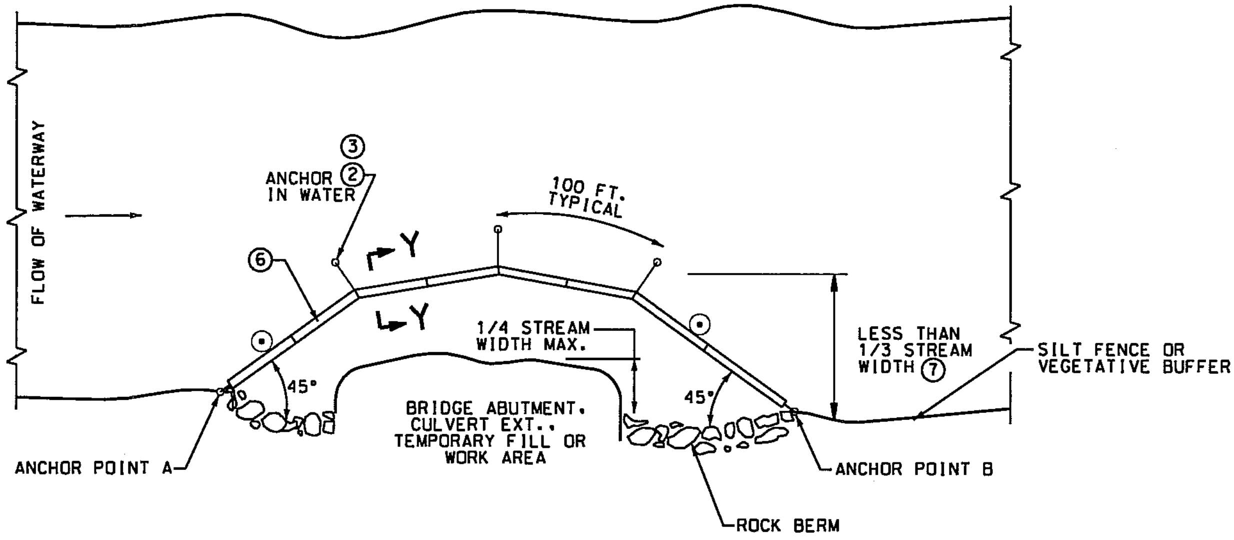
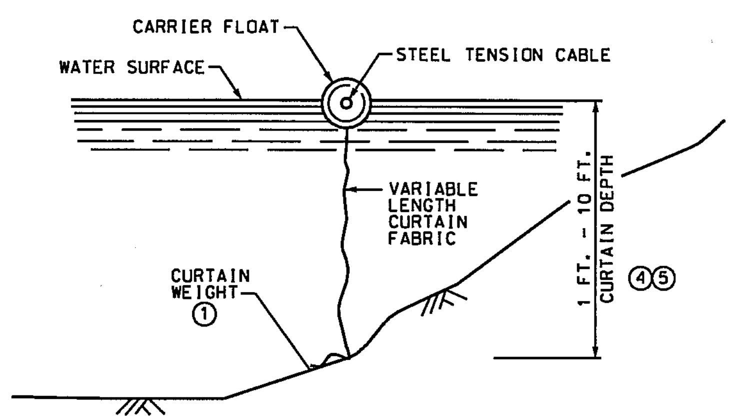


PLAN VIEW



SECTION Y-Y

NOTES:

1. CURTAIN 1 FT. FROM BOTTOM.
2. 100 FT. MAX. SPACING BETWEEN ANCHORS, MIN. 40 LBS.
3. USE ENOUGH ANCHORS TO HOLD SILT CURTAIN IN PLACE.
4. THE DEPTH OF THE SILT CURTAIN VARIES.
5. SILT CURTAIN HEIGHTS INCLUDES MAXIMUM WAVE HEIGHT FOR WATER BODY.
6. SILT CURTAIN, ROCK BERM OR SHEET PILE AS REQUIRED TO CONTROL THE INFILTRATION OF SILT.
7. KEEP AS CLOSE TO WORK AREA AS POSSIBLE.
8. FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS.

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	SILT CURTAIN		DATE JULY 2006
		DRAWN BY: EMEKHAIL	CHECKED BY: DYOUNG	FIGURE SEC – ##
		FILE:		

1.4.3 Sediment Barriers[24]

Photo 1.0: Sand Bag Barrier

A sediment barrier is a series of straw bales, silt fence, or sand bags placed on a level contour to intercept sheet flows and slow sheet flow runoff. Sediment barriers reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets, which erode rills, and ultimately gullies, into disturbed, sloped soils.[25] When working adjacent to a wetland, straw bales are effective along approach slopes.

Construct sediment barriers, as needed, for the transmission maintenance and projects (Fact Sheet 7).

1.4.4 Sediment Traps[26]

A sediment trap is a small temporary ponding area, usually with a gravel outlet, which collects and stores sediment from sites cleared or graded during construction. Sediment traps are formed by excavation or by construction of an earthen embankment. Sediment traps are a temporary measure with a design life of approximately 6 months to 1 year and are maintained until the site area is permanently protected against erosion by vegetation and/or structures.

Photo 1.0: Sediment Trap

Control of surface water and groundwater may be important on some projects. When necessary, divert surface water around or through the construction site by pumps. Water collected in excavations will need removal. Direct discharge from these dewatering operations to a temporary sediment trap constructed with a spillway that consists of

[24] California DOT. *Photo: Sand Bag Barrier*. http://www.dot.ca.gov/hq/env/stormwater/publicat/const/Nov_2001.pdf Retrieved August 1, 2006.

[25] California Stormwater Quality Association. *California Stormwater Best Management Practices, Construction*. July 2006. http://www.cabmphandbooks.com/Documents/Construction/SE-9.pdf Retrieved July 17, 2006.

[26] British Columbia Ministry of Agriculture, Food and Fisheries. *Photo*. http://www.agf.gov.bc.ca/resmgmt/publist/600Series/641310-1.pdf Retrieved August 1, 2006.

geotextile fabric and crushed rocks. Construct sediment traps, as needed, at transmission pole sites and substation/maintenance facilities for dewatering activities (Fact Sheet 8).

1.4.5 Fiber Rolls[27]

A fiber roll consists of wood excelsior, rice, wheat straw, or coconut fibers that are rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff.[28] The rolls also help to dissipate wave energy and trap eroded sediments, thereby providing a protected zone (for aquatic emergent vegetation) along the shoreline.


Photo 1.0: Fiber Log

Fiber rolls are biodegradable, breaking down in 5 to 7 years. In that time, introduced native vegetation shall become established and provide long-term slope, shoreline, and bluff stabilization.[29]

Fiber rolls will be used in conjunction with or instead of silt fence, bale checks, or sand bags on all slopes or in areas identified by the Project Manager (Fact Sheet 9 and Detail Sheet).

1.4.6 Check Dams

Check dams are made of rocks, straw, logs, lumber, or interlocking pre-cast concrete blocks within a ditch, drainage, swale, or channel to reduce the gradient of a ditch, thus slowing the water, lowering its ability to cause erosion, and allowing sediment to settle out.[30]

Use check dams on construction sites in areas identified above when specified by the Project Manager or as warranted in the field (Fact Sheet 10).

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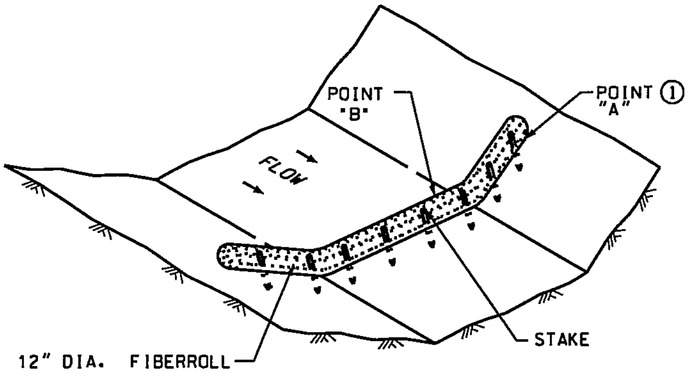
[27] Water Online. *Photo*. http://www.wateronline.com/Content/ProductShowcase/product.asp?DocID=%7B1B44ACDD-5C37-4E56-B5A1-36A7291B5482%7D&VNETCOOKIE=NO Retrieved August 1, 2006.

[28] California Department of Transportation. *Caltrans Storm Water Quality Handbooks Construction Site Best Management Practices Manual Section 4*. July 2006. http://www.dot.ca.gov/hq/construc/stormwater/SC-05.pdf Retrieved July 11, 2006.

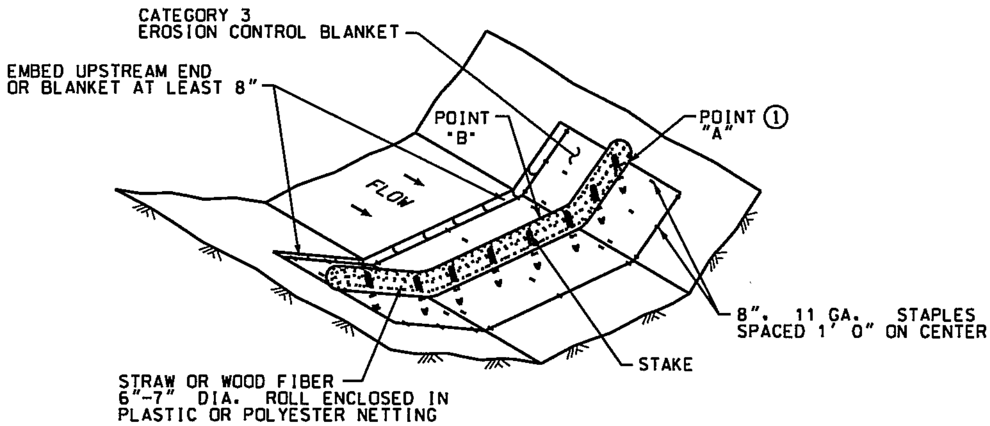
[29] Illinois EPA. July 2006. http://www.epa.state.il.us/water/conservation-2000/lake-notes/shoreline-stabilization/fiber-rolls.html Retrieved July 19, 2006.

[30] British Columbia. *Erosion Stormwater Pollution, Check Dam*. July 2006. http://www.em.gov.bc.ca/Mining/MiningStats/Aggregate%20BMP%20Handbook/BMPs/Check%20Dam.pdf Retrieved July 10, 2006.

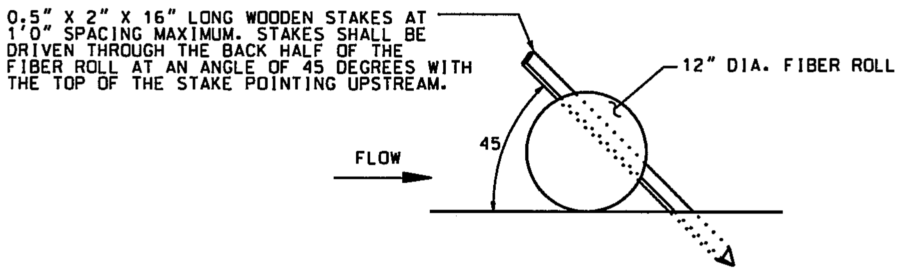


FIBERROLL DITCH CHECK

USED ON ROUGH GRADDED AREAS



FIBOR ROLL BLANKET SYSTEM DITCH CHECK



FIBER ROLL STAKING DETAIL

NOTES:

① POINT "A" TO BE AT LEAST 6" HIGHER THAN POINT "B"

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	FIBER ROLL		DATE JULY 2006
		DRAWN BY: EMEKHAIL	CHECKED BY: DYOUNG	FIGURE SEC – ##
		FILE:		

1.4.7 Inlet Protection

Drop inlet sediment barriers allow for early, safe use of the storm drainage system.

Inlet protection consist of a sediment filter or an impounding area around or upstream of inlets, which temporarily stops pond runoff before it enters the inlet. This mechanism allows sediment to settle out of the storm water runoff (Detail Sheet).

Inlet protection will be used in areas identified by the Project Manager and/or when an inlet is discovered in the field.

1.4.8 Street Cleaning

Cleaning tracked sediments and debris for paved streets prevents unwanted material from washing into surface waters and improves the appearance of public roadways (Fact Sheet 10).

Paved roadways adjacent to construction or maintenance sites will be inspected at the end of each day and tracked soil shall be promptly removed.

1.4.9 Vegetative Buffer

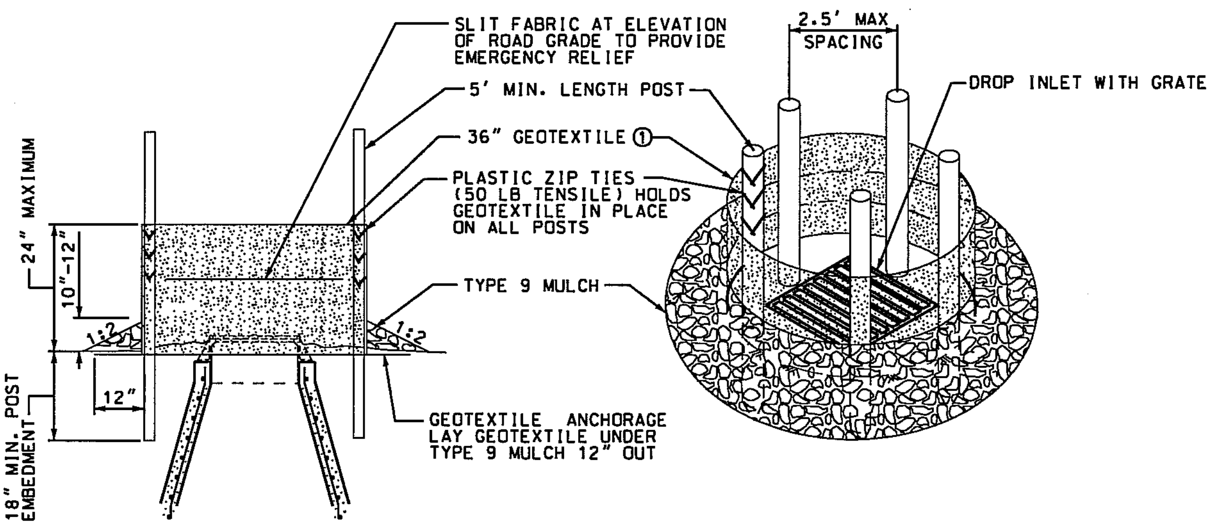
Photo 1.0: Vegetative Buffer

A vegetative buffer strip, commonly referred to as filter strip, is a gently sloping area of vegetative cover that runoff water flows through before entering a stream, storm sewer, or other conveyance, which acts as living sediment filters that intercept and detain stormwater runoff. They reduce flow and velocity of surface runoff, promote infiltration, and reduce pollutant discharge by capturing and holding sediments and other pollutants carried in the runoff water.[31]

Existing vegetation will be preserved as discussed in Section 1.3.1 and used as buffer strips where specified by the Project Manager or deemed appropriate in the field.

Vegetative buffer zones can play a key role in limiting negative water quality impacts from developed shoreland property.

[31] Idaho Department of Environmental Quality. *Catalog of Stormwater BMPs for Cities and Counties*. July 2006. http://www.deq.state.id.us\water\data_reports\storm_water\datalog\old_version\stormwater_catalog_bmp26.pdf Retrieved July 10, 2006.



SILT FENCE RING ROCK BARRIER COMBINATION

NOTE:

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS.

② MACHINE SLICED SILT FENCE MAY BE SUBSTITUTED AT CULVERT INLETS AND AT DRAINS WHERE SITE CONDITIONS ALLOW.

③ USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1H:3V or LESS

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	INLET PROTECTION TYPE D		DATE JULY 2006
		DRAWN BY: EMEKHAIL	CHECKED BY: DYOUNG	FIGURE SEC – ##
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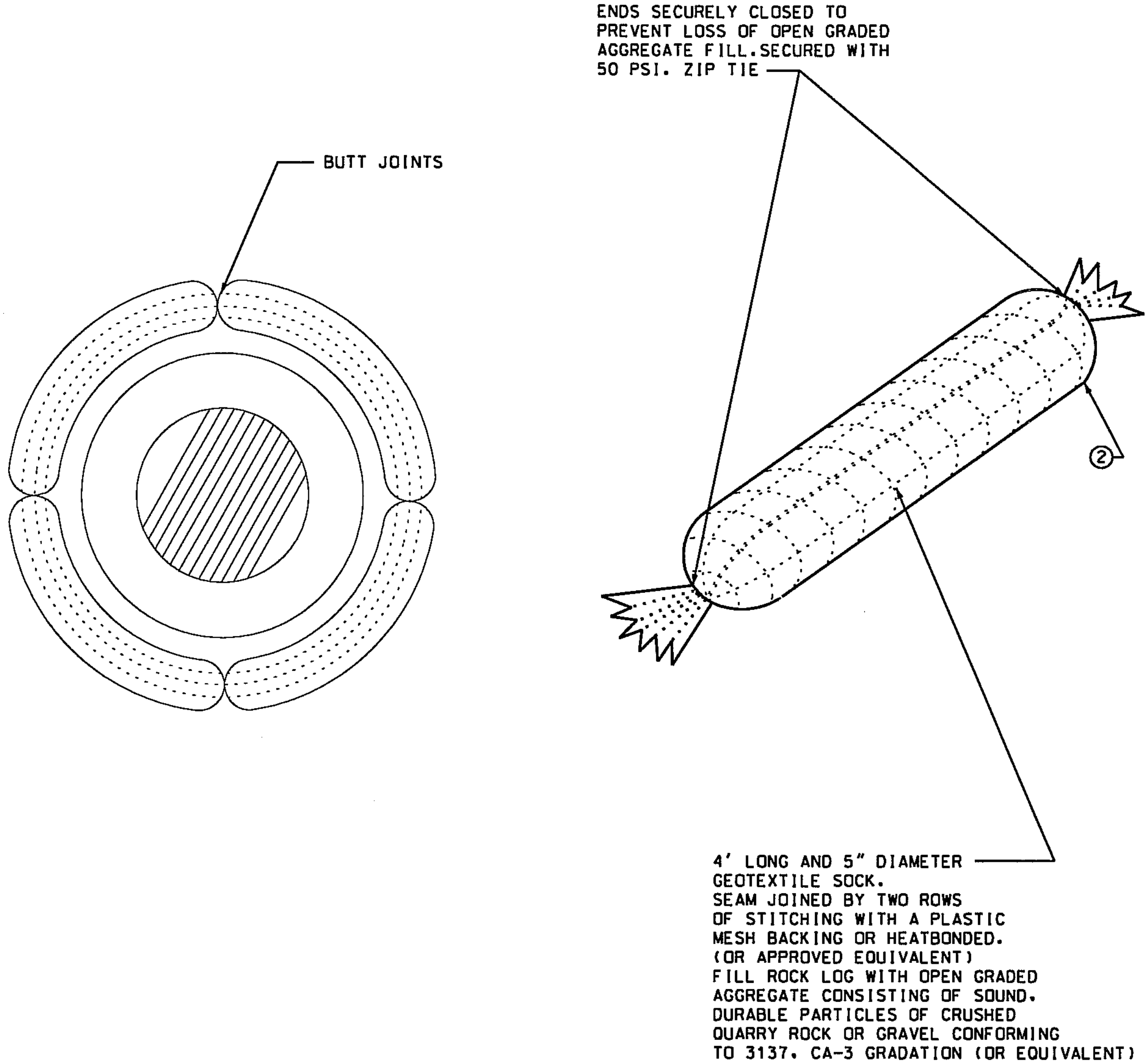


STORM DRAIN WITH ROCK LOG

DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	INLET PROTECTION TYPE C		DATE JULY 2006
		DRAWN BY: EMEKHAIL	CHECKED BY: DYOUNG	FIGURE SEC – ##
		FILE:		

1.4.10 Construction Entrance and Exit

A stabilized construction access is defined by a point of entrance or exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

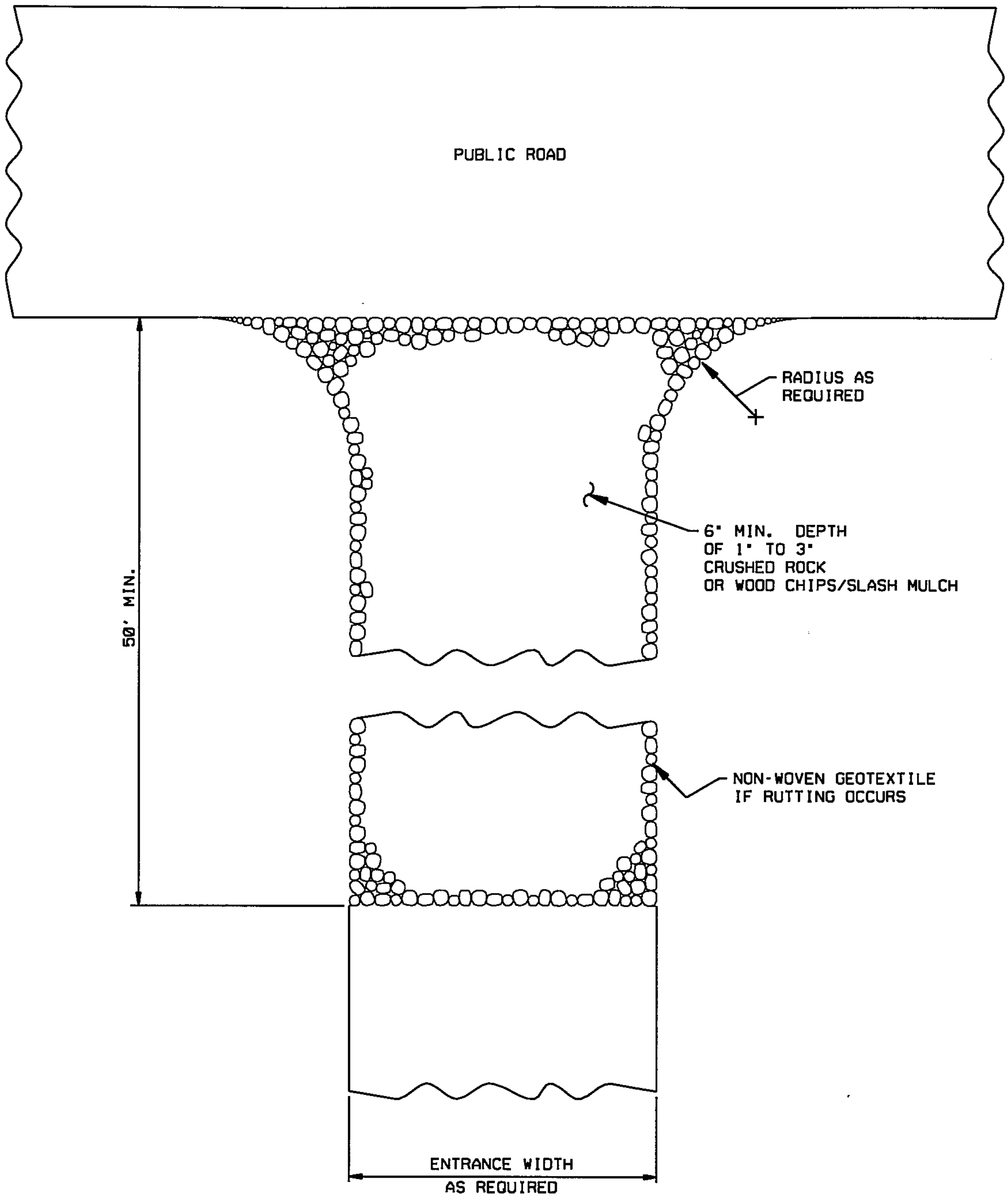
Construct entrances and exits by overlaying a 12-ounce geotextile fabric with a 6-inch layer of 1-to-3 inch diameter washed aggregate or woodchips. Vegetation and topsoil should be removed from the shoulder zones to construct the entrances, however, tall vegetation may be mowed. If the entrance/exit begins to rut, stabilize by placing a geogrid and additional washed aggregate or woodchips in the roadway. Remove the entrance/exit restore the area to the geometry of the intersection at the end of each project. Areas outside of the permanent roadway shoulder may require re-grading. Compacted soils shall be loosened by ripping or disking, then seeded and mulched (Fact Sheet 11).

Use construction entrance and exit on all construction or maintenance projects involving land disturbing activities adjacent to paved roadways.

1.4.11 Dust Control

Wind erosion or dust control consists of applying water or other dust palliatives as necessary to prevent or alleviate dust nuisance generated by construction activities.

Use water when dust proves to be a nuisance on project sites. If water proves ineffective, use soil binders (Section 1.3.6) (Fact Sheet 12).



DAIRYLAND POWER COOPERATIVE A Touchstone Energy® Cooperative	PREPARED BY HDR	CONSTRUCTION ENTRANCE & EXIT	DATE JULY 2006
		DRAWN BY: EMEKHAIL — CHECKED BY: DYOUNG FILE:	FIGURE SEC – ##

1.5 VEGETATIVE STABILIZATION

Vegetation stabilization is a combination of preserving existing vegetation, discussed previously in Section 1.3.1, and the establishment of new vegetation or turf. Vegetative stabilization can prevent erosion by wind and water and improve wildlife habitat and aesthetics.[32] In addition, vegetation reduces velocity and volume of stormwater runoff and protects exposed soil from the erosion forces of raindrops.

Most, if not all, construction projects contain some measure of clearing vegetation. Traditionally, sites are cleared of vegetation in preparation for construction activities. More vegetation is often removed than is necessary, which leads to a greater amount of exposed soil that is prone to erosion. To prevent or minimize the exposure of soil to erosion, it is important to protect and preserve existing vegetation and put a plan in place to establish temporary and permanent vegetation.

The best and cheapest way to control erosion is to establish vegetative cover. Vegetation can reduce erosion by more than 90

Temporary seeding is a means of growing a short-term (less than 5 years) vegetative cover to temporarily stabilize denuded areas that may be in danger of erosion.[33] Temporary seeding controls runoff and erosion, provides residue for soil protection and seedbed preparation, and reduces problems of mud and dust production from bare soil surfaces during construction on areas that will not be brought to final grade for a period of more than 14 working days. These plantings consist of rapidly growing annual grasses, small grains, or legumes.[34] Temporary seeding is applicable to areas, which require temporary stabilization for a period of 1 to 5 years.

Permanent seeding is a means of establishing permanent, perennial vegetative cover on disturbed areas to prevent erosion, remove sediment from runoff, reduce the volume of runoff, and improve water quality.[35] Permanent seeding is well-suited in areas where permanent, long-lived vegetative cover is the most practical or most effective method of stabilizing the soil.[36]

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[32] Dauphin County Conservation District. *BMPs Fact Sheet, Vegetative Stabilization*. 2006. http://www.dauphincd.org/main/Vegetative%20Stabilization%20fact%20sheet.pdf Retrieved August 1, 2006.

[33] University of Iowa. *Runoff Documents*. 2006. http://dhn.iihr.uiowa.edu/runoff/documents/Temporary%20Seeding.htm Retrieved July 27, 2006.

[34] Mississippi State University. *Water and Seeding*. 2006. http://www.abe.msstate.edu/Tools/csd/NRCSBMPs/pdf/water/construction/tempseeding.pdf Retrieved July 10, 2006.

[35] University of Iowa. *Runoff Documents*. July 2006. http://dhn.iihr.uiowa.edu/runoff/documents/Permanent%20Seeding.htm Retrieved July 27, 2006.

[36] Stormwater Authority. *Permanent Seeding*. July 2006. http://www.stormwaterauthority.org/assets/Permanent%20Seeding.pdf Retrieved July 27, 2006.

All construction sites shall be brought to permanent stabilization with the use of permanent seeding provided herein or with sod. No site shall be left physically disturbed at the completion of construction or maintenance projects.

In this section, information specific to states that Dairyland services have been provided. The information includes the following: soil characteristics, temporary and permanent seeding recommendations, sodding, and required vegetative maintenance and local seed vendors (Fact Sheet 1).

Seeding recommendations provided herein for Illinois and Minnesota were taken from the DOT in those respective states. The information for Iowa and Wisconsin was taken from their respective Department of Natural Resources (DNR).

1.5.1 Illinois

1.5.1.1 Soil Characteristics

Dairyland's entire service area in Illinois, as shown on Figure 3, consists of highly erodible soil. Projects undertaken in these areas will require substantial amounts of time dedicated to two essential components of project planning: scheduling and site preparation. If at all possible, projects in these areas should be undertaken during winter months when the ground is frozen or at times during the year when precipitation events are low, for instance, fall months.

1.5.1.2 Temporary Seeding

1. Seeding Mixture

Class 7 or temporary turf cover mixture is recommended for temporary turf establishment.[37]

Class 7 temporary turf cover mixture consists of:

- Perennial Ryegrass – 50 lbs per acre
- Oats, Spring – 64 lbs per acre

Class 7 mixture can be applied at any time prior to applying any seeding class or added to them and applied at the same time. Other seeds may be used if approved by the Project Manager.

2. Seedbed Preparation

Seedbed preparation is not required if the soil is in loose condition.[38] However, if the soil is hard or caked, light disking is required.

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[37] Illinois Seeding Manual. *Landscaping. Section 250. Seeding [Electronic version]. Article 250.07.* http://www.dot.state.il.us/desenv/pdfspec2002/sec200.pdf Retrieved August 1, 2006.
[38] Illinois Seeding Manual. *Article 250.05, Page 99.* 2006.

3. SEEDING METHOD

Sow seedings with a hydraulic seeder or rangeland type grass drill.[39] Broadcasting or hydraulic seeding is allowed on steep slopes (over 1:3 [V:H]) or inaccessible areas where use of the equipment specified is physically impossible. Hand broadcasting or other approved methods are permitted in the instance when Class 7 is used as an erosion control measure to establish temporary cover. Sufficient water is required to wash seeds down to the soil.

[39] Illinois Seeding Manual. *Article 250.06, Page 99.* 2006.

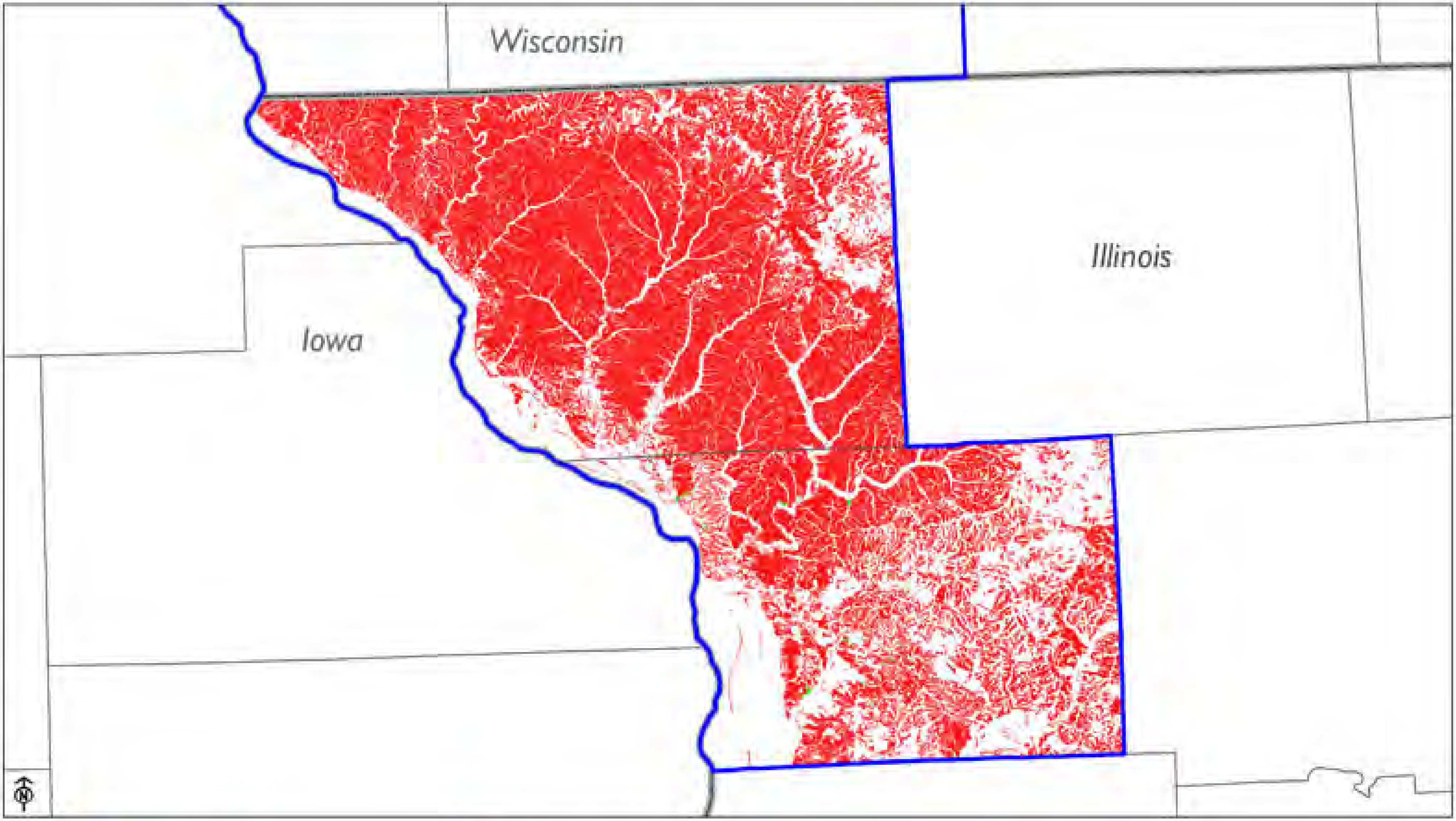


Figure 3
Highly Erodible Soils - Illinois

1.5.1.3 PERMANENT SEEDING

1. SEEDING MIXTURE

Table 3
Illinois Permanent Seeding Mixture[40]

Class –Type	Seeds	Kg/Hectare (lbs/acre)
Low Mixture[7]	Ky Bluegrass Perennial Ryegrass Creeping Red Fescue	110 (100) 70 (60) 50 (40)
Salt Tolerant Lawn Mixture[7]	Bluegrass Perennial Ryegrass Dawsons Red Fescue Scaldis Hard Fescue Fults Salt Grass	70 (60) 20 (20) 20 (20) 20 (20) 70 (60)
Low Maintenance Lawn Mixture	Fine Leaf Turf – Type Fescue[3] Perennial Ryegrass Red Top Creeping Red Fescue	170 (150) 20 (20) 10 (10) 25 (20)
Roadside Mixture7	Alta Fescue or Ky 31 Perennial Ryegrass Creeping Red Fescue Fults Salt Grass[1]	110 (100) 55 (50) 50 (40) 10 (10)
Salt Tolerant Roadside Mixture[7]	Alta Fescue or Ky 31 Perennial Ryegrass Dawsons Red Fescue Scaldis Hard Fescue Fults Salt Grass[1]	45 (40) 25 (20) 5 (5) 20 (30) 70 (60)
Slope Mixture[7]	Alta Fescue of Ky 31 Perennial Ryegrass Alsike Clover[2] Birdsfoot Trefoil[2] Little Bluestem Side-Oats Grama Oats, Spring	45 (40) 25 (20) 5 (5) 10 (10) 5 (5) 10 (10) 55 (50)
Native Grass[4,6]	Big Bluestem Little Blue Stem Side-Oats Grama Wild Rye Switch Grass Indian Grass Annual Ryegrass Oats, Spring Perennial Ryegrass	4 (4) 5 (5) 5 (5) 1 (1) 1 (1) 2 (2) 30 (25) 30 (25) 15 (15)

[40] Illinois Department of Transportation. *Standard Specification for Road and Bridge Construction*. Adopted January 1, 2002.

Class –Type	Seeds	Kg/Hectare (lbs/acre)
Low Profile Native Grass6,8	Little Blue Stem Side-Oats Grama Wild Rye Prairie Dropseed Annual Ryegrass Oats, Spring Perennial Ryegrass	5 (5) 5 (5) 1 (1) 0.5 (0.5) 30 (25) 30 (25) 15 (15)
Wetland Grass and Sedge Mixture6, 8	Annual Ryegrass Oats, Spring Wetland Grasses[41]	30 (25) 30 (25) 6 (6)
Forb With Annuals Mixture	Annuals Mixture37, 6, 8 Forb Mixture37, 6, 8	1 (1) 10 (10)
Large Flower Native Forb Mixture6,8	Forb Mixture 6, 8	5 (5)
Wetland Forb	Forb Mixture37,6, 8	2 (2)
Conservation Mixture	Smooth Brome Grass Vernal Affairs2 Oats, Spring	45 (40) 15 (15) 55 (48)
Salt Tolerant Conservation Mixture	Smooth Brome Grass Vernal Alfalfa2 Oats, Spring Fults Salt Grass1	45 (40) 15 (15) 55 (48) 25 (20)

[1]*Fults pucinnellia distans*
[2]*Legumes – inoculation required*
[3]*Specific variety as shown in the plans or approved by the Project Manager*
[4]*Other seeds may be used if approved by the Project Manager*
[5]*PLS = Pure Live Seed to be used*
[6]*Fertilizer not required*
[7]*Planting times April 1st to June 1st and August 15th to September 30th*
[8]*Planting times May 15th to June 30th and October 15th to December 1st*

2. *SEEDBED PREPARATION*

For bare-earth seeding, do not start seedbed preparation until all stones, boulders, debris, and similar material larger than 75 mm (3 inches) in diameter have been removed. Work the area to be seeded to a minimum depth of 75 mm (3 inches) with a disk tiller or other equipment (approved by the Project Manager) reducing all soil particles to a size not larger than 50 mm (2 inches) in the largest dimension. The prepared surface shall be relatively free from weeds, clods, stones, roots, sticks, rivulets, gullies, crusting, and caking. No seeds shall be sown until the Project Manager has approved the seedbed.

[41] Illinois Seeding Manual. *Article 250.07, Page 99*. 2006.

3. Seeding Method

Bare Earth Seeding

Bare earth seeding shall be done using the following methods unless otherwise specified or directed by the Project Manager:

1. Sow seed Classes 1, 2, and 6 with a machine that mechanically places the seed in direct contact with the soil, packs, and covers the seed in one continuous operation.
2. Sow seed Class 3 with a hydraulic seeder.
3. Sow seed Class 4 with a rangeland type grass drill.
4. Sow seed Class 5 with a hydraulic seeder or rangeland type grass drill. Broadcasting or hydraulic seeding will be allowed as approved by the Project Manager on steep slopes (over 1:3 [V:H]) or in inaccessible areas where use of the equipment specified is physically impossible.

Interseeding

Interseeding is the seeding of areas of existing turf. Prior to interseeding, all areas of existing turf to be interseeded, except as listed below, shall be mowed one or more times to a height of not more than 75 mm (3 inches). The equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area.

The cut material shall not be windrowed or left in a lumpy or bunched condition. Additional mowing may be required, as directed by the Project Manager, on certain areas in order to disperse the mowed material and allow penetration of the seed. The Contractor will not be required to mow within 300 mm (1 foot) of the ROW fence, continuously wet ditches and drainage ways, slopes 1:3 (V:H) and greater, or areas which may be designated as not mowable by the Project Manager. Debris encountered during the mowing and interseeding operations, which hamper the operation or are visible from the roadway shall be removed and disposed of according to the seedbed preparation portion of Section 1.5.1.3. Damage to the ROW fence and turf, such as ruts or wheel tracks more than 50 mm (2 inches) in depth, shall be repaired to the satisfaction of the Project Manager prior to the time of interseeding. All seeding classes shall be interseeded using a rangeland type grass drill with an interseeding attachment, except:

1. When specified in the plans or directed by the Project Manager, a slit seeder shall be used to interseed Class 1 or Class 2 seed.
2. Broadcasting or hydraulic seeding will be allowed, as approved by the Project Manager, on steep slopes (1:3 [V:H] or steeper) or in inaccessible areas where use of the equipment specified is physically impossible. Apply sufficient water to these areas to wash the seed down to the soil.

1.5.2 Iowa

1.5.2.1 SOIL CHARACTERISTICS

A large portion of Dairyland service area within Iowa does not have available data. Available erodible soils data for Dairyland's service area in Iowa only cover approximately 40 percent of the total area as shown on Figure 4. Of the available data, the area consists predominantly of potentially highly erodible soils which are located in the eastern part of the service area. In the central part of the service area, the soils contain a low erodibility factor. Given the potential for these soils to become highly erodible, projects undertaken in these areas will require considerable amount of time dedicated to two essential components of project planning: scheduling and site preparation.

1.5.2.2 TEMPORARY SEEDING

1. SEED MIXTURE

Table 4
Iowa Temporary Seed Mixture

Common Name	Application Rate (lbs/acre)	Planting Season	Seeding Method
Perennial Ryegrass	40 (1lb/1,000 sq. feet)	All	Hand broadcasting or hydroseeding
Oats	48 (1.2 lbs/1,000 sq ft.)	Plant March 1 – May 20	
Sundangrass	35 (0.8 lbs/1,000 sq ft.)	Plant May 21 – Aug. 14	
Winter Rye	64 (1.6 lbs/100 sq ft.)	Plant Aug. 15 – Sept. 30	

2. SEEDBED PREPARATION

Prepare seedbed to a depth of 3 inches. Before final preparation, apply 400 lbs of 13-13-13 (nitrogen-phosphorous-potassium [NPK]) fertilizer per acre (10 lbs/1,000 sq ft) and incorporate it into the seedbed. Roll the area to be seeded with an approved cultipacker.

Note: Phosphorus-free Fertilizer may be required in some areas.

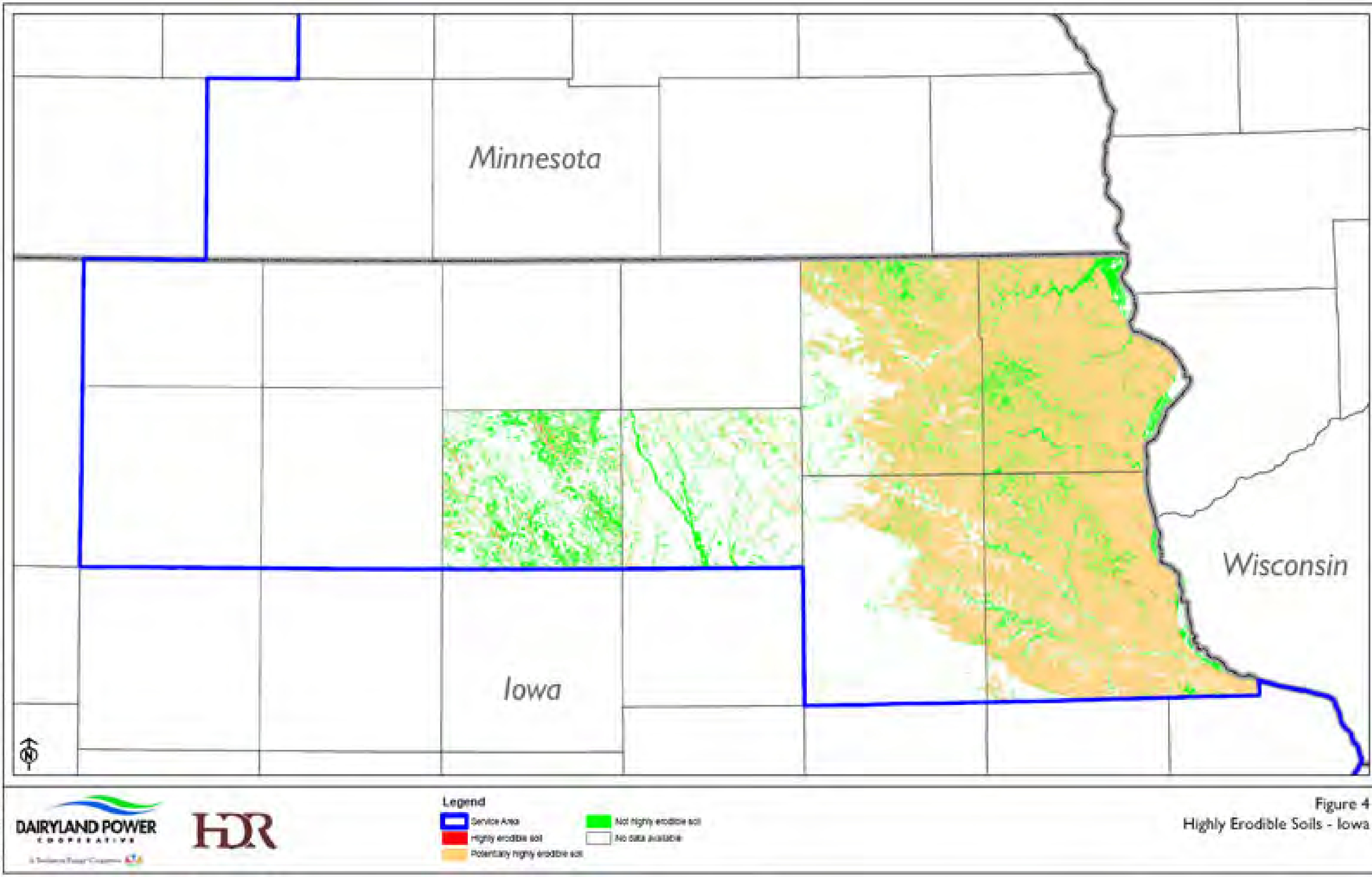


Figure 4
Highly Erodible Soils - Iowa

1.5.2.3 PERMANENT SEEDING

1. SEED MIXTURE

Table 5
Iowa Permanent Seed Mixture

<table>
<tr><th>Type</th><th>Percent</th><th>Seeding Method</th><th>Maintenance and Inspection</th></tr>
<tr><td colspan="2">Lawn Grass Mixture, 80 lbs/ac (2 lbs/1,000 sq ft)</td><td rowspan="11">• Hand broadcasting or hydroseeding
• Apply mulch uniformly – 1.5 tons/ac (70 lbs/1,000 sq. ft)
• Till all mulched</td><td rowspan="11">• Inspect once monthly, noting stand of grass
• Look for rills formed by stormwater runoff or where lack of moisture caused seedlings to die
• All areas should be corrected

It may be necessary to re-prepare the seedbed and re-mulch</td></tr>
<tr><td>Bluegrass</td><td>60</td></tr>
<tr><td>Perennial Ryegrass</td><td>20</td></tr>
<tr><td>Creeping Red Fescue</td><td>15</td></tr>
<tr><td>White Dutch Clover</td><td>>5</td></tr>
<tr><td colspan="2">Tall Grass Mixture, 40 lbs/ac (1 lb/1,000 sq ft)</td></tr>
<tr><td>Ky 31 Fescus</td><td>50</td></tr>
<tr><td>Switchgrass</td><td>10</td></tr>
<tr><td>Orchardgrass</td><td>20</td></tr>
<tr><td>Bromegrass</td><td>15</td></tr>
<tr><td>Alsike Clover</td><td>5</td></tr>
</table>

2. SEEDBED PREPARATION

Prepare seedbed to a depth of 75 mm (3 inches). Before final preparation, apply 700 lbs of 13-13-13 NPK fertilizer per acre (12 lbs/1,000 sq ft) and incorporate it into the seedbed. Roll the area to be seeded with an approved cultipacker.

Note: *phosphorus free fertilizers may be required in some areas.*

1.5.3 Minnesota

1.5.3.1 SOIL CHARACTERISTICS

A sizable portion of Dairyland service area within Minnesota does not have available data. Available erodible soils data for Dairyland's service area in Minnesota covers approximately 65 percent of total area as shown on Figure 5. Of the available data, the area consists predominantly of highly erodible soils in the eastern and central part of the service area and soils with low erodibility factor located in the western part of the service area. Projects undertaken in areas with highly erodible soils will require substantial amounts of time dedicated to two essential components of project planning: scheduling and site preparation. If at all possible, projects in these areas should be undertaken during winter months when the ground is frozen or times during the year when precipitation events are low, for instance, fall months.

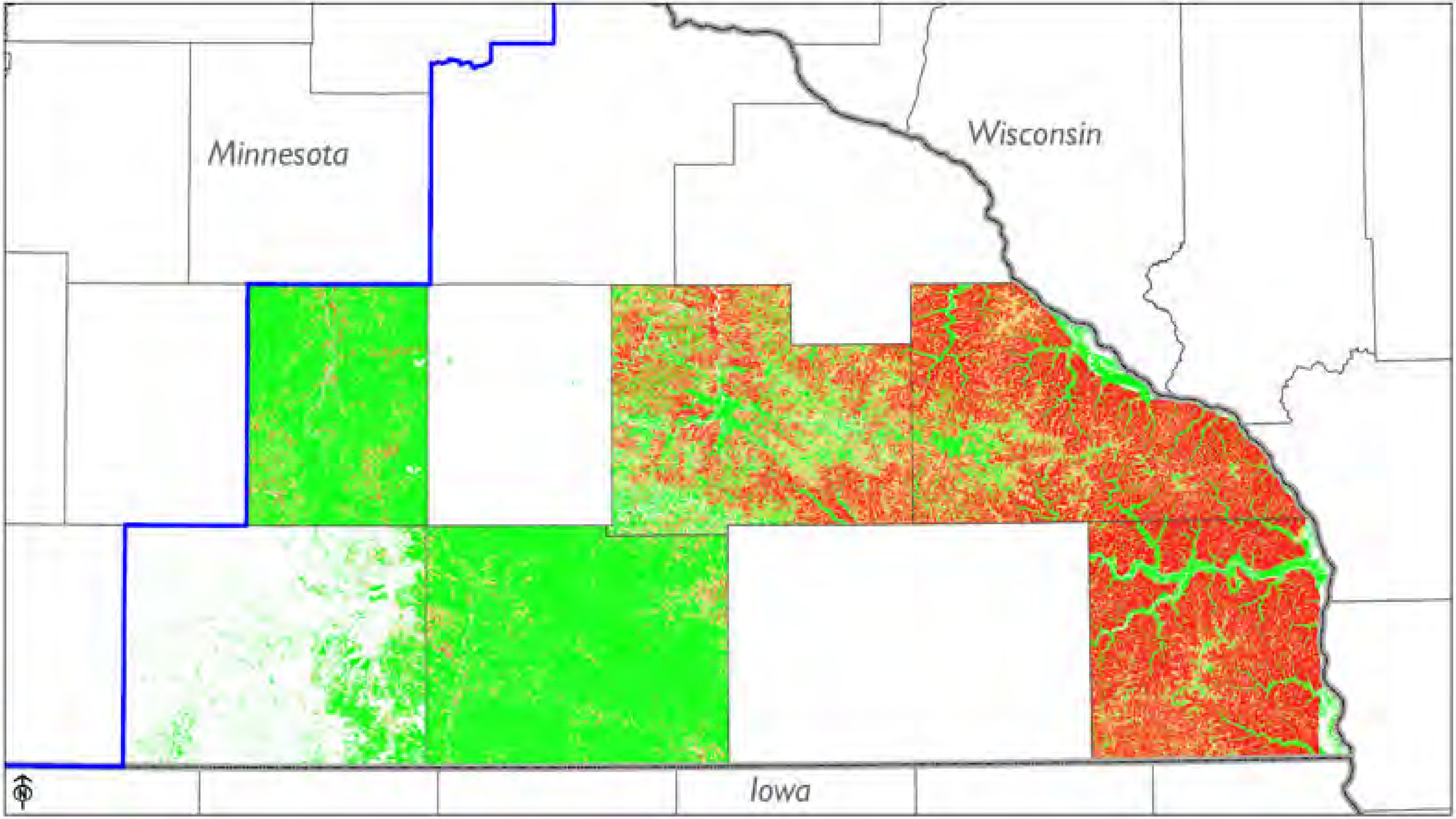


Figure 5
Highly Erodible Soils - Minnesota

1.5.3.2 TEMPORARY SEEDING

1. *SEED MIXTURE*

Table 6[42]
Minnesota Temporary Seed Mixture

Purpose	Mixture	Application Rate (lbs/ac)
Fall Cover	100B	100
Spring/Summer Cover	110B	100
1 to 2 years of Cover*	150	40
2 to 5 years of Cover	190	60

** Specified for this region per Minnesota DOT Technical Memo dated November 2005.*

Table 7
Minnesota Mixture 150

Common Name	Bulk Rate (lbs/ac-kg/ha)	Percent of Mix Component
Rye-grass, perennial	15 -16.8	37.5
Wheat-grass, slender	5 - 5.6	12.5
Red clover	10 -11.2	25.0
Alfalfa, vernal	10 -11.2	25.0
Grand Total	40 -44.8	100

2. *SEEDBED PREPARATION*

Seedbed preparations and fertilizer recommendation are covered in the next section: Seeding Methods.

Lime should be specified for all projects with a subsoil pH of 6.2 and/or less, at a rate of 2 tons per acre.

42 Minnesota Department of Transportation. *Memo from Lori Belz, Natural Resource Program Manager to Greg Paulson, Office of Environmental Services, District 6 ADE, Program Delivery*. November 2005.

3. *SEEDING METHODS*

Method 1 – Drop Seeding

Drop seeding on tilled sites is the standard method for seeding on prepared construction projects.

1. Site Preparation – Prepare the site by loosening topsoil to a minimum depth of 75 mm (3 inches).
2. Fertilizer – Either use a fertilizer analysis based on a soil test or a general recommendation of a 24-12-24 NPK commercial grade analysis at 300 lbs per acre.
3. Seed Application – Apply seed with a drop seeder that will accurately meter the types of seed to be planted, keep all seeds uniformly mixed during the seeding, and contain drop seed tubes for seed placement (Brillion-type). The drop seeder should be equipped with a cultipacker assembly to ensure seed-to-soil contact.
4. Seeding Rates – Rates are specified in the mixture tabulation for the specified mix.
5. Packing – If the drop seeder is not equipped with a cultipacker, the site should be cultipacked following the seeding to ensure seed-to-soil contact.
6. Mulch – Mulched and disc-anchor the site following cultipacking. The standard mulch is Minnesota DOT Type 1 at a rate of 2 tons per acre.

Method 2 – Hydroseeding

Hydroseeding is an acceptable method for establishing the general mixtures when done correctly. However, it is imperative that the site is prepared and finished properly. Minnesota DOT generally uses hydroseeding on steep slopes or other areas inaccessible to a drop seeder, such as wetland edges and ponds. Hydroseeding is not recommended if the extended weather patterns are hot and dry and the soil surface is dry and dusty. The seed-water slurry should be applied within 1 hour after the seed is added to the hydroseeder tank.

1. Site Preparation – Prepare the site by loosening topsoil to a minimum depth of 3 inches. It is critical that the seedbed be loosened to a point that there are a lot of spaces for seed to filter into cracks and crevices, otherwise, it may end up on the surface and wash away with the first heavy rain.
2. Fertilizer – Either use a fertilizer analysis based on a soil test or a general recommendation of a 24-12-24 NPK commercial grade analysis at 300 lbs per acre.
3. Seed Application – Apply seed by hydroseeding it evenly over the entire site. A fan-type nozzle should be used with approximately 500 gallons of water per acre. It is recommended to add approximately 75 lbs of hydromulch per 500 gallons of water for a visual tracer to ensure uniform coverage.
4. Seeding Rates – Rates are specified in the mixture tabulation for the specified mix.

5. Harrowing – The site should be harrowed, cultipacked, or raked following seeding.
6. Mulch – Mulch the site following harrowing using one of the following methods (as per plans):
   - Minnesota DOT Type 1 mulch at a rate of 2 tons per acre with disc anchoring
   - Minnesota DOT Hydraulic Soil Stabilizer or Bonded Fiber Matrix (BFM) on inaccessible sites

***Note**: When seeding in conjunction with a hydraulic soil stabilizer (BFM's), hydro-mulches, etc., it is recommended that a two-step operation be used. Seed should be placed first and the hydraulic soil stabilizer be applied afterwards. This is to ensure that seed comes into direct contact with the soil.*

Method 3 – Broadcast Seeding

Broadcast seeding is performed either with mechanical “cyclone” seeders, by hand seeding, or by any other method that scatters seed over the soil surface. It is essential that steps be taken to ensure good seed-to-soil contact when broadcast seeding is used.

1. Site Preparation – Prepare the site by loosening topsoil to a minimum depth of 3 inches. It is critical that the seedbed be loosened to a point that there are spaces for seed to filter into cracks and crevices, otherwise, it may end up on the surface and wash away with the first heavy rain.
2. Fertilizer – Either use a fertilizer analysis based on a soil test or a general recommendation of a 24-12-24 NPK commercial grade analysis at 300 lbs per acre.
3. Seed Application – Apply seed by broadcasting it evenly over the entire site. Several types and sizes of broadcast seeders are available for use, ranging from fertilizer-type spreaders to power spreaders mounted on all terrain vehicles. Seed should be mixed thoroughly prior to seeding and should be mixed occasionally in the spreader to prevent separation and settling.
4. Seeding Rates – Rates are specified in the mixture tabulation for the specified mix.
5. Harrowing – The site should be harrowed or raked following seeding.
6. Packing – The site should be cultipacked following harrowing.
7. Mulch – Mulch the site following packing using one of the following types of mulch (as per plans or special provisions):
   - Minnesota DOT Type 1 mulch at a rate of 2 tons per acre followed by disc anchoring
   - Minnesota DOT Hydraulic Soil Stabilizer or BFM on inaccessible sites

Method 4 – Interseeding

Interseeding into existing vegetation or mulch is generally used for sites that did not establish well or if a temporary mulch was applied to the site. An interseeder drill can be used to plant the seed without removing or tilling the existing vegetation or mulch.

1. Site Preparation for Existing Vegetation – Prepare the site by mowing existing vegetation to a height of 4 to 6 inches. The area can then be directly planted using an interseeding drill.

NOTE: *Sites that contain significant weed infestations may require weed control measures before planting. After mowing, a herbicide application with glyphosate should be used. Addition of a surfactant and/or addition of two, 4-D to the mix often results in a more complete kill, especially with unwanted broad-leaved species. Recommended herbicide rates are 2 quarts per acre of glyphosate and 1 to 2 quarts per acre 2, 4-D. Seeding can be performed 7 to 10 days after herbicide application. Other broadleaf herbicides can also be used, such as Trimec, Transline, Stinger, etc. Follow the label directions.*

2. Fertilizer – Either use a fertilizer analysis based on a soil test or a general recommendation of a 24-12-24 NPK commercial grade analysis at 300 lbs per acre.
3. Seed Application – Apply the seed mixture with a seed drill that will accurately meter the seed to be planted and keep all seeds uniformly mixed during the drilling. The drill should contain a legume box for small seeds, and it should be equipped with disc furrow openers and packer assembly to compact the soil directly over the drill rows. Maximum row spacing should be 8 inches. The inter-seeder drill must be out-fitted with trash rippers that will slice through the vegetative mat and make a furrow into the underlying soil approximately 1 inch wide by 0.5 to 1 inches deep. These furrows shall be directly in line with the drill seed disc openers. Fine seed should be drop-seeded onto the ground surface from the fine seed box. Drill seeding should be done whenever possible at a right angle to surface drainage.
4. Seeding Rates – Rates are specified in the mixture tabulation for the specified mix.
5. Harrowing – Harrowing is not required when using this seeding method.
6. Packing – Cultipacking the site is recommended to ensure seed-to-soil contact.
7. Mulch – Mulch is not required when using this seeding method unless a 90 percent soil coverage rate is not maintained.

1.5.3.3 PERMANENT SEEDING

1. SEED MIXTURE

Table 8[43]
Minnesota Permanent Seed Mixture

Type	Purpose	Mixture	Seeding Rate (lbs/ac)	Maintenance
General	Sandy Roadside	240	75	Mow up to 3 times per year
	General Roadside	250	70	Mow up to 3 times per year
	Commercial Turf	260	100	Mow a minimum of once per 2 weeks
	Residential Turf	270	120	Mow a minimum of once per 2 weeks
	Agricultural Area Roadside	280	50	Mow up to 3 times per year
Native	Ponds and Wet Area – Tall Grasses	310	82	To reduce weed establishment, mow 2 to 3 times (30 days apart) during the first year with the mower deck about 6 to 8 inches off the ground. Mow one time during the second year before weeds set their seeds. Burn or mow once every 3 to 5 years following the initial 2 years of maintenance to remove dead plant material and stimulate new seed.
	Sandy/dry Areas – Short Grasses	330	84.5	
	Sandy/dry Areas Mid-Height Grasses	340	84.5	
	General Roadside	350	84.5	
	Woodland Edges	5B	30	
	Western Prairie – Tall Grasses	10B	30	
	Sandy Prairie – Tall Grasses	20B	30	
	Sedge Meadow	25B	30	
	Floodplain	26B	30	

2. SEEDBED PREPARATION

Fertilizer is best determined by a soil fertility test. If no soil fertility tests are taken, these general fertilizer recommendations may be followed:

[43] Minnesota DOT. *2003 Seeding Manual: Office of Environmental Services Erosion Control Unit*. 2003.

Table 9
Minnesota General Fertilizer Recommendations

Seed Mixture	Fertilizer	Application Rate
Native Seed	17-10-30	350 lbs/ac or 392 kg/ha
Turf Seed	22-5-10	300 lbs/ac or 336 kg/ha
Sod		150 lbs/ac or 118 kg/ha

3. SEEDING METHODS

Please refer to seeding methods in Section 0 of this manual.

1.5.4 Wisconsin

1.5.4.1 SOIL CHARACTERISTICS

A substantial portion of Dairyland service area within Wisconsin does not have available data. Available erodible soils data for Dairyland's service area in Wisconsin covers approximately 50 percent of total area as shown on Figure 6. Of the available data, the area consists of highly erodible soils in the western and central part of the service area, soils with low erodibility factor located in the eastern and central part of the service area and potentially highly erodible soils throughout areas with available data. Projects undertaken in areas with highly erodible soils and soils which are potentially highly erodible will require substantial amounts of time dedicated to two essential components of project planning: scheduling and site preparation. If at all possible, projects in these areas should be undertaken during winter months when the ground is frozen or at times during the year when precipitation events are low, for instance, fall months.

1.5.4.2 TEMPORARY SEEDING

1. SEED MIXTURE

Table 10[44]
Wisconsin Temporary Seeding Mixture

Species	Lbs per Acre	Percent Purity
Oats	131[1]	98
Cereal Rye	131[2]	97
Winter Wheat	131[2]	95
Annual Ryegrass	80[2]	97

[1] *Spring and Summer Seeding*
[2] *Fall Seeding*

2. SEEDBED PREPARATION

Temporary seeding requires a seedbed of loose soil to a minimum depth of 2 inches.

Fertilizer application is not generally required for temporary seeding. However, any application of fertilizer or lime shall be based on soil testing results.

The soil shall have a pH range of 5.5 to 8.0.

3. SEEDING METHOD

All seeding methods including, but not limited to, broadcasting, drilled, or hydroseeding is acceptable, as appropriate for the site.

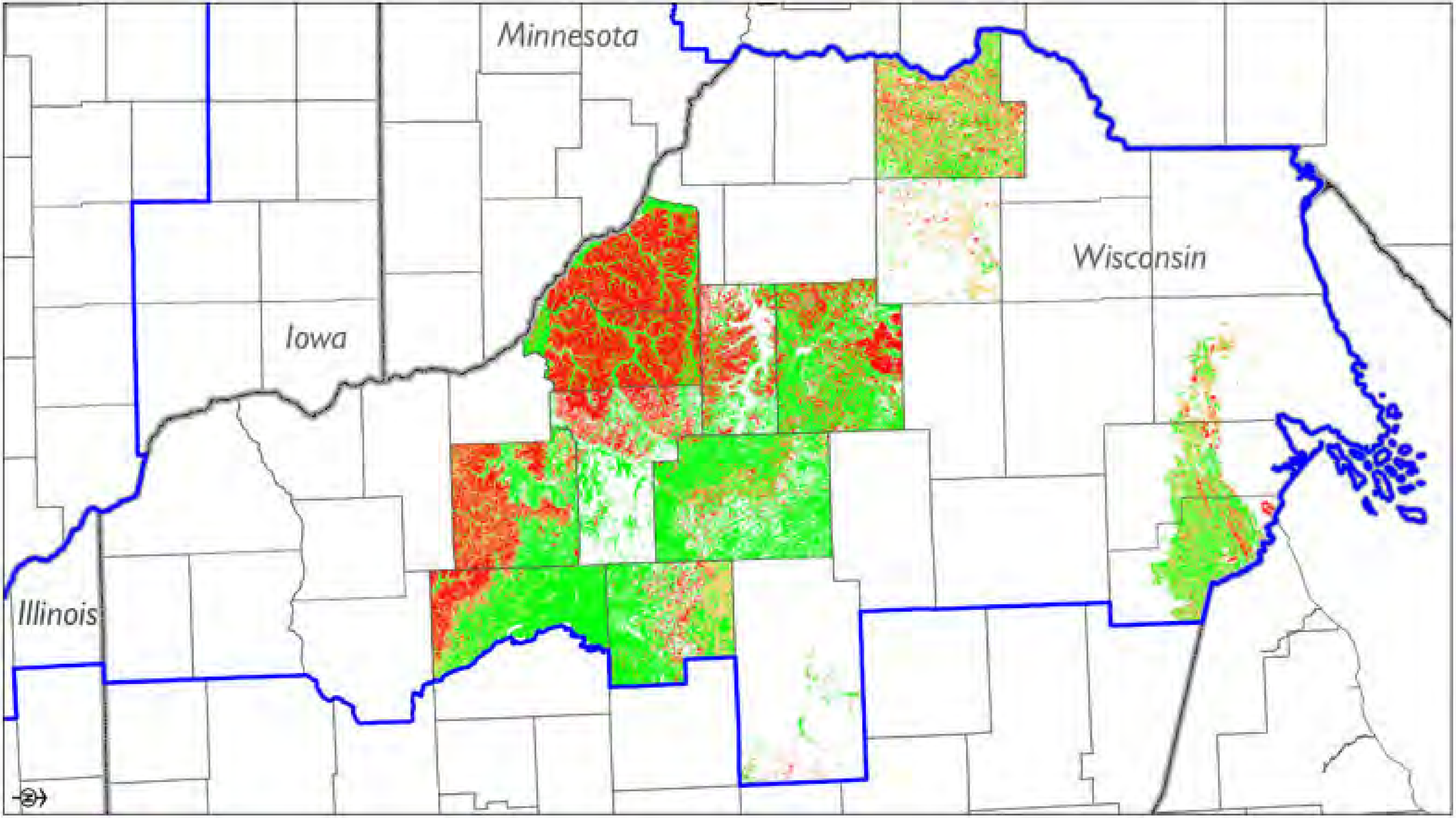
[44] Wisconsin DNR. *Seeding For Construction Site Erosion Control*. November 2003. http://dnr.wi.gov/org/water/wm/nps/pdf/stormwater/techstds/erosion/Seeding%20For%20Construction%20Site%20Erosion%20Control%20_1059.pdf Retrieved July 27, 2006.

1.5.4.3 PERMANENT SEEDING

1. SEED MIXTURE

Table 11
Wisconsin Permanent Seed Mixture

Purpose	Mixture	Seeding Rate	Maintenance
Use in areas with average loam, heavy clay, and moist soils predominate	10	1-1/2/1 lbs/1,000 sq ft	Protect seeded areas from traffic or other uses by warning signs. Repair surface gullies or other damage by re-grading and re-seeding. Mow and water as directed by seeding vendor.
Use in areas where light, dry, well-drained sandy or gravelly soils predominate. Use for all high cut and fill slopes exceeding 6 to 8 feet	20	3 lbs/1,000 sq ft	
Salt – Tolerant areas – use in medians and on slopes or in ditches within 15 feet of the shoulder.	30	2 lbs/1,000 sq ft	
Use in urban areas	40	2 lbs/1,000 sq ft	
Use on very steep slopes where sterile soil and erosive conditions exist	50	1/2 lbs/1,000 sq ft	
Use for cover in newly graded wet areas *(not wetlands)*	60	1-1/2/1 lbs/1,000 sq ft (equivalent)	
Use on slopes or upland area with well drained soils	70	3 lbs/1,000 sq ft (equivalent)	



DAIRYLAND POWER COOPERATIVE

HDR

Figure 6
Highly Erodible Soils - Wisconsin

2. Seedbed Preparation

Permanent seeding requires a seedbed of loose topsoil to a minimum depth of 100 mm (4 inches) with the ability to support a dense vegetative cover. Be sure to incorporate topsoil, which should have been segregated at the start of the project. Application rates of fertilizer or lime shall be based on soil testing results. Prepare a tilled, fine, but firm seedbed. Remove rocks, twigs, foreign material, and clods over 2 inches that cannot be broken down. The soil shall have a pH range of 5.5 to 8.0.

A fertilizer program should begin with a soil test. Soil tests provide specific fertilizer recommendations for the site and can help to avoid over-application.

3. Seeding Method

Seeding methods including, but not limited to, broadcasting, drilled, or hydroseeding, are acceptable, as appropriate for the site.

1.5.5 Sodding

Sod is a grass turf and the part of the soil beneath it held together by roots or a piece of other material. Sod is used in areas where vegetation is required to prevent erosion and is deemed necessary by the Project Manager. Sod is often used as an alternate to permanent seeding for instant aesthetic value. It is important to note that in order for sod to survive, proper conditions must be present on the site, such as adequate watering.

1.5.6 Local Seed Vendors

<u>Iowa</u>
Ion Exchange, Inc
1878 Old Mission Drive
Harpers Ferry, IA
(563) 535-7231

<u>Minnesota</u>
Brock White
6784 10th Avenue Southwest
Rochester, MN 55902
(507) 282-2421 or (800) 279-9034

Shooting Star Native Seeds (Seed Only)
20740 County Road 33
Spring Grove, MN 55974
(507) 498-3944

Sodko, Inc. (Sod Only)
20740 County Road 33
Spring Grove, MN 55974
(507) 498-3943

Ramy Turf Products
842 Vandalia Street
St. Paul, MN 55114
(651) 917-0939 or (800) 658-7269

<u>Wisconsin</u>
La Crosse Forage and Turf Seed Corporate
2541 Commerce Street
La Crosse, WI 54603
(608) 783-9560 or (800) 328-1909

1.6 STORMWATER TREATMENT

Stormwater treatment BMPs consist of infiltration systems, constructed wetlands, and retention and detention ponds. The following treatments should all be evaluated for pollution prevention and water quality benefits when building substations.

1.6.1 Infiltration Systems

Infiltration systems are stormwater runoff impoundments designed to capture stormwater runoff, hold the designed volume, and infiltrate it into the ground over the designed period. These systems include, but are not limited to, infiltration basins, rain gardens, and underground infiltration tank.

1.6.2 Constructed Wetland

A constructed wetland is an artificial marsh or swamp created for human use, such as habitat to attract wildlife, or for removing sediments and pollutants, such as heavy metals, from the water.[45]

Constructed wetlands simulate natural wastewater treatment systems, using flow beds to support water-loving plants.

1.6.3 Retention and Detention Pond Systems

A retention pond is designed to hold a specific amount of water indefinitely. Usually the pond is designed to have drainage leading to another location when the water level gets above the pond capacity, but still maintains a certain capacity.[46]

A detention pond is a low-lying area that is designed to temporarily hold a set amount of water while slowly draining to another location. They are more or less around for flood control when large amounts of rain could cause flash flooding if not dealt with properly.

Infiltration basins, constructed wetlands, and detention or retention ponds must be evaluated and selected based on water quality needs at the site.

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[45] Wikipedia Online Encyclopedia. *Constructed Wetlands*. 2006. wikipedia.org/wiki/Constructed_wetland Retrieved August 2, 2006.

[46] U.S. Department of Energy. *Environmental Earth Science Archive*. July 2006. http://www.newton.dep.anl.gov/askasci/eng99/eng99219.htm Retrieved August 2, 2006.

1.7 GENERAL OPERATIONS

1.7.1 Residential Areas

Construction near residential areas requires special precautions to minimize disturbance to residences and maximize safety considerations. Impacts to residences near construction will be minimized by implementing the following applicable mitigation measures:

- Strip and store, or replace topsoil with imported topsoil after construction.
- Install orange safety fence between the construction area and residences.
- Avoid removal of trees and landscape whenever possible or specified in an agreement.
- Maintain access to residences at all times during construction.
- Notify residences within 48 hours of start of construction and construction during nighttime hours. Review permits for additional requirements for nighttime construction.

Restoration of residential areas must be initiated within 24 hours of completion of construction. All disturbed areas must be graded to pre-construction contours. Topsoil (either segregated and replaced, or newly imported) must be placed and raked smooth. The disturbed areas must be reseeded or resodded according to landowner requests. All ornamental shrubs and other landscaping must be restored in accordance with the landowner's request, or compensate the landowner in an agreed amount or replace damaged landscaping. Restoration work should be performed by a contractor or Dairyland personnel familiar with local horticultural and turf establishment practices.

Don't forget!
Erosion control is generally more cost-effective than sediment control and requires less maintenance and repair.

Refer to BMPs previously discussed for erosion control and sediment control, as they are applicable in residential environments.

1.7.2 Highway and Road Crossings

Roadway crossing and ROW access points must be identified before the start of construction to maintain safe and accessible conditions throughout construction.

Refer to BMPs previously discussed for erosion control and sediment control as most if not all are applicable. A few that stand out are as follows:

- Preservation of existing vegetation
- Mulch, blankets, and mats
- Silt fence along perimeter of project area adjacent to roadway
- Construction entrance and exits
- Street cleaning

1.7.2.1 MAINTENANCE

Roadway crossings should be maintained in a condition which will prevent tracking of sediment onto the roadway. Mud tracked onto paved roadways must be shoveled or swept off the road daily.

1.7.3 Wetland Crossings

A wetland is a land inclusion that has a predominance of hydric soils that are saturated or flooded for long parts of the growing season[47] and that supports a hydrophytic vegetation under the above conditions.

Wetlands are essential breeding, rearing, and feeding grounds for many species of fish and wildlife. They also perform important flood protection and pollution control functions.

Permits are required to construct or work in wetlands. Refer to Volume II for more information.

Every effort should be made to avoid crossing wetlands, however, in some instances, it is not possible. In those instances, minimize construction to preserve wetland characteristics. Clearing and grading within wetlands must be limited to topsoil segregation and enhancing natural revegetation. To preserve wetland hydrology, minimize construction activities in wetlands or use special construction techniques to reduce soil compaction.

The procedures in this section require that judgment be applied in the field and must be implemented under the supervision of the Contractor. Non-compliance with these procedures must be reported for corrective action.

1.7.3.1 TIME WINDOWS FOR CONSTRUCTION

Transmission line and substation construction or maintenance activities cannot occur in wetland areas when restricted by appropriate federal or state permits due to wildlife mating or breeding seasons.

1.7.3.2 WETLAND ACCESS

The only access roads other than the construction ROW which can be used in wetlands are those existing roads that can be used with no modification and no impact on the wetland. Construction equipment operating in wetland areas should be limited to that needed for the installation or maintenance of transmission lines. All other construction equipment should use access roads

[47] Illinois Wetlands. *Kildeer Countryside Virtual Wetlands Preserve*. July 2006. www.twingroves.district96.k12.il.us/Wetlands/General/Terms.html Retrieved July 31, 2006.

located in upland areas to the maximum extent possible. In situations where upland access roads do not provide sufficient access, construction equipment may pass through the wetland.

1.7.3.3 HAZARDOUS MATERIAL

Dairyland or its contractors should not store hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating activities within 100 feet of streams or within municipal watershed areas (except at locations within these areas that are designated for these purposes by an appropriate governmental authority).

1.7.3.4 REFUELING

Refuel construction equipment at least 100 feet from streams. Where conditions require construction equipment (e.g., barge-mounted backhoes, trench dewatering pumps) be refueled within 100 feet of streams, the Contractor must take appropriate spill prevention precaution procedures.

1.7.3.5 DEWATERING

Dewatering may be required during construction- or maintenance-related activities. Water should be emptied in a sediment trap before discharging to the wetland so that silt-laden water does not enter wetlands.

1.7.3.6 REVEGETATION

1. FERTILIZER AND LIME REQUIREMENTS

The establishment of vegetation may be required in wetland areas. Do not apply fertilizer or lime, unless required in writing by the appropriate state permitting agency.

2. MULCHING

State approval is necessary for mulching in wetlands. Straw or hay can be used as mulch but must be free of noxious weed contaminants.

Mulching is more successful if the material is free of noxious grasses and weeds, is applied in "air dried" condition, and is anchored by disking.

3. TEMPORARY VEGETATION

Temporarily vegetate disturbed areas with the appropriate seed specified in Section 1.5, unless standing water is prevalent or permanent planting or seeding with native wetland vegetation is established.

4. PERMANENT REVEGETATION

Consult with a wetland scientist for a vegetation plan.

1.7.3.7 TEMPORARY WETLAND CROSSING

Photo 1.0: Wood Mat

Temporary wetland crossing options include wood mats, wood panels, wood pallets, bridge decking, expanded metal grating, polyvinyl chloride (PVC) and high density polyethylene (HDPE) pipe mats or plastic road, tire mats, corduroy, pole rails, wood aggregate, and low ground pressure equipment.[48] Temporary wetland crossings should be avoided unless absolutely necessary. Successful crossings are enhanced with a root or slash mat to provide additional support for equipment and geotextile to segregate the crossing from underlying soil and provide floatation. Temporary wetland crossing options will be discussed in further detail below.

1. WOOD MATS

Wood mats are individual cants, sawdense hardwood (oak), or round logs cabled together to make a single-layer crossing.

Wood mats provide a surface that protects wetlands during hauling or equipment-moving operations. A 3-m (10-foot) long, 10 cm by 10 cm (4 inch by 4 inch) center log is the recommended minimum size. If the surface of the crossing becomes slippery, add expanded metal grating to provide traction.

2. WOOD PANELS

Nail two-layer wood panels parallel to the perpendicular wood planks where tires will cross. Interconnecting adjacent panels in a crossing will help minimize the rocking that occurs when vehicles drive over the panels. In addition, it will improve the overall flotation provided by the crossing. If panels are not interconnected, approximately 150 mm (6 inches) should be left between the individual panels to facilitate installation and removal.

3. WOOD PALLETS

Wood pallets are constructed with three layers of pallets similar to those used for shipping and storage but specifically designed to support traffic. Wood pallets are commercially available and are constructed to be interconnected and are reversible.

4. BRIDGE DECKING

Decking of a timber bridge can be used to cross a small wetland area. Individual panels should be placed across the area with soft soil and approach ramps to the decking built.

[48] U.S. Department of Agriculture. *Temporary Stream and Wetland Crossing Options for Forest Management.* 1998.

5. *Expanded Metal Grating*

Commercial available metal grating can support machine weight by distributing it over a broader area. Expanded metal and deck span are two commercially-tested types of grating for wetland crossings. The expanded metal is recommended due to the regular non-galvanized steel that comes in various thicknesses and different opening sizes.

6. *Corduroy*

Corduroy is a crossing made of brush, small logs cut from low-value and noncommercial trees on-site, or mill slabs that are laid perpendicular (most often) or parallel to the direction of travel. The greater the surface area of the corduroy the greater the floatation capability of the crossing. Placing geotextile provides additional support and segregation of brush, logs, or mill slabs from underlying soil.

Photo 1.0: Corduroy

7. *PVC and HDPE Pipe Mats or Plastic Road*

A portable, reusable, lightweight corduroy-type crossing can be created with PVC or HDPE pipe mats. [48] Pipe mats work as a conduit and allow water to move through the crossing without further wetting the area.

8. *Pole Rails*

One or more straight hardwood poles cut from on-site trees can be laid parallel to the direction of travel below each wheel. The diameter of the poles should not exceed the 10-inch diameter on the large end so they are able to penetrate the wet area to a sufficient depth that the tires come in contact with the soil. This method will not work with machinery that is equipped with conventional width tires because they are too narrow and are operated at too high a pressure to stay on top of the poles.

9. Wood Aggregate

Photo 1.0: Wood Aggregate

Use wood particles, varying in size, to fill soft soil areas. This is a popular method because the wood is relatively light in weight, which gives it better natural flotation than gravel. Wood, being a naturally biodegradable material, will allow water to flow freely through, causing no change to the natural hydrologic flows.

10. Low Ground Pressure Equipment

Low pressure equipment exerts ground pressure of less than 5 or 6 psi. Low ground pressure equipment reduces this pressure by reducing overall machine weight, or by increasing the contact area between the equipment and soil, spreading the weight over a larger surface area. By reducing ground pressure at each contact point, equipment flotation is enhanced, traction is usually improved, and road maintenance requirements, such as grading, can be reduced. Low ground pressure equipment can also reduce rut depth and compaction, and can result in reduced fuel consumption.[49]

1.7.4 Stream and River Crossings

Pre-construction planning is an essential part of accommodating safe movement of equipment across streams. Crossing requirements, including construction methods, timing, erosion control, and restoration, are described in this section and in the stream crossing permits issued by state agencies. If site conditions or engineering constraints make any of these requirements infeasible, Dairyland may propose alternative provisions at equal or greater level of protection to the environment than the original requirements. Modification of terms of any permit will also require regulatory agency approval prior to construction. The Contractor must receive Dairyland's approval prior to implementing the alternatives.

Use the procedures in this section when crossing streams, rivers, and other permanent waterbodies, such as ponds and lakes. These procedures require that judgment be applied in the field and must be implemented under the supervision of the Contractor. Report non-compliance with these procedures to the Contractor for remedial action. Alternative procedures outlined in any project-specific plan or permit will supersede the requirements of this section.

[49] U. S. Department of Agriculture, Forest Service. *Temporary Stream and Wetland Crossing Options for Forest Management*. St. Paul, Minnesota, 1998.

1.7.4.1 TIME WINDOW FOR CONSTRUCTION

Stream crossings will be constructed during the following time windows unless directed differently in writing by the appropriate state agency on a site-specific basis.

- Cold water fisheries – June 1 through September 30
- Warm water fisheries – June 1 through November 30

1.7.4.2 HAZARDOUS MATERIALS

Dairyland or its contractors should not store hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating activities within 100 feet of streams or within municipal watershed areas (except at locations within these areas that are designated for these purposes by an appropriate governmental authority).

1.7.4.3 REFUELING

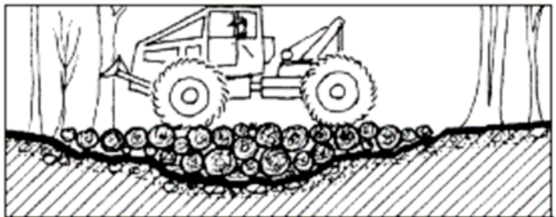
Refuel construction equipment at least 100 feet from streams. Where conditions require construction equipment (e.g., barge-mounted backhoes, trench dewatering pumps) be refueled within 100 feet of streams, the Contractor must take appropriate spill prevention precaution procedures.

Try This

If you notice an area of unprotected soil, go ahead and throw some seed or mulch on it regularly. You'd be surprised what a difference you can make.

1.7.4.4 ALIGNMENT OF CROSSING

Construct stream crossings as close to perpendicular to the axis of the stream channel as engineering and routing constraints allow.



LOG OR POLE FORD

— minimum 8"-10" diameter poles or cull logs side by side

— protect bank and channel

— use well casing to maintain water flow

— remove at closeout

1.7.4.5 TEMPORARY EQUIPMENT CROSSINGS

Temporary stream crossing is required to provide safe, erosion-free access across a stream for construction equipment. Temporary stream crossings are fords, culverts, PVC and HDPE pipe bundles, and portable or on-site constructed bridges. Unless it is absolutely necessary, stream crossing should be avoided. Use existing stream crossing locations if crossing is unavoidable and the existing crossing can withstand the weight. Properly designed, installed, and maintained temporary stream crossings can greatly reduce costs and help meet concerns of regulating agencies.[48]

If a stream crossing is needed it should be limited to as few as possible and should be as short as possible. To correctly cross a stream, the crossing should be located on a straight segment of the stream channel that has low banks (except for bridge crossings where higher banks are preferred to support the abutments). Contact a local engineer or hydrologist to determine permitting needs for the stream crossings, if needed. Temporary stream crossing options will be discussed in further detail below.

1. Fords

A ford utilizing the streambed is used when flows are consistently less than 600 mm (2 feet) deep, as part of the road or access trail, and is best for short-term, limited traffic. Fords should not be constructed or used during periods of fish spawning and migration. If the crossing location has a mucky or weak streambed a base must be constructed. A permanent constructed ford consists of gravel or rock or a temporary ford consists of mats made of wood, expanded metal, logs or poles, or a floating rubber mat.

Permanently Constructed Fords

To properly construct a permanent ford, the muck or weak streambed material should be excavated prior to the minimum of 6–inch installation of fill. Installing a geotextile prior to gravel or rock fill is recommended to provide extra support and separate material from weak native soil.

Temporarily Constructed Fords

Mats made of wood using expanded metal grading, logs, or floating rubber mats provide a firm base for a temporary ford. If the streambed or bank is too weak for geotextile and mats or expanded metal, supplemental corduroy, gravel, or rock fill may be needed to support the weakest portions of the crossing. For crossings only used a few times, a log or pole ford may be best. The stream channel is filled with logs laid parallel to the flow of the stream.

2. Culverts

A culvert is a structure that conveys water under a road or access trail.[50] Culverts are the most common methods of crossing intermittent and perennial streams. There are manufactured culverts that come in various shapes, lengths, and diameters. Manufactured culverts are made of corrugated steel, concrete, or polyethylene. Proper sizing with a minimum of a 375-mm (15-inch) diameter and installation of culverts is crucial for a successful crossing. Other materials, such as steel piling, wooden box culverts, and hollow logs can be used as culverts as well.

Photo 1.0: Culvert

3. *PVC AND HDPE PIPE BUNDLES*


Photo 1.0: PVC and HDPE Pipe Bundles

A pipe bundle crossing is constructed using a 4–inch diameter schedule 40 PVC or Standard Dimension Ratio (SDR) 11 HDPE pipes that are cabled together forming loose mates that can be formed into bundles. The bundles allow water to pass through and provide mechanical support for vehicle traffic. The pipe bundle crossing is constructed by initially placing a geotextile fabric then a layer of connected pipes is placed parallel to stream flow.

4. *BRIDGES*

Bridges keep fill and equipment out of the water better than any other stream crossing option. Temporary bridges can be constructed from ice, timber, steel, or pre-stressed concrete. A licensed engineer must review the design of any bridge that is fabricated from locally available materials, otherwise, manufactured bridges are made for various span lengths and load capacities.

Ice Bridges

Ice bridges are most common stream crossing methods during winter months with night temperatures below 0 degrees Fahrenheit (°F) with several days to build up thick enough ice. An estimated formula was developed to estimate minimum ice thickness to support a given load.

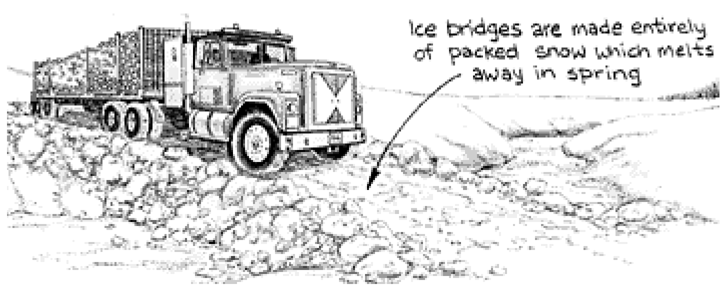


Photo 1.0: Ice Bridge

Where:

ice thickness in inches

the load or gross weight of the vehicle plus its contents, in tons

Timber Bridges

Two common designs for timber bridges are the log stinger bridges and solid sawn stinger bridges with or without a plank deck. Log stinger bridges are built by cabling logs together from trees felled in the area of construction. Solid sawn stinger bridges are built with new lumber, railroad ties, or demolition materials.

Photo 1.0: Timber Bridge

Steel Bridges

Steel-hinged bridge and modular bridges are two types of steel bridges. Steel-hinged bridges fold up for transport, and modular steel bridges are designed with individual panels that interlock forming a bridge of variable length.

Pre-stressed Concrete Bridges

Fabricated pre-cast, pre-stressed concrete panels are placed side-by-side to form a bridge. The bridge panels must be designed to accommodate the load capacity needed for the crossing.

1.7.5 Trout Stream

Trout require cool, clear streams. Trout and aquatic insects they feed on are especially sensitive to increased sedimentation. It is therefore important to take special precautions to minimize sedimentation and maintain a shade cover to prevent excessive warming of the water. Previously mentioned practices and temporary crossings are applicable in addition to the following:

- Drain water from roads and skid roads onto ridges and side slopes. Drainage structures should not divert water directly into streams.
- Re-vegetate exposed soils following road construction as soon as possible to take advantage of the loose soil conditions for seeding.
- Use mulch, gravel, and/or rock to help stabilize fills where roads and skid roads cross streams.

1.8 POLLUTION PREVENTION MANAGEMENT MEASURES

1.8.1 Spill Cleanup

Spill prevention and planning is the framework under which an outline of how a facility will prevent hazardous spills, as well as how it plans to control and contain spills from reaching surface water. This section provides Dairyland's policy and procedures for spill prevention, control, cleanup, and training.

> ***FYI***
> ***Spills can be cleaned up by using absorbent material, which can then be scooped up and properly disposed.***

1.8.1.1 SPILL PREVENTION

1. Develop procedures to prevent/mitigate spills to storm drain systems.
   - Standardize reporting procedures, containment, storage and disposal activities, documentation, and follow-up procedures.

2. Post "No Dumping" signs in appropriate substation locations with a phone number for reporting illegal dumping and disposal.

3. Conduct routine cleaning, inspections, and maintenance.
   - Sweep and clean storage areas. Do not hose down areas to storm drains or other inlets.
   - Place drip pans or absorbent materials beneath all mounted taps and at all potential drip and spill locations during filling and unloading of tanks. Reuse, recycle, or properly dispose of any collected liquids or soiled absorbent materials.
   - Check tanks (and any containment sumps) frequently for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.
   - Check for external corrosion of material containers, structural failures, spills and overfills due to operator error, failure of piping system, etc.
   - Inspect tank foundations, connections, coatings, tank walls, and piping system.

4. Properly store and handle chemical materials.
   - Designate a secure material storage area that is paved with concrete, free of cracks and gaps, and impervious to contain leaks and spills.
   - Do not store chemicals, drums, or bagged materials directly on the ground. Place these items in secondary containers.

- Keep chemicals in their original containers, if feasible.
- Keep containers well labeled according to their contents (e.g., solvent, gasoline).
- Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, and poisonous).
- Prominently display required labels on transported hazardous and toxic materials (per U.S. DOT regulations).

5. Utilize secondary containment systems for liquid materials.
   - Surround storage tanks with a berm or other secondary containment system.
   - If berm is used for secondary containment, slope the area inside the berm to a drain.
   - Drain liquids to the sanitary sewer, if available. Do not discharge wash water to sanitary sewer until contacting the local sewer authority to find out if pretreatment is required.
   - Pass accumulated stormwater in petroleum storage areas through an oil/water separator.
   - Use catch basin filtration inserts.

6. Protect materials stored outside from stormwater. Construct a berm around the perimeter of the material storage area to prevent run-on of uncontaminated stormwater from adjacent areas as well as runoff of stormwater from the material.

Did You Know?
Most people think of pollutants as chemicals like ammonia, oil, and pesticides, however, soap, cleaners, caffeine, and food can also negatively impact the environment when carried into surface waters.

7. Secure drums stored in an area where unauthorized persons may gain access to prevent accidental spillage, pilferage, or any unauthorized use.

1.8.1.2 SPILL CONTROL AND CLEANUP ACTIVITIES

1. Identify key spill response personnel.
2. Clean up leaks and spills immediately.
   - Place a stockpile of spill cleanup materials where they will be readily accessible (e.g. near storage and maintenance areas).
   - Utilize dry cleaning methods to clean up spills to minimize the use of water. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then used cleanup materials are also hazardous and must be sent to a certified laundry or disposed of as hazardous waste.

Physical methods for the cleanup of dry chemicals include the use brooms, shovels, sweepers, or plows.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Clean up chemical materials with absorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or hazardous material team may be necessary.

1.8.1.3 REPORTING

1. Report spills that pose an immediate threat to human health or the environment to local agencies.
    - Illinois – Illinois Emergency Management Agency (217) 782-7860 or (800) 728-7860
    - Iowa – Iowa DNR (515) 281-8694
    - Minnesota – Minnesota Pollution Control Agency (State Duty Office) (651) 649-5451 or (800) 422-0798
    - Wisconsin – Wisconsin DNR (800) 943-0003

2. Establish a system for tracking incidents. The system should be designed to identify the following:
    - Types and quantities (in some cases) of wastes
    - Patterns in time of occurrence (time of day/night, month, or year)
    - Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills)
    - Responsible parties

3. Federal regulations require that any oil spilled into a water body or onto an adjoining shoreline must be reported to the National Response Center (NRC) at (800) 424-8802 (24-hour).

1.8.1.4 TRAINING

1. Educate employees about spill prevention, cleanup, and reporting.
   - Establish training that provides employees with the proper tools and knowledge to immediately begin cleaning up spills.
   - Educate employees on aboveground storage tank requirements.
   - Train all employees upon hiring and conduct annual refresher training.

2. Train employees responsible for aboveground storage tanks and liquid transfers on the SPCC plan.

1.8.2 Trash and Debris

Contractors shall keep the work site clean. Trash and debris shall not be buried within fill or backfill. Collect construction, demolition, clearing, grubbing debris, and other trash weekly for disposal off–site. No on-site burning is permitted. Contractors shall comply with federal, state, and local requirements for the disposal of solid waste.

1.8.3 Hazardous Material

Oils, fuels, and hazardous substances must be properly stored, including secondary containment for tanks larger than 50 gallons, to prevent spills. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous materials must be in compliance with federal, state, and local regulations.

1.9 GENERAL PROVISIONS

1.9.1 Maintenance

1. DURING CONSTRUCTION

It is the Contractor's responsibility to maintain silt fence and other temporary erosion and sediment controls in working order throughout the project. Maintenance shall include the following:

- Sediment trap shall be at 50 percent capacity.
- Excess sediment behind silt fences and biorolls shall be removed and properly disposed when sediments reach one-third the height of the structure.
- Tracked sediments will be removed from paved surfaces at the end of each day.
- Construction entrances/exits shall be maintained daily.

Remove all remaining temporary BMPs and accumulated silt fences 30 days after site has undergone final stabilization.

2. AFTER CONSTRUCTION

Table 12
After Construction BMP Maintenance Activity and Schedule

BMP	Activity	Schedule
Retention Pond/Wetland[1]	• Cleaning and removal of debris after major storm events • Harvest excess vegetation • Repair of embankment and side slopes	Annual or as needed
	• Removal of accumulated sediment from forebays or sediment storage areas	5-year cycle, or as needed
	• Removal of accumulated sediment from main cells of pond once the original volume has been significantly reduced	5- to 10-year cycle
Detention Basin	• Removal of accumulated sediment • Repair of control structure • Repair of embankment and side slopes	Annual or as needed
Infiltration Trench[1]	• Cleaning and removal of debris after major storm events • Mowing[4] and maintenance of upland vegetated areas	Annual or as needed
Infiltration Basin[2]	• Cleaning and removal of debris after major storm events • Mowing[4] and maintenance of upland vegetated areas	Annual or as needed
	• Removal of accumulated sediment from forebays or sediment storage areas	3- to 5-year cycle

BMP	Activity	Schedule
Sand Filters[3]	• Removal of trash and debris from control openings • Repair of leaks from the sedimentation chamber or deterioration of structural components • Removal of the top few inches of sand and cultivation of the surface when filter bed is clogged (only works for a few cycles) • Clean-out of accumulated sediment from filter bed chamber • Clean out of accumulated sediment from sedimentation chamber	Annual or as needed
Bioretention[5]	• Repair of eroded areas • Mulching of void areas • Removal and replacement of all dead and diseased vegetation • Watering of plant material	Bi-annual or as needed
	• Removal of mulch and application of a new layer	Annual
Grass Swale[1]	• Mowing[4] and litter and debris removal • Stabilization of eroded side slopes and bottom • Nutrient and pesticide use management • De-thatching swale bottom and removal of thatching • Disking or aeration of swale bottom	Annual or as needed
	• Scraping swale bottom and removal of sediment to restore original cross section and infiltration rate • Seeding or sodding to restore ground cover (use proper erosion and sediment control)	5-year cycle
Filter Strip[3]	• Mowing[4] and litter and debris removal • Nutrient and pesticide use management • Aeration of soil in the filter strip • Repair of eroded or sparse grass areas	Annual or as needed

[1]*Modified from Livingston et al (1997)*
[2]*Modified from Livingston et al (1997), based on grass swale recommendations*
[3]*Modified from Claytor and Schueler (1996)*
[4]*Mowing may be required several times a year, depending on local conditions*
[5]*Modified from Prince George's County (1993)*

1.9.2 Inspections

1. DURING CONSTRUCTION

Inspections are required for all temporary erosion and sediment controls at least once every 7 days, within 24 hours of rainfall events that produce more than 0.5 inches of rain in a 24-hour period or greater, or a snowmelt event that cause surface erosion. Conduct inspections at least once per month where runoff is unlikely (due to winter conditions). Keep records for each inspection and maintenance activity and contain the following information:

- Date and time of inspection
- Name of person(s) conducting inspection
- Findings of inspections, including recommendations for corrective action
- Corrective actions taken, including dates, time, and party completing maintenance activities
- Date and amount of all rainfall events that produce more than 0.5 inches of rain in a 24-hour period or greater

2. AFTER CONSTRUCTION

Inspect permanent BMPs annually for the first 3 years and every 3 to 5 years thereafter.

1.9.3 Record Keeping and Reporting

Recordkeeping is a simple, easily implemented, and cost-effective management tool. Recordkeeping manages the life cycle[51] of the record by assessing the records values and setting the standards by which records are retained and disposed of. There are three distinct phases in a record's life cycle:

- Phase 1 – the time at which a record is created or received and is of immediate value
- Phase 2 – the point at which records have ongoing value and use but are no longer referred to on a regular basis
- Phase 3 – the point at which records have no further operational use and are disposed of either by destroying them or transferring them to the archive location where they are preserved

Complete, well-organized records help ensure proper maintenance of facilities and equipment and can assist in determining the causes of erosion, sedimentation, spills, and leaks, thus recordkeeping can protect water quality by helping to prevent future problems.

[51] Emporia State University. *Practicum in the Park, Glossary*. http://slim.emporia.edu/park/glossary.htm Retrieved September 21, 2006.

Records shall be maintained for at least 5 years from the date of sample observation, measurement, or spill report. The key to maintaining records is continual updating. New information, must be added to existing inspection records or spill reports as it becomes available. In addition, update records if there are changes to the number and location of discharge points, principal products, or raw material storage procedures.

Some simple techniques used to accurately document and report results include:

- Field notebooks
- Timed and dated photographs
- Videotapes
- Drawings and maps
- Computer spreadsheets and database programs

As appropriate, Dairyland should maintain records demonstrating successful implementation of BMPs. Recordkeeping may include training, site inspection and maintenance, and, if relevant, monitoring.

1.9.3.1 Training and Workshops

Records of all training sessions provided to staff should be maintained to allow for:

- Determining which staff requires which training
- Determining when training sessions must be conducted
- Documenting training activities for enforcement and compliance purposes

1.9.3.2 Site Inspection and BMP Maintenance

Inspection reports should be kept to track frequency and results of inspections, condition of BMPs inspected, and follow-up actions taken. It is also important to keep a record of maintenance activities or any other BMPs that are of an "action" nature. It is easy to demonstrate that a BMP that involves a physical change, such as berming or covering, has been accomplished. However, actions that relate to good environmental judgment can only be demonstrated by recordkeeping. Besides demonstrating compliance, records can assist in BMP management. Keeping a record of detention pond cleaning, for example, also provides insight into how long it takes for the pond to refill.

1.9.3.3 TRAINING

Education and training is the key to the success of BMP implementation. Dairyland shall adopt a training program which will address the following subjects:

- Maintenance Procedure Implementation and Inspection – In this training effort, proper procedures for performing activities that may adversely affect stormwater quality are addressed. Maintenance procedures cover a wide range of activities and the training may address either all maintenance procedures applicable to Dairyland or a specific procedure (e.g. detention pond cleaning, fertilizer, and pesticide use). This training can be conducted in either a formal or a tailgate-style format.
- Pollution Prevention/Spill Awareness – This training addresses the general techniques Dairyland's staff may implement to prevent pollution, as well as to respond to spills once they have occurred. Training can be tailored to management and staff who oversee pollution prevention measures, to field staff conducting activities that may result in spills, or to field staff who may encounter spills or illicit discharges.

Appendix C:
Lublin Area Study, Dairyland Power Cooperative

Lublin Area Study

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August 2006

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1.0 Executive Summary

The Lublin Area Study examines long term transmission requirements in the Lublin area. This area consists of lines with high exposure miles and many of the lines are reaching the end of their useful life due to increased maintenance costs and line overloads. The study area is bounded by Independence to the south, XCEL Seven Mile to the west, Holcombe to the north and T-Corners to the east. The DPC lines in this area are Independence-Lublin (N-3), Holcombe-Lublin (N-1), and T-Corners-Willard (N-17, N-45 and N-66). In recent summers, the first section of the N-3 out of Independence has frequently overloaded on summer peak days. To relieve this problem the 12NB3 breaker at Lublin has been opened which results in decreased system reliability. A total of 11 alternatives were studied to replace transmission lines in the Lublin area. Each alternative was studied and ranked based on transmission exposure, cost and load serving ability.

The recommended plan, alternative 2, lasts long into the future and has the lowest costs per MW of load growth. Alternative 2, which can be seen in Figure 1, rebuilds the N-3 from Independence to N3Y18RC. At that point, a new 69 kV transmission station is built which ties into XCEL's Seven Mile-Cotton School 69 kV line with an existing tap line and the normally open switch, N3Y22, would be normally closed. The Bridge Creek station is planned for three 69 kV breakers, one breaker would look towards Independence, one towards Lublin and one towards XCEL Seven Mile-Cotton School, which would be operated three terminal. The proposed location for the Bridge Creek transmission station is around switch N3Y18RC. The land owned by DPC at the Fairchild capacitor a half mile away is also a possibility for expansion into a 69 kV transmission station. This would require DPC to build a half mile of double circuit into the transmission station.

The proposed Bridge Creek transmission station greatly reduces exposure miles for the majority of the load on the N-3, which is in on the southern part of the line. Bridge Creek also solves low voltage and line overload problems. Rebuilding and not retiring the 17 mile section from Bridge Creek to Willard tap allows for DPC to avoid extra load in the NSP pricing zone, provides future flexibility to accommodate new loads in the area, and enhances operational flexibility for maintenance outages. Load flows for Alternative 2 can bee seen in Appendix D.

DPC's Holcombe-Lublin 69 kV line will be replaced by continuing the existing double circuit with Holcombe-Flambeau for one mile north and then continuing east on new Right of Way (ROW) to DPC's Hannibal substation. This plan will utilize an existing 4/0 ACSR 212° design tap line which was the 10.4 mile tap line to Hannibal and feed Hannibal on a much shorter tap line. The N-1 rebuild will continue from the new Gilman tap towards Lublin. Going into Lublin from the west there are approximately two miles where the N-1 and N-3 run parallel. These two sections of line will get consolidated into a double circuit line.

In the Lublin-T-Corners-XCEL Spokesville section, DPC's Lublin-Bridge Creek breaker station will be rebuilt with 477 ACSR as well as four miles of the N-17 line, Willard to the N-3. The rest of the N-17, Willard-DPC Loyal and N-45, DPC Loyal-Spencer tap line rebuild will be deferred until around 2015. In 2015, the 4/0 ACSR lines will be close to contingent overloads and will be at the end of its estimated remaining life, the line will need to be rebuilt at that time.

Construction for the Bridge Creek transmission station could begin as early as 2009. The rebuild of the N-3 could begin in 2010 or 2011 based on current DPC construction plans. Construction of the Bridge Creek transmission station will need to be coordinated with XCEL. Appendix B shows details on the construction sequence.

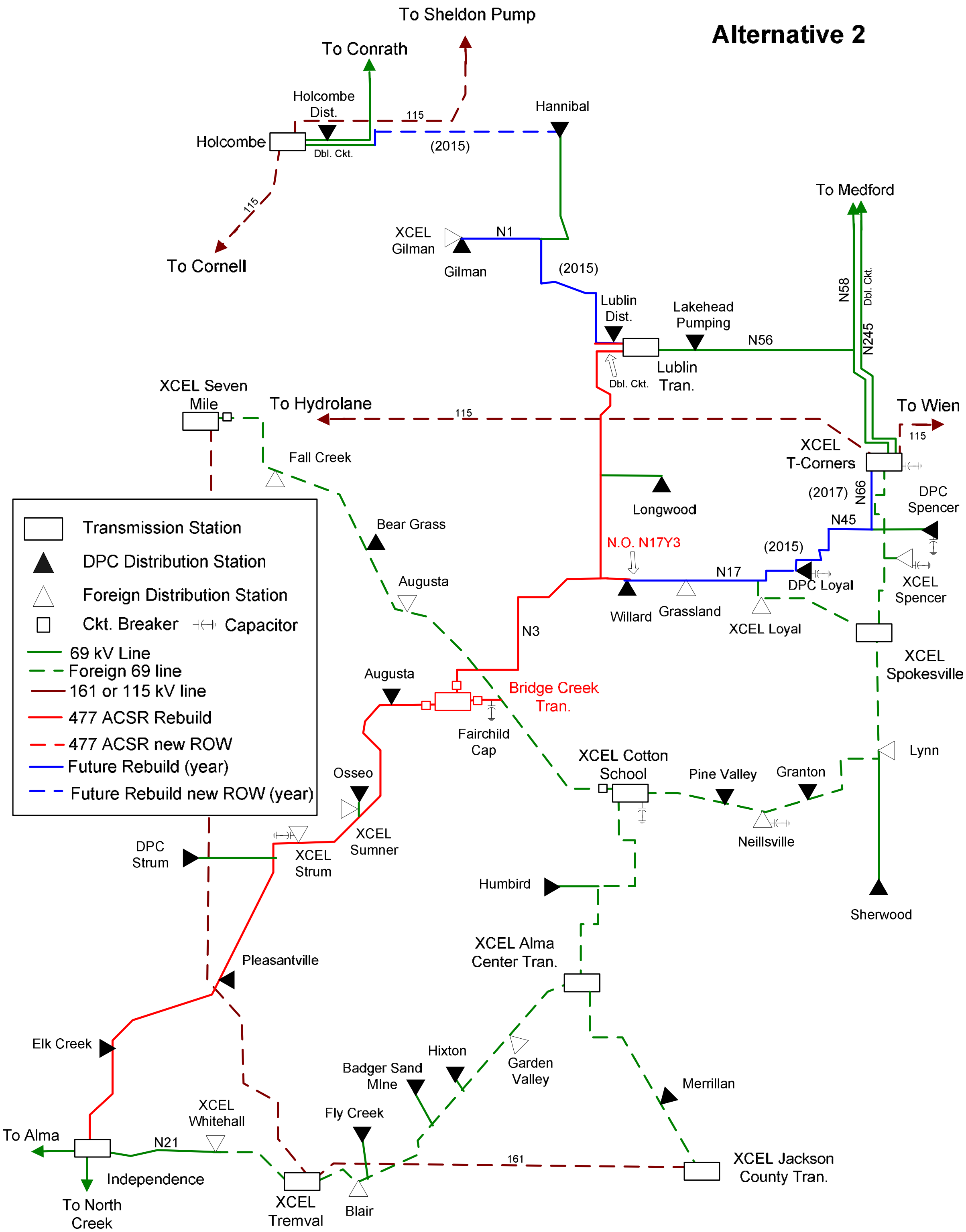


Figure 1 -Lublin Area Chosen Alternative

Listed below are the required facilities and costs for Alternative 2 in 2006 dollars.

Alternative 2 Facilities				
Facilities	**Conductor Size**	**Unit Qty or Miles**	**Year Installed**	**PW Cost in 2006 Dollars**
Independence-Bridge Creek Tran. 69 kV Rebuild	477 ACSR	36.65	2011	$7,376,291
1/0 Section of DPC Loyal-DPC Spencer 69 kV Rebuild	477 ACSR	2.83	2015	$471,341
Bridge Creek Tran.-Lublin 69 kV Rebuild	477 ACSR	44.90	2011	$9,036,711
4/0 Sections DPC Loyal-T-Corners 69 kV Rebuild	477 ACSR	8.50	2017	$1,282,223
69 kV Switching Station - Bridge Creek Tran. Station	N/A	1	2011	$595,285
69 kV Breakers at Bridge Creek	N/A	3	2011	$1,075,765
N-3T to Fairchild capacitor and XCEL line 69 kV Rebuild	477 ACSR	0.5	2011	$100,632
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015	$3,253,857
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015	$50,939
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015	$1,485,641
N-1/N-3 Dbl. Ckt. into Lublin 69	477 ACSR	2.00	2011	$595,285
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015	$152,008
Willard-DPC Loyal & DPC 4/0 section DPC Loyal-Spencer	477 ACSR	18.34	2015	$3,053,725
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015	$413,447
Total				$28,943,149

Table 1 - Summary of Recommended Plan

Table 2 below lists terminal equipment limiters that should be upgraded as needed to utilize the full capacity of the new conductor. All of the “A” and “C” disconnect switches are rated at 600 Amperes. The buswork at Independence is 4/0 Copper, Lublin is 636 ACSR and Holcombe is 477 ACSR.

Terminal Limits Below 86 MVA		
Transmission Station-Breaker	**Equipment**	**Existing Limit (MVA)**
Independence	Bus Work	57
Independence-8NB3	Relay Load Limit	48
	Current Transformer	72
	A & C Disconnect Switches	72
Lublin-12NB3	Relay Load Limit	47
	A & C Disconnect Switches	72
Lublin-12NB2	A & C Disconnect Switches	72
Holcombe - 23NB1	Relay Load Limit	42.3
	A & C Disconnect Switches	72

Table 2 - Terminal Equipment Limiters

2.0 Introduction

2.1 Purpose

The purpose of this study is to identify transmission issues in the Lublin area and to examine alternative plans that will address the problems. Existing issues in the system include real time heavy loading on peak summer days of the Independence-Elk Creek section of the N-3. Many substations in this area also experience above average exposure miles. The area examined in this study is shown in Figure 2. The study area boundaries are Independence to the south, XCEL Seven Mile to the west, Holcombe to the north and XCEL T-Corners to the east.

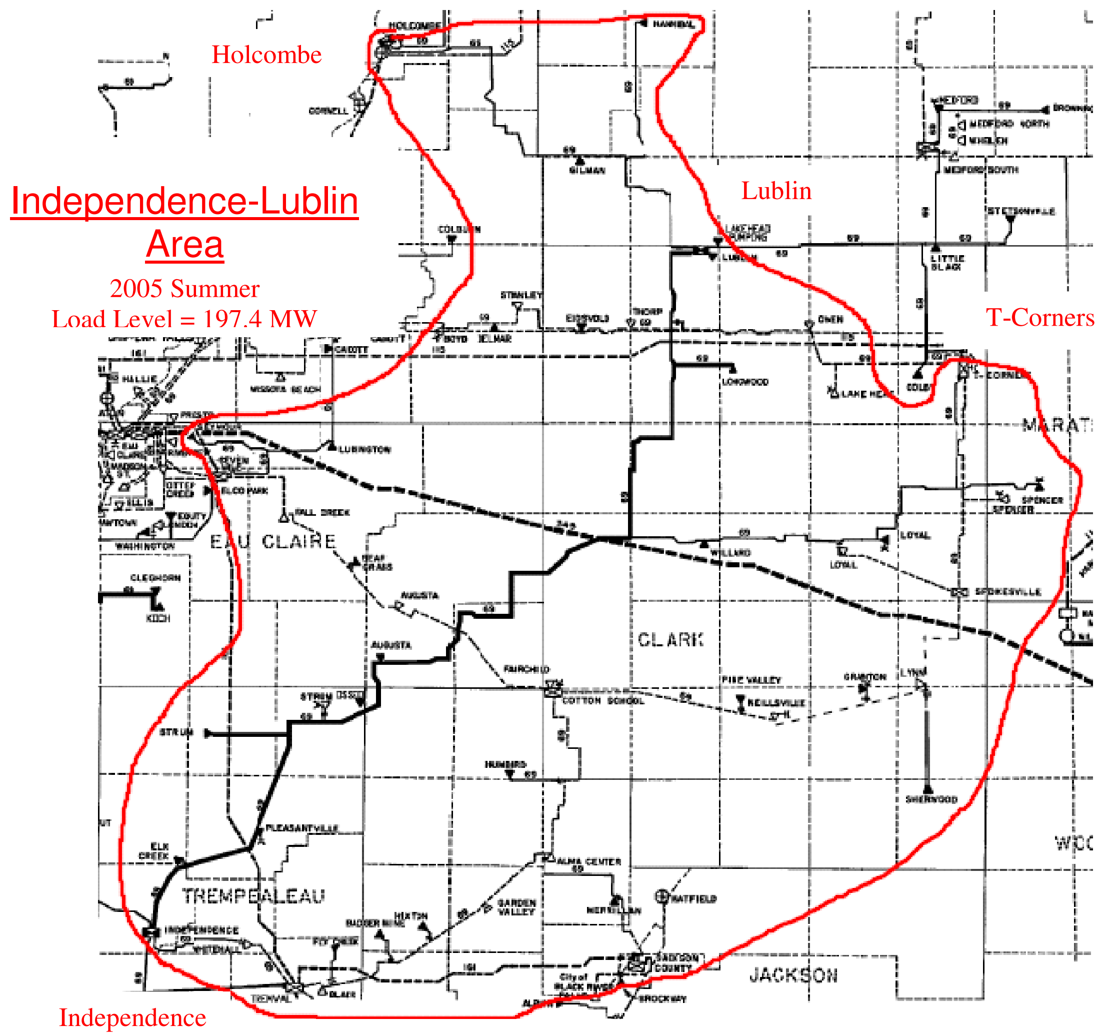


Figure 2 - Lublin Study Area

2.2 Scope

This study used the 2005 summer, winter, and summer off peak with high transfers cases of the 2005 MAPP Series Models to determine load serving issues in the Lublin area. ACCC analysis was run to determine critical contingencies affecting the area. Each alternative was reviewed based on cost, contingent performance, longevity, and transmission exposure. The longevity of each alternative was determined by scaling up the area load and simulating the critical contingencies. Each alternative was then ranked based on cost per MW of load growth.

3.0 Model Development and Assumptions

The 2005 summer, summer off peak with high transfers and winter peak cases were used for this study. Updates and changes to these cases are listed below:

- Generation at Flambeau changed from 24 MW to 12.5 MW, 50% output
- Adjusted summer off-peak hydro generation in northern WI to 50%
- Change rating of N-66, T Corners-Spencer to 25 MVA
- Change rating of Bugle Lake-Whitehall on N-21 to 25 MVA
- Replaced 47 MVA transformer at XCEL T-Corners with 112 MVA and moved 47 MVA transformer to Osprey 115 bus
- Adjusted taps on T-Corners 62.5 MVA transformer
- Changed control mode of Fairchild and Loyal Capacitors from fixed to discrete
- Added DPC Medford 6 MVAR capacitor
- Change XCEL Strum Cap from 7.2 MVAR to 5.4 MVAR
- Upgraded N-7, rebuild will be apart of Utica Area Study
- Added DPC load at Osseo, 725 kW (XCEL Sumner load already in model)

4.0 Existing System Analysis

4.1 Existing Line Performance

Table 3 shows the present condition and design of the DPC lines in the Lublin Area Study. The study area has approximately 197.4 MW of load in the summer 2005 peak case. The area consists of DPC and XCEL load. The main two lines in the study area are Independence-Lublin and Holcombe-Lublin.

Existing Line Data					
Line Segment	**Line**	**Installed Date**	**Condition**	**Structure Type**	**Shield Wire**
Independence-Lublin	N-3	1950	Poor	Montana	Yes
Holcombe-Lublin	N-1	1948	Poor/Fair	Montana/Top Post/Wishbone	Yes
DPC Loyal-N-3	N-17	1950/55	Poor/Fair	Montana	Yes
DPC Loyal-DPC Spencer	N-45	1960	Good	Wishbone	Yes
DPC Spencer-T-Corners	N-66	1972	Good	Wishbone	Yes
Lublin-N-58	N-56	1963	Good	Wishbone	Yes
Strum tap-N-3	N-32	1972	Good	Wishbone	Yes
Longwood tap-N-3	N-130	1975	Good	Wishbone	Yes

Table 3 - Lublin Area Existing Line Data

Independence-Lublin has a total of 92.3 miles of line exposure; which includes 3.98 miles of the N-17. The N-3 serves six DPC and two XCEL distribution substations. The existing N-3 line has an auto sectionalizer with remote control at the Fairchild tap. This motor operated switch breaks the line into sections of 42.45 miles and 49.86 miles in the case of a fault. There are also remote controlled switches at DPC Strum tap which help to expedite load restoration. The N-3 is rated in poor condition and has an estimated 5 years of remaining life until the lines will need to be replaced simply based on maintenance cost and reliability. Two other lines are in poor to fair condition; the N-1 and N-17. These lines have an estimated 5-10 years of remaining life.

The 2005 summer peak case caused the most stress to the system. In the base case the Independence-Elk Creek line was loaded at 96% without contingency. Table 4 shows contingencies of the existing system.

Existing System Contingency Problems (2005 summer peak)		
Facility	**Contingency**	**Percent of Rating or Nominal Voltage**
Independence-Elk Creek	Base Case	96
Independence-Elk Creek	T-Corner 115/69 62.5MVA,TCN-Hydrolane 115	106
Independence-Elk Creek	T-Corners 115/69 112 MVA, TCN-Wien 115	118
Elk Creek-Pleasantville		109
Pleasantville-Strum T		103
Independence-Elk Creek	Holcombe-Cornell 115	113
Elk Creek-Pleasantville		104
Spencer Tap-Loyal	Spokesville-XCEL Loyal 69	109
Elk Creek 69	Independence-Elk Creek 69	0.9004
Pleasantville 69		0.9016
DPC Strum 69		0.9030

Table 4 - Existing System Contingencies

The Independence-Elk Creek section of the N-3 can become overloaded under contingency. To resolve this problem, the Lublin breaker on the N-3 can be opened; however, this decreases system reliability and is not a long term solution to the problem. An example of decreased system reliability occurred on July 17, 2006. After opening the Lublin breaker to relieve the line loading problem, real-time security analysis predicted about 89% voltage at Irving for loss of the Tremval 161/69 kV transformer.

Another existing problem is the overload of Spencer tap-DPC Loyal tap for loss of XCEL Spokesville-XCEL Loyal. Although there is a normally open switch connecting Willard to the N-3 source, under a worst case scenario this wasn't considered a viable option, especially in a peak load case. The DPC Spencer tap-DPC Loyal tap section of the N-45 has 1/0 conductor rated at 17 MVA and can overload when it is trying to feed DPC Loyal, Grassland, Willard and XCEL Loyal radially from the T-Corners source. If this contingency did occur, the area could be reconfigured to relieve this problem. Closing the emergency tie at Willard, N17Y6 and opening on the N-3 at N3Y19 would create a Lublin-T-Corners loop and loading on the 1/0 ACSR section between Spencer and DPC Loyal would be reduced to 91%, 15.7 MVA.

4.2 Existing System Reliability

Table 5 shows line performance in the Lublin Area over the past 5 years. In general, DPC lines in the Lublin Area have an above average number of operations each year, however, when taking into account the age and exposure miles of the DPC lines in this area the lines perform reasonably well. The two worst performing lines in the area are XCEL's Seven Mile-Cotton School 69 line and DPC's T-Corners-Lublin-Medford 69 line. Both of these lines are at or above the average number of operations each year and operations per mile over the past 5 years.

	Circuit Breaker Operations						5 Year
Line Segment	2001	2002	2003	2004	2005	Ave.	Ave./Mile
Independence-Lublin	4	12	1	3	4	4.80	0.06
T-Corners-Loyal-Spokesville	1	7	1	0	13	4.40	0.09
XCEL Seven Mile-Cotton School	5	11	5	7	5	6.60	0.21
Holcombe-Lublin	1	6	2	2	0	2.20	0.05
TCorners-Lublin-Medford	6	9	6	1	4	5.20	0.13
DPC System Average	4.29	5.16	2.91	2.51	2.98	3.57	0.13

Table 5 - Lublin Area Line Performance

5.0 Analysis of Alternatives

5.1 Description

Originally the Lublin Area Study focused on the N-3 line and surrounding areas. The study area was eventually expanded to include the Holcombe-Lublin 69 kV line (N-1) as well. This section will analyze 2 areas: the Holcombe-Lublin area and the Independence-Lublin-T-Corners area. All of the alternatives were analyzed on a basis of permanent and temporary fault exposure miles, total cost and cost per megawatt of load growth.

The MVA rating of the new facilities was compared with the existing terminal equipment ratings, in order to determine what existing equipment should be uprated at Independence, Lublin or Holcombe. DPC standard is to use 477 ACSR conductor for looped lines and 1200 Amp switches. 477 ACSR conductor has a summer rating of 86 MVA or 720 Amperes. Terminal equipment could limit the use of the higher capacity rebuilt line. Table 6 below lists terminal equipment below 86 MVA. Buswork at Independence is 4/0 copper, Lublin is 636 ACSR and Holcombe is 477 ACSR. All of the "A" and "C" breaker disconnect switches are rated at 600 Amperes, 72 MVA. The terminal limiters should be upgraded as needed so that the full capability of the rebuilt line can be utilized.

Terminal Limiters Below 86 MVA		
Transmission Station-Breaker	Equipment	Existing Limit (MVA)
Independence	Buswork	57
Independence-8NB3	Relay Load Limit	48
	Current Transformer	72
	A & C Disconnect Switches	72
Lublin-12NB3	Relay Load Limit	47
	A & C Disconnect Switches	72
Lublin-12NB2	A & C Disconnect Switches	72
Holcombe - 23NB1	Relay Load Limit	42.3
	A & C Disconnect Switches	72

Table 6 - Terminal Limiters

5.1.1 Holcombe-Lublin (N-1) Alternatives

Two options were considered for replacing Holcombe-Lublin. The N-1 can be seen in Figure 3. The first 4.1 miles of the N-1 heading east from Holcombe is a 477 ACSR double circuit with the Holcombe-Flambeau line. The remaining part of the N-1 is 4/0 ACSR conductor which has become one of the oldest lines on the DPC system and is rated as being in-between poor and fair condition as of January 2006. The N-1 can overload for loss of the double circuit out of T-Corners towards Medford. In time, maintenance costs will continue to increase and the line will need to be replaced due to its aged condition.

One option is to rebuild the entire line on existing ROW. This consisted of 29.9 miles of rebuild. The second option was to utilize the already designed and poled double circuit with the N-307, Holcombe-Flambeau, where the line turns from heading east and starts heading north for approximately 1 mile. This 1 mile of the north-south section of Holcombe-Flambeau has already been designed for a double circuit. The arms will need to be added and then string the 477 ACSR conductor. From there the line will continue east on new ROW to the DPC Hannibal sub. The existing Hannibal sub is on a 4/0 ACSR 10.4 mile tap line from the N-1. This new option would utilize the existing 4/0 ACSR Hannibal tap rated at 47 MVA and would continue rebuilding the N-1 on existing ROW from the Gilman tap into Lublin. The old line from Gilman towards Holcombe would be retired. The second option is in red on Figure 3.

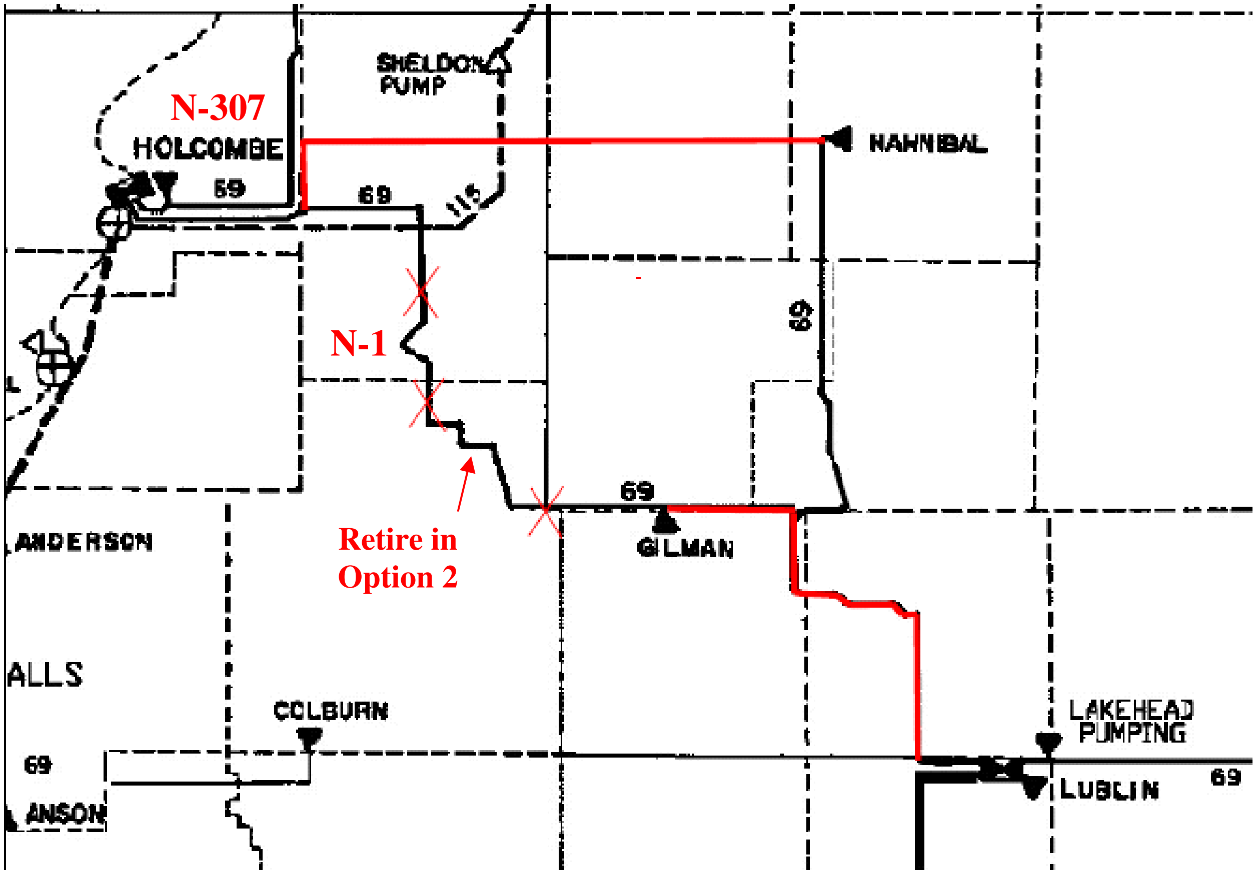


Figure 3 - Lublin-Holcombe Alternatives

Table 7 shows a cost comparison of these two alternatives. The estimated in service date based on age and condition is 2015. The cost of Option 1 (N-1 rebuild) is $5.26M and the cost of Option 2 (new ROW to Hannibal) is $5.95M.

Holcombe-Lublin Alternative Costs	
Alternative	**Cumulative Present Worth 2006 Dollars**
Option 1	$5,259,065
Option 2	$5,951,177

Table 7 - Holcombe-Lublin Alternative Costs

Two indices called the Permanent Fault Exposure Measurement (PFEM) and the Temporary Fault Exposure Measurement (TFEM) are used to measure the relative exposure of DPC's customers to permanent or temporary faults on the transmission system. These indices provide a standard for measuring the quality of service to DPC's customers. The quality of service is based on the likelihood of a transmission line being interrupted. The TFEM and PFEM are calculated based on the affected load, transmission line miles and time required to restore load following clearing due to a fault.

Table 8 shows the average exposure measurement for the Hannibal and Gilman substations and then compares those numbers with the existing system's exposure measurements. While the rebuild on existing ROW has no change, the second option is able to greatly reduce the average permanent fault exposure and also slightly reduce the average temporary fault exposure for these two substations. This is mainly attributed to eliminating the existing 10.4 mile tap line Hannibal is fed from.

Transmission Exposure for Hannibal & Gilman				
ALTERNATIVE	PFEM (1) Average	TFEM (2) Average	% PFEM Decrease	% TFEM Decrease
DPC average	123.8	79.8		
Original N-1	226.2	80.6		
N-1 Rebuild	226.2	80.6	0.0	0.0
New ROW to Hannibal	100.8	78.3	54.4	2.9

1 – PFEM = Permanent Fault Exposure Measurement
2 – TFEM = Temporary Fault Exposure Measurement

Table 8 - Holcombe-Lublin Alternative Line Exposure Miles

Due to these results, the new ROW option to Hannibal was selected and used in all of the alternatives for the Lublin area. This option for replacing the N-1 costs about 13% more than the total rebuild, but is able to utilize an additional 1 mile of double circuit with Holcombe-Flambeau and serve Hannibal from an approximate 0.4 mile tap instead of 10.4 mile tap line.

The chosen alternative will retire a 16.4 mile section of the N-1 from Gilman heading north. The Chippewa Valley and Jump River long range plans were reviewed to ensure transmission line wasn't retired in an area that needed a new distribution substation. Both long range plans are for the years 2005-2014 and neither called for a new substation in the area.

5.1.2 Independence-Lublin Area Alternatives

In Appendix A there are 11 alternatives for replacing DPC lines in the Lublin area. Each alternative shows the 2011 rebuilds or additions in red. Each alternative also shows the future rebuilds in blue with the installation year. All of the alternatives are a combination of 69 kV rebuilds, new 69 kV line construction, and transmission station additions.

All deferred line rebuilds were tested to ensure their ability to handle the worst contingency with the load escalated at 2% a year up until the year they are to be replaced. Although these lines are reaching the end of their useful life, deferred line rebuilds are needed due to the high number of line rebuild miles in the study and resulting high cost.

5.2 Load Flow Analysis

Table 9 shows the longevity of all eleven alternatives. The Lublin area load has a 197.4 MW summer peak load level in 2005. Loads were scaled up for each alternative and contingencies were run to determine the maximum local load each alternative can support. The longevity test focused on the ability of DPC's newly upgraded system to handle the worst contingency. Contingent issues like low voltages in the DPC Fly Creek area for loss of the XCEL Tremval transformer were ignored as a part of this test in order to test the longevity of the actual upgrades to the system.

Longevity of Alternatives			
Alternatives	Study Area Load Level (MW)	Contingency	Problem
1	274	Independence-Elk Creek	Low voltage at Strum
2	376	T-Corners-DPC Spencer Tap	Low Voltage at DPC Spencer
3	338	Grassland-Loyal tap	Low Voltage at Grassland
4	276	Independence-Elk Creek	Low voltage at Strum
5	338	Grassland-Loyal tap	Low Voltage at Grassland
6	245	Independence-Elk Creek	Low voltage at Strum
7	376	T-Corners-DPC Spencer Tap	Low Voltage at DPC Spencer
8	299	Independence-Elk Creek	Low voltage at Strum
9	231	Independence-Elk Creek	Low voltage at Strum
10	268	Independence-Elk Creek	Low voltage at Strum
11	338	Grassland-Loyal tap	Low Voltage at Grassland

Table 9 – Longevity of Lublin Area Alternatives

Alternatives 9 and 6 had the lowest amount of load growth, approximately 8-11 years at 2% load growth. They both experienced low voltage at DPC Strum for loss of Independence-Elk Creek. These options did not add a new breaker station that would provide a new source for the Independence-Elk Creek contingency. This resulted in low voltages due to the inability to feed the long radial out of Lublin. In some cases, placing a 6.0 MVAR capacitor bank at Willard to help voltage levels in the area under contingency did not work due to a greater than 5% voltage change under contingency.

Alternatives 2 and 7 lasted the longest into the future. These alternatives ran out of gas when the study area load level reached 376 MW. At 2% load growth in the Lublin area, 376 MW of area load is approximately equal to the year 2037. Both of these alternatives provide a new source to the N-3 by tying into XCEL's Seven Mile-Cotton School source. Alternative 2 uses a new breaker station where the two lines meet, while alternative 7 runs on new ROW to the Cotton School transmission station.

All of the longevity tests used the configuration of the system to transfer load if necessary. Many alternatives keep the normally open point around Willard or Grassland. The ability to switch these loads to either the Independence or T-Corners source depending on the contingency was able to increase the longevity of many alternatives.

5.3 Reliability Analysis

PFEM and TFEM were explained in the section reviewing the exposure miles for the N-1 options. Exposure miles are another useful tool to examine the impacts alternatives have on the system. Substations affected by the new alternatives with above average PFEM or TFEM were used in finding the average change of PFEM and TFEM. Seven of the distribution substations in the Lublin area were monitored to see the effects of each alternative on the substation's exposure miles. Table 10 shows PFEM and TFEM averages for the existing study area and each alternative. Each alternative is ranked based on decrease in exposure miles.

Transmission Exposure						
ALTERNATIVE	PFEM (1)	TFEM (2)	PFEM Decrease		TFEM Decrease	
	Average	Average	Rank	%	Rank	%
DPC average	123.8	79.8				
Existing study area (3)	190.3	192.1				
Alternative 1	190.3	192.1	9	0	11	0
Alternative 2	191.1	128.3	10	0	6	33
Alternative 3	173.0	110.2	3	9	2	43
Alternative 4	186.6	180.8	8	2	10	6
Alternative 5	182.6	126.6	5	4	5	34
Alternative 6	191.1	128.3	10	0	6	33
Alternative 7	186.2	130.2	6	2	8	32
Alternative 8	186.3	139.2	7	2	9	28
Alternative 9	149.9	87.1	1	21	1	55
Alternative 10	159.5	112.4	2	16	3	41
Alternative 11	177.1	114.3	4	7	4	41

1 – PFEM = Permanent Fault Exposure Measurement
2 – TFEM = Temporary Fault Exposure Measurement
3 –Included DPC substations: Strum, Longwood, Spencer, Elk Creek, Willard, Loyal, Augusta

Table 10 - Lublin Area Transmission Exposure Miles

The alternative with the greatest reduction in PFEM and TFEM was alternative 9. This alternative reduced exposure on the N-3 the most by placing a single breaker at Fairchild, feeding Longwood radially from Lublin and DPC Loyal radially from T-Corners. In this alternative, Independence-XCEL Spokesville is looped. Altneratives 3, 10 and 11 were close behind alternative 9 with smaller reductions in PFEM but 41-43% reductions in TFEM for the sampled DPC substations.

5.4 Economic Comparison

Table 11 summarizes the present value of revenue requirements for each alternative in 2006 dollars. The assumed in-service date for each facility is 2011 or later. All of the alternative costs include the previously mentioned and chosen new ROW to Hannibal alternative for replacing the N-1. The present worth (PW) calculations use the following assumptions:

Discount Rate: 6.50%
Inflation Rate: 2.50%
LARR Rate: 12.54%

The revenue requirements for each option are based on a 35 year life cycle of each facility. The least cost plan is Alternative 3 with a present worth of $25,552,825. The most expensive plan is Alternative 7 with a cost of $30,516,365.

Lublin Area, Alternative Costs	
Alternatives	Cumulative Present Worth 2006 Dollars
1	$27,372,988
2	$28,943,149
3	$25,552,825
4	$29,370,139
5	$25,988,332
6	$27,062,773
7	$30,516,365
8	$28,998,639
9	$27,478,028
10	$27,970,089
11	$26,332,713

Table 11 - Lublin Area Alternative Costs

Using data acquired from the longevity of each alternative, a cost per MW of growth can be used to evaluate the alternatives. The growth of each alternative was found by subtracting the existing load in 2009 from the maximum load found from each alternative's longevity. By dividing the cost of each alternative with their respective load growth, a measure of cost versus load growth can be found. This provides another measurement for choosing a preferred alternative. Table 12 shows the cost per MW of load growth for each alternative.

Cost versus Load Growth					
Alternatives	Cost	Max Load	Load Increase	Years from 2005 at 2% Load Growth	Cost per MW of Load Growth
1	$27,372,988	274.0	77.3	16.7	$354,113
2	$28,943,149	376.0	179.3	32.7	$161,423
3	$25,552,825	338.0	141.3	27.3	$180,840
4	$29,370,139	276.0	79.3	17.1	$370,367
5	$25,988,332	338.0	141.3	27.3	$183,923
6	$27,062,773	245.0	48.3	11.1	$560,306
7	$30,516,365	376.0	179.3	32.7	$170,197
8	$28,998,639	298.9	102.2	21.1	$283,744
9	$27,478,028	231.1	34.4	8.1	$798,780
10	$27,970,089	268.0	71.3	15.6	$392,287
11	$26,332,713	338.0	141.3	27.3	$186,360

Table 12 - Cost per MW of load growth

The alternative with the lowest cost per MW is alternative 2 with a cost per MW of $161,423. Ultimately, not retiring Bridge Creek-Willard and the ability to feed the Willard and Grassland loads from either the Lublin or T-Corners side due to contingency proved to be the best option to serve the area load long into the future.

5.5 Sensitivity to the DPC/XCEL Network Settlement

As of May 1, 2006, DPC and XCEL reached in principle a new network service agreement after the old agreement had expired. The new network service agreement defines a methodology for determining DPC load in the NSP pricing zone subject to a MISO tariff.

Alternatives 3, 5, and 11 remove a 17 mile section of the N-3 between the Fairchild capacitor and Willard tap. By removing this section, DPC subs in the Holcombe/T-Corners area would be under the MISO tariff. Table 13 shows these substations.

DPC Subs subject to MISO Tariff	
Longwood	Lublin Dist.
Willard	Lakehead Pumping
Loyal	Little Black
Spencer	Stetsonville
Gilman	Colby
Hannibal	Flambeau Dist
Conrath	Holcombe

Table 13 - Possible DPC subs subject to a MISO tariff

The added yearly cost to DPC of adding the above loads that are subject to the tariff is in Table 14 below. Although Table 14 only goes out 10 years, the actual costs would continue into the future. The yearly costs begin in 2011, approximately when the recommended plan would be done. The load growth used in this analysis is 2% a year.

Year	Added Load (MW)	Cost ($/year)
2011	36.1	$739,364
2012	37.0	$757,016
2013	37.9	$775,022
2014	38.8	$793,387
2015	39.7	$812,119
2016	40.6	$831,226
2017	41.6	$850,716
2018	42.5	$870,595
2019	43.5	$890,872
2020	44.5	$911,554

Table 14 - Yearly Cost Associated with Additional Load Under MISO Tariff

The yearly cost associated with adding load under the DPC/XCEL Network Settlement Agreement greatly increases the overall cost of implementing alternatives 3, 5, or 11. For this reason alternative 3, 5 and 11 are not feasible alternatives.

6.0 Conclusion

Transmission lines in the Lublin area are reaching the end of their useful life with increased maintenance costs, high exposure miles, line overloads and low voltages. 11 possible alternatives were examined for replacing DPC's transmission lines in the area. Each alternative was evaluated based on cost, exposure miles, future load serving ability and cost per MW of load growth.

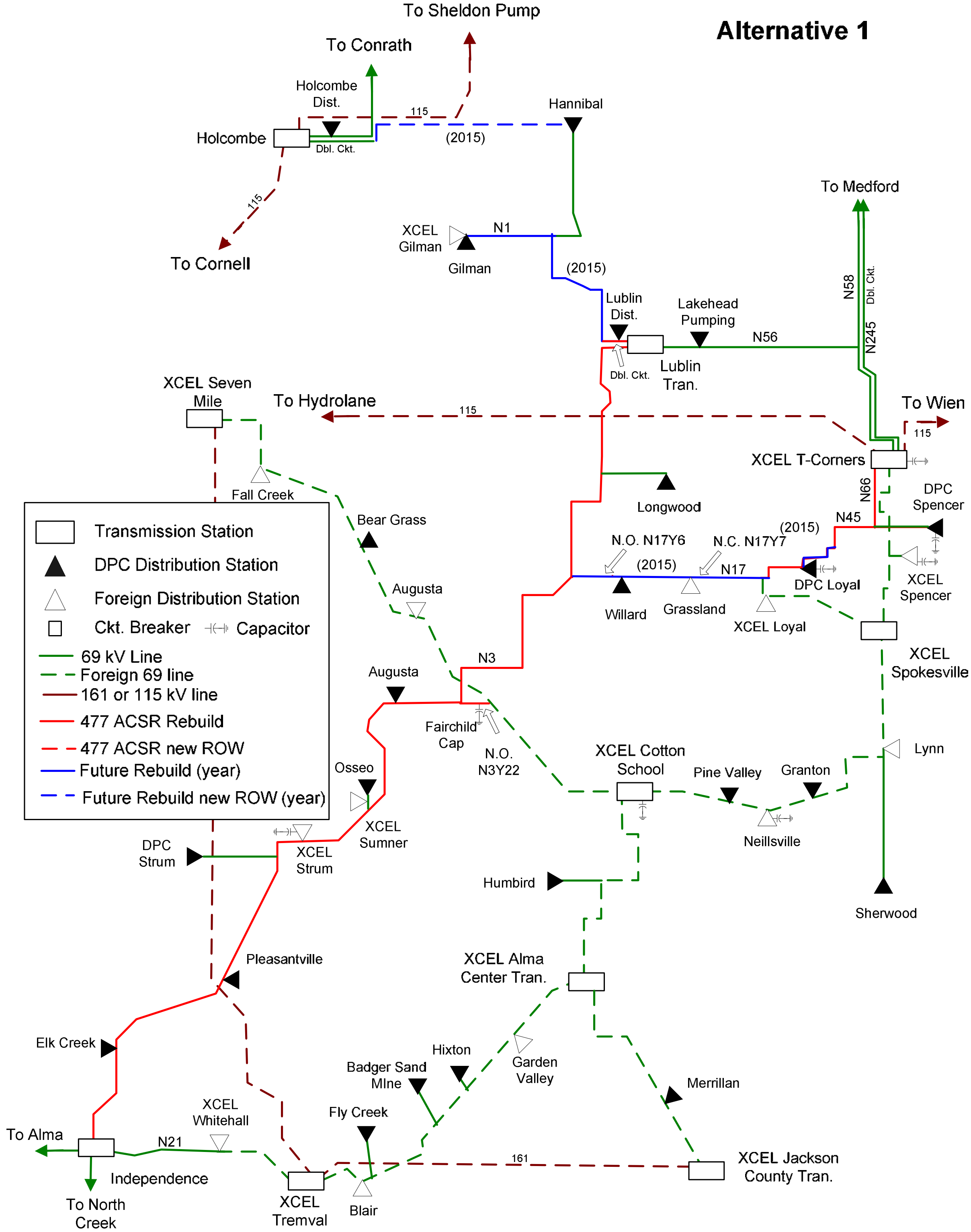
Alternative 2 was able to last long into the future and solve existing overload and low voltage problems. Alternative 2 is also the least cost option in terms of cost per MW of load growth. The new Bridge Creek transmission station will be able to serve load on the N-3 for loss of Independence-Elk Creek and decrease exposure miles for load on the N-3. Furthermore, the Bridge Creek breaker station is on the southern section of the N-3 which has a majority of the load tapped from the Independence-Lublin line. Tying XCEL's Seven Mile-Cotton school line with the existing N-3 at the Bridge Creek transmission station provides additional system flexibility. This alternative also preserves the XCEL T-Corners-XCEL Spokesville loop. Longwood and Willard will be fed from the new Bridge Creek-Lublin line section with the option to feed these two substations from T-Corners-Spokesville in the case of an emergency.

The selected option for replacing the Holcombe-Lublin line will greatly improve permanent fault exposure for the Hannibal substation and replace a line with increasing maintenance costs due to age. The chosen plan will continue the existing double circuit with Holcombe-Flambeau for one mile heading north. Continuing on new ROW, the line will head east to the Hannibal substation. The N-1 will use the existing 4/0 ACSR 212° design tap line from Hannibal to the N-1. From there the N-1 will be rebuilt to Lublin with 477 ACSR conductor. Coming into the Lublin station the N-1 and N-3 will be consolidated into a single double circuit.

As a part of this project, terminal equipment will also need to be upgraded to prevent terminal limiters and take advantage of the full capacity of the line. Terminal equipment less than 86 MVA at Independence, Lublin and Holcombe are listed in Appendix C. Appendix B shows a recommended plan for the construction of the Independence-Lublin facilities pertaining to Alternative 2. Construction sequences for the N-1 and Willard-T-Corners area can be done closer to the construction dates. Construction of the new Bridge Creek 69 kV breaker station could begin as early as 2009. The rebuild of N-3 is estimated to begin in either 2010 or 2011 based on current construction plans. The entire present worth of this project in 2006 dollars is $28,943,149.

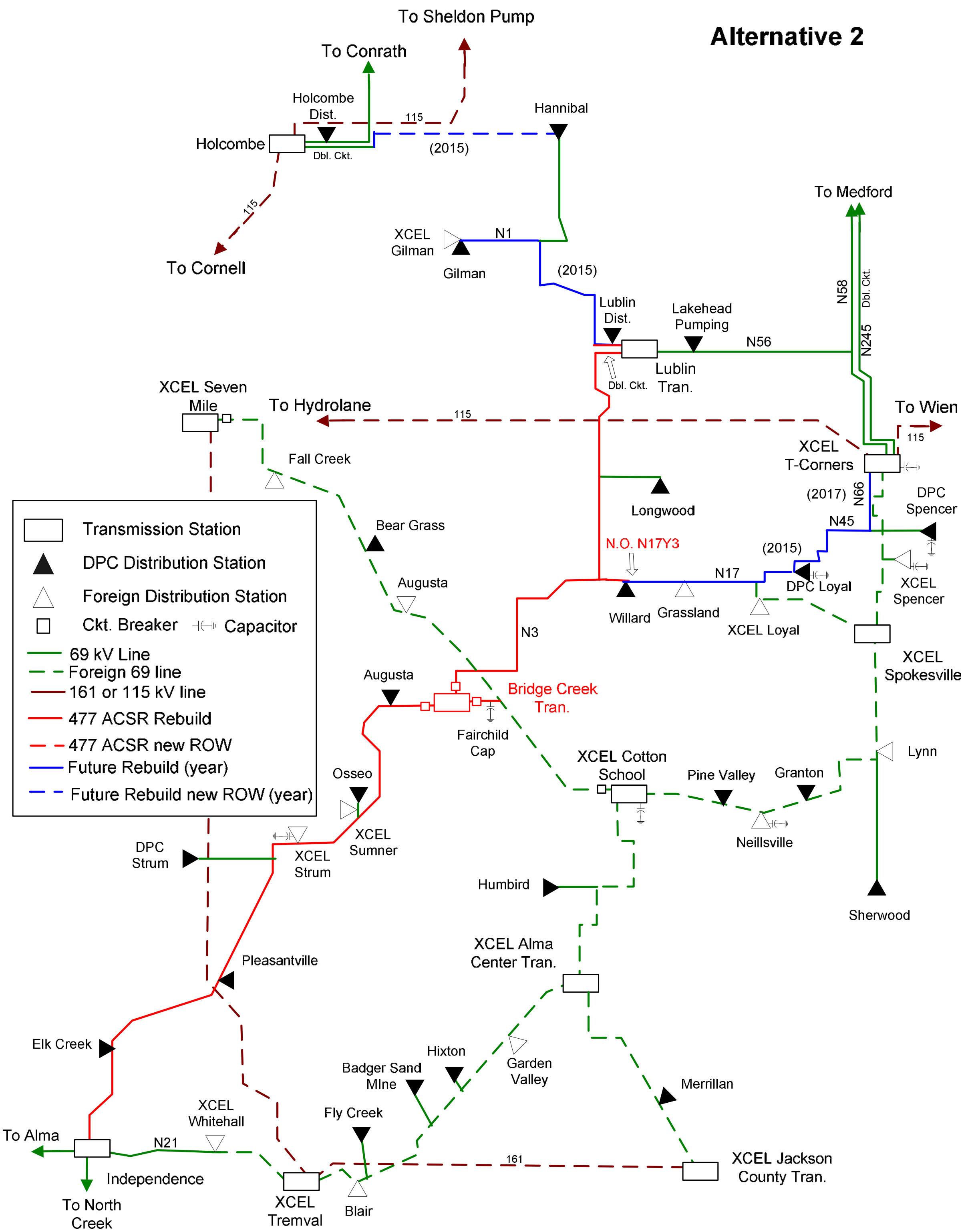
Appendix A – Alternatives

Alternative 1



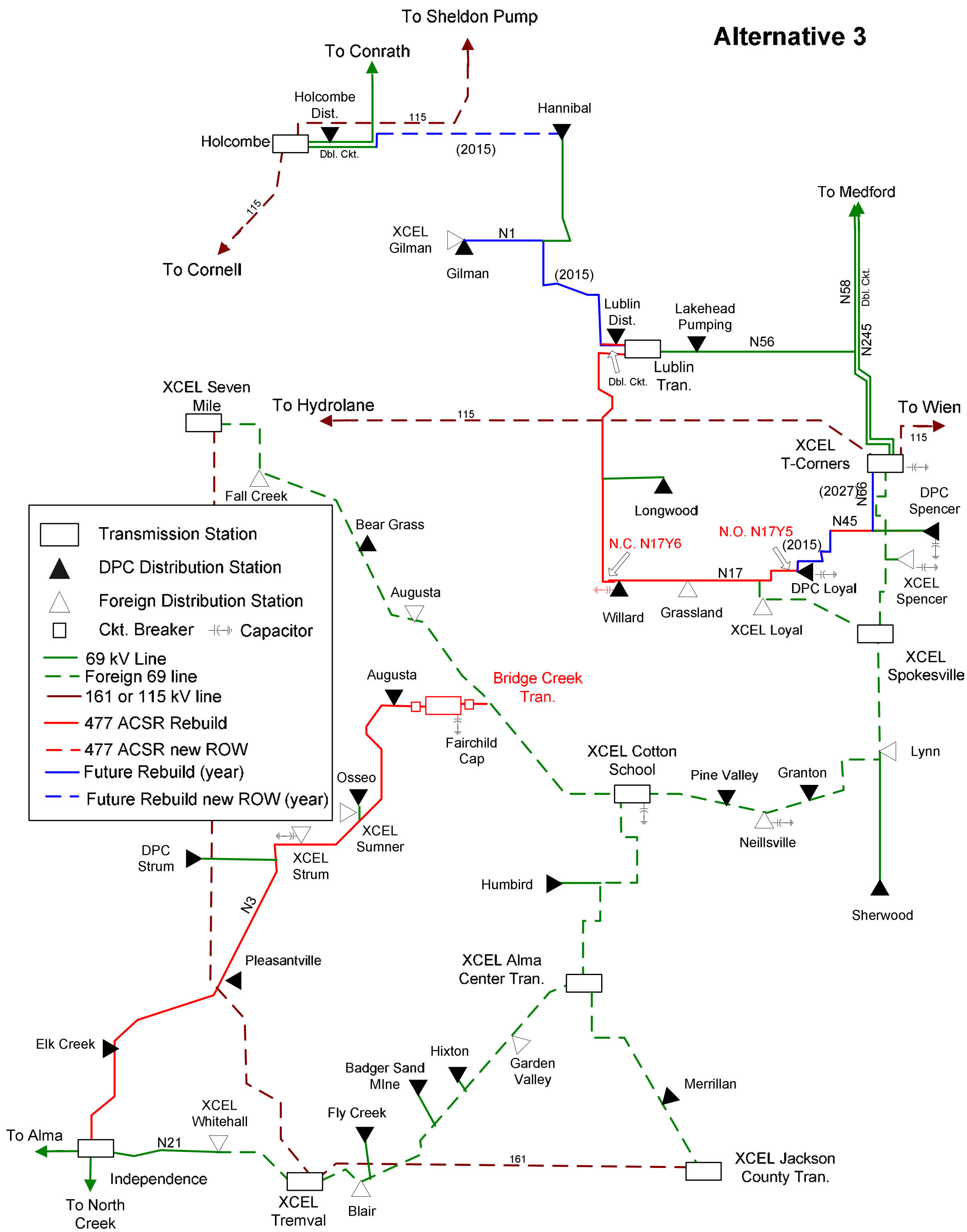
Alternative 1 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Lublin 69 kV Rebuild	477 ACSR	75.61	2011
N-3T XCEL line-Fairchild-Bridge Creek 69 kV Rebuild	477 ACSR	0.50	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Rebuild 1/0 ACSR section of DPC Spencer tap-Loyal tap	477 ACSR	5.30	2011
4/0 sec. DPC Spencer tap-DPC Loyal	477 ACSR	5.57	2015
T-Corners-DPC Spencer tap	477 ACSR	8.50	2011
Rebuild Willard tap-DPC Loyal Tap	477 ACSR	15.32	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

Alternative 2



Alternative 2 Facilities			
Facilities	**Conductor Size**	**Unit Qty or Miles**	**Year Installed**
Independence-Bridge Creek Tran. 69 kV Rebuild	477 ACSR	36.65	2011
1/0 Section of DPC Loyal-DPC Spencer 69 kV Rebuild	477 ACSR	2.83	2015
Bridge Creek Tran.-Lublin 69 kV Rebuild	477 ACSR	44.90	2011
4/0 Sections DPC Loyal-T-Corners 69 kV Rebuild	477 ACSR	8.50	2017
69 kV Switching Station -- Bridge Creek Tran. Station	N/A	1	2011
69 kV Breakers at Bridge Creek	N/A	3	2011
N-3T XCEL line-Fairchild-Bridge Creek 69 kV Rebuild	477 ACSR	0.50	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Willard-DPC Loyal & DPC 4/0 section DPC Loyal-Spencer	477 ACSR	18.34	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

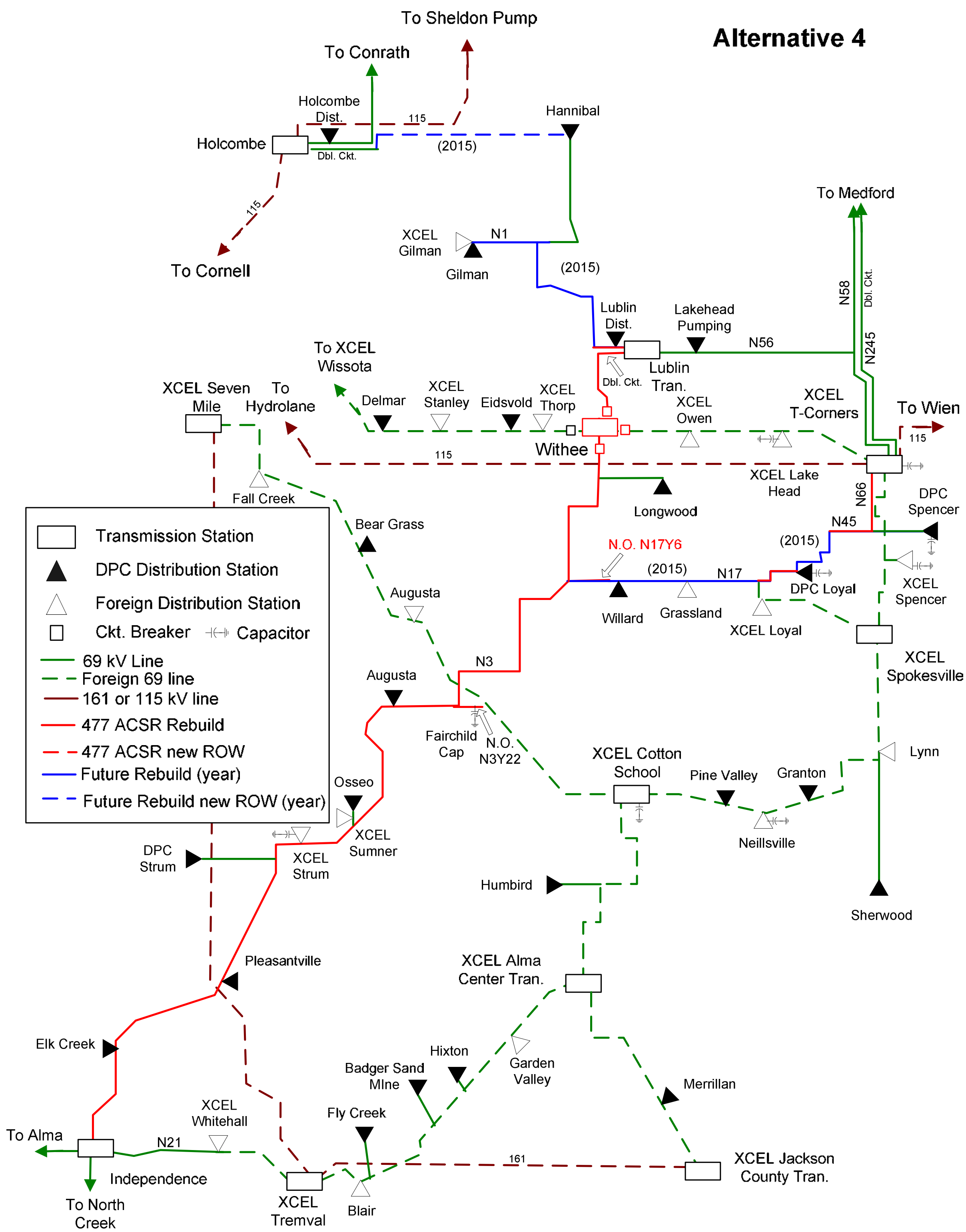
Alternative 3



Alternative 3 Facilities

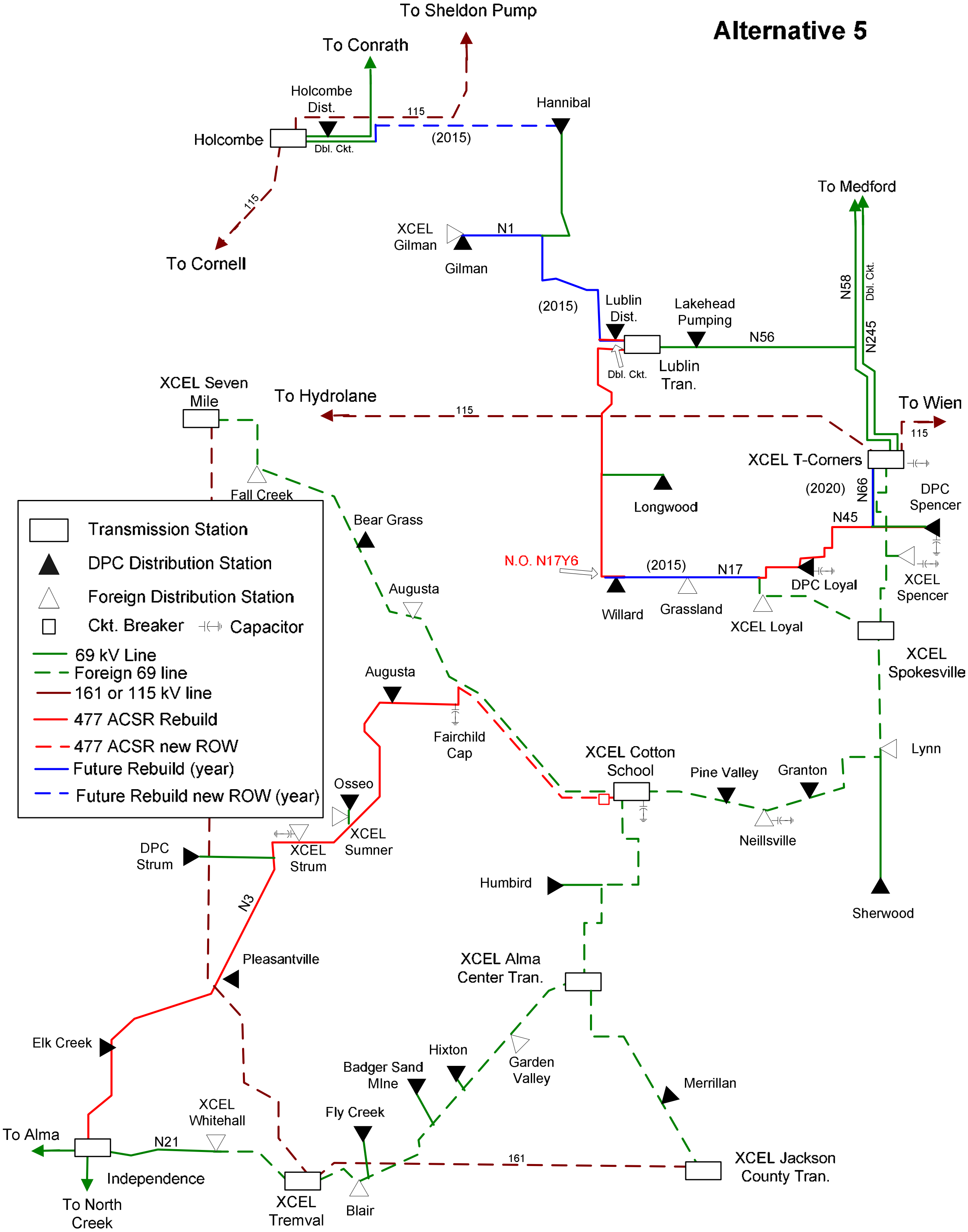
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
69 kV Switching Station -- Bridge Creek Tran. Station	N/A	1	2011
69 kV Breakers at Bridge Creek Tran. Station	N/A	2	2011
N-3 tap to Fairchild and XCEL line 69 kV Rebuild	477 ACSR	0.5	2011
Retire Fairchild-Willard Tap 69 kV	N/A	16.80	2011
Independence-Bridge Creek 69 kV Rebuild	477 ACSR	36.65	2011
1/0 Section Willard tap-DPC Spencer & Lublin-Willard tap (N3) Rebuild	477 ACSR	43.22	2011
4/0 Section DPC Spencer tap-DPC Loyal	477 ACSR	5.57	2015
DPC Spencer Tap-T-Corners 69 kV Rebuild	477 ACSR	8.50	2027
6.0 MVAR Cap bank at Willard	N/A	1	2011
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

Alternative 4



Alternative 4 Facilities			
Facilities	**Conductor Size**	**Unit Qty or Miles**	**Year Installed**
Independence-Withee 69 kV Rebuild	477 ACSR	70.27	2011
69 kV Breaker at Withee	477 ACSR	3.00	2011
N-3T XCEL line-Fairchild-Bridge Creek 69 kV Rebuild	477 ACSR	0.50	2011
Withee Sub Expansion	N/A	1	2011
Withee-Lublin 69 kV Rebuild	477 ACSR	6	2011
Rebuild 1/0 section of DPC Spencer-Loyal tap and TCN-DPC Spencer tap	477 ACSR	13.80	2011
Rebuild 1/0 ACSR Willard Tap-Loyal tap 4/0 Section DPC Loyal-Spencer	477 ACSR	20.89	2015
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

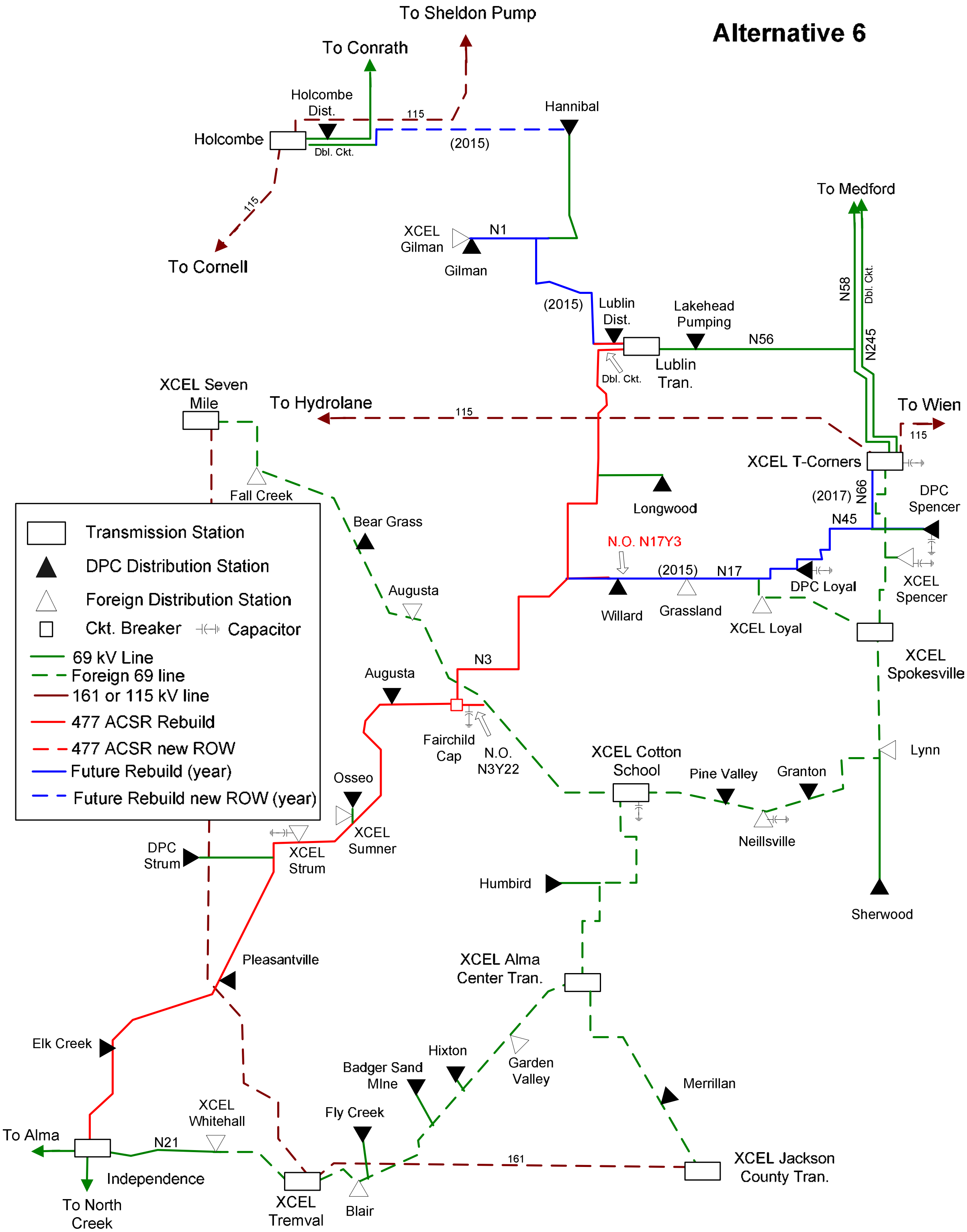
Alternative 5



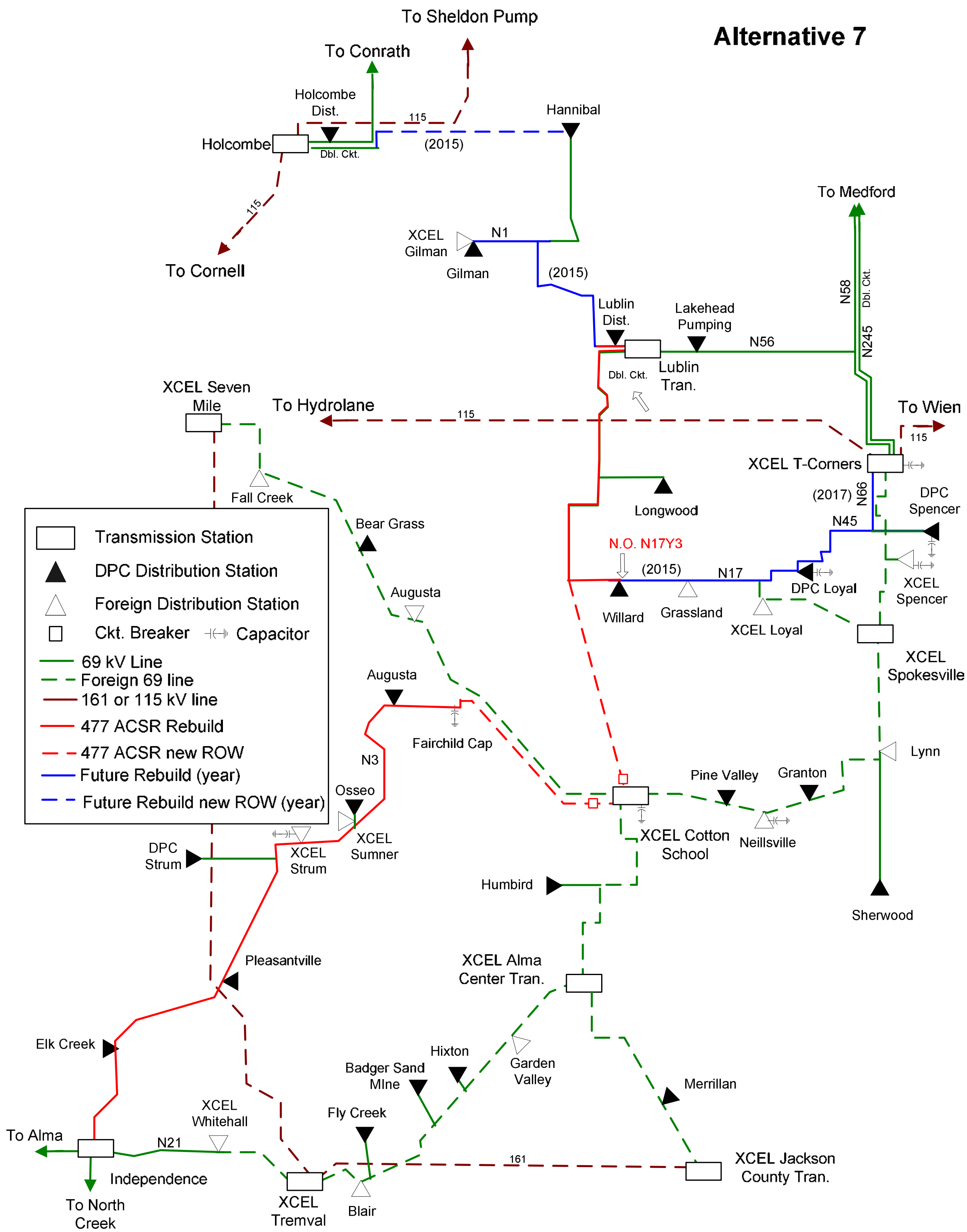
Alternative 5 Facilities

Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Fairchild Tap 69 kV Rebuild	477 ACSR	36.69	2011
Fairchild-Cotton School 69 kV on new ROW	477 ACSR	7.20	2011
69 kV Breaker at Cotton School	N/A	1	2011
Retire Fairchild-Willard Tap 69 kV	N/A	16.80	2011
DPC Spencer tap-XCEL Loyal Tap 69 kV Rebuild	477 ACSR	10.87	2011
T-Corners-DPC Spencer 69 kV Rebuild	477 ACSR	8.50	2020
Rebuild Willard tap-Loyal tap	477 ACSR	15.32	2015
Rebuild Lublin-Longwood tap-Willard tap	477 ACSR	22.60	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

Alternative 6



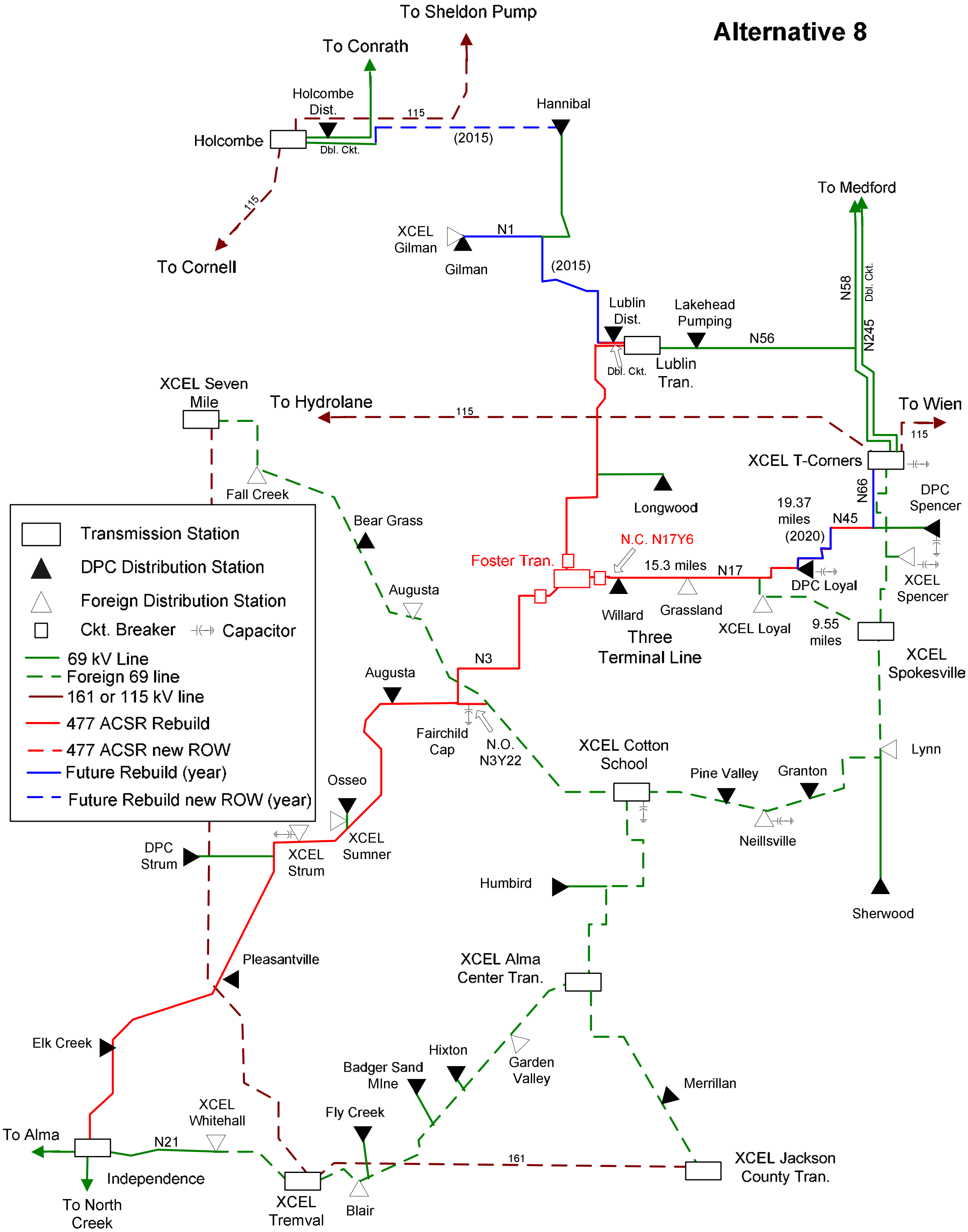
Alternative 6 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Lublin 69 kV Rebuild	477 ACSR	75.61	2011
69 kV Breaker at Fairchild	N/A	1	2011
Dbl. Ckt. Into Fairchild to Fairchild Breaker 69 kV Rebuild	477 ACSR	0.46	2011
Rebuild 1/0 Sections of Willard tap-DPC Spencer tap	477 ACSR	20.615	2015
Rebuild 4/0 Sections TCN-DPC Spencer tap, DPC Loyal-DPC Spencer tap	477 ACSR	14.07	2017
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015



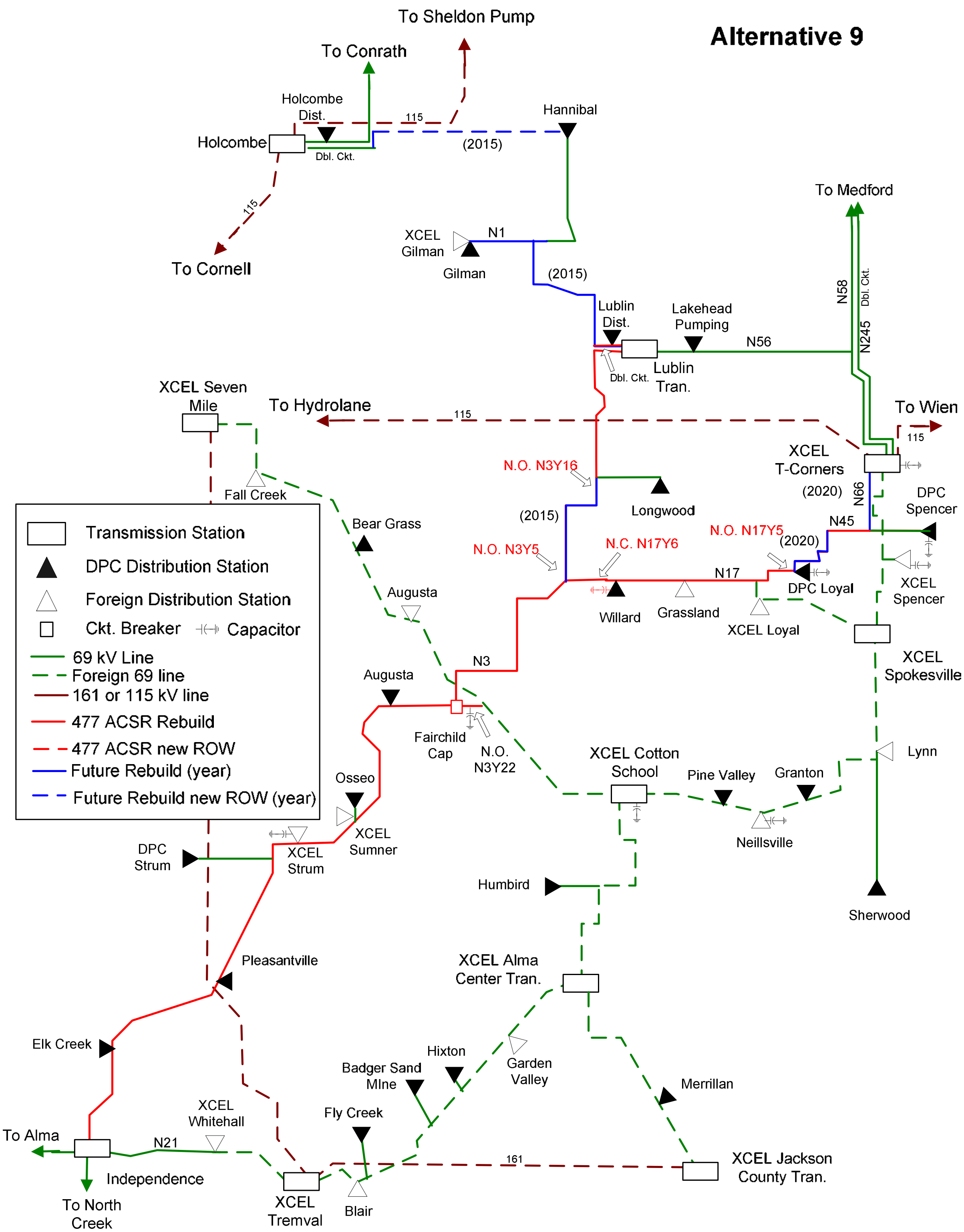
Alternative 7
To Sheldon Pump
To Conrath
Holcombe Dist.
115
Holcombe
Dbl. Ckt.
(2015)
Hannibal
115
To Cornell
To Medford
XCEL Gilman
N1
Gilman
(2015)
Lublin Dist.
Lakehead Pumping
N56
N58
Dbl. Ckt.
N245
Dbl. Ckt.
Lublin Tran.
XCEL Seven Mile
To Hydrolane
115
To Wien
115
XCEL T-Corners
Fall Creek
Longwood
(2017)
N66
DPC Spencer
Bear Grass
N45
N.O. N17Y3
(2015)
N17
XCEL Spencer
DPC Loyal
Augusta
Willard
Grassland
XCEL Loyal
XCEL Spokesville
Augusta
Fairchild Cap
Lynn
N3
Pine Valley
Granton
Osseo
XCEL Cotton School
Neillsville
XCEL Sumner
DPC Strum
XCEL Strum
Humbird
Sherwood
Pleasantville
XCEL Alma Center Tran.
Elk Creek
Hixton
Badger Sand Mine
Garden Valley
Merrillan
XCEL Whitehall
Fly Creek
To Alma
N21
161
XCEL Jackson County Tran.
Independence
To North Creek
XCEL Tremval
Blair
Transmission Station
DPC Distribution Station
Foreign Distribution Station
Ckt. Breaker
Capacitor
69 kV Line
Foreign 69 line
161 or 115 kV line
477 ACSR Rebuild
477 ACSR new ROW
Future Rebuild (year)
Future Rebuild new ROW (year)

Alternative 7 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Fairchild 69 kV Rebuild	477 ACSR	36.69	2011
Fairchild-Cotton School New ROW 69 kV	477 ACSR	7.20	2011
Retire Fairchild-Willard tap 69 kV	4/0 ACSR	16.82	2011
Willard Tap-Lublin 69kV Rebuild & Willard tap-Willard	477 ACSR	27.62	2011
69 kV Breakers at Cotton School	N/A	2	2011
Cotton School-Willard Tap new ROW 69 kV	477 ACSR	14.60	2011
Rebuild 1/0 Sections of Willard -DPC Spencer tap	477 ACSR	15.60	2015
Rebuild 4/0 Sections TCN-DPC Spencer tap, DPC Loyal-DPC Spencer tap	477 ACSR	14.07	2017
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

Alternative 8



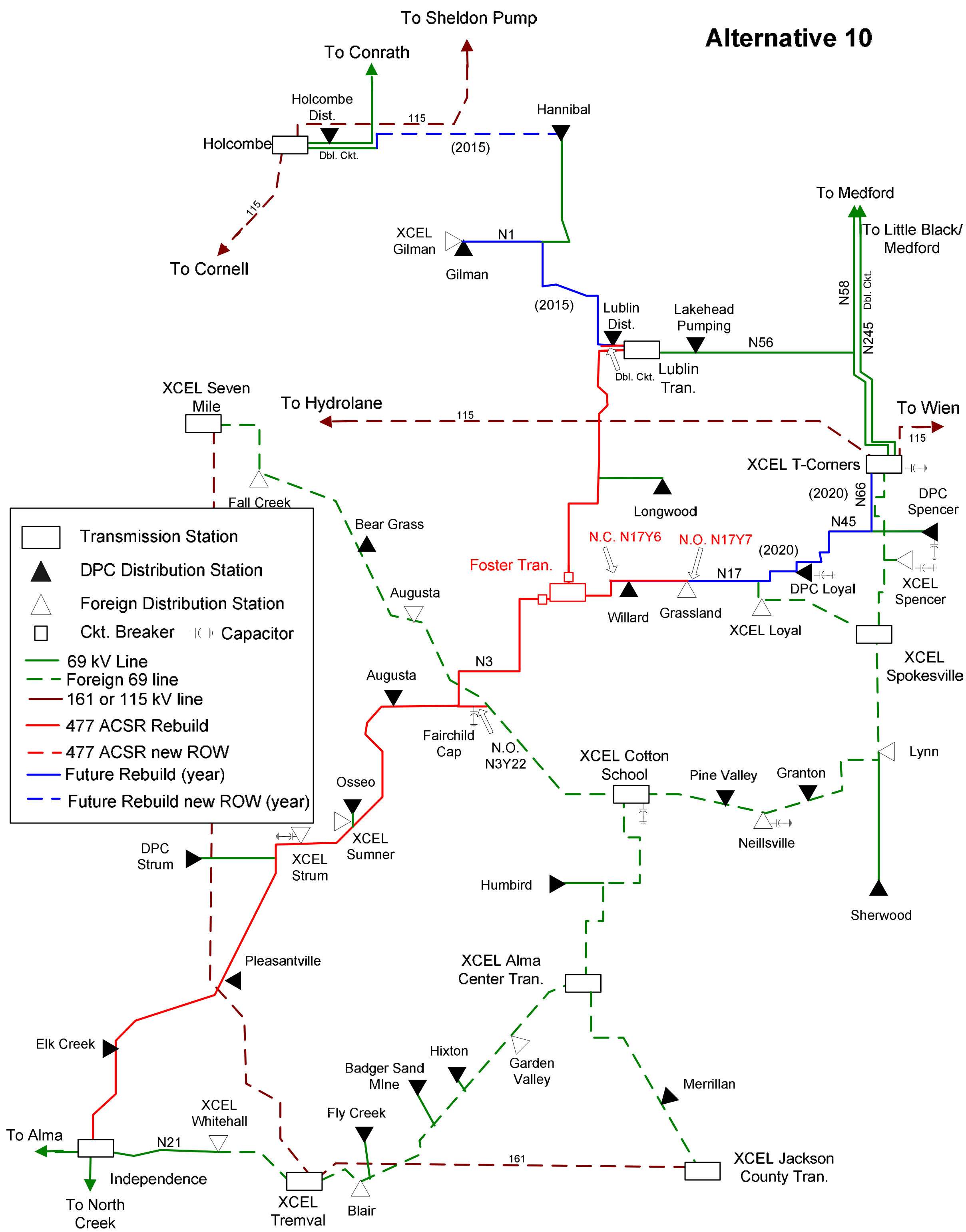
Alternative 8 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Foster 69 kV Rebuild	477 ACSR	53.47	2011
Foster 69 kV Switching Station	N/A	1	2011
69 kV Breakers at Foster SS	N/A	3	2011
N-3T XCEL line-Fairchild-Bridge Creek 69 kV Rebuild	477 ACSR	0.50	2011
1/0 Sections T-Corners-Foster 69 kV Rebuild	477 ACSR	21	2011
4/0 Sections T-Corners-Foster 69 kV Rebuild	477 ACSR	14.07	2020
Rebuild Foster-Lublin	477 ACSR	22.6	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.3	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015



Alternative 9
To Sheldon Pump
To Conrath
Holcombe Dist.
115
Hannibal
Holcombe
Dbl. Ckt.
(2015)
115
To Cornell
To Medford
XCEL Gilman
N1
Gilman
(2015)
N58
Dbl. Ckt.
Lublin Dist.
Lakehead Pumping
N56
N245
Dbl. Ckt.
Lublin Tran.
XCEL Seven Mile
To Hydrolane
115
To Wien
115
XCEL T-Corners
N.O. N3Y16
(2020)
N66
DPC Spencer
Fall Creek
Longwood
Bear Grass
(2015)
N45
N.O. N17Y5
(2020)
N.O. N3Y5
N.C. N17Y6
N17
DPC Loyal
XCEL Spencer
Augusta
Willard
Grassland
XCEL Loyal
XCEL Spokesville
N3
Augusta
Fairchild Cap
N.O. N3Y22
Lynn
XCEL Cotton School
Pine Valley
Granton
Osseo
XCEL Sumner
Neillsville
DPC Strum
XCEL Strum
Humbird
Sherwood
Pleasantville
XCEL Alma Center Tran.
Elk Creek
Hixton
Badger Sand MIne
Garden Valley
Merrillan
XCEL Whitehall
Fly Creek
To Alma
N21
161
XCEL Jackson County Tran.
Independence
To North Creek
XCEL Tremval
Blair
Transmission Station
DPC Distribution Station
Foreign Distribution Station
Ckt. Breaker
Capacitor
69 kV Line
Foreign 69 line
161 or 115 kV line
477 ACSR Rebuild
477 ACSR new ROW
Future Rebuild (year)
Future Rebuild new ROW (year)

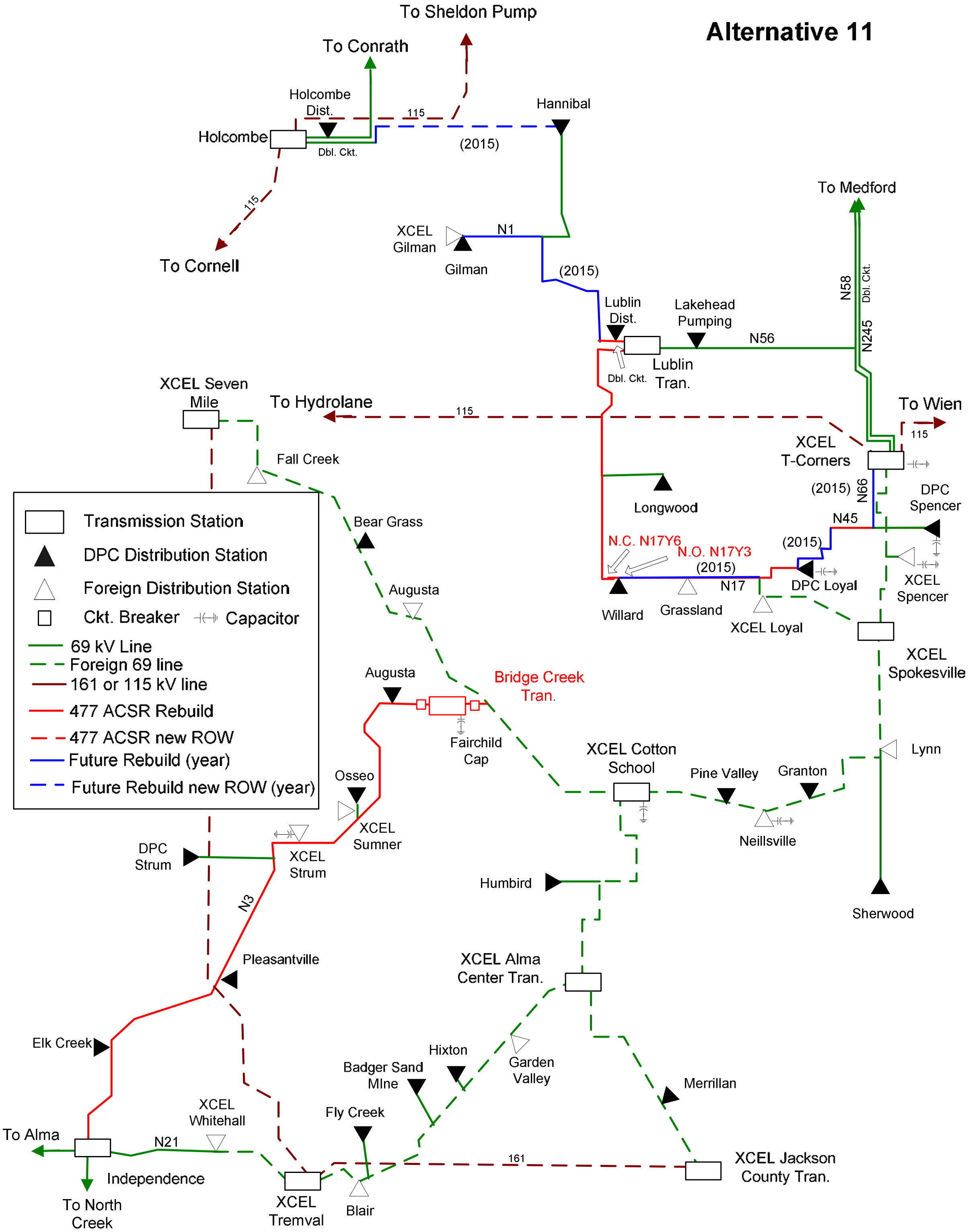
Alternative 9 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Fairchild 69 kV Rebuild	477 ACSR	36.19	2011
Fairchild-T-Corners N-3 & 1/0 Sections 69 kV Rebuild	477 ACSR	37.90	2011
69 kV Breaker at Fairchild	N/A	1.00	2011
4/0 Sections DPC Loyal-T-Corners 69 kV Rebuild	477 ACSR	14	2020
Rebuild Lublin-Longwood tap	477 ACSR	7.80	2011
Rebuild N.O. section Longwood tap-Willard tap	477 ACSR	14.80	2015
6.0 MVAR Cap bank at Willard	N/A	1	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015
Dbl. Ckt. Into Fairchild to Fairchild Breaker 69 kV Rebuild	477 ACSR	0.46	2011

Alternative 10



Alternative 10 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
Independence-Foster 69 kV Rebuild	477 ACSR	53.47	2011
69 kV Breaker Station at Foster	N/A	1	2011
69 kV Breakers at Foster	N/A	2	2011
Rebuild Foster-Lublin	477 ACSR	22.6	2011
N-3T XCEL line-Fairchild-Bridge Creek 69 kV Rebuild	477 ACSR	0.50	2011
Rebuild 1/0 sections Loyal tap-DPC Spencer tap	477 ACSR	9.3	2020
Rebuild 4/0 Sections TCN-DPC Spencer tap, DPC Loyal-DPC Spencer tap	477 ACSR	14.07	2020
Rebuild Foster-Grassland, N-17	477 ACSR	11.32	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl Ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

Alternative 11



Alternative 11 Facilities			
Facilities	Conductor Size	Unit Qty or Miles	Year Installed
69 kV Switching Station -- Bridge Creek Tran. Station	N/A	1	2011
69 kV Breakers at Bridge Creek Tran. Station	N/A	2	2011
N-3 tap to Fairchild and XCEL line 69 kV Rebuild	477 ACSR	0.5	2011
Retire Fairchild-Willard Tap 69 kV	N/A	16.8	2011
Independence-Bridge Creek 69 kV Rebuild	477 ACSR	36.65	2011
1/0 Section Loyal tap-DPC Spencer 69 kV Rebuild	477 ACSR	5.57	2011
4/0 Section T-Corners-DPC loyal & Willard tap-Loyal tap	477 ACSR	28.35	2015
Willard Tap-Lublin 69kV Rebuild	477 ACSR	27.62	2011
Holcombe-Hannibal new ROW 69 kV	477 ACSR	14.30	2015
N-1 - String dbl ckt., add arms with N-307	477 ACSR	1.01	2015
Gilman Tap-Lublin 69 kV Rebuild sections on existing ROW	477 ACSR	8.92	2015
N-1/N-3 Dbl. Ckt into Lublin 69 kV	477 ACSR	2.00	2011
Retire part of Holcombe-Gilman 69 kV	4/0 ACSR	16.20	2015
Rebuild new Gilman tap line 69 kV	4/0 ACSR	2.82	2015

Appendix B – Construction Issues

Construction Issues

Recommended Sequence of N3 rebuild:

1. 2008/2009: Bridge Creek 69 kV switching Station. Until rebuild of N-3 begins, operate N3Y15RC N.O. at Strum to split up exposure and to address the IND-Elk Creek 69 kV overload.
2. 2008/2009: N-3T, XCEL line-Bridge Creek
3. 2010: Independence-Strum DPC Tap
4. 2011: Strum DPC Tap-Bridge Creek
5. 2011: Lublin-Longwood Tap 69 kV
6. 2012: Bridge Creek-Longwood Tap 69 kV

If the above sequence is followed, there are no seasonal limitations

Appendix C – Terminal Limit Upgrades

Terminal Limiters

The rating of 477 ACSR is 86 MVA. Substation terminal limits should be upgraded before the line rebuild is complete so that the full rating of the line can be utilized. The DPC transmission substations affected by the Lublin area study are Lublin, Holcombe and Independence. Terminal limiters are listed below. These limiters are for all alternatives.

Terminal Limits Below 86 MVA		
Transmission Station-Breaker	**Equipment**	**Existing Limit (MVA)**
Independence	Buswork	57
Independence-8NB3	Relay Load Limit	48
	Current Transformer	72
	A & C Disconnect Switches	72
Lublin-12NB3	Relay Load Limit	47
	A & C Disconnect Switches	72
Lublin-12NB2	A & C Disconnect Switches	72
Holcombe - 23NB1	Relay Load Limit	42.3
	A & C Disconnect Switches	72

Note:

- Buswork:
  - Independence is 4/0 Copper
  - Lublin is 636 ACSR
  - Holcombe is 477 ACSR
- All "a" and "C" disconnects switches are 600 Amps
- The middle section of the new N-1 configuration will be rated at 47 MVA
- Terminal upgrades for the N-1 delayed rebuild, 23NB1 & 12NB2, should be done before the estimated construction date of 2015

Appendix D - PSS/E Power Flow Output

Appendix D:
Preliminary Wetland Delineation Report for Phase I (Strum Tap to Willard Tap)

WETLAND DELINEATION REPORT
STRUM - LUBLIN 69kV (N-3) TRANSMISSION LINE REBUILD PROJECT
PHASE I: STRUM TAP TO WILLARD TAP
CLARK, EAU CLAIRE, JACKSON AND TREMPEALEAU COUNTIES, WISCONSIN

Prepared for:

Dairyland Power Cooperative
3200 East Avenue South
La Crosse, Wisconsin 54602

Prepared by:

Tetra Tech
February 2013

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ACRONYMS AND ABBREVIATIONS

CWA	Clean Water Act
DNR	Department of Natural Resources
DPC	Dairyland Power Cooperative
EPA	Environmental Protection Agency
GP	general permit
kV	kilovolt
MLRA	major land resource area
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NRPW	non-relatively permanent water
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
ROW	right-of-way
RPW	relatively permanent water
SSURGO	Soil Survey Geographic (database)
TNW	traditional navigable water
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOUS	waters of the United States
WWI	Wisconsin Wetland Inventory

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) conducted wetland delineations for Phase I of the proposed Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project (Project). The Strum Tap to Willard Tap (Phase I) portion of the proposed Project is located in Clark, Eau Claire, Jackson and Trempealeau counties of Wisconsin. This Wetland Delineation Report includes a description of the Project Area, methods used to delineate wetlands, delineation results, and references used to support the conclusions. Appendices include figures illustrating the Project and survey results, field data forms, and site photographs.

1.1 Project Location and Description

The proposed Project consists of rebuilding approximately 58 miles of DPC's existing 76-mile 69kV N-3 transmission line within an 80-foot right-of-way (ROW). The 58 miles that make up the proposed Project are part of the central and northern segments of DPC's N-3 transmission line between Strum Tap in Trempealeau County and Lublin Substation in Clark County. The proposed Project also crosses Jackson and Eau Claire counties. Construction of the Project is scheduled to take place in two phases. Phase I, proposed to begin construction in summer 2013, includes approximately 34 miles of transmission line between Strum Tap and Willard Tap (Project Area), and Phase II, proposed to begin construction in summer 2014, includes approximately 24 miles of transmission line between Willard Tap and Lublin Substation. Only the Strum Tap to Willard Tap (Phase I) portion of the project within the 80-foot ROW (Project Area) is considered in this report. The Project Area is shown on Figure 1. The Project Area generally consists of agricultural pasture and crop lands and forest. The Project Area is located within portions of the sections of land listed in Table 1.

Table 1: Project Location – Phase I

County	Township	Range	Section(s)
Jackson	24N	6W	5, 7, 8
Trempealeau	24N	7W	12-17
Eau Claire	25N	5W	3-10, 18-19
Eau Claire	25N	6W	24-32
Clark	26N	4W	10-13, 15-17, 19-20
Eau Claire	26N	5W	22-24, 27, 34

DPC is proposing to replace the existing single-pole wood transmission structures with new single-pole wood structures that would be approximately 60-80 feet tall with a span between structures of approximately 300-400 feet. Approximately 580 single-pole transmission structures would be constructed as part of Phase I.

1.2 Area of Analysis

In August 2012 Tetra Tech conducted a wetland evaluation survey of the entire (Phase I and Phase II) Project ROW (Tetra Tech 2012). The evaluation survey identified 104 potential wetlands within the Project ROW. Of these 104 potential wetlands, Tetra Tech and DPC identified 55 within the Phase I portion of the Project where proposed structures were located within the potential wetland boundary. These 55 potential wetlands that may be permanently impacted by the Project were designated by DPC to be formally delineated. Wetlands listed in Table 2 were delineated within the 80-foot wide ROW.

Table 2: Potential Wetlands Identified for Delineation

Wetland Evaluation Feature ID	Impacting Structure(s)
001	314
006	356
009	362-364
011	368
012	380-382
015	378-379
017	391
018	394-395
022	429
023	430
024	436
025	438
031	452-453
032	464-465
038	493
039	527
041	528-530
047	559
048	560

Wetland Evaluation Feature ID	Impacting Structure(s)
051	570-574
053	576-577
056	581-583
058	4-12
059	18-21
060	23-25
061	26
063	28-29
065	31-32
067	38-40
068	41
070	46-48
072	51-55
074	59-61
076	62-64
077	69-71
078	80-86
080	90
081	92

Wetland Evaluation Feature ID	Impacting Structure(s)
082	95-101
084	130-132
087	139-143
089	151-154
092a	161-162
093	168
095	176
102	219
105	222
108	232
110	240-242
114	257-258
116	261
118	267-268
119	270
120	272-273
123	290-296

1.3 Physical Setting and Hydrology

The southern portion of the Project Area is located in the Natural Resource Conservation Service (NRCS) Northern Mississippi Valley Loess Hills Major Land Resource Area (MLRA) (M 105), which encompasses southwestern Wisconsin, southeastern Minnesota and northeastern Iowa. This region is a part of the “Driftless Area” of Wisconsin characterized by gently sloping to rolling hills that are relatively unaffected by glaciation. The majority of land in this region has been converted to agriculture, primarily for row-crops as well as pasture to a lesser extent. Areas with greater slopes not suitable to cultivation are often wooded. Uplands in this region generally support native hardwoods (oak, hickory and sugar maple) as well as big and little bluestem. Lowlands support mixed hardwoods (elm, cottonwood, river birch, ash, silver maple and willow) as well as sedge and grass meadows (USDA NRCS 2006).

The northern portion of the Project Area is located in the NRCS Wisconsin Central Sands MLRA (K 89), which is a relatively small region in central Wisconsin. This region is also a part of the “Driftless Area” of Wisconsin and is characterized by isolated buttes and mesas, valley trains, floodplains and extensive wetlands. The northern and western parts of the region, where the Project Area is located, consist primarily of low hills and piedmonts. This region lies within the southern part of the conifer-hardwood forest, which includes xeric pine savannas and oak barrens. Dominant tree species include jack pine, northern pine, black oak and white oak. The extensive wetlands support red maple, aspen, paper birch and speckled alder. The majority of this region is forested, with some areas used for agriculture (row crops, cranberry production and pasture) (USDA NRCS 2006).

The climate within the Project Area is continental with warm summers and cold winters. Spring and fall are typically short with periods of sharp temperature transitions (USDA 1922, USDA 1968, USDA 1974, USDA 1994). Precipitation in the Project Area averages between 30 inches and 38 inches, most of which falls as rain during the growing season of approximately May through September (USDA NRCS 2006).

The Project Area is located in the Upper Mississippi-Black-Root and the Chippewa watershed subregions. The extreme southwestern portion of the Project Area is located in the Upper Mississippi-Black-Root subregion and is drained by King Creek, North Fork Buffalo River, South Fork Buffalo River and their tributaries, which flow generally west and southwest to the Buffalo River and, ultimately, the Mississippi River. The northwestern portion of the Project Area is located in the Chippewa subregion and is drained by Black Creek, Hay Creek, Horse Creek, Iron Run and their tributaries, which flow generally north and northwest to the Eau Claire River and, ultimately, the Chippewa River (USGS 2012).

1.4 Regulatory Framework

The U.S. Army Corps of Engineers (USACE) has regulatory authority over navigable waters as defined by Section 10 of the Rivers and Harbors Act, and the USACE and the Environmental Protection Agency (EPA) have regulatory authority over waters of the U.S. (WOUS) as defined by Section 404 of the Clean Water Act (CWA). The Project is located within the USACE - St. Paul District. Several classes of water bodies are subject to federal jurisdiction under the CWA, including: traditional navigable waters (TNWs); non-navigable tributaries of TNWs that are relatively permanent (RPWs); and wetlands that directly abut RPWs (EPA and USACE 2008)[1].

The EPA and the USACE are required to assert jurisdiction over other certain types of waters based on a fact-specific analysis as to whether they have a significant nexus with a TNW (USACE 2007). These types of waters include:

- Non-navigable tributaries that are relatively non-permanent (NRPW);
- Wetlands adjacent to NRPWs; and,
- Wetlands adjacent to, but not directly abutting, an RPW.

The regulations define adjacent as “bordering, contiguous, or neighboring,” and state that wetlands separated from other WOUS by barriers such as natural river berms, man-made dikes and beach dunes may be considered adjacent wetlands. The ruling also requires that agencies not generally assert jurisdiction over the following features:

- Swales or erosional features (e.g. gullies, small washes characterized by low volume, infrequent or short duration of flow); and,
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

Guidance issued jointly by the EPA and USACE states that agencies will apply the significant nexus standards as follows:

[1] Draft revised guidance regarding jurisdiction of waters under the CWA was issued by the EPA and USACE (76 *Fed. Reg.* 128 [5 July 2011]). The draft guidance provides clarification on waters not regulated by the CWA.

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters; and,
- Significant nexus includes consideration of hydrologic and ecological factors.

The regulations specify that tributaries to WOUS should be considered WOUS. In the absence of adjacent wetlands, lateral jurisdiction over non-tidal waters extends to the ordinary high water mark (OHWM). The definition of the OHWM is "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 *CFR* 328.3(e) [2012]).

Only the USACE can make a final determination on the jurisdiction of a wetland at a site; therefore, jurisdictional determinations provided in this report are preliminary and are based on application of the above guidance following desk top review of relevant information and field inspection. If development is to occur, the USACE also determines the type of permit, if any, that may be required under the CWA.

Certain developments in WOUS may be permitted by the USACE under a Nationwide Permit or regional General Permit (GP). The proposed Project may be authorized under GP-002-WI. To qualify for GP authorization, the prospective permittee must comply with the general conditions identified within the relevant section(s) of the GP (USACE 2011a). Section 2a(9) of GP-002-WI discusses authorization of utility line discharges resulting from activities required for the construction, maintenance, repair and removal of utility lines and associated facilities (i.e., utility lines, utility line substations, and foundations for overhead utility line towers, poles and anchors) in WOUS, provided the activity does not result in the loss of greater than 10,000 square-feet of WOUS for each single and complete project[2]. Utility line activities are authorized under a reporting GP and a joint state-federal application must be submitted to the USACE and Wisconsin Department of Natural Resources (DNR) prior to construction.

The Wisconsin DNR also has regulatory authority over wetlands and waterways within the state. A permit is required from the DNR for any excavation or placement of material within a wetland or other water of the state in accordance with sections 30 and 281.36 of Wisconsin Statues, and NR 299 and NR 103 of the Wisconsin Administrative Code. Waters of the state include those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface or ground water, natural or artificial, public or private, within the state or its jurisdiction (NR 103.02 [4]).

A single wetland or waterway may be regulated by the USACE and Wisconsin DNR. A joint application and review process has been established between the USACE and Wisconsin DNR for activities requiring a permit from both agencies.

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[2] A "single and complete" project is defined as the total project proposed by the proponent. For any development or linear project that affects several different areas of WOUS, the cumulative total of all filled areas is the basis for deciding the project's total wetland/water impact. For phased development, each phase may constitute a single and complete project if it has independent utility and would accomplish its intended purpose whether or not other phases were constructed (USACE 2011a).

2.0 METHODS

2.1 Desktop Data Review

Prior to and during the wetland delineation survey, available information was reviewed to assist and support wetland delineation activities. Data sources reviewed include recent aerial photographs, the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD), Wisconsin Wetland Inventory (WWI), and the Soil Survey Geographic (SSURGO) database.

2.2 Wetland Delineations

Wetland delineations were conducted in accordance with the three-parameter approach outlined in the USACE 1987 Manual (Environmental Laboratory 1987), and the Midwest Regional Supplement (USACE 2010) or Northcentral and Northeast Regional Supplement (USACE 2011b), as appropriate.

For each delineated wetland, a transect was established perpendicular to the potential wetland being investigated nearest the location of potential impacts that would result from development of the Project, often along the centerline of the Project ROW. Sample plots were then placed along the transect. These plots were the points in the field at which wetland characteristics were studied in accordance with the 1987 Manual and Regional Supplement. Sample plots were established within the feature being investigated at the location determined to have the highest potential to exhibit wetland characteristics. This determination was based on local topography and the presence of wetland hydrology and/or wetland vegetation. Sample plots were established near proposed transmission structure locations when feasible.

If positive indicators of wetland vegetation, hydrology, and hydric soils were present at a sample plot, data was collected from additional sample plots placed to delineate the transition from wetland to upland. The boundary of each wetland delineated is determined as the location where at least one of the above three parameters failed to meet wetland criteria. If no sample plot within the potential wetland meets all three parameters, no wetland is delineated and the area is determined to be non-wetland.

Vegetation within each sample plot was characterized to determine dominance of either hydrophytic or non-hydrophytic vegetation. Dominance is estimated based on the percent coverage within sample plots with a 5-foot radius for herbaceous vegetation, a 15-foot radius for samplings and shrubs, and a 30-foot radius for trees and woody vines. Wetland indicator status for all plant species followed the USACE National Wetland Plant List (USACE 2012) Soils at each sample plot were evaluated and determined to be hydric or not hydric according to the guidelines put forth in the U.S. Department of Agriculture (USDA) NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA NRCS 2010) and the Regional Supplement (USACE 2010, USACE 2011b). Hydrology was assessed by evaluating each sample plot for field indicators of wetland hydrology such as inundation, soil saturation, water marks, drainage patterns, and topographic position as described in the Regional Supplement (USACE 2010, USACE 2011b).

2.2.1 Digital Capture of Data

A geodatabase was specifically designed for the Project that was used to collect wetland feature location data in the field using Trimble GPS technology, as well as to manage and display features for quality control and electronic deliverables. The geodatabase contains three types of feature classes for data capture: wetland points, wetland lines, and wetland polygons. Additional attribute data collected in the field at the time the feature was collected included:

- Date feature was collected;
- Feature type: seasonally flooded basin, shallow marsh, shrub swamp, or wooded swamp;
- Notes if the feature extends beyond what was collected, in what direction and approximately how far;
- Other feature issues (i.e. impacts by landowner, road crossing, or other noted disturbances);

The geodatabase was loaded on a Trimble GeoXT handheld GPS unit, which has an accuracy of one meter or less, and ran both ESRI's ArcPad 7 and Trimble GPS Correct Software Packages.

After the field data were post-processed, the biologist who collected the field data conducted a quality control review of the geodatabase to ensure the features collected corresponded with field observations.

3.0 RESULTS

3.1 Desktop Data Review

The following sections describe the data sources reviewed prior to, and utilized as part of, the wetland delineation survey. These data sources include recent aerial photographs, the USGS NHD, WWI, and SSURGO Soils.

3.1.1 Aerial Photographs

Recent aerial photography for the Project Area was obtained from Digital Globe (2010). The reviewed 2010 aerial photography showed the Project Area to be a mix of agricultural crop and pasture lands, and forest lands. The southern end of the Project Area appeared to be largely agricultural with the northern portion consisting of mixed hardwood and coniferous forest. The region appears to have a well-established drainage system with numerous streams and intermittent drainages, and relatively few apparent isolated wetlands. Reviewed aerial photography is presented on Figure 2 (provided as appendix A of the Environmental Assessment).

3.1.2 National Hydrography Dataset

The NHD was downloaded from the USGS NHD website (USGS 2012). The Project Area is located in four HUC4 watersheds. The south end of the Project Area originates in the Harvey Creek-Buffalo River watershed and transects the Eau Claire River watershed and Hay Creek-Eau Clair River watershed before terminating at the north end in the South Fork Eau Claire River watershed. The Project Area crosses many intermittent and perennial streams. Named streams crossed by the Project Area include Black Creek, Bridge Creek, Diamond Valley Creek, Hay Creek (2), Horse Creek, Iron Run, King Creek, North Fork Buffalo River, Pea Creek, South Fork Buffalo River, Surveyor Creek, Thompson Valley Creek, and Travis Creek. It appears that all NHD stream features depicted in the Project Area are hydrologically connected to a TNW. Waterways in the Harvey Creek-Buffalo River watershed in the southern portion of the Project Area drain to the Mississippi River, and streams in the northern portion of the Project Area drain to the Chippewa River. The NHD data are presented on Figure 2 (provided as appendix A of the Environmental Assessment).

3.1.3 Wisconsin Wetlands Inventory

The WWI data for the Project Area was obtained from the Wisconsin DNR. Digital WWI data was provided for Trempealeau and Clark counties. Digital data was not available for Eau Claire or Jackson counties. WWI data for these counties was provided on paper maps that were scanned, geo-referenced, and digitized in GIS for review and inclusion on field maps. The WWI data indicated the presence of 99 wetlands in the Project Area. The presence of many of these wetlands was confirmed during the Wetlands and Waters Evaluation survey (Tetra Tech 2012), however, numerous potential wetlands not depicted within the WWI data were identified during this survey suggesting that the WWI generally underestimates wetlands in this region. The WWI data are presented on Figure 2 (provided as appendix A of the Environmental Assessment).

3.1.4 Soil Survey

Soils data for the Project Area were obtained from the NRCS Soil Survey Geographic (SSURGO) Database. This information was used to study the distribution of hydric soils within the Project Area. According to reviewed data, there are 68 soil series represented within the Project Area. Soil, as it relates to wetland delineations, must be classified as a hydric soil for the area to qualify as a wetland in accordance with the 1987 Manual (Environmental Laboratory 1987) and the Regional Supplement (USACE 2010, USACE 2011b). Hydric soils are defined as soils that are formed under conditions of saturation, flooding, or ponding that occurs long enough during the growing season to develop anaerobic conditions. In the SSURGO database, soils may be classified as not hydric (all series components rated as not hydric), partially hydric (at least one component rated as hydric and at least one component rated as not hydric) or all hydric (all series components rated as hydric). In the Project Area, approximately 74 percent of the land area consists of soils that are classified as not hydric, 12 percent are classified as partially hydric and 14 percent are classified as all hydric. Table 3 summarizes the type and extent of soils found in the Project Area. The distribution of hydric soils within the Project area is depicted on Figure 3.

Table 3: Soil Series in the Project Area

Symbol	Soil Series	Hydric Class	Area (acres)
FmA, FmB	Fairchild and Merrillan soils	Partially hydric	24.10
ScA	Simescreek sand	Not hydric	21.63
LuB, LuC	Ludington and Humbird soils	Not hydric	20.29
MdA, MdB, MdC2	Meridian loam	Not hydric	18.54
SeB, SeC2, SeD2, SmB	Seaton silt loam	Not hydric	17.15
Eo	Elm Lake loamy sand	All hydric	13.42
GoA, GoB, GoC, GoC2, GoD2	Gotham loamy fine sand	Not hydric	12.84
296B, LuB, LuC	Ludington sand	Not hydric	11.11
GaB, GaC2, GaD2	Gale silt loam	Not hydric	11.04
224B, 224C2	Elevasil sandy loam	Not hydric	9.95
BlB, BlC2, BlD2	Billett fine sandy loam	Not hydric	9.57
MdB	Menahga sand	Not hydric	9.45
BoB, BoC, BoE	Boone-Plainbo complex	Not hydric	8.29
EmC2, EmD2, EmE	Elkmound loam	Not hydric	8.22
LxB	Ludington-Fairchild sands	Not hydric	7.97
FeA	Fairchild-Elm Lake complex	Partially hydric	7.67
LfB2, LfC2	La Farge silt loam	Not hydric	6.48
RkA	Rockdam sand	Not hydric	6.21
FrA	Friendship loamy sand	Not hydric	6.02
ElB, ElC2, ElD2	Eleva sandy loam	Not hydric	5.84
AtB, AtC2	Arland sandy loam	Not hydric	5.34
Af	Alluvial land	All Hydric	5.19
Ve	Vesper loam	All hydric	5.09
KeA	Kert loam	Partially hydric	5.06
Ma	Markey muck	All hydric	4.66
Vd	Veedum silt loam	All hydric	4.28
HnB, HnB2, HnC2, HnD2	Hixton loam	Not hydric	4.20

Symbol	Soil Series	Hydric Class	Area (acres)
Or	Otter silt loam	All hydric	4.05
NtC2, NtE2	Northfield silt loam	Not hydric	3.98
EaB	Eauclaire loamy sand	Not hydric	3.83
PdC2	Plainbo loamy sand	Not hydric	3.60
213C2	Hixton silt loam	Not hydric	3.30
1234B	Bilson-Silverhill sandy loams	Not hydric	3.02
PoB	Pillot silt loam	Not hydric	2.86
Pv	Ponycreek-Dawsil complex	All hydric	2.66
Na	Newson loamy sand	All hydric	2.55
SpB	Sparta loamy sand	Not hydric	2.54
PeA	Pelkie-Winterfield loamy fine sands	Not hydric	2.37
HeC2	Hiles silt loam	Not hydric	2.24
233C	Boone sand	Not hydric	2.16
551A	Impact sand	Not hydric	1.98
Ho	Houghton muck	All hydric	1.70
MgB	Menahga loamy sand	Not hydric	1.32
434B	Bilson sandy loam	Not hydric	1.29
SrA	Sparta loamy fine sand	Not hydric	1.26
HkB	Hiles and Kert soils	Partially hydric	1.24
DkB	Dickinson fine sandy loam	Not hydric	1.18
561B	Tarr sand	Not hydric	1.16
PfB	Plainfield loamy sand	Not hydric	1.10
Pa	Palms muck	All hydric	1.02
EnF	Eleva-Boone complex	Not hydric	1.00
569A	Newlang muck	Partially hydric	0.99
30A	Adder muck	All Hydric	0.98
566A	Tint sand	Not hydric	0.92
TrB	Trempe loamy sand	Not hydric	0.85
Lv	Loamy alluvial land	Not hydric	0.82
Ka	Kato loam	All hydric	0.81
288A	Merrillan fine sandy loam	Partially hydric	0.79
1234C2	Bilson-Elevasil sandy loams	Not hydric	0.64
IxA	Ironrun-Ponycreek complex	Partially hydric	0.59
ArA	Arenzville silt loam	Partially hydric	0.57
Da	Dawsil mucky peat	All hydric	0.53
Sa	Sandy alluvial land	Not hydric	0.50
WoA	Worthen silt loam	Not hydric	0.26
GP	Gravel pit	Partially hydric	0.23
NoC2	Norden loam	Not hydric	0.14
1224F	Boone-Elevasil complex	Not hydric	0.02
679A	Ettrick silt loam	Partially hydric	<0.01

3.2 Wetland Delineation Survey

Wetland delineations were conducted from September 18, 2012 through September 27, 2012. Vegetation, soils and hydrology information collected during the wetland evaluation survey for delineated wetlands is summarized below. Field data forms and photographic documentation are included as Appendix B and are organized by feature ID. Figure 2 (provided as appendix A of the Environmental Assessment). depicts the wetlands delineated during the survey as well as the location of proposed transmission structures, NHD data, and WWI data. A summary of wetland delineation results is presented in Table 5.

3.2.1 Vegetation Evaluation

The vegetation within the Project Area was generally segregated into two distinct zones correlating with the USACE Midwest Region and the USACE Northcentral and Northeast Region (USACE 2010, USACE 2011b). The southern portion of the Project Area, primarily in Trempealeau and Jackson counties, in the USACE Midwest Region was located within an area used primarily for agriculture (cultivated crops and pasture). Relatively few trees and shrubs were observed in this area and most that were observed occurred in riparian areas. Reed canary grass (*Phalaris arundinacea*) was observed to be pervasive throughout this area and was documented at most wetlands.

The most common wetland plant community observed in the southern portion of the Project Area was the seasonally flooded basin community. Reed canary grass (*Phalaris arundinacea*) and late goldenrod (*Solidago gigantea*) were the most commonly observed species in this community. Other dominant species observed included: arrow-leaf tearthumb (*Persicaria sagittata*) and black elder (*Sambucus nigra*). Other wetland plant communities observed in the southern portion of the Project Area included the wet meadow and shallow marsh communities. The most common species associated with the wet meadow community was the uptight sedge (*Carex stricta*), and the most common species associated with the shallow marsh community was narrow-leaf cat-tail (*Typha angustifolia*).

The northern portion of the Project Area, primarily in Eau Claire and Clark counties, in the USACE Northcentral and Northeast Region was located within an area dominated by forest lands. However, the existing N-3 transmission line ROW is largely kept clear of trees and other woody vegetation. In many cases, delineation sample plots in this area included only grasses, sedges, forbs and small saplings or shrubs while just outside of the ROW larger trees and shrubs dominated. Wetland plant communities in this area were commonly classified as seasonally flooded basins, wet meadows or shallow marshes due to the systematic removal of the tree and shrub species that might otherwise be present. The most common species observed in these areas were: upright sedge (*Carex stricta*), rattlesnake manna grass (*Glyceria canadensis*), bristly dewberry (*Rubus hispidus*), bluejoint (*Calamagrostis canadensis*), dark-green bulrush (*Scirpus atrovirens*) and cottongrass bulrush (*Scirpus cyperinus*). Shrub swamp wetland vegetation communities were observed in some parts of the Project Area where woody wetland vegetation had not been cleared or had regrown. Speckled alder (*Alnus incana*) and willows (*Salix spp.*) were the most common woody species occurring in this community.

Detailed vegetation observations for each wetland are documented on the wetland determination data forms in Appendix B.

3.2.2 Soils Evaluation

Soils within the Project Area were typically sandy (especially in the north part) and ranged from sand, to sandy loam, to silt loam. Soils mapped at wetland sample plots in the NRCS SSURGO database are listed in Table 4.

Table 4: Soil Series at Wetland Sampling Points

Symbol	Soil Series	Hydric Class
30A	Adder muck	All Hydric
Af	Alluvial land	All Hydric
BlC2	Billett fine sandy loam	Not hydric
224B	Elevasil sandy loam	Not hydric
Eo	Elm Lake loamy sand	All hydric
FmA, FmB	Fairchild and Merrillan soils	Partially hydric
213C2	Hixton silt loam	Not hydric
Ho	Houghton muck	All hydric
Ka	Kato loam	All hydric
KeA	Kert loam	Partially hydric
Lv	Loamy alluvial land	Not hydric
LuB, LuC	Ludington and Humbird soils	Not hydric
LuC	Ludington sand	Not hydric
LxB	Ludington-Fairchild sands	Not hydric
Na	Newson loamy sand	All hydric
Or	Otter silt loam	All hydric
Pa	Palms muck	All hydric
PeA	Pelkie-Winterfield loamy fine sands	Not hydric
Sa	Sandy alluvial land	Not hydric
566A	Tint sand	Not hydric
Vd	Veedum silt loam	All hydric
Ve	Vesper loam	All hydric

Observed soils were generally consistent with soil series descriptions for the soil series mapped at the location, except in some cases when the observed soils may be more closely matched to an associated series or an adjacent mapped soil series. Some typically not hydric soils were observed to be similar to the mapped soil series description for the location but with more hydric characteristics such as redox concentrations, depleted matrix or gleyed matrix. The redox depressions hydric soil indicator was the most often documented indicator at wetland sample plots with loamy gleyed matrix, loamy mucky mineral and sandy redox also commonly observed.

Detailed soils observations for each wetland are documented on the wetland determination data forms in Appendix B. See Figure 3 for a map of soil units present in the Project vicinity based on SSURGO data.

3.2.3 Hydrologic Evaluation

Wetland delineations were conducted at the end of the growing season when water levels are typically lower. Additionally, this region had experienced much lower than average precipitation over the past three months (4.84 inches less than the normal 11.42 inches) (NOAA 2012). As a result, primary indicators of wetland hydrology were not observed at many wetlands that appeared to have been saturated or inundated earlier in the season but that were dry at the time of the wetland delineation. The most commonly documented primary wetland hydrology indicator was saturation and the most commonly documented secondary wetland hydrology indicators were geomorphic position and the FAC-neutral test.

Detailed hydrology observations for each wetland are documented on the wetland determination data forms in Appendix B.

3.2.4 Wetlands

Of the 55 potential wetlands identified for delineation by Tetra Tech and DPC (Table 2), 10 did not meet wetland delineation criteria as defined by the USACE and were determined to be upland. The remaining 45 potential wetlands did meet USACE wetland delineation criteria and their boundaries were delineated in accordance with the 1987 Manual and Regional Supplements (Environmental Laboratory 1987, USACE 2010, USACE 2011b). In some cases a potential wetland feature was delineated into two or more distinct wetlands separated by non-wetland areas. A total of 52 wetlands were delineated. Wetlands were classified using the wetland plant community types described in *Wetland Plants and Plant Communities of Minnesota and Wisconsin* (Eggers and Reed 2011); 34 were classified as seasonally flooded basins, 6 as fresh wet meadows, 8 as shallow marshes and 4 as shrub swamps. Wetland boundaries were marked in the field by placement of pin flags at approximately 15-foot intervals.

In addition to the 55 potential wetlands that were identified for delineation as part of this survey (Section 1.2, Table 2), there are six potential seasonally flooded basins identified during the August 2012 wetland evaluation survey (Tetra Tech 2012) that are located within 10 feet of proposed structure locations. These six potential wetlands were not identified for delineation by DPC and were not delineated as part of this survey; however, for the purposes of planning, the wetland boundaries established during the August 2012 wetland evaluation survey (Tetra Tech 2012) are considered to be a worst case scenario in these cases and potential impacts were estimated accordingly. In general, a conservative approach was taken in establishing the wetland boundaries during the evaluation survey such that it is more likely that the defined wetlands contain non-wetland areas as opposed to wetland areas being excluded, which was generally confirmed during the September 2012 wetland delineation survey.

The results of the wetland delineation survey are summarized in Table 5 and are shown on Figure 2 (provided as appendix A of the Environmental Assessment).

Table 5: Wetland Delineation Results

Wetland Evaluation Feature ID	Delineation Results	Wetland Delineation Feature ID	Wetland Classification	Number of Proposed Structures in Wetland[3]
001	One wetland delineated	001D	Seasonally Flooded Basin	0
006	One wetland delineated	006D	Seasonally Flooded Basin	1
009	One wetland delineated	009D	Seasonally Flooded Basin	2
011	One wetland delineated	011D	Seasonally Flooded Basin	1
012	Two wetlands delineated	012D1	Seasonally Flooded Basin	1
		012D2	Seasonally Flooded Basin	0
015	One wetland delineated	015D	Seasonally Flooded Basin	0
017	One wetland delineated	017D	Seasonally Flooded Basin	0
018	One wetland delineated	018D	Seasonally Flooded Basin	2
022	One wetland delineated	022D	Seasonally Flooded Basin	0
023				
024	One wetland delineated	024D	Seasonally Flooded Basin	0
025	One wetland delineated	025D	Shallow Marsh	0
028	Not delineated	-	Seasonally Flooded Basin	2
030	Not delineated	-	Seasonally Flooded Basin	1
031	One wetland delineated	031D	Fresh Wet Meadow	1
032	One wetland delineated	032D	Shallow Marsh	2
035	Not delineated	-	Seasonally Flooded Basin	1
038	One wetland delineated	038D	Fresh Wet Meadow	1
039	One wetland delineated	039D	Shallow Marsh	0
041	One wetland delineated	041D	Seasonally Flooded Basin	2
043	Not delineated	-	Seasonally Flooded Basin	1
047	No wetland present	n/a	n/a	n/a
048	No wetland present	n/a	n/a	n/a
051	One wetland delineated	051D	Fresh Wet Meadow	4
053	One wetland delineated	053D	Seasonally Flooded Basin	1
056	One wetland delineated	056D	Fresh Wet Meadow	2
058	Four wetlands delineated	058D1	Seasonally Flooded Basin	1
		058D2	Seasonally Flooded Basin	0
		058D3	Seasonally Flooded Basin	1
		058D4	Seasonally Flooded Basin	0
059	Two wetlands delineated	059D1	Seasonally Flooded Basin	0
		059D2	Shallow Marsh	0
060	One wetland delineated	060D	Seasonally Flooded Basin	2
061	No wetland present	n/a	n/a	n/a

[3] Includes structures within 10 feet of the wetland boundary.

Wetland Evaluation Feature ID	Delineation Results	Wetland Delineation Feature ID	Wetland Classification	Number of Proposed Structures in Wetland[3]
063	One wetland delineated	063D	Seasonally Flooded Basin	0
065	Two wetlands delineated	065D1	Seasonally Flooded Basin	1
		065D2	Seasonally Flooded Basin	0
067	One wetland delineated	067D	Shallow Marsh	2
068	No wetland present	n/a	n/a	n/a
070	No wetland present	n/a	n/a	n/a
072	Two wetlands delineated	072D1	Seasonally Flooded Basin	1
		072D2	Shallow Marsh	3
074	One wetland delineated	074D	Seasonally Flooded Basin	1
076	No wetland present	n/a	n/a	n/a
077	One wetland delineated	077D	Shrub Swamp	1
078	Two wetlands delineated	078D1	Shallow Marsh	1
		078D2	Shrub Swamp	2
080	One wetland delineated	080D	Seasonally Flooded Basin	0
081	One wetland delineated	081D	Seasonally Flooded Basin	1
082	One wetland delineated	082D	Shrub Swamp	2
084	One wetland delineated	084D	Seasonally Flooded Basin	2
087	One wetland delineated	087D	Shrub Swamp	5
089	One wetland delineated	089D	Fresh Wet Meadow	4
092a	One wetland delineated	092D	Seasonally Flooded Basin	1
093	No wetland present	n/a	n/a	n/a
095	One wetland delineated	095D	Seasonally Flooded Basin	1
101	Not delineated	-	Seasonally Flooded Basin	1
102	One wetland delineated	102D	Seasonally Flooded Basin	1
105	No wetland present	n/a	n/a	n/a
108	No wetland present	n/a	n/a	n/a
110	No wetland delineated[4]	n/a	n/a	n/a
114	One wetland delineated	114D	Seasonally Flooded Basin	1
115	Not delineated	-	Seasonally Flooded Basin	1
116	One wetland delineated	116D	Shallow Marsh	1
118	One wetland delineated	118D	Seasonally Flooded Basin	1
119	One wetland delineated	119D	Seasonally Flooded Basin	1
120	One wetland delineated	120D	Seasonally Flooded Basin	0
123	One wetland delineated	123D	Fresh Wet Meadow	6

[4] Due to thick brush, much of potential wetland feature 110 on the east side of Hay Creek was inaccessible during the delineation survey and one proposed structure location (#242) was not observed.

4.0 CONCLUSIONS

The results of this investigation found 42 wetlands that may be impacted by construction of the proposed transmission structures in the Strum Tap to Willard Tap (Phase I) portion of the Strum-Lublin 69kV Transmission Line Rebuild Project. These wetlands are identified in Table 5 and depicted on Figure 2 (provided as appendix A of the Environmental Assessment).. A total of 70 transmission structures are currently proposed in wetlands. Affected wetlands may have between one and six proposed structures in them, although most have only one or two.

DPC is currently working to redesign the Project to reduce the number of proposed structures located in wetlands; however, it will not be possible to eliminate all wetland impacts. Wetlands impacted by the Project may be permitted under WDNR-GP1-2012 by the Wisconsin DNR with notification to the USACE.

5.0 REFERENCES

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High Resolution dataset for the Chippewa Subbasin (0705)
High Resolution dataset for the Upper Mississippi-Black-Root Subbasin (0704)

APPENDIX A – FIGURES

Figure 1: Project Area

Figure 2: Sheetmaps
Provided as Appendix A of Environmental Assessment

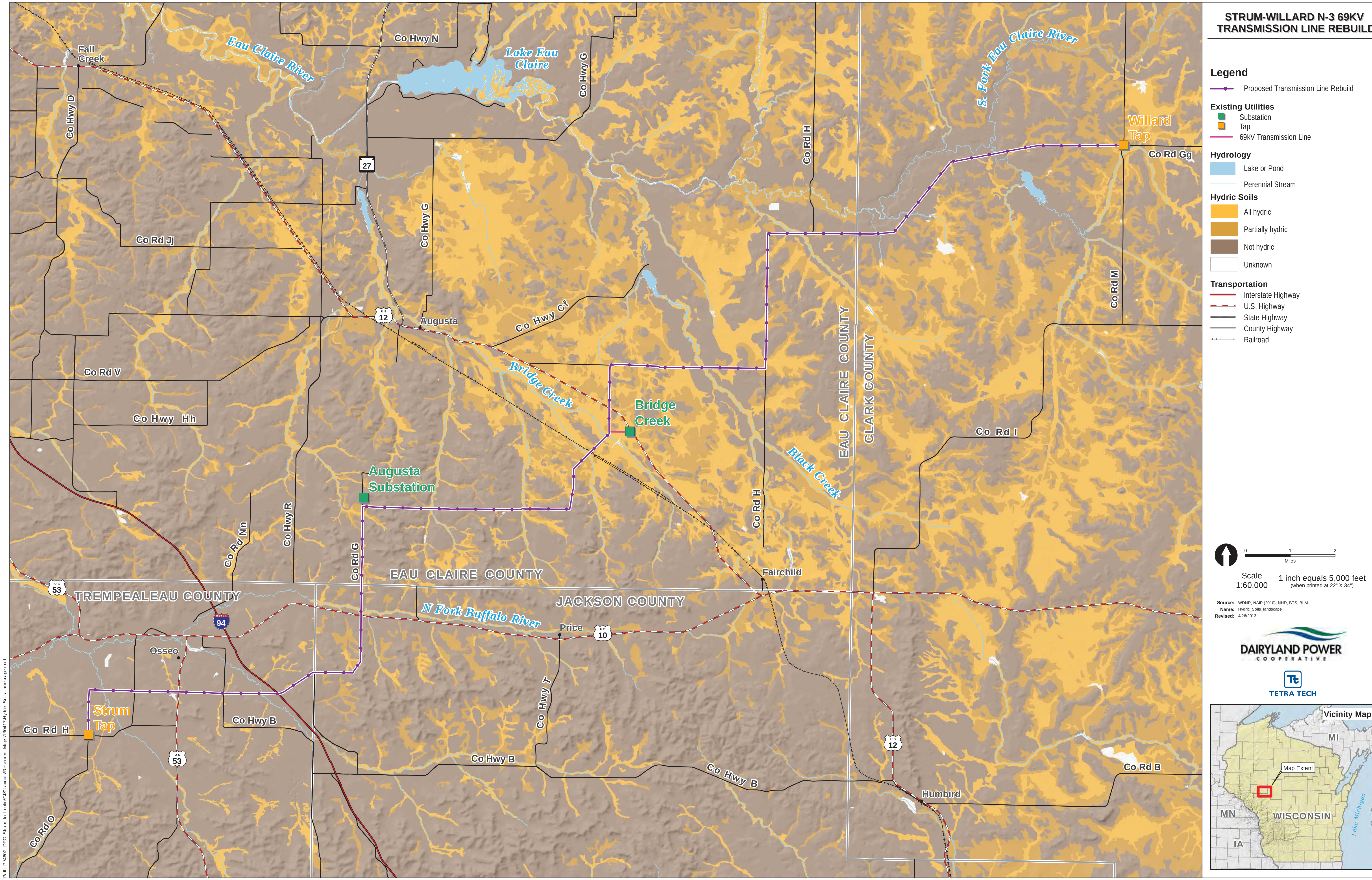

Figure 3: Hydric Soils

APPENDIX B – SUPPORTING FIELD DOCUMENTATION

.

001D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sturm Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12
Applicant/Owner: DPC State: WI Sampling Point: 00101
Investigator(s): KB + AJ Section, Township, Range: S17 T24N R7W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): ______
Slope (%): 1% Lat: 44 33 40.93 Long: -91 15 39.78 Datum: NAD 83
Soil Map Unit Name: Loamy alluvial land NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ______
Hydric Soil Present?	Yes X	No ______
Wetland Hydrology Present?	Yes X	No ______
Is the Sampled Area within a Wetland?	Yes X	No ______

Remarks: Photo 002, 003, 004, 005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1. Rubus idaeus	5%	Y	FACU
2. Rhamnus lanceolata	2%	N	FACW
3. Alnus serrulata	5%	Y	OBL
4.			
5.			
= Total Cover	12		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	25%	Y	FACW
2. Solidago gigantea	15%	Y	FACW
3. Solidago canadensis	3%	N	FACU
4. Symphyotrichum lanceolatum	1%	N	FAC
5. Polygonum arifolium	1%	N	OBL
6.			
7.			
8.			
9.			
10.			
= Total Cover	45		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover	57		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 00101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	80%	10YR 5/4	20%	C	M	Sand	
10-16	10YR 2/1	97%	10YR 3/6	3%	C	M	Sand	
16-20	10YR 3/1	95%	10YR 3/4	5%	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 16"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12

Applicant/Owner: DPC State: WI Sampling Point: 001DZ

Investigator(s): KB + AS Section, Township, Range: S17 T24N R7W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave

Slope (%): 1 Lat: 44 33 40.83 Long: -91 15 40.91 Datum: NAD 83

Soil Map Unit Name: Loamy alluvial land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks: Photo # 001

1-km @ Structure 314

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1. Rubus idaeus	2%	N	FACU
2. Sambucus nigra	2%	N	FACW
3.			
4.			
5.			
	4	= Total Cover	
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	75%	Y	FACW
2. Solidago canadensis	5%	N	FACU
3. Solidago gigantea	5%	N	FACW
4. Symphyotrichum lanceolatum	2%	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	87	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	91	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 001D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					loamy Sand	
8-18	10YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	001D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/18/2012

COMMENTS

Wetland is located adjacent to King Creek (seen in foreground).

006D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12
Applicant/Owner: DPC State: WI Sampling Point: 006 D1
Investigator(s): KB + AJ Section, Township, Range: S14 T24N R7W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave
Slope (%): 1% Lat: 44 33 39.73 Long: -91 12 19.82 Datum: NAD83
Soil Map Unit Name: Kato loam NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___	
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes X No ___		

Remarks: Photo # 0006, 0008

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Phalaris arundinacea	100%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)

Total Number of Dominant Species Across All Strata: ___ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 006D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2								Coarse Muck
2-8	2.5Y 4/1	93%	10 YR 3/6	7%	C	PL	Silt loam	
8-20	2.5Y 3/1	90%	10 YR 3/6	7%	C	PL	Silt loam	
			2.5Y 5/1	3%	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12

Applicant/Owner: DPC State: WI Sampling Point: 006D2

Investigator(s): KB's AJ Section, Township, Range: S14 T24N R7W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex

Slope (%): 2% Lat: 44 33 39.50 Long: -91 12 19.18 Datum: NAD83

Soil Map Unit Name: La Farge silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	X	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: Photo 0007, 0008

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1. Rubus idaeus	2%	N	FACU
2. Sambucus canadensis	2%	N	FACW
3.			
4.			
5.			
= Total Cover	4%		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	80%	Y	FACW
2. Solidago gigantea	5%	N	FACW
3. Symphyotrichum lanceolatum	5%	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	90%		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

SOIL

Sampling Point: 006D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100%					Sand	
11-20	10YR 4/3	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____________

Water Table Present? Yes ____ No ____ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____________

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	006D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/18/2012

COMMENTS

Wetland is located adjacent to an unnamed tributary of the South Fork Buffalo River.

009D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12

Applicant/Owner: DPC State: WI Sampling Point: 009D1

Investigator(s): KB & AJ Section, Township, Range: S14 T24N R7W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 1% Lat: 44 33 39.53 Long: -91 11 50.44 Datum: Nad83

Soil Map Unit Name: Billett fine sandy loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___	Is the Sampled Area within a Wetland?	Yes X No ___
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes X No ___		

Remarks: Point at Pole 362 Photo 0009

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Persicaria sagittata	15%	N	OBL
2. Phalaris arundinacea	79%	Y	FACW
3. Urtica dioica	3%	N	FACW
4. Cirsium arvense	3%	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100%		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 009D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100%					Sand	
2-11	2.5Y 4/3	100%					Sand	
11-18	2.5Y 4/2	95%	10YR 3/4	3%	C	PL	Loamy Sand	
			2.5Y 3/1	2%	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sturm Lublin City/County: Trempealeau Co Sampling Date: 9/18/12

Applicant/Owner: DPC State: WI Sampling Point: 009D2

Investigator(s): KB & AJ Section, Township, Range: S14 T24N R7W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none

Slope (%): 3% Lat: 44 33 39.75 Long: -91 11 52.04 Datum: NAD83

Soil Map Unit Name: Billett fine sandy loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:
Photo # 0010, 0011

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Pinus resinosa	3	Y	FACU
2. Rubus idaeus	2	N	FACU
3.			
4.			
5.			
= Total Cover	5		
Herb Stratum (Plot size: ___)			
1. Solidago gigantea	10	N	FACW
2. Symphyotrichum lanceolatum	10	N	FAC
3. Potentilla simplex	3	N	FACU
4. Cirsium arvense	2	N	FACU
5. Bromus inermis	20	Y	FACU
6. Toxicodendron radicans	2	N	FAC
7. Poa compressa	40	Y	FACU
8.			
9.			
10.			
= Total Cover	87		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	10	x 2 = 20
FAC species	12	x 3 = 36
FACU species	70	x 4 = 280
UPL species	0	x 5 = 0
Column Totals:	92 (A)	336 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 009D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 5/2	100%					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ______

Water Table Present? Yes ______ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ______

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	009D	DATE
Northwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/18/2012

011D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12

Applicant/Owner: DPC State: WI Sampling Point: 011D1

Investigator(s): KB; AJ Section, Township, Range: S14 T24N R7W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None

Slope (%): 1% Lat: 44 33 39.59 Long: – 91 11 20.65 Datum: NAD83

Soil Map Unit Name: Sandy alluvial land NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Photo # 0012

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Solidago gigantea	50%	Y	FACW
2. Potentilla simplex	10%	N	FACU
3. Phalaris arundinacea	30%	Y	FACW
4. Asclepias syriaca	1%	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 01101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100%					Sand	
3-11	2.5Y 5/3	100%					Sand	
11-13	2.5Y 7/1	93%	2.5Y 5/6	7%	C	M	Sand	
13-16	2.5Y 2.5/1	100%					Loamy Sand	
16-18	2.5Y 5/2	85%	10YR 3/6	15%	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 16

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Trempealeau Co. Sampling Date: 9/18/12

Applicant/Owner: DPC State: WI Sampling Point: 011D2

Investigator(s): KB & AJ Section, Township, Range: S14 T24N R7W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none

Slope (%): 2% Lat: 44 33 39.00 Long: -91 11 22.87 Datum: NAD83

Soil Map Unit Name: Sparta loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ______ No X	Is the Sampled Area within a Wetland? Yes ______ No X
Hydric Soil Present?	Yes ______ No X	
Wetland Hydrology Present?	Yes ______ No X	

Remarks: Photo # 0013, D014

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus Alba	5%	Y	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1. Rhamnus lanceolata	5%	Y	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: ______)			
1. Rubus flagellaris	10%	N	FACU
2. Juncus tenuis	50%	Y	FAC
3. Solidago Canadensis	7%	N	FACU
4. Poa Compressa	25%	Y	FACU
5. Spartina pectinata	2%	N	FACW
6.			
7.			
8.			
9.			
10.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	______ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	7	x 2 = 14
FAC species	50	x 3 = 150
FACU species	47	x 4 = 188
UPL species	0	x 5 = 0
Column Totals:	104 (A)	352 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ______ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 011D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ____________

Water Table Present? Yes ______ No ______ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	011D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/18/2012

COMMENTS

Wetland is located adjacent to an unnamed tributary of the South Fork Buffalo River.

012D1 012D2

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Trempealeau CO. Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: 012D1

Investigator(s): KB & AJ Section, Township, Range: S13 T24N R7W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave

Slope (%): 1% Lat: 44 33 52.70 Long: -91 10 24.26 Datum: NAD 83

Soil Map Unit Name: Palms muck NWI classification: PFO1/EMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks: at Structure 380, Photo #0015 & 0016
Overview Photos 0020, 0021, 0022, 0023, 0024

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Polygonum sagittatum	50%	Y	OBL
2. Urtica dioica	5%	N	FACW
3. Solidago gigantea	10%	N	FACW
4. Phalaris arundinacea	5%	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	70% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 012D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100%					Silt loam	
10-20	10YR 2/1	99%	7.5YR 3/4	1%	C	PL	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 14

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stian Lublin City/County: Trempealeau Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: O12D2

Investigator(s): KB AJ Section, Township, Range: S13 T24N R7W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slope

Slope (%): 1 Lat: 44-33-51.38 Long: 91-10-27.70 Datum: NAD83

Soil Map Unit Name: Billett fine sandy loam NWI classification: PFO1/EMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:
Photo 0017

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus velutina	5	Y	UPL
2.			
3.			
4.			
5.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Rhamnus cathartica	40	Y	FAC
2. Rubus idaeus	5	N	FACU
3.			
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: ___)			
1. Solidago canadensis	2	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	40	x 3 = 120
FACU species	7	x 4 = 28
UPL species	5	x 5 = 25
Column Totals:	52 (A)	173 (B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Sparsely vegetated ground under trees

SOIL

Sampling Point: 012D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	100					Sandy loam	
8-18	10YR 4/3	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.   [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ______
Water Table Present? Yes ___ No ___ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ______

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	012D1	DATE
Southwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	012D2	DATE
Southwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

COMMENTS

Wetland is formed by a hillside seep, note flattened vegetation in foreground indicating water flow.

015D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stan Lublin City/County: Trempealeau Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: O15D1

Investigator(s): KB + AJ Section, Township, Range: S13 T24N R7W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 1% Lat: 44 33 49.33 Long: -91 10 31.11 Datum: NAD83

Soil Map Unit Name: Billett fine sandy loam NWI classification: PFO1/EMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Photo # 0019

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	100%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O15DL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 – 10	Gley 2.5/N	100					Silt loam	
10 - 12	2.5Y 2.5/1	100					Silt loam	
12 - 20	2.5Y 4/1	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ____

Water Table Present? Yes ___ No ___ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 14

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stian Lublin City/County: Trempealeau Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: O15D2

Investigator(s): KB & AJ Section, Township, Range: S13 T24N R7W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None

Slope (%): 3% Lat: 44 33 48.46 Long: -91 10 32.80 Datum: NAD83

Soil Map Unit Name: Gotham loamy fine sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X		

Remarks: Recently mowed Point at 378 Photo 0018

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Rubus idaeus			FACU
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Solidago gigantea			FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover			
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 015D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/1	100					Silt loam	
15-18	10YR 4/3	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	015D	DATE
Southwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

COMMENTS

Wetland had been mowed by landowner.

017D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Jackson Co. Sampling Date: 7/19/12

Applicant/Owner: DPL State: WI Sampling Point: 017D1

Investigator(s): KB + AJ Section, Township, Range: S7 T24N R6W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave

Slope (%): 0 Lat: 44 34 5.37 Long: -91 9 45.29 Datum: NAD83

Soil Map Unit Name: Elevasil sandy loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
Phot #0026+0027

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Phalaris arundinacea	95%	Y	FACW
2. Thistle	5%	N	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)

Total Number of Dominant Species Across All Strata: ___ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes Y No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: ONDI

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	95	10YR 3/6	5	C	PL	Silt loam	
10-20	10YR 3/2	95	10YR 3/6	5	C	PL	Silty clay loam	
20-22	10YR 3/1	94	10YR 3/6	6	C	PL	Silty Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes X No ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ____________

Water Table Present? Yes ______ No X Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ____________

Wetland Hydrology Present? Yes X No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sturm Lublin City/County: Jackson Co. Sampling Date: 9/14/12

Applicant/Owner: DPC State: WI Sampling Point: 617D2

Investigator(s): KB + AJ Section, Township, Range: S7 T24N R6W

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): none

Slope (%): 2% Lat: 44 34 5.38 Long: -91 9 45.79 Datum: NAD83

Soil Map Unit Name: Elevasil sandy loam NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Structure 391 Photo # 0025

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	48%	Y	FACW
2. Solidago gigantea	48%	Y	FACW
3. Asclepias syriaca	4%	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100%		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 017D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Silt loam	
16-20	10YR 4/4	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ____________

Water Table Present? Yes ______ No ______ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ____________

Wetland Hydrology Present? **Yes** ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	017D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

018D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Jackson Co. Sampling Date: 9/19/12
Applicant/Owner: DPC State: WI Sampling Point: 018D1
Investigator(s): KB + AJ Section, Township, Range: S7 T24N R6W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
Slope (%): 1% Lat: 44 34 5.41 Long: -91 9 35.24 Datum: NAD 83
Soil Map Unit Name: Elevasil sandy loam NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks: Photo #0028 Structure #394

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 018D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	99%	10YR 3/4	1%	C	PL	Silt loam	
4-6	10YR 6/2	95	10YR 3/6	5	C	PL	Silty Clay loam	
6-18	2.5Y 3/1	90	10YR 3/6	10	C	PL	Silt loam	Sand lenses

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes X No ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ______	No X	Depth (inches): ______
Water Table Present?	Yes ______	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ______	No X	Depth (inches): ______

Wetland Hydrology Present? Yes X No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stium Lublin City/County: Jackson Co. Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: 018D2

Investigator(s): KB + AJ Section, Township, Range: S7 T24N R6W

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): convex

Slope (%): 3% Lat: 44 34 5.40 Long: -91 9 36.16 Datum: NAD83

Soil Map Unit Name: Elevasil sandy loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ______	Is the Sampled Area within a Wetland? Yes ______ No X
Hydric Soil Present?	Yes ______	No X	
Wetland Hydrology Present?	Yes ______	No X	

Remarks:
Photo #0029, 0030

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	60%	Y	FACW
2. Solidago gigantea	40%	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	______ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 014D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					Silt loam	
11-18	10YR 5/4	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	018D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

022D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stium Lublin City/County: Jackson Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: O22D1

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none

Slope (%): 1% Lat: 44 35 16.86 Long: -91 8 41.49 Datum: NAD83

Soil Map Unit Name: Adder muck NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
Photo #0032, 0033

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Rubus idaeus	1%	N	FACU
2. Alnus incana	10%	Y	FACW
3.			
4.			
5.			
= Total Cover	11		
Herb Stratum (Plot size: ___)			
1. Phalaris arundinacea	70%	Y	FACW
2. Solidago gigantea	2%	N	FACW
3. Symphyotrichum lanceolatum	3%	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	75		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)

Total Number of Dominant Species Across All Strata: ___ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O22D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 2.5/1	100					Loamy Sand	
3-6	2.5Y 3/2	95	10YR 3/4	5	C	M	Sand	
6-10	2.5Y 3/1	100					Sand	
10-18	2.5Y 6/4	50	10YR 5/8	50	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 11

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 2

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Jackson Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: 022D2

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None

Slope (%): 1% Lat: 44 35 16.40 Long: -91 8 41.63 Datum: NAD83

Soil Map Unit Name: Adder muck NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: Photo # 0031 at Structure #429

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Rubus allegheniensis	5%	N	FACU
2. Rubus hispidus	25%	Y	FACW
3. Prunus serotina	1%	N	FACU
4. Quercus rubra	1%	N	FACU
5. Populus tremuloides	1%	N	FAC
= Total Cover	33		
Herb Stratum (Plot size: ___)			
1. Juncus tenuis	10%	N	FAC
2. Poa compressa	45%	Y	FACU
3. Phalaris arundinacaea	15%	N	FACW
4. Solidago gigantea	10%	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	80		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	50	x 2 = 100
FAC species	11	x 3 = 33
FACU species	52	x 4 = 208
UPL species	0	x 5 = 0
Column Totals:	113 (A)	341 (B)

Prevalence Index = B/A = 3.01

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O22D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 – 18	10YR 3/2	100					Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ____________
Water Table Present? Yes ______ No X Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ____________

Wetland Hydrology Present? **Yes** ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Jackson Co. Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: 023D1

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave

Slope (%): 1% Lat: 44 35 19.47 Long: -91 8 41.72 Datum: NAD83

Soil Map Unit Name: Tint Sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks:
Photo # 0035

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Sambucus nigra	7%	Y	FACW
2.			
3.			
4.			
5.			
= Total Cover	7		
Herb Stratum (Plot size: ___)			
1. Phalaris arundinacea	98%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	98		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 023D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Silt loam	
10-15	10YR 3/1	95%	10YR 3/3	2%	C	PL	Silt loam	
			2.5Y 2.5/1	3%	D	M		
15-18	N/2.5	100					Sandy loam	lots of organic

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 15

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Sturm Lublin City/County: Jackson Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: 02302

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None

Slope (%): 1% Lat: 44 35 19.80 Long: -91 8 41.68 Datum: NAD 83

Soil Map Unit Name: Tint sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ______ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:
Structure # 430 Photo # 0034

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	70	Y	FACW
2. Elymus repens	25	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	95		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	70	x 2 = 140
FAC species	0	x 3 = 0
FACU species	25	x 4 = 100
UPL species	0	x 5 = 0
Column Totals:	95 (A)	240 (B)

Prevalence Index = B/A = 2.52

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O23D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Sand	
4-12	10YR 4/2	100					Sand	
12-18	10YR 5/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	022D	DATE
East	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

COMMENTS

Wetland is located adjacent to the North Fork Buffalo River (seen in lower left corner).

024D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Jackson Co. Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: O24D1

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): Concave

Slope (%): 35 Lat: 44 35 40.05 Long: -91 8 41.70 Datum: NAD83

Soil Map Unit Name: Hixton silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Photo #0036, 0037

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	75	Y	FACW
2. Solidago gigantea	1	N	FACW
3. Urtica dioica	5	N	FACW
4. Impatiens capensis	15	N	FACW
5. Persicaria sagittata	1	N	OBL
6. Cirsium arvense	2	N	FACU
7.			
8.			
9.			
10.			
= Total Cover	99		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- __ 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 02401

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/2	95	10YR 3/6	5	C	PL	Sandy loam	
9 - 13	10YR 3/1	93	10YR 3/3	7	C	PL	Sandy loam	
13 - 18	10YR 3/1	90	10YR 3/4	10	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Jackson Co Sampling Date: 9/19/12
Applicant/Owner: DPC State: WI Sampling Point: O24D2
Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave
Slope (%): 3% Lat: 44 35 40.26 Long: -91 8 41.87 Datum: NAD83
Soil Map Unit Name: Hixton silt loam NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1. Rubus idaeus	1	N	FACU
2.			
3.			
4.			
5.			
= Total Cover	1		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	99	Y	FACW
2. Bromus inermis	1	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O24D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/1	100					Silt loam	
4-11	2.5Y 4/2	100					Silt loam	
11-15	2.5Y 3/2	100					Silt clay loam	
15-18	2.5Y 4/1	99	10YR 3/4	1	C	PL	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ______

Water Table Present? Yes ______ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ______

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	024D	DATE
Southwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/19/2012

025D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Jackson Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: 025D1

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 1% Lat: 44 35 45.69 Long: -91 8 41.63 Datum: NAD83

Soil Map Unit Name: Hixton silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

Photo # 0039, 0040

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Phalaris arundinacea	75	Y	FACW
2. Persicaria sagittata	10	N	OBL
3. Typha angustifolia	15	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 025D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100						Peat
8-20	10YR 3/1	95%	10YR 3/6	5%	C	PL	Clay loam	mucky

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- X 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Dammed pond

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stian Lublin City/County: Jackson Co Sampling Date: 9/19/12

Applicant/Owner: DPC State: WI Sampling Point: 025D2

Investigator(s): KB + AJ Section, Township, Range: S5 T24N R6W

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): None

Slope (%): 3% Lat: 44 35 45.72 Long: -91 8 41.89 Datum: NAD 83

Soil Map Unit Name: Hixton silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		
Hydric Soil Present? Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Wetland Hydrology Present? Yes ___ No X		

Remarks:
Photo # 0038 at Structure 438

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1. Cornus racemosa	90	Y	FAC
2.			
3.			
4.			
5.			
= Total Cover	90		
Herb Stratum (Plot size: ______)			
1. Urtica dioica	10%	Y	FACW
2. Phalaris arundinacea	10%	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	20		
Woody Vine Stratum (Plot size: ______)			
1. Vitis vulpina	20%	Y	FAC
2. Parthenocissus quinquefolia	30%	Y	FACU
= Total Cover	50		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O25D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	99	10YR 3/3	1	C	PL	Silt loam	
5-8	10YR 3/1	100					Silt loam	
8-14	10YR 5/4	40	10YR 4/1	50			Silt loam	Probable Fill
"			10YR 3/1	10				
14-18	10YR 2/1	99	10YR 3/3	1			Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	025D	DATE
South	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/20/2012

COMMENTS

Wetland created/enhanced by damming drainage to create pond (seen in left side of frame).

031D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: 031D1

Investigator(s): KB + AJ Section, Township, Range: S31 T25N R6W

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): concave

Slope (%): 2% Lat: 44 36 33.19 Long: -91 8 41.66 Datum: NAD 83

Soil Map Unit Name: Houghton muck NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ______
Hydric Soil Present?	Yes X	No ______
Wetland Hydrology Present?	Yes X	No ______

Is the Sampled Area within a Wetland? Yes X No ______

Remarks: Structure 453
Photo #0045, 0046

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1. Rubus idaeus	2	N	FACU
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	25	Y	FACW
2. Carex stricta	50	Y	OBL
3. Scirpus atrovirens	15	N	OBL
4. Solidago gigantea	3	N	FACW
5. Persicaria sagittata	1	N	OBL
6.			
7.			
8.			
9.			
10.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	______ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 031D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	73	10YR 2/1	20	D	M	Silt loam	Very organic
			10YR 4/6	7	C	PL		
4-6	2.5Y 2.5/1	95	10YR 3/3	5	C	PL	Silt loam	Very organic
6-8	2.5Y 5/3	95	10YR 3/6	5	C	PL	Sand	
8-14	Gley 2.5/N	95	10YR 3/6	5	C	PL	Silty clay loam	
14-18	2.5Y 3/1	100					Silty clay loam	
18-26	2.5Y 5/1	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stran Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: O31D2

Investigator(s): KB + AJ Section, Township, Range: S31 T25N R6W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None

Slope (%): 1 Lat: 44 36 30.00 Long: -91 8 41.76 Datum: NAD83

Soil Map Unit Name: Houghton muck NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: at structure 452
Photo # 0044

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1. Cornus racemosa	1	N	FAC
2.			
3.			
4.			
5.			
= Total Cover	1		
Herb Stratum (Plot size: ___)			
1. Solidago gigantea	20	Y	FACW
2. Phalaris arundinacea	75	Y	FACW
3. Toxicodendron radicans	1	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	96		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 031DZ

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/3	100%					Silt loam	
12-19	10YR 6/2	93%	10YR 4/4	5%	C	PL	Silt loam	
[illegible]	[illegible]	[illegible]	Gley 2.5/N	2%	D	M		
19-20	10YR 2/1	100%					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ____________

Water Table Present? Yes ______ No X Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	031D	DATE
Northwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/20/2012

COMMENTS

Wetland is located adjacent to an unnamed intermittent tributary of the North Fork Buffalo River.

032D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stran Lublin City/County: Eau Claire Co. Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: D32D1

Investigator(s): KB+AS Section, Township, Range: S30 T25N R6W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave

Slope (%): 1 Lat: 44 37 12.95 Long: -91 8 41.56 Datum: NAD83

Soil Map Unit Name: Kert loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ______	Is the Sampled Area within a Wetland? Yes X No ______
Hydric Soil Present?	Yes X No ______	
Wetland Hydrology Present?	Yes X No ______	

Remarks:
Photo #0041

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	40	Y	FACW
2. Persicaria sagittatum	5	N	OBL
3. Calamagrostis canadensis	5	N	OBL
4. Carex stricta	45	Y	OBL
5. Verbena hastata	1	N	FACW
6.			
7.			
8.			
9.			
10.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	______ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 032D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-11	2.5Y 2.5/1	100					Silty clay loam	Mucky
11-16	2.5Y 4/1	100					Clay loam	
16-20								Probably Sand, All out

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: 032B2

Investigator(s): KB + AJ Section, Township, Range: S30 T25N R6W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None

Slope (%): 22 Lat: 44 37 14.56 Long: -91 8 41.81 Datum: NAD83

Soil Map Unit Name: Kert loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks: Photo # 0042, 0043

Heavily grazed pasture

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Juncus tenuis	1	N	FAC
2. Trifolium repens	10	N	FACU
3. Agrostis gigantea	20	Y	FACW
4. Phleum pratense	20	Y	FACU
5. Poa pratensis	20	Y	FAC
6.			
7.			
8.			
9.			
10.			
= Total Cover	71		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 032 D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/3	99	10YR 4/6	1	C	PL	Silt loam	
9-16	10YR 7/4	98	10YR 6/6	2	C	PL	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ____________

Water Table Present? Yes ______ No X Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ____________

Wetland Hydrology Present? **Yes** ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	032D	DATE
South	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/20/2012

COMMENTS

Wetland located within a heavily grazed pasture.

038D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DLP State: WI Sampling Point: 038D1

Investigator(s): KB + AJ Section, Township, Range: S28 T25N R6W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave

Slope (%): 1% Lat: 44 37 18.29 Long: -91 6 48.37 Datum: NAD83

Soil Map Unit Name: Otter silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks: At Structure 493 photo # 0047, 0048

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1. Alnus incana	5	Y	FACW
2. Cornus racemosa	2	N	FAC
3.			
4.			
5.			
= Total Cover	7		
Herb Stratum (Plot size: ______)			
1. Symphyotrichum puniceum	2	N	OBL
2. Typha angustifolia	5	N	OBL
3. Carex stricta	40	Y	OBL
4. Phalaris arundinacea	25	Y	FACW
5. Schoenoplectus tabernaemontani	15	N	OBL
6. Eutrochium maculatum	1	N	OBL
7. Eupatorium perfoliatum	1	N	OBL
8.			
9.			
10.			
= Total Cover	89		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 038D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2								Muck
2-14	2.5Y3/1	100					silt loam	
14-18	2.5Y3/1	75	2.5Y 2.5/1	25			Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
X 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______
Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): <1
Water Table Present? Yes ___ No ___ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DLP State: WI Sampling Point: 038D2

Investigator(s): KB + AJ Section, Township, Range: S28 T25N R6W

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): none

Slope (%): 1% Lat: 44 37 18.23 Long: -91 6 47.62 Datum: NAD83

Soil Map Unit Name: Billett sandy loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:
Photo # 0049, 0050
Cultivated alfalfa field

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1. Prunus serotina	5	Y	FACU
2. Vitis vulpina	3	N	FAC
3. Rubus idaeus	1	N	FACU
4.			
5.			
= Total Cover	9		
Herb Stratum (Plot size: ____)			
1. Eleusine indica	2	N	FACU
2. Medicago sativa	15	N	FACU
3. Monolepis nuttalliana	65	Y	UPL
4. Polygonum aviculare	15	N	FAC
5. Symphyotrichum lanceolatum	1	N	FAC
6.			
7.			
8.			
9.			
10.			
= Total Cover	98		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	19	x 3 = 57
FACU species	23	x 4 = 92
UPL species	65	x 5 = 325
Column Totals:	107 (A)	474 (B)

Prevalence Index = B/A = 4.42

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 038D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/3	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ______

Water Table Present? Yes ______ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes X No ______ Depth (inches): 18

Wetland Hydrology Present? **Yes** ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	038D	DATE
East	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/20/2012

COMMENTS

Wetland is located adjacent to Thompson Valley Creek.

039D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: 039D1

Investigator(s): KB + AJ Section, Township, Range: S26 T25N R6W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 1% Lat: 44 37 18.30 Long: -91 4 43.75 Datum: NAD83

Soil Map Unit Name: Otter silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

photo #0054, 0055

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	100	Y	FACW
2. Typha angustifolia	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 039D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 4/1	98	2.5Y 4/3	2	C	PL	Silt loam	
4-9	2.5Y 3/1	75	10YR 3/4	25	C	PL	Silty Clay loam	
9-15	2.5Y 4/1	75	10YR 3/6	25	C	PL	Silty Clay loam	
15-18	2.5Y 4/1	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 15

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/20/12
Applicant/Owner: DPC State: WI Sampling Point: 039D2
Investigator(s): KB + AJ Section, Township, Range: S26 T25N R6W
Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex
Slope (%): ______ Lat: 44 37 18.50 Long: -91 4 43.29 Datum: NAD83
Soil Map Unit Name: Otter silt loam NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		
Hydric Soil Present? Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Wetland Hydrology Present? Yes ___ No X		

Remarks:
Structure 527 Photo # 0053
On top of earthen dam to make pond

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Phlaris arundinacea	50%	Y	FACW
2. Cirsium arvense	25%	Y	FACU
3. Verbena hastata	1%	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	76		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	51	x 2 = 102
FAC species	0	x 3 = 0
FACU species	25	x 4 = 100
UPL species	0	x 5 =
Column Totals:	76 (A)	202 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 039 D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 5/3	100					Silt Loam	
13-20	10YR 5/3	93	10YR 3/6	7			Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	039D	DATE
East	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/20/2012

COMMENTS

Wetland is located adjacent to an unnamed intermittent tributary of Hay Creek. Wetland created/enhanced by damming tributary to create pond (seen in lower right corner).

041D

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stian Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: 041D1

Investigator(s): KB + AJ Section, Township, Range: S26 T25N R6W

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave

Slope (%): 2-5% Lat: 44 37 16.65 Long: -91 4 36.07 Datum: NAD83

Soil Map Unit Name: Otter silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
Ditch adjacent to 529 Photo #0052 /0056
Stream channelized to ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Verbena hastata	1	N	FACW
2. Juncus tenuis	3	N	FAC
3. Phalaris arundinacea	75	Y	FACW
4. Eutrochium maculatum	2	N	OBL
5. Scirpus cyperinus	5	N	OBL
6. Schoenoplectus tabernaemontani	4	N	OBL
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O41D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	93	10YR 3/6	7	C	PL	Silty clay loam	
8-16	2.5Y 4/1	95	10YR 3/6	5	C	PL	Silt loam	
16-18	2.5Y 5/1	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes X No ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ______

Water Table Present? Yes ______ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ______

Wetland Hydrology Present? Yes X No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/20/17

Applicant/Owner: DPC State: WI Sampling Point: 041D2

Investigator(s): KB + AJ Section, Township, Range: S26 T25N 6W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none

Slope (%): 12 Lat: 44 37 18.58 Long: -91 4 33.06 Datum: NAD 83

Soil Map Unit Name: Gotham loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X		

Remarks: Structure # 530 photo # 0051

Pasture adjacent to modified drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: ___)			
1. Poa pratensis	80	Y	FAC
2. Phleum pratense	5	N	FACU
3. Juncus tenuis	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 041D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	98	10YR 3/6	2	C	PL	Silt loam	
5-10	10YR 6/2	98	10YR 3/6	2	C	PL	Silt loam	
10-18	10YR 6/3	90	10YR 6/4	10	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ____________

Water Table Present? Yes ______ No X Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	041D	DATE
East	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/20/2012

COMMENTS

Wetland is located adjacent to an unnamed intermittent tributary of Hay Creek. Tributary had largely been diverted to the roadside ditch (seen in left side of frame).

047

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Stium Lublin City/County: Eau Claire Co Sampling Date: 9/20/12

Applicant/Owner: DPC State: WI Sampling Point: O47D1

Investigator(s): KB + AJ Section, Township, Range: S24 T25N R6W

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none

Slope (%): 0 Lat: 44 37 44.31 Long: -91 2 57.54 Datum: NAD83

Soil Map Unit Name: Fairchild & Merrillan soils NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks: Photo # 0057

heavily grazed pasture

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Echium vulgare	7	N	UPL
2. Achillea millefolium	10	N	FACU
3. Plantago major	3	N	FAC
4. Viola sororia	7	N	FAC
5. Juncus tenuis	15	Y	FAC
6. Medicago lupulina	3	N	FACU
7. Poa pratenses	25	Y	FAC
8. Erigeron canadensis	1	N	FACU
9. Potentilla simplex	7	N	FACU
10.			
= Total Cover	78		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 047D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	98	10YR 3/3	2	C	PL	Sandy loam	
4-7	10YR 4/1	98	10YR 3/6	2	C	PL	Sand	
7-10	10YR 2/1	98	10YR 3/3	2	C	PL	Sandy loam	lenses of Sand
10-15	10YR 4/2	100					Sand	
15-18	2.5Y 5/4	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: J47D2

Investigator(s): KB + AJ Section, Township, Range: S24 T25N R6W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 1% Lat: 44 37 43.89 Long: -91 2 57.68 Datum: NAD83

Soil Map Unit Name: Fairchild & Merillan soils NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: Photo # 0058

Heavily grazed pasture

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Sapling/Shrub Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. Schoenoplectus tabernaemontani	4	N	OBL
2. Juncus tenuis	5	N	FAC
3. Viola sororia	7	N	FAC
4. Plantago major	5	N	FAC
5. Achillea millefolium	3	N	FACU
6. Huperzia lucidula	15	Y	FACW
7. Poa pratenses	25	Y	FAC
8.			
9.			
10.			
= Total Cover	64		

Woody Vine Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 047 D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	99	10YR 3/4	1	C	PL	Sandy loam	
5-10	10YR 4/3	97	10YR 3/6	3	C	PL	Sand	
10-20	2.5Y 5/2	95	10YR 4/6	5	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): __________

Water Table Present? Yes _____ No X Depth (inches): __________

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): __________

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

048

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: 048D1

Investigator(s): KB + AJ Section, Township, Range: S24 T25N R6W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR or MLRA): LRR K Lat: 44 37 47.25 Long: -91 2 56.97 Datum: NAD83

Soil Map Unit Name: Plainbo loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0002

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 048D1

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix petiolaris	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	60	Y	FACW
2. Rubus hispidus	20	Y	FACW
3. Solidago canadensis	3	N	FACU
4. Solidago gigantea	3	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	86	= Total Cover	

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 043D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					loam	
5-12	10YR 3/1	90	10YR 5/3	7			Silty Clay loam	Sand inclusion
			10YR 3/6	3	C	PL		
12-15	2.5Y 5/4	95	10YR 3/6	5	C	PL	Sand	
15-19	2.5Y 6/4	90	10YR 5/6	10	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

051D

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stium Lubli City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: 051D1

Investigator(s): KB + AJ Section, Township, Range: S24 T25N R6W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): ____

Subregion (LRR or MLRA): LRR K Lat: 44 38 17.76 Long: -92 2 42.52 Datum: NAD83

Soil Map Unit Name: Fairchild + Merillan soils NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0060, 0061

Structure 571

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: O5IDL

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus Strobus	3	N	FACU
2. Vaccinium corymbosum	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
	13	= Total Cover	

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Osmunda cinnamomea	5	N	FACU
2. Rubus hispidus	50	Y	FACW
3. ~~Vaccinium corymbosum~~			FACW
4. Lycopodiella inundata	20	Y	OBL
5. Botrypus virginianus	3	N	FACU
6. Scirpus cyperinus	5	N	OBL
7. Eriophorum virginicum	1	N	OBL
8. Carex cryptolepis	3	N	OBL
9.			
10.			
11.			
12.			
	87	= Total Cover	

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 051D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1.5								Peat
1.5-3	2.5Y 2.5/1	100					silt loam	mucky
3-12	2.5Y 6/1	50	2.5Y 4/1	50			Sand	Streaked
12-16	2.5Y 4/2	100					Sand	
16-18	2.5Y 3/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/21

Applicant/Owner: DPC State: WI Sampling Point: OS1DZ

Investigator(s): KB + AJ Section, Township, Range: S24 T25N R6W

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 38 14.90 Long: -91 2 45.81 Datum: NAD83

Soil Map Unit Name: Elm Lake loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo #0059

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 05102

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	75	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	75 = Total Cover		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	____ = Total Cover		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Osmunda cinnamomea	50	Y	FACW
2. Rubus hispidus	10	N	FACW
3. Potentillia simplex	7	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	67 = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	60	x 2 = 120
FAC species	0	x 3 = 0
FACU species	82	x 4 = 328
UPL species	0	x 5 =
Column Totals:	142 (A)	448 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a seperate sheet.)

Understory is sparcely Vegetatage except for fern

SOIL

Sampling Point: 05ID2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2								organic peat
2-4	2.5Y 5/1	100					Sand	
4-20	2.5Y 6/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L, M)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	051D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/21/2012

COMMENTS

Wetland is located adjacent to Travis Creek. Southwest end of wetland used as horse pasture.

053D

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: 053D1

Investigator(s): KB + AJ Section, Township, Range: S18 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): LRRK Lat: 44 38 32.32 Long: -91 2 22.17 Datum: NAD83

Soil Map Unit Name: Elm Lake loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Structure 577

Photo # 0063

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 053D1

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	___ = Total Cover		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	___ = Total Cover		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus hispidus	25	Y	FACW
2. Lycopodiella inundata	25	Y	OBL
3. Carex stricta	40	Y	OBL
4. Scirpus cyperinus	7	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	97 = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 05301

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1		100						Peat
1-5	2.5Y 2.5/1	100					Silty clay loam	Slightly mucky, sand lenses
5-10	2.5Y 5/2	100					Sand	
10-18	2.5Y 7/2	98	10YR 5/8	2	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains   [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- _X_ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes _X_ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DLP State: WI Sampling Point: 053 D2

Investigator(s): KB + AJ Section, Township, Range: S18 T25N R5W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 38 32.96 Long: -91 2 21.44 Datum: NAD83

Soil Map Unit Name: Elm Lake loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0064, 0065

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ______
Water Table Present?	Yes ___	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 053D2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size: ______)			
1. Rubus hispidus	40	Y	FACW
2. Lycopodiella inundata	20	Y	OBL
3. Scirpus cyperinus	1	N	OBL
4. Brickellia eupatorioides	5	N	UPL
5. Carex stricta	25	Y	OBL
6. Botrypus virginianus	5	N	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	96	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 05302

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Sandy loam	
2-6	10YR 5/2	100					Sand	
6-10	10YR 4/6	100					Sand	
10-20	2.5Y 5/4	99	10YR 4/6	1			Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains   [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	053D	DATE
Southwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/21/2012

056D

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: 036D1

Investigator(s): KB + AJ Section, Township, Range: S18 T25N R5W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 38 42.36 Long: -91 2 8.33 Datum: NAD83

Soil Map Unit Name: Newson loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ______
Hydric Soil Present?	Yes X	No ______
Wetland Hydrology Present?	Yes X	No ______

Is the Sampled Area within a Wetland? Yes X No ______

If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0067, 0068

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ______	No X	Depth (inches): ______
Water Table Present?	Yes ______	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ______	No X	Depth (inches): ______

Wetland Hydrology Present? Yes X No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 056 D1

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus allegheniensis	15	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex stricta	90	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	90	x 1 = 90
FACW species		x 2 =
FAC species		x 3 =
FACU species	15	x 4 = 60
UPL species		x 5 =
Column Totals:	105 (A)	150 (B)

Prevalence Index = B/A = 1.42

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 056D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 2.5/1	100					Loam	Slightly mucky
6-15	2.5Y 3/1	100					Sandy loam	
15-22	10YR 3/3	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- X Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: 056D2

Investigator(s): KB + AJ Section, Township, Range: S18 T25N R5W

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 38 41.77 Long: -91 2 9.23 Datum: NAD83

Soil Map Unit Name: Newson loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Structure 581

Photo # 0066

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 056D2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1. Compteonia peregrina	20	Y	UPL
2. Vaccinium angustifolium	10	N	FACU
3. Rubus allegheniensis	20	Y	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: ______)			
1. Rubus hispidus	30	Y	FACW
2. Bromus ciliatus	5	N	FACW
3. Festuca rubra	50	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	35	x 2 = 70
FAC species	0	x 3 = 0
FACU species	80	x 4 = 320
UPL species	20	x 5 = 100
Column Totals:	135 (A)	490 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 056DZ

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Sandy loam	
3-6	10YR 6/2	100					loamy Sand	
6-12	10YR 5/6	100					loamy Sand	
12-20	10YR 6/3	100					loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	056D	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/21/2012

COMMENTS

Wetland is located adjacent to Bridge Creek.

058D1 058D2

058D3 058D4

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: 05802

Investigator(s): KB + AJ Section, Township, Range: S18 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 39 1.66 Long: -91 2 0.50 Datum: NAD83

Soil Map Unit Name: Elm Lake loamy sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soil Present? Yes X No ___ Wetland Hydrology Present? Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___ If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0069

near structure #5, near ditch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 05801

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	______ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	______ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 058D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loam	
4-10	10YR 4/1	95	10YR 3/6	5	C	PL	Sandy Loam	
10-18	2.5Y 7/2	50	2.5Y 5/1	40	D	M	Sand	
			10YR 3/6	10	C	PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Sharon Lublin City/County: Eau Claire Co Sampling Date: 9/21/12

Applicant/Owner: DPC State: WI Sampling Point: DS8D2

Investigator(s): KB + AJ Section, Township, Range: S18 T25N R5W

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR K Lat: 44 38 59.87 Long: -91 2 0.55 Datum: NAD 83

Soil Map Unit Name: Fairchild & Merillan soils NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 70-79

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 058P2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1. Salix petiolaris	15	Y	FACW
2. Comptonia peregrina	15	Y	UPL
3.			
4.			
5.			
6.			
7.			
30 = Total Cover			
Herb Stratum (Plot size: ______)			
1. Botrypus virginianus	20	Y	FACU
2. Phalaris arundinacea	5	N	FACW
3. Lycopodiella inundata	10	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
35 = Total Cover			
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	10	x 1 = 10
FACW species	20	x 2 = 40
FAC species	0	x 3 = 0
FACU species	20	x 4 = 80
UPL species	15	x 5 = 75
Column Totals:	65 (A)	205 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 05802

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/2	100					Silt loam	
7-11	2.5Y 5/2	99	10YR 4/6	1			loam sand	
11-14	2.5Y 7/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

Refusal at 14 inches

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	058D1	DATE
West	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/21/2012

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	058D2	DATE
Northwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	058D3 and 058D4	DATE
North	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

059D1   059D2

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stiun Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 059D1

Investigator(s): KB + AJ Section, Township, Range: 37 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 39 51.52 Long: -91 1 59.90 Datum: NAD83

Soil Map Unit Name: Vesper loam NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0081-84

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 059D1

Tree Stratum (Plot size: ________)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: ________)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	____ = Total Cover		

Herb Stratum (Plot size: ________)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex stricta	50	Y	OBL
2. Phalaris arundinacea	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60% = Total Cover		

Woody Vine Stratum (Plot size: ________)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ________ (A)

Total Number of Dominant Species Across All Strata: ________ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ________ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ________

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Has been mowed

SOIL

Sampling Point: 039D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	95	10YR 3/6	5	C	PL	Silt loam	
5-9	10YR 3/1	95	10YR 3/6	5	C	PL	Silt loam	
9-18	2.5Y 6/2	91	10YR 4/6	9	C	PL	Silt loam	gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stuan Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 059D2

Investigator(s): KB + AJ Section, Township, Range: S7 T25N R5W

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 39 52.21 Long: -91 1 59.90 Datum: NAD 83

Soil Map Unit Name: Vesper loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo Number 0080
Structure #21
Adjacent to ditch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ______
Water Table Present?	Yes ___	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 059D2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	2	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	2	= Total Cover	

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	10	N	FACW
2. Glyceria canadensis	40	Y	OBL
3.			
4. Solidago gigantea	1	N	FACW
5. Agrostis alba	40	Y	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	91	= Total Cover	

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation has been mowed

SOIL

Sampling Point: 059DZ

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2						Silt loam	
2-13	10YR 6/3	93	10YR 3/6	7	C	PL	Silt loam	w gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

Refusal at 13, gravel

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	059D1	DATE
North	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

COMMENTS

Wetland had been mowed by landowner.

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	059D2	DATE
South	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

COMMENTS

Wetland within ROW had been mowed by landowner.

060D

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 060D1

Investigator(s): KB + AJ Section, Township, Range: S7 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 40 2.15 Long: -91 1 59.94 Datum: NAD 83

Soil Map Unit Name: Veedum silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Structure 24

Photo # 95

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ______
Water Table Present?	Yes ___	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 060D1

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix petiolaris	2	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	2 = Total Cover		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex stricta	7	N	OBL
2. Juncus tenuis	15	Y	FAC
3. Verbena hastata	1	N	FACW
4. Agrostis gigantea	20	Y	FACW
5. Mentha arvensis	2	N	FACW
6. Scirpus cyperinus	5	N	OBL
7. Juncus effusus	2	N	OBL
8. Glyceria canadensis	10	N	OBL
9. Potentilla simplex	5	N	FACU
10. Persicaria sagittata	2	N	OBL
11.			
12.			
	69 = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 060D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/1	50	10YR 2/1	45	D	M	Silty Clay loam	
			10YR 3/6	5	C	PL		
5-15	2.5Y 6/2	98	2.5Y 5/6	2	C	PL	Sand	
15-21	2.5Y 6/2	93%	10YR 5/8	7	C	PL	Silty clay loam	
21-23	2.5Y 4/1	85%	10YR 5/8	15%	C	PL	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 060D2

Investigator(s): KB + AJ Section, Township, Range: S7 T25N R5W

Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 39 58.68 Long: -91 1 59.94 Datum: NAD83

Soil Map Unit Name: Veedum silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo #0086, 0087

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ______
Water Table Present?	Yes ___	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 06002

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Poa compressa	25	Y	FACU
2. Scirpus cyperinus	2	N	OBL
3. Symphyotrichum lanceolatum	2	N	FACW
4. Hieracium scabrum	1	N	UPL
5. Solidago gigantea	7	N	FACW
6. Potentilla simplex	5	N	FACU
7. Pastinaca sativa	2	N	UPL
8. Carix tribuloides	15	N	FACW
9. Glyceria canadensis	25	Y	OBL
10.			
11.			
12.			
= Total Cover	84		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	27	x 1 = 27
FACW species	24	x 2 = 48
FAC species	0	x 3 = 0
FACU species	30	x 4 = 120
UPL species	3	x 5 = 15
Column Totals:	84 (A)	210 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 060D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/2	100					Silt loam	
7-10	10YR 3/1	99	10YR 3/6	1	C	PL	Silt loam	
10-18	10YR 5/2	93	10YR 5/4	7	C	PL	Silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L, M)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	060D	DATE
South	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

061

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 061D1

Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): LRR K Lat: 44 40 9.35 Long: -91 1 59.98 Datum: NAD 83

Soil Map Unit Name: Hiles + Kert Soils NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______	

Remarks: (Explain alternative procedures here or in a separate report.)

Photo #0088

drain tiled

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ______
Water Table Present?	Yes ___	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 06101

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	95	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

Heavily grazed pasture

SOIL

Sampling Point: 06101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	95	10YR 3/4	5	C	PL	Silt loam	
6-10	10YR 4/1	95	10YR 3/3	5	C	PL	Sandy loam	
10-20	2.5Y 6/2	90	10YR 5/8	10	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ______

Remarks:

063D

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: O63D1

Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 40 968 Long: -91 1 50.32 Datum: NAD 83

Soil Map Unit Name: Veedum silt loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo #0090 #0091

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches): 9	Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 063P1

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: ______)			
1. Schoenoplectus tabernaemontani	30	Y	OBL
2. Eupatorium perfoliatum	2	N	FACW
3. Symphyotrichum lanceolatum	2	N	FACW
4. Symphyotrichum puniceum	1	N	OBL
5. Scirpus atrovirens	25	Y	OBL
6. Carex vulpinoidea	10	N	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	70 = Total Cover		

Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

grazed pasture

SOIL

Sampling Point: 063D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	2.5Y 2.5/1	100					Clay loam	
3 - 11	2.5Y 2.5/1	93	10YR 3/6	7	C	PL	Sandy loam	Sand lenses
11 - 18	2.5Y 6/3	60	10YR 5/8	40	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 063D2

Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): LRR K Lat: 44 40 9.38 Long: -91 1 50.29 Datum: NAD83

Soil Map Unit Name: Arland sandy loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No X
Hydric Soil Present? Yes ___ No X
Wetland Hydrology Present? Yes ___ No X

Is the Sampled Area within a Wetland? Yes ___ No X

If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo #0089 Structure 29

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______
Water Table Present? Yes ___ No X Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 063D2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phleum pratense	10	N	FACU
2. Plantago major	7	N	FACU
3. trifolium pratense	7	N	FACU
4. Taraxacum officinale	3	N	FACU
5. Poa pratense	40	Y	FACU
6. Ambrosia artemisiifolia	5	N	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	72 = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	0	x 3 = 0
FACU species	72	x 4 = 288
UPL species	0	x 5 = 0
Column Totals:	72 (A)	288 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ______ No X

Remarks: (Include photo numbers here or on a separate sheet.)

newly grazed pasture

SOIL

Sampling Point: OG3DZ

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Sandy Silt	
4-12	10YR 4/2	99	10YR 4/3	1	C	PL	Sandy loam	
12-18	2.5Y 5/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains   [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L, M)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes ______ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	063D	DATE
West	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

COMMENTS

Wetland partially excavated for livestock pond (seen in background).

065D1 065D2

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Storm Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: O65P1

Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR or MLRA): LRR K Lat: 44 40 8.89 Long: -91 / 42.35 Datum: NAD83

Soil Map Unit Name: Vesper loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soil Present? Yes X No ___ Wetland Hydrology Present? Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___ If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 0092

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 10	Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 065D1

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Plantago major	3	N	FACU
2. Scirpus validus	5	N	OBL
3. Carix vulpinoidea	10	N	OBL
4. Scirpus atrovirens	20	Y	OBL
5. Eupatorium perfoliatum	1	N	FACW
6. Phleum pratense	5	N	FACU
7. Juncus tenuis	7	N	FAC
8. Phalaris arundinacea	15	Y	FACW
9. Glyceria canadensis	25	Y	OBL
10.			
11.			
12.			
	91	= Total Cover	

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: O6SD1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/1	100					Silt loam	
4-9	2.5Y 3/1	95	10YR 3/6	5			Silty clay loam	
9-18	2.5Y 5/1	90	10YR 4/6	10			Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum cublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 065D3

Investigator(s): KBD AS Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 3

Subregion (LRR or MLRA): LRRK Lat: 44 40 9.54 Long: -91 / 42.30 Datum: NAD83

Soil Map Unit Name: Kert loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo 93, 94.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 065D3

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	______ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Phleum pratense	3	N	FACU
2. Plantago major	10	N	FACU
3. Trifolium pratense	10	N	FACU
4. Taraxacum officinale	7	N	FACU
5. Poa pratense	60	Y	FACU
6. Schoenoplectus tabernaemontani	2	N	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	______ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	2	x 1 = 2
FACW species	0	x 2 = 0
FAC species	0	x 3 = 0
FACU species	90	x 4 = 360
UPL species	0	x 5 = 0
Column Totals:	92 (A)	362 (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ______ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Heavily grazed pasture

SOIL

Sampling Point: 065D3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/2	97	10YR 5/6	3	C	PL	Silt loam	
8-18	10YR 5/4	98	10YR 4/6	2	C	PL	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/22/12

Applicant/Owner: DPC State: WI Sampling Point: 06.5DZ

Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 40 8.61 Long: -91 1 37.29 Datum: NAD83

Soil Map Unit Name: Vesper loam NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo 95

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 8

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 06SD2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	90	Y	FACW
2. Schoenoplectus tabernaemontani	10	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 065D2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 4/2	100					Silty Clay loam	
3-11	2.5Y 4/1	95	10YR 3/6	5	C	PL	Silty Clay loam	
11-15	2.5Y 6/3	93	10YR 3/6	3	C	PL	loamy Sand	
15-16.5	2.5Y 3/1	99	10YR 3/4	1	C	PL	Silty Clay loam	Sulfur odor
16.5-20	2.5Y 5/2	99	10YR 5/6	1	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR R, MLRA 149B)**
- __ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- __ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- __ Loamy Mucky Mineral (F1) **(LRR K, L)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- __ Coast Prairie Redox (A16) **(LRR K, L, R)**
- __ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- __ Dark Surface (S7) **(LRR K, L, M)**
- __ Polyvalue Below Surface (S8) **(LRR K, L)**
- __ Thin Dark Surface (S9) **(LRR K, L)**
- __ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- __ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes X No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stun Lublin City/County: Eau Claire Co Sampling Date: 9/22/12
Applicant/Owner: DPC State: WI Sampling Point: 065D4
Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3
Subregion (LRR or MLRA): LRR K Lat: 44 40 9.08 Long: -91 1 37.27 Datum: NAD83
Soil Map Unit Name: Vesper loam NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soil Present? Yes ___ No X Wetland Hydrology Present? Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Structure 32

Photo 0096, 0097

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ______
Water Table Present?	Yes ___	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 065 04

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: ______)			
1. Phalaris arundinacea	95		FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 = Total Cover		

Woody Vine Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 065D4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100					loam	
4-13	2.5Y 4/1	97	10YR 3/6	3	C	PL	loam	
13-22	2.5Y 3/1	97	10YR 3/4	3	C	PL	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains
[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	065D1	DATE
Northeast	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	065D2	DATE
West	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/22/2012

067D 068

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/23/12

Applicant/Owner: DPC State: WI Sampling Point: 0607D1

Investigator(s): KB + AJ Section, Township, Range: S6 T25N R5W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 40 8.33 Long: -91 1 6.62 Datum: NAD83

Soil Map Unit Name: Elm Lake loamy sand NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present? Yes X No ____	
Wetland Hydrology Present? Yes X No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 101 – 103

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 10

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 06701

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Calamagrostis canadensis	25	Y	OBL
2. Carex stricta	20	Y	OBL
3. Carex vulpinoidea	15	N	OBL
4. Eutrochium maculatum	1	N	OBL
5. Glyceria canadensis	7	N	OBL
6. Scirpus atrovirens	20	Y	OBL
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	88		

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- __ 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 067D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-11	2.5Y 3/1	100					Silty clay loam	
11-18	2.5Y 6/2	98	10YR 3/6	2			Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stum Lublin City/County: Eau Claire Co Sampling Date: 9/23/12

Applicant/Owner: DRC State: WI Sampling Point: 0707-2 & 068

Investigator(s): KB + AJ Section, Township, Range: S5 T25N R5W

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): LRR K Lat: 44 40 8.23 Long: -91 0 58.77 Datum: NAD83

Soil Map Unit Name: Ludington + Humbird soils NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

Photo # 99, 100

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 067D2 & 068D2

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	1	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover	1		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	1	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover	1		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	25	N	FACW
2. Solidago gigantea	15	N	FACW
3. Poa compressa	50	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	90		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	40	x 2 = 80
FAC species	0	x 3 = 0
FACU species	52	x 4 = 208
UPL species	0	x 5 = 0
Column Totals:	92 (A)	(B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 06702 E06802

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	100					loam	
5-7	10YR 5/3	97	10YR 4/6	3			silt loam	
7-18	2.5Y 6/3	100					silt loam	gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strum Lublin City/County: Eau Claire Co Sampling Date: 9/23/12

Applicant/Owner: DPC State: WI Sampling Point: 068D1

Investigator(s): KB + AJ Section, Township, Range: S5 T25N R5W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR K Lat: 44 40 8.67 Long: -91 0 57.41 Datum: NAD83

Soil Map Unit Name: Elm Lake loamy sand NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

Photo #0098

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 068D1

Tree Stratum (Plot size: ________)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ________)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum (Plot size: ________)			
1. Phalaris arundinacea	100		FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: ________)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ________ (A)

Total Number of Dominant Species Across All Strata: ________ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ________ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	________	x 1 = ________
FACW species	________	x 2 = ________
FAC species	________	x 3 = ________
FACU species	________	x 4 = ________
UPL species	________	x 5 = ________
Column Totals:	________ (A)	________ (B)

Prevalence Index = B/A = ________

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ______

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 068D1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	98	10YR 3/6	2	C	PL	loam	
5-18	2.5Y 6/1	95	10YR 4/6	5	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

Strum-Lublin 69kV (N-3) Transmission Line Rebuild Project

Phase I: Strum Tap to Willard Tap

DIRECTION	FEATURE ID	067D	DATE
Northwest	PHOTOGRAPHER	Kathy Bellrichard and Apryl Jennrich	9/23/2012