Wetland Delineation Report

Project ID# 1560-31-00/71

Cumberland - Spooner
Woodyard Road to CTH B (East)
USH 63
Washburn County

Prepared by the Wisconsin Department of Transportation
Northwest Region
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Contents

Wetland Delineation Report
- Project Summary……. 1
- Delineators……... 1
- Equipment…… 1
- Pre-delineation Resources…… 2
- Delineation Methods…… 2
  - Vegetation
  - Hydrology
  - Soils
- Delineation ……. 4
  - Wetland site 1
  - Wetland site 2
  - Wetland site 3
  - Wetland site 4
  - Wetland site 5
  - Wetland site 6
  - Wetland site 7
  - Wetland site 8
  - Wetland site 9
  - Wetland site 10
  - Wetland site 11
- Wetland Impacts……. 7
- Wetland Mitigation……. 8

Appendix A (Tables and Figures)
- Figure 1: Project Location Map
- Figure 2: Wisconsin Wetland Inventory Map
- Figure 3: NRCS Hydric Soils Map
- Figure 4: Project Impact Location Map
- Figure 5: WMBAS form

Appendix B (Monitoring Forms)
- Monitoring Forms 1-22: Wetland/Upland site 1-11

Appendix C (Photos)
- Photo 1-22: Wetland/Upland site 1-11

Project Summary

The Wisconsin Department of Transportation (WisDOT) has proposed a resurface project on USH 63 from Woodyard Road to CTH B (East) in Washburn County. This project also includes some reconstruction within the urban area of the City of Shell Lake. The reconstruction work involves converting the existing two lane roadway into a three lane roadway with a two-way left turn lane between the travel lanes, as well as construction of raised median pedestrian refuge islands for safer pedestrian crossing in several locations. Work in the urban area will also improve and lengthen right turn lanes at CTH D, and construct intersections with 200 foot right turn lanes with curb and gutter at Pederson Road and CTH B (east). Construction of a new storm sewer as well as some City of Shell Lake utility work on sanitary sewer and water lines will take place, with reconstruction of storm sewer outfalls. Within the rural area several culvert pipes will be cleaned, have concrete culvert ends replaced and have the addition of apron end walls. Also, two side road culverts will be replaced and two mainline culverts will be lined.

There are unavoidable wetland impacts associated with this project. The area surrounding construction has been delineated according to the US Army Corps of Engineers 1987 Wetland Delineation Manual and the US Army Corps of Engineers 2012 Midwest Supplement and the impacted wetland type and acreage have been determined based on three criteria—vegetation, hydrology, and soils.

Wetland Delineators

The delineation for project 1560-31-00/71 was conducted on multiple site visits by multiple Wisconsin Department of Transportation Environmental Analysis and Review Specialist interns (EARS), over a span of three years (2010-2013). All of the interns involved in completing wetland delineations for this project have graduated from the University of Wisconsin system and have obtained a BS in Biology or a related field. During employment, all EARS interns completed the Basic and Advanced Wetland Delineation training through the University of Wisconsin- La Crosse.

Equipment

- In order to conduct the delineation, several pieces of field equipment were used, including:
  - Trimble Geo XH Global Positioning System Unit 6000 Series
  - Munsell® Soil Color Chart 2010 edition
  -20 inch WSA soil boring tool
  - Field identification books:
    - "Wetland Plants and Plant Communities of Minnesota and Wisconsin" 2nd ed.
    - "Wildflowers of Wisconsin and the Great Lakes Region; A Comprehensive Field Guide" 2nd ed.
    - "A Great Lakes Wetland Flora" 3rd ed.
- In the office, software programs were used, including:
  -GPS Pathfinder Office Software version 5.40
  -Microstation V8i 2010 Edition
  - Microsoft Office Series 2007

Pre-Delineation Resources

- *United States Agriculture Department- Natural Resource Conservation Service*
  - Web Soil Survey
    - Hydric soil map
- *Department of Natural Resources*
  -Surface Water Data Finder
    - WI Wetland Inventory Map

Delineation Methods

Wetlands are delineated by examining an area for the presence of wetland indicators. There are three categories of indicators used to determine if an area is a wetland: vegetation, hydrology, and soils. Samples and observations of these wetland indicators are necessary for proper delineation. First, a site walk of the project area is completed in order to identify areas that may fit the wetland criteria. Second, transects are set up perpendicular to the proposed wetland boundary and data plots are taken. Data plots are usually taken in reference to obvious changes in topography and/or vegetation. At each of the data plots, criteria for hydrophytic vegetation, hydric soils, and hydrology is checked for.

A list of the most prevalent plant species is made and then compared to the *National List of Plant Species that Occur in Wetlands*, published by the U.S. Fish and Wildlife Service, in order to determine the likelihood of that species occurring in a wetland by defining their wetland indicator status.

Soil samples are collected using a soil probe or shovel to collect the first 20 inches of soil. Examination of the sample is then conducted for evidence of saturation, as well as other soil indicators listed in the US Army Corps of Engineers 1987 Wetland Delineation Manual. This manual is used as a reference guide to compare our methods, observations, and data with proper delineation techniques and information.

Field observation of the soils, vegetation, and the general area are used determine the presence of hydrology indicators.

After soil samples, lists of vegetation, and on-site hydrology observations are made and recorded, in conjunction with using reference materials and on site observations, wetland areas are confirmed. After verifying the wetland area, the wetland boundary is delineated between upland and wetland plots.

The resurfacing, reconstruction and culvert maintenance on USH 63 will permanently impact eleven wetland areas. The area surrounding construction has been delineated and the impacted wetland type and acreage have been determined.

Vegetation:

- It is stated in the US Army Corps of Engineers 1987 Wetland Delineation Manual that "hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions". These species are labeled FAC, FACW, and/or OBL. Accordingly, if an area is dominated by ≥50% of these species, it meets the wetland vegetation requirement.
- Through species identification, the impacted wetlands were all determined to have hydrophytic dominance in proportions ≥50%. Dominant species include Shining

Willow *(Salix lucida),* Sandbar Willow (*Salix interior),* Green Ash (*Fraxinus pensylvanica),* Black Ash *(Fraxinus nigra)*, Quaking Aspen *(Populus tremuloides)*, Speckled Alder *(Alnus incana)*, Red-Osier Dogwood (*Cornus alba*), Reed Canary Grass (*Phalaris arundinacea*), Lake Sedge (*Carex lacustris)*, Orange Jewelweed *(Impatiens capensis)*, Arrowleaf Tearthumb *(Persicaria sagittata)*, Black Bulrush *(Scirpus atrovirens)*, Sensitive Fern *(Onoclea sensibilis)*, and Giant Goldenrod *(Solidago gigantea)*. The hydrophytic vegetation present at these plots is similar to common species found among meadow (M), shrub-scrub (SS), wooded swamp (WS), riparian forest (RPF), and deep marsh (DM) wetland environments. The species found in these plots are listed in the vegetation section of the Routine Wetland Delineation Forms located in Appendix B.

Hydrology:

- Paragraph 55 of the US Army Corps of Engineers 1987 Wetland Delineation Manual states, "an area has wetland hydrology if it is inundated or saturated to the surface continuously for at least 5% of the growing season in most years (50% probability of recurrence)." The growing season for this definition is determined based on the number of frost-free days for a certain area.
- Hydrology of the impacted wetland areas was determined using several indicators. All sites had primary indicators of saturation within 12 inches of the surface. Seven sites had presence of the water table within 12 inches of the surface, one site had surface water, one site had water stained leaves, and one site had presence of oxidized rhizospheres on living roots, all primary indicators. A secondary indicator observed at all sites was the FAC-Neutral test; four sites also had presence of a dry-season water table, two sites had moss trim lines, and one site had a secondary indicator of geomorphic position.

Soils:

- According to the U.S.D.A Natural Resources Conservation Service (NRCS) a hydric soil is, "A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part."
- The Soil Survey and the Hydric Soils List for Washburn County were obtained from the United States Department of Agriculture (USDA). The soil type listed for the areas impacted by this project is loam and muck soils.

1. Wetlands 56, 58, 59, & 60

Freeon- soils are listed on the NRCS Web Soil Survey as having a moderately well drained drainage class. Depth to water table is about 12 inches.

Map Unit symbol: 157C

Wetland Type: Wooded Swamp (WS) & Meadow (M)

2. Wetlands 59, 73, 74, 78, & 81

Seelyeville and Cathro soils- soils are listed on the NRCS Web Soil Survey as having a very poorly drained drainage class, with frequent ponding. Depth to water table is about 0 inches.
Map Unit symbol: 410A
Wetland Type: Wooded Swamp (WS), Meadow (M) and Shrub-Scrub (SS)

3. Wetlands 81 & 102

Magnor- soils are listed on the NRCS Web Soil Survey as having a somewhat poorly drained drainage class. Depth to water table is about 6 inches.
Map Unit symbol: 156B
Wetland Type: Meadow (M) & Wooded Swamp (WS)

4. Wetlands 102 & 126

Oesterle sandy loam- soils are listed on the NRCS Web Soil Survey as having a somewhat poorly drained drainage class Depth to water table is about 12 inches.
Map Unit symbol: 160A
Wetland Type: Wooded Swamp (WS) & Deep Marsh (DM)

5. Wetland 151

Fordum silt loam- soils are listed on the NRCS Web Soil Survey as having a poorly drained drainage class, with frequent flooding and ponding. Depth to water table is about 0 inches.
Map Unit symbol: 555A
Wetland Type: Riparian Forest (RPF)

- Soil samples were taken at all data plots to 20 inches or to an unavoidable resistance. Hydric soil indicators were present among all wetland sites for this project. Histosol, loamy mucky mineral, loamy gleyed matrix, sandy gleyed matrix, depleted below dark surface, depleted dark surface, redox dark surface, sandy redox, and sandy mucky mineral were the hydric soil indicators present. Full soil profiles are included in the Routine Wetland Delineation Forms in Appendix B.

Delineation

One hundred and fifty one different wetlands have been determined to be within the limits of the projects, but only eleven will be impacted. The delineation of the wetlands included the establishment of one hundred and fifty one upland monitoring sites as well as one hundred and fifty one wetland sites, but only eleven wetland and upland sites will be impacted. Below is the summary for the wetlands that will be impacted.

- Wetland 56- Wooded Swamp (Monitoring Forms 1-2)
    - Monitoring form 1 (Wetland 56): This wetland lies on the west side of USH 63 in the southwest corner of the USH 63 and Woodyard Road intersection and is associated with a wooded swamp (WS) wetland type. Dominant hydrophytic species in this area include Orange Jewelweed, Arrowleaf Tearthumb, Quaking Aspen and Black Ash; non-dominant species include Reed Canary Grass and Speckled Alder. At this site, loam and loamy clay soils were found. The soils

were saturated at eight inches and the hydric soil indicator found was depleted below dark surface (A11). No surface water was found at this site.
    - Monitoring form 2 (Upland 56): The upland portion of this site was dominated by Large Leaved Aster, Pennsylvania Sedge and Red Maple. Sandy loam soils were found up to a refusal at ten inches and no hydric soil indicator was obtained.
- Wetland 58- Meadow (Monitoring Forms 3-4)
    - Monitoring form 3 (Wetland 58): This wetland lies on the east side of USH 63 in the northeast corner of the USH 63 and Woodyard Road intersection. It is located in a triangular area of land between the intersections of USH 63, Woodyard Road and North Woodyard Road and is associated with a meadow (M) wetland type. Dominant hydrophytic species in this area was Reed Canary Grass; there were no non-dominant species. At this site, loam and loamy clay soils were found. The soils were saturated at five inches and the hydric soil indicator found was depleted dark surface (F7). No surface water was found at this site.
    - Monitoring form 4 (Upland 58): The upland portion of this site was dominated by Birdsfoot Trefoil and Reed Canary Grass. Soils were not obtained due to refusal at the surface.
- Wetland 59- Wooded Swamp (Monitoring Forms 5-6)
    - Monitoring form 5 (Wetland 59): This wetland lies on the west side of USH 63 in the northwest corner of the USH 63 and North Woodyard Road intersection and is associated with a wooded swamp (WS) wetland type. Dominant hydrophytic species in this area include Reed Canary Grass, Black Bulrush, Sandbar Willow and Green Ash; non-dominant species include Fireweed, Giant Goldenrod, and Spotted Joe-Pye-Weed. At this site, loam and silt loam soils were found. The soils were saturated at five inches and the hydric soil indicator found was redox dark surface (F6). No surface water was found at this site.
    - Monitoring form 6 (Upland 59): The upland portion of this site was dominated by Birdsfoot Trefoil and Reed Canary Grass. Soils were not obtained due to refusal at the surface.
- Wetland 60- Meadow (Monitoring Forms 7-8)
    - Monitoring form 7 (Wetland 60): This wetland lies on the west side of USH 63 in the northeast corner of the USH 63 and North Woodyard Road intersection and is associated with a meadow (M) wetland type. Dominant hydrophytic species in this area include Reed Canary Grass and Speckled Alder; there were no non-dominant species. At this site, clay loam and loamy clay soils were found. The soils were saturated at six inches and the hydric soil indicator found was redox dark surface (F6). No surface water was found at this site.
    - Monitoring form 8 (Upland 60): The upland portion of this site was dominated by Quack Grass and Pennsylvania Sedge. Soils were not obtained due to refusal at the surface.
- Wetland 73- Meadow (Monitoring Forms 9-10)
    - Monitoring form 9 (Wetland 73): This wetland lies on the east side of USH 63 roughly 0.25 miles south of the USH 63 and Heart Lake Road intersection and is associated with a meadow (M) wetland type. Dominant hydrophytic species in this area include Reed Canary Grass and Sandbar Willow; non-dominant species include Water Smartweed and Orange Jewelweed. At this site, loam soils were

found. The soils were saturated at ten inches and the hydric soil indicator found was histosol (A1). No surface water was found at this site.
    - Monitoring form 10 (Upland 73): The upland portion of this site was dominated by Reed Canary Grass and Yarrow. Loamy sand soils were found up to a refusal at eight inches and no hydric soil indicator was obtained.
- Wetland 74- Shrub-Scrub (Monitoring Forms 11-12)
    - Monitoring form 11 (Wetland 74): This wetland lies on the west side of USH 63 roughly 0.25 miles south of the USH 63 and Heart Lake Road intersection and is associated with a shrub-scrub (SS) wetland type. Dominant hydrophytic species in this area include Sandbar Willow and Reed Canary Grass; non-dominant species include Steeplebush. At this site, sandy loam soils were found. The soils were completely saturated and the hydric soil indicator found was sandy redox (S5). No surface water was found at this site.
    - Monitoring form 12 (Upland 74): The upland portion of this site was dominated by Reed Canary Grass Reed Canary Grass and Yarrow. Loamy sand soils were found up to a refusal at seven inches and no hydric soil indicator was obtained.
- Wetland 78- Meadow (Monitoring Forms 13-14)
    - Monitoring form 13 (Wetland 78): This wetland lies on the east side of USH 63 in the northeast corner of the USH 63 and Heart Lake Road intersection, between USH 63 and Old HWY 63. It is associated with a meadow (M) wetland type. Dominant hydrophytic species in this area include Sandbar Willow, Shining Willow and Reed Canary Grass; non-dominant species include Spotted Joe-Pye-Weed and Steeplebush. At this site, peat soils were found. The soils were completely saturated and the hydric soil indicator found was histosol (A1). No surface water was found at this site.
    - Monitoring form 14 (Upland 78): The upland portion of this site was dominated by Pennsylvania Sedge and Bull Thistle. Soils were not obtained due to refusal at the surface.
- Wetland 81- Meadow (Monitoring Forms 15-16)
    - Monitoring form 15 (Wetland 81): This wetland lies on the east side of USH 63 in the northeast corner of the USH 63 and Old HWY 63 intersection and is associated with a meadow (M) wetland type. Dominant hydrophytic species in this area include Sandbar Willow, Lake Sedge and Sensitive Fern; non-dominant species include Giant Goldenrod, Spotted Joe-Pye-Weed, Reed Canary Grass and Black Bulrush. At this site, peat and silty clay loam soils were found. The soils were saturated at five inches and the hydric soil indicator found was redox dark surface. No surface water was found at this site.
    - Monitoring form 16 (Upland 81): The upland portion of this site was dominated by Pennsylvania Sedge. Soils were not obtained due to refusal at the surface.
- Wetland 102- Wooded Swamp (Monitoring Forms 17-18)
    - Monitoring form 17 (Wetland 102): This wetland lies on the west side of USH 63 roughly 0.15 miles south of the USH 63 and Hilltop Road intersection and is associated with a Wooded Swamp (WS) wetland type. Dominant hydrophytic species in this area include Reed Canary Grass, Quaking Aspen and Sandbar Willow; non-dominant species include Giant Goldenrod. At this site, peat soils

were found. The soils were saturated at six inches and the hydric soil indicator found was histosol (A1). No surface water was found at this site.

- Monitoring form 18 (Upland 102): The upland portion of this site was dominated by Big Blue Stem Grass and Common Ragweed. Soils were not obtained due to refusal at the surface.

- Wetland 126- Deep Marsh (Monitoring Forms 19-20)
  - Monitoring form 19 (Wetland 126): This wetland lies on the west side of USH 63 roughly 0.10 miles south of the USH 63 and Hilltop Road intersection and is associated with a deep marsh (DM) wetland type. Dominant hydrophytic species in this area include Reed Canary Grass and Lake Sedge; non-dominant species include Broad Leaved Cattail, Bebbs Willow and Duckweed. At this site, loam, loamy sand and clay soils was found. The soils were completely saturated and the hydric soil indicators found were loamy gleyed matrix (F2), loamy mucky mineral (F1) and loamy gleyed matrix (F2). Two inches of surface water was found at this site.
  - Monitoring form 20 (Upland 126): The upland portion of this site was dominated by Pennsylvania Sedge. Soils were not obtained due to refusal at the surface.
- Wetland 151- Riparian Forest (Monitoring Forms 21-22)
  - Monitoring form 21 (Wetland 151): This wetland lies on the west side of USH 63 in the northwest corner of the USH 63 and CTH B (West) intersection in the City of Shell Lake. It is associated with a riparian forest (RPF) wetland type. Dominant hydrophytic species in this area include Reed Canary Grass, Red Osier Dogwood, Sandbar Willow, and Speckled Alder; non-dominant species include Ostrich Fern, River Clubrush, Climbing Nightshade, Canadian Moon Seed, Orange Jewelweed, American Red Raspberry and Lake Sedge. At this site, sandy soils were found. The soils were saturated at six inches and the hydric soil indicators found were sandy mucky mineral (S1) and sandy redox (S5). No surface water was found at this site.
  - Monitoring form 22 (Upland 151): The upland portion of this site was dominated by Crown Vetch, Quack Grass and Sandbar Willow. Sandy soils were found and no hydric soil indicator was obtained.

Wetland Impacts

The cumulative **permanent** wetland impacts for the USH 63 project in Washburn County are 0.373 acres. The impacted acreage consists of:

- 0.139 acres of wooded swamp (WS)
- 0.119 acres of meadow (M)
- 0.002 acres of shrub-scrub (SS)
- 0.105 acres of deep marsh (DM)
- 0.008 acres of riparian forest (RPF)

There will also be **temporary** wetland impacts from the USH 63 project. The impacted acreage consists of:

- 0.024 acres of wooded swamp (WS)
- 0.061 acres of meadow (M)
- 0.310 acres of shrub-scrub (SS)

The permanent losses will be mitigated according to and at a ratio consistent with the Wisconsin DOT Wetland Mitigation Banking Technical Guideline (2002 revision). The temporary wetland impacts will not be mitigated for, as they will be restored once the project is complete. For the wooded swamp (WS) and shrub-scrub (SS) areas that will be temporarily impacted, no clearing or removal of woody vegetation will take place, only cleaning of culverts. Delineation monitoring forms demonstrating wetland criteria in each sampling area can be found in Appendix B of this report. Photos of the delineated areas for these projects are located in Appendix C (Photos 1-22).

The area that will be temporarily impacted while construction is taking place will be restored once construction is complete. This is done by laying a geotextile fabric between the existing ground and the temporary fill. This is done to ensure that no artificial soils get incorporated into the present and natural wetland soils as well as to mark where the native wetland soil boundary is located. A silt screen is placed along the creek and silt fencing along the wetland boundaries. This is done to ensure no particulates of fill soil from erosion or other causes will enter the water or wetlands. After the construction is complete, the soils will be undisturbed and seeding will be done to ensure that any vegetation that may have been disturbed or destroyed while completing this project is restored.

Wetland Mitigation

According to the NRCS, “mitigation is compensation through wetland restoration, enhancement, or creation for functions and values that are lost on a converted wetland”. The total permanent wetland impact for the USH 63 project located in Washburn County is 0.373 acres. The permanent losses will be mitigated by debiting them to the WisDOT Lauritsen Wetland Mitigation Bank Site in Burnett County at a ratio consistent with the Wisconsin DOT Wetland Mitigation Banking Technical Guideline (2002 revision). The 0.139 acres of wooded swamp (WS) wetland will be mitigated at a 1:1 compensation ratio to wooded swamp (WS) totaling 0.139 acres; the 0.119 acres of meadow (M) wetland will be mitigated at a 1:1 compensation ratio to meadow (M) totaling 0.119 acres; the 0.002 acres of shrub-scrub (SS) wetland will be mitigated at a 1:1 compensation ratio to wooded swamp (WS) totaling 0.002 acres; the 0.105 acres of deep marsh (DM) wetland will be mitigated with a 1:1 compensation ratio to deep marsh (DM) totaling 0.105 acres; and the 0.008 acres of riparian forest (RPF) wetland will be mitigated with a 1:1.3 compensation ratio to wooded swamp (WS) totaling 0.010 acres. A Wetland Mitigation Bank Accounting Sheet (WMBAS) is included at the end of Appendix A, summarizing the wetland losses and mitigation plans.

Appendix A

Tables and Figures

Figure 1- Project Location Map

PROJECT ID:

WITH:

COUNTY:

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS =

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1560-31-71		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

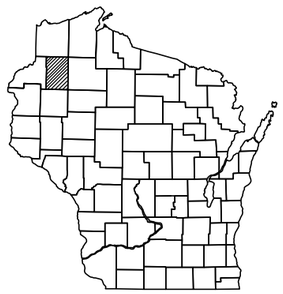
PLAN OF PROPOSED IMPROVEMENT

CUMBERLAND - SPOONER ROAD

WOODYARD ROAD - CTH B (EAST)

USH 63

WASHBURN COUNTY

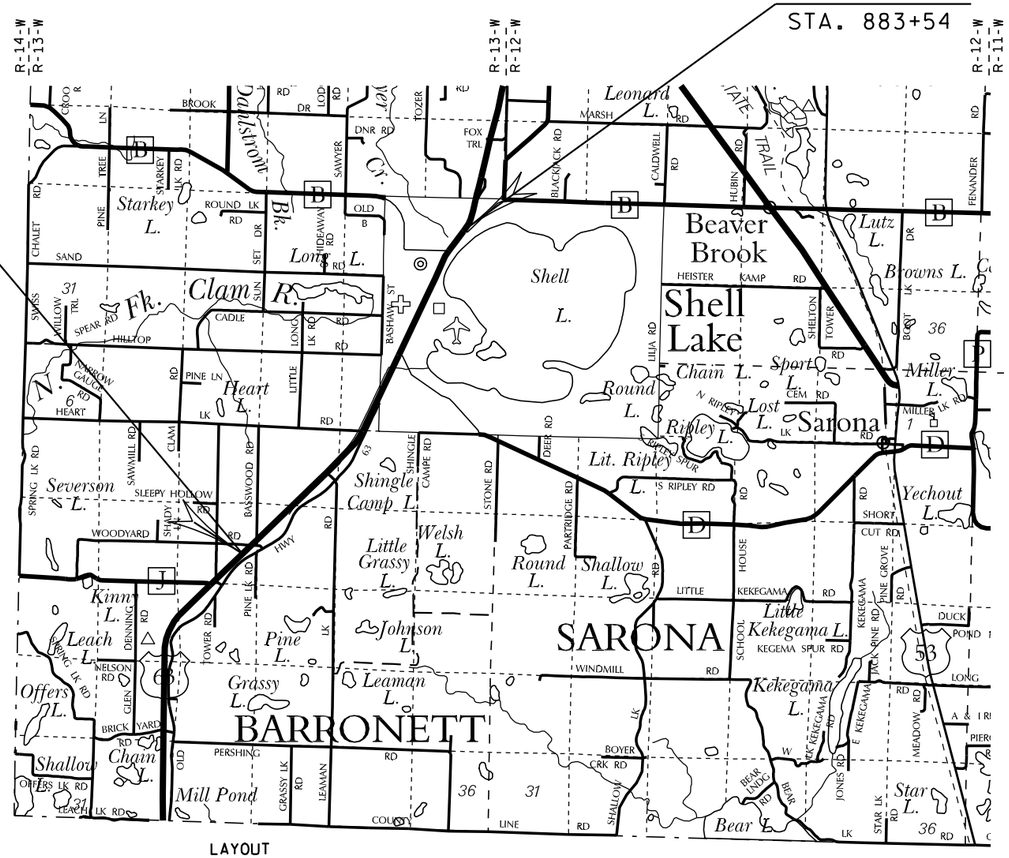


N

STATE PROJECT NUMBER
1560-31-71

BEGIN PROJECT
STA. 625+00
N = 518858.64
E = 719626.34

END PROJECT
STA. 883+54



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 4.897 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), WASHBURN COUNTY.

DESIGN DESIGNATION

	(WOODYARD RD. -CTH D)	(CTH D - W. LAKE DR.)	(W. LAKE DR. - CTH B EAST)
A.A.D.T. (2014)	= 3700	= 4300	= 6400
A.A.D.T. (2034)	= 4500	= 5500	= 7400
D.H.V. (2034) (K30)	= 630	= 770	= 1036
D.D.	= 63/37 %	= 63/37 %	= 63/37 %
T. (DHV)	= 5.4	= 5.4	= 5.4
DESIGN SPEED	= 60 MPH	= 50 MPH	= 40 MPH
ESALS	=	=	=

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ACCEPTED FOR
CITY of SHELL LAKE

(Date) (Signature & Title of Official)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	DOT/NWBE
Designer	GREG PESOLA
Project Manager	PHIL KEPPERS
Regional Examiner	
Regional Supervisor	DAVE OSTROWSKI
C.O. Examiner	

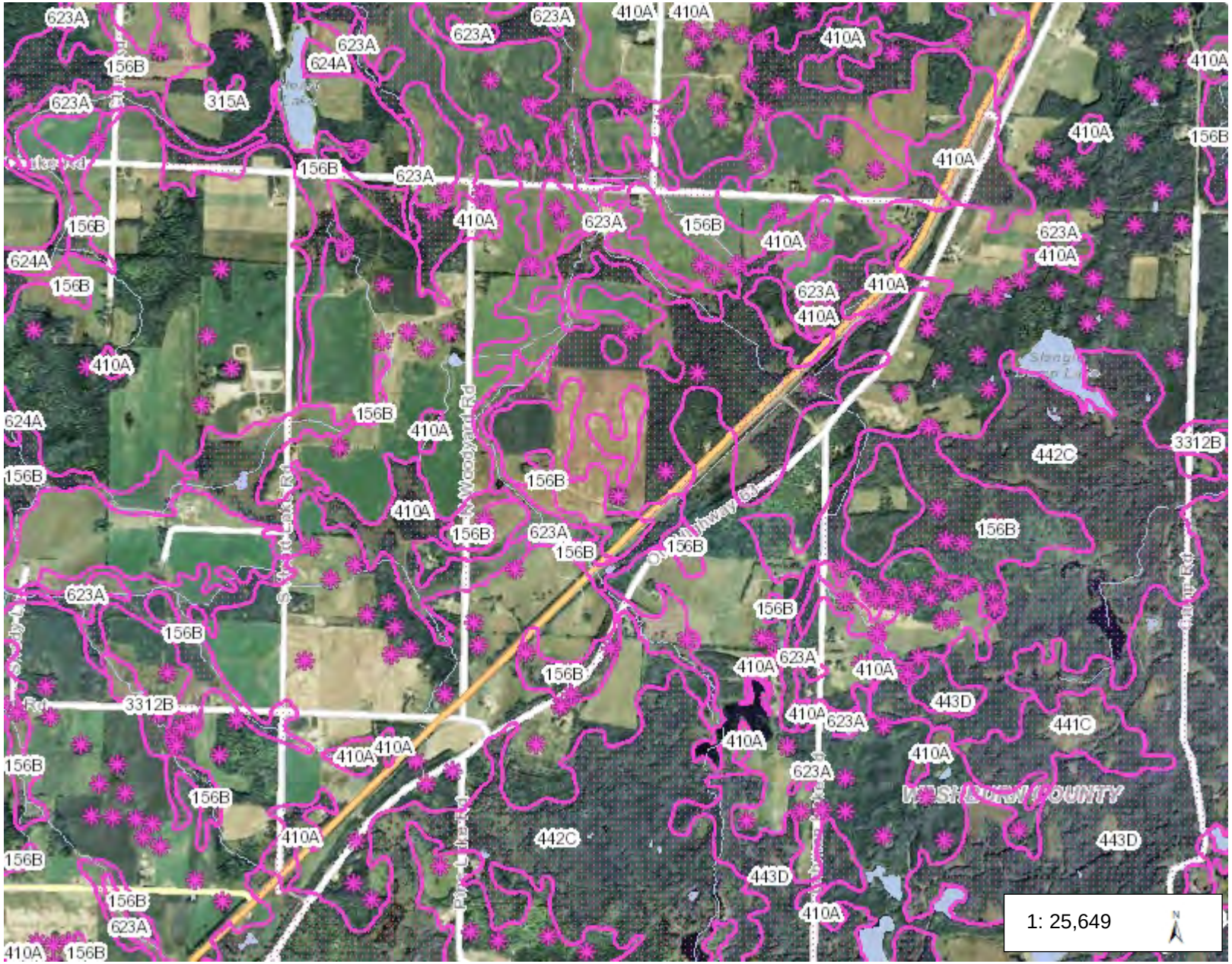
APPROVED FOR THE DEPARTMENT

DATE: (Signature)

E

Figure 2a- Wisconsin Wetland Inventory Map

Surface Water Data Viewer Map 1560-31-00/71 Wet 56, 58, 59, 60, 73, & 74



Legend

- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- NRCS Wetspots
- Wetland Indicators
- Rivers and Streams
- Open Water
- Air Photo Index (2008 NAIP)

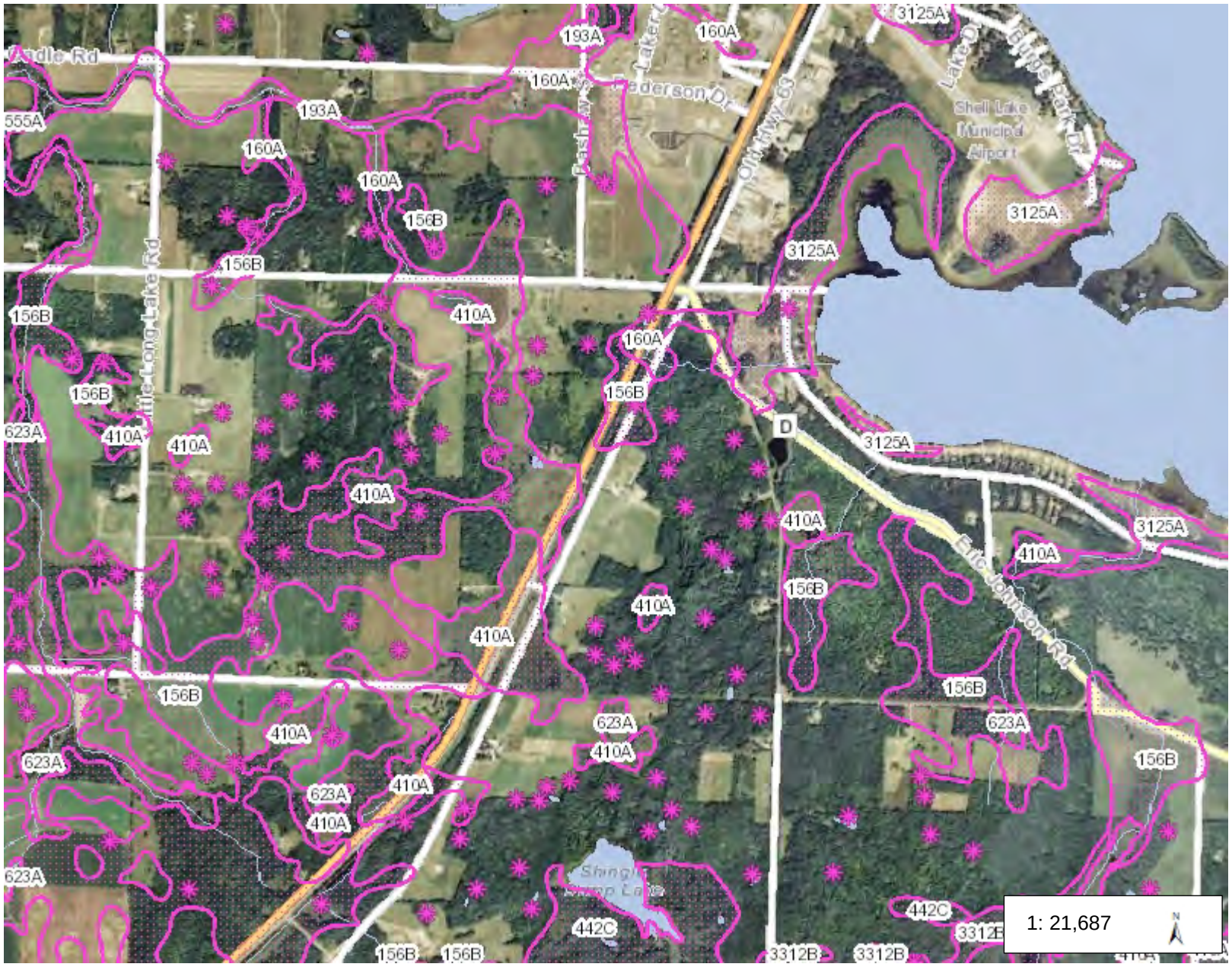
Notes

0.8 0 0.40 0.8 Miles

NAD_1983_HARN_Wisconsin_TM

Figure 2b- Wisconsin Wetland Inventory Map

Surface Water Data Viewer Map 1560-31-00/71 Wet 78, 81, 102, & 126



Legend

- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
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- Open Water
- Air Photo Index (2008 NAIP)

Notes

0.7 0 0.34 0.7 Miles

NAD_1983_HARN_Wisconsin_TM

Figure 2c- Wisconsin Wetland Inventory Map

Surface Water Data Viewer Map 1560-31-00/71 Wet 151

Legend

- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- NRCS Wetspots
- Wetland Indicators
- Rivers and Streams
- Open Water
- Air Photo Index (2008 NAIP)

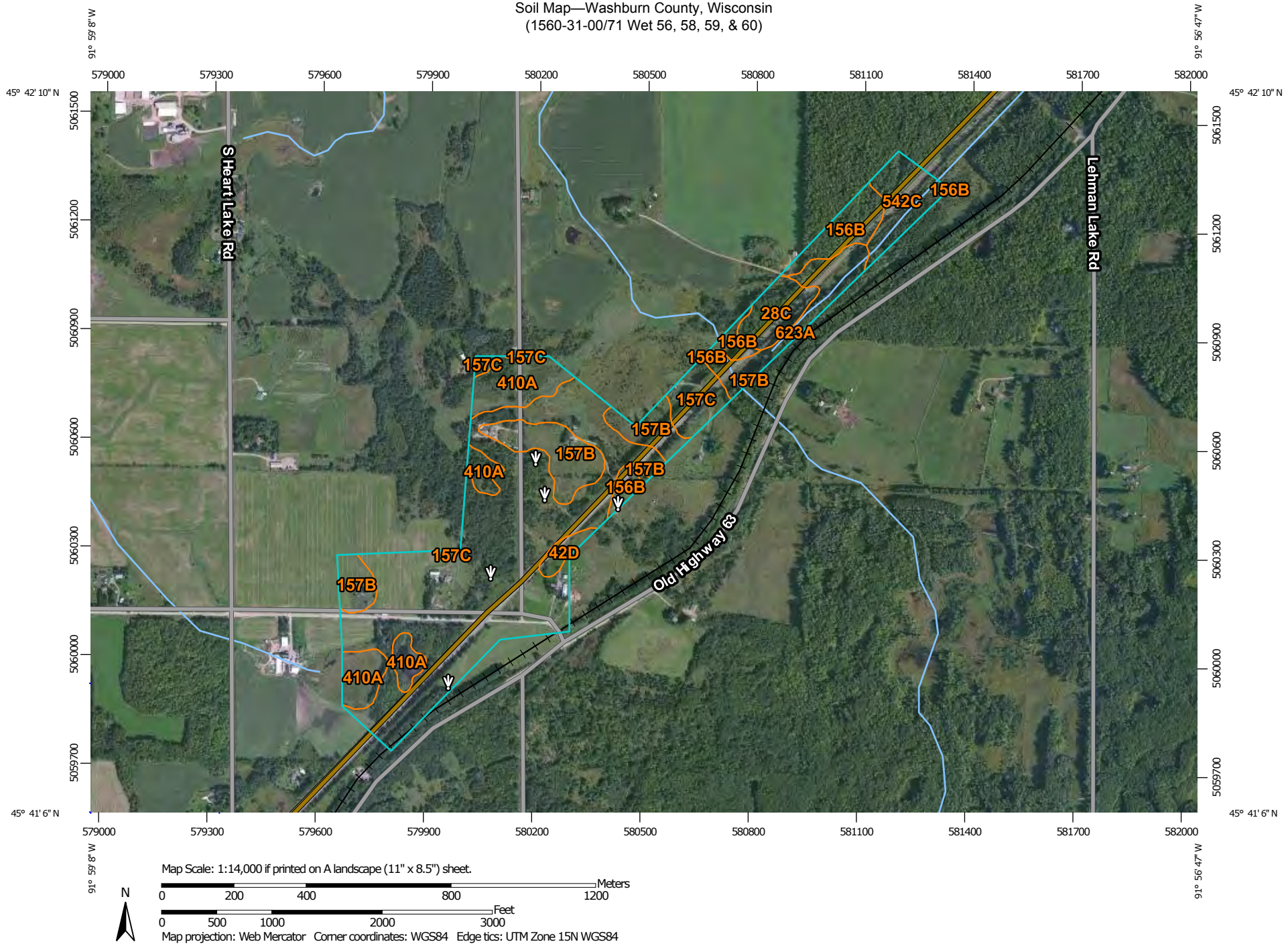
Notes

0.3 0 0.16 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

Figure 3a- NRCS Hydric Soils Map

Soil Map—Washburn County, Wisconsin
(1560-31-00/71 Wet 56, 58, 59, & 60)

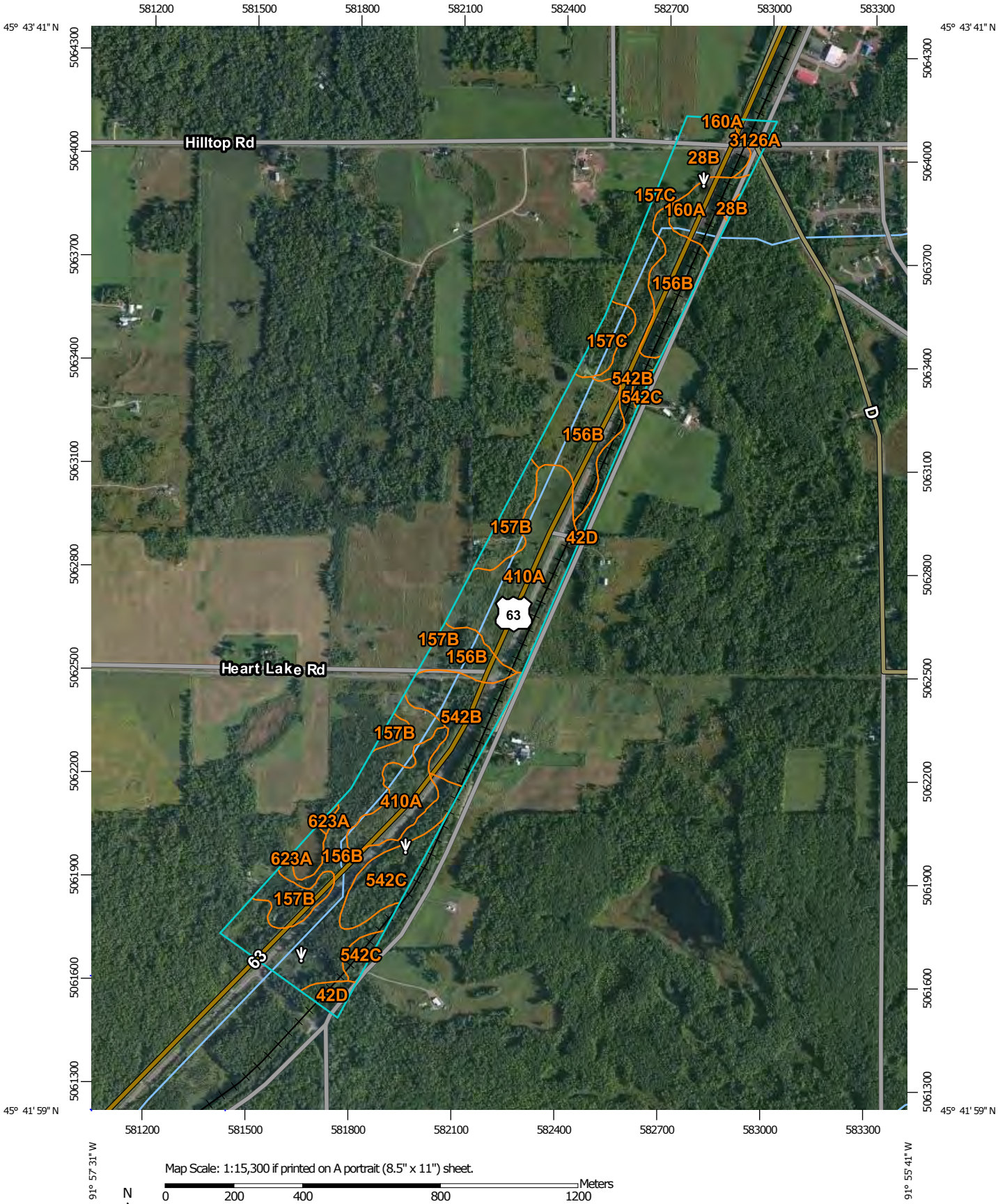


Map Unit Legend

Washburn County, Wisconsin (WI129)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
28C	Haugen-Rosholt complex, 6 to 12 percent slopes, very stony	6.3	4.1%
42D	Amery sandy loam, 12 to 25 percent slopes, very stony	2.0	1.3%
156B	Magnor, very stony-Magnor complex, 0 to 4 percent slopes	9.4	6.1%
157B	Freeon, very stony-Freeon complex, 2 to 6 percent slopes	16.8	11.0%
157C	Freeon, very stony-Freeon complex, 6 to 12 percent slopes	84.6	55.4%
410A	Seelyeville and Cathro soils, 0 to 1 percent slopes	16.0	10.5%
542C	Haugen, very stony-Haugen complex, 6 to 12 percent slopes	8.1	5.3%
623A	Capitola muck, 0 to 2 percent slopes, very stony	9.6	6.3%
Totals for Area of Interest		**152.7**	**100.0%**

Figure 3b- NRCS Hydric Soils Map

Soil Map—Washburn County, Wisconsin
(1560-31-00/71 Wet 73, 74, 78, 81, 102, & 126)

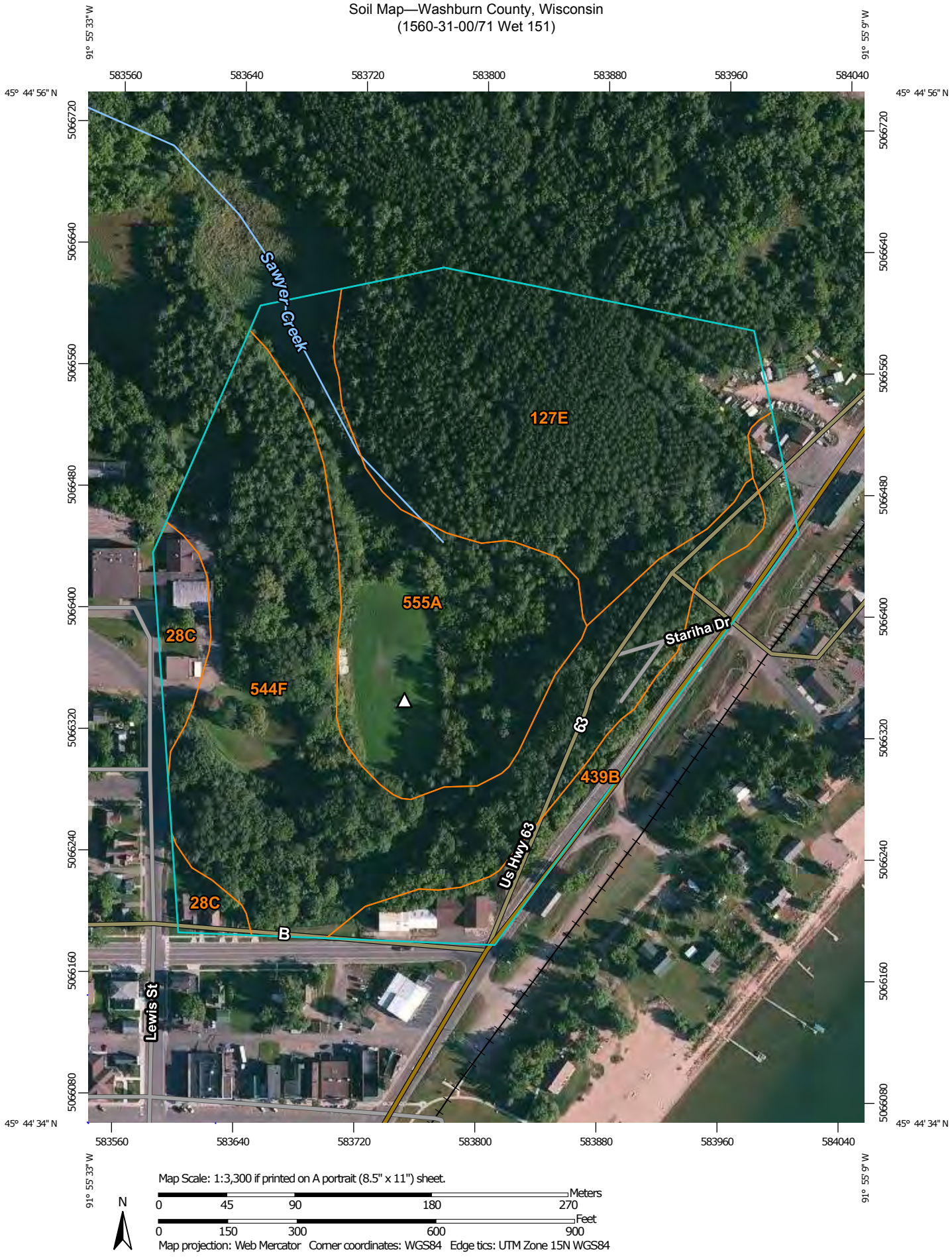


Legend for Figure 3b

Map Unit Legend

Washburn County, Wisconsin (WI129)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
28B	Haugen-Rosholt complex, 2 to 6 percent slopes, very stony	10.2	5.6%
42D	Amery sandy loam, 12 to 25 percent slopes, very stony	2.3	1.3%
156B	Magnor, very stony-Magnor complex, 0 to 4 percent slopes	65.2	35.5%
157B	Freeon, very stony-Freeon complex, 2 to 6 percent slopes	12.3	6.7%
157C	Freeon, very stony-Freeon complex, 6 to 12 percent slopes	4.5	2.5%
160A	Oesterle sandy loam, 0 to 2 percent slopes	7.4	4.0%
410A	Seelyeville and Cathro soils, 0 to 1 percent slopes	38.5	21.0%
542B	Haugen, very stony-Haugen complex, 2 to 6 percent slopes	28.2	15.4%
542C	Haugen, very stony-Haugen complex, 6 to 12 percent slopes	11.8	6.4%
623A	Capitola muck, 0 to 2 percent slopes, very stony	0.5	0.3%
3126A	Wurtsmith loamy sand, 0 to 3 percent slopes	2.5	1.4%
Totals for Area of Interest		**183.6**	**100.0%**

Figure 3c- NRCS Hydric Soils Map



Legend for Figure 3c

Map Unit Legend

Washburn County, Wisconsin (WI129)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
28C	Haugen-Rosholt complex, 6 to 12 percent slopes, very stony	1.4	3.9%
127E	Amery-Rosholt complex, 20 to 45 percent slopes, very stony	10.9	30.7%
439B	Graycalm-Menahga complex, 0 to 6 percent slopes	3.0	8.5%
544F	Menahga and Mahtomedi soils, 30 to 45 percent slopes	13.1	36.8%
555A	Fordum silt loam, 0 to 2 percent slopes, frequently flooded	7.1	20.1%
Totals for Area of Interest		**35.6**	**100.0%**

Figure 4- Project Impact Location Map

STA. 625+69 LT
9'W X 14'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR REQ'D

STA 625+34
CLEANING CULVERT PIPES MINIMAL LT
REMOVE 36" X 4' CPRC RT
1 - 36" X 6' CPRC RT
1- APRON ENDWALL RT REQ'D
1 - CONCRETE COLLAR RT REQ'D

BEGIN PROJECT NO. 1560-31-71
STA. 625+00.00
X = 719,626.34
Y = 518,858.64
(SAW CUT REQUIRED)

WOODYARD ROAD

Pi: 7+72.39'WS'

8'WS'

SLOPE INTERCEPT FOR
SLOPE REPAIR

620

625

630

USH 63

WETLAND 56
STA. 625+58 - 625+92 LT
WWI CLASS: WS
PERMANENT IMPACT: 258 SF
TEMPORARY IMPACT: 0 SF
PERMANENT:
0.006 ACRES - 0.002 HECTARES
TEMPORARY:
0 ACRES - 0 HECTARES

SLOPE INTERCEPT FOR
SLOPE REPAIR

ROADSIDE CLEARING
LIMITS TO 45'

STA. 625+18 RT
14'W X 9'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR REQ'D

NE QUADRANT USH 63 / WOODYARD ROAD SOUTH
SLOPE REPAIR INTERSECTION

STA. 631+12 LT
7'W X 13'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR REQ'D

WETLAND 59
STA. 630+92 - 631+28 LT
WWI CLASS: WS
PERMANENT IMPACT: 38 SF
TEMPORARY IMPACT: 280 SF
PERMANENT: 0.001 ACRES - 0.000 HECTARE
TEMPORARY: 0.006 ACRES - 0.002 HECTARE

Pi: 10+00.00'WS'

10'WS'

ROADSIDE CLEARING
LIMITS TO 45'

SLOPE INTERCEPT FOR
SLOPE REPAIR INTERSECTION

STA. 631+81 - 632+31 RT
DITCH CLEANING

STA. 631+12 RT
7'W X 13'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR REQ'D

12'WS'

Pi: 11+94.43'WS'

Pi: 13+19.72'WS'

STA 631+12
EXISTING 24" X 104' CPRC
CLEANING CULVERT PIPES MINIMAL LT
REMOVE 24" X 8' CPRC LT
CLEANING CULVERT PIPES MINIMAL RT
REMOVE 24" X 8' CPRC RT
1 - 24" X 104' PIPE LINER

WETLAND 58
STA. 630+92 - 631+57 RT
WWI CLASS: M
PERMANENT IMPACT: 82 SF
TEMPORARY IMPACT: 790 SF
PERMANENT: 0.002 ACRES-
0.001HECTARE
TEMPORARY: 0.018 ACRE -
0.007 HECTARE

Pi: 12+07.09'WN'

10'WN'

STA. 9+40.7'WN' SKEW 37°33' RHF
REMOVE SMALL PIPE CULVERT
1 - 18" X 34' CPCS
2 - APRON ENDWALLS REQ'D
6' X 6' RIPRAP AND GEOTEXTILE
FABRIC TYPE REQ'D R LT & RT

NORTH WOODYARD ROAD

8P: 7+74.18'WN'

STA. 633+46, 44.6' RT
SAVE TREE
(16-INCH DIA. DEAD DECIDUOUS TREE)

STA. 634+40, 43.7' RT
SAVE TREE (12-INCH DIA. RED PINE)

MATCHLINE STA. 634+50.00

MATCHLINE STA. 634+50.00

NORTH WOODYARD RD

STA. 637+60 - 638+60 LT
SALVAGE AND REPLACE
BARBED WIRE FENCE

STA 638+10 CULVERT PIPE FOR CATTLE PASS
(INCLUDES 1 - 24" X 98' CPCP AND FILL VOID IN BARREL AND
WINGWALLS WITH LOW STRENGTH CONCRETE GROUT)
2 - APRON ENDWALLS REQ'D

(EXISTING 42" X 72" X 98' CATTLE PASS TO REMAIN IN PLACE)

638+10 LT
CLEANING CULVERT PIPES MINIMAL
7'W X 13'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR REQ'D

WETLAND 60
STA. 637+86 - 638+28 LT
WWI CLASS: M
PERMANENT IMPACT: 233 SF
TEMPORARY IMPACT: 290 SF
PERMANENT: 0.005 ACRES - 0.002 HECTARE
TEMPORARY: 0.007 ACRES - 0.003 HECTARE

WETLAND 65
STA. 645+50 - 645+65 RT
WWI CLASS: M
PERMANENT IMPACT: 0 SF
TEMPORARY IMPACT: 137 SF

WETLAND 65
PERMANENT: 0 ACRES - 0 HECTARE
TEMPORARY: 0.003 ACRES - 0.001 HECTARE

STA 646+00
EXISTING 48" X 138' CPRC
NO WORK REQ'D

SLOPE INTERCEPT FOR
SLOPE REPAIR

ROADSIDE CLEARING
LIMITS TO 45'

635

640

645

USH 63

SLOPE INTERCEPT FOR
SLOPE REPAIR

ROADSIDE CLEARING
LIMITS TO 45'

STA. 635+75, 46' RT
REMOVE OVERHANGING BRANCHES
(24-INCH DIAMETER BOX ELDER)

STA. 637+10, 49.5' RT
REMOVE OVERHANGING BRANCHES
(24-INCH DIAMETER BOX ELDER)

STA. 636+82, 44.5' RT
CLEAR TREE
(38-INCH DIAMETER BOX ELDER)

STA. 637+60 - 638+60 RT
SALVAGE AND REPLACE
BARBED WIRE FENCE

STA. 647+00, 36' RT
CLEANING CULVERT PIPES MINIMAL
6' X 6' LIGHT RIPRAP AND
GEOTEXTILE FABRIC TYPE R REQ'D

STA. 646+76, 36' RT
CLEANING CULVERT PIPES MINIMAL
6' X 6' LIGHT RIPRAP AND GEOTEXTILE
FABRIC TYPE R REQ'D

MATCHLINE STA. 649+50.00

PROJECT NO: 1560-31-71	HWY: USH 63	COUNTY: WASHBURN	USH 63	SHEET	E

STA 719+08 LT
CLEANING CULVERT PIPES FULL
REMOVE 24" X 4' CPRC
1 - 24" X 6' CPRC
1 - APRON ENDWALL REQ'D
1 - CONCRETE COLLAR REQ'D
MEDIUM RIPRAP AND GEOTEXTILE
FRABIC TYPE HR REQ'D

WETLAND 74
STA. 718+78 - 719+39 LT
WWI CLASS: SS
PERMANENT IMPACT: 87 SF
TEMPORARY IMPACT: 1,343 SF
PERMANENT: 0.002 ACRES - 0.001 HECTARE
TEMPORARY: 0.310 ACRES - 0.125 HECTARE

STA. 718+98 - 719+18 LT
SLOPE REPAIR CULVERT

Wet 74 SS

PC: 714+46.27

MATCHLINE STA. 709+50.00

710

715

720

ROADSIDE CLEARING
LIMITS TO 45'

ROADSIDE CLEARING
LIMITS TO 45'

MATCHLINE STA. 724+50.00

USH 63

Wet 73

STA 719+08 RT
CLEANING CULVERT PIPES MINIMAL
REMOVE 24" X 4' CPRC
1 - 24" X 6' CPRC
1 - APRON ENDWALL REQ'D
1 - CONCRETE COLLAR REQ'D
MEDIUM RIPRAP AND GEOTEXTILE
FABRIC TYPE HR REQ'D

STA. 718+98 - 719+18 RT
SLOPE REPAIR CULVERT

WETLAND 73
STA. 718+78 - 719+39 RT
WWI CLASS: M
PERMANENT IMPACT: 99 SF
TEMPORARY IMPACT: 371 SF
PERMANENT: 0.002 ACRES - 0.001 HECTARE
TEMPORARY: 0.009 ACRES - 0.004 HECTARE

5

5

STA 733+34 LT
REMOVE 24" X 4' CPRC
1 - 24" X 6' CPRC
1 - APRON ENDWALL REQ'D
1 - CONCRETE COLLAR REQ'D
6' X 6' LIGHT RIPRAP AND
GEOTEXTILE FABRIC TYPE R REQ'D

PI STA = 724+92.46
Y = 525952.12
X = 726664.22
DELTA = 20°41'45"
D = 1°00'00"
T = 1046.19
L = 2069.58
R = 5729.58
PC STA = 714+46.27
PT STA = 735+15.85
SE = 2.71%

WETLAND 76
STA. 732+76 - 733+05 LT
WWI CLASS: M
PERMANENT IMPACT: 0 SF
TEMPORARY IMPACT: 415 SF
PERMANENT: 0 ACRES - 0 HECTARE
TEMPORARY: 0.010 ACRES - 0.004 HECTARE

STA. 732+90 - 733+10 LT
SLOPE REPAIR CULVERT

STA. 732+90 - 733+06 LT
DITCH CLEANING

BP: 7+77.75'HL'

8'HL'
HEART LAKE ROAD

STA 733+34 CLEAN CULVERT PIPE
(EXISTING 24" X 64' CPRC)

WETLAND 78
STA. 733+25 - 735+00 RT
WWI CLASS: M
PERMANENT IMPACT: 4,638 SF
TEMPORARY IMPACT: 0 SF
PERMANENT: 0.106 ACRES - 0.043 HECTARE

PT: 735+15.85

ROADSIDE CLEARING
LIMITS TO 45'

MATCHLINE STA. 724+50.00

725

730

735

USH 63

SIGN

SIGN

SIGN

ROADSIDE CLEARING
LIMITS TO 45'

10'HL'

EP: 10+00.00'HL'

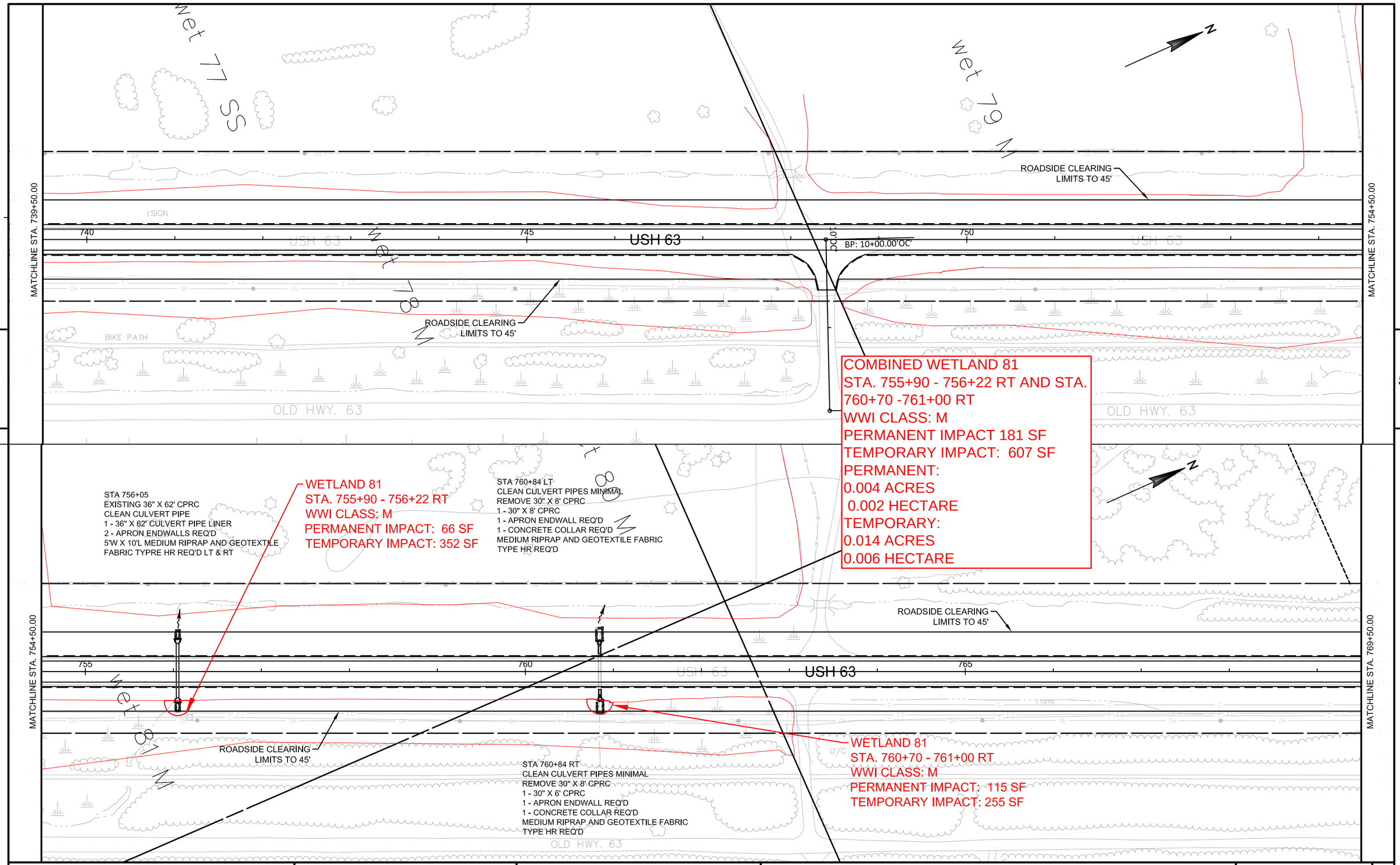
STA. 733+25 - 735+00 RT
GRADE DITCH

STA 733+34 RT
REMOVE 24" X 4' CPRC
1 - 24" X 8' CPRC
1 - APRON ENDWALL REQ'D
1 - CONCRETE COLLAR REQ'D
MEDIUM RIPRAP AND GEOTEXTILE
FABRIC TYPE HR REQ'D

BIKE PATH

MATCHLINE STA. 739+50.00

PROJECT NO: 1560-31-71	HWY: USH 63	COUNTY: WASHBURN	USH 63	SHEET	E



PROJECT NO: 1560-31-71	HWY: USH 63	COUNTY: WASHBURN	USH 63	SHEET	E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1101_SHELL_LAKE_SS\C3D_12\050201_PN_US63.DWG PLOT DATE : 7/14/2014 9:57 AM PLOT BY : USER PLOT NAME : PLOT SCALE : 1:100_XREF

RIGHT-OF-WAY

BEGIN GRADING
STA. 776+97.6 LT
(END CLEARING LIMITS TO 45')

ROADSIDE CLEARING LIMITS TO 45'

PROPOSED SLOPE INTERCEPT

WETLAND: 102
STA. 779+13 - 783+24 LT
WWI CLASS: WS
PERMANENT IMPACT: 7,017 SF
TEMPORARY IMPACT: 775 SF
~~PERMANENT: 0.132 ACRES - 0.053 HECTARE~~
~~TEMPORARY: 0.018 ACRES - 0.007 HECTARE~~

RE-ALIGN CHANNEL

STA. 780+00 LT
REMOVE 2 - 48" X 4' CPRC
2 - 48" X 22' CPRC
2 - CONCRETE COLLARS
1 - CONCRETE MASONRY ENDWALL
20'W X 35'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR RED'Q

776 778 USH 63 780 782

1 1/4"PE FO T OH

ROADSIDE CLEARING LIMITS TO 45'

PROPOSED SLOPE INTERCEPT

RIGHT-OF-WAY

STA. 780+00 RT
REMOVE 2 - 48" X 4' CPRC
2 - 48" X 8' CPRC
2 - CONCRETE COLLARS
1 - CONCRETE MASONRY ENDWALL
24'W X 24'L MEDIUM RIPRAP AND
GEOTEXTILE FABRIC TYPE HR REQ'D

BIKE PATH

MATCHLINE STA. 783+00

5 5

1270 1260 1250 1240 1230

EXISTING GRADE LINE

PROPOSED GRADE LINE

EXISTING GRADE LINE

PROPOSED GRADE LINE

775	776	+50	777	+50	778	+50	779	+50	780	+50	781	+50	782	+50	783
1245.43	**1245.55**	1244.83	**1244.95**	1244.40	**1244.53**	1244.20	**1244.33**	1243.94	**1244.06**	1243.64	**1243.76**	1243.33	**1243.45**	1243.04	**1243.17**	1242.84	**1242.96**	1242.57	**1242.69**	1242.32	**1242.44**	1242.12	**1242.25**	1241.87	**1242.00**	1241.63	**1241.76**	1241.39	**1241.51**	1241.23	**1241.36**

PROJECT NO: 1560-31-71	HWY: USH 63	COUNTY: WASHBURN	PLAN AND PROFILE: USH 63	SHEET	E

TEMP. EASEMENT

RIGHT-OF-WAY

MARSH EXCAVATION
STA. 783+80 - 784+90 LT

PROPOSED
SLOPE INTERCEPT

WETLAND 126
STA. 783+23 - 784+99 LT
WWI CLASS: DM
PERMANENT IMPACT: 4,556 SF
TEMPORARY IMPACT: 0 SF
PERMANENT: 0.105 ACRES - 0.006 HECTARE
TEMPORARY: 0 ACRES - 0 HECTARE

HILLTOP ROAD

9'HT

SIGN

USH 63 STA. 789+02.74 =
HILLTOP RD STA. 10+00.00'HT' =
CTH D STA. 10+00.00'D'

MATCHLINE STA. 783+00

MATCHLINE STA. 790+50

784 786 USH 63 788 790

10'D' 10'HT'

CLEARING LIMITS
TO 45'

BEGIN GRADING
STA. 783+49.0 RT
(END CLEARING LIMITS TO 45')

PROPOSED
SLOPE INTERCEPT

RIGHT-OF-WAY

PC: 10+77.66'D'

CTH D

11'D'

5

5

1260
1250
1240
1230
1220

PROPOSED
GRADE LINE

EXISTING
GRADE LINE

EXISTING
GRADE LINE

PROPOSED
GRADE LINE

1241.23	**1241.36**	1240.91	**1241.03**	1240.57	**1240.69**	1240.34	**1240.47**	1240.15	**1240.27**	1239.82	**1239.95**	1239.56	**1239.69**	1239.27	**1239.40**	1239.03	**1239.15**	1238.78	**1238.90**	1238.48	**1238.60**	1238.16	**1238.29**	1238.09	**1238.21**	1237.89	**1238.02**	1237.66	**1237.79**	1237.42	**1237.55**
783		+50		784		+50		785		+50		786		+50		787		+50		788		+50		789		+50		790		790	

PROJECT NO: 1560-31-71	HWY: USH 63	COUNTY: WASHBURN	PLAN AND PROFILE: USH 63	SHEET	E

APPROX. 222 SF WETLAND TAKING

WETLAND: 151
NORTH OF CTH B/6TH AVENUE
WWI CLASS: RPF
PERMANENT IMPACT: 222 SF
TEMPORARY IMPACT: 0 SF

STA. 28+58.5'BD'
1 - 48" APRON ENDWALL FOR CULVERT PIPE REQ'D

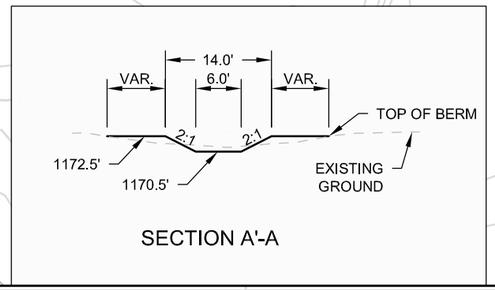
STA. 29+05'BD'
REMOVE CONCRETE BASE

LIMITS OF HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE HR

PI: 28+64.50'BD'

S19.2
MANHOLE 6x6-J
STA:3+03.8 OFF:0.0
RIM:1180.14
INV IN:1172.13
INV OUT:1172.13

DELINEATED WETLAND BOUNDARY



SECTION A'-A

DELINEATED WETLAND BOUNDARY

1'DP'
BP: 1+00.00'DP'

WETLAND: 151
STATION 869+40 - 869+47 LT
WWI CLASS: RPF
PERMANENT IMPACT 116 SF
TEMPORARY IMPACT: 0 SF

DRAINAGE EASEMENT

WETLAND: 151 TOTAL FROM ABOVE
WWI CLASS: RPF
PERMANENT IMPACT: 338 SF
TEMPORARY IMPACT: 0 SF
PERMAMENT: 0.008 ACRES - 0.003 HECTARES
TEMPORARY: 0 ACRES - 0 HECTARES

CTH B STORM SEWER OUTFALL

S19.1
RIM=1205.25

48" x 205 LF SSPRC CL III
@ 8.40%

EXISTING CTH B STORM SEWER OUTFALL

48" x 99 LF SSPRC CL III
@ 26.46%

EXISTING GRADE LINE

S19.2
RIM=1180.14

SUMP MANHOLE
18-INCHES

48" x 10 LF SSPRC CL III
@ 0.70%

PROPOSED STORM SEWER OUTFALL
BASIN VOLUME = 3,010 CF

7.0' 4.5' 6.0'

STA. = 28+90.2
ELE. = 1170.5

STA. = 28+72.7
ELE. = 1169.0

STA. = 28+66.6
ELE. = 1172.0

MATCH IN TO EXISTING RIPRAP

PROPOSED GRADE LINE

EXISTING GRADE LINE

PROPOSED GRADE LINE

1211.23 1205.25 1192.36 1179.79 1167.37 **1167.17** 1163.62 1163.27

27+00 27+50 28+00 28+50 29+00 29+50 30+00

PROJECT NO: 1560-31-71	HWY: USH 63	COUNTY: WASHBURN	STORM SEWER: USH 63	SHEET -----	E

Wisconsin Department of Transportation

Figure 5- WMBAS Form

Division of Transportation System Development
Northwest Region

WETLAND IMPACT TRACKING FORM

This form must be filled out for all projects.

For projects in:
Jackson, Trempealeau, Buffalo, Clark, Eau Claire, Pepin, Pierce, St.Croix, Dunn, Chippewa, and Taylor Counties;

Return to:

Nick Schaff
Environmental Coordinator
WisDOT - Northwest Region
718 W. Clairemont Avenue
Eau Claire, WI 54701
Phone : (715) 836-2068
Facsimile (FAX):
NicholasA.Schaff@dot.state.wi.us

For projects in:
Douglas, Bayfield, Ashland, Burnett, Washburn, Sawyer, Polk, Barron, and Rusk Counties;

Return to:

Amy Adrihan
Environmental Coordinator
WisDOT - Northwest Region
1701 N. 4th Street
Superior, WI 54880
Phone : (715) 392-7972
Facsimile (FAX):
amy.adrihan@dot.state.wi.us

Project Design I.D. #: 1560-31-00
Project Construction I.D. #: 1560-31-71
Project Title : USH 63
Cumberland - Spooner, Woodyard Rd to CTH B (East)
County : Washburn
Construction Year : 2015
Date this form is completed : 8/21/2014

Prepared by (name & phone #) : Erin Dethloff, WisDOT Environmental Analysis Intern, 715-392-7969

Is a discharge of dredged or fill material into wetlands anticipated?

NO [ ] **Form complete; no further information is required (RETURN FORM).**

YES [x] **Complete remainder of form and:**

1. Include this sheet with your DNR 401 and COE 404 permit applications.
2. When you receive DNR 401 final concurrence and COE 404 permit, return this form with:
   - **a.** D size copy of plan sheet showing impact areas.
   - **b.** A copy of the DNR 401 Water Quality Certification Letter.
   - **c.** A copy of the U.S. COE 404 permit (Cover letter only).

Wetland Delineation/Determination completed by (name & phone #, qualifications):
WisDOT Environmental Analysis Interns, 715-392-7972, UW- La Crosse Basic and Advanced Wetland Delineation Training

Directions:

1. One location may be made up of several different wetland types. List each type of wetland impacted from each location on the project corridor separately in the table below.
2. Contact the Environmental Coordinator for appropriate ratio and bank information.
3. Use Department of Transportation Wetland Classification System.
4. Areas should be reported to the nearest 0.001-acre if possible.

				The Environmental Coordinator (EC) will provide this information.		
Site #	Impact Location (project station)	Type Impacted	Area Impacted	Debit Ratio	Type Mitigated	Area Mitigated
1	Wetland 56, STA 625+58 - 625+92 LT (permanent)	WS	0.006	1:1	WS	0.006
2	Wetland 59, STA 630+92 - 631+28 LT (permanent)	WS	0.001	1:1	WS	0.001
3	Wetland 58, STA 630+92 - 631+57 RT (permanent)	M	0.002	1:1	M	0.002
4	Wetland 60, STA 637+86 - 638+28 LT (permanent)	M	0.005	1:1	M	0.005
5	Wetland 74, STA 719+96 - 720+22 LT (permanent)	SS	0.002	1:1	WS	0.002
6	Wetland 73, STA 718+78 - 719+39 RT (permanent)	M	0.002	1:1	M	0.002
7	Wetland 78, STA 733+25 - 735+00 RT (permanent)	M	0.106	1:1	M	0.106
8	Wetland 81, STA 755+90 - 756+22 RT (permanent)	M	0.004	1:1	M	0.004
9	Wetland 102, STA 779+13 - 783+24 LT (permanent)	WS	0.132	1:1	WS	0.132
10	Wetland 126, STA 783+13 - 784+99 LT (permanent)	DM	0.105	1:1	DM	0.105
11	Wetland 151, STA 867+64 - 868+49 LT (permanent)	RPF	0.008	1:1.3	WS	0.010
12	Wetland 59, STA 630+92 - 631+28 LT (temporary)	WS	0.006	N/A	N/A	N/A
13	Wetland 58, STA 630+92 - 631+57 RT (temporary)	M	0.018	N/A	N/A	N/A
14	Wetland 60, STA 637+86 - 638+28 LT (temporary)	M	0.007	N/A	N/A	N/A
15	Wetland 65, STA 645+50 - 645+65 RT (temporary)	M	0.003	N/A	N/A	N/A

16	Wetland 74, STA 719+96 - 720+22 LT (temporary)	SS	0.310	N/A	N/A	N/A
17	Wetland 73, STA 718+78 - 719+39 RT (temporary)	M	0.009	N/A	N/A	N/A
18	Wetland 76, STA 732+76 - 733+05 LT (temporary)	M	0.010	N/A	N/A	N/A
19	Wetland 81, STA 755+90 - 756+22 RT (temporary)	M	0.014	N/A	N/A	N/A
20	Wetland 102, STA 779+13 - 783+24 LT (temporary)	WS	0.018	N/A	N/A	N/A
	TOTAL		**0.373**			**0.375**

Is there potential for onsite mitigation? If unknown, check with the EC.

YES [ ] Where is it located? (T/R, station, map) _____

NO [X] List bank site to be used. **(Determined by EC)** Lauritsen Wetland Mitigation Bank Site, Burnett County

Please attach another sheet if the space provided is not adequate for all impacts or to add any additional comments.

Appendix B

Monitoring Forms

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/25/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 56	Is the area potentially naturally problematic?		YES		X	NO
Plot Description: Between the Woodyard Roads	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Impatiens capensis* Orange Jewelweed	90	FACW	H	1.	*Phalaris arundinaceae* Reed Canary Grass	10	FACW	H
2.	*Polygonum sagittatum* Tearthumb	30	OBL	H	2.	*Alnus rugosa* Speckled Alder	8	OBL	T
3.	*Populus tremuloides* Quaking Aspen	10	FAC	T	3.				
4.	*Fraxinus nigra* Black Ash	25	FACW	T	4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	**X**	**YES**		**NO**
Prevalence Index is < or =3.01		**YES**		**NO**
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		**YES**		**NO**
Problematic Hydrophytic Vegetation1 (Explain)		**YES**		**NO**

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: ___Yes __X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: __X__Yes _____No -13 Depth (inches) Saturation Present?: _X___Yes ____No -8 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_X__ Moss Trim Lines (B16)
_X__ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (3:0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-13	Loam	100	10 YR 2/1					
13-20	Loamy clay	95	10 YR 4/2	10 YR 5/6	5	C	M	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____Loamy Mucky Mineral (F1)
____Loamy Gleyed Matrix (F2)
____Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____Depleted Dark Surface (F7)
____Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
X	**WS**			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 56	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Eurybia macrophylla* Large Leaved Aster	40	FACU	H	1.	*Pteridium aquilinum* Bracken Fern	10	FACU	H
2.	*Carex pensylvanica* Pennsylvania Sedge	60	OBL	H	2.	*Onoclea sensibilis* Sensitive Fern	10	FACW	H
3.	*Acer rubrum* Red Maple	15	FAC	S	3.	*Apocynum sibiricum* Clasping Dogbane	25	FAC	H
4.					4.	*Tilia americana* Basswood	8	FACU	H
5.					5.	*Acer rubrum* Red Maple	15	FAC	H
6.					6.	*Tilia americana* Basswood	8	FACU	S
7.					7.	*Salix interior* Sandbar Willow	10	OBL	S
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 66%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes _X___No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicators

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-9	Sandy loam	100	10 YR 3/2					

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____Loamy Mucky Mineral (F1)
____Loamy Gleyed Matrix (F2)
____Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____Depleted Dark Surface (F7)
____Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

Remarks:
Refusal at 10 inches, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 58	Is the area potentially naturally problematic?		YES		X	NO
Plot Description: In triangle	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	100	FACW	H	1.				
2.					2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: ____Yes __X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: __X___Yes _____No -7 Depth (inches) Saturation Present?: __X__Yes ____No -5 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
___ 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (1 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-4	Loam	100	10 YR 3/2					
4-10	Loam	65	10 YR 3/2	7.5 YR 5/6	35	C	PL	
10-20	Loamy clay	60	10 YR 2/1	7.5 YR 5/8	40	C	PL	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____Loamy Mucky Mineral (F1)
____Loamy Gleyed Matrix (F2)
____Depleted Matrix (F3)
____ Redox Dark Surface (F6)
_X___Depleted Dark Surface (F7)
____Redox Depressions (F8)

Indicators for Problematic Hydric Soils*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
X	**M**			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 58	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Lotus corniculatus* Birdsfoot Trefoil	35	FAC	H	1.	*Ambrosia artemisiifolia* Ragweed	15	FACU	H
2.	*Phalaris arundinacea* Reed Canary Grass	20	FACW	H	2.	*Andropogon gerardii* Big Blue Stem Grass	10	FAC	H
3.					3.	*Achillea millefolium* Yarrow	15	FACU	H
4.					4.	*Taraxacum officinale* Dandelion	15	FACU	H
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 100%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes _X___No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
__X_ FAC-Neutral Test (D5)

FAC-Neutral Test (1 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____Loamy Mucky Mineral (F1)
____Loamy Gleyed Matrix (F2)
____Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____Depleted Dark Surface (F7)
____Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

Remarks:
No soil sample was obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/25/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 59	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	25	FACW	H	1.	*Chamerion angustifolium* Fireweed	5	FAC	H
2.	*Scirpus atrovirens* Black Bulrush	30	OBL	H	2.	*Solidago gigantea* Giant Goldenrod	8	FACW	H
3.	*Salix interior* Sandbar Willow	10	OBL	S	3.	*Eupatorium maculatum* Spotted Joe-Pye-Weed	2	OBL	H
4.	*Fraxinus pensylvanica* Green Ash	50	FACW	T	4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 100%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: ____Yes __X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: __X___Yes _____No -7 Depth (inches) Saturation Present?: __X__Yes ____No -5 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
___ 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
__X_ FAC-Neutral Test (D5)

FAC-Neutral Test (3 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-2	Loam	100	10YR 3/2					
2-20	Silt loam	60	10 YR 4/4	7.5 YR 5/6	40	C	PL	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
X	**WS**			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 59	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Lotus corniculatus* Birdsfoot Trefoil	35	FAC	H	1.	*Ambrosia artemisiifolia* Ragweed	15	FACU	H
2.	*Phalaris arundinacea* Reed Canary Grass	20	FACW	H	2.	*Andropogon gerardii* Big Blue Stem Grass	10	FAC	H
3.					3.	*Achillea millefolium* Yarrow	15	FACU	H
4.					4.	*Taraxacum officinale* Dandelion	15	FACU	H
5.					5.	*Hieracium aurantiacum* Orange Hawkweed	5	NI	H
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 100%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes _X____No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes __X__No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
__X_ FAC-Neutral Test (D5)

FAC-Neutral Test (1 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____Loamy Mucky Mineral (F1)
____Loamy Gleyed Matrix (F2)
____Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____Depleted Dark Surface (F7)
____Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

Remarks:
No soil sample was obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 60	Is the area potentially naturally problematic?		YES		X	NO
Plot Description: N of Woodyard Rd	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	100	FACW	H	1.				
2.	*Alnus rugosa* Speckled Alder	15	OBL	T	2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: __Yes _X____No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: __X___Yes ____No -13 Depth (inches) Saturation Present?: __X__Yes ____No -6 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
_X__ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (2 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-4	Clay loam	100	10 YR 3/1					
4-20	Loamy clay	75	10 YR 3/2	7.5 YR 5/6	25	C	PL	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
X	**M**			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/25/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 60	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Elymus repens* Quack Grass	30	FACU	H	1.	*Cirsium arvense* Canada Thistle	10	FACU	H
2.	*Carex pensylvanica* Pennsylvania Sedge	80	OBL	H	2.	*Solidago canadensis* Canada Goldenrod	10	FACU	H
3.					3.	*Phalaris arundinacea* Reed Canary Grass	10	FACW	H
4.					4.	*Achillea millefolium* Yarrow	15	FACU	H
5.					5.	*Eurybia macrophylla* Large Leaved Aster	2	FACU	H
6.					6.	*Asclepias syriaca* Common Milkweed	2	UPL	H
7.					7.	*Bromus inermis* Smooth Brome Grass	8	UPL	H
8.					8.	*Poa compressa* Canada Bluegrass	8	FACU	H
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **50%**

Prevalence Index Worksheet:

Total % Cover of:		**Multiply By:**	
OBL species:	**80**	**1**	**80**
FACW species:		**2**	
FAC species:		**3**	
FACU species:	**30**	**4**	**120**
UPL species:		**5**	
TOTAL (A):	**110**	**TOTAL (B):**	**200**
Prevalence Index (B/A):	**1.81**		

Hydrophytic Vegetation Indicators

Dominance Test is >50%		**YES**	**X**	**NO**
Prevalence Index is < or =3.01	**X**	**YES**		**NO**
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		**YES**		**NO**
Problematic Hydrophytic Vegetation1 (Explain)		**YES**		**NO**

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes _X___No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicators

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:
No soil sample obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 73	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	100	FACW	H	1.	*Polygonum amphibium* Water Smartweed	10	OBL	H
2.	*Salix interior* Sandbar Willow	15	OBL	S	2.	*Impatiens capensis* Orange Jewelweed	5	FACW	H
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	

Prevalence Index (B/A):

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: ___Yes __X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: _X___Yes _____No -13 Depth (inches) Saturation Present?: __X__Yes ____No -10 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
_X__ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (2 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-20	Loam	100	10 YR 2/1					

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils Indicators:

X 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
X	**M**			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/25/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 73	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	80	FACW	H	1.				
2.	*Achillea millefolium* Yarrow	40	FACU	H	2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **50%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:	80	2	160
FAC species:		3	
FACU species:	40	4	160
UPL species:		5	
TOTAL (A):	120	TOTAL (B):	320
Prevalence Index (B/A):	2.6		

Hydrophytic Vegetation Indicators

Dominance Test is >50%		YES	X	NO
Prevalence Index is < or =3.01	X	YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes __X__No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicator

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-8	Loamy sand	100	10 YR 3/2					

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____Loamy Mucky Mineral (F1)
____Loamy Gleyed Matrix (F2)
____Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____Depleted Dark Surface (F7)
____Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

Remarks:
Refusal at 8 inches, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/26/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 74	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	100	FACW	H	1.	*Spirea tomentosa* Steeplebush	5	FACW	H
2.	*Salix interior* Sandbar Willow	75	OBL	S	2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 100%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: ____Yes __X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: __X___Yes ____No -8 Depth (inches) Saturation Present?: _X___Yes ____No 0 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
___ 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X_ FAC-Neutral Test (D5)

FAC-Neutral Test (2 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-20	Sandy loam	85	10 YR 2/1	7.5 YR 5/6	15	C	M	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
_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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
X	**SS**			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/26/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 74	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Achillea millefolium* Yarrow	50	FACU	H	1.	*Phalaris arundinacea* Reed Canary Grass	20	FACW	H
2.	*Carex pensylvanica* Pennsylvania Sedge	60	OBL	H	2.	*Trifolium pratense* Red Clover	10	FACU	H
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **50%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:	60	1	60
FACW species:		2	
FAC species:		3	
FACU species:	50	4	200
UPL species:		5	
TOTAL (A):	110	TOTAL (B):	260
Prevalence Index (B/A):	2.36		

Hydrophytic Vegetation Indicators

Dominance Test is >50%		YES	X	NO
Prevalence Index is < or =3.01	X	YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes __X____No ____ Depth (inches) Saturation Present?: ____Yes __X__No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicators

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-7	Loamy sand	100	10 YR 3/2					

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Refusal at 7 inches, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/26/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 78	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Salix interior* Sandbar Willow	50	OBL	S	1.	*Eupatorium maculatum* Spotted Joe-Pye-Weed	3	OBL	H
2.	*Salix lucida* Shining Willow	20	FACW	S	2.	*Spirea tomentosa* Steeplebush	8	FACW	H
3.	*Phalaris arundinacea* Reed Canary Grass	100	FACW	H	3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 100%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: ____Yes ___X__No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: __X___Yes _____No -5 Depth (inches) Saturation Present?: _X___Yes ____No 0 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
___ 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (3 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-20	Peat	100	10 YR 2/1					

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils Indicators:

X 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)
___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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
X	**M**			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/26/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 78	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Carex pensylvanica* Pennsylvania Sedge	70	OBL	H	1.	*Phalaris arundinacea* Reed Canary Grass	15	FACW	H
2.	*Cirsium vulgare* Bull Thistle	35	FACU	H	2.	*Elymus repens* Quack Grass	15	FACU	H
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **50%**

Prevalence Index Worksheet:

Total % Cover of:		**Multiply By:**	
OBL species:	**70**	**1**	**70**
FACW species:		**2**	
FAC species:		**3**	
FACU species:	**35**	**4**	**140**
UPL species:		**5**	
TOTAL (A):	**102**	**TOTAL (B):**	**210**
Prevalence Index (B/A):	**2**		

Hydrophytic Vegetation Indicators

Dominance Test is >50%		**YES**	**X**	**NO**
Prevalence Index is < or =3.01	**X**	**YES**		**NO**
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		**YES**		**NO**
Problematic Hydrophytic Vegetation1 (Explain)		**YES**		**NO**

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ____X__No ____ Depth (inches) Saturation Present?: ____Yes _X___No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicators

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

No soil sample obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			RPE
	SS			RPF
	WS			BOG
	SM			AB
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/26/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 81	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Salix interior* Sandbar Willow	65	OBL	S	1.	*Solidago gigantea* Giant Goldenrod	10	FACW	H
2.	*Carex lacustris* Lake Sedge	60	OBL	H	2.	*Eupatorium maculatum* Spotted Joe-Pye-Weed	10	OBL	H
3.	*Onoclea sensibilis* Sensitive Fern	45	FACW	H	3.	*Phalaris arundinacea* Reed Canary Grass	20	FACW	H
4.					4.	*Scirpus atrovirens* Black Bulrush	15	OBL	H
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: ___Yes __X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: ___X__Yes ____No -11 Depth (inches) Saturation Present?: __X__Yes ____No -5 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
___ 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (3 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-2	Peat	100	10 YR 2/1					
2-20	Silty clay loam	75	10 YR 4/2	7.5 YR 5/8	25	C	M	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
X	**M**			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/26/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 81	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Carex pensylvanica* Pennsylvania Sedge	90	OBL	H	1.	*Phalaris arundinacea* Reed Canary Grass	15	FACW	H
2.					2.	*Achillea millefolium* Yarrow	15	FACU	H
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	

Prevalence Index (B/A): _____

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: _____Yes ___X__No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes __X__No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
__X_ FAC-Neutral Test (D5)

FAC-Neutral Test (1 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

No soil sample obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 8/31/10
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Rachelle Peterson and Caleb Jensen	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 102	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	90	FACW	H	1.	*Solidago gigantea* Giant Goldenrod	15	FACW	H
2.	*Populus tremuloides* Quaking Aspen	15	FAC	S	2.				
3.	*Salix interior* Sandbar Willow	45	OBL	S	3.				
4.	*Populus tremuloides* Quaking Aspen	35	FAC	T	4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? 100%

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)	X	YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: ___Yes _X___No _____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: __X___Yes ____No -12 Depth (inches) Saturation Present?: _X___Yes ____No -6 Depth (inches)

Remarks:

Trees exhibited buttressed roots (morphological adaptation)

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
___ 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
__X_ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_X__ FAC-Neutral Test (D5)

FAC-Neutral Test (3 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-20	Peat	100	10 YR 2/1					

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils Indicators:

X 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
X	**WS**			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 8/31/10	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Rachelle Peterson and Caleb Jensen					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 102	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Andropogon gerardii* Big Blue Stem Grass	60	FAC	H	1.	*Phalaris arundinacea* Reed Canary Grass	20	FACW	H
2.	*Ambrosia artemisiifolia* Ragweed	20	FACU	H	2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **50%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:	60	3	180
FACU species:	20	4	80
UPL species:		5	
TOTAL (A):	80	TOTAL (B):	260
Prevalence Index (B/A):	3.25		

Hydrophytic Vegetation Indicators

Dominance Test is >50%	___ YES	X NO
Prevalence Index is < or =3.01	___ YES	X NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)	___ YES	___ NO
Problematic Hydrophytic Vegetation1 (Explain)	___ YES	___ NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes _X____No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes __X__No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
_ ___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicators

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
__Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:
No soil sample obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [ ] **YES** [X] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63					Date: 7/20/2012	
Applicant/Owner: WisDOT					County: Washburn	
Investigator(s): Lindsay Tekler					State: WI	
Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?		YES		X	NO
Plot #: wet 126	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)?					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	40	FACW	H	1.	*Typha latifolia* Broad Leaved Cattail	20	OBL	H
2.	*Carex lacustris* Lake Sedge	40	OBL	H	2.	*Salix bebbiana* Bebbs Willow	15	FACW	H
3.					3.	*Lemna minor* Duckweed	5	OBL	H
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **100%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	X	YES		NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):

_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:

_____ **No Recorded Data Available**

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?: __X___Yes _____No 2 Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)

Water table present?: ___X__Yes _____No 0 Depth (inches) Saturation Present?: _X___Yes ____No 0 Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more required, check all that apply)

- _X__ 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)
- __X_ Water-Stained Leaves (B9)
- _X__ 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: (2 or more required)

- ___ Surface Soil Cracks (B6)
- _____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _X__ FAC-Neutral Test (D5)

FAC-Neutral Test (2 : 0)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-5	Loam	100	10 YR 2/1					mucky
5-12	Loamy sand	75	7.5 YR 2/2	7.5 YR 5/8	10	C	M	
				2.5 YR 5/1	15	D	M	
12-20	Clay	75	10 YR 2/1	7.5 YR 5/8 2.5 YR 6/1	15 10	C D	M M	

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
- ___
- _X_ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- _X___Loamy Mucky Mineral (F1)
- __X__Loamy Gleyed Matrix (F2)
- ____Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____Depleted Dark Surface (F7)
- ____Redox Depressions (F8)

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

Indicators for Problematic Hydric Soils*

- ___2 cm muck (A10)
- ___Coast Prairie Redox (A16)
- ___5cm mucky peak or Peat (S3)
- ___Polyvalue Below Surface (S8)
- ___Thin Dark Surface (S9)
- ___Iron/Manganese Masses (F12)
- ___ Red Parent Material (TF2)
- ___Very Shallow Dark Surface (TF12)
- ____Other (Explain in Remarks)

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
X	**DM**			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00 USH 63	Date: 7/20/2012
Applicant/Owner: WisDOT	County: Washburn
Investigator(s): Lindsay Tekler	State: WI

Normal climatic conditions on site typical for this time of year? yes	Do "normal circumstances" exist on the site?	X	YES			NO
Transect #:	Is the site significantly disturbed (Atypical Situation)?	X	YES			NO
Plot #: up 126	Is the area potentially naturally problematic?		YES		X	NO
Plot Description:	Type of atypical or problem area (soils, vegetation, hydrology)? Soils					

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.
Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Carex pennsylvanica* Pennsylvania Sedge	60	NI	H	1.	*Taraxacum officinale* Common Dandelion	10	FACU	H
2.					2.	*Onoclea sensibilis* Sensitive Fern	5	FACW	H
3.					3.	*Trifolium pratense* Red Clover	5	FACU	H
4.					4.	*Mentha arvensis* Wild Mint	5	FACW	H
5.					5.	*Carex lacustris* Lake Sedge	2	OBL	H
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **0%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	YES	X NO
Prevalence Index is < or =3.01	YES	NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)	YES	NO
Problematic Hydrophytic Vegetation1 (Explain)	YES	NO

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

Hydrophytic Vegetation Present?
Yes/No

Hydrology

_____ **Recorded Data** (describe in remarks):
_____ Stream, lake, or tide gauge _____ Aerial photographs _____ Monitoring well _____ Other:
_____ **No Recorded Data Available**
Growing Season Dates/Days: _____
(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:
Surface water present?: _____Yes __X___No ____ Depth (inches) Water in well?: ____Yes _____No _____ Depth (inches)
Water table present?: _____Yes ___X___No ____ Depth (inches) Saturation Present?: ____Yes __X__No _____ Depth (inches)

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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: (2 or more required)

___ Surface Soil Cracks (B6)
_____ Drainage Patterns (B10)
____ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

FAC-Neutral Test (:)
(OBL & FACW : FACU & UPL)

Remarks: No hydrology indicators present

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES / NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils 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)
____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*

___2 cm muck (A10)
___Coast Prairie Redox (A16)
___5cm mucky peak or Peat (S3)
___Polyvalue Below Surface (S8)
___Thin Dark Surface (S9)
___Iron/Manganese Masses (F12)
___ Red Parent Material (TF2)
___Very Shallow Dark Surface (TF12)
____Other (Explain in Remarks)

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

Remarks:
No soil sample obtained, refusal at surface, roadfill

Wetland Determination

Wetland Vegetation Present? [ ] **YES** [X] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			RPE
	SS			RPF
	WS			BOG
	SM			AB
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site: 1560-31-00/71, USH 63 Cumberland – Spooner, Woodyard Rd to CTH B (East)					Date: 7/23/2013						
Applicant/Owner: WisDOT					County: Washburn						
Investigator(s): Erin Dethloff and Derek Huebsch					State: WI						
Normal climatic conditions on site typical for this time of year?	Yes	X	No		Do "normal circumstances" exist on the site?	X	YES			NO	
Transect #:					Is the site significantly disturbed (Atypical Situation)?		YES		X	NO	
Plot #: Wet 151					Is the area potentially naturally problematic?		YES		X	NO	
Plot Description: STA 868+00 – 869+00 LT					Type of atypical or problem area (soils, vegetation, hydrology)?						

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		**Non-Dominant Species**	%	Indicator	Stratum
1.	*Phalaris arundinacea* Reed Canary Grass	45	FACW	H	5.	*Solanum dulcamara* Climbing Nightshade	3	FAC	H
2.	*Securgia varia* Crown Vetch	20	NI	H	6.	*Menispermum canadense* Canadian Moon Seed	3	FAC	H
3.	*Rhus glabra* Smooth Sumac	20	NI	S	7.	*Arctium minus* Lesser Burdock	2	FACU	H
4.	*Cornus alba* Red Osier Dogwood	8	FACW	S	8.	*Impatiens capensis* Orange Jewelweed	1	FACW	H
5.	*Salix interior* Sandbar Willow	35	FACW	T	9.	*Rubus ideaus* American Red Raspberry	1	FAC	H
6.	*Alnus incana* Speckled Alder	15	FACW	T	10.	*Carex lacustris* Common Lake Sedge	1	OBL	H
	Non-Dominant Species	%	Indicator	Stratum					
1.	*Matteuccia struthiopteris* Ostrich Fern	10	FAC	H	11.	*Elymus repens* Quack Grass	1	FACU	H
2.	*Glechoma hederacea* Ground Ivy	5	FACU	H	12.	*Taxacum officinale* Common Dandelion	1	FACU	H
3.	*Carex pensylvanica* Pennsylvania Sedge	5	NI	H	13.	*Acer accharum* Sugar Maple	8	FACU	T
4.	*Schoenoplectus fluviatilis* River Clubrush	4	OBL	H	14.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **66%**

Prevalence Index Worksheet:

Total % Cover of:		**Multiply By:**	
OBL species:		**1**	
FACW species:		**2**	
FAC species:		**3**	
FACU species:		**4**	
UPL species:		**5**	
TOTAL (A):		**TOTAL (B):**	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%	**X**	**YES**		**NO**
Prevalence Index is < or =3.01		**YES**		**NO**
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		**YES**		**NO**
Problematic Hydrophytic Vegetation1 (Explain)		**YES**		**NO**

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

Hydrophytic Vegetation Present?

(Yes) No

Hydrology

Recorded Data (describe in remarks):

Stream, lake, or tide gauge ____ Aerial photographs ____ Monitoring well ____ Other: ____

No Recorded Data Available

Growing Season Dates/Days: ____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?	**Yes**		**No**	X	Depth (inches)		Water in well?	**Yes**		**No**		Depth (inches)	
Water table present?	**Yes**	X	**No**		Depth (inches)	15	Saturation Present?	**Yes**	X	**No**		Depth (inches)	6

Remarks: Wetland Plot adjacent to stream

Wetland Hydrology Indicators:

Primary Indicators: (1 or more required, check all that apply)		**Secondary Indicators**: (2 or more required)	
___ Surface Water (A1)	___ Aquatic Fauna (B13)	___ Surface Soil Cracks (B6)	
___ High Water Table (A2)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)	
		___ Moss Trim Lines (B16)	
X Saturation (A3)	___ Hydrogen Sulfide Odor (C1)	X Dry-Season Water Table (C2)	
___ Water Marks (B1)	X Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)	
___ Sediment Deposits (B2)		___ Saturation Visible on Aerial (C9)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Stunted or Stressed Plants (D1)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	X Geomorphic Position (D2)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Shallow Aquitard (D3)	
___ Inundation Visible on Aerial Imagery (B7)	___ Water-Stained Leaves (B9)	___ Microtopographic Relief (D4)	
___ Sparsely Vegetated Concave Surface (B8)	___ Other (Explain in Remarks)	X FAC-Neutral Test (D5)	
		FAC-Neutral Test (4:2) (OBL & FACW : FACU & UPL)	

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-5	Sand	100	10YR 3/3					
5-16	Sand	98	10YR 2/2	10YR 5/6	2	C	PL	Mucky
16-20	Sand	100	10YR 2/1					High organic, mucky

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils Indicators:

___ Histosol (A1)	___ Thick Dark Surface (A12)	___ Stripped Matrix (S6)	**Indicators for Problematic Hydric Soils***
___ Histic Epipedon (A2)	___ Coast Prairie Redox (A16)*	___ Dark Surface (S7)*	___ Depleted Matrix (F3)
___ Black Histic (A3)	X Sandy Mucky Mineral (S1)	___ Polyvalue Below Surface (S8)*	___ Redox Dark Surface (F6)
___ Hydrogen Sulfide (A4)	___ 5 cm Mucky Peat or Peat (S3)*	___ Thin Dark Surface (S9)*	___ Depleted Dark Surface (F7)
___ Stratified Layers (A5)	___ Sandy Gleyed Matrix (S4)	___ Loamy Mucky Mineral (F1)	___ Redox Depressions (F8)
___ 2 cm Muck (A10)*	X Sandy Redox (S5)	___ Loamy Gleyed Matrix (F2)	___ Iron-Manganese Masses (F12)*
___ Depleted Below Dark Surface (A11)	___ Mesic Spodic (TA6)*	___ Red Parent Material (TF2)*	___ Piedmont Floodplain Soils (F19)*
			___ Very Shallow Dark Surface (TF12)*
***Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**			Other (Explain in Remarks)

Remarks:

Wetland Determination

Wetland Vegetation Present? [X] **YES** [ ] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [X] **YES** [ ] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [X] **YES** [ ] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [X] **YES** [ ] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

Is This Plot a Wetland? [X] **YES** [ ] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS		X	**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Routine Wetland Delineation Data Form

(1987 COE Wetlands Delineation Manual, 2009 Northeast & Northcentral Supplement)

Wetland Site:1560-31-00/71, USH 63 Cumberland – Spooner, Woodyard Rd to CTH B (East)					Date: 7/23/2013						
Applicant/Owner: WisDOT					County: Washburn						
Investigator(s): Erin Dethloff and Derek Huebsch					State: WI						
Normal climatic conditions on site typical for this time of year?	Yes	X	No		Do "normal circumstances" exist on the site?	X	YES			NO	
Transect #:					Is the site significantly disturbed (Atypical Situation)?	X	YES			NO	
Plot #: Up Plot 151					Is the area potentially naturally problematic?		YES		X	NO	
Plot Description: STA 868+00 – 869+00 LT					Type of atypical or problem area (soils, vegetation, hydrology)? **mowed**						

Vegetation

Dominant species are the most abundant species in each stratum that sum to 50% of total dominance measure. Any additional species comprising 20% of total dominance measure are also dominant. Non-dominant species used if dominant species are equal in number.

Strata = Herbs (**H**) 5'radius plot; 30' radius plot for: Trees (**T**) >3" dbh, Shrubs (**S**) <3" dbh, >3.2' tall, & Woody Vines (**V**)

	Dominant Species	%	Indicator	Stratum		Non-Dominant Species	%	Indicator	Stratum
1.	*Securgia varia* Crown Vetch	20	NI	H	1.	*Rubus ideaus* American Red Raspberry	5	FAC	H
2.	*Elymus repens* Quack Grass	15	FACU	H	2.	*Ranunculus hispidus* Bristly Buttercup	3	FAC	H
3.	*Salix interior* Sandbar Willow	5	FACW	T	3.	*Phleum pratense* Common Timothy Grass	1	FACU	H
4.					4.	*Agrostis gigantea* Red Top Grass	1	FACW	H
5.					5.	*Bromus inermis* Smooth Brome Grass	1	UPL	H
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				

Dominance Test: % of dominant species (all strata) that are OBL, FACW, and/or FAC? **33%**

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species:		1	
FACW species:		2	
FAC species:		3	
FACU species:		4	
UPL species:		5	
TOTAL (A):		TOTAL (B):	
Prevalence Index (B/A):			

Hydrophytic Vegetation Indicators

Dominance Test is >50%		YES	X	NO
Prevalence Index is < or =3.01		YES		NO
Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		YES		NO
Problematic Hydrophytic Vegetation1 (Explain)		YES		NO

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

Hydrophytic Vegetation Present?

Yes (No)

Hydrology

	Recorded Data (describe in remarks):										
	Stream, lake, or tide gauge		Aerial photographs		Monitoring well		Other:				
	No Recorded Data Available										

Growing Season Dates/Days: _____

(To evaluate hydrologic data from stream gauges/g.w. wells)

Field Observations:

Surface water present?	**Yes**		**No**	X	Depth (inches)		Water in well?	**Yes**		**No**	X	Depth (inches)	
Water table present?	**Yes**		**No**	X	Depth (inches)		Saturation Present?	**Yes**		**No**	X	Depth (inches)	

Remarks:

Wetland Hydrology Indicators:

Primary Indicators: (1 or more 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)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Other (Explain in Remarks)

Secondary Indicators: (2 or more required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

FAC-Neutral Test (1 : 2)
(OBL & FACW : FACU & UPL)

Remarks:

Soils (Describe to depth needed to document the indicator, or confirm the absence of indicators)

Map Unit Name (Series & hase):	Drainage Class:	Permeability:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	YES NO

Matrix				Redox Features				
Depth (Inches)	Texture	%	Matrix Color (G= Gleyed)	Color	%	Type[1] (C,D,RM, CS)	Location[2] (PL, M)	Remarks
0-20	Sand	60	5YR 4/4					30% clay, 10% gravel

Type[1] C=concentration D=depletion RM=reduced matrix CS=coated sand grains Location[2]: PL=Pore Lining M=Matrix

Hydric Soils Indicators:

Indicators for Problematic Hydric Soils*

- ___ 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)
- ___ Coast Prairie Redox (A16)*
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)*
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Mesic Spodic (TA6)*
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)*
- ___ Polyvalue Below Surface (S8)*
- ___ Thin Dark Surface (S9)*
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Red Parent Material (TF2)*
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12)*
- ___ Piedmont Floodplain Soils (F19)*
- ___ Very Shallow Dark Surface (TF12)*
- ___ Other (Explain in Remarks)

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

Remarks:

Wetland Determination

Wetland Vegetation Present? [ ] **YES** [X] **NO**

Note: The 1987 Corps Wetland Delineation Manual requires that greater than 50% of all dominant species be OBL, FACW, or FAC.

Wetland Hydrology Present? [ ] **YES** [X] **NO**

Note: According the 1987 Corp Wetlands Delineation Manual, wetland hydrology criteria are met if soil is saturated within the major portion of the root zone of the prevalent vegetation . The root zone is usually defined to be ≤12 inches. We define the major portion as ≤ to 50% or ≤ 6 inches. Estimating the saturated capillary fringe to be SPD = 2" and PD, VPD = 12", the depth of water table required to result in saturation in the major portion of the root zone can be calculated below.

Soil Type _____ Drainage Class _____ Permeability _____ Capillary Fringe _____ +6"=W.T. Depth Criteria _____

The 1989 Manual requires saturation to the surface defined by a water table at 6-18" below surface depending on the soil type.
SPD=6", PD & VPD at <6"/hr =18', at ≥6"/hr = 12".

Wetland Soils Present? [ ] **YES** [X] **NO**

Note: A wetland restoration site (man-induced wetland) is considered a disturbed (atypical) situation in the 1987 Corp Wetlands Delineation Manual. Soil indicators are often not reliable indicators since they reflect pre-restoration conditions rather than post-restoration conditions. In accordance with the 1987 Manual, in such cases where necessary, a wetland determination can be made based on the presence of hydrophytic vegetation and wetland hydrology if there is documented evidence that the wetland resulted from human activities.

Duration Met? [ ] **YES** [X] **NO**

If all 3 parameters are met, are they or would they normally be present during a significant portion of the growing season?

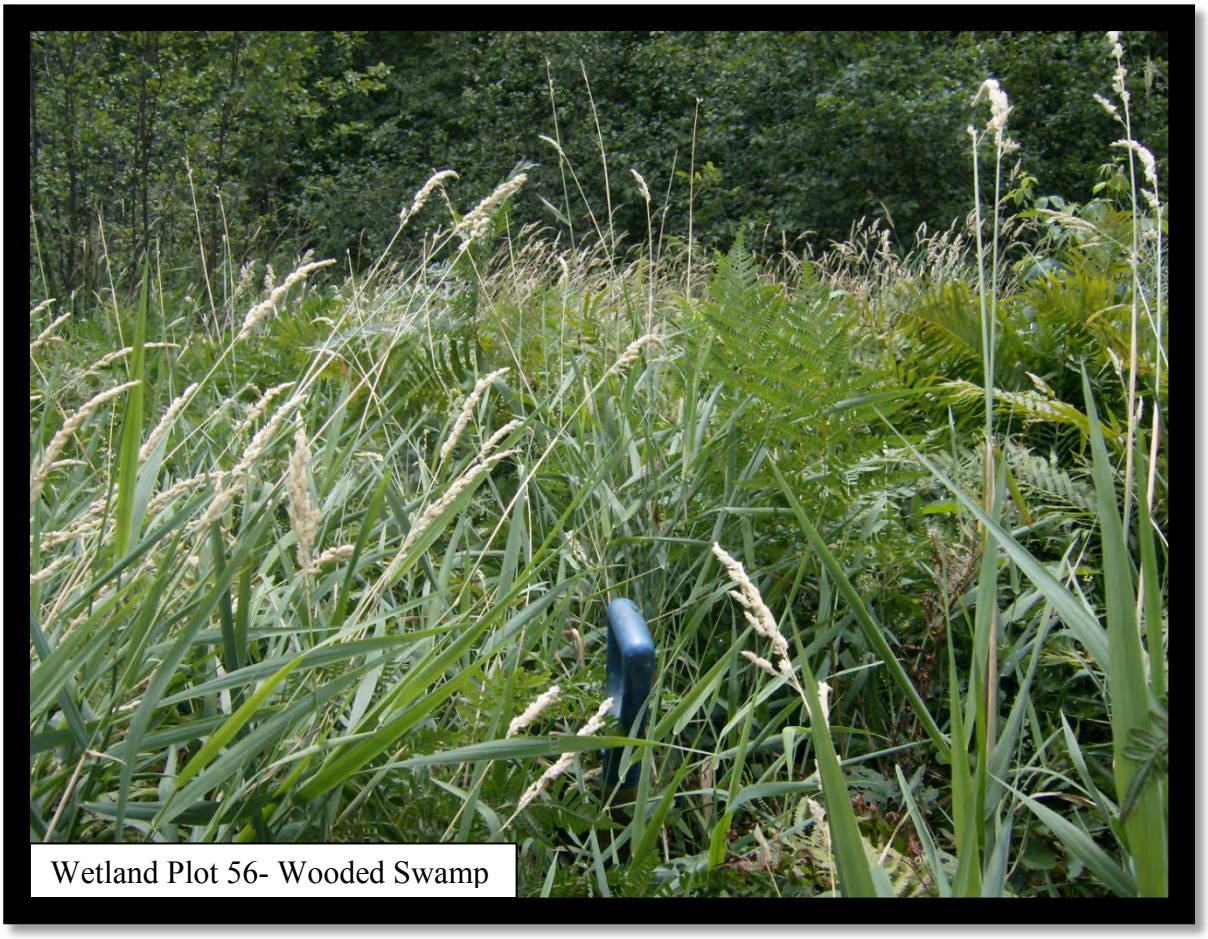
Is This Plot a Wetland? [ ] **YES** [X] **NO**

Plot ID:

Wetland Type:				
	M			**RPE**
	SS			**RPF**
	WS			**BOG**
	SM			**AB**
	DM			

Appendix C

Photos



Wetland Plot 56- Wooded Swamp

Upland Plot 56

Wetland Plot 58- Meadow

Upland Plot 58

Wetland Plot 59- Wooded Swamp

Upland Plot 59

Wetland Plot 60- Meadow

Upland Plot 60

Wetland Plot 73- Meadow

Upland Plot 73

Wetland Plot 74- Shrub Scrub

Upland Plot 74

Wetland Plot 78- Meadow

Upland Plot 78

Wetland Plot 81- Meadow

Upland Plot 81

Wetland Plot 102- Wooded Swamp

Upland Plot 102

Wetland Plot 126- Deep Marsh

Upland Plot 126

Wetland Plot 151- Riparian Forest (RPF)

Upland Plot 151