



**US Army Corps
of Engineers®**
St. Paul District

Appendix J: Wetland Delineation

CAP Section 205 Flood Risk Management Study

Arcadia, WI

Final Feasibility Study Report with Integrated
Environmental Assessment

This page intentionally left blank

Contents

Wetland Delineation Appendix J	3
1. Introduction	3
1.1. Off-Site Analyses	3
1.2. Field Verification	3
2. Turton Creek Area.....	4
2.1. Landscaped Area at Confluence with the Trempealeau River.....	4
2.2. Remainder of Corridor Between the Levee and Turton Creek Upstream to North Oak Street	4
2.3. Floodplain Forest.....	4
2.4. Area Downstream of North Oak Street Bridge	5
2.5. Wetlands on Interior (City Side) of Levee Along Turton Creek	9
2.5.1 Shallow/Deep Marsh	9
2.5.2 Stormwater Wetlands	10
2.5.3 Other Wetlands	10
3. Myers Valley Creek and Pasture Area.....	10
4. Natural Wetlands, Former Sewage Lagoons and Stormwater Pond.....	12
5. Literature Cited	12

Attachment A—Wisconsin Wetland Inventory Maps

Attachment B—Web Soil Survey

Attachment C—Data Sheets and Figures

Attachment D—Photographs

Attachment E—Precipitation Data

Wetland Delineation Appendix J

1. Introduction

A wetland delineation in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region—Version 2.0* (U.S. Army Corps of Engineers 2010) was conducted in August and September 2019. Off-site analyses followed by field verification were conducted as is standard practice. Identification and evaluation of other aquatic resources within the project area, such as streams and ponds, were not part of this investigation.

1.1. Off-Site Analyses

National Wetland Inventory (NWI) and Wisconsin Wetland Inventory (WWI) mapping of the project area were reviewed (Attachment A). A soils report for the project area was generated using the Web Soil Survey (Attachment B). Aerial photography from 1938, 2005, 2006, 2008, 2010, 2011, 2013, 2015, 2017, 2018 and 2019 was reviewed for wetland signatures and history of land use/alterations. A LiDAR layer and two-foot contour mapping were utilized in conjunction with interpreting presence/absence of wet signatures on aerial photography. A map illustrating the area inundated by the 2-year flood event, generated by the Corps modeling of the project area, was obtained to assist hydrology determinations. This is pertinent as the wetland hydrology technical standard requires inundation, and/or a water table ≤ 12 inches below the soil surface, for ≥ 14 consecutive days during the growing season in $\geq 50\%$ of years (U.S. Army Corps of Engineers 2005 and 2010). The two-year flood elevation addresses the 50% frequency of occurrence by inundation.

1.2. Field Verification

Fieldwork was conducted in August and September 2019. Data sheets and photographs were compiled to document observations (Attachments C and D). GPS data were collected for incorporation into GIS to produce maps illustrating the location of data points and delineation of wetland/upland boundaries. Not all areas were field-verified as permission to access some properties was not granted. Off-site analyses and observations from adjacent areas where access had been granted were conducted for areas lacking site access.

Precipitation recorded at the Trempealeau Dam weather station showed that, overall, the period of April through September 2019 was wetter than normal. April was within the normal range (3.74 inches) while May (7.53 inches), June (4.70 inches), July (6.56 inches) and September (6.61 inches) were wetter than normal. Only August was drier than normal (3.05 inches). Antecedent precipitation was characterized by applying the NRCS three month, weighted method using WETS tables (Woodward et al. 1997, Weber et al. 2015). Antecedent conditions for the August fieldwork were wetter than normal. In fact, the score of 18 is the wettest possible rating for a prior three month

period. Antecedent conditions for September were normal (Attachment E).

2. Turton Creek Area

2.1. Landscaped Area at Confluence with the Trempealeau River

A landscaped area exists between a levee and the channel of Turton Creek from its confluence with the Trempealeau River extending upstream approximately 545 feet. This area was originally a floodplain forest but has been highly disturbed. A levee was constructed years ago to address flooding problems experienced by the City of Arcadia. The present-day channel of Turton Creek at this location was formerly the main channel of the Trempealeau River (see 1938 aerial photograph). The NWI and WWI did not map this area as wetlands.

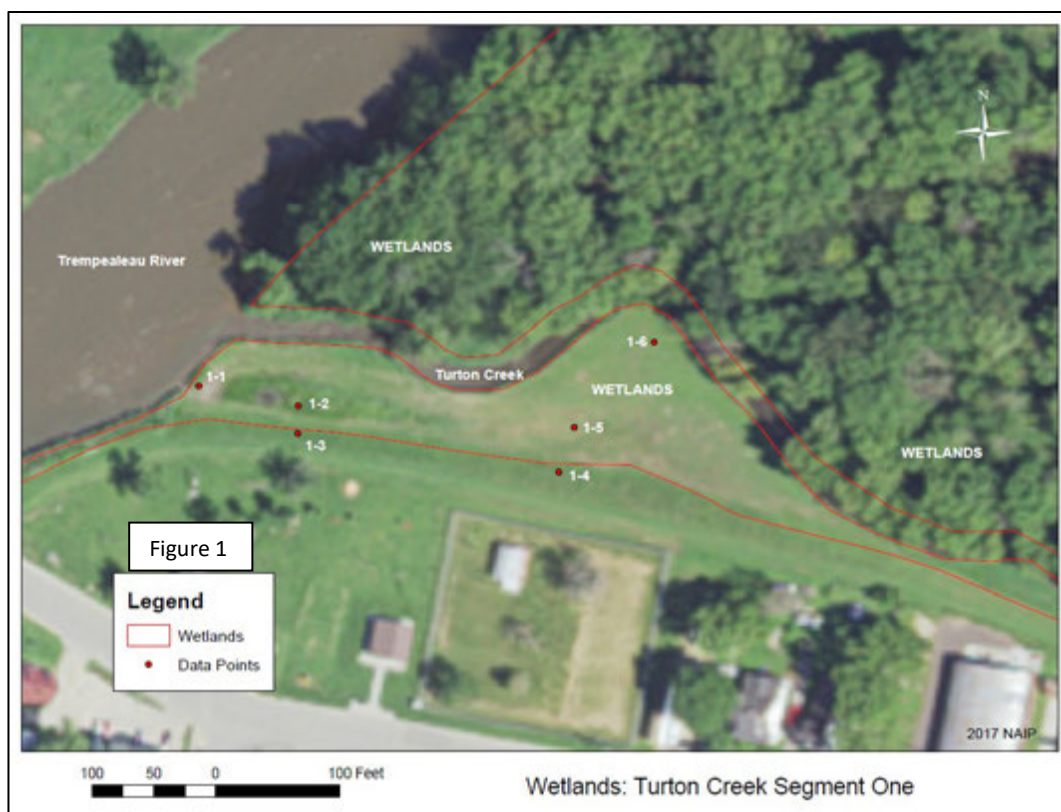
Six data points were documented. Soil samples were composed of mixed fill materials. Vegetation had been manipulated by management as turf including frequent mowing and presumed seeding of turf grasses (e.g., bluegrasses (*Poa* sp.)); however, turf grasses were flooded out in portions of this area creating mudflats and ponded areas. Per Chapter 5 procedures (U.S. Army Corps of Engineers 2010), managed vegetation (e.g., a planted crop, landscaped turf grasses) is excluded for purposes of the hydrophytic vegetation determination. Volunteer vegetation can be evaluated to indicate what vegetation would establish in the absence of management. In this case, volunteer vegetation was dominated by hydrophytes. Hydric soil and wetland hydrology field indicators were met. A depressional area at the western end was inundated to a depth of nine inches, which could be attributed to the wetter than normal conditions of August 2019. However, inundation is visible on six of eleven aerial photographs spanning 2004 to 2019. In sum, approximately 1.07 acre extending from the toe of the levee to the channel of Turton Creek was determined to be composed of wetlands (Figure 1). The seasonally inundated area is classified as shallow marsh (Eggers and Reed 2015)/PEMC (Cowardin et al. 1979)/E1K (WWI). The saturated soil area is classified as fresh (wet) meadow (Eggers and Reed 2015)/PEMB (Cowardin et al. 1979)/E1K (WWI).

2.2. Remainder of Corridor Between the Levee and Turton Creek Upstream to North Oak Street

A narrow corridor of wetlands exists between the toe of the levee and channel of Turton Creek extending upstream to the bridge at North Oak Street. This corridor of wetlands is not continuous as there are areas where the toe of the levee abuts the creek channel. Vegetation was dominated by reed canary grass (*Phalaris arundinacea*—FACW). Classification is fresh (wet) meadow (Eggers and Reed 2015)/PEMB (Cowardin et al. 1979)/E1K (WWI).

2.3. Floodplain Forest

The opposing side of Turton Creek from its confluence with the Trempealeau River to



the bridge at North Oak Street is predominately composed of a floodplain forest. Exceptions include a narrow berm extending approximately 1,050 feet downstream from that bridge (see discussion under 2.4) and fill for a railroad corridor. This is the least disturbed portion of the wetland complex adjacent to Turton Creek and the Trempealeau River. It was one of the few locations where a natural soil profile (i.e., undisturbed soils) was observed as well as being the most floristically diverse (Table 1). NWI and WWI mapped this area as wetlands. Classification is floodplain forest (Eggers and Reed 2015)/PFO1C (Cowardin et al. 1979)/T3Kw (WWI).

2.4. Area Downstream of North Oak Street Bridge

The section of Turton Creek in the vicinity of the North Oak Street bridge and downstream had been highly disturbed by past straightening and construction of a flood-control levee along the south side. On the north side, a berm exists with that portion closest to the creek channel cleared of woody vegetation and routinely mowed. The berm was not mapped as wetlands by NWI/WWI.

A major flood event, estimated to be a 200-year event for this section of Turton Creek, occurred on 27 July 2017. High flows overtopped the berm on the north side of the creek eroding part of the berm and resulting in an extensive alluvial fan of newly deposited sandy materials north of Turton Creek. Scouring created gullies (up to 14 inches in depth) and deposition of sandy materials up to 17 inches in depth.

TABLE 1: Floodplain Forest Community			
Stratum/Common Name	Scientific Name	Indicator Rating	Dominant
Trees:			
Silver maple	<i>Acer saccharinum</i>	FACW	Yes
Box elder	<i>Acer negundo</i>	FAC	Yes
Plains cottonwood	<i>Populus deltoides</i> ssp. <i>monilifera</i>	FAC	Yes
American elm	<i>Ulmus americana</i>	FACW	No
Black walnut	<i>Juglans nigra</i>	FACU	No
White-crack willow	<i>Salix x fragilis</i>	FAC	No
Hackberry	<i>Celtis occidentalis</i>	FAC	No
Green ash	<i>Fraxinus pennsylvanica</i>	FACW	No
Shrubs:			
Common buckthorn	<i>Rhamnus cathartica</i>	FAC	Yes
Box elder	<i>Acer negundo</i>	FAC	Yes
Nannyberry	<i>Viburnum lentago</i>	FAC	No
Sand-bar willow	<i>Salix interior</i>	OBL	No
Elderberry	<i>Sambucus nigra</i>	FAC	No
Gooseberry	<i>Ribes missourense</i>	FACU	No
Woody vines:			
River-bank grape	<i>Vitis riparia</i>		Yes
Herbaceous:			
Reed canary grass	<i>Phalaris arundinacea</i>	FACW	Yes
Jewelweed	<i>Impatiens capensis</i>	FACW	Yes
Virginia knotweed	<i>Persicaria virginiana</i>	FACW	Yes
Wood nettle	<i>Laportea canadensis</i>	FACW	Yes
Moneywort	<i>Lysimachia nummularia</i>	FAC	Yes
Gray-headed coneflower	<i>Rudbeckia laciniata</i>	FACW	No
Wild cucumber	<i>Echinocystis lobata</i>	FAC	No
Virginia wild-rye	<i>Elymus virginicus</i>	FACW	No
Green dragon	<i>Arisaema dracontium</i>	FACW	No
Ostrich fern	<i>Matteuccia struthiopteris</i>	FACW	No
Giant ragweed	<i>Ambrosia trifida</i>	FAC	No
Hops	<i>Humulus lupulus</i>	FAC	No
Angelica	<i>Angelica atropurpurea</i>	OBL	No
Stinging nettle	<i>Urtica dioica</i>	FAC	No
Clearweed	<i>Pilea pumila</i>	FACW	No
Red-stem aster	<i>Symphotrichum puniceum</i>	OBL	No

Flooding and deposition/scouring of soils is a natural occurrence in floodplains; however, a 200-year flood event could be considered a catastrophic event the results of which do not represent the normal circumstances. But given that the deposition and scouring were the result of natural events, a stronger case can be made to consider current conditions as representing new normal circumstances. That approach was

adopted for this delineation.

A determination of hydric versus non-hydric soils was complicated by the recent, substantial scouring/deposition as well as past placement of fill materials. Data Point 4-1 was located in an area that appeared to have been scoured—herbaceous vegetation had been washed away and was still in the process of recolonizing this site. Soils met a hydric soil field indicator. Abundant hydrology indicators were observed (e.g., drift deposits, sediment deposits); however, these could be misleading as they were due to a recent, major flood event as opposed to indicating inundation at a frequency and duration sufficient to support wetland hydrology. This data point was on the boundary of inundation by the 2-year flood event—but this modeling used contour mapping based on pre-July 2017 conditions that do not reflect any scouring (lowering in elevation) that may have occurred due to the July 2017 flood event. Herbaceous vegetation was depauperate and low areal cover by pioneering species should be viewed with caution as it may not be a reliable indicator of what herbaceous cover would eventually dominate. Trees were a mix of FACW/FAC/ FACU species. There was no shrub layer. Overall, the hydrophytic vegetation criterion was met. This data point was determined to be within wetlands.

Data Point 4-2 was located within a more heavily forested portion of the berm. Trees were composed of a mix of FAC and FACU species, as were shrubs. Again, the herbaceous layer was depauperate and composed of pioneering species; therefore, it may not be a reliable indicator of what herbaceous cover would eventually dominate. Using tree and shrub species alone, the hydrophytic vegetation criterion was met. Piles of fill materials were observed and the soil pit was located outside of those obvious disturbances. However, the soil pit revealed recent deposition of 17 inches of sandy materials, the depth of which eliminated all hydric soil field indicators. While hydrology indicators such as drift deposits and sediment deposits were abundant, these could be misleading as they were due to a major flood event as opposed to indicating inundation at a frequency and duration sufficient to support wetland hydrology. This data point was also located just outside of the area inundated by the 2-year flood—note that this was based on pre-July 2017 contour mapping that does not reflect an increase in elevation due to a 17-inch thick layer of new sediments. The final determination for this data point was that it was within uplands. See discussion below.

Along this reach of Turton Creek, the 2-year flood elevation determined by the Corps model extended to approximately elevation 732. While the 2-year flood elevation addresses the $\geq 50\%$ frequency requirement of the wetland hydrology technical standard, it does not address the duration requirement of ≥ 14 consecutive days during the growing season. An inquiry was made as to whether the Corps model could be calibrated to determine a 14-day duration, 2-year flood event. While this modeling is possible, the time and cost to calibrate and run the model were beyond the scope of this wetland delineation effort. Additionally, a new contour map would be needed given changes due to the 2017 flood event. Using the elevation of the 2-year flood event with no duration requirement would be conservative—i.e., showing the maximum areal

extent that could meet wetland hydrology via flooding alone.

The berm along the north side of Turton Creek is at elevation 732-734. The 2-year flood elevation and 2-foot contour interval mapping for the site, in conjunction with field verification, were applied and determined that the majority of the berm—approximately 1.95 acre—is composed of uplands (Figure 2). Initially, the wetland/upland boundary along the backside portion (northern boundary) of the berm was mapped using the 732 contour interval. However, that contour mapping used pre-July 2017 conditions and does not reflect changes due to deposition and scouring by the July 2017 event. Field verification in 2019 included collecting GPS data points to document present-day conditions. Figure 2 illustrates the end product of modifying the 732 contour line using GPS data to arrive at the present-day wetland/upland boundary. The topography break along the backside of the berm was the final element in this determination. NWI/WWI mapped wetlands in about one-third of the wetland area shown by Figure 2 and classified it as PFO1/EM1C (Cowardin et al. 1979)/T3/E1Kw (WWI).

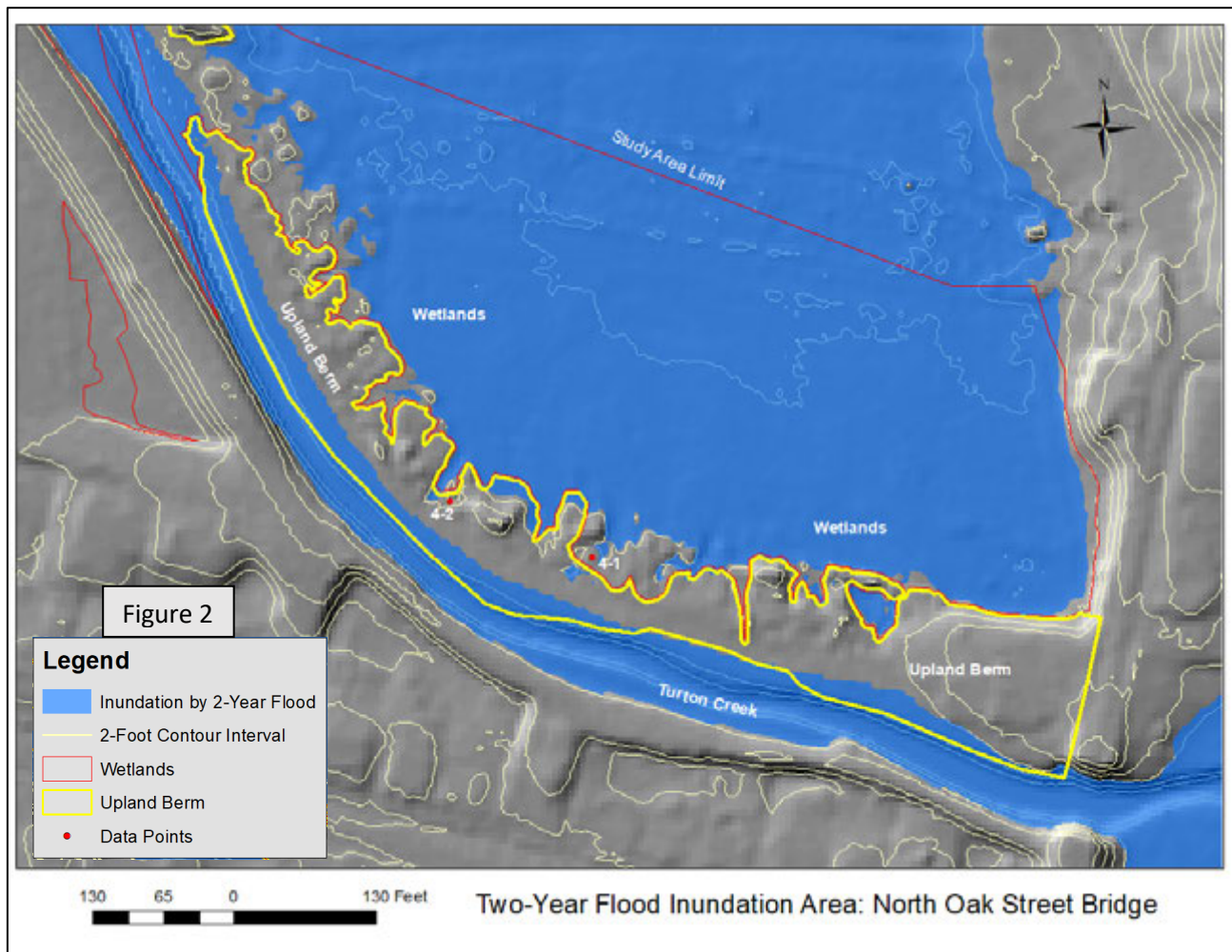
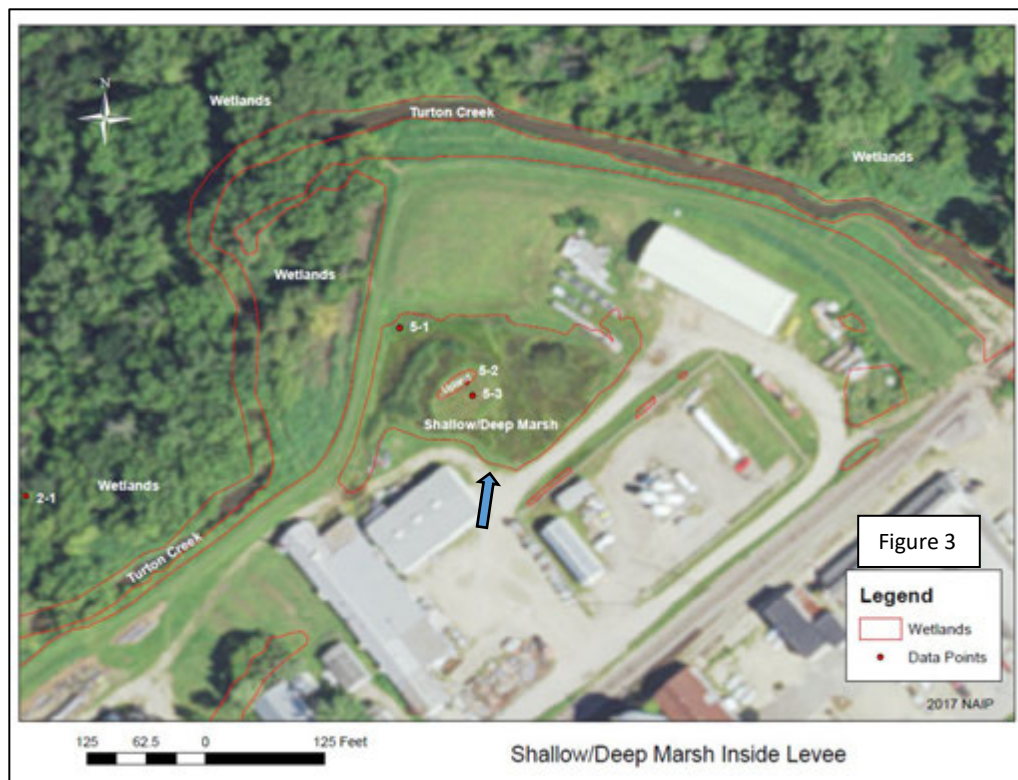


Figure 2: The gap between the wetland/upland boundary and 2-year flood inundation area in the vicinity of Data Point 4-1 appears to be a result of scouring by the July 2017 event. Scattered, small (less than 0.01 acre) piles of dredged/fill material at elevation 732 or greater are uplands but were not individually mapped for purposes here.

2.5. Wetlands on Interior (City Side) of Levee Along Turton Creek

2.5.1 Shallow/Deep Marsh

This area was historically part of the extensive floodplain forest complex adjacent to the Trempealeau River and Turton Creek but was cut-off by construction of the levee and then subjected to various fill activities over the years. The higher, drier portions are routinely mowed when conditions allow. NWI/WWI did not map any wetlands at this location; however, an area of approximately 0.77 acre consistently showed wet signatures including inundation visible in seven of eleven years of aerial photography spanning 2004-2019 (Figure 3). Soils were hydric and inundation up to 9 inches (22 August) and 14 inches (24 September) was observed. Three wetland plant communities were field-verified: (1) deep marsh (Eggers and Reed 2015)/PEMF (Cowardin et al. 1979)/E2H (WWI) dominated by water plantain (*Alisma triviale*—OBL) and lesser duckweed (*Lemna minor*—OBL) with broad-leaved arrowhead (*Sagittaria latifolia*—OBL) and cattails (*Typha* spp.—OBL) also common; (2) shallow marsh (Eggers and Reed 2015)/PEMC (Cowardin et al. 1979)/E1K (WWI) dominated by water plantain and marsh spike-rush (*Eleocharis palustris*—OBL); and (3) seasonally flooded basin (Eggers and Reed 2015)/PEMA (Cowardin et al. 1979)/E1K (WWI) dominated by flat-sedges (*Cyperus strigosus*, *C. diandrus*—both FACW). Regarding the seasonally flooded basin—this area is what remains after a fill activity visible on 2005 aerial photography. Placement of fill changed the wetland type, but was insufficient to convert the area to non-wetlands. In contrast, an adjacent, small, linear area was filled to a higher elevation that was sufficient to convert it to non-wetlands.



2.5.2 Stormwater Wetlands

A stormwater drainage ditch, consisting of wetlands, exists along the north end of Van Buren Street and then follows Massuere Street. Cattails and reed canary grass were the dominant species while non-dominants included beggarticks (*Bidens cernua*—OBL) and giant managrass (*Glyceria grandis*—OBL). A stormwater ponding area consisting of approximately 0.14 acre of wetlands exists at the junction of Massuere Street and East River Street. Saturated soils and microdepressions with standing water were observed. Dominant vegetation was a spike-rush (*Eleocharis* sp.) along with a diversity of pioneering species including flat-sedges, smartweeds and curly dock (*Rumex crispus*—FAC). Classification is seasonally flooded basin (Eggers and Reed 2015)/PEMA (Cowardin et al. 1979)/E1K (WWI).

2.5.3 Other Wetlands

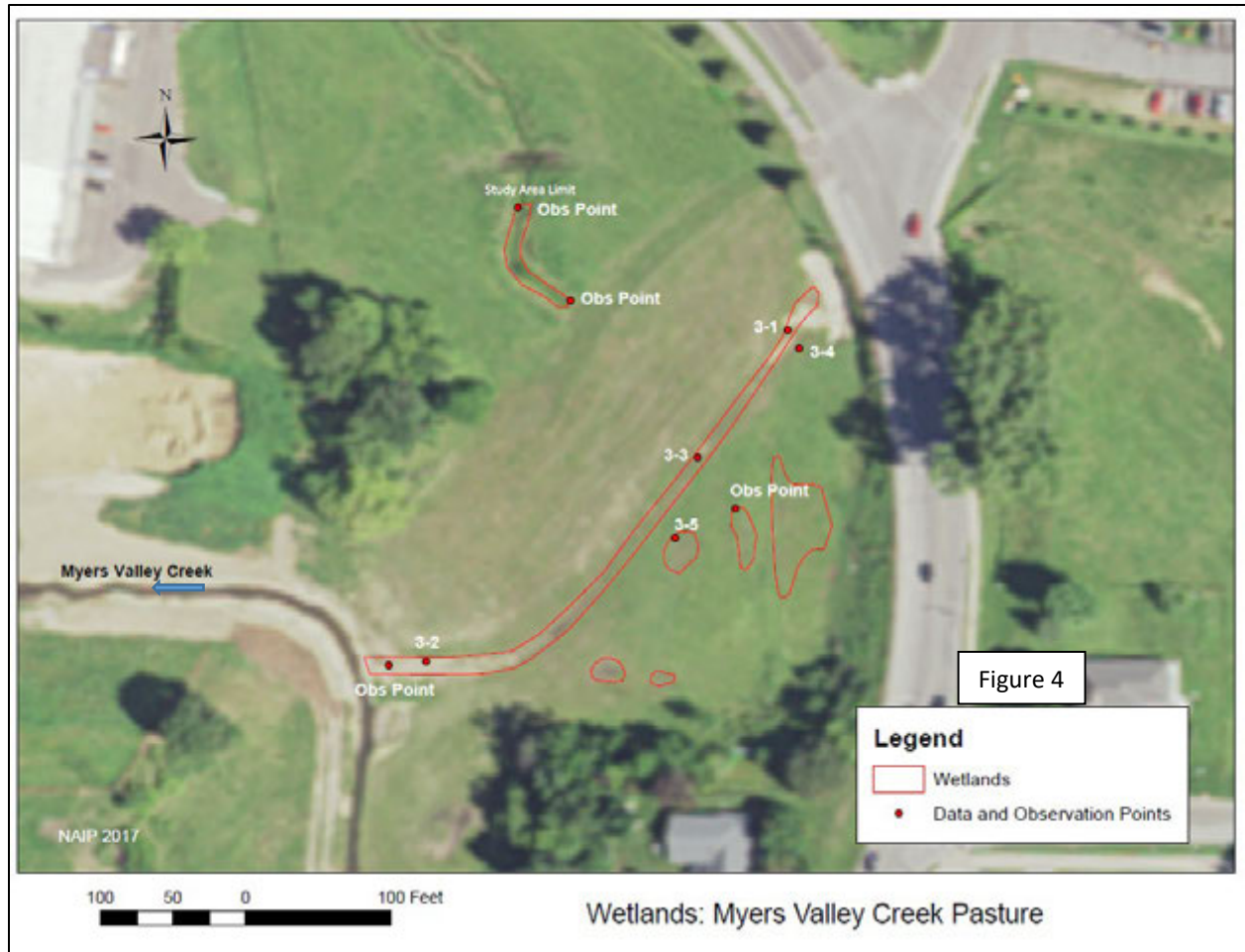
A number of small, isolated pockets of wetlands were mapped. Most were dominated by reed canary grass. Plains cottonwood, willows and common buckthorn were present in some remnants.

3. Myers Valley Creek and Pasture Area

This area has a long history of disturbance. Myers Valley Creek has been rerouted twice, most recently in 2016 when the creek was diverted to the west and a large berm was constructed to block flows to the north (towards the Ashley Furniture complex). A man-made swale now conveys runoff from the north that is directed into the swale via large culverts under South Washington Street (County Road J) and then connects with the new channel of Myers Valley Creek (Figure 4).

Soils have been significantly disturbed by past grading and filling activities. Compacted soils of this site required multiple attempts to find locations where soil samples could be taken, and then often to a depth of less than 10 inches before encountering a layer that could not be penetrated with hand tools. Vegetation largely consisted of a typical pasture/erosion control seed mix including perennial rye (*Lolium perenne*—FACU), annual bluegrass (*Poa annua*—FACU) and clovers (*Trifolium repens*, *T. pratense*, *T. hybridum*—all FACU). Thus, the area was considered to be managed vegetation. Chapter 5 procedures exclude a planted/seeded crop from the hydrophytic vegetation determination. Volunteer vegetation can be used, but caution is advised if the total areal cover by volunteer species is low. The area was recently grazed, but dominant vegetation could still be identified. In sum, all three factors—hydrology, soils and vegetation—were significantly disturbed.

NWI/WWI did not map any wetlands within this area.



Data points were established within the newly-constructed, man-made swale. Dominant vegetation was composed of water pepper (*Persicaria hydropiper*—OBL) and reed canary grass as opposed to species associated with a pasture/erosion control mix. Soils were hydric and wetland hydrology was evident. Moving upslope to a slightly higher elevation, soils remained hydric but both wetland hydrology and hydrophytic vegetation were absent. The swale, approximately 432 feet in length and ranging from approximately 8.5 to 13.0 feet in width, was delineated as wetlands. Classification is seasonally flooded basin (Eggers and Reed 2015)/PEMA (Cowardin et al. 1979)/E1K (WWI).

Five, small, isolated wetland depressions (totaling approximately 0.10 acre) were also documented within the pasture. These areas were ponded at the time of site visits (August and September 2019). Hydric soils and dominance by hydrophytes were observed with water pepper being the primary dominant. Classification is seasonally flooded basin (Eggers and Reed 2015)/PEMA (Cowardin et al. 1979)/E1K (WWI).

A remnant of the channel of Myers Valley Creek located north of the newly constructed berm is within the project corridor and consists of a steep-walled, 3.5-foot deep channel approximately 6-feet in width. Standing water and dominance by hydrophytic vegetation was observed.

4. Natural Wetlands, Former Sewage Lagoons and Stormwater Pond

An extensive wetland complex composed of wet meadow, shallow/deep marsh and open water exists along the southern and western borders of the project corridor, which consist of a levee. Both natural wetlands, and abandoned sewage lagoons that have reverted to wetlands, are present. In order to avoid wetland impacts, the proposed project would be built on top of the existing levee. Wetland hydrology includes a water table ≤ 12 inches from the soil surface for ≥ 14 consecutive days during the growing season in most years. Given the semi-permanent inundation associated with this wetland complex, the wetland boundary would be 12 inches above the normal water elevation. Further delineation of this boundary was not part of the subject delineation.

The southern boundary includes a stormwater pond that would be impacted by the proposed project. The pond was vegetated by coontail (*Ceratophyllum demersum*) and elodea (*Elodea canadensis*).

5. Literature Cited

Cowardin, L., V. Carter, F. Golet and E. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 103 pp.

Eggers, S. and D. Reed. 2015. *Wetland Plants and Plant Communities of Minnesota and Wisconsin— Version 3.2*. U.S. Army Corps of Engineers, St. Paul District. St. Paul, MN. 478 pp.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. 98 pp. plus appendices.

U.S. Army Corps of Engineers. 2005. *Technical Standard for Water-Table Monitoring of Potential Wetland Sites*. WRAP Technical Notes Collection (ERDC TN-WRAP-05-2). U.S. Army Engineer Research and Development Center, Vicksburg, MS. 18 pp.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region—Version 2.0*. Ed. By J. Wakeley, R. Lichvar and C. Noble. ERDC/EL TR-10-16. U.S. Army Engineer Research and Development Center, Vicksburg, MS. 152 pp.

Weber, R. ed. 2015. *Hydrology Tools for Wetland Identification and Analysis*. Chapter 19, Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX. 112 pp.

Woodward, D. ed. 1997. *Hydrology Tools for Wetland Determination*. Chapter 19, Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX. 55 pp.

Attachment A: Wisconsin Wetland Inventory Maps



DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>



Surface Water Data Viewer Map



Legend

- Wetland Identifications and Confirmations
 - 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
 - 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
 - Municipality
 - State Boundaries
 - County Boundaries
 - Major Roads
 - Interstate Highway
 - State Highway
 - US Highway
 - County and Local Roads
 - County HWY
 - Local Road
 - Railroads

Notes

0.3 0 0.13 0.3 Miles

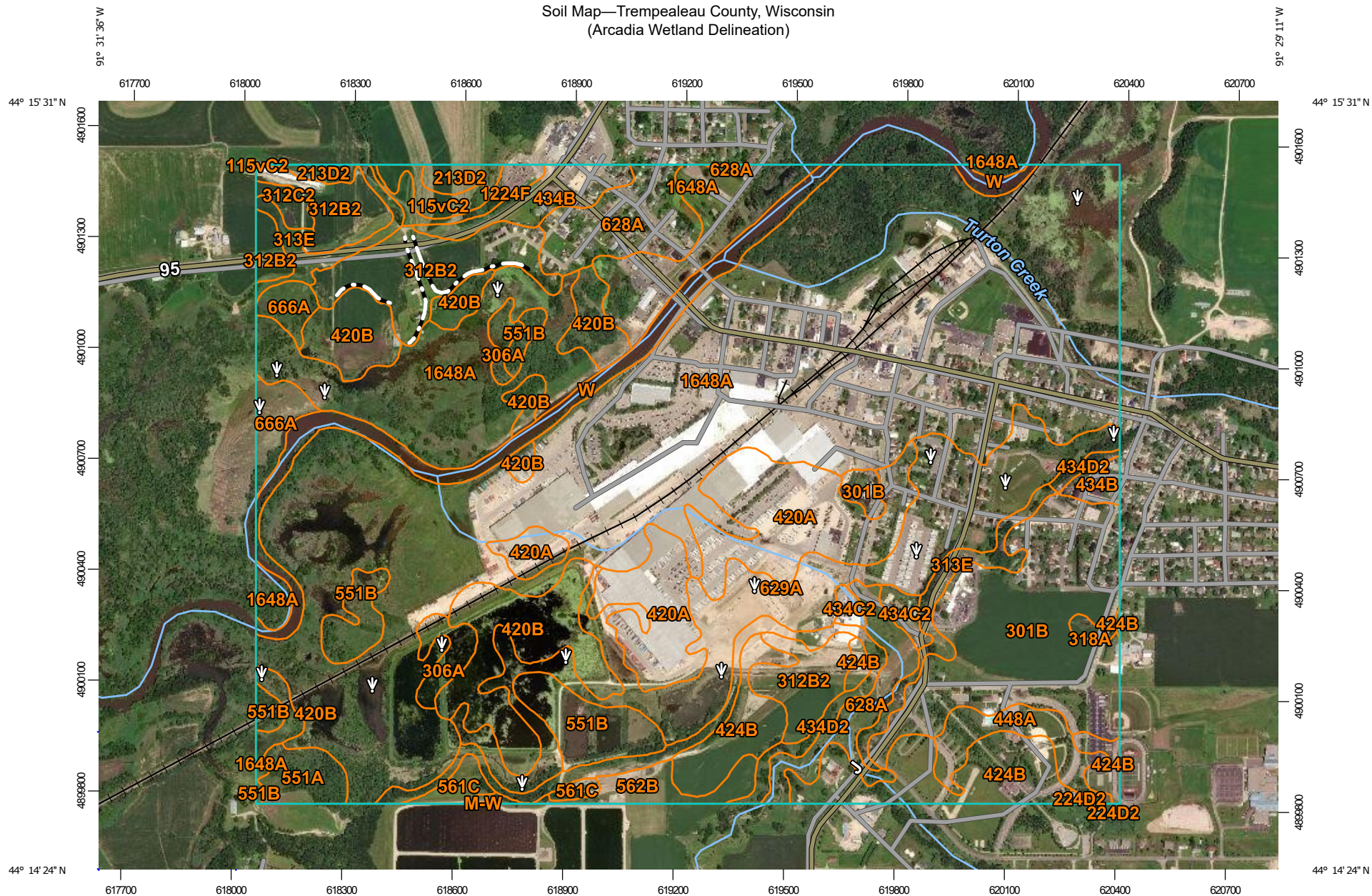
NAD_1983_HARN_Wisconsin_TM

1: 7,920

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

Attachment B: Web Soil Survey

Soil Map—Trempealeau County, Wisconsin
(Arcadia Wetland Delineation)



Map Scale: 1:14,600 if printed on A landscape (11" x 8.5") sheet.

0 200 400 800 1200 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

7/17/2019
Page 1 of 4

Soil Map—Trempealeau County, Wisconsin
(Arcadia Wetland Delineation)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Trempealeau County, Wisconsin

Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 5, 2015—Sep 28, 2017

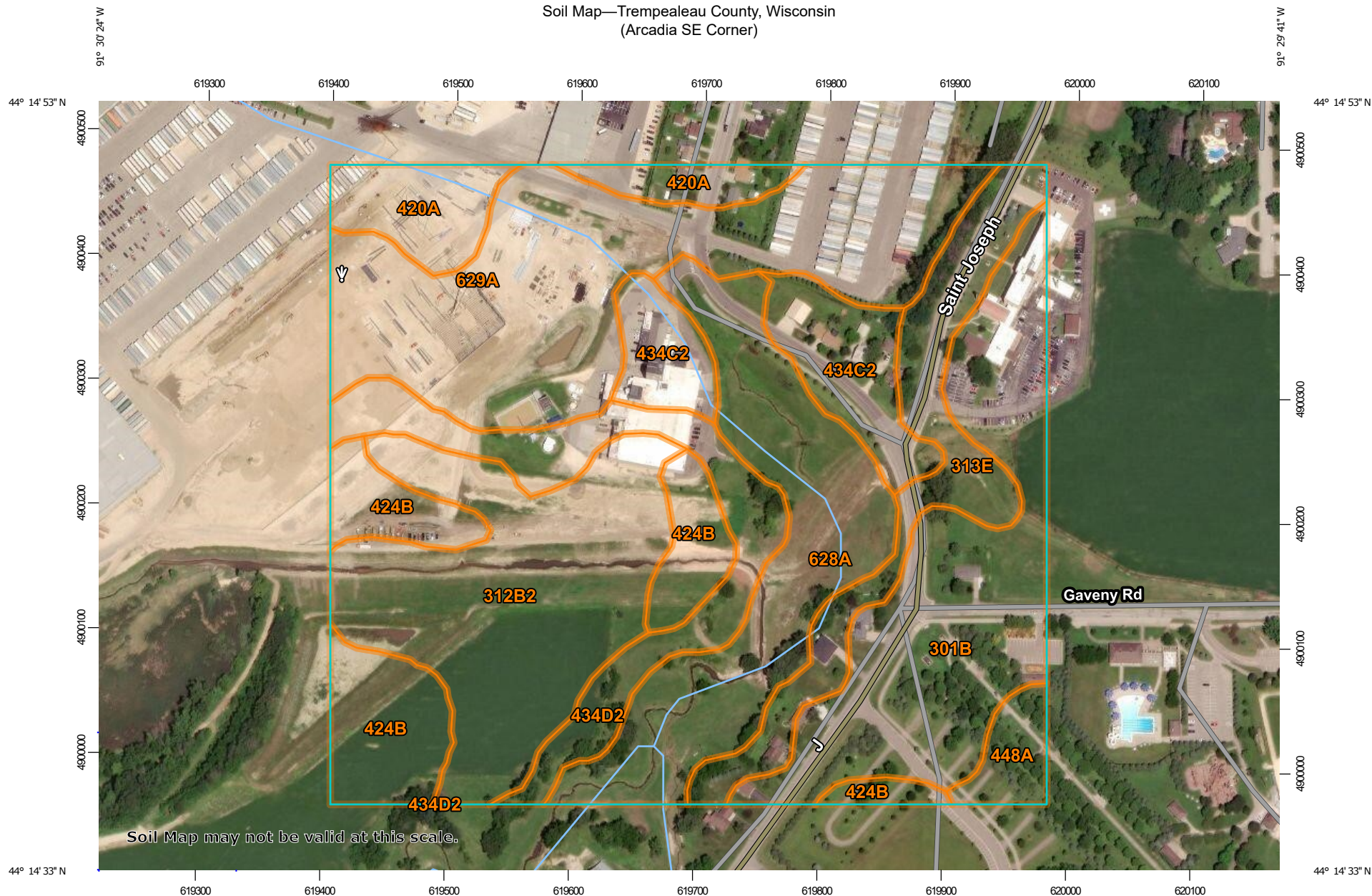
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
115vC2	Seaton silt loam, driftless valley, 6 to 12 percent slopes, moderately eroded	4.8	0.5%
213D2	Hixton silt loam, 12 to 20 percent slopes, moderately eroded	5.5	0.6%
224D2	Elevasil sandy loam, 12 to 20 percent slopes, moderately eroded	0.5	0.0%
301B	Pillot silt loam, 2 to 6 percent slopes	69.1	6.9%
306A	Whitehall silt loam, 0 to 3 percent slopes, occasionally flooded	8.2	0.8%
312B2	Festina silt loam, 1 to 6 percent slopes, moderately eroded	49.5	4.9%
312C2	Festina silt loam, 6 to 12 percent slopes, moderately eroded	2.9	0.3%
313E	Plumcreek silt loam, 20 to 45 percent slopes	16.7	1.7%
318A	Bearpen silt loam, 0 to 3 percent slopes, rarely flooded	1.3	0.1%
420A	Bilson fine sandy loam, 0 to 2 percent slopes	59.9	5.9%
420B	Bilson fine sandy loam, 2 to 6 percent slopes	57.4	5.7%
424B	Merit silt loam, 1 to 6 percent slopes	43.3	4.3%
434B	Bilson sandy loam, 1 to 6 percent slopes	14.0	1.4%
434C2	Bilson sandy loam, 6 to 12 percent slopes, moderately eroded	4.6	0.5%
434D2	Bilson sandy loam, 12 to 20 percent slopes, moderately eroded	19.0	1.9%
448A	Sooner silt loam, 0 to 3 percent slopes	12.0	1.2%
551A	Impact sand, 0 to 3 percent slopes	8.1	0.8%
551B	Impact sand, 2 to 6 percent slopes	25.0	2.5%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
561C	Tarr sand, 6 to 15 percent slopes	4.9	0.5%
562B	Gosil loamy sand, 1 to 6 percent slopes	8.4	0.8%
628A	Orion silt loam, 0 to 3 percent slopes, occasionally flooded	35.1	3.5%
629A	Ettrick silt loam, 0 to 2 percent slopes, frequently flooded	76.0	7.6%
666A	Absco loamy sand, 0 to 3 percent slopes, occasionally flooded	10.9	1.1%
1224F	Boone-Elevasil complex, 15 to 50 percent slopes	5.2	0.5%
1648A	Northbend-Ettrick silt loams, 0 to 3 percent slopes, frequently flooded	438.3	43.5%
M-W	Miscellaneous water	0.1	0.0%
W	Water	26.0	2.6%
Totals for Area of Interest		1,006.5	100.0%

Soil Map—Trempealeau County, Wisconsin
(Arcadia SE Corner)



Map Scale: 1:4,340 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

7/17/2019
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Trempealeau County, Wisconsin

Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 5, 2015—Sep 28, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
301B	Pillot silt loam, 2 to 6 percent slopes	11.0	15.1%
312B2	Festina silt loam, 1 to 6 percent slopes, moderately eroded	11.7	15.9%
313E	Plumcreek silt loam, 20 to 45 percent slopes	5.6	7.6%
420A	Bilson fine sandy loam, 0 to 2 percent slopes	3.4	4.7%
424B	Merit silt loam, 1 to 6 percent slopes	6.3	8.7%
434C2	Bilson sandy loam, 6 to 12 percent slopes, moderately eroded	4.6	6.3%
434D2	Bilson sandy loam, 12 to 20 percent slopes, moderately eroded	5.7	7.7%
448A	Sooner silt loam, 0 to 3 percent slopes	1.2	1.6%
628A	Orion silt loam, 0 to 3 percent slopes, occasionally flooded	9.5	12.9%
629A	Ettrick silt loam, 0 to 2 percent slopes, frequently flooded	14.3	19.5%
Totals for Area of Interest		73.3	100.0%



Attachment C: Data Sheets and Figures



150 75 0 150 Feet

Wetlands: Turton Creek Segment One



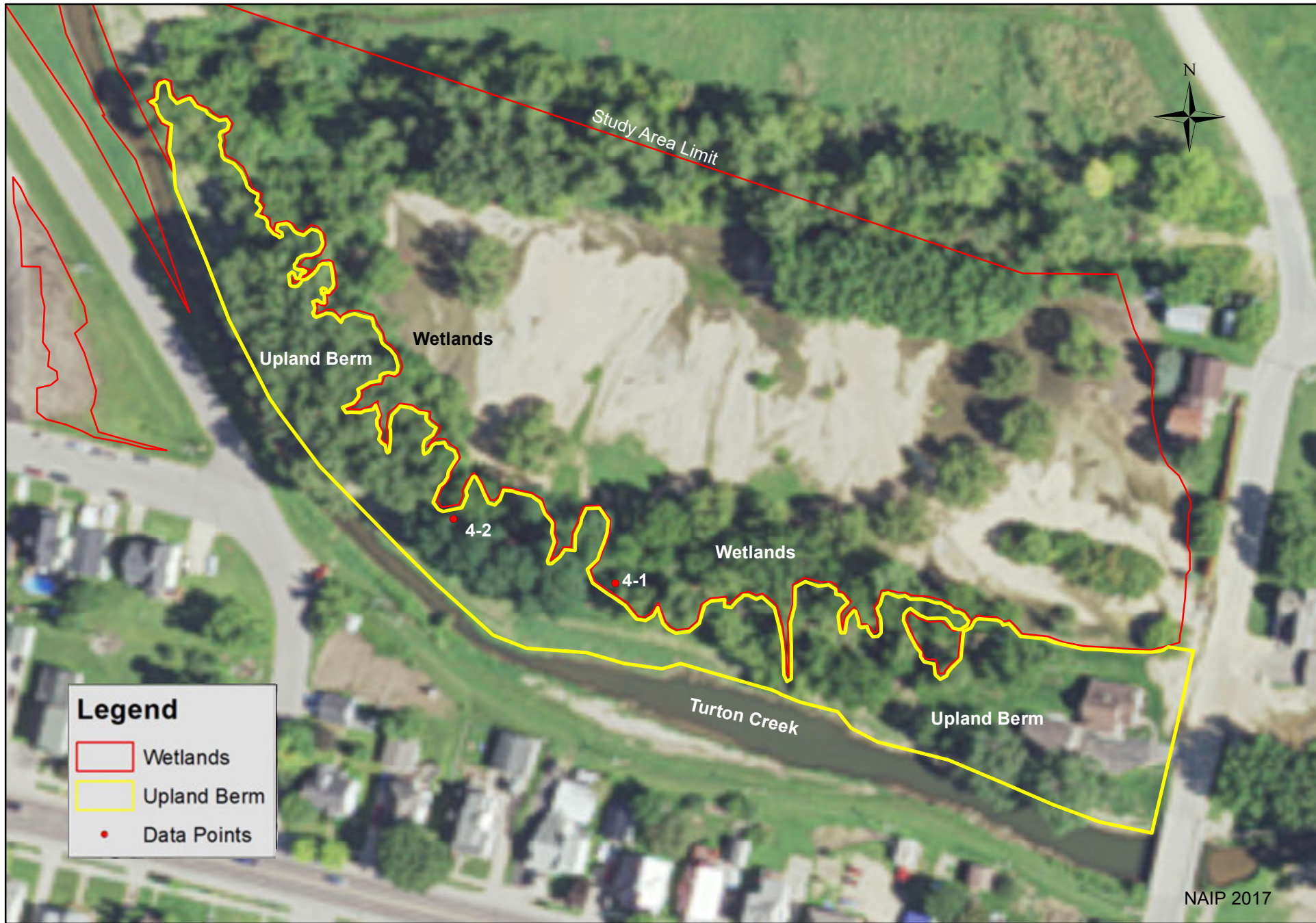
150 75 0 150 Feet

Wetlands: Turton Creek Segment Three

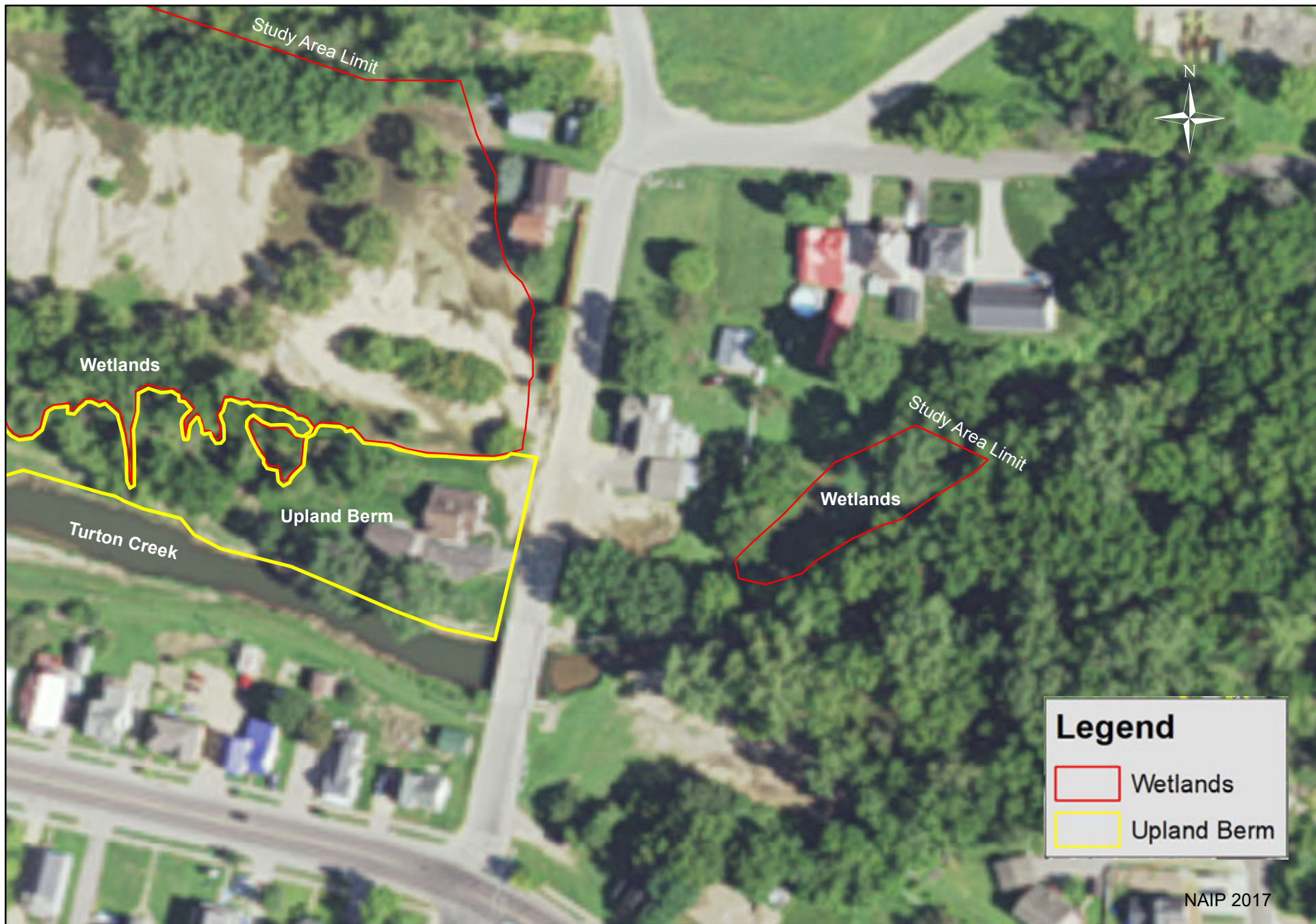


160 80 0 160 Feet

Wetlands: Turton Creek Segment Four

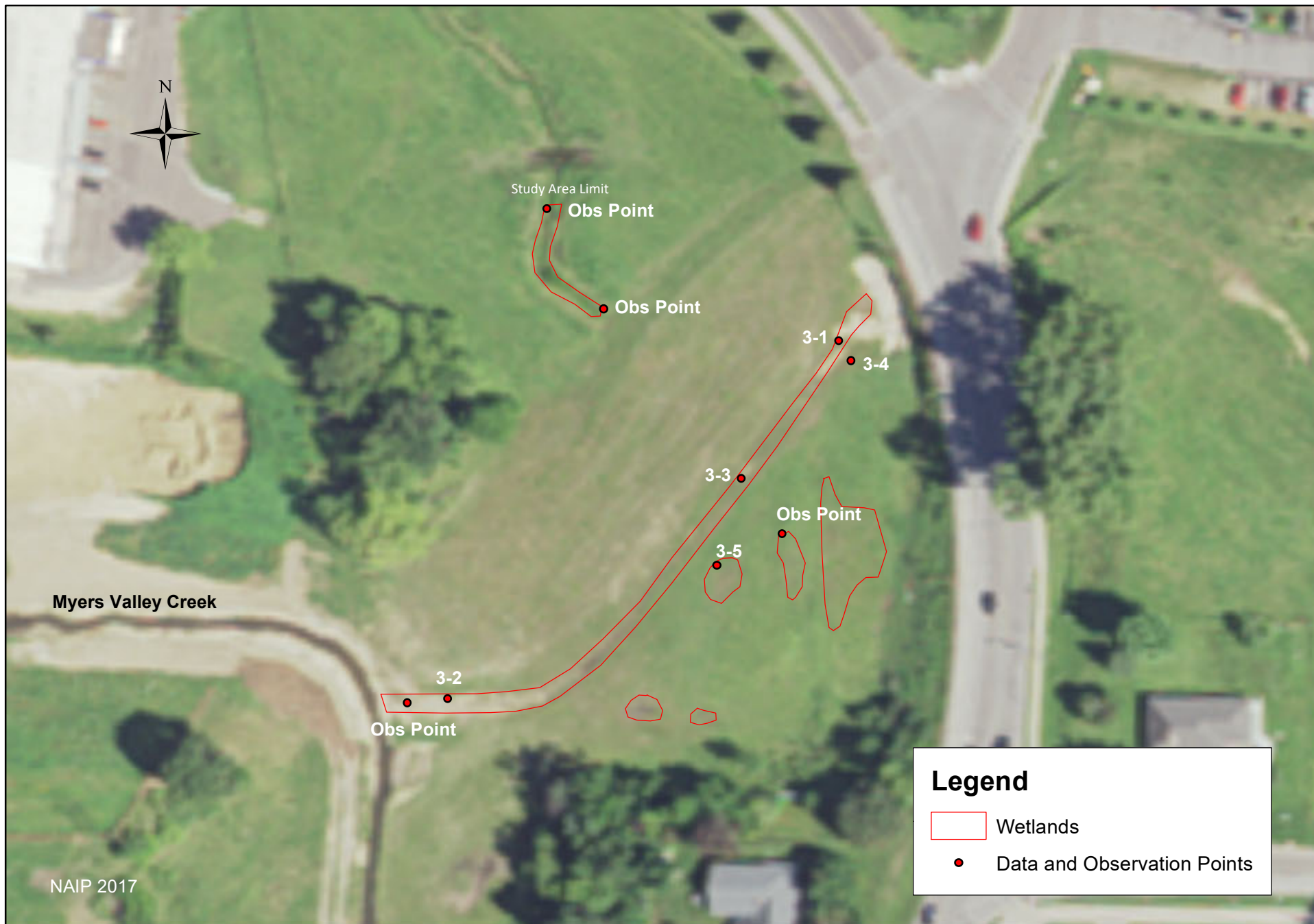


Wetlands: Turton Creek Segment Five



125 62.5 0 125 Feet

Wetlands: Turton Creek Segment Six



Wetlands: Myers Valley Creek Pasture

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 1-1
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Landscaped turf area, recently mowed, extending from toe of floodcontrol levee to present-day channel of Turton Creek. Not normal circumstances given active management of vegetation for turf/landscaping. Not mapped by NWI/WWI--classification of PEMB determined in the field.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Herb Stratum	(Plot size: <u>7' x 11'</u>)			
1. <u>Cyperus esculentus</u>		20	Yes	FACW
2. <u>Periscaria hydropiper</u>		15	Yes	OBL
3. <u>Phalaris arundinacea</u>		15	Yes	FACW
4. <u>Lysimachia nummularia</u>		5	No	FACW
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
		55 =Total Cover		
Woody Vine Stratum	(Plot size: _____)			
1. _____				
2. _____				
		=Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>40</u>	x 2 = <u>80</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>55</u> (A)	<u>95</u> (B)
Prevalence Index = B/A = <u>1.73</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation

Present? Yes X No _____

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

Turf grass (Poa sp.) with 60% areal cover. This is a "managed plant community" per Chapter 5 procedures. The planted/managed vegetation is excluded from the hydrophytic vegetation determination. Documenting volunteer vegetation is one of the methods per Chapter 5 procedures.

SOIL

Sampling Point: 1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/2	70	7.5YR 4/4	5	C	M	Loamy/Clayey	Mixed fill materials
	10YR 5/1	25						
8-20	10YR 2/2	70	7.5YR 4/4	10	C	M	Loamy/Clayey	
	10YR 3/2	20						

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)
	<input type="checkbox"/> ? Coast Prairie Redox (A16)
	<input type="checkbox"/> Iron-Manganese Masses (F12)
	<input type="checkbox"/> Red Parent Material (F21)
	<input type="checkbox"/> Very Shallow Dark Surface (F22)
	<input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:
Disturbed, not a natural soil profile (e.g., lighter matrix colors on top of darker matrix colors is reverse of a natural soil profile). Given levee construction and re-routing of Trempealeau River and Turton Creek, this area has been highly disturbed. Redox in upper 8 inches with diffuse boundaries (indicating it is not relic). Landscape position and volunteer vegetation indicate wetland conditions. BPJ is that soil is hydric.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.5</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:
The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek near this sample point was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Adjacent areas ponded to 4" deep. Water table in bore hole at 6" after 10 minutes, then at 0.5" after 20 minutes. Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 1-2
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): Concave
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Landscaped turf area, recently mowed, extending from toe of floodcontrol levee to present-day channel of Turton Creek. Not normal circumstances given active management of vegetation for turf/landscaping. Not mapped by NWI/WWI--classification of PEMC determined in the field.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Herb Stratum	(Plot size: <u>5' radius</u>)			
1. <u>Eleocharis acicularis</u>		25	Yes	OBL
2. <u>Eleocharis palustris</u>		20	Yes	OBL
3. <u>Echinochloa crus-galli</u>		10	No	FACW
4. <u>Lysimachia nummularia</u>		5	No	FACW
5. <u>Phalaris arundinacea</u>		5	No	FACW
6. <u>Persicaria hydropiper</u>		2	No	OBL
7. _____				
8. _____				
9. _____				
10. _____				
		67 =Total Cover		
Woody Vine Stratum	(Plot size: _____)			
1. _____				
2. _____				
		=Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>47</u>	x 1 = <u>47</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>67</u> (A)	<u>87</u> (B)
Prevalence Index = B/A = <u>1.30</u>	

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation
 Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 Recently mowed, before inundated condition. This is a "managed plant community." Documenting volunteer vegetation is one of the methods per Chapter 5 procedures. In this case, the turf grass has been completely drowned out and replaced by OBL and FACW volunteer species.

SOIL

Sampling Point: 1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/1	75	7.5YR 4/4	15	C	M	Loamy/Clayey	
			10YR 5/1	5	D	M		
			10YR 2/2	5	D	M		
6-18	10YR 4/1	78	7.5YR 4/4	20	C	M	Loamy/Clayey	
			10YR 5/1	2	D	M		

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

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
--	--

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:
Disturbed soil. Given levee construction and re-routing of Trempealeau River and Turton Creek, this area has been highly disturbed.

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>9</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

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

Remarks:
The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Inundation is visible on 6 of 11 years of aerial imagery spanning 2004-2019. Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 1-3
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: Landscaped turf area, recently mowed, on the slope of the levee. Not normal circumstances given active management of vegetation.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Herb Stratum	(Plot size: <u>5' radius</u>)			
1.	<u>Lysimachia nummularia</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Trifolium repens</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Glechoma hederacea</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
4.	<u>Taraxacum officinale</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
5.	<u>Plantago rugelii</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		<u>52</u>	=Total Cover	
Woody Vine Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>2</u>	x 3 = <u>6</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>52</u> (A)	<u>166</u> (B)
Prevalence Index = B/A = <u>3.19</u>	

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation

Present? Yes _____ No X

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

Turf grass (Poa sp.) 60% cover. This is a "managed plant community" per Chapter 5. The artificially planted vegetation is excluded from the hydrophytic veg determination. Documenting volunteer vegetation is one of the methods per Chapter 5 procedures.

SOIL

Sampling Point: 1-3

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek near this sample point was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Precipitation three months antecedent was wetter than normal.			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 1-4
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): Slope
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: Slope of fill for levee. Landscaped turf area, recently mowed. Not normal circumstances given active management of vegetation.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
1. _____																					
2. _____																					
3. _____																					
4. _____																					
5. _____																					
		=Total Cover																			
Sapling/Shrub Stratum	(Plot size: _____)				Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>50</u> (A)</td> <td><u>175</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.50</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>50</u> (A)	<u>175</u> (B)	Prevalence Index = B/A = <u>3.50</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>10</u>	x 2 = <u>20</u>																				
FAC species <u>5</u>	x 3 = <u>15</u>																				
FACU species <u>35</u>	x 4 = <u>140</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>50</u> (A)	<u>175</u> (B)																				
Prevalence Index = B/A = <u>3.50</u>																					
1. _____																					
2. _____																					
3. _____																					
4. _____																					
5. _____																					
		=Total Cover																			
Herb Stratum	(Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Trifolium repens</u>		<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Taraxacum officinale</u>		<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Lysimachia nummularia</u>		<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Plantago rugelii</u>		<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Glechoma hederacea</u>		<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Unknown grass</u>		<u>2</u>	<u>No</u>																		
7. _____																					
8. _____																					
9. _____																					
10. _____																					
		<u>52</u> =Total Cover																			
Woody Vine Stratum	(Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																
1. _____																					
2. _____																					
		=Total Cover																			

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

Turf grass (Poa sp.) with 50% areal cover, recently mowed. The managed turf grass is excluded from the hydrophytic veg determination. Documenting volunteer vegetation is one of the methods per Chapter 5 procedures to determine if hydrophytes would dominate w/o management.

SOIL

Sampling Point: 1-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-17	10YR 2/2	96	7.5YR 4/4	2	C	M	Loamy/Clayey	Fill materials
			10YR 5/4	2	C	M		Distinct redox concentrations

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

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
---	--

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Iron-Manganese Masses (F12)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:
 Disturbed, fill material used to construct levee. Given levee construction and re-routing of Trempealeau River and Turton Creek, this area has been highly disturbed.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>				<u>Secondary Indicators (minimum of two required)</u>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)					
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)					
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)					
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)					
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)					
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)					
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)					
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)					
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)						
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)						

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Corps modeling shows sample point is outside of area inundated by 2-year flood event.

Remarks:
 Sample point is on slope of levee fill. The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 1-5
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Landscaped turf area. Turf grass drowned out and replaced by mudflat and volunteer vegetation listed below. Not mapped by NWI/WWI--classification of PEMB determined in the field.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Herb Stratum	(Plot size: <u>5' radius</u>)			
1. <u>Cyperus esculentus</u>		25	Yes	FACW
2. <u>Echinochloa crus-galli</u>		15	Yes	FACW
3. <u>Phalaris arundinacea</u>		10	No	FACW
4. <u>Lindernia dubia</u>		10	No	OBL
5. <u>Plantago rugelii</u>		2	No	FAC
6. <u>Persicaria hydropiper</u>		1	No	OBL
7. _____				
8. _____				
9. _____				
10. _____				
		63	=Total Cover	
Woody Vine Stratum	(Plot size: _____)			
1. _____				
2. _____				
		=Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>11</u>	x 1 = <u>11</u>
FACW species <u>50</u>	x 2 = <u>100</u>
FAC species <u>2</u>	x 3 = <u>6</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>63</u> (A)	<u>117</u> (B)
Prevalence Index = B/A = <u>1.86</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation

Present? Yes X No _____

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

Turf grass (Poa sp.) drowned out. Documenting volunteer vegetation is one of the methods per Chapter 5 procedures to determine if hydrophytes would dominate absent management.

SOIL

Sampling Point: 1-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0.5-16	10YR 3/1	80	7.5YR 4/4	10	C	M	Loamy/Clayey	0.5" thick sand layer on surface
			10YR 2/1	8	D	M		
			10YR 3/4	2	C	M		Distinct redox concentrations

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:
Disturbed, mixed soils. Redox starts at 1 inch and then throughout rest of profile. Thin sand lens on surface was 10YR 4/3. Given levee construction and re-routing of Trempealeau River and Turton Creek, this area has been highly disturbed.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:
Inundation 1-2" deep about 10 feet from soil pit. The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek near this sample point was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 1-6
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Forested plant community on opposite side of present-day Turton Creek. Unable to cross the creek at this point due to depth of water. Conducted a visual observation of vegetation. Classified as PFO1C by NWI and T3Kw by WWI.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
1. <u>Acer saccharinum</u>	_____	_____	FACW																	
2. <u>Acer negundo</u>	_____	_____	FAC																	
3. <u>Salix X fragilis</u>	_____	_____	FAC																	
4. <u>Ulmus americana</u>	_____	_____	FACW																	
5. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. <u>Salix interior</u>	_____	_____	FACW																	
2. <u>Salix sp.</u>	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: _____)																				
1. <u>Phalaris arundinacea</u>	_____	_____	FACW																	
2. <u>Urtica dioica</u>	_____	_____	FACW																	
3. <u>Ambrosia trifida</u>	_____	_____	FAC																	
4. <u>Rudbeckia laciniata</u>	_____	_____	FACW																	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No _____																
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____	Woody Vine Stratum (Plot size: _____)																
=Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
=Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)
 Unable to do plots and estimates of percent cover from opposite bank of stream. Visual evaluation is that Acer saccharinum, Acer negundo and Phalaris arundinacea are dominants, all of which are hydrophytes.

SOIL

Sampling Point: 1-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

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

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> Other (Explain in Remarks)
---	--	--

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input type="checkbox"/>
---	--

Remarks:
No soil sample obtained.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>				<u>Secondary Indicators (minimum of two required)</u>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)					
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)					
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)					
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)					
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)					
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)					
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)					
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)					
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)						
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)						

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:
The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek near this sample point was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 2-1
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Sample point within forested plant community observed from opposite side of creek by Sample Point 1-6. Both NWI and WWI mapped this area as forested wetlands (PFO1C and T3Kw, respectively).	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u>Acer negundo</u>	40	Yes	FAC																	
2. <u>Acer saccharinum</u>	20	Yes	FACW																	
3. <u>Juglans nigra</u>	10	No	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
	70	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius)				Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>124</u></td> <td>x 2 = <u>248</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>7</u></td> <td>x 5 = <u>35</u></td> </tr> <tr> <td>Column Totals: <u>236</u> (A)</td> <td><u>608</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.58</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>124</u>	x 2 = <u>248</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>7</u>	x 5 = <u>35</u>	Column Totals: <u>236</u> (A)	<u>608</u> (B)	Prevalence Index = B/A = <u>2.58</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>124</u>	x 2 = <u>248</u>																			
FAC species <u>95</u>	x 3 = <u>285</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>7</u>	x 5 = <u>35</u>																			
Column Totals: <u>236</u> (A)	<u>608</u> (B)																			
Prevalence Index = B/A = <u>2.58</u>																				
1. <u>Rhamnus cathartica</u>	25	Yes	FAC																	
2. <u>Acer negundo</u>	5	No	FAC																	
3. <u>Ribes missouriense</u>	2	No	UPL																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
	32	=Total Cover																		
Herb Stratum (Plot size: <u>5'</u> radius)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation¹ (Explain)</u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Impatiens capensis</u>	30	Yes	FACW																	
2. <u>Lysimachia nummularia</u>	30	Yes	FACW																	
3. <u>Persicaria virginiana</u>	25	Yes	FAC																	
4. <u>Laportea canadensis</u>	25	Yes	FACW																	
5. <u>Phalaris arundinacea</u>	10	No	FACW																	
6. <u>Ribes missouriense</u>	5	No	UPL																	
7. <u>Echinocystis lobata</u>	2	No	FACW																	
8. <u>Rudbeckia laciniata</u>	1	No	FACW																	
9. <u>Arisaema dracontium</u>	1	No	FACW																	
10. _____	_____	_____	_____																	
	129	=Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. <u>Vitis riparia</u>	5	Yes	FACW																	
2. _____	_____	_____	_____																	
	5	=Total Cover																		

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

Plant species observed outside of plots--Trees: Celtis occidentalis-FAC, Populus deltoides-FAC, Fraxinus pennsylvanica-FACW. Shrubs: Sambucus nigra-FAC, Viburnum lentago-FAC. Herbs: Elymus virginicus-FACW, Matteuccia struthiopteris-FACW, Humulus lupulus-FACU, Pilea pumila-FACW.

SOIL

Sampling Point: 2-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 3/1	95	10YR 4/4	5	C	M	Loamy/Clayey	
18-22	10YR 5/3	50					Sandy	
	10YR 3/2	50						

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input checked="" type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 18 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 18 (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Modeling by the Corps shows that this area is inundated by the 2-year flood event.	
Remarks: The Trempealeau River and Turton Creek have been re-routed since the 1930s and a flood control levee constructed. The present-day location of Turton Creek near this sample point was previously the main channel of the Trempealeau River (see 1938 aerial photograph). Precipitation three months antecedent was wetter than normal.	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 3-1
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Pasture, recently grazed. Sample point within a linear swale that connects to Myers Valley Creek. At this point, the swale was 13 feet wide. Managed vegetation per Chapter 5--presumed seeding of pasture/erosion control mix. Final decision of wetlands based on soil and hydrology field indicators.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
1.																					
2.																					
3.																					
4.																					
5.																					
		=Total Cover																			
Sapling/Shrub Stratum	(Plot size: _____)				Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>12</u></td> <td>x 1 = <u>12</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>6</u></td> <td>x 4 = <u>24</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>23</u> (A)</td> <td><u>61</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.65</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>12</u>	x 1 = <u>12</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>6</u>	x 4 = <u>24</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>23</u> (A)	<u>61</u> (B)	Prevalence Index = B/A = <u>2.65</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>12</u>	x 1 = <u>12</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>0</u>	x 3 = <u>0</u>																				
FACU species <u>6</u>	x 4 = <u>24</u>																				
UPL species <u>5</u>	x 5 = <u>25</u>																				
Column Totals: <u>23</u> (A)	<u>61</u> (B)																				
Prevalence Index = B/A = <u>2.65</u>																					
1.																					
2.																					
3.																					
4.																					
5.																					
		=Total Cover																			
Herb Stratum	(Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1.	<u>Bidens cernua</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
2.	<u>Daucus carota</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>																	
3.	<u>Ambrosia artemisiifolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
4.	<u>Persicaria hydropiper</u>	<u>2</u>	<u>No</u>	<u>OBL</u>																	
5.	<u>Cirsium vulgare</u>	<u>1</u>	<u>No</u>	<u>FACU</u>																	
6.																					
7.																					
8.																					
9.																					
10.																					
		<u>23</u> =Total Cover																			
Woody Vine Stratum	(Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No _____																
1.																					
2.																					
		=Total Cover																			
Remarks: (Include photo numbers here or on a separate sheet.) Managed vegetation pasture--Lolium perenne and Trifolium repens had 40% areal cover each--but planted/seeded species are excluded per Chapter 5. Volunteer species can be used but caution when areal cover is low. Vegetation call inconclusive. Soils and hydrology were deciding factors.																					

SOIL

Sampling Point: 3-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/1	50	10YR 3/2	20			Loamy/Clayey	Sand and gravel mixed in
			10YR 4/3	20				
			10YR 5/2	5				
			7.5YR 4/6	5				
10-12	10YR 3/4	50					Sandy	
	10YR 3/2	50						

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:
Disturbed, mixed soils. Boring terminated at 12 inches due to compacted soils. A 0.5-inch thick, uniformly colored gravel layer encountered in upper 8 inches. Area has been graded and Meyers Valley Creek has been re-routed. Sample point is immediately downgradient from large urban stormwater outlet. Abundant redox, with diffuse boundaries, in upper 6 inches. BPJ is that soil is hydric.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2 Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 10 (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

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

Remarks:
Man-made, linear swale connecting to Myers Valley Creek--constructed in vicinity of the original channel of the creek. Microdepressions within 5 feet of this sample point had 1 to 2 inches of standing water. Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 3-2
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Pasture, recently grazed. Linear swale that connects to Myers Valley Creek. Swale 12 feet wide at this point. NWI class of PEMA determined in the field. Managed vegetation is not normal circumstances.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Herb Stratum	(Plot size: <u>7' x 11'</u>)			
1. <u>Persicaria hydropiper</u>		60	Yes	OBL
2. <u>Schoenoplectus tabernaemontani</u>		5	No	OBL
3. <u>Juncus effusus</u>		2	No	OBL
4. <u>Echinochloa crusgalli</u>		2	No	FACW
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
		69 =Total Cover		
Woody Vine Stratum	(Plot size: _____)			
1. _____				
2. _____				
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>67</u>	x 1 = <u>67</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>69</u> (A)	<u>71</u> (B)
Prevalence Index = B/A = <u>1.03</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation

Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 Vegetation could still be identified as grazing was not severe. Pasture/erosion control mix species, if previously present, had been drowned out and replaced by volunteer, hydrophytic species. Applied Chapter 5 procedures.

SOIL

Sampling Point: 3-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 3/1	90	7.5YR 4/4	8	C	M	Loamy/Clayey	Mixed with pea to 3-inch gravel sizes
			10YR 6/2	2	D	M		

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:
 Area has been graded and filled in the past, most recently associated with re-routing Meyers Valley Creek. Compacted gravel layer near surface. Took multiple probes to find a spot where a soil sample could be taken. Boring was terminated at 9 inches due to compaction.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

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

Remarks:
 Man-made, linear swale in vicinity of the original channel of Myers Valley Creek, which has been re-routed. Precipitation three months antecedent was wetter than normal.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 3-3
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Pastured area, recently grazed. Middle portion of swale in vicinity of former channel of Myers Valley Creek. Not mapped by NWI/WWI--classification of PEMA determined in the field. Wetland swale determined to be 8.5 feet wide at this sample point.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Herb Stratum	(Plot size: <u>7' x 11'</u>)			
1.	<u>Phalaris arundinacea</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Persicaria hydropiper</u>	<u>6</u>	<u>No</u>	<u>OBL</u>
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		<u>76</u>	=Total Cover	
Woody Vine Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>6</u>	x 1 = <u>6</u>
FACW species <u>70</u>	x 2 = <u>140</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>76</u> (A)	<u>146</u> (B)
Prevalence Index = B/A = <u>1.92</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation

Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 Less than 1 percent cover: unknown forb and an unknown mustard family. Pasture/erosion control mix species--Lolium perenne with 10% cover--was excluded from hydrophytic vegetation determination per Chapter 5 procedures.

SOIL

Sampling Point: 3-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 3/1	80	7.5YR 4/4	20	C	M	Loamy/Clayey	
11-12	10YR 3/1	80	10YR 4/4	15	C	M	Loamy/Clayey	Higher % sand than first layer
			10YR 6/2	5	D	M		

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)		

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

Restrictive Layer (if observed):		Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Type: _____			
Depth (inches): _____			

Remarks:
Boring terminated at 12" due to soil compaction. Area has been graded in the past and work was done to re-route Myers Valley Creek.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	1		
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	3		
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	0		
(includes capillary fringe)					

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

Remarks:
Man-made swale constructed in vicinity of the original channel of Myers Valley Creek, since re-routed. Precipitation three months antecedent was wetter than normal.

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 3-4
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: UPL

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u> X </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u> X </u>
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u> X </u>			
Remarks: Pasture, recently grazed. Sample point near outlet of stormsewer culvert but about 8" higher in elevation than Sample Point 3-1. Managed vegetation per Chapter 5--volunteer species are non-hydrophytes. Soils are hydric but wetland hydrology is clearly absent.					

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
Herb Stratum	(Plot size: 5' radius)			
1. <i>Cirsium arvense</i>		15	Yes	FACU
2. <i>Taraxacum officinale</i>		5	Yes	FACU
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
		20 =Total Cover		
Woody Vine Stratum	(Plot size: _____)			
1. _____				
2. _____				
		=Total Cover		

Dominance Test worksheet:			
Number of Dominant Species That Are OBL, FACW, or FAC:	0		(A)
Total Number of Dominant Species Across All Strata:	2		(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0%		(A/B)

Prevalence Index worksheet:			
	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	20	(A)	80 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is $\leq 3.0^1$
___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation ¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation
Present? Yes _____ No <u> X </u>

Midwest Region – Version 2.0

SOIL

Sampling Point: 3-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	75	7.5YR 4/4	25	C	M	Loamy/Clayey	
10-12	2.5Y 5/4	65	10YR 4/2	30	D	M	Sandy	
			7.5YR 4/4	5	C	M		

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)
	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Boring terminated at 12" due to soil compaction.	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Precipitation three months antecedent was wetter than normal.	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia/Trempealeau Sampling Date: 8/14-15/2019
 Applicant/Owner: _____ State: WI Sampling Point: 3-5
 Investigator(s): Steve Eggers, LeeAnn Glomski, Vanessa Alberto Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Pasture, recently grazed. Sample point is within a small depressional area of approximately 21' x 28' that is near, but does not have a wetland connection to, the wetland swale documented by 3-1, 3-2, 3-3. Not mapped by NWI/WWI--classification of PEMA determined in the field.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Herb Stratum	(Plot size: <u>5' radius</u>)			
1.	<u>Panicum hydropiper</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>
2.	<u>Echinochloa crus-galli</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
3.	<u>Phalaris arundinacea</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		<u>65</u>	=Total Cover	
Woody Vine Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>50</u>	x 1 = <u>50</u>
FACW species <u>15</u>	x 2 = <u>30</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>65</u> (A)	<u>80</u> (B)

Prevalence Index = B/A = 1.23

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation

Present? Yes X No _____

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

Species with less than 1 percent cover: Juncus effusus (OBL); Rumex crispus (FAC). Managed vegetation--pasture/erosion control mix likely applied. Lolium perenne had 15% areal cover but planted/seeded species are excluded from the hydrophytic vegetation determination per Chapter 5.

SOIL

Sampling Point: 3-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/1	85	10YR 4/4	15	C	M	Loamy/Clayey	
10-17	10YR 3/1	80	7.5YR 4/4	20	C	M	Sandy	Prominent redox concentrations

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Precipitation three months antecedent was wetter than normal.	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia, Trempealeau Sampling Date: 8/15, 9/24/19
 Applicant/Owner: _____ State: WI Sampling Point: 4-1
 Investigator(s): S. Eggers, L. Glomski, V. Alberto Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PFOA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: Major, recent (July 2017) flood event washed away herbaceous vegetation and substantially buried/scoured soils. Area behind (north) of this location appeared to be scoured to a lower elevation given comparison to pre-flood contour mapping/2-yr flood.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Acer saccharinum</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Robinia pseudoacacia</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Acer negundo</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
4. <u>Juglans nigra</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
<u>37</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				
1. <u>Persicaria lapathifolia</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Echinochloa crus-galli</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Elymus repens</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
4. <u>Phalaris arundinacea</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
5. <u>Ambrosia trifida</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
6. <u>Poa annua</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
7. <u>Polygonum aviculare</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
8. <u>Cyperus strigosus</u>	<u>+</u>	<u>No</u>	<u>FACW</u>	
9. <u>Bidens sp.</u>	<u>+</u>	<u>No</u>	<u>--</u>	
10. <u>Oxalis stricta</u>	<u>+</u>	<u>No</u>	<u>FACU</u>	
<u>37</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30' radius</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____	_____	_____	<u>--</u>	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Groundlayer was depauperate due to scouring by recent, severe flood event--dominants are pioneering species colonizing the recently exposed soils. Trees were a mix of FACW/FAC/FACU species.				

SOIL

Sampling Point: 4-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-13	10YR 3/2	90	7.5YR 3/4	10			L/C	
13-22	10YR 3/2	95	7.5YR 4/4	5			Sandy	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____	
Depth (inches): _____	

Remarks:

Along this section of the north bank of Turton Creek, a recent major flood event buried areas with fresh sand (up to 17" depth) alternating with areas that were scoured (up to 14" depth) thereby creating lower, wetter, eroded gullies. The sample point was located in an area that appeared to be scoured to some degree.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:			Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Modeling by the Corps shows that the sample point is just outside area inundated by the 2-year flood event.

Remarks:

Turton Creek has been modified by a levee on the opposite (south) side from the sample point as well as straightening in the past. An upland berm exists along the north side of the creek, and Sample Point 4-1 is just beyond this upland berm and located within wetlands.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia, Trempealeau Sampling Date: 8/15,9/24/19
 Applicant/Owner: _____ State: WI Sampling Point: 4-2
 Investigator(s): S. Eggers, L. Glomski, V. Alberto Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks: Berm of higher elevation along Turton Creek not inundated by the 2-year flood event. Major, recent (July 2017) flood event washed away herbaceous vegetation and substantially buried/scoured soils.					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Robinia pseudoacacia</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Juglans nigra</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Acer negundo</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
4. <u>Populus deltoides</u> spp. <u>monilifera</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
5. <u>Salix x fragilis</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
	<u>72</u>	<u>= Total Cover</u>		
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Acer negundo</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Rhamnus cathartica</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	OBL species <u>0</u> x 1 = <u>0</u>
3. <u>Celtis occidentalis</u>	<u>+</u>	<u>No</u>	<u>FAC</u>	FACW species <u>12</u> x 2 = <u>24</u>
4. _____	_____	_____	_____	FAC species <u>52</u> x 3 = <u>156</u>
5. _____	_____	_____	_____	FACU species <u>40</u> x 4 = <u>160</u>
	<u>15</u>	<u>= Total Cover</u>		UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>104</u> (A) <u>340</u> (B)
Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B/A = <u>3.27</u>
1. <u>Acer negundo</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation</u> ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Echinocystis lobata</u>	<u>2</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Laportea canadensis</u>	<u>2</u>	<u>Yes</u>	<u>FACW</u>	
4. <u>Pilea pumila</u>	<u>2</u>	<u>Yes</u>	<u>FACW</u>	
5. <u>Impatiens capensis</u>	<u>2</u>	<u>Yes</u>	<u>FACW</u>	
6. <u>Elymus virginicus</u>	<u>2</u>	<u>Yes</u>	<u>FACW</u>	
7. <u>Cinna</u> sp.	<u>+</u>	<u>No</u>	<u>--</u>	
8. <u>Carex</u> sp.	<u>+</u>	<u>No</u>	<u>--</u>	
9. <u>Symphotrichum</u> sp.	<u>+</u>	<u>No</u>	<u>--</u>	
10. _____	_____	_____	_____	
	<u>15</u>	<u>= Total Cover</u>		
Woody Vine Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Vitis riparia</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
2. <u>Parthenocissus</u> sp.	<u>1</u>	<u>No</u>	<u>--</u>	
	<u>3</u>	<u>= Total Cover</u>		
Remarks: (Include photo numbers here or on a separate sheet.) Tree and shrub layers only used for Dominance Test because herbaceous layer was depauperate due to recent scouring by major flood event. Woody vine stratum did not meet required 5% or more total areal cover to contribute a dominant(s).				

SOIL

Sampling Point: 4-2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-17	10YR 5/3	95	7.5YR 3/4	5			Sandy	Freshly deposited sand layer
17-23	10YR 3/2	95	7.5YR 3/4	5			L/C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16) |
| <input type="checkbox"/> Dark Surface (S7) |
| <input type="checkbox"/> Iron-Manganese Masses (F12) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒**Remarks:**

Fresh layer of sand deposited by recent flood event buried surface layer that met F6. Depth of new sand deposit eliminates meeting F6, or any other field indicator. Consideration given to whether site could meet Criteria 4 for a hydric soil--flooded for long (7-30 days) or very long (30+ days) duration in most years. Prior to the July 2017 flood, this sample point was right on the upper boundary of the 2-year flood. With post-flood elevation being some 17 inches higher, Criteria 4 would not be met.

HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

- | |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No ☒

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

Modeling by the Corps shows that the sample point is just outside of area inundated by the 2-year flood event.

Remarks:

Turton Creek has been modified by a levee on the opposite side from the sample point as well straightening in the past. Drift/sediment deposits reflect a recent major flood event, not inundation with a frequency/duration that could support wetland hydrology. Area is outside of that inundated by the 2-year flood event. FAC-N not met (using tree and shrub dominants). Determination is that wetland hydrology is not present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia, Trempealeau Sampling Date: 8/22/2019
 Applicant/Owner: _____ State: WI Sampling Point: 5-1
 Investigator(s): S. Eggers Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMC/F

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Formerly part of large floodplain forest complex (see 1938 aerial) but now cut-off from that complex by a levee. Subjected to various fill projects (e.g., see 2005 aerial). Not mapped by NWI/WWI; classification of PEMC/F determined in the field.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius) 1. <u>Eleocharis palustris</u> 60 Yes OBL 2. <u>Alsima triviale</u> 30 Yes OBL 3. <u>Lemna minor</u> 5 No OBL 4. <u>Lindernia dubia</u> 2 No OBL 5. <u>Phalaris arundinacea</u> 1 No FACW 6. <u>Persicaria hydropiper</u> + No OBL 7. _____ 8. _____ 9. _____ 10. _____ 98 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius) 1. _____ 2. _____ _____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Plot located in outer perimeter of basin between open water and fill for levee. Area is mowed periodically when conditions (drier) permit.				
Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				

SOIL

Sampling Point: 5-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/3	100					Organic	Fibric
2-9	2.5Y 5/2	80	7.5YR 4/6	5	C	M	L/C	Organic mixed with mineral soil
			10YR 5/1	15	D	M		and 0.5- to 1-inch diameter gravel

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____	
Depth (inches): _____	

Remarks:
Disturbed, mixed soils. Boring terminated at 9 inches due to rock/gravel fill.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	1*	
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	1	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Inundation is visible on 7 out of 11 years of aerial photography spanning 2004-2019.

Remarks:
*Microdepressions within 5-foot radius had 1 inch of inundation. Adjacent area of open water had 9 inches of water depth. Precipitation three months antecedent was wetter than normal. Hydrology highly altered due to levee construction and fill projects. Nonetheless, this remnant of what historically had been floodplain forest meets all three factors for wetlands.

Project/Site: Arcadia 205 Project City/County: Arcadia, Trempealeau Sampling Date: 8/22/2019
Applicant/Owner: _____ State: WI Sampling Point: 5-2
Investigator(s): S. Eggers Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Convex
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: UPL

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

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No _____			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					
Convex area of fill clearly visible on aerial photography (see 2010). Fill activity evident on 2005 aerial image. Since levee and fill were placed >10 years ago, current condition is considered normal circumstances.					

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
Sapling/Shrub Stratum (Plot size: 15' radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
Herb Stratum (Plot size: 5' radius)				
1. Glechoma hederacea	40	Yes	FACU	
2. Phalaris arundinacea	40	Yes	FACW	
3. Trifolium hybridum	5	No	FACU	
4. Taraxacum officinale	+	No	FACU	
5. Oxalis stricta	+	No	FACU	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				85 = Total Cover
Woody Vine Stratum (Plot size: 30' radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				_____ = Total Cover

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

Periodically mowed.

Dominance Test worksheet:			
Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)	
Total Number of Dominant Species Across All Strata:	2	(B)	
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)	
Prevalence Index worksheet:			
Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	85	(A)	260 (B)
Prevalence Index = B/A =		3.05	
Hydrophytic Vegetation Indicators:			
___ 1 - Rapid Test for Hydrophytic Vegetation			
___ 2 - Dominance Test is >50%			
___ 3 - Prevalence Index is ≤3.0 ¹			
___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
___ Problematic Hydrophytic Vegetation ¹ (Explain)			
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic Vegetation Present?			
Yes	___	No	X

SOIL

Sampling Point: 5-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
---	---

Remarks:
Densely compacted granular/gravel fill material. Unable to penetrate with hand tools.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
---	--

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

Remarks:
Precipitation three months antecedent was wetter than normal. Convex feature of fill material surrounded by remnant wetlands. Given its higher elevation, BPJ is that wetland hydrology is no longer present. This is supported by creeping charlie (Glechoma hederacea)[FACU] being one of the dominant plant species. Its dominance disappears when moving downslope to areas confirmed to meet all three factors for wetlands (see data sheets for Sample Points 5-1 and 5-3).

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Arcadia 205 Project City/County: Arcadia, Trempealeau Sampling Date: 8/22/2019
 Applicant/Owner: _____ State: WI Sampling Point: 5-3
 Investigator(s): S. Eggers Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Flat
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: Flat area of fill material, most recent placement of which was circa 2005 (see aerial photography). Since levee and fill material were placed >10 years ago, the current condition is considered "normal circumstances." Not mapped by NWI/WWI.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius) 1. <u>Cyperus strigosus</u> 35 Yes FACW 2. <u>Cyperus diandrus</u> 30 Yes FACW 3. <u>Agrostis gigantea</u> 5 No FACW 4. <u>Eleocharis palustris</u> 5 No OBL 5. <u>Poa pratensis</u> 5 No FAC 6. <u>Phalaris arundinacea</u> 5 No FACW 7. <u>Trifolium hybridum</u> 5 No FACU 8. <u>Persicaria hydropiper</u> 1 No OBL 9. <u>Echinochloa crus-galli</u> + No FACW 10. <u>Carex muskingumensis</u> + No OBL 91 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius) 1. _____ 2. _____ _____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Juncus tenuis-FAC and Prunella vulgaris-FAC also present, each with less than 1% areal cover. Area is periodically mowed.				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				

SOIL

Sampling Point: 5-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/2	65	7.5YR 4/4	10	C	M	L/C	
			10Y 4/1	25	D	M		
4-22	2.5Y 5/2	60	7.5YR 4/6	40	C	M	Sandy	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____	
Depth (inches): _____	

Remarks:

Disturbed soils, mixed fill materials. Abundant redox and depletions with diffuse boundaries near the soil surface indicate recent anaerobic conditions. BPJ is that soils are hydric.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:			Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 22	

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

Remarks:

A somewhat higher elevation, flat area compared to adjacent open water area, which is semi-permanent. Abundant redox and depletions with diffuse boundaries near the soil surface indicate recent anaerobic conditions. FACW dominated plant community also indicates that wetland conditions have persisted in spite of placement of fill materials. BPJ is that early growing season of most years this sample point would have a water table within 12 inches of the soil surface for 14 consecutive days or more.

Attachment D: Photographs



This location is next to the confluence of Turton Creek and the Trempealeau River.

Photograph taken from Sample Point 1-1 looking at inundated area where Sample Point 1-2 was established. Sample Points 1-3 and 1-4 were established in the lower slope of the levee (fill) to determine the wetland/upland boundary.



B2-Sediment Deposits



False Pimpernel
(*Lindernia dubia*)



Mowed turf area adjacent to Turton Creek and the Trempealeau River. Sample Points 1-1 and 1-2 were established at the far end of this flat.



Sample Point 1-5



Observations for Sample Point 1-6 were taken along this area.



Plant community at Sample Point 2-1: Floodplain Forest.



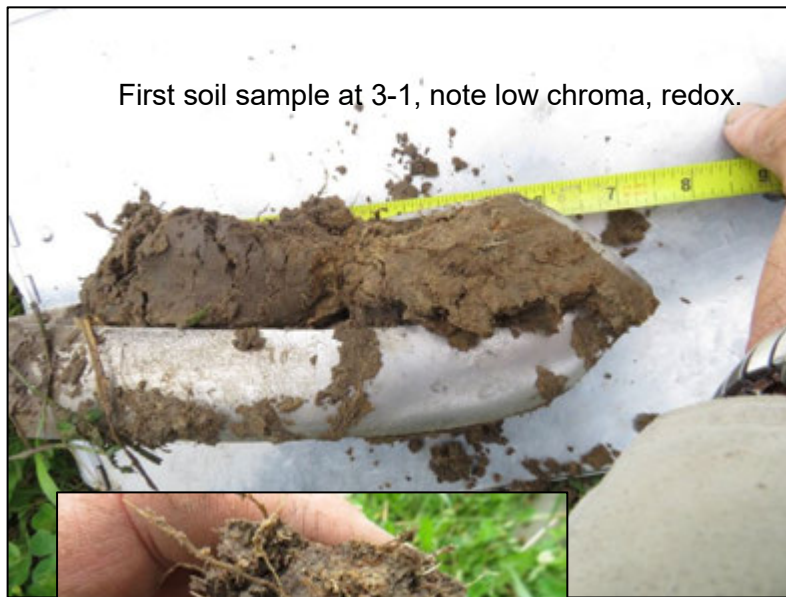
Above, another view of floodplain forest community. Silver maple (*Acer saccharinum*) and reed canary grass (*Phalaris arundinacea*) are dominants in this component.



Green dragon (*Arisaema dracontium*), an uncommon, characteristic species of floodplain forests.



Grazed pasture, predominately uplands, where Sample Points 3-1 through 3-6 were documented.



First soil sample at 3-1, note low chroma, redox.



Water pepper (*Persicaria hydropiper*—OBL)



Sample Point 3-3. Hydric—met F6.



Sample Point 3-1, second soil sample: mixed, disturbed soils with gravel fill materials. Note light colored gravel lens.



Sample Point 3-1. Upper edge of swale downstream of stormsewer culverts under South Washington Street (County J). Soils were hydric and hydrology indicators were observed. Vegetation was non-hydrophytic (note white clover (*Trifolium repens*)—FACU) but managed vegetation (e.g., planted/seeded) is not used for the hydrophytic vegetation determination.



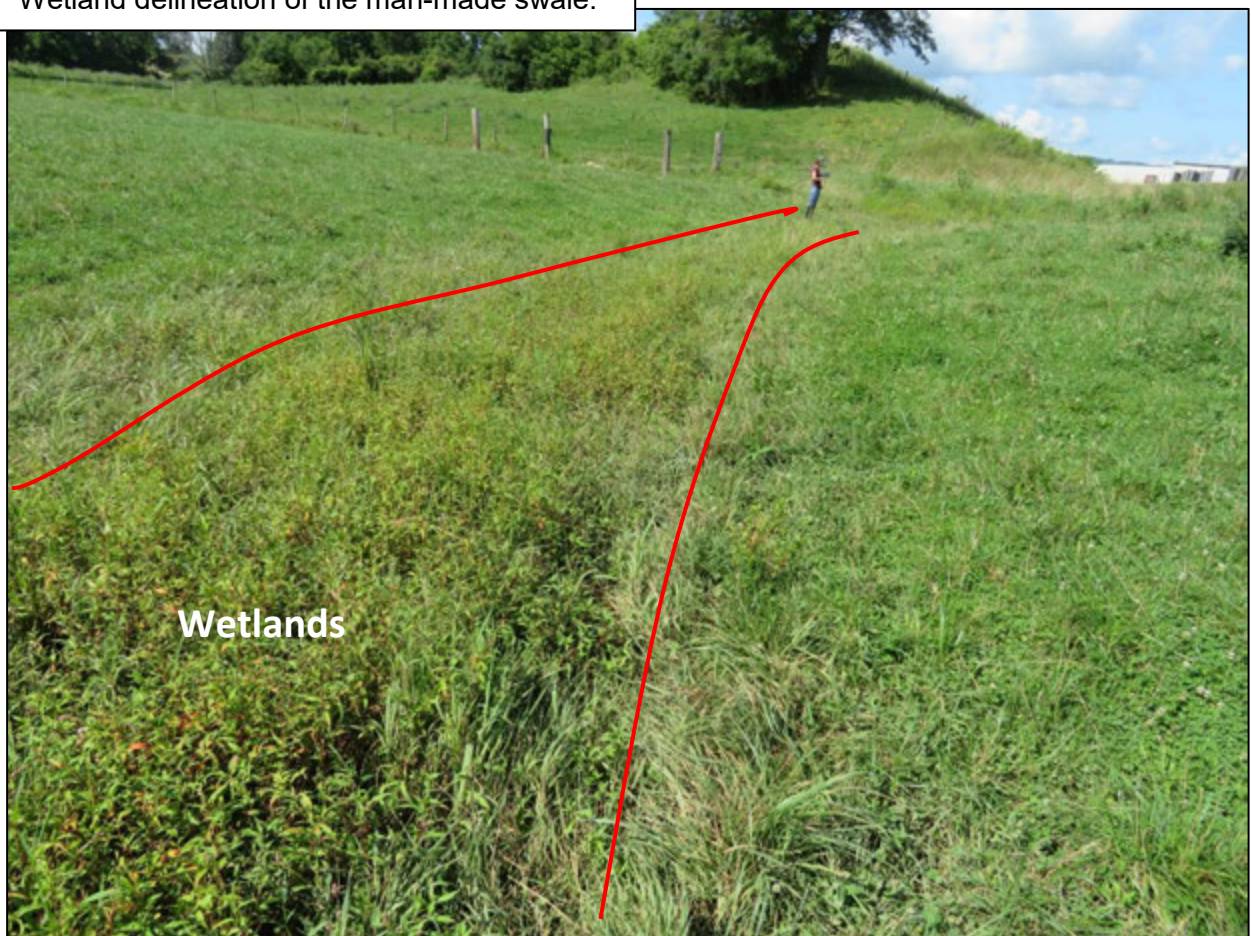
Sample Point 3-2 (red circle, approximate location) was established in the southern portion of the swale downgradient of Sample Points 3-1 and 3-3. This location was dominated by water pepper (*Persicaria hydropiper*--OBL).



Hydric soils--met F6.



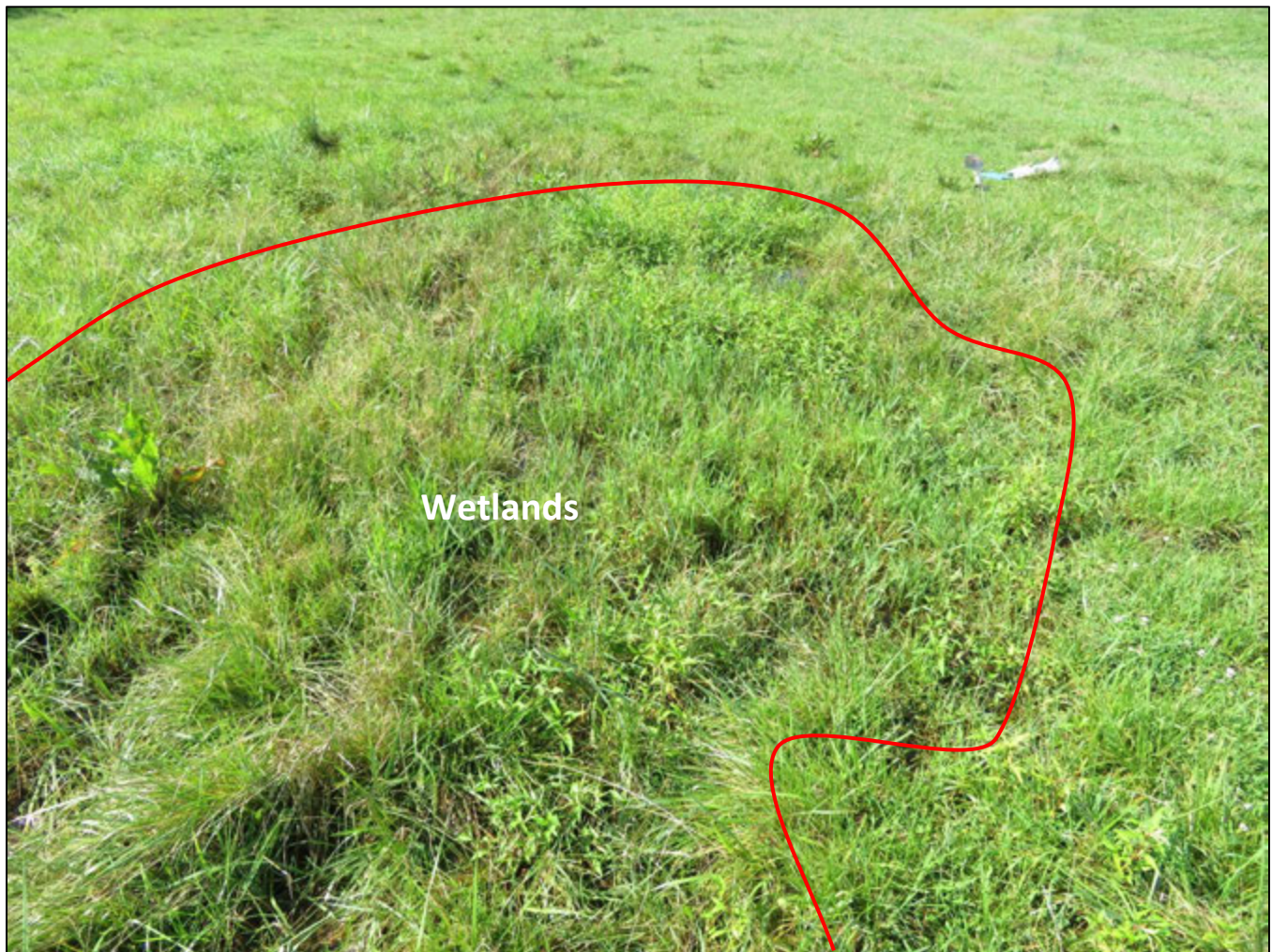
Wetland delineation of the man-made swale.





Sample Point 3-5 was located within this small (21- by 28-foot) depressional area within the pasture. The dominant forb visible in the photographs is water pepper. Hydric soils. Inundated with up to 4 inches of water.





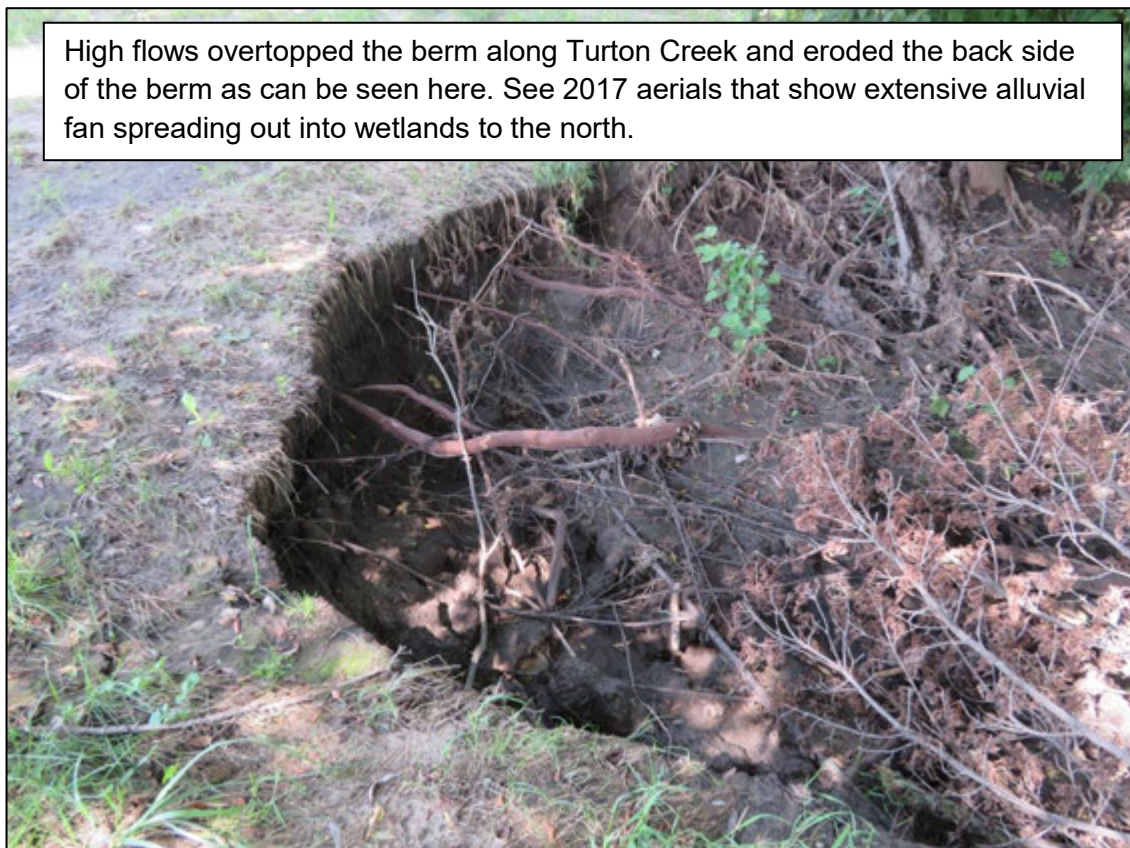
Wetland determination for depressional area that included Sample Point 3-5.



Former channel of Meyers Valley Creek now cut-off due to new alignment of creek.



Blow out of Turton Creek's north bank just downstream of North Oak Street bridge.



High flows overtopped the berm along Turton Creek and eroded the back side of the berm as can be seen here. See 2017 aerials that show extensive alluvial fan spreading out into wetlands to the north.



Examples of aftermath of flood event of Turton Creek just downstream of North Oak Street bridge. While some areas were scoured (to 14 inches depth) other areas were buried with fresh sediment (up to 17 inches thick).



More examples of effects of flood event of Turton Creek just downstream of North Oak Street bridge.





More examples of effects of flood event of Turton Creek downstream of North Oak Street bridge.





Sample Point 4-1, sparsely vegetated due to recent flood event but neither buried by fresh sediment nor eroded into a gully. Thus, may indicate conditions present prior to catastrophic flood of July 2017.



Sample Point 4-2: 17 inches of freshly deposited sandy material due to recent flood event—very sparse herbaceous layer as a result. Trees were a mix of FAC and FACU species. Sample point determined to be within uplands.





Deep/Shallow Marsh and vicinity involving Sample Points 5-1, 5-2 and 5-3.





Sample Point 5-3: hydric soils.



Standing water depths to 9 inches (22 August 2019) and 14 inches (24 Sept 2019).



View of former sewage lagoons next to Ashley Furniture property. At this location, the footprint of the proposed levee would not encroach beyond the existing levee footprint seen here.



Example of narrow strip of wetlands, dominated by reed canary grass, that exists between Turton Creek and the levee.

Attachment E: Precipitation Data

Antecedent Precip for Aug 2019 at Trempealeau Dam Station, WI

Long-term rainfall records									
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	July	2.97		5.52	6.56	W	3	3	9
2nd prior month*	Jun	2.60		4.54	4.70	W	3	2	6
3rd prior month*	May	2.69		4.45	7.53	W	3	1	3
								Sum	

* Compared to photo date

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

18 = Wet

Antecedent Precip for Sept 2019 at Trempealeau Dam Station, WI

Long-term rainfall records									
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	Aug	3.12		5.49	3.05	D	1	3	3
2nd prior month*	Jul	2.97		5.52	6.56	W	3	2	6
3rd prior month*	Jun	2.60		4.54	4.70	W	3	1	3
								Sum	

* Compared to photo date

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

12 = Normal

WETS Table

WETS Station: TREMPPEALEAU
DAM 6, WI

Requested years: 1971 - 2000

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	24.2	5.3	14.7	1.07	0.65	1.29	3	10.0
Feb	30.8	11.4	21.1	0.88	0.39	1.05	2	6.0
Mar	42.6	23.7	33.1	1.95	1.28	2.35	4	4.9
Apr	58.0	36.8	47.4	3.24	2.10	3.90	7	0.8
May	70.5	48.3	59.4	3.77	2.69	4.45	7	0.0
Jun	79.1	57.7	68.4	3.81	2.60	4.54	7	0.0
Jul	83.1	62.4	72.7	4.59	2.97	5.52	7	0.0
Aug	80.6	59.9	70.2	4.59	3.12	5.49	8	0.0
Sep	71.9	51.2	61.6	3.85	2.00	4.70	7	0.0
Oct	60.1	39.6	49.8	2.37	1.32	2.88	5	0.0
Nov	42.0	26.4	34.2	2.21	1.15	2.66	5	2.6
Dec	28.7	12.7	20.7	1.09	0.66	1.32	3	8.9
Annual:					29.61	35.87		
Average	56.0	36.3	46.1	-	-	-	-	-
Total	-	-	-	33.42			66	33.2

GROWING SEASON DATES

Years with missing data:	24 deg = 1	28 deg = 1	32 deg = 1
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 29	28 deg = 29	32 deg = 29
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	4/3 to 10/26: 206 days	4/15 to 10/16: 184 days	4/27 to 10/5: 161 days
70 percent *	3/30 to 10/30: 214 days	4/11 to 10/20: 192 days	4/23 to 10/10: 170 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1936											1.22	M1.13	2.35
1937	1.32	0.88	1.98	4.27	5.91	4.12	M0.30	4.25	2.08	2.14	0.98	0.40	28.63
1938	0.59	0.91	3.13	3.95	4.87	6.61	7.46	3.58	8.46	1.61	2.68	M0.83	44.68
1939	0.74	M1.64	0.57	2.19	1.87	3.78	1.42	5.04	0.80	0.80	0.28	0.43	19.56
1940	0.22	0.61	M1.14	2.68	3.15	4.94	1.45	6.30	0.58	2.97	2.93	1.46	28.43
1941	1.32	M0.14	M1.24	2.26	4.65	4.34	2.18	2.16	7.53	4.38	1.79	M1.09	33.08
1942	0.25	0.86	2.88	0.92	6.74	6.23	3.55	4.27	3.94	2.26	1.24	1.76	34.90
1943	1.26	0.19	M1.53	M0.59	2.62	4.70	2.56	3.91	1.62	2.56	1.99	0.03	23.56
1944	M1.13	1.47	1.42	1.74	3.83	4.60	2.73	2.45	4.	0.	1.21	0.37	25.

									19	73			87
1945	0.91	2.39	2.72	3.68	6.38	3.40	3.74	3.46	M2.29	0.47	M2.84	1.98	34.26
1946	1.96	0.38	2.31	M0.02	M3.01	4.26	1.07	3.04	5.26	2.39	1.82	1.24	26.76
1947	0.85	0.16	1.44	M0.78	3.87	6.47	3.52	1.93	5.60	3.09	M1.93	M1.22	30.86
1948	0.10	1.54	1.02	M1.82	2.16	M1.32	0.73	2.33	1.16	1.02	2.76	1.44	17.40
1949	1.40	0.21		1.38	2.39	5.22	2.67	1.35	1.14	1.41	0.56		17.73
1950	1.15	1.02	2.52	2.73	2.30	4.92	5.92	2.19	1.51	1.00	0.49	1.24	26.99
1951	0.56	1.21	4.04	4.09	4.44	5.84	5.46	4.60	3.33	4.38	1.66	0.84	40.45
1952	2.07	1.07	3.22	1.50	2.64	7.47	4.72	5.19	0.59	M0.04		0.91	29.42
1953	0.69	1.11	1.87	4.72	3.54	6.46	7.04	2.86	0.26	0.36	1.77	1.26	31.94
1954		0.38	1.74			5.74	3.86	2.50	5.74	5.35	0.60		25.91
1955	0.12	0.56	1.17	3.39	4.78	1.64	5.85	1.12	0.95	1.25	0.38	0.76	21.97
1956	0.36	0.46	M3.41	1.91	4.71	4.07	2.80	2.92	1.34	1.36	1.70	0.83	25.87
1957	0.20	0.35	0.81	1.65	4.94	4.24	5.66	4.25	1.29	1.42	3.53	0.52	28.86
1958	0.20	0.03	0.15	2.58	1.12	1.78	3.84	2.28	2.43	1.18	1.95	M0.21	17.75
1959	M0.47	2.28	1.98	0.96	3.90	3.08	2.55	7.49	4.17	2.54	1.70	1.57	32.69
1960	0.34	0.29	0.70	2.58	7.36	5.77	1.89	8.37	4.02	1.56	1.85	0.41	35.14
1961	0.27	1.43	3.51	1.32	3.60	3.41	2.31	M2.28	3.92	2.25	2.19	1.04	27.53
1962	0.08	1.71	2.07	3.21	3.93	2.87	3.50	7.30	2.38	2.03	0.03	0.30	29.41
1963	0.54	0.43	2.47	2.76	2.33	2.45	4.42	2.81	3.59	1.31	1.87	0.41	25.39
1964	0.37	T	1.20	2.08	4.79	1.25	1.00	3.28	6.72	0.34	1.47	0.70	23.20
1965	0.45	1.21	2.11	5.51	4.06	2.79	5.33	5.15	9.11	0.96	2.32	1.84	40.84
1966	1.09	1.50	3.25	0.88	2.14	4.16	4.61	3.06	1.28	2.94	0.30	1.59	26.80
1967	2.71	0.80	2.38	2.50	2.42	8.11	0.55	2.48	1.01	2.41	0.33	0.38	26.08
1968	0.85	0.17	0.82	6.99	5.11	9.93	6.22	1.84	6.50	3.12	0.69	2.51	44.75
1969	2.56	T	1.22	1.23	1.98	6.26	5.05	0.67	2.50	3.73	0.94	1.85	27.99
1970	0.49	T	2.68	2.33	7.05	3.57	3.45	2.88	5.43	5.13	2.95	1.58	37.54
1971	2.11	2.00	1.01	0.97	5.77	3.28	4.78	0.90	3.55	1.94	2.02	1.30	29.63
1972	0.66	0.43	1.66	1.63	1.72	4.92	7.88	4.47	9.39	3.84	1.84	2.20	40.64
1973	1.11	0.69	3.42	5.44	5.98	3.35	3.14	8.55	5.33	1.26	2.63	1.59	42.49
1974	0.51	1.77	2.67	2.42	4.87	4.27	1.19	4.73	2.55	2.00	0.96	1.25	29.19
1975	1.23	1.54	2.23	5.57	3.33	5.66	1.30	4.23	1.47	0.34	3.96	1.37	32.23
1976	0.95	0.50	4.00	4.41	2.64	1.47	2.11	0.77	0.96	0.45	T	0.34	18.60
1977	M0.40		3.65	2.91	2.86	4.11	4.16	3.71	3.20	3.28	1.27	M1.01	30.56
1978	0.96	0.31	0.40	2.86	4.92	6.00	12.64	3.62	3.	1.	1.39	0.99	38.

									52	05		
												66
1979	1.35	1.27	2.91	1.47	5.09	3.02	2.44	7.12	1.07	4.21	2.57	0.50 33.02
1980	1.08	0.36	0.97	1.30	5.07	4.62	2.63	9.31	13.13	2.18	0.16	0.57 41.38
1981	0.10	3.15	0.69	4.48	1.41	3.02	4.87	8.11	2.17	1.75	M0.91	1.22 31.88
1982	M1.86	0.18	2.12	2.76	5.02	1.26	2.90	3.42	6.60	5.62	3.78	3.17 38.69
1983	1.40	1.71	1.09	3.55	6.17	2.23	5.22	2.96	M5.51	3.69	4.86	M0.94 39.33
1984	M0.27	1.61	1.66	4.05	2.11	5.65	3.50	2.15	3.21	5.23	1.14	M1.08 31.66
1985	1.00	0.58	3.32	1.70	1.09	3.31	2.85	5.83	5.64	1.14	M4.09	1.98 32.53
1986	0.71	M0.84	1.63	2.38	1.76	4.15	6.64	1.94	M9.36	3.81	0.64	0.49 34.35
1987	M0.75	0.00	2.01	2.55	4.40	M3.41	7.10	4.00	1.35	0.35	3.23	M1.11 30.26
1988	1.63	0.22	1.46	1.73	1.46	M2.28	1.80	5.16	4.93	0.69	3.70	0.76 25.82
1989	0.40	0.34	2.15	2.05	5.56	M1.00	3.34	3.03	1.04	3.59	1.10	1.03 24.63
1990	0.62	0.61	2.45	5.64	4.67	7.06		7.43	1.43	1.97	0.61	M1.54 34.03
1991	0.84	0.13	M1.14	4.48	5.33	2.01	11.05	3.96	4.42	2.14	M6.73	1.95 44.18
1992	0.44	0.52	2.60	4.91	2.26	1.89	4.02	M3.17	M8.01	0.66	3.66	1.42 33.56
1993	0.90	M0.92	1.43	7.13	5.20	7.59	6.55	M5.24	M1.81	M0.77	1.02	0.48 39.04
1994	1.37	0.66	0.26	6.07	1.92	2.11	3.65	5.40	4.43	1.84	1.40	0.39 29.50
1995	0.50	0.02	2.73	3.41	3.12	2.04	3.85	4.91	2.34	4.26	0.96	0.53 28.67
1996	3.74	0.26	2.23	1.33	1.87	4.59	2.29	2.23	1.70	3.06	M5.57	1.24 30.11
1997	1.24	0.84	2.30	0.70	4.43	2.29	M6.14	5.03	3.15	2.69	0.25	0.34 29.40
1998	M1.50	3.06	M2.57	2.24	3.61	7.77	2.62	7.72	0.18	4.43	1.59	M0.13 37.42
1999	M1.50	M0.50	M0.75	5.87	3.97	2.42	9.20	3.48	2.02	1.64	1.65	0.36 33.36
2000	0.92	0.62	1.10	1.20	5.34	7.47	3.28	3.78	2.06	1.11	2.56	1.28 30.72
2001	1.12	0.80	0.71	4.78	5.07	3.25	2.40	5.02	6.14	1.22	1.94	0.94 33.39
2002	0.28	1.96	1.29	3.52	1.02	5.35	3.35	3.81	3.11	3.21	0.26	0.46 27.62
2003	0.43	0.66	1.82	2.97	4.50	2.28	2.01	1.91	2.34	0.63	2.34	1.04 22.93
2004	0.60	0.99	2.16	1.76	9.51	5.87	6.48	3.17	5.85	1.43	1.86	0.90 40.58
2005	1.48	1.71	1.79	2.30	2.84	2.58	3.72	5.20	7.59	0.43	1.56	0.71 31.91
2006	0.39	1.01	2.93	3.76	4.12	3.06	2.56	4.37	3.14	0.61	1.46	1.03 28.44
2007	M0.83	1.95	2.70	2.08	3.56	2.81	2.46	10.62	2.34	3.38	0.03	2.67 35.43
2008	1.55	0.60	0.30	8.46	3.33	2.92	4.32	1.35	1.20	0.91	1.68	3.75 30.37
2009	0.63	0.76	0.92	2.92	3.45	2.39	1.57	6.00	1.64	6.42	0.51	2.46 29.67
2010	0.81	0.95	0.72	1.90	3.93	8.17	4.26	4.74	8.95	1.50	2.18	1.62 39.73
2011	0.67	1.01	3.77	4.62	2.58	3.42	5.22	M1.80	2.72	1.46	1.05	1.16 29.48
2012	0.86	1.26	1.63	1.62	4.73	1.95	2.17	2.89	1.	4.	0.69	1.20 24.

									14	12			26
2013	0.87	1.14	2.00	5.62	9.52	4.05	2.93	1.45	1.48	5.03	1.14	1.06	36.29
2014	0.97	1.33	0.77	7.26	2.88	8.19	2.75	4.46	3.60	3.31	1.14	1.03	37.69
2015	0.48	0.50	1.17	4.43	5.57	5.18	5.62	3.13	3.63	1.88	1.81	4.78	38.18
2016	0.90	0.82	3.94	1.00	3.05	6.56	8.92	7.68	10.27	2.36	1.40	2.11	49.01
2017	2.42	1.19	2.14	4.80	5.12	5.33	9.75	3.05	1.32	5.59	0.51	0.43	41.65
2018	1.53	1.12	M0.74	3.59	7.05	5.59	3.30	3.45	6.28	4.02	2.46	2.13	41.26
2019	1.34	4.20	1.66	3.74	7.53	4.70	6.56	3.05	6.61	M2.49			41.88

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22