WEST LAKE CORRIDOR PROJECT

NICTD

Wetland Delineation Technical Report

November 2016

Prepared for:

Federal Transit Administration and Northern Indiana Commuter Transportation District

Prepared by:

AECOM

SUMMARY

Purpose

The Federal Transit Administration (FTA) and Northern Indiana Commuter Transportation District (NICTD) are conducting the environmental review process for the West Lake Corridor Project (Project) in Lake County, Indiana, and Cook County, Illinois, in accordance with the National Environmental Policy Act (NEPA) and other regulatory requirements. A Draft Environmental Impact Statement (DEIS) is being prepared as part of this process, with the FTA as the Federal Lead Agency and NICTD as the Local Project Sponsor responsible for implementing the Project under NEPA.

As part of the advanced planning work for the Project, NICTD's consultant AECOM conducted a wetland investigation of the Study Area to identify existing wetlands and waters of the United States. The total area investigated for wetlands was 628.8 acres.

Project Description

NICTD is studying three Build Alternatives and a No Build Alternative as part of the DEIS. The No Build Alternative is included as a baseline from which to compare the other alternatives. The Build Alternatives are as follows:

- Commuter Rail Alternative, including four Options,
- Indiana Harbor Belt (IHB) Alternative, including four options, and,
- Hammond Alternative, including three options.

There is also the Maynard Junction Rail Profile Option, which is a design variation that can apply to some of the Build Alternative Options. Under this design variation, at Maynard Junction in Munster, the alignment would cross the existing CSX freight line in an at-grade profile instead of an elevated profile. The proposed alignment would then remain east of the CSX freight line ROW for the Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and the Hammond Alternative Options 1 and 2. The Maynard Junction Rail Profile Option would not be combined with Commuter Rail Option 4, IHB Alternative Option 4, or Hammond Alternative Option 3.

Methodology

Investigation of wetland areas was conducted using three approaches due to limited access to all areas in the Study Area. Approach A is a full delineation, conducted where access was possible, using a method in accordance with the Section 404 guidelines of the United States Army Corps of Engineers (USACE) including utilization of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0) (USACE 2010). Approach B is an estimation of wetlands assessed where wetlands were accessible from adjacent property only. This method consisted of noting vegetation and hydrology from the adjacent property; soil data and Floristic Quality Indices (FQIs) were not obtained. Approach C is an identification of wetlands where wetlands could not be seen or accessed from adjacent property. This method consisted of using the wetland boundaries as identified by the National

Wetland Inventory, as well as an estimate based on wetland indicators seen in aerial photography.

Results

The investigation identified 52 wetlands of varying sizes and quality in the Study Area. The wetlands include ditch wetlands, retention and detention basins, forested, riparian, floodplain forest, sedge meadow, wet meadow, scrub/shrub, prairie marsh, and emergent wetland communities.

Most wetlands are of low quality indicative of disturbance, except for Wetland 19, Wetland 26, and Wetland 28 (Flatfoot Lake/Beaubien Woods Forest Preserve), and Wetland 27 (Burnham Prairie Nature Preserve), which are high quality aquatic resources based on the Mean C of 3.5 or higher, as determined by Native Species based on the Chicago Region FQI Calculator 09292014, as provided by USACE, Chicago District. Wetlands 19, 26, 27, and 28 would also qualify as high quality aquatic resources due to the presence of state-protected species in the preserves within which they are located.

Conclusion

Wetland impacts due to the Project Alternative Options vary. These impacts are summarized in the **Table S-1**.

Table S-1 Potential Wetland Impacts (acres)

Alternative	Wetland Impacts (acres)			
	Option 1	**Option 2**	**Option 3**	**Option 4**
Commuter Rail Alternative	8.83	9.25	9.25	5.42
IHB Alternative	20.42	20.79	19.31	19.31
Hammond Alternative	8.10	8.18	4.50	N/A

SOURCE: AECOM 2016 N/A: Not Applicable

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Acronyms

CMAP	Chicago Metropolitan Agency for Planning
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
DNR	Department of Natural Resources
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FQI	Floristic Quality Index
FTA	Federal Transit Administration
GPS	Global Positioning System
IDEM	Indiana Department of Environmental Management
IEPA	Illinois Environmental Protection Agency
IHB	Indiana Harbor Belt
MED	Metra Electric District
NEPA	National Environmental Policy Act
NFSAM	National Food Security Act Manual
NICTD	Northern Indiana Commuter Transportation District
NIRPC	Northwest Indiana Regional Planning Commission
NS	Norfolk Southern
NWI	National Wetland Inventory
ROW	Right-of-Way
SSL	South Shore Line
US	United States
USACE	United States Army Corp of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USNRCS	United States Natural Resource Conservation Service

1. INTRODUCTION

The Federal Transit Administration (FTA) and Northern Indiana Commuter Transportation District (NICTD) are conducting the environmental review process for the West Lake Corridor Project (Project) in Lake County, Indiana, and Cook County, Illinois, in accordance with the National Environmental Policy Act (NEPA) and other regulatory requirements. A Draft Environmental Impact Statement (DEIS) is being prepared as part of this process, with the FTA as the Federal Lead Agency and NICTD as the Local Project Sponsor responsible for implementing the Project under NEPA.

1.1 Purpose of Report

The purpose of this report is to provide information on the wetlands located in the Study Area, including location and general quality, and to provide a preliminary indication regarding potential wetland impacts from the Project Alternative Options.

1.2 Project Overview

The environmental review process builds upon NICTD's prior West Lake Corridor studies that examined a broad range of alignments, technologies, and transit modes. The studies concluded that a rail-based service between the Munster/Dyer area and Metra's Millennium Station in downtown Chicago, shown on **Figure 1-1**, would best meet the transportation needs of the Northwest Indiana area. Thus, NICTD advanced a "Commuter Rail" Alternative for more detailed analysis in the DEIS. NEPA also requires consideration of a "No Build" Alternative to provide a basis for comparison to the Commuter Rail Alternative. In addition, a number of design variations are being considered related to alignment, stations, parking, and maintenance and storage facilities (see **Figure 1-2**).

1.2.1 No Build Alternative

The No Build Alternative is defined as the existing transportation system, plus any committed transportation improvements included in the Northwestern Indiana Regional Planning Commission's (NIRPC) *2040 Comprehensive Regional Plan* (CRP) (NIRPC 2011) and Chicago Metropolitan Agency for Planning's (CMAP) *GO TO 2040 Comprehensive Regional Plan* (CMAP 2014) through the planning horizon year 2040. It also includes capacity improvements to the existing Metra Electric District's (MED) line and Millennium Station, documented in NICTD's *20-Year Strategic Business Plan* (NICTD 2014).

Figure 1-1 Regional Setting for West Lake Corridor Project

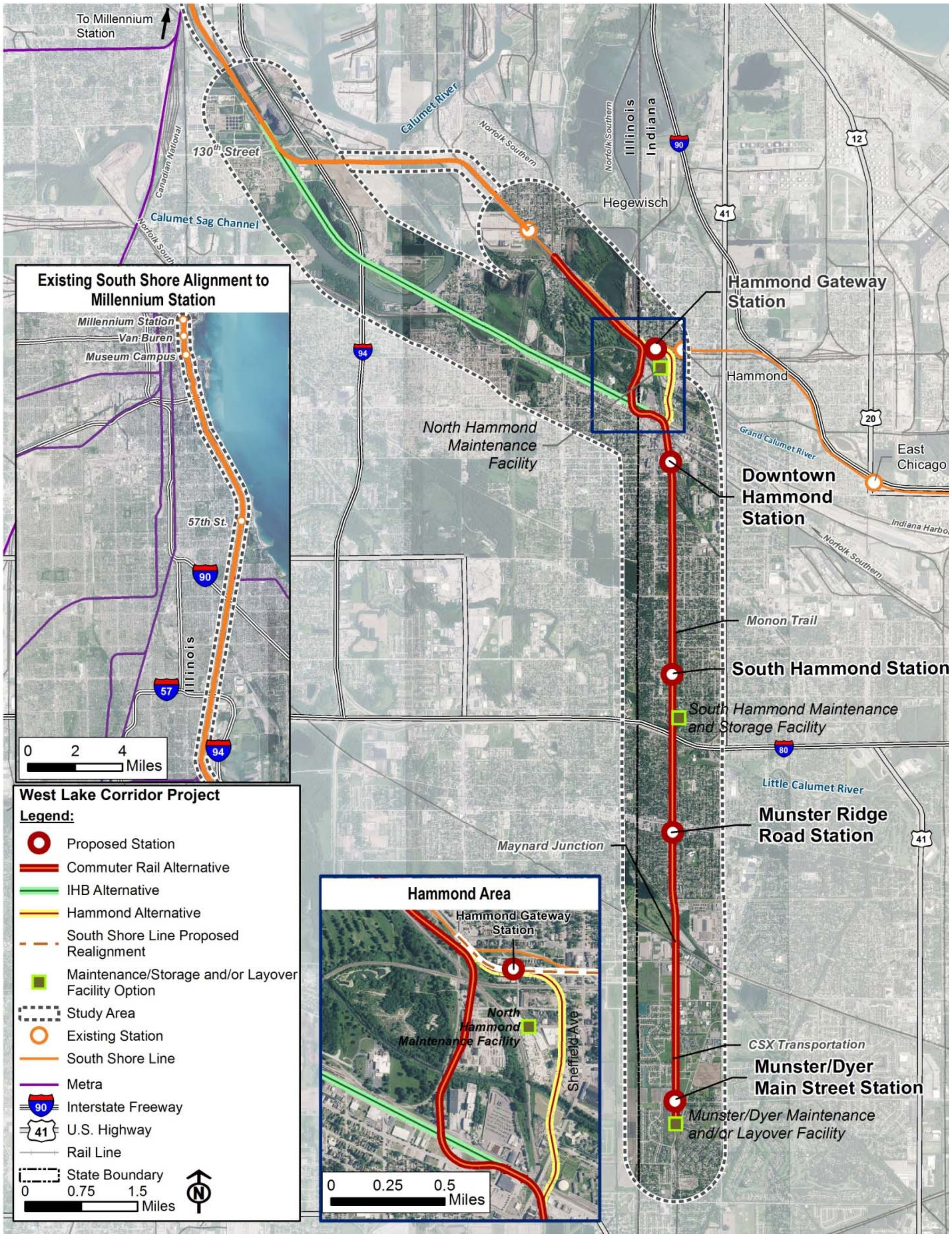

Figure 1-2 West Lake Corridor Project Study Area

1.2.2 Commuter Rail Alternative

The Commuter Rail Alternative would involve commuter rail service using electric-powered trains on an approximate 9-mile southern extension of NICTD's existing South Shore Line (SSL) between Dyer and Hammond, Indiana (see **Figures 1-2** and **1-3**). Heading north from the southern terminus near Main Street at the Munster/Dyer municipal boundary, the Project would include new track on a separate right-of-way (ROW) adjacent to, and east of, the CSX freight line in Munster. North of the proposed elevated crossing over another CSX freight line at the Maynard Junction, the proposed Commuter Rail Alternative alignment would use the publically-owned former Monon Railroad corridor in Munster and Hammond. North of downtown Hammond the track alignment would turn west under Hohman Avenue, and then continue north on new elevated track generally along the Indiana-Illinois state line to connect to the existing SSL southeast of the Hegewisch Station in Chicago. Project trains would operate on the existing MED line for their final 14 miles, terminating at Millennium Station in downtown Chicago. Station locations for the Commuter Rail Alternative would include Munster/Dyer Main Street, Munster Ridge Road, South Hammond, and Downtown Hammond.

Four design options to the Commuter Rail Alternative near the southern Project terminus include:

- **Commuter Rail Alternative Option 1**: Under this design variation, parking for the Munster/Dyer Main Street Station would be located on the east side of the station, and a vehicle maintenance and storage facility would be located south of 173rd Street in Hammond near the South Hammond Station. See **Figure 1-3**.
- **Commuter Rail Alternative Option 2**: Under this design variation, parking for the Munster/Dyer Main Street Station would be located on the west side of the existing CSX freight line. Main Street would be extended west from Sheffield Avenue using an underpass to cross the CSX railroad and Project ROW. The vehicle maintenance and storage facility would be located south of 173rd Street in Hammond near the South Hammond Station. See **Figure 1-3**.
- **Commuter Rail Alternative Option 3**: Under this design variation, the vehicle maintenance and storage facility would be located south of the Munster/Dyer Main Street Station, on the east side of the existing CSX freight line, at Munster/Dyer Main Street Station, instead of south of the South Hammond Station. Parking for the Munster/Dyer Main Street Station would be located on the east side of the station. See **Figure 1-3**.
- **Commuter Rail Alternative Option 4**: Under this design variation, the rail alignment would be routed above the existing CSX freight line at Maynard Junction, to land on the west side of the CSX freight line, and then continue south to the Munster/Dyer Main Street Station area. The Munster/Dyer Main Street Station and parking would be located west of the existing CSX freight line. A Main Street extension west under the CSX freight line and the Project ROW would be required. The vehicle maintenance and storage facility would be located south of 173rd Street in Hammond near the South Hammond Station. See **Figure 1-3**.

There are two design variations to the Commuter Rail Alternative related to the proposed alignment (i.e., the Indiana Harbor Belt [IHB] Alternative and the Hammond Alternative) as follows. See **Figures 1-4**, **1-5**, and **1-6**.

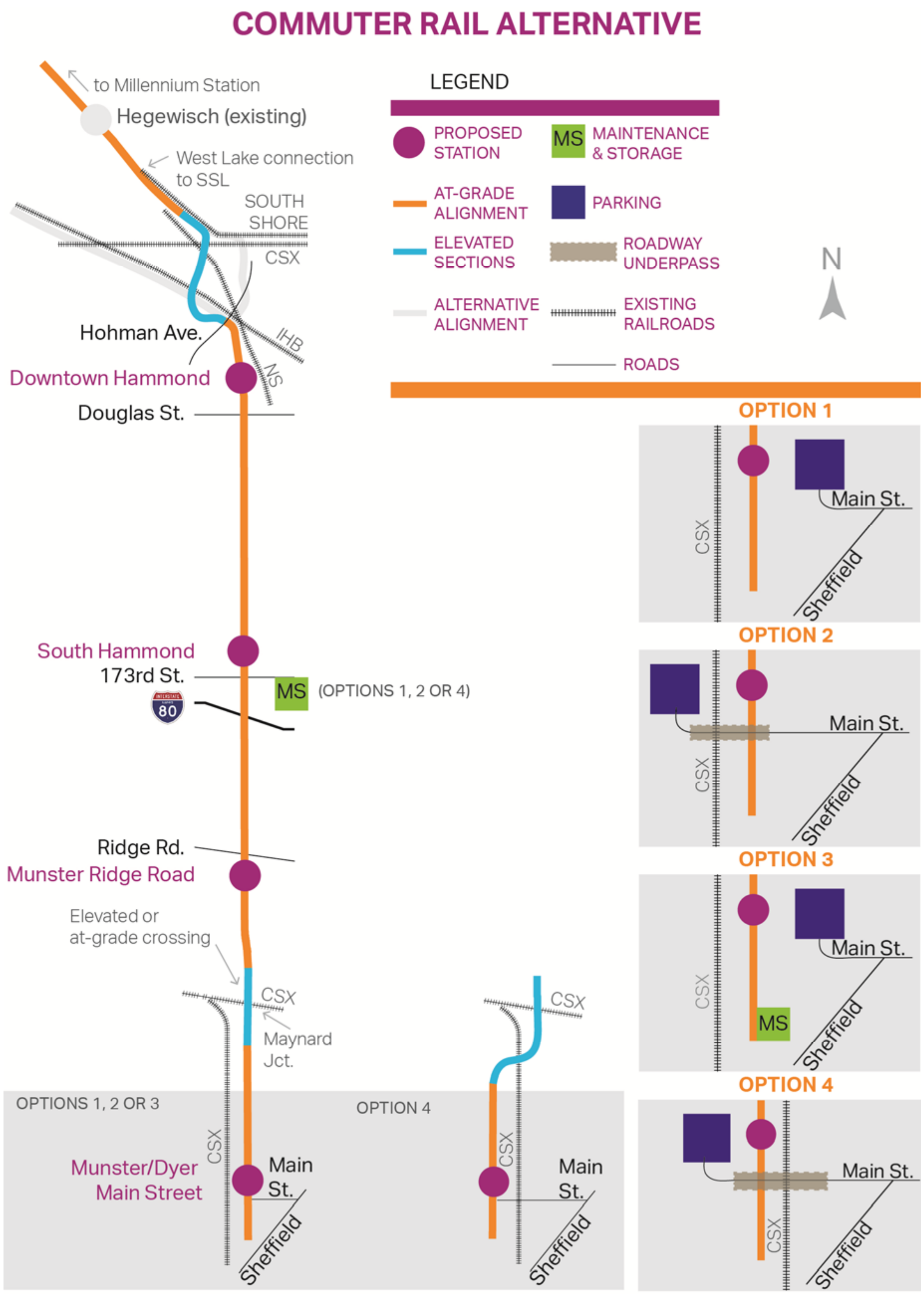

Figure 1-3 Commuter Rail Alternative Options

1.2.3 Indiana Harbor Belt (IHB) Alternative

South of Douglas Street, the IHB Alternative duplicates the Commuter Rail Alternative Options described above. From downtown Hammond north of Douglas Street, the alignment of the IHB Alternative would turn west under Hohman Avenue in Hammond and would be constructed in the IHB freight line ROW west through Calumet City, Burnham, and Chicago, Illinois. West of Burnham Avenue, the IHB Alternative would bridge over the IHB and CSX freight lines, landing in the IHB Kensington Branch freight line ROW, and would include relocating and reconstructing the IHB freight line on a new adjacent track within the existing railroad ROW. The Project would then continue northwest to the proposed connection with the existing SSL near I-94 and 130th Street in Chicago. See **Figure 1-4**.

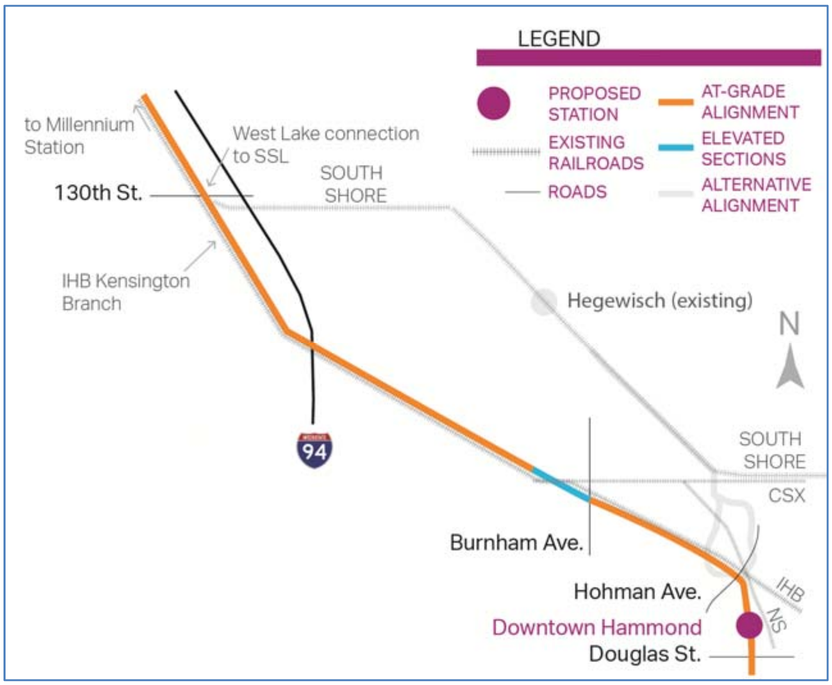

Figure 1-4 Indiana Harbor Belt Alternative

1.2.4 Hammond Alternative

South of Douglas Street, the Hammond Alternative is similar to the Commuter Rail Alternative described above. From downtown Hammond north of Douglas Street, the Hammond Alternative would extend north on embankment and bridges crossing over the IHB and Norfolk Southern freight lines immediately east of the Hohman Avenue overpass. The alignment would then extend northward and cross over Hohman Avenue just south of Michigan Street. The alignment would then continue north and west, crossing over the existing CSX freight line, and connecting with the existing SSL. See **Figure 1-5**.

Under the Hammond Alternative, the Hammond Gateway Station would be constructed in North Hammond and would replace the existing SSL Hammond Station (see **Figure 1-5**). The Hammond Alternative assumes the existing SSL track would be relocated between the existing SSL Hammond Station and the Indiana-Illinois state line to facilitate a passenger connection between the Project and the SSL at the Hammond Gateway Station on the Hammond Alternative. The alignments of both routes would be adjacent to one another at this location, allowing passengers to transfer at the combined station. During non-peak times, West Lake Corridor Project trains would operate as shuttles between Munster/Dyer Main Street Station and

Hammond Gateway Station, making connections with SSL service. **Figure 1-6** illustrates the SSL track relocation.

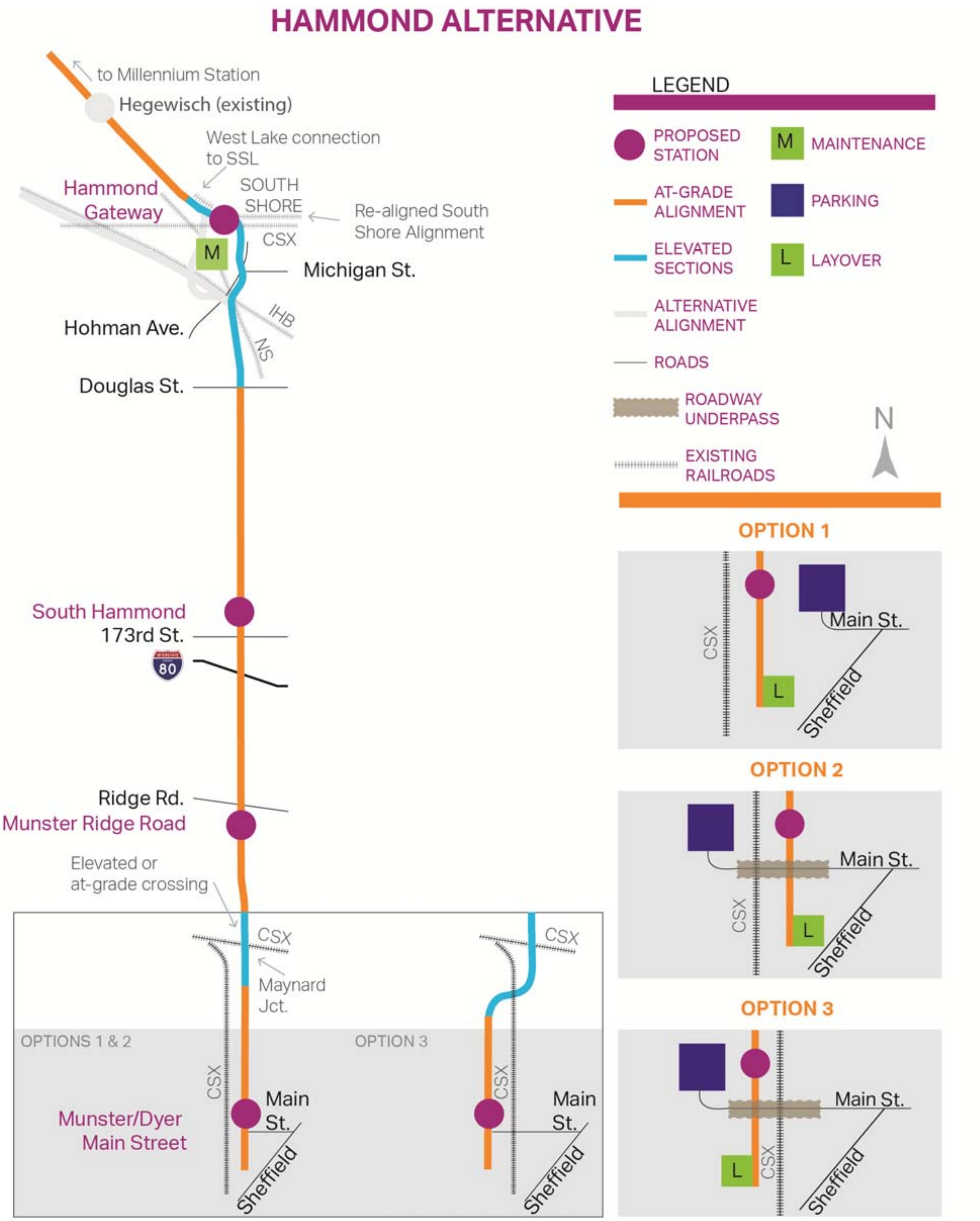

Figure 1-5 Hammond Alternative Options

Figure 1-6 South Shore Line Proposed Realignment

A maintenance facility would be located immediately south of the Hammond Gateway Station. A separate layover facility at the southern end of the Project corridor, near the Munster/Dyer Main Street Station, would also be constructed, as shown on **Figure 1-5**. There are three design variations on how the layover facility, Munster/Dyer Main Street Station, and parking would be configured under the Hammond Alternative, as follows:

- **Hammond Alternative Option 1:** The Munster/Dyer Main Street Station, layover facility, and parking would be on the east side of the existing CSX freight line. See **Figure 1-5**.
- **Hammond Alternative Option 2:** The Munster/Dyer Main Street Station and layover facility would be on the east side of the existing CSX freight line, and the parking would be west of the CSX freight line. A Main Street extension west under the CSX freight line and Project ROW would be required. See **Figure 1-5**.
- **Hammond Alternative Option 3:** This option would require routing the Project above the existing CSX freight line at Maynard Junction, landing on the west side of the CSX freight line ROW, and continuing south to the Munster/Dyer Main Street area. The Munster/Dyer Main Street Station, layover facility, and parking would be located west of the existing CSX freight line. A Main Street extension west under the CSX freight line and the Project ROW would be required. See **Figure 1-5**.

1.2.5 Maynard Junction Rail Profile Option

One design variation is being considered for each Build Alternative—the Maynard Junction Rail Profile Option. Under this design variation, at Maynard Junction in Munster, the alignment would cross the existing CSX freight line in an at-grade profile instead of an elevated profile. The proposed alignment would remain east of the CSX freight line ROW for the Commuter Rail Alternative Options 1, 2, and 3 (see **Figure 1-3**), the IHB Alternative Options 1, 2, and 3, and the Hammond Alternative Options 1 and 2 (see **Figure 1-5**).

2. REGULATORY SETTING

Wetlands are regulated under Sections 401 (33 United States Code [USC] § 1341) and 404 (33 USC § 1344) of the Clean Water Act (CWA). Section 404 of the CWA regulates the discharge of dredge or fill material into wetlands that are considered waters of the United States (US). The United States Army Corps of Engineers (USACE) administers the Section 404 CWA permitting program, including determining which wetlands are jurisdictional under the CWA. The United States Environmental Protection Agency (USEPA) develops and interprets policy, reviews and comments on individual permit applications, and enforces Section 404 provisions.

Wetlands are determined to be waters of the US if there are hydrologic connections to interstate waters, or if they are a significant nexus to waters of the US. Section 404 of the CWA regulates the discharge of dredge or fill material into wetlands. USACE provided documentation on which wetlands in Indiana would be considered jurisdictional under the CWA in a letter dated July 29, 2016. This information has been incorporated into the wetland descriptions in **Table 4-1**. A copy of the letter is included in **Appendix G**.

Section 401 CWA Water Quality Certifications are needed for projects that require a Section 404 permit. Section 401 of the CWA requires any applicant for a Section 404 permit obtain the Water Quality Certification for any activity that may result in a discharge of a pollutant into wetlands that are considered waters of the US. The Section 401 Water Quality Certification is administered by the state; in Illinois it is administered by the Illinois Environmental Protection Agency (IEPA) and in Indiana it is administered by the Indiana Department of Environmental Management (IDEM).

Permits are required under both Sections 401 and 404 of the CWA prior to dredge or fill activities. As part of the permitting process, it must be demonstrated that impacts to wetlands were avoided to the extent possible, minimized where avoidance is not possible, and mitigation provided for unavoidable impacts. Applicable Section 404 permits depend on the state in which the impacts occur, as well as the total amount of impacts. In Illinois, the USACE Regional Permitting program may be applicable. Per Regional Permit 3: Transportation Projects, wetland impacts must not exceed 1.0 acre total, with no single crossing exceeding 0.25 acre of wetland impacts. In Indiana, the USACE Indiana Regional General Permit No. 001 allows for up to 1.0 acre of wetland impacts, and a maximum of 1,500 linear feet of stream channel impacts. If wetland impacts exceed the amount allowable under the appropriate regional permit, then an individual permit would be required.

Wetlands that are isolated from waters of the US are regulated under state laws. In Indiana, isolated wetlands are regulated under the State Isolated Wetlands Law (Indiana Code 13-18-22), under the jurisdiction of IDEM. In Illinois, isolated waters are regulated under the Illinois Rivers, Lakes, and Streams Act (615 Illinois Compiled Statutes 5), under the jurisdiction of the Illinois Department of Natural Resources (DNR). In addition, Illinois has the Interagency Wetlands Policy Act of 1989, which regulates any activities that impact wetlands as a result of a project financially funded with Illinois state funds.

3. METHODOLOGY

On September 14 to 17, 28 to 30, and October 27, 2015, AECOM performed wetland investigations and delineations in the Study Area between Dyer and Hammond, Indiana, and near the IHB freight line ROW. The delineations were performed for NICTD as part of the planning process for the proposed Project in Lake County, Indiana, and Cook County, Illinois. The purpose of the investigation was to determine the location and extent of any wetlands and waters of the US in the Study Area.

In Indiana, all wetlands located within 50 feet of the proposed alignment were identified or delineated. In Illinois, all wetlands located within 100 feet of the proposed alignment were identified or delineated (100 foot buffers are required per the Cook County Watershed Management Ordinance). Wetlands were investigated using one of three methods, based on right of entry and physical access issues. For areas with approved and safe right of entry, the investigation was performed in accordance with the Section 404 guidelines of the USACE Chicago District, the 1987 *Corps of Engineers Wetlands Delineation Manual* (Manual) (USACE 1987), and the *Interim Regional Supplement to the Corps of Engineers Wetland Manual: Midwest Region* (2010 Supplement) (USACE 2010). Wetland boundaries were flagged where property ownership allowed. For those portions of the wetland that extended outside of the 50-foot or 100-foot buffer, wetland boundaries were estimated and drawn on aerial photography.

Wetlands located between Hammond and Metra's Millennium Station in downtown Chicago, or the IHB freight line ROW and Metra's Millennium Station, were identified using National Wetland Inventory (NWI) maps only. No new infrastructure is proposed in this portion of the Study Area; as such, full on-site wetland delineations were not conducted from Hammond, Indiana, to Metra's Millennium Station where the proposed Project would operate on the existing MED/SSL. Since there would be no impacts in this area, the greater degree of accuracy was deemed unnecessary.

Detailed exhibits that indicate the location and extent of the wetlands, the proposed alignment, and the individual properties are included in **Appendix A**.

3.1 Background Research

AECOM reviewed the corresponding topographic, wetland, soil, and floodplain maps for landscape features that could indicate the presence of wetlands or waters of the US. The field investigations were guided by the analysis of the NWI wetland map, the United States Natural Resource Conservation Service (USNRCS) soil surveys of Cook County and Lake County, and the Federal Emergency Management Agency (FEMA) flood insurance rate maps. Special attention was given to areas at lower elevations, those mapped with hydric soils, and areas with NWI-designated wetlands.

3.1.1 National Wetland Inventory Map, United States Fish and Wildlife Service (USFWS)

NWI maps show the approximate configuration, location, and type of wetlands found in a given area (see **Figure 3-1**). The NWI maps are prepared primarily by conventional aerial photo interpretation (stereoscopic analysis) of high altitude aerial photography (1:80,000 black and white). The *User Notes for National Wetlands Inventory Maps* (USFWS 1983) caution: "Maps should be used to locate the presence of wetlands and not to identify precise boundaries between wetlands and uplands." Because the NWI maps are limited in precision by their scale (1:24,000) and the identification method used, the boundaries of wetlands shown on the NWI maps need to be more precisely determined in the field. Commonly, small wetland areas, and, less frequently, large wetland areas are not shown.

The NWI map depicts wetlands in the Study Area in the vicinity of Wetlands 13, 16, 18, 26, 28, 29, 31, 45, and 48; the wetland investigation confirmed the presence of wetlands in these locations.

3.1.2 Soil Survey of Cook County, Illinois, and Lake County, Indiana, USNRCS Web Soil Survey

Soil surveys furnish soil maps, soil descriptions, and soil properties to guide decisions about soil selection, use, and management. See **Figure 3-2** for the soil map. The Web Soil Survey map of the Study Area shows 20 soil units in the area investigated, including urban land and landfill; 6 are hydric soil units and 14 are non-hydric soil units (United States Department of Agriculture [USDA] NRCS 2015). A hydric soil is formed under conditions of saturation, flooding, or ponding of sufficient length during the growing season to develop anaerobic conditions in the upper part of the soil profile. Hydric soil is one of the three key components of a wetland, along with vegetation and hydrology. The hydric soil units in the investigated area included Pella silty clay loam, 0-2 percent slopes (153); Gilford fine sandy loam, 0-2 percent slopes (201); Bono silty clay (BN); Maumee loamy fine sand (Mm); and Rensselaer loam, calcareous subsoil variant (Rs). See **Appendix B** for the USNRCS soil survey report.

3.1.3 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Cook County, Illinois, and Lake County, Indiana

The FIRM map indicates that the investigation area is in a mapped 100-year floodplain at four locations, including where it crosses the Calumet River and Little Calumet River. See **Figure 3-3** for the FEMA floodplain map.

3.2 Field Methods

3.2.1 Full Delineations (Approach A)

NICTD's consultant AECOM conducted wetland delineations in the Study Area between Dyer and Hammond, Indiana, and between Hammond, Indiana, and the IHB Kensington Branch railroad ROW. Because right of entry could not be obtained for all properties, AECOM identified wetlands or estimated wetland boundaries using three approaches. Approach A entailed a full delineation and was used on properties with safe and approved right of entry.

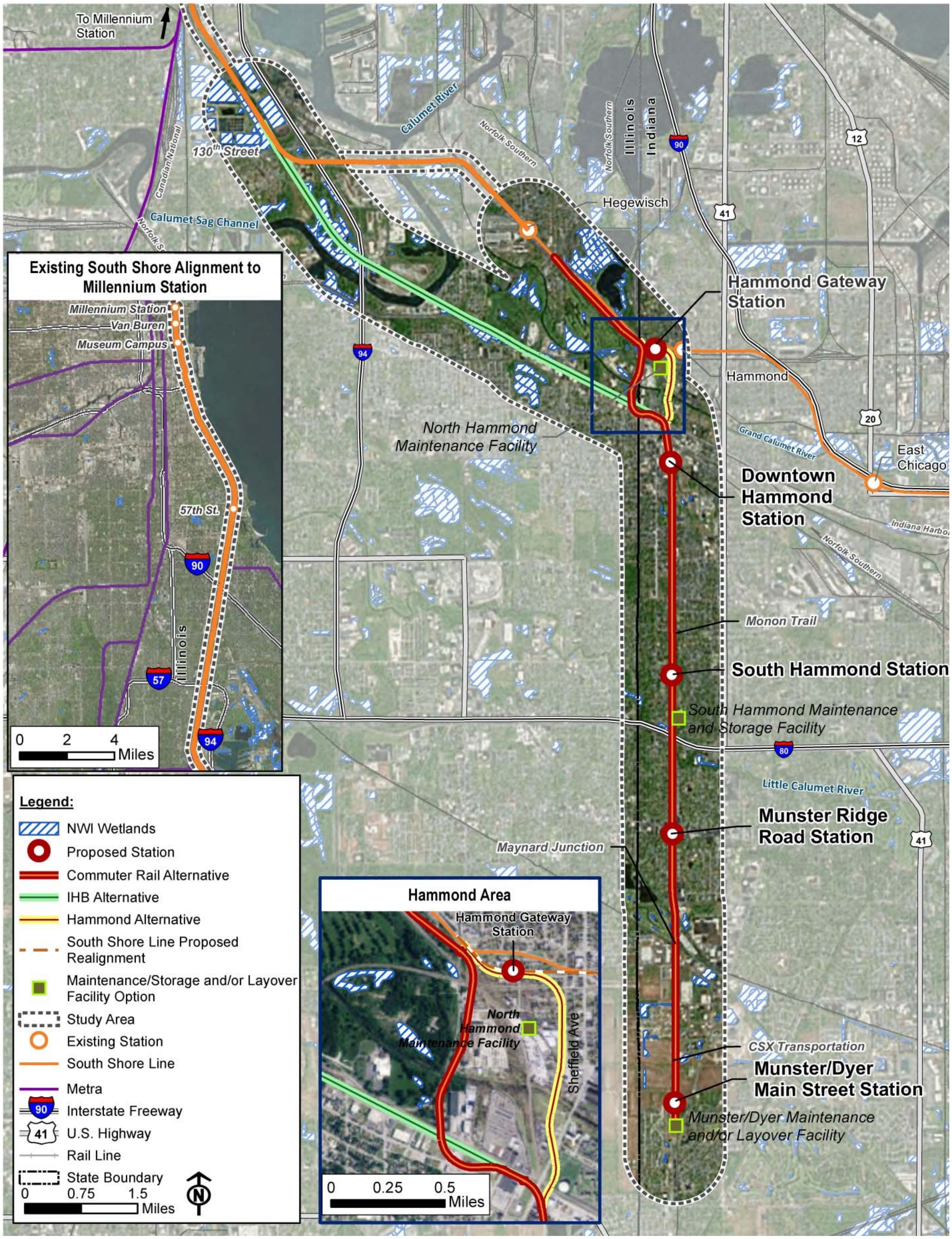

Figure 3-1 Project Wetland Delineation National Wetland Inventory Map

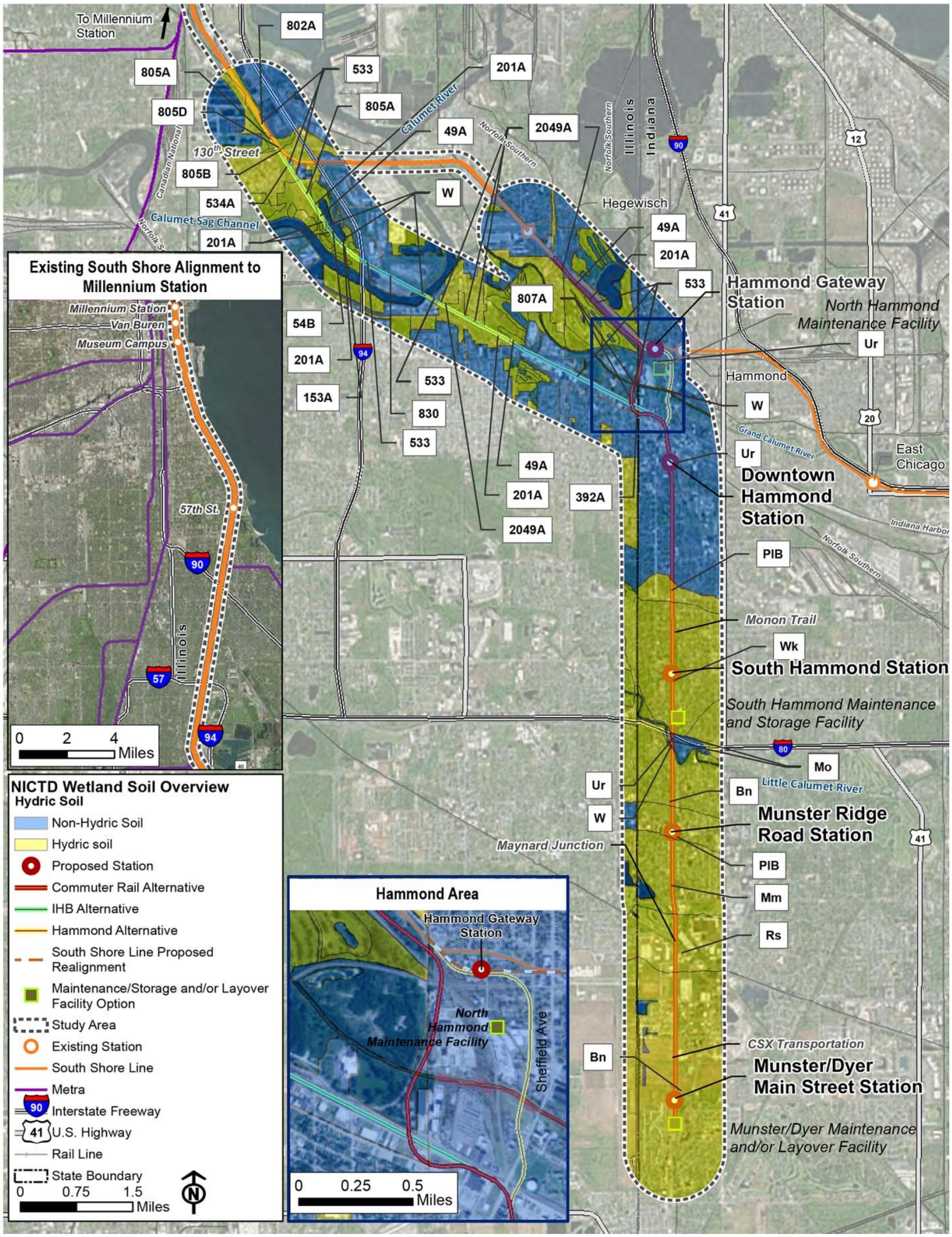

Figure 3-2 Project Wetland Delineation Soil Survey Map

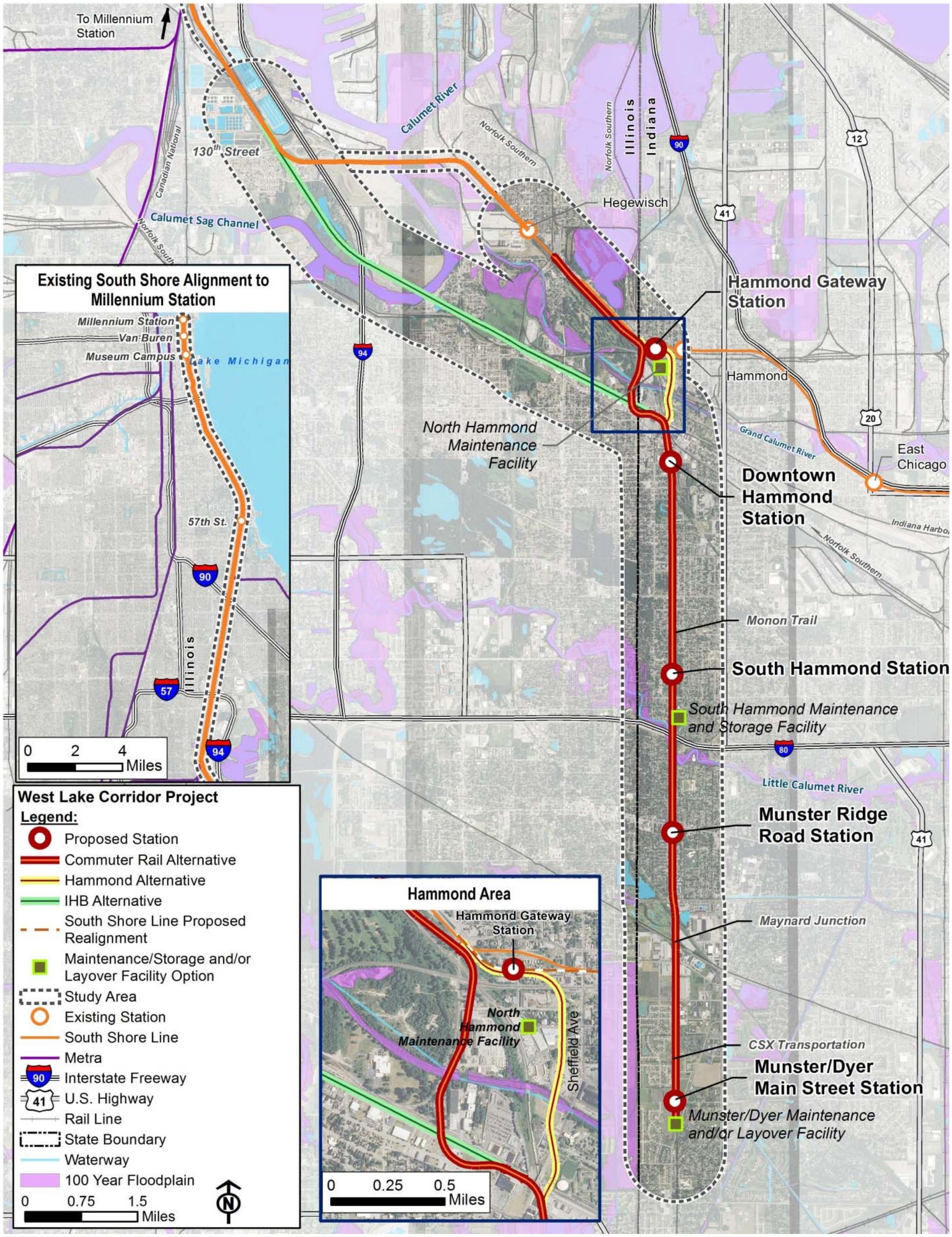

Figure 3-3 Project Wetland Delineation Floodplain Map

Wetlands delineations were done in accordance with the Section 404 guidelines of the USACE, including utilization of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0) (USACE 2010). Using the three parameter methodology, data pertaining to vegetation, hydrology, and soil indicators were obtained. After each wetland determination was complete, an inventory was made of all identifiable plant species in order to calculate a Floristic Quality Index (FQI) and mean coefficient of conservatism (Mean C). Wetland boundaries were surveyed in the field using a Trimble GeoExplorerXH unit. If wetlands extended outside the 50-foot (Indiana) or 100-foot (Illinois) boundary, the boundary of the extended portion of the wetland was estimated using aerial photography.

For properties where AECOM had safe and approved right of entry, the team performed Approach A, using the three-parameter methodology of the Manual. Suspect wetlands were investigated for the presence of wetland vegetation, hydrology, and soil indicators using the guidelines of the 2010 Supplement. A data observation point was chosen in a representative portion of the suspect wetland to characterize the community. Observations of vegetation, soil, and hydrology were documented, and if wetland indicators were positive, an observation point was chosen in an adjoining upland area to establish the location of the wetland boundary. USACE wetland determination data forms documenting observations obtained at the data points can be found in **Appendix C**. Photographs were taken of each soil sample, of the surrounding vegetation community, and where possible, an overview of each of the wetlands. Photographs of the wetlands and the project site are included in **Appendix D**. Wetland boundary information was transferred to aerial photographs to indicate location and extent of the identified wetlands. Exhibits indicating these wetland boundaries can be found in **Appendix A**. The FQI Reports can be found in **Appendix E**.

Wetland Hydrology

Hydrologic conditions were assessed using wetland hydrology indicators such as evidence of inundation, drift lines, surface scour, watermarks, and sediment deposits. Any evidence of hydrological modification was noted.

Wetland Vegetation

At each observation point, the plant community was assessed using the 2010 Supplement methodology to determine whether hydrophytic vegetation was dominant. With the soil core at the center, nested circular sample plots of 5-foot, 15-foot, and 30-foot diameters were used to evaluate the herbaceous, sapling/shrub, and tree layers/vine, respectively. To determine the dominant species in each layer, the percentage of cover was recorded for each species and the totals were calculated using the Dominance Test or 50/20 rule. Species that represented 50 percent or more of the total vegetative cover by layer plus any other species that, by itself, accounted for at least 20 percent of the total were considered dominants.

The wetland indicator status of each dominant species was used to determine whether the sample met the criterion for hydrophytic vegetation. The indicator status is a rating that is based on a species' likelihood to be found in a wetland area, and therefore can be considered a hydrophytic species. The rating for each species can be found in the National Wetland Plant List (Midwest Region) (Lichvar et al. 2014) and in Plants of the Chicago Region (Swink and Wilhelm 1994). If the majority of dominant species were rated as wetland species, then the vegetation is considered hydrophytic.

Wetland Soil

Soil samples were augured up to 18 inches or more to characterize wetland and upland soil conditions. Samples were examined by hand in the field to determine structure and texture, and soil colors were classified using a Munsell color chart.

Floristic Quality Index (FQI)

After each wetland determination was complete, an inventory was made of all the identifiable plant species at each wetland in order to calculate an FQI and Mean C. The FQI metric was developed by Chicago-area botanists Floyd Swink and Gerould Wilhelm to measure the natural area quality and degree of disturbance present in a vegetation community. The FQI relies on a value, represented by a number from 0 to 10, called the coefficient of conservatism (C Value), which has been assigned to each native plant species in the Chicago region. The value reflects a species' degree of fidelity to a high-quality natural community. For example, a very conservative species, found in habitats with little disturbance, would have a high C Value such as 9 or 10, while a very weedy species that is found in highly disturbed areas would have a low C Value such as 0 or 1. Non-native species are not given a rating because they are not originally part of any natural community. The FQI calculation must be conducted for all wetlands as part of the delineation and Section 404 permitting requirements of the USACE Chicago District. A wetland community with a Mean C value of 3.5 or an FQI of 20 or greater is considered a high quality aquatic resource by the USACE Chicago District.

3.2.2 Field Methods – Identified Wetlands (Approach B)

For properties where NICTD could not obtain right of entry, or could not perform the three parameter methodology due to physical or safety access reasons, AECOM identified wetlands and estimated wetland boundaries based on a visual assessment from adjacent property. This approach is described as Approach B.

Approach B consisted of noting vegetation and hydrology from adjacent property; soil data and FQIs were not obtained. Using the Trimble GeoExplorer unit, global positioning system (GPS) points were taken at the beginning and end of the wetland, and at any points between that would be necessary to identify boundary locations. Field notes were taken describing the distance and direction the GPS points were taken from the actual wetland boundary. When the geographic information system data were downloaded, the points were shifted by the direction and distance needed in order to reflect the actual wetland boundary. Wetland boundaries using this methodology were estimated based on the GPS point data and field notes. Aerial photography was used to supplement visual estimates, if necessary.

3.2.3 Field Methods – Estimated Wetlands (Approach C)

For properties where NICTD could not obtain right of entry and could not sufficiently access adjacent property to conduct a visual assessment, AECOM identified wetlands and estimated wetland boundaries using Approach C described below. Wetlands located between Hammond, Indiana and Metra's Millennium Station in downtown Chicago were identified using Approach C.

For properties that could not be seen from adjacent public properties, such as those adjacent to the IHB alignment in Illinois, or properties that were obscured by distance or vegetation, wetland boundaries were estimated based on the USFWS' NWI maps and aerial photography.

3.3 Agricultural Land Assessment

In the southern portion of the Study Area, near Seminary Drive and Sheffield Avenue in Munster, Indiana, the Study Area includes land that is under agricultural production and that includes mapped hydric soils. Often, wetlands on agricultural lands are difficult to identify using the USACE routine wetland determination methodology because agricultural practices can obscure or eliminate some wetland features. For the cultivated areas in the Study Area, AECOM delineators followed the USACE procedures for determining wetland areas on agricultural land, which require the use of aerial imagery and employ wetland identification methods developed by USNRCS. The USNRCS mapping conventions follow the methodology of the National Food Security Act Manual (NFSAM) that addresses the special conditions of agricultural wetlands. The mapping conventions call for a comparison of at least five normal-rainfall years of aerial photos against aerial photos of one wet-rainfall year and one dry year, which are used as a reference to detect characteristic field signatures that indicate the presence of wetlands. The NFSAM standards require an area to have wetland signatures present in three years out of the five normal years in order to be considered a wetland. The USACE Chicago District Regulatory Branch has issued a regulatory bulletin with guidelines for using the USNRCS Conventions.

Appendix F contains the aerial photos used to detect field characteristics for the agricultural land investigation.

3.4 Wildlife Observations

AECOM made note of all the wildlife observed in the Study Area on the days of the investigation. These observations are discussed in **Section 4.1**.

3.5 Wetland Delineation Exhibit

In all instances, wetland data obtained via Trimble GeoExplorer, aerial photography, or NWI maps were transferred to an exhibit that includes an identifying code for each wetland. Wetlands are noted in different colors to indicate which methodology was utilized to determine the wetland boundary (i.e., boundaries based on field delineations or estimation based on aerial photography or NWI maps). The use of different colors allows for the level of accuracy of the boundary determination to be readily apparent. The location and extent of the wetland, the proposed alignment, and the individual properties are included in the wetland boundaries maps (**Figure 4-1**), and detailed exhibits are included in **Appendix A**.

4. AFFECTED ENVIRONMENT

4.1 Wetland Areas Descriptions

For wetland investigations that took place on September 14, 15, 16, and 17, 2015, the weather was mild and sunny, with temperatures in the low 70s°F to low 80s°F. Rain had fallen in the previous week.

For wetland investigations that took place on September 28, 29, and 30, 2015, the weather was mild and sunny on September 28 and 30, with temperatures in the low 60s°F to high 70s°F. On September 29, the weather was rainy in the morning with the same temperatures. Rain had fallen in the previous two weeks, and 0.10 inch precipitation was recorded for September 29 in Munster, Indiana.

For wetland investigations that took place on October 27, 2015, the weather was cool and rainy, with temperatures in the mid-40s°F to mid-50s°F. Minimal rain had fallen in the previous week, and 0.11 inch precipitation was recorded for this date in Munster, Indiana.

Initial review of soil maps and aerial photography indicated the presence of 12 wetlands located in the Study Area. Site investigation confirmed the presence of these 12 wetlands, as well as additional wetlands, for a total of 52 wetlands in the entire Study Area. In two wetlands (Wetlands 31 and 38), the investigation discovered prior and unknown wetland delineation flags in the properties, which were consistent with the AECOM determination of wetland boundaries.

Wetland boundaries of the 29 wetlands investigated using the full delineation method (Approach A) were flagged in the field and surveyed. Dominant vegetation was determined, soil sampling was conducted, and indicators of wetland hydrology were noted. An FQI was collected during the investigation in each wetland at the data point.

Wetland area boundaries of 14 wetlands were investigated using Approach B. Five wetland boundaries were determined partially using the full delineation method (Approach A) and partially with Approach B. Full boundary delineations using Approach A on these five wetlands were not possible due either to right of entry issues or safety reasons. Nine wetlands were investigated using Approach C. Wetland areas investigated using Approach B and Approach C were not flagged in the field and were surveyed using the methods described in **Chapter 3**. Similarly, soil samples were not taken in areas using Approach B or Approach C. Dominant vegetation was identified from adjacent property for wetlands identified using Approach B.

Wildlife observations included bird species sightings such as a great blue heron at Wetlands 1, 2, 3, and 21, and a hummingbird species at Wetland 6. A rabbit was seen in Wetland 12 and frogs were heard in Wetland 20. A monarch butterfly was seen in Wetland 9 and crayfish holes were seen in Wetlands 15 and Wetland 19.

Figure 4-1 shows an overview of wetlands locations and **Table 4-1** summarizes pertinent information related to the 52 wetlands found in the Study Area. **Appendix A** contains exhibits showing the wetland delineation boundaries in detail.

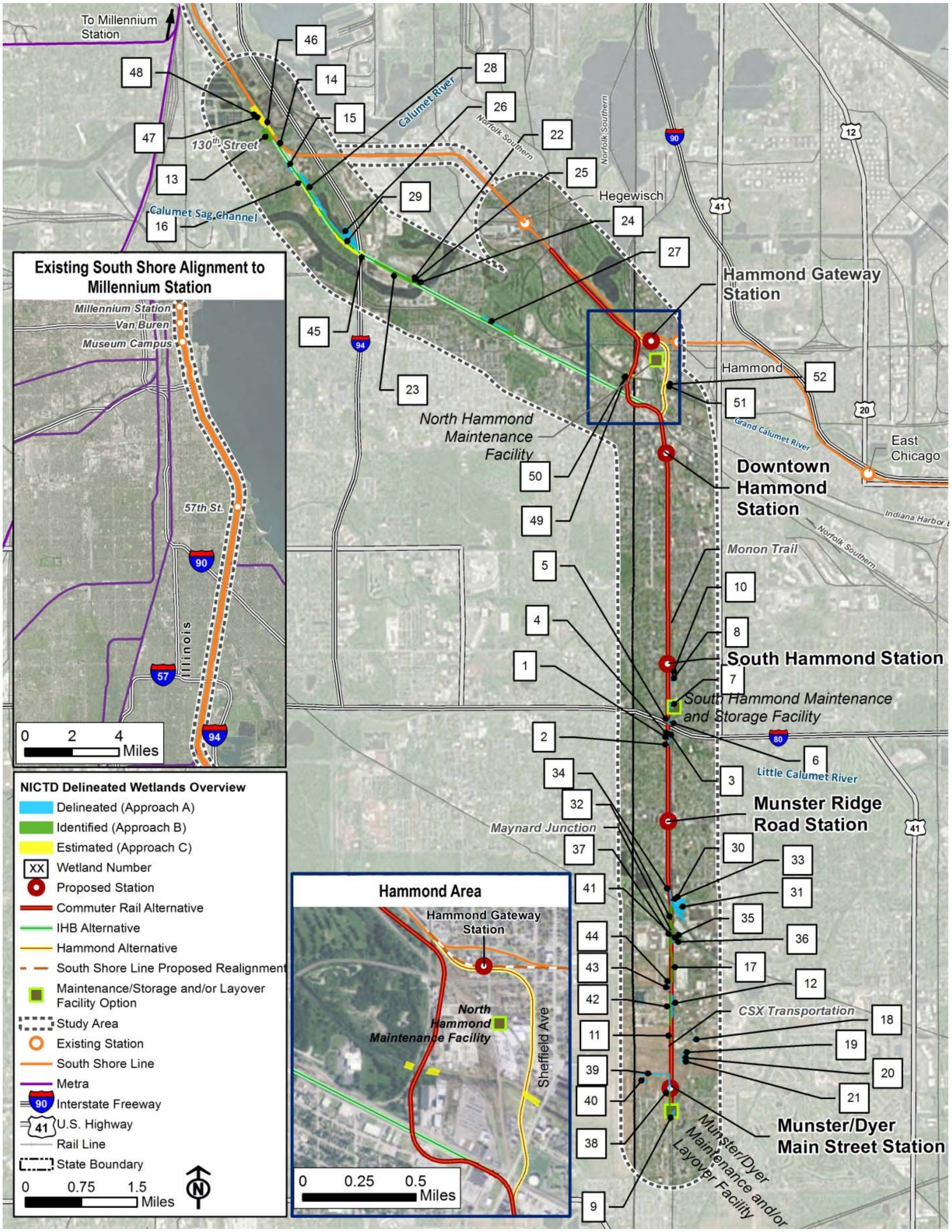

Figure 4-1 Project Wetland Delineation Boundaries Map: Overview

Table 4-1 Summary of Wetlands in the Study Area

Wetland	Wetland Type	Location	Approach	Mapped Soil	Dominant Vegetation	Mean C/ FQI [1]
1	Emergent, riparian	Immediately south of river at Monon Trail bridge	A	Bono silty clay loam	*Persicaria lapathifolium, Phalaris arundinacea, Ipomoea hederacea*	2.15/ 7.77
2	Wet meadow; wooded wetland	South of river at Monon Trail bridge	A	Bono silty clay loam	*Phalaris arundinacea, Parthenocissus quinquefolia, Vitis riparia, Fraxinus pennsylvanica subintegerrima, Acer negundo, Quercus macrocarpa, Ulmus rubra*	3.13/ 12.14
3	Emergent, riparian	Immediately north of river at Monon Trail bridge	A	Bono silty clay loam	*Persicaria lapathifolia, Helianthus tuberosus, Phalaris arundinacea, Symphyotrichum pilosum, Eupatorium serotinum, Sambucus nigra*	1.59/ 6.55
4	Floodplain forest	Eastern side of Monon Trail, north of river, south of interstate	A	N/A	*Lysimachia nummularia, Phragmites australis, Acer negundo, Fraxinus pennsylvanica*	1.50/ 4.74
5	Sedge meadow	Immediately north of interstate at Monon Trail	A	Watseka silt loam	*Phragmites australis, Fraxinus pennsylvanica subintegerrima, Acer negundo, Populus deltoides*	2.22/ 9.43
6	Eastern forested wetland	Immediately north of interstate at Monon Trail	A	Watseka silty clay loam	*Impatience capensis, Crataegus mollis, Ulmus americana, Fraxinus pennsylvanica subintegerrima*	2.29/ 9.46
7	Sedge meadow with forested wetland edge	East of Monon Trail at 174th Street	A	Watseka loamy fine sand	*Lythrum salicaria, Salix interior, Populus deltoides, Fraxinus pennsylvanica subintegerrima, Phragmites australis*	2.26/ 9.86
8	Sedge meadow edges with forested wetland center	North of 173rd Street and east of Lyman Avenue	A	Watseka loamy fine sand	*Lythrum salicaria, Fraxinus pennsylvanica subintegerrima, Populus deltoides*	1.95/ 8.95
9	Wet prairie with shrubs	West of Sheffield Avenue and south of Main Street at rail crossing	A/B	Bono silty clay loam	*Sambucus nigra, Frangula alnus, Lythrum salicaria*	2.82/ 11.64
10	Sedge meadow with forested wetland edge	North of 173rd Street and east of Lyman Avenue	A	Watseka loamy fine sand	*Lythrum salicaria, Fraxinus pennsylvanica subintegerrima, Populus deltoides*	1.95/ 8.95
11	Ditch wetland	East of rail near edge of subdivision south of Otis Bowen Drive	B	Bono silty clay loam	*Phragmites australis*	NA
12	Bioretention basin	East of rail, south of Superior Avenue	A	Bono silty clay loam	*Phragmites australis*	2.15/ 7.77

Wetland	Wetland Type	Location	Approach	Mapped Soil	Dominant Vegetation	Mean C/ FQI [1]
13	Sedge meadow swale and shrub wetland	North of East 130th Street near Calumet Water Reclamation Plant, west of rail	B	Orthents clayey	*Phragmites australis, Salix spp, Morus alba, Populus deltoides*	NA
14	Sedge meadow and shrub wetland	South of 130th Street, east of rail	B	Orthents clayey	*Typha angustifolia, Hawthorn spp.*	NA
15	Sedge meadow swale	West of rail near 132nd Street	A	Orthents, Ashkum, aquents	*Eleocharis palustris*	2.00/ 6.00
16	Sedge meadow and shrub wetland ditch	Adjacent to rail on west side in Cook County Forest Preserve District	B	Orthents clayey	*Phragmites australis, Lythrum salicaria, Sambucus nigra, Salix exigua, Equisetum arvense, Helianthus tuberosus, Eleocharis palustris, Ulmus americana*	NA
17	Retention basin wetland	East of rail, south of 45th Street near Town of Munster	B	Rensselaer loam, calcareous subsoil variant, Bono silty clay	*Phragmites australis, Lythrum salicaria*	NA
18	Detention basin	East of rail in subdivision near Columbia Avenue	A	Bono silty clay loam	*Phragmites australis, Typha angustifolia*	2.67/ 4.62
19	Disturbed wet prairie	East of rail in subdivision near Columbia Avenue	A	Bono silty clay loam	*Populus deltoides, Salix interior, Phragmites australis, Eleocharis palustris*	3.60/ 11.38
20	Detention basin	East of rail in subdivision near Columbia Avenue	A	Bono silty clay loam	*Lythrum salicaria, Eleocharis palustris, Salix interior*	2.33/ 7.00
21	Detention basin	East of rail in subdivision near Columbia Avenue	A	Bono silty clay loam	*Salix interior, Eleocharis palustris*	3.86/ 10.21
22	Ditch sedge meadow	North side of rail near Waste Management landfill	B	Landfill	*Phragmites australis, Bidens cernua*	NA
23	Ditch sedge meadow and forested wetland	South side of rail near Waste Management landfill	B	Landfill	*Phragmites australis*	NA
24	Forested riparian wetland	North side of rail near Waste Management landfill, at river edge	B	Landfill	*Phragmites australis, Acer negundo*	NA
25	Forested riparian ditch wetland	North side of rail near Waste Management landfill	B	Landfill	*Phragmites australis, Rhamnus frangula, Acer negundo*	NA
26	Large prairie marsh and forested wetland	Adjacent to rail on east side in Cook County Forest Preserve District	A/B	Watseka silty clay loam, Plainfield loamy sand, Gilford fine sandy loam	*Populus deltoides, Bidens cernua, Carex stricta, Typha latifolia, Alisma subcordatum*	3.93/ 26.08

Wetland	Wetland Type	Location	Approach	Mapped Soil	Dominant Vegetation	Mean C/ FQI [1]
27	Wet prairie and sedge meadow	North of rail near 143rd Street and Hammond Avenue	A/B	Gilford loamy sand, Watseka loamy fine sand	*Phalaris arundinacea, Populus tremuloides, Populus deltoides,Solidago rugosa, Vitis riparia*	3.56/ 15.08
28	Prairie marsh	Adjacent to rail on east side in Cook County Forest Preserve District	A/B	Orthents (aquic), Watseka loamy fine sand, Gilford fine sandy loam	*Phragmites australis, Lythrum salicaria, Salix interior, Populus deltoides*	3.83/ 21.00
29	Forested riparian wetland	Adjacent to rail on west side in Cook County Forest Preserve District	C	Pella silty clay loam	*Phragmites australis, Populus deltoides*	NA
30	Disturbed sedge meadow	East of rail, south of Fisher Street	A	Maumee loamy fine sand	*Phragmites australis*	1.00/ 1.00
31	Sedge meadow	East of rail, south of Fisher Street	A	Rensselaer loam, calcareous subsoil variant	*Populus deltoides, Phragmites australis*	1.94/ 7.75
32	Sedge meadow and forested wetland ditch	East of rail, south of Fisher Street	B	Rensselaer loam, calcareous subsoil variant	*Populus deltoides, Rhamnus frangula, Salix interior, Phragmites australis*	NA
33	Sedge meadow ditch	East of rail, south of Fisher Street	A	Maumee loamy fine sand	*Phragmites australis, Populus deltoides*	2.25/ 6.36
34	Sedge meadow	West of rail, south of Fisher Street	A	Maumee loamy fine sand	*Phragmites australis, Lythrum salicaria, Cornus stolonifera, Frangula alnus, Geum laciniatum trichocarpum*	2.91/ 9.65
35	Sedge meadow	East of rail, north of 45th Street	B	Rensselaer loam, calcareous subsoil variant	*Salix interior, Populus deltoids, Cornus stolonifera, Fraxinus pennsylvanica subintegerrima, Typha angustifolia, Vitis riparia*	NA
36	Sedge meadow	East of rail, north of 45th Street	A	Rensselaer loam, calcareous subsoil variant	*Populus deltoides, Typha angustifolia, Phragmites australis*	3.00/ 9.00
37	Sedge meadow	West of rail, north of 45th Street	B	Rensselaer loam, calcareous subsoil variant	*Salix interior, Cornus stolonifera, Typha angustifolia, Vitis riparia*	NA
38	Ditch forested wetland and sedge meadow ditch	West of rail near Sheffield Avenue crossing	A/B	Bono silty clay	*Phragmites australis, Salix interior, Cornus stolonifera, Equisetum arvense, Acer saccharinum, Prunus serotina, Populus deltoides, Rubus occidentalis*	2.06/ 8.25
39	Forested wetland ditch	West of rail, north of Seminary Drive	A	Bono silty clay	*Phragmites australis, Salix interior, Salix fragilis*	1.80/ 4.02

Wetland	Wetland Type	Location	Approach	Mapped Soil	Dominant Vegetation	Mean C/ FQI [1]
40	Wet prairie	West of rail, north of Seminary Drive	A	Bono silty clay	*Lythrum salicaria, Salix interior*	2.33/ 5.72
41	Forested wetland	West of rail, north of 45th Street	B	Rensselaer loam, calcareous subsoil variant	*Phragmites australis, Populus deltoides*	NA
42	Ditch sedge meadow	West of rail near Glastonbury Street, south of 45th Street	B	Bono silty clay	*Lythrum salicaria, Andropogon gerardii, Cornus stolonifera*	NA
43	Detention basin	West of rail near Glastonbury Street, south of 45th Street	A	Bono silty clay	*Open water with riprap. No vegetation.*	NA
44	Sedge meadow swale	West of rail near Glastonbury Street, south of 45th Street	A	Bono silty clay	*Lythrum salicaria, Typha angustifolia*	2.20/ 4.92
45	Riparian forested wetland	East of interstate near river and Waste Management	C	Landfills	*Not visible*	NA
46	Sedge meadow	East of rail, north of 130th Street	C	Orthents, clayey	*Not visible*	NA
47	Ditch sedge meadow	Between rail, north of 130th Street	C	Orthents, loamy	*Not visible*	NA
48	Ditch sedge meadow	West of rail, north of 130th Street	C	Orthents, loamy	*Not visible*	NA
49	Riparian wetland	On northern bank of Calumet River near Chicago Street and State Line Road	C	Urban land	*Not visible*	NA
50	Riparian wetland	On southern bank of Calumet River near Chicago Street and State Line Road	C	Orthents, loamy-skeletal	*Not visible*	NA
51	Riparian wetland	On southern bank of Calumet River near Wilcox Street and Hohman Avenue	C	Urban land	*Not visible*	NA
52	Riparian wetland	On northern bank of Calumet River near Wilcox Street and Hohman Avenue	C	Urban land	*Not visible*	NA

SOURCE: AECOM 2016.

[1] Mean C (Native Species) and FQI (Native Species) based on Chicago Region FQI Calculator 09292014, as provided by USACE Chicago District.

4.2 Wetland Areas with Descriptions of Soils and Hydrology

Wetland 1 (Approach A)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a redox dark surface (F6). The letter and number code represent the wetland characteristics according to the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0) (August 2010). The main indicators of hydrology were sediment deposits (B2) and drainage patterns (B10).

The upland data point also showed evidence of hydric soils, with 3 percent of redox concentrations leading to a preliminary classification of redox dark surface (F6). However, the presence of rock and asphalt indicated highly disturbed soils, which could disprove the sample as a strong indicator of wetland soils. There were no signs of hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 1 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 2 (Approach A)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a depleted below the dark surface (A11) soil. The main indicators of hydrology were water marks (B1) and a sparsely vegetated concave surface (B8).

The upland data point also showed evidence of hydric soils, with 3 percent of redox concentrations leading to a preliminary classification of redox dark surface (F6). However, the presence of rock and asphalt indicated highly disturbed soils, which could disprove the sample as a strong indicator of wetland soils. There were no signs of hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 2 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 3 (Approach A)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a redox dark surface (F6). The main indicators of hydrology were sediment deposits (B2) and drainage patterns (B10). The sample was taken approximately 5 feet from the edge of the river bank. An upland data point for soils could not be obtained due to the large amount of gravel and debris in the soil. There were no indicators of hydrology in the upland data point.

USACE advised in their letter dated July 29, 2016, that Wetland 3 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 4 (Approach A)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a redox dark surface (F6). The main indicator of hydrology was a high water table (A2). An upland data point for soils could not be obtained due to the large amount of gravel and debris in the soil. There were no indicators of hydrology in the upland data point.

USACE advised in their letter dated July 29, 2016, that Wetland 4 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 5 (Approach A)

The soils investigation confirmed the mapped non-hydric soil, Watseka silt loam. Although typically a non-hydric soil, the soil was hydric due to the presence of a depleted matrix (F3). The main indicator of hydrology was saturation (A3). The upland data point confirmed the mapped non-hydric soil, Watseka silt loam. There were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 5 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 6 (Approach A)

The soils investigation confirmed the mapped non-hydric soil, Watseka silty clay loam. Although typically a non-hydric soil, the soil was hydric due to the presence of a depleted below dark surface (A11). The main indicators of hydrology were sparsely vegetated concave surfaces (B8), aquatic fauna (B13), and surface soil cracks (B6). The upland data point confirmed the mapped non-hydric soil, Watseka silty clay loam. There were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 6 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 7 (Approach A)

The soils investigation confirmed the mapped non-hydric soil, Watseka loamy fine sand. Although typically a non-hydric soil, the soil was hydric due to the presence of a stripped matrix (S6). The main indicators of hydrology were geomorphic position (D2) and a FAC-neutral test (D5); the FAC-neutral test is used as a secondary indicator of wetland hydrology. The upland data point confirmed the mapped non-hydric soil, Watseka loamy fine sand. There were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 7 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 8 (Approach A)

The soils investigation confirmed the mapped non-hydric soil, Watseka loamy fine sand. Although typically a non-hydric soil, the soil was hydric due to the presence of a stripped matrix (S6). The main indicators of hydrology were geomorphic position (D2) and sediment deposits (B2). The upland data point confirmed the mapped non-hydric soil, Watseka loamy fine sand. There were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 8 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 9 (Approach A and B)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a redox dark surface (F6). The main indicators of hydrology were geomorphic position (D2) and a FAC-neutral test (D5). The upland data point confirmed the mapped hydric soil, Bono silty clay loam. Despite the mapped hydric designation, there were no indications of hydric soil or of wetland hydrology. Approach B was used on the area of the wetland located on property where right of entry was denied.

USACE advised in their letter dated July 29, 2016, that Wetland 9 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 10 (Approach A)

The soils investigation confirmed the mapped non-hydric soil, Watseka loamy fine sand. Although typically a non-hydric soil, the soil was hydric due to the presence of a stripped matrix (S6). The main indicators of hydrology were geomorphic position (D2) and sediment deposits (B2). The upland data point confirmed the mapped non-hydric soil, Watseka loamy fine sand. There were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 10 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 11 (Approach B)

Neither wetland, upland soils, nor hydrology data points were obtained due to the wetland location primarily on property where right of entry was denied. The mapped soil for the area was a hydric Bono silty clay loam.

USACE advised in their letter dated July 29, 2016, that Wetland 11 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 12 (Approach A)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a loamy gleyed matrix (F2). The sample was restricted to the top 8 inches of soil due to a restrictive gravel layer. The main indicators of wetland hydrology were surface water (A1), a high water table (A2), saturation (A3), and drainage patterns (B10).

The upland data point was also mapped as Bono silty clay loam and showed evidence of redox concentrations; however, the soils were determined to be too highly disturbed to serve as an indicator of wetland/upland soils. There were no signs of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 12 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law (Indiana Code 13-18-22) because it is a manmade body of surface water created by excavation to retain water.

Wetland 13 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because property right of entry was denied. The mapped soils for the area were Orthents clayey.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 14 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because property right of entry was denied. The mapped soils for the area were Orthents clayey.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 15 (Approach A)

The soils investigation confirmed the mapped hydric soil, which is primarily Urban land - clayey Orthents. The soil was hydric due to the presence of a depleted matrix (F3). The main indicators of wetland hydrology were a high water table (A2), soil saturation (A3), and drainage patterns (B10). The upland data point was determined to be loamy sand and conflicted with the mapped Orthents, Ashkum aquents. There were no indications of hydric soil or of wetland hydrology.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 16 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because property right of entry was denied. The mapped soils for the area were Orthents clayey.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 17 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because property right of entry was denied. The mapped soils for the area were Renssalaer loam, calcareous subsoil variant or Bono silty clay loam.

USACE advised in their letter dated July 29, 2016, that Wetland 17 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law because it is a manmade body of surface water created by excavation to retain water.

Wetland 18 (Approach A)

Wetland soils were not obtained due to riprap along the embankment and open water. Upland soils were not obtained to not disturb manicured lawn on residential property. The mapped soils for the area were mapped as hydric soil, Bono silty clay loam. The main indicator of wetland hydrology was surface water (A1).

USACE advised in their letter dated July 29, 2016, that Wetland 18 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law because it is a manmade body of surface water created by excavation to retain water.

Wetland 19 (Approach A)

The soils investigation confirmed the mapped hydric soil, Bono silty clay loam. The soil was hydric due to the presence of a depleted matrix (F3). The sample was restricted to the top 16 inches of soil due to a restrictive gravel layer. The main indicators of wetland hydrology were surface water (A1), a high water table (A2), and an algal mat or crust (B4). An upland soils and hydrology data point was not obtained. The mapped soil for the area was a Bono silty clay loam.

USACE advised in their letter dated July 29, 2016, that Wetland 19 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law because it is a manmade body of surface water created by excavation to retain water.

Wetland 20 (Approach A)

Wetland soils were not obtained due to riprap along the embankment and open water. Upland soils were not obtained to not disturb manicured lawn on residential property. The mapped soils for the area were mapped as hydric soil, Bono silty clay loam. The main indicator of wetland hydrology was surface water (A1).

USACE advised in their letter dated July 29, 2016, that Wetland 20 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law because it is a manmade body of surface water created by excavation to retain water.

Wetland 21 (Approach A)

Wetland soils were not obtained due to riprap along the embankment and open water. Upland soils were not obtained to not disturb manicured lawn on residential property. The mapped soils for the area were mapped as hydric soil, Bono silty clay loam. The main indicator of wetland hydrology was surface water (A1).

USACE advised in their letter dated July 29, 2016, that Wetland 21 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law because it is a manmade body of surface water created by excavation to retain water.

Wetland 22 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained due to the location of the wetland on the property of a hazardous waste landfill.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 23 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained due to the location of the wetland on the property of a hazardous waste landfill.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 24 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained due to the location of the wetland on the property of a hazardous waste landfill.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to it being adjacent to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 25 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained due to the location of the wetland on the property of a hazardous waste landfill.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to it being adjacent to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 26 (Approach A and B)

The soils investigation confirmed the mapped mix of Watseka silty clay loam, Plainfield loamy sand, and Gilford fine sandy loam. The soil was hydric due to the presence of a thick dark surface (A12). The wetland hydrology indicators were surface water (A1), a high water table (A2), saturation (A3), water marks (B1), sediment deposits (B2), algal mat or crust (B4), inundation visible on an aerial image (B7), and a thin muck surface (C7). An upland soils and hydrology data point was not obtained as the adjacent upland areas extended beyond the Project boundary or were on rail embankments. Approach B was used on the area of the wetland located on property where right of entry was denied.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 27 (Approach A and B)

The soils investigation confirmed the mapped Gilford loamy sand and Watseka loamy fine sand. The soil was hydric due to the presence of a sandy mucky mineral (S1). Hydrology included water marks (B1) and saturated soils (A3). An upland soils and hydrology data point was not obtained as the adjacent upland areas extended beyond the Project boundary or were on rail embankments. Approach B was used on the area of the wetland located on property where right of entry was denied and where high-power transmission towers were present overhead.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 28 (Approach A and B)

A soil sample was not taken because of standing water greater than 6 inches. Samples taken at the perimeter would destabilize the slope. The mapped soil was indicated as Orthents (aquic), Watseka loamy fine sand, and Gilford fine sandy loam. The wetland hydrology indicators were surface water (A1), a high water table (A2), saturation (A3), water marks (B1), sediment deposits (B2), inundation visible on an aerial image (B7), water stained leaves (B9), saturation visible on an aerial image (C9), and geomorphic position (D2). An upland soils and hydrology data point was not obtained as the adjacent upland areas extended beyond the Project boundary or were on rail embankments.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 29 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained due to inability to access the property. The mapped soils for the area were Pella silty clay loam.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 30 (Approach A)

A soil sample was not taken because of railroad debris (gravel, construction materials, asphalt). The soils were mapped as Maumee loamy fine sand. The wetland hydrology indicators were surface water (A1), saturation (A3), and surface soil cracks (B6). An upland soils and hydrology data point was not obtained.

USACE advised in their letter dated July 29, 2016, that Wetland 30 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 31 (Approach A)

A soil sample was not taken because of railroad debris (gravel, construction materials, asphalt). The soils were mapped as a Rensselaer loam, calcareous subsoil variant. The wetland hydrology indicators were surface water (A1) and saturation (A3). An upland soils and hydrology data point was not obtained.

USACE advised in their letter dated July 29, 2016, that Wetland 31 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 32 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained due to radio frequency fields at this site exceeding Federal Communications Commission rules for human exposure. The mapped soils for the area were Rensselaer loam, calcareous subsoil variant.

USACE advised in their letter dated July 29, 2016, that Wetland 32 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 33 (Approach A)

The soils investigation confirmed the mapped soil, Maumee loamy fine sand. The soil was hydric due to the presence of a depleted dark surface (F7). The wetland hydrology indicators were saturation (A3) and sparsely vegetated concave surface (B8). An upland soils and hydrology data point was not obtained.

USACE advised in their letter dated July 29, 2016, that Wetland 33 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 34 (Approach A)

The soils investigation confirmed the mapped soil, Maumee loamy fine sand. The soil was hydric due to the presence of a depleted dark surface (F7). The wetland hydrology indicators were saturation (A3) and sparsely vegetated concave surface (B8). An upland soils and hydrology data point was not obtained.

USACE advised in their letter dated July 29, 2016, that Wetland 34 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 35 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Rensselaer loam, calcareous subsoil variant.

USACE advised in their letter dated July 29, 2016, that Wetland 35 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 36 (Approach A)

A soil sample was not taken because of standing water. The soils were mapped as Rensselaer loam, calcareous subsoil variant. The wetland hydrology indicators were surface water (A1) and saturation (A3). An upland soils and hydrology data point was not obtained.

USACE advised in their letter dated July 29, 2016, that Wetland 36 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 37 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Rensselaer loam, calcareous subsoil variant.

USACE advised in their letter dated July 29, 2016, that Wetland 37 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 38 (Approach A and B)

The soils investigation did not confirm the mapped soils as Bono silty clay. Instead, the soils were found to be loamy sand. Soils were hydric due to being depleted below a dark surface (A11). The wetland hydrology indicators were a high water table (A2), saturation (A3), sediment deposits (B2), drainage patterns (B10), and geomorphic position (D2). The upland data point confirmed the mapped hydric soil, Bono silty clay loam. Despite the mapped hydric designation, there were no indications of hydric soil or of wetland hydrology. Approach B was used on the area of the wetland located on property where right of entry was denied.

USACE advised in their letter dated July 29, 2016, that Wetland 38 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 39 (Approach A)

The soils investigation did not confirm the mapped soils as Bono silty clay. Instead the soils were found to be loamy sand. Soils were hydric due to being depleted below a dark surface (A11). The wetland hydrology indicators were a high water table (A2), saturation (A3), sediment deposits (B2), drainage patterns (B10), and geomorphic position (D2). The upland data point confirmed the mapped hydric soil, Bono silty clay loam. Despite the mapped hydric designation, there were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 39 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 40 (Approach A)

The soils investigation did not confirm the mapped soils as Bono silty clay. Instead the soils were found to be sandy clay. Soils were hydric due to being a thick dark surface (A12). The wetland hydrology indicators were iron deposits (B5), recent iron reduction in tilled soils (C6), surface soil cracks (B6), drainage patterns (B10), and a FAC-neutral test (D5). The upland data point confirmed the mapped hydric soil, Bono silty clay loam. Despite the mapped hydric designation, there were no indications of hydric soil or of wetland hydrology.

USACE advised in their letter dated July 29, 2016, that Wetland 40 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 41 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Rensselaer loam, calcareous subsoil variant.

USACE advised in their letter dated July 29, 2016, that Wetland 41 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 42 (Approach B)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Bono silty clay.

The USACE advised in their letter dated July 29, 2016 that Wetland 42 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 43 (Approach A)

Neither wetland nor upland soils data points were obtained because the presence of riprap prevented soil sampling. The mapped soils for the area were Bono silty clay. The hydrology indicator in the wetland was surface water (A1). The upland data point did not possess hydrologic indicators.

USACE advised in their letter dated July 29, 2016, that Wetland 43 is not jurisdictional under the CWA because it was created as a stormwater detention facility and is exempt from CWA regulations (see **Appendix G**). In addition, stormwater detention facilities are exempt from Indiana's Isolated Wetlands Law because it is a manmade body of surface water created by excavation to retain water.

Wetland 44 (Approach A)

Neither wetland nor upland soils data points were obtained because of the presence of railroad ballast and riprap. The mapped soils for the area were Bono silty clay. The hydrology indicator in the wetland was surface water (A1). The upland data point did not possess hydrologic indicators.

USACE advised in their letter dated July 29, 2016, that Wetland 44 is jurisdictional under the CWA due to its location adjacent to the Little Calumet River (see **Appendix G**).

Wetland 45 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Landfills.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 46 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Orthents, clayey.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 47 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Orthents, loamy.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 48 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Orthents, loamy.

USACE did not advise on the jurisdictional status of wetlands in Illinois. For purposes of this study it is assumed that this wetland is jurisdictional due to a hydrologic connection to the Little Calumet River. Final determination of jurisdictional status will occur during the CWA permitting process.

Wetland 49 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Urban land.

USACE advised in their letter dated July 29, 2016, that Wetland 49 is jurisdictional under the CWA due to its location adjacent to the Grand Calumet River (see **Appendix G**).

Wetland 50 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Orthents, loamy-skeletal.

USACE advised in their letter dated July 29, 2016, that Wetland 50 is jurisdictional under the CWA due to its location adjacent to the Grand Calumet River (see **Appendix G**).

Wetland 51 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Urban land.

USACE advised in their letter dated July 29, 2016, that Wetland 51 is jurisdictional under the CWA due to its location adjacent to the Grand Calumet River (see **Appendix G**).

Wetland 52 (Approach C)

Neither wetland nor upland soils and hydrology data points were obtained because right of entry was denied. The mapped soils for the area were Urban land.

USACE advised in their letter dated July 29, 2016, that Wetland 52 is jurisdictional under the CWA due to its location adjacent to the Grand Calumet River (see **Appendix G**).

4.3 Agricultural Land Assessment

In the southern portion of the Study Area, near Seminary Drive and Sheffield Avenue in Munster, Indiana, the Project includes land that is under agricultural production and that includes mapped hydric soils. NFSAM delineations for agricultural land requires the use of at least five normal-rainfall years of aerial photos against aerial photos of one wet-rainfall year, which are used as a reference to detect characteristic field signatures that indicate the presence of wetlands. AECOM examined six years of aerial photographs of the subject properties. The years 1998, 2007, 2008, 2009, and 2012 were normal rainfall years in Munster, Indiana. The wet rainfall year examined was 2002.

Examination of the aerial imagery review determined that the agricultural land did not contain locations that meet the standard for farmed wetlands, as only one out of five normal rainfall years showed wetland indicators. **Appendix F** contains the aerial photos used to detect field characteristics for the Agricultural Land Assessment.

5. ENVIRONMENTAL CONSEQUENCES

Wetland impacts resulting from the alternatives being considered are discussed in this section. Impacts were determined by overlaying the Project footprint of the Build Alternative Options with the identified wetlands. Each Build Alternative Option was evaluated to determine the amount of wetland impacts.

For purposes of this study, it was assumed that all wetland areas located in the Project footprint would be affected by the Project. It is likely that project design can be altered in some instances to minimize impacts. Until the design is further along, however, those minimization opportunities are not known. Therefore, for the purpose of this assessment, all areas where the Project footprint overlaps the wetland are considered a permanent impact. In addition, all wetlands whose areas are affected by 50 percent or greater are considered as being affected in their entirety. Because impacts of that magnitude often result in permanent impacts to the hydrology of the remaining portion of the wetland, this study considers the entire wetland affected for planning purposes. The wetland impacts resulting from each alternative option are discussed below, with tables summarizing each. Detailed exhibits indicating the wetland impacts are included in **Appendix A**.

5.1 No Build Alternative

The No Build Alternative would have no wetland impacts. The No Build Alternative does not include construction, nor increases in existing commuter rail services that would result in wetland impacts.

5.2 Commuter Rail Alternative Options

The Commuter Rail Alternative Options would have wetland impacts ranging from 5.42 acres to 9.25 acres. The wetland impacts occur primarily in Indiana. Details are discussed below by option. **Table 5-1** presents a summary of the impacts to wetlands that would result from the Commuter Rail Alternative Options.

Table 5-1 Summary of Wetland Impacts – Commuter Rail Alternative Options

Wetland	Mean C/ FQI [1]	Location	Wetland Impacts (acres)			
			Option 1	Option 2	Option 3	Option 4
1	2.15/ 7.77	Immediately south of River at Monon Trail bridge	0.06	0.06	0.06	0.06
2	3.13/ 12.14	South of River at Monon Trail bridge	0.001	0.001	0.001	0.001
4	1.50/ 4.74	Eastern side of Monon Trail, north of River, south of Interstate	0.04	0.04	0.04	0.04
5	2.22/ 9.43	Immediately north of Interstate at Monon Trail	0.04	0.09	0.09	0.09
6	2.29/ 9.46	Immediately north of Interstate at Monon Trail	0.45	0.45	0.45	0.45
7	2.26/ 9.86	East of Monon Trail at 174th Street	0.66	0.66	0.66	0.66
8	1.95/ 8.95	North of 173rd Street and east of Lyman Avenue	0.32	0.32	0.32	0.32
9	2.82/ 11.64	West of Sheffield Avenue and south of Main Street at CSX freight line	0.97	0.97	0.97	0

Wetland	Mean C/ FQI [1]	Location	Wetland Impacts (acres)			
			Option 1	Option 2	Option 3	Option 4
10	1.95/ 8.95	North of 173rd Street and east of Lyman Avenue	0.17	0.17	0.17	0.17
11	NA	East of rail near edge of subdivision south of Otis Bowen Drive	0.11	0.11	0.11	0
12	2.15/ 7.77	East of rail, south of Superior Avenue	1.46	1.46	1.46	0
17	NA	East of rail, south of 45th St. near Town of Munster	1.90	1.90	1.90	0
32	NA	East of rail, south of Fisher Street	1.81	1.81	1.81	1.75
33	2.25/ 6.36	East of rail, south of Fisher Street	0.32	0.32	0.32	0.32
34	2.91/ 9.65	West of rail, south of Fisher Street	0.01	0.01	0.01	0.01
35	NA	East of rail, north of 45th Street	0.05	0.05	0.05	0
36	3.00/ 9.00	East of rail, north of 45th Street	0.09	0.09	0.09	0
37	NA	West of rail, north of 45th Street	0.18	0.18	0.18	0
38	2.06/ 8.25	West of rail near Sheffield Avenue crossing	0	0.33	0.33	0.83
39	1.80/ 4.02	West of rail, north of Seminary Drive	0	0.04	0.04	0.04
41	NA	West of rail, north of 45th Street	0	0	0	0.24
42	NA	West of rail near Glastonbury Street, south of 45th Street	0	0	0	0.09
43	NA	West of rail near Glastonbury St., south of 45th St.	0	0	0	0.05
44	2.20/ 4.92	West of rail near Glastonbury Street, south of 45th Street	0	0	0	0.11
49	NA	On northern bank of Calumet River near Chicago Street and State Line Road	0.16	0.16	0.16	0.16
50	NA	On south bank of Calumet River near Chicago Street and State Line Road	0.03	0.03	0.03	0.03
Total Impacts			**8.83**	**9.25**	**9.25**	**5.42**

SOURCE: AECOM 2016

[1] Mean C (Native Species) and FQAI (Native Species) based on Chicago Region FQI Calculator 09292014, as provided by USACE Chicago District.

5.2.1 Commuter Rail Alternative Option 1

Commuter Rail Alternative Option 1 would result in 8.83 acres of wetland impacts; 0.19 acre would occur in Illinois, 8.64 acres in Indiana. All of the wetlands are of low to moderate quality; none of them would qualify as a high quality aquatic resource per USACE Chicago District guidelines.

5.2.2 Commuter Rail Alternative Option 2

Commuter Rail Alternative Option 2 would result in 9.25 acres of wetland impacts; 0.19 acre would occur in Illinois, 9.06 acres in Indiana. All of the wetlands are of low to moderate quality;

none of them would qualify as a high quality aquatic resource under USACE Chicago District guidelines.

5.2.3 Commuter Rail Alternative Option 3

Commuter Rail Alternative Option 3 would result in 9.25 acres of wetland impacts; 0.19 acre would occur in Illinois, 9.06 acres in Indiana. All of the wetlands are of low to moderate quality; none of them would qualify as a high quality aquatic resource under USACE Chicago District guidelines.

5.2.4 Commuter Rail Alternative Option 4

Commuter Rail Alternative Option 4 would result in 5.42 acres of wetland impacts; 0.19 acre would occur in Illinois, 5.23 acres in Indiana. The primary reduction in wetland impacts over Commuter Rail Alternative Options 1 through 3 are the result of Commuter Rail Alternative Option 4 being located on the west side of the existing CSX tracks in the southern portion of the Study Area, and therefore its avoidance of Wetland 12, as well as Commuter Rail Alternative Option 4 not having the maintenance and storage facility on the east side of the tracks. All of the wetlands that would be affected are of low to moderate quality; none of them would qualify as a high quality aquatic resource under USACE Chicago District guidelines.

5.3 IHB Alternative Options

The IHB Alternative Options would have wetland impacts ranging from 19.31 acres to 20.79 acres. Three of the wetlands located in Illinois can be classified as high quality aquatic resources under USACE Chicago District guidelines, both because of Mean C values greater than 3.5 or because they contain known state-protected species. Details of the wetland impacts are discussed below by option. **Table 5-2** presents a summary of the impacts that would result from the IHB Alternative Options.

Table 5-2 Summary of Wetland Impacts – IHB Alternative Options

Wetland	Mean C/ FQI [1]	Location	Wetland Impacts (acres)			
			Option 1	Option 2	Option 3	Option 4
1	2.15/ 7.77	Immediately south of River at Monon Trail bridge	0.06	0.06	0.06	0.06
2	3.13/ 12.14	South of River at Monon Trail bridge	0.001	0.001	0.001	0.001
4	1.50/ 4.74	Eastern side of Monon Trail, north of River, south of Interstate	0.04	0.04	0.04	0.04
5	2.22/ 9.43	Immediately north of Interstate at Monon Trail	0.09	0.09	0.09	0.09
6	2.29/ 9.46	Immediately north of interstate at Monon Trail	0.45	0.45	0	0
7	2.26/ 9.86	East of Monon Trail at 174th Street	0.66	0.66	0	0
8	1.95/ 8.95	North of 173rd Street and east of Lyman Avenue	0.32	0.32	0.32	0.32
9	2.82/ 11.64	West of Sheffield Avenue and south of Main Street at CSX freight line	0.97	0.97	0.97	0.97
10	1.95/ 8.95	North of 173rd Street and east of Lyman Avenue	0.17	0.17	0.17	0.17

Wetland	Mean C/ FQI [1]	Location	Wetland Impacts (acres)			
			Option 1	Option 2	Option 3	Option 4
11	NA	East of rail near edge of subdivision south of Otis Bowen Drive	0.11	0.11	0.11	0.11
12	2.15/ 7.77	East of rail, south of Superior Ave.	1.46	1.46	1.46	1.46
13	NA	North of East 130th Street near Calumet Water Reclamation Plant, west of rail	0.002	0.002	0.002	0.002
14	NA	South of 130th Street, east of rail	0.16	0.16	0.16	0.16
15	2.00/ 6.00	West of rail near 132nd Street	0.001	0.001	0.001	0.001
16	NA	Adjacent to rail on west side in Cook County Forest Preserve District	0.81	0.81	0.81	0.81
17	NA	East of rail, south of 45th St. near Town of Munster	1.90	1.90	1.90	1.90
22	NA	North side of rail near Waste Management landfill	0.41	0.41	0.41	0.41
23	NA	South side of rail near Waste Management landfill	3.12	3.12	3.12	3.12
25	NA	North side of rail near Waste Management landfill	0.15	0.15	0.15	0.15
26	3.93/ 26.08	Adjacent to rail on east side in Cook County Forest Preserve District	1.70	1.70	1.70	1.70
27	3.56/ 15.08	North of rail near 143rd Street and Hammond Avenue	1.58	1.58	1.58	1.58
28	3.83/ 21.00	Adjacent to rail on east side in Cook County Forest Preserve District	1.14	1.14	1.14	1.14
29	NA	Adjacent to rail on west side in Cook County Forest Preserve District	1.73	1.73	1.73	1.73
32	NA	East of rail, south of Fisher Street	1.81	1.81	1.81	1.81
33	2.25/ 6.36	East of rail, south of Fisher Street	0.32	0.32	0.32	0.32
34	2.91/ 9.65	West of rail, south of Fisher Street	0.01	0.01	0.01	0.01
35	NA	East of rail, north of 45th Street	0.05	0.05	0.05	0.05
36	3.00/ 9.00	East of rail, north of 45th Street	0.09	0.09	0.09	0.09
37	NA	West of rail, north of 45th Street	0.18	0.18	0.18	0.18
38	2.06/ 8.25	West of rail near Sheffield Avenue crossing	0	0.33	0	0
39	1.80/ 4.02	West of rail, north of Seminary Drive	0	0.04	0	0
45	NA	East of interstate near river and Waste Management	0.64	0.64	0.64	0.64
47	NA	Between rail, north of 130th Street	0.29	0.29	0.29	0.29
Total Impacts			**20.42**	**20.79**	**19.31**	**19.31**

SOURCE: AECOM 2016

[1] Mean C (Native Species) and FQAI (Native Species) based on Chicago Region FQI Calculator 09292014, as provided by USACE Chicago District.

5.3.1 IHB Alternative Option 1

IHB Alternative Option 1 would result in 20.42 acres of wetland impacts; 11.73 acres would occur in Illinois, 8.69 acres in Indiana. Three of the wetlands qualify as high quality aquatic resources due to their Mean Cs being greater than 3.5 and the presence of state-protected species potentially utilizing the wetlands. Impacts to these high quality aquatic resource wetlands total 4.42 acres. The remaining 12.644 acres of wetland impacts would occur to wetlands of low to moderate quality. The high quality aquatic resource wetlands are:

- Wetland 26, which would be affected in its entirety, would result in 1.70 acres of impacts. This wetland is located in the Flatfoot Lake/Beaubien Woods Forest Preserve, which is owned by the Forest Preserve District of Cook County. This wetland has a Mean C of 3.93 and the Preserve is known to contain three state-protected species [yellow-crowned night heron (*Nyctanassa violacea*), black-billed cuckoo (*Coccyzus erythropthalmus*), and willow flycatcher (*Empidonax trailli*)].
- Wetland 27, which would be affected in its entirety, would result in 1.58 acres of impacts. This wetland is located in the Burnham Prairie Nature Preserve, which is owned by the Forest Preserve District of Cook County. This wetland has a Mean C of 3.56 and the Preserve is known to contain six state-protected species [least bittern (*Ixobrychus exilis*), little blue heron (*Egretta caerulea*), yellow-crowned night heron (*Nyctanassa violacea*), common gallinule (*Gallinula galeata*), black-billed cuckoo (*Coccyzus erythropthalmus*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*)].
- Wetland 28, which would be affected in its entirety, would result in 1.14 acres of impacts. This wetland is located in the Flatfoot Lake/Beaubien Woods Forest Preserve, which is owned by the Forest Preserve District of Cook County. This wetland has a Mean C of 3.83 and the Preserve is known to contain three state-protected species [yellow-crowned night heron (*Nyctanassa violacea*), black-billed cuckoo (*Coccyzus erythropthalmus*), and willow flycatcher (*Empidonax trailli*)].

5.3.2 IHB Alternative Option 2

IHB Alternative Option 2 would result in 20.79 acres of wetland impacts; 11.73 acres would occur in Illinois, 9.06 acres in Indiana. Impacts to Wetlands 26, 27, and 28, discussed above in IHB Alternative Option 1, would be the same. Impacts to these three high quality aquatic resource wetlands total 4.42 acres. The remaining 16.37 acres of wetland impacts would occur to wetlands of low to moderate quality.

5.3.3 IHB Alternative Option 3

IHB Alternative Option 3 would result in 19.31 acres of wetland impacts; 11.73 acres would occur in Illinois, 7.58 acres in Indiana. Impacts to Wetlands 26, 27, and 28, discussed above in IHB Alternative Option 1, would be the same. Impacts to these three high quality aquatic resource wetlands total 4.42 acres. The remaining 14.89 acres of wetland impacts would occur to wetlands of low to moderate quality.

5.3.4 IHB Alternative Option 4

IHB Alternative Option 4 would result in 19.31 acres of wetland impacts; 11.73 acres would occur in Illinois, 7.58 acres in Indiana. Impacts to Wetlands 26, 27, and 28, discussed above in IHB Alternative Option 1, would be the same. Impacts to these three high quality aquatic resource wetlands total 4.42 acres. The remaining 14.89 acres of wetland impacts would occur to wetlands of low to moderate quality.

5.4 Hammond Alternative Options

The Hammond Alternative Options would have wetland impacts ranging from 4.50 acres to 8.18 acres. All of the wetland impacts would occur in Indiana. Details are discussed below by option. **Table 5-3** presents a summary of the impacts that would result from the Hammond Alternative Options.

Table 5-3 Summary of Wetland Impacts – Hammond Alternative Options

Wetland	Mean C/ FQI [1]	Location	Wetland Impacts (acres)		
			Option 1	Option 2	Option 3
1	2.15/ 7.77	Immediately south of River at Monon Trail bridge	0.06	0.06	0.06
2	3.13/ 12.14	South of River at Monon Trail bridge	0.001	0.001	0.001
4	1.50/ 4.74	Eastern side of Monon Trail, north of River, south of Interstate	0.04	0.04	0.04
5	2.22/ 9.43	Immediately north of Interstate at Monon Trail	0.09	0.09	0.09
8	1.95/ 8.95	North of 173rd Street and east of Lyman Avenue	0.32	0.32	0.32
9	2.82/ 11.64	West of Sheffield Avenue and south of Main Street at CSX freight line	0.97	0.97	0
10	1.95/ 8.95	North of 173rd Street and east of Lyman Avenue	0.17	0.17	0
11	NA	East of rail near edge of subdivision south of Otis Bowen Drive	0.11	0.11	0
12	2.15/ 7.77	East of rail, south of Superior Ave	1.46	1.46	0
17	NA	East of rail, south of 45th St. near Town of Munster	1.90	1.90	0
32	NA	East of rail, south of Fisher Street	1.81	1.81	1.81
33	2.25/ 6.36	East of rail, south of Fisher Street	0.32	0.32	0.32
34	2.91/ 9.65	West of rail, south of Fisher Street	0.01	0.01	0.01
35	NA	East of rail, north of 45th Street	0.05	0.05	0.02
36	3.00/ 9.00	East of rail, north of 45th Street	0.09	0.09	0
37	NA	West of rail, north of 45th Street	0.18	0.18	0.01
38	2.06/ 8.25	West of rail near Sheffield Avenue crossing	0	0.33	0.86
39	1.80/ 4.02	West of rail, north of Seminary Drive	0	0.04	0.04
41	NA	West of rail, north of 45th Street	0	0	0.24
43	NA	West of rail near Glastonbury St., south of 45th St.	0	0	0.05
44	2.20/ 4.92	West of rail near Glastonbury Street, south of 45th Street	0	0	0.11
51	NA	On south bank of Calumet River near Wilcox Street and Hohman Avenue	0.11	0.11	0.11

Wetland	Mean C/ FQI [1]	Location	Wetland Impacts (acres)		
			Option 1	Option 2	Option 3
52	NA	On north bank of Calumet River near Wilcox Street and Hohman Avenue	0.41	0.12	0.41
Total Impacts			**8.10**	**8.18**	**4.50**

SOURCE: AECOM 2016

[1] Mean C (Native Species) and FQAI (Native Species) based on Chicago Region FQI Calculator 09292014, as provided by USACE Chicago District.

5.4.1 Hammond Alternative Option 1

Hammond Alternative Option 1 would result in 8.10 acres of wetland impacts, all in Indiana. All of the wetlands are of low to moderate quality; none would qualify as a high quality aquatic resource under USACE Chicago District guidelines.

5.4.2 Hammond Alternative Option 2

Hammond Alternative Option 2 would result in 8.18 acres of wetland impacts, all in Indiana. All of the wetlands are of low to moderate quality; none of them would qualify as a high quality aquatic resource under USACE Chicago District guidelines.

5.4.3 Hammond Alternative Option 3

Hammond Alternative Option 3 would result in 4.50 acres of wetland impacts, all in Indiana. All of the wetlands are of low to moderate quality; none of them would qualify as a high quality aquatic resource under USACE Chicago District guidelines.

The primary reduction in wetland impacts over Hammond Alternative Options 1 and 2 is the result of Hammond Alternative Option 3 being located on the west side of the existing CSX freight line in the southern portion of the Study Area, and therefore its avoidance of Wetlands 12 and 17, as well as Hammond Alternative Option 3 not having the maintenance and storage facility on the east side of the tracks.

5.5 Maynard Junction Rail Profile Option

There would be no change to impacts to wetlands as described for the applicable alternative options (i.e., Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2) resulting from the Maynard Junction Rail Profile Option.

6. MITIGATION

6.1 Mitigation Requirements

Mitigation would be provided for wetlands or waters of the US impacts based on applicable regulations. Mitigation ratios would be determined as part of the CWA Sections 401/404 permitting processes, and wetland types and mitigation amounts would be determined at that time. Mitigation would be provided for impacts to wetlands or waters of the US determined to be jurisdictional under the CWA in a USACE-approved bank.

NICTD would comply with CWA requirements, as well as Executive Orders 11990 and 12608 for protection of wetlands, regardless of the need for a CWA permit.

A determination of impacts to waters of the US would be finalized during the Engineering phase. Any impacts to wetlands or waters of the US that occur in Illinois would be mitigated for in Illinois. Any impacts to wetlands or waters of the US that occur in Indiana would be mitigated for in Indiana, in the watershed where the impacts occur (Lake Michigan or Kankakee River watersheds). The amount and type of wetlands or waters of the US mitigation would be determined as part of the CWA permit process, in compliance with USACE/USEPA requirements. For impacts to wetlands determined not to be jurisdictional under the CWA, mitigation would be provided per applicable state requirements.

6.2 Additional Mitigation

In addition to mitigation required under CWA permitting, a USFWS letter dated November 4, 2014 (see **Appendix G**) expressed concern regarding any new crossing of the West Branch of the Grand Calumet River in Hammond, Indiana. This letter requested avoidance of impacts to any remediation efforts and recommended spanning the river without piers or abutments placed in the river that could compromise the integrity of the sediment. The Project would not result in any piers or abutments placed in the Grand Calumet River.

A letter received from USEPA dated November 26, 2014 (see **Appendix G**) reiterated USFWS concern with polluted sediments in the Grand Calumet River. In addition, USEPA provided guidelines related to the CWA. These include choosing the least environmental damaging practicable alternative (minimizing impacts), prohibitions on causing or contributing to significant degradation of waters, and minimizing and mitigating unavoidable impacts to water resources. NICTD is committed to honoring these requests.

Per the Indiana DNR (ER-17897) (see **Appendix G**), the Project would utilize existing structures for stream crossings where possible, thereby minimizing impacts to surface waters and wetlands. If the use of an existing structure is not possible, spans without piers would be used at the Little Calumet River; bridges would be used preferentially over culverts; and bottomless culverts would be used instead of pipe culverts in order to promote passage of aquatic organisms. If box or pipe culverts are used, they would be buried a minimum of 6 inches; crossings would span the entire channel width; the natural stream substrate would be maintained in any structures; and stream depths and velocities during low flow conditions would be similar to those in the natural stream. NICTD is committed to complying with these guidelines; impacts to surface waters would therefore be minimized.

ER-17897 provided recommendations for stream crossings that would minimize impacts to fish, wildlife, and botanical resources. Recommendations included erosion and sediment control requirements for exposed soil. Additionally, the Indiana DNR advised that riparian habitat mitigation will be required if riparian impacts occur. Impacts specific to riparian habitat, as defined by the Indiana's Construction in a Floodway regulations, will be determined as part of the CWA Sections 401/404 permitting process.

Impacts to surface waters would be minimized through the methods described above, and through the implementation of best management practices and erosion and sediment control plans. Additional mitigation beyond what is described above is not proposed.

7. REFERENCES

CMAP. 2014. *GO TO 2040 Comprehensive Regional Plan*.

FEMA. Flood Insurance Rate Map: Cook County, Illinois and Lake County, Indiana, FEMA, National Flood Insurance Program.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W. N. Kirchner. 2014. “The National Wetland Plant List. 2014 Update of Wetland Ratings.” *Phytoneuron* 2014-41: 1-42.

NICTD and RDA. 2014. *20-Year Strategic Business Plan*. June 2014.

NIRPC. 2011. *2040 Comprehensive Regional Plan, A Vision for Northwest Indiana*. http://www.nirpc.org/2040-plan.aspx.

Swink, Floyd and Gerould Wilhelm. 1994. *Plants of the Chicago region*. 4th ed. Indianapolis: Indiana Academy of Science.

USACE. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report y-87-1. Department of the Army. Vicksburg, Mississippi.

USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center. August 2010.

USDA NRCS. 2010. *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 7.0*. L. M. Vasilas, G. W. Hurt, and C.V. Noble (eds.). USDA, USNRCS in cooperation with the National Technical Committee for Hydric Soils. ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/FieldIndicators_v7.pdf.

USDA NRCS. 2015. Natural Resources Conservation Service, Soil Survey Staff, United States Department of Agriculture. Web Soil Survey. Accessed November 2015. http://websoilsurvey.nrcs.usda.gov.

USFWS. 1983. *User Notes for National Wetlands Inventory Maps*.

USFWS. 2015. Branch of Resource and Mapping Support. Wetland Mapper. National Wetland Inventory, Madison, WI: National Standards and Support Team. Accessed September 2015. http://www.fws.gov/wetlands/Data/Mapper.html.

APPENDIX A
NICTD West Lake Corridor Wetland Delineation Boundaries Exhibits

Wetland Impacts

NICTD Delineated Wetlands

- Delineated (Approach A)
- Identified (Approach B)
- Estimated (Approach C)
- Probable Wetland Continuation
- Existing Station
- South Shore Line
- Commuter Rail Alternative
- IHB Alternative
- Hammond Alternative
- South Shore Line Proposed Realignment
- Proposed Station
- Project Footprint
- Study Area
- Commuter Rail Alt. Impacts
- IHB Alt. Impacts
- Hammond Alt. Impacts
- Maynard Junction Rail Profile Option Impacts

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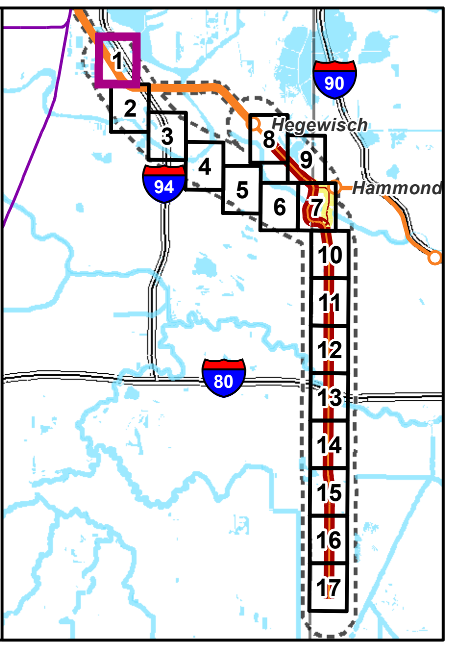

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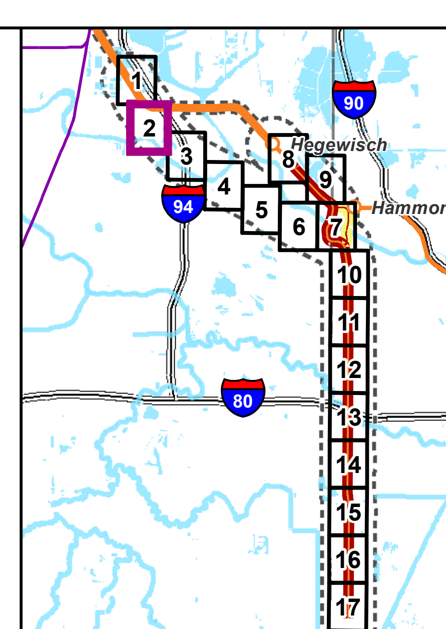

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- Hammond Alt. Impacts
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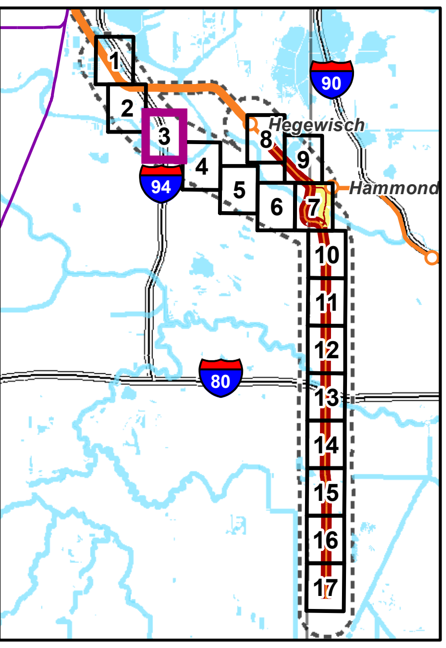

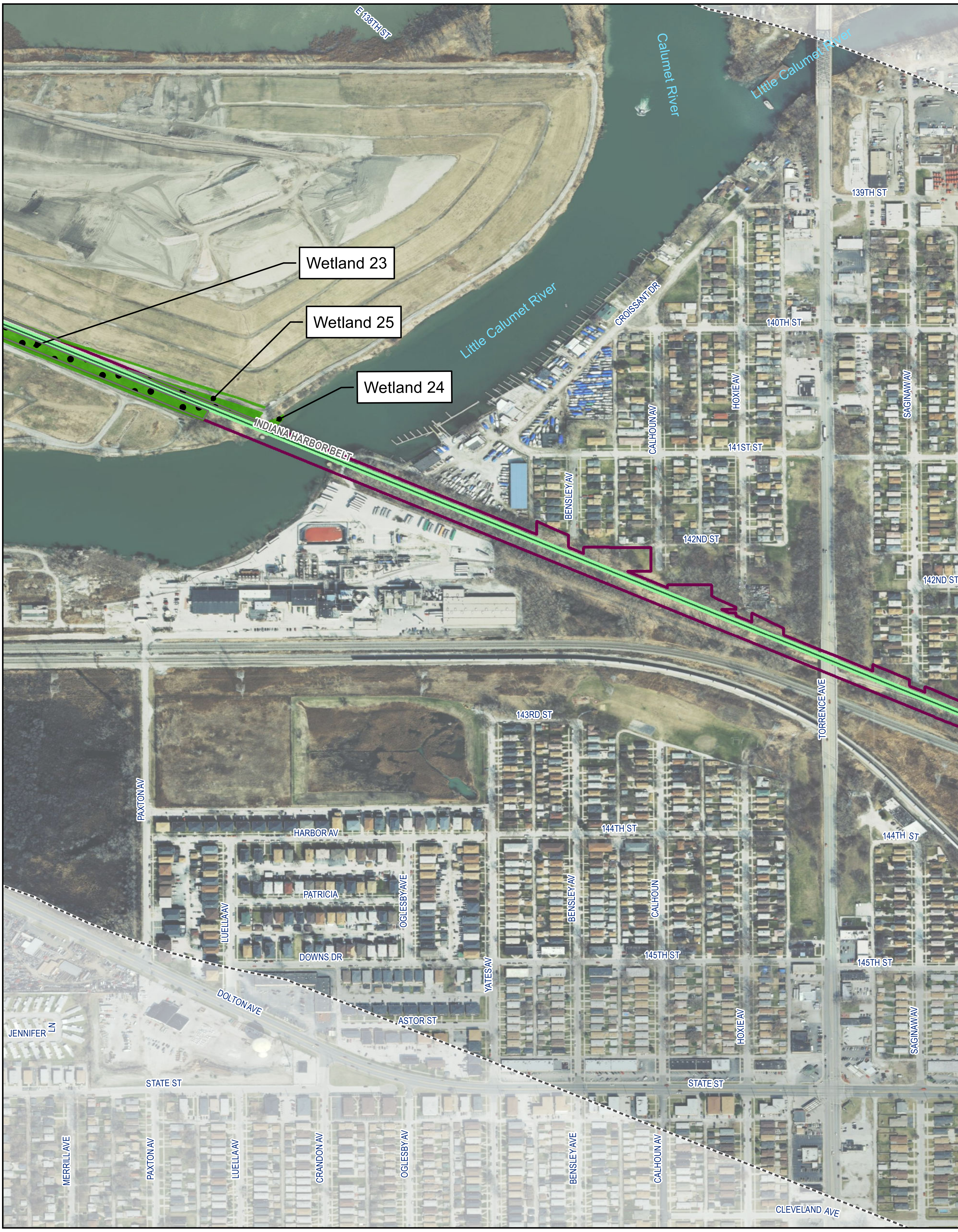

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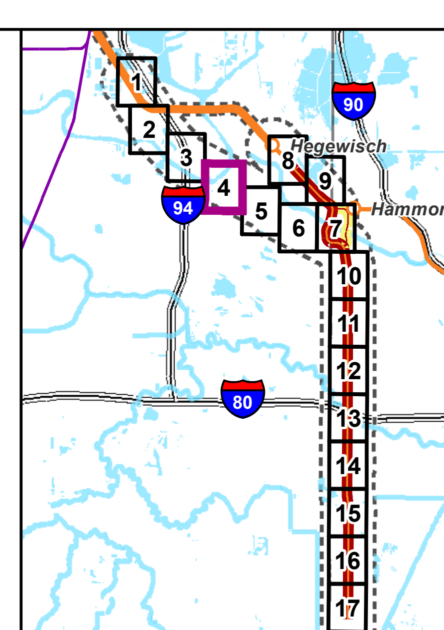

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MANISTEE AV
INDIANA HARBOR BELT
145TH ST
HAMMOND AV
ALICE AVE
NORFOLK SOUTHERN
Grand Calumet River
GOODRICH AV
ALICE AV
STATE ST
ESCANABA AV
CLEVELAND AVE
GEORGE ST
MUSKEGON AV
EXCHANGE AV
STEWART AVE
ARTHUR PL
CAMPBELL AV
HARDING AVE
LUCAS ST
SIBLEY BLVD
COMMERCIAL AV
HOUSTON AV
STEWART AV
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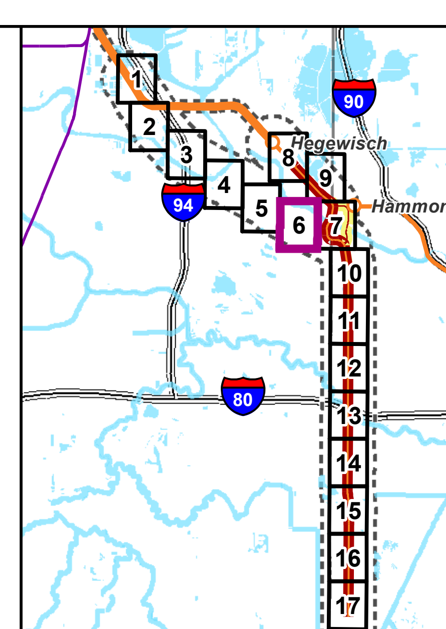

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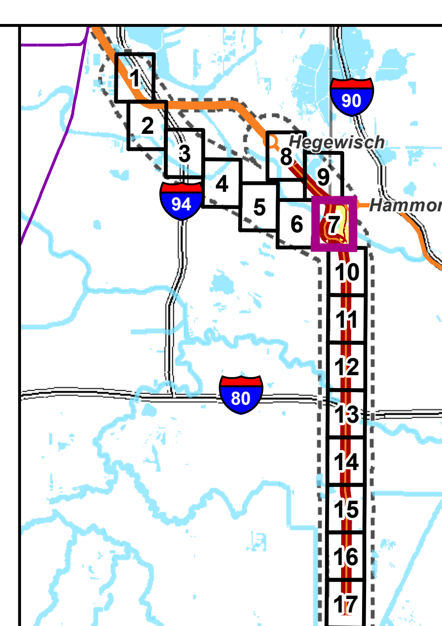

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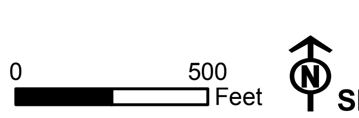

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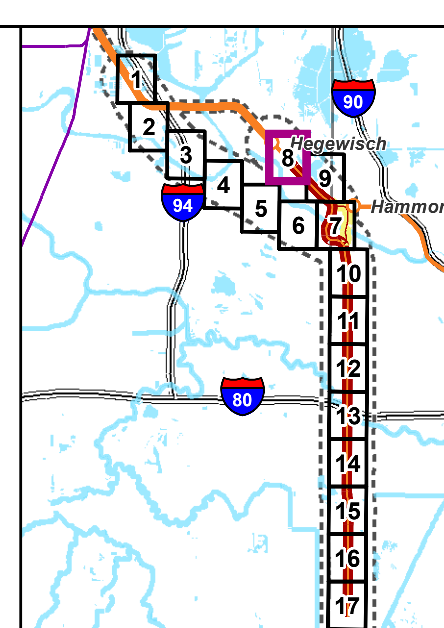

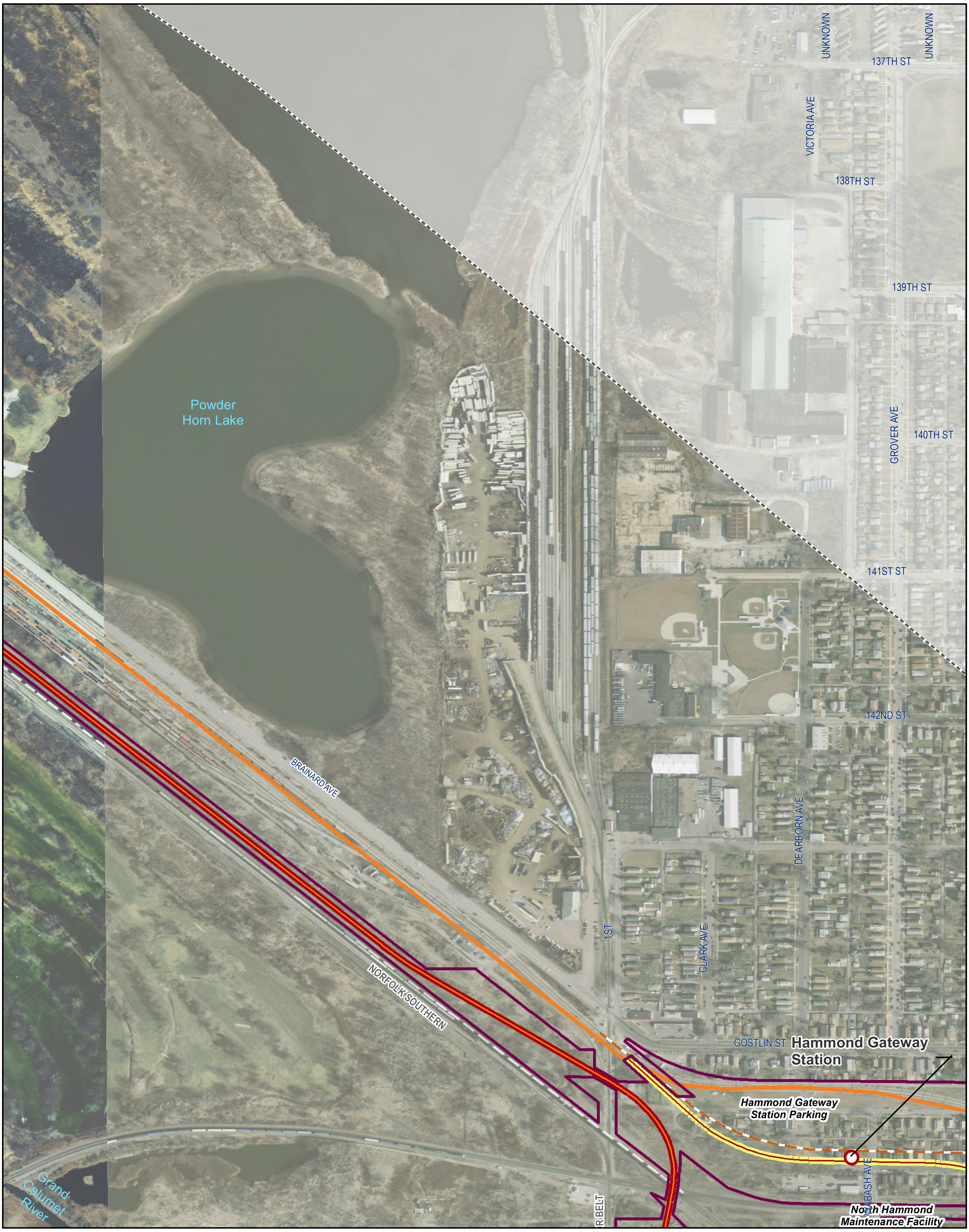

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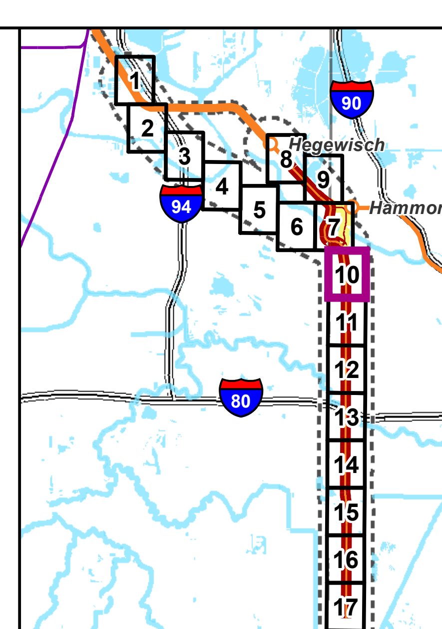

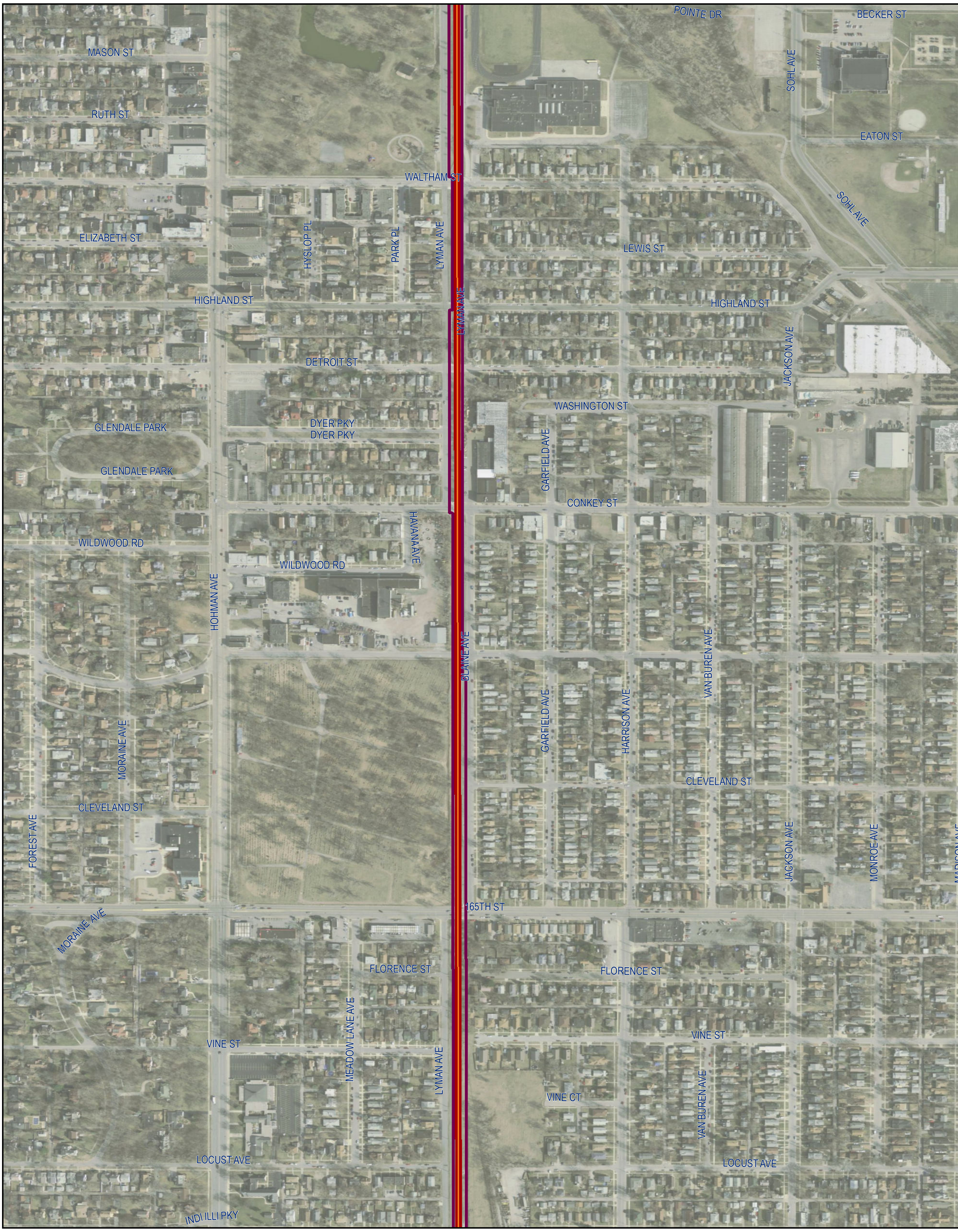

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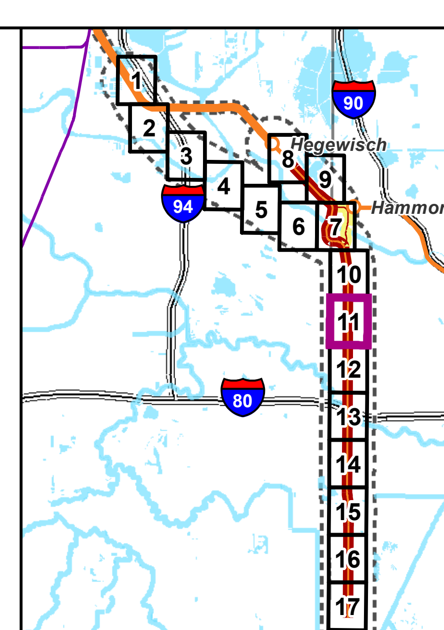

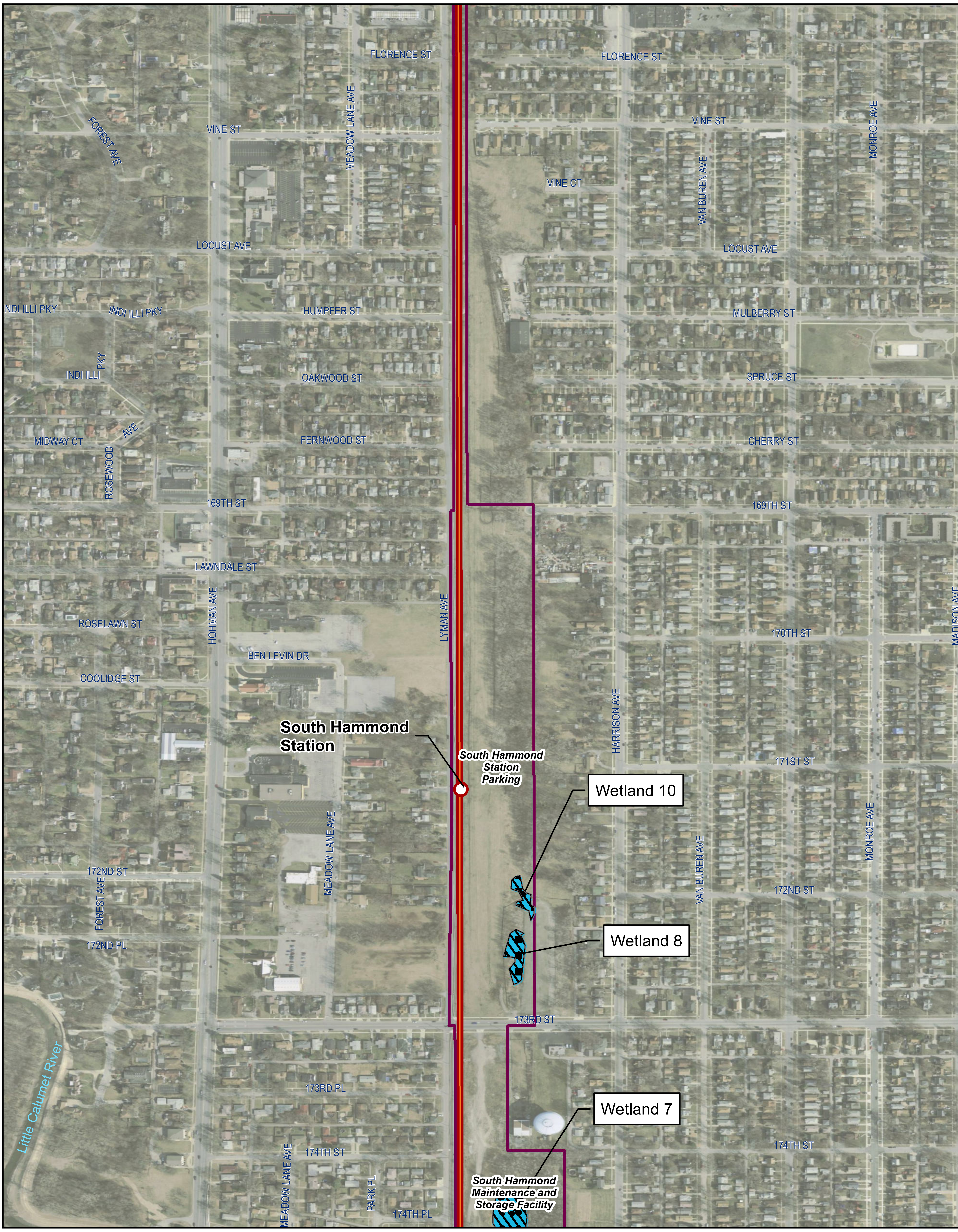
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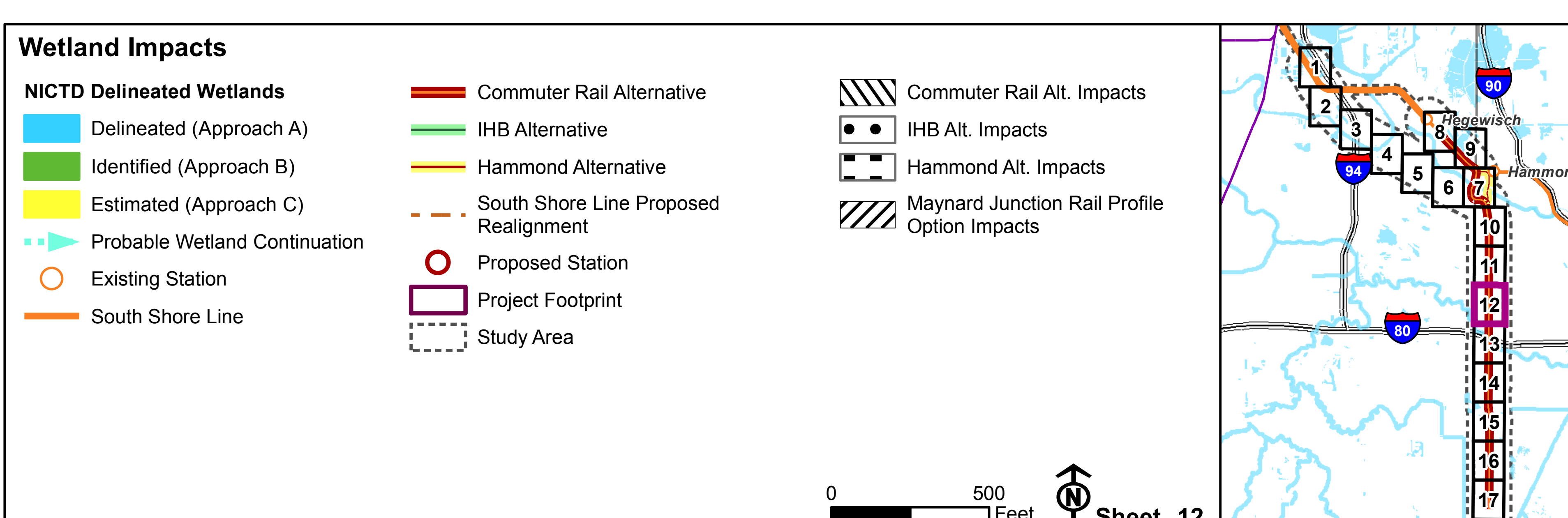
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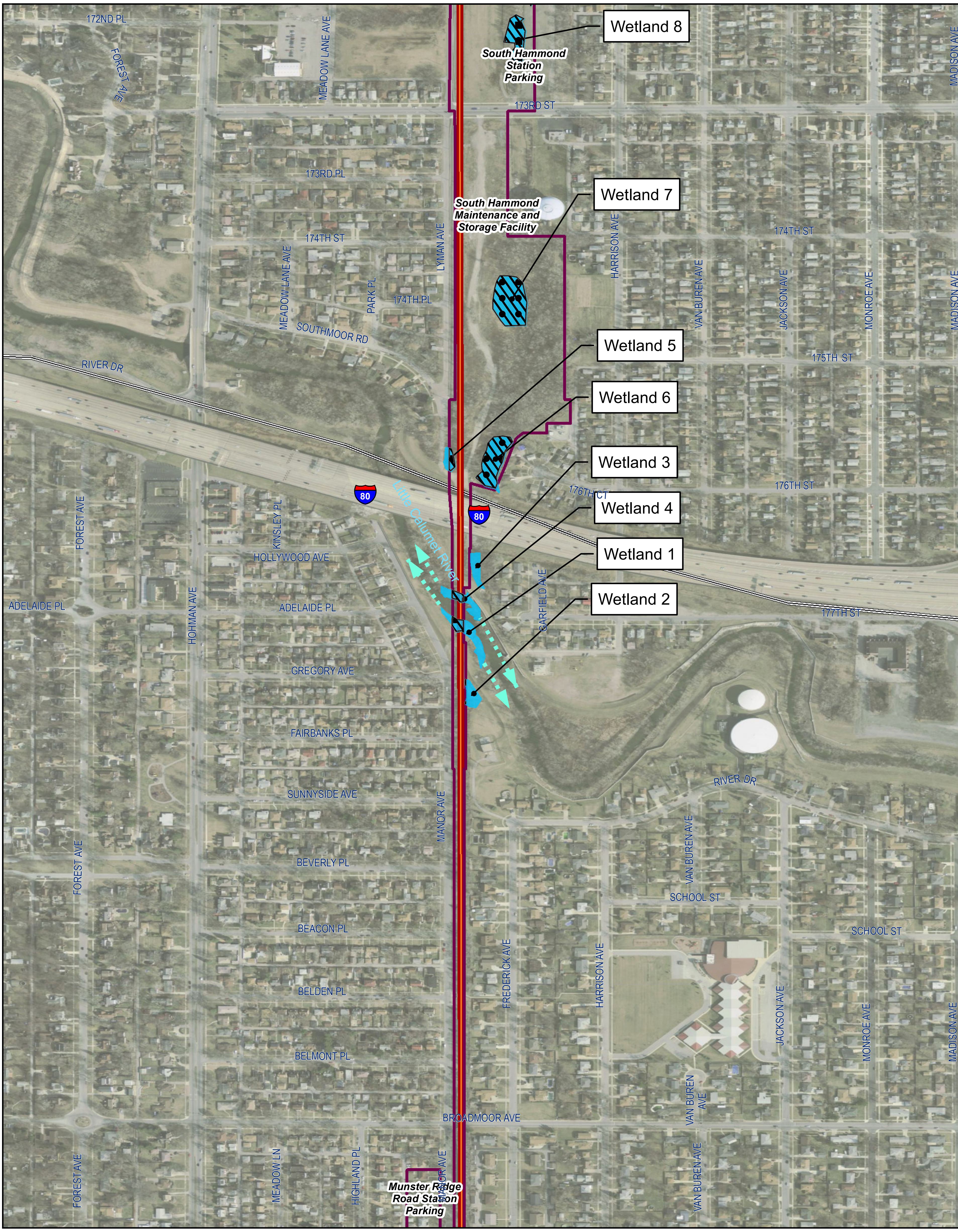

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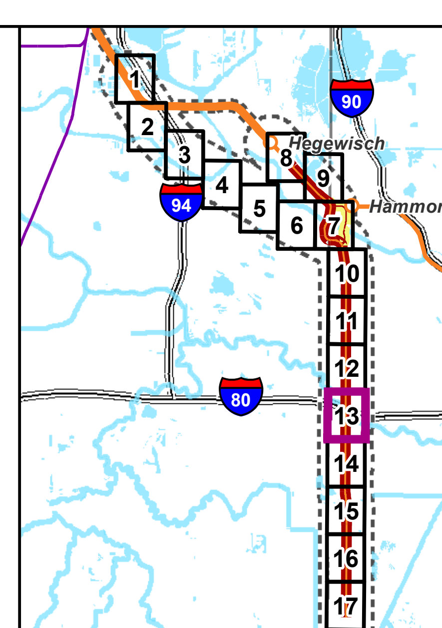

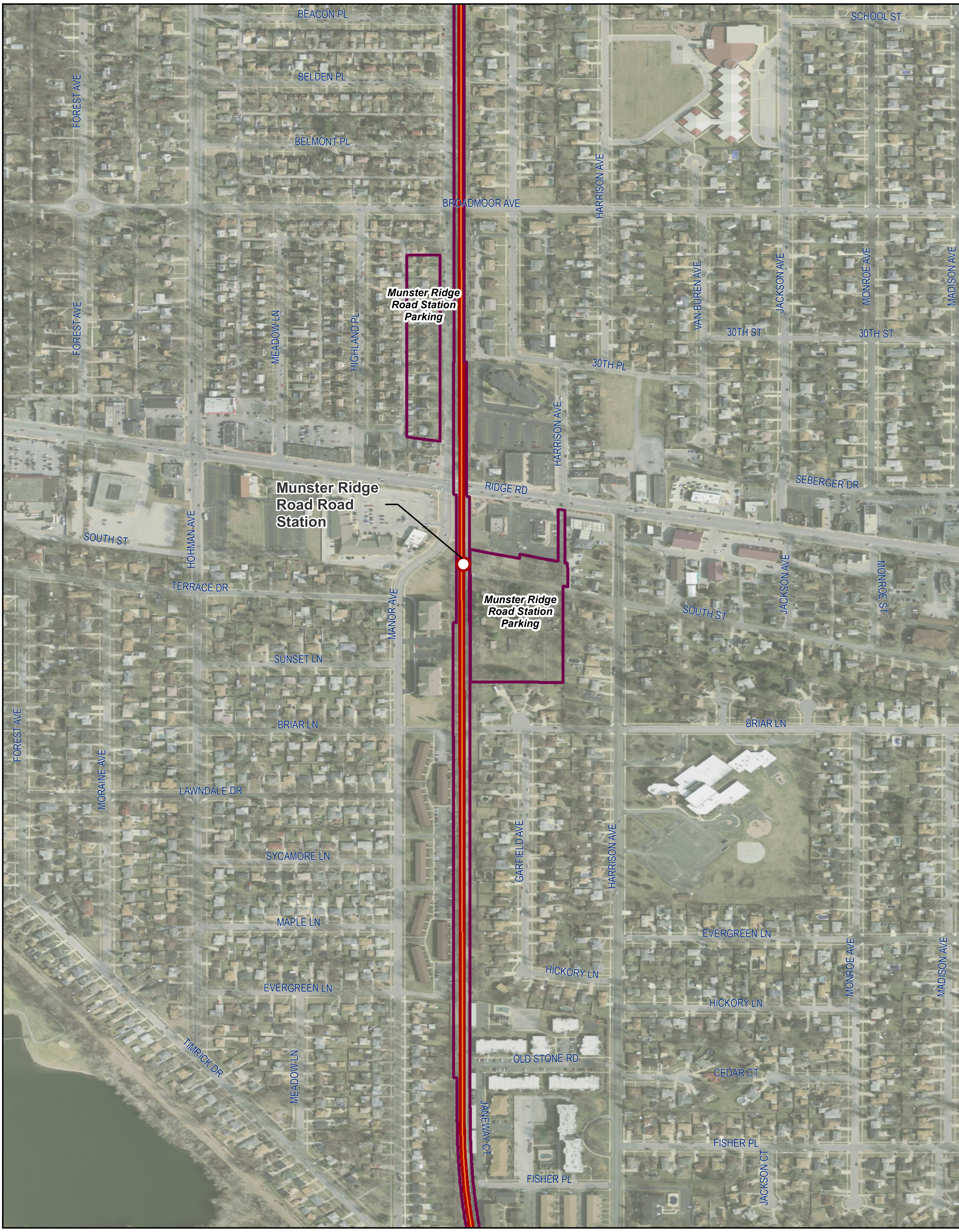

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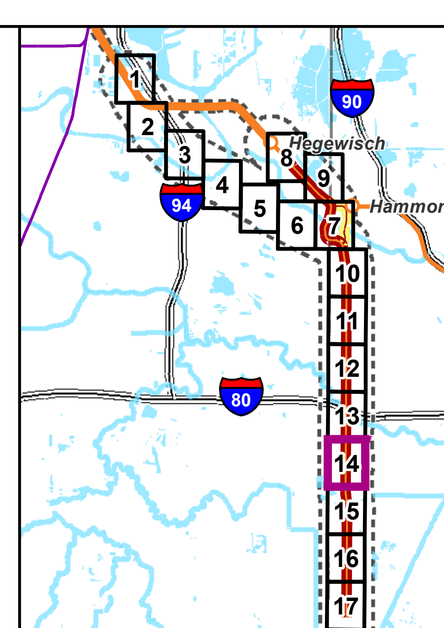

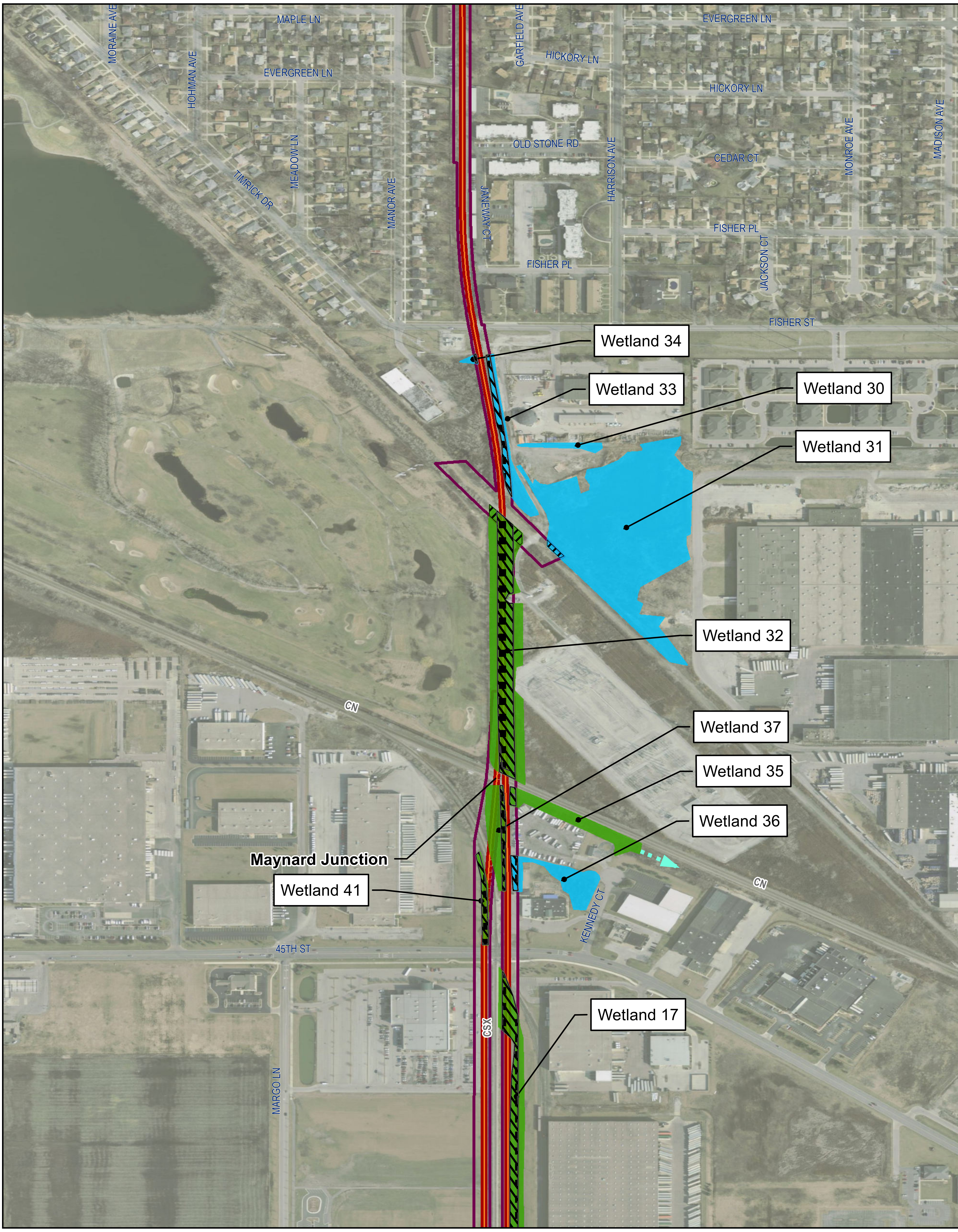

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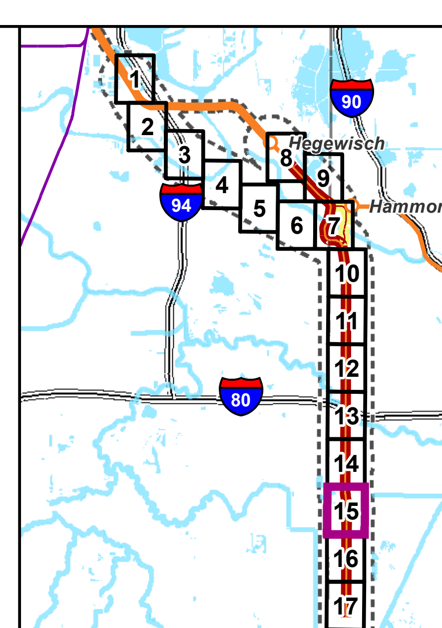

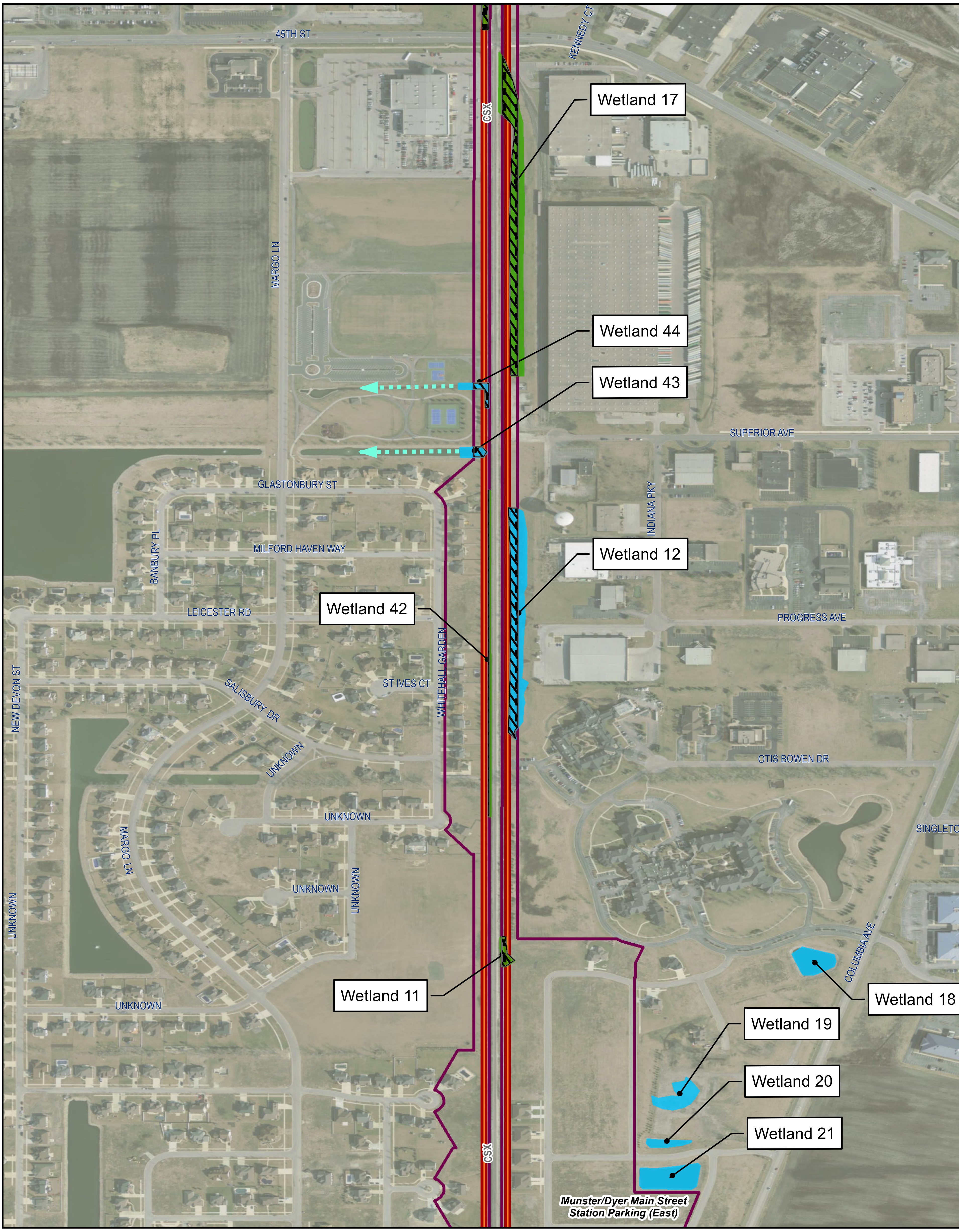
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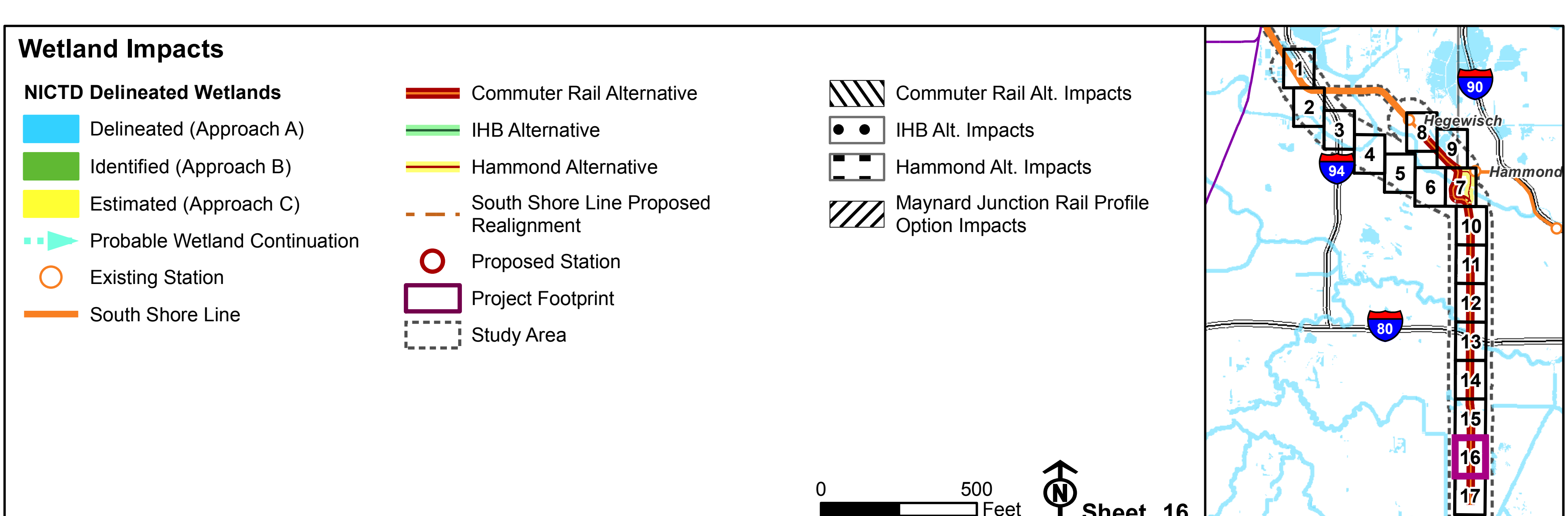
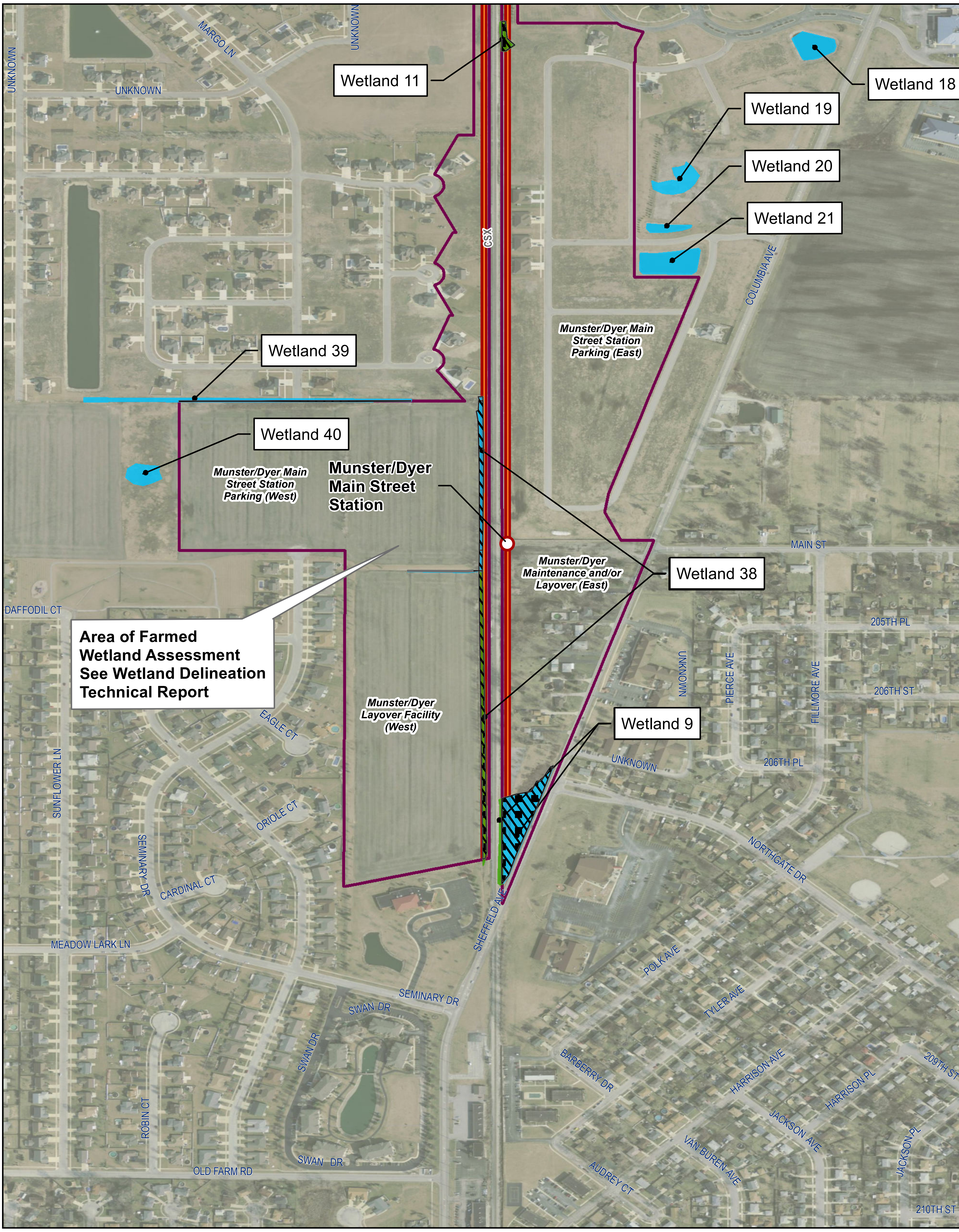
INDIANA PKY
Wetland 12
Wetland 42
LEICESTER RD
PROGRESS AVE
NEW DEVON ST
SALISBURY DR
ST IVES CT
WHITEHALL GARDEN
UNKNOWN
OTIS BOWEN DR
SINGLETON
MARGO LN
COLUMBIA AVE
Wetland 11
Wetland 18
Wetland 19
Wetland 20
Wetland 21
Munster/Dyer Main Street
Station Parking (East)


Wetland Impacts
NICTD Delineated Wetlands
Delineated (Approach A)
Identified (Approach B)
Estimated (Approach C)
Probable Wetland Continuation
Existing Station
South Shore Line
Commuter Rail Alternative
IHB Alternative
Hammond Alternative
South Shore Line Proposed Realignment
Proposed Station
Project Footprint
Study Area
Commuter Rail Alt. Impacts
IHB Alt. Impacts
Hammond Alt. Impacts
Maynard Junction Rail Profile Option Impacts
0
500
Feet
N
Sheet 16
Hegewisch
Hammond



Wetland Impacts

NICTD Delineated Wetlands

- Delineated (Approach A)
- Identified (Approach B)
- Estimated (Approach C)
- Probable Wetland Continuation
- Existing Station
- South Shore Line

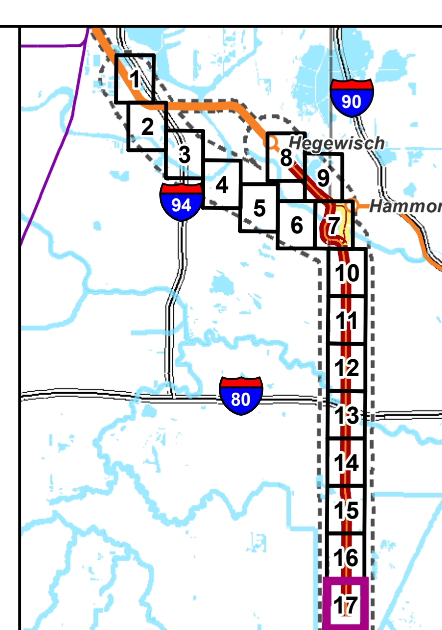
- Commuter Rail Alternative
- IHB Alternative
- Hammond Alternative
- South Shore Line Proposed Realignment
- Proposed Station
- Project Footprint
- Study Area

- Commuter Rail Alt. Impacts
- IHB Alt. Impacts
- Hammond Alt. Impacts
- Maynard Junction Rail Profile Option Impacts

0 500 Feet

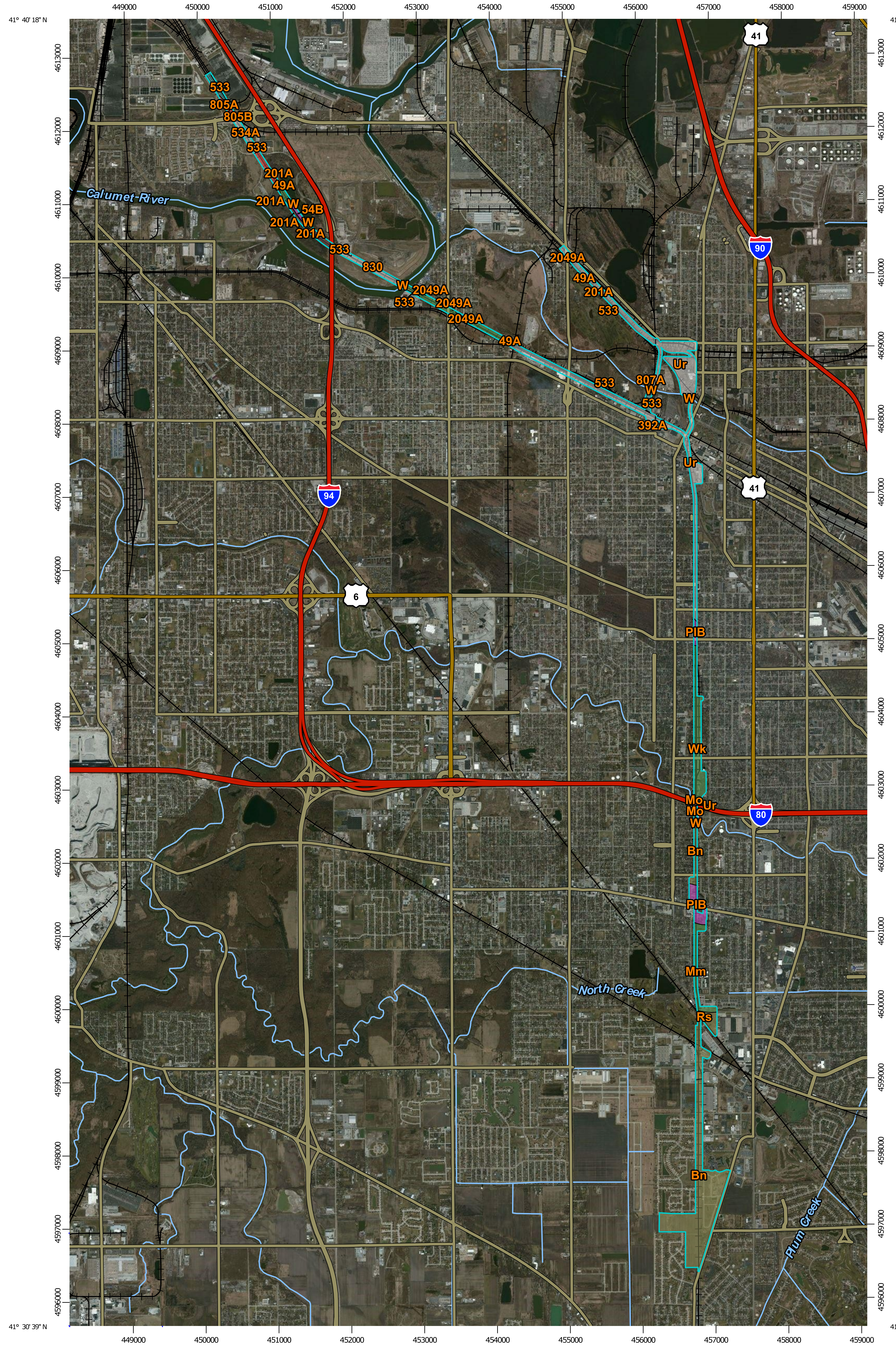
N

Sheet 17



APPENDIX B
USNRCS Web Soil Survey Soil Reports

Hydrologic Soil Group—Cook County, Illinois, and Lake County, Indiana
(NICTD Wetland Delineation Soils)



Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

Meters: 0 500 1000 2000 3000

Feet: 0 2000 4000 8000 12000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 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: http://websoilsurvey.nrcs.usda.gov
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: Cook County, Illinois
Survey Area Data: Version 9, Sep 25, 2015

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 18, Sep 10, 2015

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Mar 13, 2012—Mar 28, 2012

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.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Cook County, Illinois (IL031)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
49A	Watseka loamy fine sand, 0 to 2 percent slopes	A/D	7.0	1.1%
54B	Plainfield loamy sand, 1 to 6 percent slopes	A	4.8	0.8%
153A	Pella silty clay loam, 0 to 2 percent slopes	B/D	10.7	1.7%
201A	Gilford fine sandy loam, 0 to 2 percent slopes	A/D	28.6	4.5%
392A	Urban land-Orthents, loamy, complex, nearly level		0.9	0.1%
533	Urban land		86.3	13.7%
534A	Urban land-Orthents, clayey, complex, nearly level		11.7	1.9%
802A	Orthents, loamy, nearly level	C	6.3	1.0%
805A	Orthents, clayey, nearly level	D	13.4	2.1%
805B	Orthents, clayey, undulating	D	0.3	0.0%
805D	Orthents, clayey, rolling	D	3.3	0.5%
807A	Orthents, loamy-skeletal, nearly level	C	5.9	0.9%
830	Landfills		18.7	3.0%
2049A	Orthents, loamy-Urban land-Watseka complex, 0 to 2 percent slopes	C	2.1	0.3%
W	Water		2.6	0.4%
Subtotals for Soil Survey Area			**202.6**	**32.2%**
Totals for Area of Interest			**628.8**	**100.0%**

Hydrologic Soil Group— Summary by Map Unit — Lake County, Indiana (IN089)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Bn	Bono silty clay	C/D	179.7	28.6%
Mm	Maumee loamy fine sand	A/D	20.8	3.3%
Mo	Milford silt loam, overwash	C/D	0.8	0.1%

Hydrologic Soil Group— Summary by Map Unit — Lake County, Indiana (IN089)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
PlB	Plainfield fine sand, 0 to 6 percent slopes	A	20.3	3.2%
Rs	Rensselaer loam, calcareous subsoil variant	C/D	33.9	5.4%
Ur	Urban land		119.8	19.1%
W	Water		0.9	0.1%
Wk	Watseka loamy fine sand	A/D	50.0	8.0%
Subtotals for Soil Survey Area			**426.2**	**67.8%**
Totals for Area of Interest			**628.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–IL031-Cook County, Illinois					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
49A: Watseka loamy fine sand, 0 to 2 percent slopes	Watseka	85-100	Beach ridges,outwash plains,lake plains,stream terraces	No	—
	Urban land	0-5	—	No	—
	Granby	0-5	Swales	Yes	2
	Gilford	0-5	Outwash plains	Yes	2
	Orthents, loamy	0-5	Ground moraines,lake plains	No	—
54B: Plainfield loamy sand, 1 to 6 percent slopes	Plainfield	85-100	Beach ridges on lake plains	No	—
	Urban land	0-9	—	No	—
	Watseka	0-9	Beach ridges,outwash plains,lake plains,stream terraces	No	—
153A: Pella silty clay loam, 0 to 2 percent slopes	Pella-Drained	90-100	Outwash plains,lake plains,till plains	Yes	2
	Harpster-Drained	0-9	Depressions on outwash plains,depressions on till plains	Yes	2
	Urban land	0-2	—	No	—
201A: Gilford fine sandy loam, 0 to 2 percent slopes	Gilford	88-100	Outwash plains	Yes	2
	Orthents, loamy	0-5	Ground moraines,lake plains	No	—
	Fieldon	0-5	Swales	Yes	2
	Urban land	0-5	—	No	—
392A: Urban land-Orthents, loamy, complex, nearly level	Urban land	50-85	—	No	—
	Orthents-Loamy, nearly level	15-49	Ground moraines,lake plains	No	—
	Orthents-Clayey, nearly level	0-9	Ground moraines,lake plains	No	—
	Orthents-Loamy-skeletal, nearly level	0-9	Ground moraines,lake plains	No	—
533: Urban land	Urban land	85-100	—	No	—
	Orthents-Clayey, nearly level	0-9	Ground moraines,lake plains	No	—

Hydric Soil List - All Components–IL031-Cook County, Illinois					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
	Orthents-Loamy, nearly level	0-9	Ground moraines,lake plains	No	—
	Orthents-Loamy-skeletal, nearly level	0-5	Ground moraines,lake plains	No	—
534A: Urban land-Orthents, clayey, complex, nearly level	Urban land	50-85	—	No	—
	Orthents-Clayey, nearly level	15-49	Ground moraines,lake plains	No	—
	Ashkum	0-5	End moraines,ground moraines	Yes	2
	Aquents-Clayey	0-5	Lake plains	Yes	2
	Orthents-Loamy-skeletal, nearly level	0-5	Ground moraines,lake plains	No	—
802A: Orthents, loamy, nearly level	Orthents-Loamy, nearly level	85-100	Ground moraines,lake plains	No	—
	Orthents-Clayey, nearly level	0-9	Ground moraines,lake plains	No	—
	Urban land	0-9	—	No	—
	Orthents-Loamy-skeletal, nearly level	0-5	Ground moraines,lake plains	No	—
	Drummer	0-5	Ground moraines,outwash plains	Yes	2
	Pella	0-5	Ground moraines,outwash plains,lake plains	Yes	2
805A: Orthents, clayey, nearly level	Orthents-Clayey, nearly level	85-100	Ground moraines,lake plains	No	—
	Ashkum	0-9	End moraines,ground moraines	Yes	2
	Urban land	0-9	—	No	—
	Aquents-Clayey	0-5	Lake plains	Yes	2
805B: Orthents, clayey, undulating	Orthents-Clayey, undulating	85-100	Ground moraines,lake plains	No	—
	Ashkum	0-9	End moraines,ground moraines	Yes	2
	Urban land	0-9	—	No	—
	Bryce	0-9	Ground moraines,glacial lakes (relict)	Yes	2
	Aquents-Clayey	0-5	Lake plains	Yes	2
805D: Orthents, clayey, rolling	Orthents-Clayey, rolling	88-100	Ground moraines,lake plains	No	—
	Urban land	0-9	—	No	—
	Aquents-Clayey	0-5	Lake plains	Yes	2

Hydric Soil List - All Components–IL031-Cook County, Illinois					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
807A: Orthents, loamy-skeletal, nearly level	Orthents-Loamy-skeletal, nearly level	91-100	Ground moraines,lake plains	No	—
	Urban land	0-9	—	No	—
830: Landfills	Orthents-Landfill	85-100	—	Unranked	—
	Orthents-Clayey, undulating	0-9	Ground moraines,lake plains	No	—
	Orthents-Loamy, undulating	0-9	Ground moraines,outwash plains,lake plains	No	—
2049A: Orthents, loamy-Urban land-Watseka complex, 0 to 2 percent slopes	Orthents-Loamy	30-65	Lake plains	No	—
	Urban land	15-45	—	No	—
	Watseka	10-30	Beach ridges,outwash plains,lake plains,stream terraces	No	—
	Gilford	0-9	Outwash plains	Yes	2
W: Water	Water	100	Channels,drainageways,lakes,oxbows,perenial streams,rivers	—	—

Hydric Soil List - All Components–IN089-Lake County, Indiana					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
Bn: Bono silty clay	Bono	100	Depressions on lake plains	Yes	2,3
Mm: Maumee loamy fine sand	Maumee	100	Depressions on outwash plains	Yes	2,3
Mo: Milford silt loam, overwash	Milford	100	Depressions on lake plains	Yes	2,3
PlB: Plainfield fine sand, 0 to 6 percent slopes	Plainfield	90	Outwash plains	No	—
	Maumee	3	Depressions	Yes	2,3
Rs: Rensselaer loam, calcareous subsoil variant	Rensselaer	100	Depressions on lake plains	Yes	2,3
Ur: Urban land	Urban land	100	—	Unranked	—
W: Water	Water	100-100	—	No	—
Wk: Watseka loamy fine sand	Watseka	90	Outwash plains	No	—
	Maumee	3	Depressions	Yes	2,3
	Wauseon	3	Depressions	Yes	2,3
	Gilford	3	Depressions	Yes	2,3

Data Source Information

Soil Survey Area: Cook County, Illinois
Survey Area Data: Version 9, Sep 25, 2015

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 18, Sep 10, 2015

APPENDIX C
USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NITCD West Lake Corridor City/County: Lake County Sampling Date: 9/14/15

Applicant/Owner: ______ State: IN Sampling Point: Upland 1

Investigator(s): Anna Hochhalter, Scott Beckmeyer, Cheryl Nash Section, Township, Range: ______

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

Slope (%): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Bono silty clay loam NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil ______, or hydrology ______ significantly disturbed? Are "normal circumstances" present? ______

Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ______)			
1 *Echinochloa crus-galli*	30	Y	FACW
2 *agrostis gigantea*	30	Y	FACW
3 *setaria pumila*	30	Y	FAC
4			
5			
6			
7			
8			
9			
10			
	90	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	90 (A)		210 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 1

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 27+	10YR 3/1.5	90	5YR 5/8	3	RM	M	Silty Clay Loam	
	ROCK	7						Rock/Asphault

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Mapped Soil: Bono

Emankment for Monon Trail, Highly Disturbed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/14/15

Applicant/Owner: State: IN Sampling Point: Wetland 1

Investigator(s): Anna Hochhalter, Scott Beckmeyer, Cheryl Nash Section, Township, Range:

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

Slope (%): Lat: Long: Datum:

Soil Map Unit Name NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? (If no, explain in remarks)

Are vegetation ___, soil ___, or hydrology ___ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ___, soil ___, or hydrology ___ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *persicaria lapathifolia*	40	Y	FACW
2 *phalaris arundinacea*	30	Y	FACW
3 *ipomoea hederacea*	30	Y	FAC
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	70	x 2 =	140	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	230	(B)

Prevalence Index = B/A = 2.30

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 1

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 15	10YR 3/1.5	97	5YR 5/8	3	RM	M	Silty Clay Loam	
15 - 27+	10YR 3/1.5	97	5YR 5/8	3	RM	M	Silty Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
Bono silty clay loam
Hydric Rating: Yes

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 9/14/15

Applicant/Owner: ______   State: IL   Sampling Point: Upland 2

Investigator(s): Anna Hochhalter, Scott Beckmeyer, Cheryl Nash   Section, Township, Range: ______

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

Slope (%): ______   Lat: ______   Long: ______   Datum: ______

Soil Map Unit Name: Bono silty clay loam   NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil ______, or hydrology ______ significantly disturbed?   Are "normal circumstances" present? ______

Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ______)			
1 *Echinochloa crus-galli*	30	Y	FACW
2 *agrostis gigantea*	30	Y	FACW
3 *setaria pumila*	30	Y	FAC
4			
5			
6			
7			
8			
9			
10			
	90	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	60	x 2 =	120	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	90	(A)	210	(B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 2

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 27+	10YR 3/1.5	90	5YR 5/8	3	RM	M	Silty Clay Loam	
	ROCK	7						Rock/Asphault

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:

Mapped Soil: Bono

Emankment for Monon Trail, Highly Disturbed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/14/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 2

Investigator(s): Anna Hochhalter, Scott Beckmeyer, Cheryl Nash | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: Urban Land | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *quercus macrocarpa*	40	Y	FAC
2 *Ulmus rubra*	30	Y	FAC
3 *crataegus mollis*	10	N	FAC
4 *quercus alba*	5	N	FACU
5			
	85	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *Acer negundo*	30	Y	FAC
2 *Fraxinus pennsylvanica*	10	Y	FACW
3 *Ulmus rubra*	5	N	FAC
4			
5			
	45	= Total Cover	
Herb stratum (Plot size:)			
1 *parthenocissus quinquefolia*	20	Y	FACU
2 *phalaris arundinacea*	10	Y	FACW
3 *geum laciniatum*	5	N	FACW
4 *persicaria hydropiper*	5	N	OBL
5			
6			
7			
8			
9			
10			
	40	= Total Cover	
Woody vine stratum (Plot size:)			
1 *vitis riparia*	10	Y	FACW
2			
	10	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across all Strata:	7	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	85.71%	(A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	5	x 1 =	5	
FACW species	35	x 2 =	70	
FAC species	115	x 3 =	345	
FACU species	25	x 4 =	100	
UPL species	0	x 5 =	0	
Column totals	180	(A)	520	(B)
Prevalence Index = B/A =			2.89	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 2

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 5	10YR 4/1	75	10YR 7/8	20	RM	M	Clay Loam	
			7/10 BG	5			Clay Loam	Gley
5 - 27+	10YR 4/1	50	10YR 7/8	40	RM	M	Silty Clay Loam	
			7/10 BG	10				

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Bono silty clay loam
Hydric Rating: Yes

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/14/15

Applicant/Owner: | State: IN | Sampling Point: Upland 3

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: Bono silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *poa pratensis*	50	Y	FAC
2 *vicia sativa*	30	Y	FACU
3 *sonchus asper*	10	N	FACU
4 *trifolium repens*	5	N	FACU
5 *Cirsium vulgare*	5	N	FACU
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across all Strata:	2	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	50	x 3 =	150	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column totals	100	(A)	350	(B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Upland 3

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0+								Gravel

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: Gravel
Depth (inches): 0

Hydric soil present? N

Remarks:
Unable to take sample. Too much gravel in surrounding area

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology present

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/14/15

Applicant/Owner: ______ State: IN Sampling Point: Wetland 3

Investigator(s): Anna Hochhalter, Scott Beckmeyer, Cheryl Nash Section, Township, Range: ______

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

Slope (%): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name Urban land NWI Classification: ______

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil ______, or hydrology ______ significantly disturbed? Are "normal circumstances" present? ______

Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1 *sambucus nigra*	5	Y	FACW
2			
3			
4			
5			
	5	= Total Cover	
Herb stratum (Plot size: ______)			
1 *phalaris arundinacea*	40	Y	FACW
2 *persicaria lapathifolia*	10	Y	FACW
3 *symphyotrichum pilosum*	10	Y	FACU
4 *helianthus tuberosus*	10	Y	
5 *eupatorium serotinum*	10	Y	FAC
6 *ipomoea hederacea*	2	N	FAC
7			
8			
9			
10			
	82	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	6	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	66.67%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	55	x 2 =	110	
FAC species	12	x 3 =	36	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column totals	77	(A)	186	(B)
Prevalence Index = B/A =			2.42	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 3

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 24+	2.5YR 3/2	90	7.5YR 4/6	10	RM	M	Silty Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
Bono silty clay loams
Hydric Indicator: Yes

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
5 ft from river bank

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/14/15

Applicant/Owner: State: IN Sampling Point: Upland 4

Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range:

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

Slope (%): Lat: Long: Datum:

Soil Map Unit Name Bono silty clay loam NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *poa pratensis*	50	Y	FAC
2 *vicia sativa*	30	Y	FACU
3 *sonchus asper*	10	N	FACU
4 *trifolium repens*	5	N	FACU
5 *Cirsium vulgare*	5	N	FACU
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across all Strata:	2	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	50	x 3 =	150	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column totals	100	(A)	350	(B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Upland 4

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0+								Gravel

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: Gravel
Depth (inches): 0

Hydric soil present? N

Remarks:
Unable to take sample. Too much gravel in surrounding area

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes	No	Depth (inches):
Surface water present?		X	
Water table present?		X	
Saturation present? (includes capillary fringe)		X	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology present

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/14/15

Applicant/Owner: State: IN Sampling Point: Wetland 4

Investigator(s): Anna Hochhalter, Scott Beckmeyer, Cheryl Nash Section, Township, Range:

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

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: Bono silty clay loam NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *fraxinus pennsylvanica*	5	Y	FACW
2			
3			
4			
5			
	5	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *acer negundo*	60	Y	FAC
2 *salix fragilis*	10	N	FAC
3 *ulmus rubra*	5	N	FAC
4 *acer saccharinum*	5	N	FACW
5 *morus alba*	5	N	FAC
	85	= Total Cover	
Herb stratum (Plot size:)			
1 *lysimachia nummularia*	25	Y	FACW
2 *phragmites australis*	25	Y	FACW
3 *solidago gigantea*	10	N	FACW
4 *solidago altissima*	5	N	FACU
5 *parthenocissus quinquefolia*	5	N	FACU
6 *symphyotrichum pilosum*	2	N	FACU
7			
8			
9			
10			
	72	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	80	x 3 =	240
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column totals	162 (A)		428 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 4

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 + 27+	2.5YR 3/1	95	2.5YR 3/3	5	RM	M	Silty Clay Laom	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes		No		Depth (inches):
Surface water present?	Yes		No	X	
Water table present?	Yes	X	No		
Saturation present? (includes capillary fringe)	Yes	X	No		

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Groundwater fed wetland

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/17/15
Applicant/Owner: | State: IN | Sampling Point: Upland 5
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: | Long: | Datum:
Soil Map Unit Name Watseka silt loam | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *alianthus altissima*	20	Y	
2 *caltalpa speciosa*	20	Y	
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *rhamnus frangula*	10	Y	
2 *acer negundo*	5	Y	FAC
3 *ulmus species*	5	Y	
4			
5			
	20	= Total Cover	
Herb stratum (Plot size:)			
1 *poa palustris*	80	Y	FACW
2 *solidago altissima*	20	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1 *vitis riparia*	8	Y	FACW
2			
	8	= 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: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 37.50% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	88	x 2 =	176
FAC species	5	x 3 =	15
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	113 (A)		271 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 5

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

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
1 - 10	10YR 4/1	100					Loamy Sand	No observed redo features
10 - 25+	2.5Y 2.5/1	100					Loamy Sand	No observed redo features

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? N

Remarks:
Watseka loamy fine sand
No hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No observed hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 9/15/15

Applicant/Owner: State: IN   Sampling Point: Wetland 5

Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range:

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

Slope (%):   Lat: Long: Datum:

Soil Map Unit Name Watseka silt loam   NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?   Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ____)			
1 *populus deltoides*	10	Y	FAC
2 *acer negundo*	5	Y	FAC
3 *fraxinus pennsylvanica*	5	Y	FACW
4 *salix eriocephala*	2	N	FACW
5			
	22	= Total Cover	
Herb stratum (Plot size: ____)			
1 *phragmites australis*	75	Y	FACW
2 *bidens cernua*	10	N	OBL
3 *juncus torreyi*	5	N	FACW
4 *juncus dudleyi*	5	N	FACW
5 *elymus virginicus*	5	N	FACW
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size: ____)			
1 *vitis riparia*	3		FACW
2			
	3	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	10	x 1 =	10	
FACW species	100	x 2 =	200	
FAC species	15	x 3 =	45	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	125	(A)	255	(B)
Prevalence Index = B/A =			2.04	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 5

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

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 10	2.5YR 5/2	90	2.5YR 5/6	3	RM	M	Silt Loam	
	6/10 Y	7					Silt Loam	Gley
10 - 20	10YR 4/1	95	7YR 5/8	5	RM	M	Sandy Clay Loam	
20+								Rock

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 20

Hydric soil present? Y

Remarks:
Mapped Soil: Watseka (No hydric rating)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes		No		
Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/17/15
Applicant/Owner: State: IN Sampling Point: Upland 6
Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):
Slope (%): Lat: Long: Datum:
Soil Map Unit Name Waseka silty clay loam NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *alianthus altissima*	20	Y	
2 *catalpa speciosa*	20	Y	FACU
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *rhamnus frangula*	10	Y	
2 *acer negundo*	5	Y	FAC
3 *ulmus species*	5	Y	
4			
5			
	20	= Total Cover	
Herb stratum (Plot size:)			
1 *poa palustris*	80	Y	FACW
2 *solidago altissima*	20	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1 *vitis riparia*	8	Y	FACW
2			
	8	= 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:	8	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	37.50%	(A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	88	x 2 =	176	
FAC species	5	x 3 =	15	
FACU species	40	x 4 =	160	
UPL species	0	x 5 =	0	
Column totals	133	(A)	351	(B)
Prevalence Index = B/A =			2.64	

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 6

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
1 - 10	10YR 4/1	100					Loamy Sand	No observed redo features
10 - 25+	2.5Y 2.5/1	100					Loamy Sand	No observed redo features

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? N

Remarks:
Watseka loamy fine sand
No hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No observed hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/15/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 6

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name Watseka silty clay loam | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____ , soil ____ , or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____ , soil ____ , or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *crataegus mollis*	30	Y	FAC
2 *fraxinus pennsylvanica*	30	Y	FACW
3 *populus deltoides*	5	N	FAC
4			
5			
	65	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *fraxinus pennsylvanica*	15	Y	FACW
2 *ulmus americana*	5	Y	FACW
3 *crataegus mollis*	5	Y	FAC
4			
5			
	25	= Total Cover	
Herb stratum (Plot size:)			
1 *impatiens capensis*	50	Y	FACW
2 *symphyotrichum lanceolatum*	10	N	FAC
3 *scutellaria lateriflora*	10	N	OBL
4 *bidens cernua*	10	N	OBL
5 *phragmites australis*	5	N	FACW
6			
7			
8			
9			
10			
	85	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	20	x 1 =	20
FACW species	105	x 2 =	210
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	175 (A)		380 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 6

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 9	5Y 2.5/1	100					Silty Clay Loam	
9 - 23+	5Y 4/2	97	10YR 6/8	3	RM	M	Silt Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Mapped Soil: Watseka (No hydric rating)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/17/15

Applicant/Owner: | State: IN | Sampling Point: Upland 7

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: Watseka loamy fine sand | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N
Is the sampled area within a wetland?	N
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *populus deltoides*	10	Y	FAC
2			
3			
4			
5			
	10	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *salix interior*	50	Y	FACW
2			
3			
4			
5			
	50	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	10	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	10	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	70 (A)		150 (B)
Prevalence Index = B/A =	2.14		

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 7

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
1 - 10	10YR 4/1	100					Loamy Sand	No observed redo features
10 - 25+	2.5Y 2.5/1	100					Loamy Sand	No observed redo features

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ____________________
Depth (inches): ____________________

Hydric soil present? N

Remarks:

Watseka loamy fine sand
No hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	____	No	X	Depth (inches): ____
Water table present?	Yes	____	No	X	Depth (inches): ____
Saturation present? (includes capillary fringe)	Yes	____	No	X	Depth (inches): ____

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No observed hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/17/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 7

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: Watseka loamy fine sand | NWI Classification:

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____ , soil ____ , or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____ , soil ____ , or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *salix interior*	40	Y	FACW
2 *populus deltoides*	20	Y	FAC
3 *acer saccharinum*	5	N	FACW
4 *morus alba*	2	N	FAC
5			
	67	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *salix interior*	40	Y	FACW
2 *fraxinus pennsylvanica*	15	Y	FACW
3			
4			
5			
	55	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	50	Y	FACW
2 *lythrum salicaria*	25	Y	OBL
3 *typha angustifolia*	15	N	OBL
4 *alisma triviale*	5	N	OBL
5			
6			
7			
8			
9			
10			
	95	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	45	x 1 =	45
FACW species	150	x 2 =	300
FAC species	22	x 3 =	66
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	217 (A)		411 (B)

Prevalence Index = B/A = 1.89

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 7

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 1	10YR 3/1	100					Loamy Sand	
1 - 3	2.5Y 4/2	98	10YR 6/8	2	RM	M	Loamy Sand	
3 - 4	10YR 3/1	98	10YR 6/8	2	RM	M	Loamy Sand	
4 - 22+	10YR 3/1	100					Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Watseka loamy fine sand
Visile iron depletions below stipped layer (>3" deep)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/28/15
Applicant/Owner: | State: IN | Sampling Point: Upland 8
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: | Long: | Datum:
Soil Map Unit Name: Watseka loamy fine sand | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____ , soil ____ , or hydrology ____ significantly disturbed?

Are vegetation ____ , soil ____ , or hydrology ____ naturally problematic?

Are "normal circumstances" present? ____

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y			
Hydric soil present?	N	**Is the sampled area within a wetland?**	N	
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *poa pratensis*	100	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	100	x 3 =	300	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	300	(B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 8

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 5	2.5Y 2.5/1	100					N/A	
5 - 15	2.5Y 2.5/1	100					N/A	RESEMBLES CRUSHED COAL
15 - 22+	2.5Y 6/6	90					N/A	
	2.5Y 2.5/1	3					N/A	
	2.5Y 5/6	7					N/A	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? N

Remarks:
Watseka loamy fine sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
NO INDICATORS

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/17/15
Applicant/Owner: State: IN Sampling Point: Wetland 8
Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):
Slope (%): Lat: Long: Datum:
Soil Map Unit Name Watseka loamy fine sand NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? (If no, explain in remarks)
Are vegetation ___, soil ___, or hydrology ___ significantly disturbed? Are "normal circumstances" present? ___
Are vegetation ___, soil ___, or hydrology ___ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *fraxinus pennsylvanica*	30	Y	FACW
2 *populus deltoides*	20	Y	FAC
3 *salix interior*	10	N	FACW
4			
5			
	60	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *fraxinus pennsylvanica*	10	Y	FACW
2			
3			
4			
5			
	10	= Total Cover	
Herb stratum (Plot size:)			
1 *lythrum salicaria*	70	Y	OBL
2 *symphyotrichum lanceolatum*	10	N	FAC
3 *bidens cernua*	5	N	OBL
4 *cyperus esculentus*	5	N	FACW
5 *persicaria lapathifolia*	5	N	FACW
6			
7			
8			
9			
10			
	95	= Total Cover	
Woody vine stratum (Plot size:)			
1 *vitis riparia*	2		FACW
2			
	2	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	75	x 1 =	75	
FACW species	62	x 2 =	124	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	167	(A)	289	(B)

Prevalence Index = B/A = 1.73

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation
X Dominance test is >50%
X Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 8

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 6	10YR 2/1	100					Loamy Sand	
6 - 7	2.5Y 4/3	100					Loamy Sand	
7 - 15	2.5Y 6/6	10					Sand	
15 - 19+	5Y 2.5/1	85	7.5YR 6/8	10	RM	M	Loamy Sand	
			7.5YR 3/4	5	RM	M	Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Watseka loamy fine sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/16/15

Applicant/Owner: ______ State: IN Sampling Point: Upland 9

Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range: ______

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

Slope (%): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Bono silty clay loam NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil ______, or hydrology ______ significantly disturbed?

Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

Are "normal circumstances" present? ______

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1 *Acer saccharinum*	5	Y	FACW
2 *ulmus pumila*	5	Y	UPL
3			
4			
5			
	10	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1	8	Y	
2			
3			
4			
5			
	8	= Total Cover	
Herb stratum (Plot size: ______)			
1 *agrostis hyemalis*	40	Y	FAC
2 *Rubus occidentalis*	40	Y	
3 *cirsium arvense*	40	Y	FACU
4			
5			
6			
7			
8			
9			
10			
	120	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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:	6	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	33.33%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	40	x 3 =	120
FACU species	40	x 4 =	160
UPL species	5	x 5 =	25
Column totals	90 (A)		315 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Upland 9

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

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 13	2.5Y 3/2	100					Silty Clay Loam	
13 - 24+	2.5Y 4/1	80	10YR 4/6	15	RM	M	Silty Clay Loam	
			7/10 Y	5	RM	M	Silty Clay Loam	Gley

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? N

Remarks:
No signs of iron in the top 12" of soil

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No visible signs of hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 9/16/15

Applicant/Owner: ______   State: IN   Sampling Point: Wetland 9

Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range: ______

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

Slope (%): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name Bono silty clay loam   NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil ______, or hydrology ______ significantly disturbed?   Are "normal circumstances" present? ______

Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1 *sambucus nigra*	50	Y	FACW
2 *frangula alnus*	25	Y	FACW
3 *pyrus communis*	5	N	
4			
5			
	80	= Total Cover	
Herb stratum (Plot size: ______)			
1 *lythrum salicaria*	80	Y	OBL
2 *epilobium coloratum*	15	N	OBL
3 *persicaria amphibia*	10	N	OBL
4 *geum laciniatum*	10	N	FACW
5			
6			
7			
8			
9			
10			
	115	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	105	x 1 =	105
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	190 (A)		275 (B)

Prevalence Index = B/A = 1.45

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 9

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 24+	2.5Y 3/1	96	2.5Y4/4	4	RM	M	Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Bono silty clay loam
Hydric Indicator: Yes

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: Lake County Sampling Date: 9/28/15
Applicant/Owner: State: IN Sampling Point: Upland 10
Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):
Slope (%): Lat: Long: Datum:
Soil Map Unit Name Watseka loamy fine sand NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? (If no, explain in remarks)
Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present?
Are vegetation , soil , or hydrology naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *poa pratensis*	100	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)
Prevalence Index = B/A =			3.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 10

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 5	2.5Y 2.5/1	100					N/A	
5 - 15	2.5Y 2.5/1	100					N/A	RESEMBLES CRUSHED COAL
15 - 22+	2.5Y 6/6	90					N/A	
	2.5Y 2.5/1	3					N/A	
	2.5Y 5/6	7					N/A	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? N

Remarks:
Watseka loamy fine sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
NO INDICATORS

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/17/15
Applicant/Owner: | State: IN | Sampling Point: Wetland 10
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: | Long: | Datum:
Soil Map Unit Name: Watseka loamy fine sand | NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *fraxinus pennsylvanica*	30	Y	FACW
2 *populus deltoides*	20	Y	FAC
3 *salix interior*	10	N	FACW
4			
5			
	60	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *fraxinus pennsylvanica*	10	Y	FACW
2			
3			
4			
5			
	10	= Total Cover	
Herb stratum (Plot size:)			
1 *lythrum salicaria*	70	Y	OBL
2 *symphyotrichum lanceolatum*	10	N	FAC
3 *bidens cernua*	5	N	OBL
4 *cyperus esculentus*	5	N	FACW
5 *persicaria lapathifolia*	5	N	FACW
6			
7			
8			
9			
10			
	95	= Total Cover	
Woody vine stratum (Plot size:)			
1 *vitis riparia*	2		FACW
2			
	2	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	75	x 1 =	75	
FACW species	62	x 2 =	124	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	167	(A)	289	(B)
Prevalence Index = B/A =			1.73	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 10

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 6	10YR 2/1	100					Loamy Sand	
6 - 7	2.5Y 4/3	100					Loamy Sand	
7 - 15	2.5Y 6/6	10					Sand	
15 - 19+	5Y 2.5/1	85	7.5YR 6/8	10	RM	M	Loamy Sand	
			7.5YR 3/4	5	RM	M	Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ________
Depth (inches): ________

Hydric soil present? Y

Remarks:
Watseka loamy fine sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **17-Sep-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 11**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Bono silty clay** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor City/County: ______ Sampling Date: 9/17/15
Applicant/Owner: ______ State: ______ Sampling Point: Upland 12
Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range: ______
Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______
Slope (%): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name bono silty clay NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)
Are vegetation ______, soil ______, or hydrology ______ significantly disturbed? Are "normal circumstances" present? ______
Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ______)			
1 *poa pratensis*	100	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation
X Dominance test is >50%
X Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 12

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
1 - 4	2.5Y 3/1	97	2.5Y6/8	3	RM	M	Silty Clay Loam	
4 - 9	2.5Y 5/2	70	2.5Y 6/8	5	RM	M	Silty Clay Loam	
	2.5Y 3/1	25					Silty Clay Loam	
9 - 12	2.5Y 3/1	95	2.5Y 6/8	1	RM	M	Silty Clay Loam	
	2.5Y 5/2	4					Silty Clay Loam	
12 - 22	2.5Y 3/1	95	2.5Y 6/8	5	RM	M	Silty Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? N

Remarks:
Soil: Bono silty clay loam
Highly disturbed soil in a development. While soils contain redox concentrations, soil is not indicative of a true hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Upland of wetland

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 9/17/15
Applicant/Owner: ______   State: IN   Sampling Point: Wetland 12
Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range: ______
Landform (hillslope, terrace, etc.): ______   Local relief (concave, convex, none): ______
Slope (%): ______   Lat: ______   Long: ______   Datum: ______
Soil Map Unit Name Bono silty clay   NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)
Are vegetation ______, soil ______, or hydrology ______ significantly disturbed?
Are vegetation ______, soil ______, or hydrology ______ naturally problematic?
Are "normal circumstances" present? ______

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	Is the sampled area within a wetland?	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ______)			
1 *phragmites australis*	90	Y	FACW
2 *lythrum salicaria*	10	N	OBL
3 *juncus dudleyi*	5	N	FACW
4 *cyperus erythrorhizos*	5	N	OBL
5			
6			
7			
8			
9			
10			
	110	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	15	x 1 =	15	
FACW species	95	x 2 =	190	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	110	(A)	205	(B)
Prevalence Index = B/A =			1.86	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 12

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 8	2.5Y 2.5/1	30	2.5Y 6/4	10	RM	M	Silty Clay Loam	
	6/10Y	60					Silty Clay Loam	Gleyed
8+								Gravel

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 8

Hydric soil present? Y

Remarks:

Hydric Soils apparent in upper 8 inches.
Mapped Soil: Bono silty clay loam.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	
Water table present?	Yes	X	No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **28-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 13**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **orthents clayey** NWI Classification: PFO1/EMCd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Salix spp*			#N/A
2. *populus deltoides*			FAC+
3. *morus alba*			FAC
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **28-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 14**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Orthents clayey** NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Crataegus spp*			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *typha angustifolia*			OBL
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%
______ Prevalence Index is ≦3.0*
______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Cook County | Sampling Date: 9/28/15

Applicant/Owner: | State: IL | Sampling Point: Upland 15

Investigator(s): Anna Hochhalter | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: Orthents, Ashkum aquents | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *ulmus rubra*	5	Y	FAC
2			
3			
4			
5			
	5	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *poa pratensis*	80	Y	FAC
2 *taraxacum officinale*	10	N	FACU
3			
4			
5			
6			
7			
8			
9			
10			
	90	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	95 (A)		295 (B)

Prevalence Index = B/A = 3.11

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Upland 15

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 8	2.5Y 3/2	100					LOAMY SAND	
8 - 21+	2.5Y 5/2	69	10YR 6/8	1	RM	M	LOAMY SAND	
	2.5Y 4/1	30					LOAMY SAND	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? N

Remarks:
Urban land - Orthents clayey

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Cook County   Sampling Date: 9/28/15

Applicant/Owner: State: IL   Sampling Point: Wetland 15

Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range:

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

Slope (%):   Lat: Long: Datum:

Soil Map Unit Name Urban land - orthents clayey   NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?   Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *eleocharis palustris*	75	Y	OBL
2 *persicaria lapathifolia*	10	N	FACW
3 *lythrum salicaria*	10	N	OBL
4 *echinochloa crusgalli*	5	N	
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	85	x 1 =	85
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	95 (A)		105 (B)

Prevalence Index = B/A = 1.11

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 15

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 6	2.5Y 3/2	80	2.5Y 5/4	20	RM	M	SILTY CLAY LOAM	
6 - 8	2.5Y 5/2	90	10YR 6/8	5	RM	M	SANDY CLAY LOAM	+5% LAYER Z8
8 - 12	10YR 3/1	97	10YR 6/8	3	RM	M	SANDY CLAY LOAM	
12 - 18	2.5Y 4/2	90	2.5Y 6/8	2	RM	M	LOAMY SAND	
18 - 25+	10YR 6/8	10	2.5Y 4/2	10	RM	M	LOAMY SAND	SATURATED

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
NRCS SOILS: ORTHENTS(23%), ASHKUM (3%), AQUENTS(2%)
HYDRIC RATING: YES

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes		No		Depth (inches):
Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes	X	No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **28-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 16**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Orthents clayey** NWI Classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *sambucus nigra*	**5**		#N/A
2. *Salix exigua*	**5**		OBL
3. *Ulmus americana*	**5**		FACW-
4. --			--
5. --			--
Total Cover:	**15**		
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*	**50**		FACW+
2. *lythrum salicaria*	**20**		OBL
3. *helianthus tuberosus*	**10**		FAC
4. *Equisetum arvense*	**10**		FAC
5. *eleocharis palustris*	**10**		OBL
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:	**100**		
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ______ Dominance Test is >50%
- ______ Prevalence Index is ≦3.0*
- ______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
- ______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **28-Sep-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 17**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Rensselaer loam, calcareous subsoil variant, Bono silty clay** NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. *lythrum salicaria*			OBL
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor　City/County: Lake County　Sampling Date: 9/28/15

Applicant/Owner: ______　State: IN　Sampling Point: Wetland 18

Investigator(s): Anna Hochhalter and Scott Beckmeyer　Section, Township, Range: ______

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

Slope (%): ______　Lat: ______　Long: ______　Datum: ______

Soil Map Unit Name Bono silty clay　NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil X, or hydrology ______ significantly disturbed?　Are "normal circumstances" present? ______

Are vegetation ______, soil X, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

No Soil sample taken because of rip-rap on edges with open water

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1 *phragmites australis*	5	Y	FACW
2 *typha angustifolia*	5	Y	OBL
3			
4			
5			
	10	= Total Cover	
Herb stratum (Plot size: ______)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	5	x 1 =	5	
FACW species	5	x 2 =	10	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	10	(A)	15	(B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 18

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
X Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
Bono silty clay
High Redox Concentration

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ___ No ___ Depth (inches): ___
Water table present? Yes ___ No ___ Depth (inches): ___
Saturation present? Yes ___ No ___ Depth (inches): ___
(includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/28/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 19

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: | Long: | Datum:

Soil Map Unit Name: Bono silty clay | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *populus deltoides*	10	Y	FAC
2 *salix interior*	10	Y	FACW
3			
4			
5			
	20	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	70	Y	FACW
2 *eleocharis palustris*	50	Y	OBL
3 *bidens cernua*	20	N	OBL
4 *juncus torreyi*	2	N	FACW
5 *lythrum salicaria*	2	N	OBL
6			
7			
8			
9			
10			
	144	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	72	x 1 =	72
FACW species	82	x 2 =	164
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	164 (A)		266 (B)

Prevalence Index = B/A = 1.62

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 19

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 16	2.5Y 2.5/1	10	2.5Y 5/6	10	RM	M	Silty Clay Loam	
	5Y 4/2	80						Gleyed Appearance
16+								gravel

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: gravel
Depth (inches): 16

Hydric soil present? Y

Remarks:
Bono silty clay
High Redox Concentration

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes		No		Depth (inches):
Surface water present?	Yes	X	No		
Water table present?	Yes	X	No		
Saturation present? (includes capillary fringe)	Yes	X	No		

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/28/15
Applicant/Owner: | State: IN | Sampling Point: Wetland 20
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: | Long: | Datum:
Soil Map Unit Name: Bono silty clay | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil X, or hydrology X significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Detention basin. Wetland soils were not obtained due to rip-rap along the embankment and open water.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *salix interior*	20	Y	FACW
2			
3			
4			
5			
	20	= Total Cover	
Herb stratum (Plot size:)			
1 *eleocharis palustris*	20	Y	OBL
2 *lythrum salicaria*	5	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	25	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	25	x 1 =	25	
FACW species	20	x 2 =	40	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	45	(A)	65	(B)

Prevalence Index = B/A = 1.44

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 20

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Detention basin

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes		No		Depth (inches):
Surface water present?	Yes	X	No		
Water table present?	Yes		No		
Saturation present? (includes capillary fringe)	Yes	X	No		

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 9/28/15
Applicant/Owner: ______   State: IN   Sampling Point: Wetland 21
Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range: ______
Landform (hillslope, terrace, etc.): ______   Local relief (concave, convex, none): ______
Slope (%): ______   Lat: ______   Long: ______   Datum: ______
Soil Map Unit Name Bono silty clay   NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)
Are vegetation ______, soil X, or hydrology X significantly disturbed?   Are "normal circumstances" present? ______
Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS
(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Detention basin. No soil sample taken because of rip-rap and standing water.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1 *salix interior*	20	Y	FACW
2			
3			
4			
5			
	20	= Total Cover	
Herb stratum (Plot size: ______)			
1 *eleocharis palustris*	40	Y	OBL
2 *lythrum salicaria*	10	N	OBL
3 *Cyperus erythrorhizos*	2	N	OBL
4			
5			
6			
7			
8			
9			
10			
	52	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	52	x 1 =	52	
FACW species	20	x 2 =	40	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	72	(A)	92	(B)
Prevalence Index = B/A =			1.28	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 21

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type*	Loc**	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
Detention basin

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **29-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 22**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Landfill** NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *phragmites australis*			FACW+
2. *bidens cernua*			OBL
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			

Woody Vine Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%
______ Prevalence Index is ≦3.0*
______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **29-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 23**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Landfill** NWI Classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%
______ Prevalence Index is ≦3.0*
______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **29-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 24**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Landfill** NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Acer Negundo*			FACW-
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **29-Sep-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 25**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Landfill** NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Acer Negundo*			FACW-
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rhamnus frangula*			FAC+
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **29-Sep-15**

Applicant/Owner: ______ State: **IN** Sampling Poin[illegible]**and 25**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: ______ Long: ______ Datum: ______

Soil Unit Name: **Landfill** NWI Classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Acer Negundo*			FACW-
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rhamnus frangula*			FAC+
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ______ Dominance Test is >50%
- ______ Prevalence Index is ≦3.0*
- ______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
- ______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Cook County | Sampling Date: 09/29/15

Applicant/Owner: | State: IL | Sampling Point: Wetland 26

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.646 | Long: -87.581 | Datum:

Soil Map Unit Name: Watseka silty clay loam, Plainfiled loamy sand, Bliford fine sandy | NWI Classification: PFO1C, PEMA, PEMC

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *populus deltoides*	5	Y	FAC
2			
3			
4			
5			
	5	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *bidens cernua*	20	Y	OBL
2 *carex stricta*	10	Y	OBL
3 *typha latifolia*	10	Y	OBL
4 *alisma subcordatum*	10	Y	OBL
5 *sagittaria rigida*	5	N	OBL
6 *typha angustifolia*	5	N	OBL
7			
8			
9			
10			
	60	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	60	x 1 =	60
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	65 (A)		75 (B)

Prevalence Index = B/A = 1.15

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 26

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 6	10YR 2/1	100					Silty Clay Loam	Mucky
6 - 17	10YR 2/1	100					Silty Clay Loam	
17 - 23	2.5Y 4/1	100					Sandy Loam	
23 - 28+	2.5Y 5/4	98	10YR 6/6	2	RM	M	Sandy Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Rain at time of sample. Could not fully dry
Watseka silty clay loam, Plainfield loamy sand, Gliford fine sandy loam,

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):
Water table present?	Yes	X	No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Cook County | Sampling Date: 9/30/15 and 10/27/15

Applicant/Owner: | State: IL | Sampling Point: Wetland 27

Investigator(s): | Section, Township, Range:

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

Slope (%): | Lat: 41.6328 | Long: -87.5506 | Datum:

Soil Map Unit Name: Gilford loamy sand, Watseka loamy fine | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *populus deltoides*	40	Y	
2			
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *populus tremuloides*	30	Y	FAC
2 *salix babylonica*	5	N	
3			
4			
5			
	35	= Total Cover	
Herb stratum (Plot size:)			
1 *phalaris arundinacea*	50	Y	FACW
2 *solidago rugosa*	30	Y	FAC
3 *onoclea sensibilis*	5	N	FACW
4 *helianthus grosseserratus*	2	N	FACW
5			
6			
7			
8			
9			
10			
	87	= Total Cover	
Woody vine stratum (Plot size:)			
1 *vitis riparia*	5	Y	FACW
2			
	5	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	62	x 2 =	124
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	122 (A)		304 (B)

Prevalence Index = B/A = 2.49

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 27

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 4	2.5Y 2.5/1	100					Loamy Sand	Mucky Mineral
4 - 10	2.5Y 2.5/1	100					Loamy Sand	
10 - 23+	2.5Y 6/3	60	10YR 6/8	10	RM	M	Loamy Sand	
	2.5Y 2.5/1	30					Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Confirmed to be mapped Gilford loamy sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	___	No	___	Depth (inches):	___
Water table present?	Yes	___	No	___	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor | City/County: Cook County | Sampling Date: 09/30/15
Applicant/Owner: ______ | State: IL | Sampling Point: Wetland 28
Investigator(s): ______ | Section, Township, Range: ______
Landform (hillslope, terrace, etc.): ______ | Local relief (concave, convex, none): ______
Slope (%): ______ Lat: 41.6516 Long: -87.58703 Datum: ______
Soil Map Unit Name Orthents (aquic) Watseka loamy fine sand, Gilford fine sandy loa NWI Classification: PSS1C, PEMF
Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)
Are vegetation ______, soil ______, or hydrology ______ significantly disturbed? Are "normal circumstances" present? ______
Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS
(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species	Indicator Staus
1 *populus deltoides*	10	Y	FAC
2			
3			
4			
5			
	10	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1 *salix interior*	5	Y	FACW
2			
3			
4			
5			
	5	= Total Cover	
Herb stratum (Plot size: ______)			
1 *lythrum salicaria*	70	Y	OBL
2 *phragmites australis*	20	Y	FACW
3			
4			
5			
6			
7			
8			
9			
10			
	90	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	70	x 1 =	70	
FACW species	25	x 2 =	50	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	105	(A)	150	(B)
Prevalence Index = B/A =			1.43	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 28

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0+								Unable to take sample

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Unable to take sample. 6+ inches of standing water. Would destabilize if taken at slope.
Soil:Orthents (aquic), Watseka loamy fine sand, Gilford fine sandy loam
poorly drained or very poorly drained soils

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	
Water table present?	Yes	X	No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil Inundated

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **30-Sep-15**

Applicant/Owner: State: **IL** Sampling Point: **Wetland 29**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range:

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

Slope %: Lat: 41.64588 Long: -87.5823 Datum:

Soil Unit Name: **Pella silty clay loam** NWI Classification: PEMA, PFO1A, PFO1C, PFO!/E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *populus deltoides*			FAC+
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor City/County: Lake County Sampling Date: 09/30/15
Applicant/Owner: ______ State: IN Sampling Point: Wetland 30
Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range: ______
Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______
Slope (%): ______ Lat: 41.5501 Long: -87.5172 Datum: ______
Soil Map Unit Name: Maumee loamy fine sand NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)
Are vegetation ______, soil ______, or hydrology ______ significantly disturbed? Are "normal circumstances" present? ______
Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?		If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ______)			
1 *phragmites australis*	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 30

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0+								Unable to take sample

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? ___

Remarks:
Unable to take sample. Restricted by railroad debris (gravel, construction materials, asphalt)
Soil: Maumee loamy fine sand
poorly drained or very poorly drained soils

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	
Water table present?	Yes	X	No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 09/30/15
Applicant/Owner: | State: IN | Sampling Point: Wetland 31
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: 41.5494 | Long: -87.5168 | Datum:
Soil Map Unit Name Rensselaer loam, calcareous subsoil variant | NWI Classification: PFO1C
Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?		If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *populus deltoides*	40	Y	FAC
2			
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	40	x 3 =	120	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	140	(A)	320	(B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 31

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0+								Unable to take sample

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? ___

Remarks:
Unable to take sample. Restricted by railroad debris (gravel, construction materials, asphalt)
Soil: Rensselaer loam, calcareous subsoil variant
poorly drained or very poorly drained soils

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	
Water table present?	Yes	X	No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **30-Sep-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 32**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: 41.54766 Long: -87.517816 Datum: ______

Soil Unit Name: **rensselaer loam, calcareous subsoil variant** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____ No ____ Hydric Soils Present? Yes ____ No ____ Wetland Hydrology Present? Yes ____ No ____		**Is the Sampling Area within a Wetland?**	**Yes** x **No** ____

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Populus deltoides*	**50**		FAC+
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:	**50**		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rhamnus frangula*	**5**		FAC+
2. *salix interior*	**5**		#N/A
3. --			--
4. --			--
5. --			--
Total Cover:	**10**		
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*	**100**		FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:	**100**		
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≦3.0*

____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 09/30/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 33

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.5495 | Long: -87.5177 | Datum:

Soil Map Unit Name Maumee loamy fine sand, Rensselaer loam | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

Are "normal circumstances" present? ____

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *populus deltoides*	10	Y	FAC
2			
3			
4			
5			
	10	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	110 (A)		230 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 33

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 5	2.5Y 3/1	100					Silty Clay Loam	
5 - 7	5Y 2.5/1	75					Clay Loam	
	5Y 7/2	15	2.5Y 5/6	10	RM	M	Clay Loam	
17 - 22	2.5Y 3/2	100					Loamy Sand	
22 - 25+	2.5Y5/2	100					Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Maumee loamy fine sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 9/30/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 34

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.551335 | Long: -87.51837 | Datum:

Soil Map Unit Name: Maumee loamy fine sand | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *cornus stolonifer*	20	Y	
2 *frangula alnus*	5	Y	FACW
3			
4			
5			
	25	= Total Cover	
Herb stratum (Plot size:)			
1 *lythrum salicaria*	30	Y	OBL
2 *phragmites australis*	30	Y	FACW
3 *geum laciniatum*	20	Y	FACW
4 *typha angustifolia*	10	N	OBL
5 *scirpus atrovirens*	2	N	OBL
6 *juncus torreyi*	2	N	FACW
7			
8			
9			
10			
	94	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	5	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	80.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	42	x 1 =	42
FACW species	57	x 2 =	114
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	99 (A)		156 (B)

Prevalence Index = B/A = 1.58

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 34

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0 - 5	2.5Y 3/1	100					Silty Clay Loam	
5 - 7	5Y 2.5/1	75					Clay Loam	
	5Y 7/2	15	2.5Y 5/6	10	RM	M	Clay Loam	
17 - 22	2.5Y 3/2	100					Loamy Sand	
22 - 25+	2.5Y5/2	100					Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Maumee loamy fine sand

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes	No	Depth (inches):
Surface water present?		X	
Water table present?		X	
Saturation present? (includes capillary fringe)	X		

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **30-Sep-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 35**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: 41.544721 Long: -87.51663 Datum: ______

Soil Unit Name: **Rensselaer loam, calcareous subsoil variant** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *salix interior*	**50**		#N/A
2. *populus deltoides*	**5**		FAC+
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *cornus stolonifera*	**10**		FACW
2. *fraxinus pennsylvanica*	**5**		FACW
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *typha angustifolia*	**85**		OBL
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. *vitis riparia*	*5*		FACW-
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ______ Dominance Test is >50%
- ______ Prevalence Index is ≦3.0*
- ______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
- ______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 09/30/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 36

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.5437 | Long: -87.5168 | Datum:

Soil Map Unit Name: Rensselaer loam, calcareous subsoil variant | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

forested ditch

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *poplar deltoides*	40	Y	
2			
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	50	Y	FACW
2 *typha angustifolia*	30	Y	OBL
3 *lythrum salicaria*	10	N	OBL
4			
5			
6			
7			
8			
9			
10			
	90	= Total Cover	
Woody vine stratum (Plot size:)			
1 *rubus occidentalis*	5	Y	
2			
	5	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	40	x 1 =	40	
FACW species	50	x 2 =	100	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	90	(A)	140	(B)
Prevalence Index = B/A =			1.56	

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 36

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type*	Loc**	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
standing water prevented soil sample. Rensselaer loam is mapped soil

mapped soils:

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):
Water table present?	Yes		No		Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **30-Sep-15**

Applicant/Owner: ____ State: **IN** Sampling Point: **Wetland 37**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ____

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

Slope %: ____ Lat: 41.54434 Long: -87.518 Datum: ____

Soil Unit Name: **Rensselaer loam, calcareous subsoil variant** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?**	**Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____		
Wetland Hydrology Present?	Yes ____	No ____		

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *salix interior*	**50**		#N/A
2. *populus deltoides*	**5**		FAC+
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *cornus stononlifera*	**10**		#N/A
2. *fraxinus pennsylvanica*	**5**		FACW
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *typha angustifolia*	**85**		OBL
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. *Vitris riparia*	*5*		#N/A
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≦3.0*

____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 10/27/15

Applicant/Owner: ____   State: IN   Sampling Point: Upland 38

Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range: ____

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

Slope (%): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name bono silty clay   NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?   Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS
(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Active Agricultural land is the dominant upland condition

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ____)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	
Woody vine stratum (Plot size: ____)			
1			
2			
	0	= 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: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Upland 38

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-19+	2.5Y 6/3	5					Sandy Clay Loam	
	2.5Y 3/2	64					Sandy Clay Loam	
	2.5Y 7/8	1					Sandy Clay Loam	
	2.5Y 5/2	30					Sandy Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: Dense Clay
Depth (inches): 19

Hydric soil present? N

Remarks:
Dense clay, unable to bore deeper

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor City/County: Lake County Sampling Date: 10/27/15

Applicant/Owner: State: IN Sampling Point: Wetland 38

Investigator(s): Anna Hochhalter and Scott Beckmeyer Section, Township, Range:

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

Slope (%): Lat: 41.5246 Long: -87.5182 Datum:

Soil Map Unit Name: Bono silty clay NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______, soil ______, or hydrology ______ significantly disturbed? Are "normal circumstances" present? ______

Are vegetation ______, soil ______, or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

forested ditch

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1 *acer saccharinum*	20	Y	FACW
2 *poplar deltoides*	20	Y	
3 *prunus serotina*	10	Y	FACU
4			
5			
	50	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *cornus stolonifera*	10	Y	
2 *salix interior*	10	Y	FACW
3			
4			
5			
	20	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	10	Y	FACW
2 *equisetum arvense*	5	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
	15	= Total Cover	
Woody vine stratum (Plot size:)			
1 *rubus occidentalis*	5	Y	
2			
	5	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 8 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	55 (A)		135 (B)

Prevalence Index = B/A = 2.45

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 38

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
1 - 4	2.5Y 2.5/1	50					Clay Loam	
	2.5Y 7/3	35	10YR 4/6	5	CS	M	Loamy Sand	
4 - 8	2.5Y 7/3	68	10YR 4/6	2	CS	M	Loamy Sand	
	2.5Y 2.5/1	30					Loamy Sand	
8 - 28+	2.5Y 5/4	65	2.5YR 6/8	5	RM	M	Loamy Sand	
	2.5Y 3/2	30					Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Bono silty clay

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes	X	No		Depth (inches):	25
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	10

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor   City/County: Lake County   Sampling Date: 10/27/15

Applicant/Owner: ______   State: IN   Sampling Point: Upland 39

Investigator(s): Anna Hochhalter and Scott Beckmeyer   Section, Township, Range: ______

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

Slope (%): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name Bono silty clay   NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ______ (If no, explain in remarks)

Are vegetation ______ , soil ______ , or hydrology ______ significantly disturbed?   Are "normal circumstances" present? ______

Are vegetation ______ , soil ______ , or hydrology ______ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Active Agricultural land is the dominant upland condition

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: ______)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: ______)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	
Woody vine stratum (Plot size: ______)			
1			
2			
	0	= 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: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Upland 39

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type*	Loc**	Texture	Remarks
0-19+	2.5Y 6/3	5					Sandy Clay Loam	
	2.5Y 3/2	64					Sandy Clay Loam	
	2.5Y 7/8	1					Sandy Clay Loam	
	2.5Y 5/2	30					Sandy Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: Dense Clay
Depth (inches): 19

Hydric soil present? N

Remarks:
Dense clay, unable to bore deeper

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes	No	Depth (inches)
Surface water present?		X	
Water table present?		X	
Saturation present? (includes capillary fringe)		X	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 10/27/15
Applicant/Owner: | State: IN | Sampling Point: Wetland 39
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: 41.5248 | Long: -87.5229 | Datum:
Soil Map Unit Name: Bono silty clay | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

ditch

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1 *salix fragilis*	35	Y	FAC
2 *populus deltoides*	5	N	FAC
3			
4			
5			
	40	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *salix interior*	30	Y	FACW
2			
3			
4			
5			
	30	= Total Cover	
Herb stratum (Plot size:)			
1 *phragmites australis*	100	Y	FACW
2			
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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:	100.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	130	x 2 =	260
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	170 (A)		380 (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 39

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
1 - 4	2.5Y 2.5/1	50					Clay Loam	
	2.5Y 7/3	35	10YR 4/6	5	CS	M	Loamy Sand	
4 - 8	2.5Y 7/3	68	10YR 4/6	2	CS	M	Loamy Sand	
	2.5Y 2.5/1	30					Loamy Sand	
8 - 28+	2.5Y 5/4	65	2.5YR 6/8	5	RM	M	Loamy Sand	
	2.5Y 3/2	30					Loamy Sand	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Bono silty clay

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes	No	Depth (inches)
Surface water present?		X	
Water table present?	X		25
Saturation present? (includes capillary fringe)	X		10

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 10/27/15
Applicant/Owner: | State: IN | Sampling Point: Upland 40
Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):
Slope (%): | Lat: | Long: | Datum:
Soil Map Unit Name Bono silty clay | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?
Are "normal circumstances" present? ____

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Active Agricultural land is the dominant upland condition

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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:	0	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	0.00%	(A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Upland 40

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-19+	2.5Y 6/3	5					Sandy Clay Loam	
	2.5Y 3/2	64					Sandy Clay Loam	
	2.5Y 7/8	1					Sandy Clay Loam	
	2.5Y 5/2	30					Sandy Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: Dense Clay
Depth (inches): 19

Hydric soil present? N

Remarks:
Dense clay, unable to bore deeper

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 10/27/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 40

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.5237 | Long: -87.5231 | Datum:

Soil Map Unit Name: Bono silty clay | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

Are "normal circumstances" present? ____

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1 *salix interior*	35	Y	FACW
2			
3			
4			
5			
	35	= Total Cover	
Herb stratum (Plot size:)			
1 *lythrum salicaria*	80	Y	OBL
2 *juncus dudleyi*	10	N	FACW
3 *epilobium ciliatum*	5	N	FACW
4			
5			
6			
7			
8			
9			
10			
	95	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	80	x 1 =	80
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	130 (A)		180 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 40

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0 - 14	2.5Y 2.5/1	100					Clay	
14 - 20+	2.5Y 4/1	75	10YR 6/8	15	RM	M	Sandy Clay	
	2.5Y 2.5/1	10					Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
Difficult to bore. Clay
Bono silty clay

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **27-Oct-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 41**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: 41.5434 Long: -87.5182 Datum: ______

Soil Unit Name: **Rensselaer loam, calcareous subsoil variant** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. *Populus deltoides*			FAC+
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *phragmites australis*			FACW+
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%
______ Prevalence Index is ≦3.0*
______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

Remarks: (Include photo numbers here or on a separate sheet.)
Follows topography at rail embankment.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **27-Oct-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 42**

Investigator(s): **Anna Hochhalter and Scott Beckmeyer** Section, Township, Range: ______

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

Slope %: ______ Lat: 41.535 Long: -87.518 Datum: ______

Soil Unit Name: **Bono silty clay** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach B, which entails identifying the dominant species and does not include collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *cornus stolonifera*			FACW
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1. *Lythrum salicaria*			OBL
2. *Andropogon gerardii*			FAC-
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%
______ Prevalence Index is ≦3.0*
______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ______ **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 10/27/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 43

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.537 | Long: -87.518 | Datum:

Soil Map Unit Name: Bono silty clay | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	Y	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

No Vegetation. Soil samples were not taken due to the presence of rip-rap and standing water within wetland

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	0	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: Wetland 43

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type*	Loc**	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric soil present? Y

Remarks:
Bono silty clay is mapped soil. Rip-rap prevented soil sample.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

	Yes		No		Depth (inches):	
Surface water present?	Yes	X	No		Depth (inches):	
Water table present?	Yes		No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: NICTD West Lake Corridor | City/County: Lake County | Sampling Date: 10/27/15

Applicant/Owner: | State: IN | Sampling Point: Wetland 44

Investigator(s): Anna Hochhalter and Scott Beckmeyer | Section, Township, Range:

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

Slope (%): | Lat: 41.5379 | Long: -87.5182 | Datum:

Soil Map Unit Name: Bono silty clay | NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? ____ (If no, explain in remarks)

Are vegetation ____ , soil ____ , or hydrology ____ significantly disturbed? Are "normal circumstances" present? ____

Are vegetation ____ , soil ____ , or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y		
Hydric soil present?	Y	**Is the sampled area within a wetland?**	Y
Indicators of wetland hydrology present?	Y	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Soil sample was not taken due to standing water. Upland is mowed lawn.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size:)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size:)			
1 *typha angustifolia*	80	Y	OBL
2 *lythrum salicaria*	20	Y	OBL
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	
Woody vine stratum (Plot size:)			
1			
2			
	0	= 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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		100 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: Wetland 44

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L)**
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Very Shallow Dark Surface (TF12)
___ Other (explain in remarks)

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

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric soil present? Y

Remarks:
Bono silty clay soil mapped.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No		Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No		Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **13-Nov-15**

Applicant/Owner: State: **IL** Sampling Point: **Wetland 45**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range:

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

Slope %: Lat: 41.64409 Long: -87.5779 Datum:

Soil Unit Name: **Landfill** NWI Classification: PEM/FO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1. --			--
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ____ **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **13-Nov-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 46**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range: ______

Landform (hillside, terrace, etc.): open, flat Local relief (concave, convex, none: ______

Slope %: ______ Lat: 41.6631 Long: -87.5969 Datum: ______

Soil Unit Name: **Orthents, clayey** NWI Classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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 ______	No ______	**Is the Sampling Area within a Wetland?** **Yes** x **No** ______
Hydric Soils Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%
______ Prevalence Index is ≦3.0*
______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **13-Nov-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 47**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range: ______

Landform (hillside, terrace, etc.): open, flat Local relief (concave, convex, none: ______

Slope %: ______ Lat: 41.664 Long: -87.598 Datum: ______

Soil Unit Name: **Orthents, loamy** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **13-Nov-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 48**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range: ______

Landform (hillside, terrace, etc.): open, flat Local relief (concave, convex, none: ______

Slope %: ______ Lat: 41.663 Long: -87.598 Datum: ______

Soil Unit Name: **Orthents, loamy** NWI Classification: PF01/EMCd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps. This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **13-Nov-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 49**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range: ______

Landform (hillside, terrace, etc.): open, flat Local relief (concave, convex, none: ______

Slope %: ______ Lat: 41.626 Long: -87.526 Datum: ______

Soil Unit Name: **Urban land** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?**	**Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____		
Wetland Hydrology Present?	Yes ____	No ____		

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Cook County** Sampling Date: **13-Nov-15**

Applicant/Owner: ______ State: **IL** Sampling Point: **Wetland 50**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range: ______

Landform (hillside, terrace, etc.): Riparian hillside Local relief (concave, convex, none: ______

Slope %: ______ Lat: 41.626 Long: -87.526 Datum: ______

Soil Unit Name: **Orthents, loamy-skeletal** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **13-Nov-15**

Applicant/Owner: ______ State: **IN** Sampling Point: **Wetland 51**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range: ______

Landform (hillside, terrace, etc.): flat, open Local relief (concave, convex, none): ______

Slope %: ______ Lat: 41.625 Long: -87.518 Datum: ______

Soil Unit Name: **Urban land** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______

Are Vegetation ______ Soil ______ or hydrology ______ Significantly disturbed? Are "Normal Circumstances" present? Yes ______ 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	No	**Is the Sampling Area within a Wetland?**	**Yes** x **No**
Hydric Soils Present?	Yes	No		
Wetland Hydrology Present?	Yes	No		

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

______ Dominance Test is >50%

______ Prevalence Index is ≦3.0*

______ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)

______ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ______

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

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: **NICTD West Lake Corridor** City/County: **Lake County** Sampling Date: **13-Nov-15**

Applicant/Owner: State: **IN** Sampling Point: **Wetland 52**

Investigator(s): **Anna Hochhalter and Cheryl Nash** Section, Township, Range:

Landform (hillside, terrace, etc.): flat, open Local relief (concave, convex, none:

Slope %: Lat: 41.624 Long: -87.518 Datum:

Soil Unit Name: **Urban land** NWI Classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____

Are Vegetation ____ Soil ____ or hydrology ____ Significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	No ____	**Is the Sampling Area within a Wetland?** **Yes** x **No** ____
Hydric Soils Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
Wetland investigation used Approach C, which entails estimating the wetland boundaries based on aerial photography and National Wetland Inventory maps.
This method does not include on-site observation, identifying species, collecting soil samples or calculating floristic quality.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
Total Cover:			
Herb Stratum (Plot size: 5ft)			
1.			#N/A
2. --			--
3. --			--
4. --			--
5. --			--
6. --			--
7. --			--
8. --			--
9. --			--
10. --			--
Total Cover:			
Woody Vine Stratum (Plot size: 15ft)			
1. --			--
2. --			--
Total Cover:			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals	**0** (A)		**0** (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≦3.0*
____ Morphological Adaptations* (Provide supporting data in remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation (Explain)

*Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

APPENDIX D
Photographs of Wetland Investigation Areas

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 1	Date: 09/14/15

Direction Photo Taken:

North

Description:

Wetland 1

Photo No. 2	Date: 09/14/15

Direction Photo Taken:

Description:

Wetland 1

Wetland Soil sample

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 3	Date: 09/14/15
Direction Photo Taken: East	
Description: **Wetland 2**	

Photo No. 4	Date: 09/14/15
Direction Photo Taken:	
Description: **Wetland 2** Wetland Soil Sample	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 5	Date: 09/14/15
Direction Photo Taken: West	
Description: **Wetland 3**	

Photo No. 6	Date: 09/14/15
Direction Photo Taken:	
Description: **Wetland 3** Soil Sample	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 7	Date: 09/15/15
Direction Photo Taken: East	
Description: **Wetland 4**	

Photo No. 8	Date: 09/15/15
Direction Photo Taken: north	
Description: **Wetland 4** Soil Sample	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Hammond, IN	Project No. 60321036

Photo No. 9	Date: 09/15/15
Direction Photo Taken: South	
Description: **Wetland 5**	

Photo No. 10	Date: 09/15/15
Direction Photo Taken: north	
Description: **Wetland 5** Soils Sample	

AECOM	PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Hammond, IN	Project No. 60321036

Photo No. 11	Date: 09/15/15

Direction Photo Taken:

South

Description:

Wetland 6

Photo No. 12	Date: 09/15/15

Direction Photo Taken:

north

Description:

Wetland 6

Soils Sample

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Hammond, IN	Project No. 60321036

Photo No. 13	Date: 09/17/15
Direction Photo Taken: South	
Description: **Wetland 7**	

Photo No. 14	Date: 09/17/15
Direction Photo Taken: north	
Description: **Wetland 7**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Hammond, IN	Project No. 60321036

Photo No. 15 | **Date:** 09/17/15

Direction Photo Taken:

North

Description:

Wetland 8

Photo No. 16 | **Date:** 09/17/15

Direction Photo Taken:

north

Description:

Wetland 8

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Dyer, IN	Project No. 60321036

Photo No. **17**

Date: 09/16/15

Direction Photo Taken:

Southwest

Description:

Wetland 9

Photo No. **18**

Date: 09/16/15

Direction Photo Taken:

north

Description:

Wetland 9

Soil Sample

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Hammond, IN	Project No. 60321036

Photo No. 19	Date: 09/16/15

Direction Photo Taken:

South

Description:

Wetland 10

Photo No. 20	Date: 09/16/15

Direction Photo Taken:

north

Description:

Wetland 10

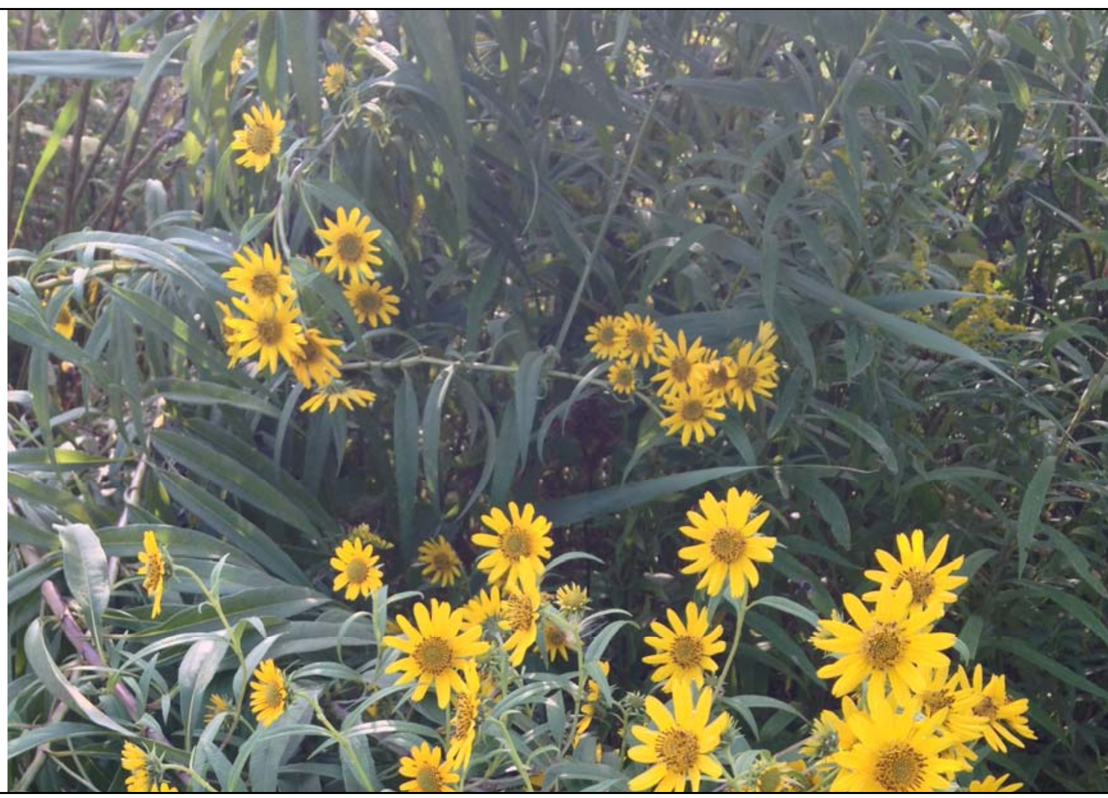
AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Dyer, IN	Project No. 60321036

Photo No. 21	Date: 09/17/15
Direction Photo Taken: South	
Description: **Wetland 11**	

Photo No. 22	Date: 09/17/15
Direction Photo Taken: West	
Description: **Wetland 11**	



AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 23	Date: 09/17/15
Direction Photo Taken: South	
Description: **Wetland 12**	

Photo No. 24	Date: 09/17/15
Direction Photo Taken: north	
Description: **Wetland 12** Soil Sample	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Chicago, IL	Project No. 60321036

Photo No. 25	Date: 09/28/15

Direction Photo Taken:

North

Description:

Wetland 13

Photo No. 26	Date: 09/28/15

Direction Photo Taken:

North

Description:

Wetland 13

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Chicago, IL	Project No. 60321036

Photo No. 27	Date: 09/28/15
Direction Photo Taken: South	
Description: **Wetland 14**	

Photo No. 28	Date: 09/28/15
Direction Photo Taken: north	
Description: **Wetland 14**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: West Lake Corridor Study Area	Project No. 60321036

Photo No. 29

Date: 09/28/15

Direction Photo Taken:

South

Description:

Wetland 15

Photo No. 30

Date: 09/28/15

Direction Photo Taken:

north

Description:

Wetland 15

Soil Sample

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Chicago, IL	Project No. 60321036

Photo No. 31	Date: 09/28/15
Direction Photo Taken: Northeast	
Description: **Wetland 16**	

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 32	Date: 09/28/15
Direction Photo Taken: South	
Description: **Wetland 17**	

Photo No. 33	Date: 09/28/15
Direction Photo Taken: north	
Description: **Wetland 17**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 34	Date: 09/28/15
Direction Photo Taken: Northeast	
Description: **Wetland 18**	

Photo No. 35	Date: 09/28/15
Direction Photo Taken: East	
Description: **Wetland 18**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 36	Date: 09/28/15

Direction Photo Taken:

South

Description:

Wetland 19

Disturbed wet prairie wetland

Photo No. 37	Date: 09/28/15

Direction Photo Taken:

North

Description:

Wetland 19

Soil sample

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 38	Date: 09/28/15

Direction Photo Taken:

Northeast

Description:

Wetland 19

Standing water in wetland. Wetland egetation growing through gravel

Photo No. 39	Date: 09/28/15

Direction Photo Taken:

North

Description:

Wetland 19

Crayfish holes

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 40	Date: 09/28/15
Direction Photo Taken: West	
Description: **Wetland 20**	

Photo No. 41	Date: 09/28/15
Direction Photo Taken: north	
Description: **Wetland 20**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 42	Date: 09/28/15
Direction Photo Taken: Southwest	
Description: **Wetland 21**	

Photo No. 43	Date: 09/28/15
Direction Photo Taken: Northeast	
Description: **Wetland 21**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Burnham, IL	Project No. 60321036

Photo No. 44	Date: 09/29/15

Direction Photo Taken:

North

Description:

Wetland 22

Photo No. 45	Date: 09/29/15

Direction Photo Taken:

West

Description:

Wetland 22

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Burnham, IL	Project No. 60321036

Photo No. 46	Date: 09/29/15

Direction Photo Taken:

South

Description:

Wetland 23

Photo No. 47	Date: 09/29/15

Direction Photo Taken:

South

Description:

Wetland 23

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Burnham, IL	Project No. 60321036

Photo No. 48	Date: 09/29/15
Direction Photo Taken: Southwest	
Description: **Wetland 24**	

Photo No. 49	Date: 09/29/15
Direction Photo Taken: Northeast	
Description: **Wetland 24**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Burnham, IL	Project No. 60321036

Photo No. 50	Date: 09/29/15

Direction Photo Taken:

Southwest

Description:

Wetland 25

Photo No. 51	Date: 09/29/15

Direction Photo Taken:

East

Description:

Wetland 26

Beaubian Woods

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	**Site Location: Chicago, IL**	**Project No.** 60321036

Photo No. 52	**Date:** 09/29/15
Direction Photo Taken: Southwest	
Description: **Wetland 26** Beaubian Woods	

Photo No. 53	**Date:** 09/29/15
Direction Photo Taken:	
Description: **Wetland 26** Soil Sample	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Burnham, IL	Project No. 60321036

Photo No.	Date:
54	09/29/15

Direction Photo Taken:

Northeast

Description:

Wetland 27

Contiguous to Burnham Prairie wetland – far western edge near Manistee Ave and 143rd St.

Photo No.	Date:
55	09/29/15

Direction Photo Taken:

Northeast

Description:

Wetland 27

Soil Sample

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	**Site Location: Burnham, IL**	**Project No.** 60321036

Photo No. **56** / **Date:** 10/27/15 **Direction Photo Taken:** Northeast **Description:** **Wetland 27** Burnham Prairie wetland – interior of wetland	
Photo No. **57** / **Date:** 10/2715 **Direction Photo Taken:** Southwest **Description:** **Wetland 27** Burnham Prairie wetland – interior of wetland	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Chicago, IL	Project No. 60321036

Photo No. 58	Date: 09/30/15

Direction Photo Taken:

Southwest

Description:

Wetland 28

Beaubian Woods – interior of wetland

Photo No. 59	Date: 09/30/15

Direction Photo Taken:

Southeast

Description:

Wetland 28

Beaubian Woods – western edge at rail embankment and 132nd St.

Photo No. 60	Date: 09/30/15	
Direction Photo Taken: Southeast		
Description: **Wetland 28** Beaubian Woods – interior of wetland		

Photo No. 61	Date: 09/30/15	
Direction Photo Taken: Southeast		
Description: **Wetland 28** Beaubian Woods – forested wetland at far eastern edge near Flatfoot Lake		

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 62	Date: 09/30/15
Direction Photo Taken: West	
Description: **Wetland 29**	

Photo No. 63	Date: 09/30/15
Direction Photo Taken: West	
Description: **Wetland 29**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 64	Date: 09/30/15
Direction Photo Taken: West	
Description: **Wetland 30**	

Photo No. 65	Date: 09/30/15
Direction Photo Taken: East	
Description: **Wetland 30**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 66	Date: 09/30/15
Direction Photo Taken: West	
Description: **Wetland 31**	

Photo No. 67	Date: 09/30/15
Direction Photo Taken: Northwest	
Description: **Wetland 31**	

AECOM	**PHOTOGRAPHIC LOG**

Project: NICTD West Lake Corridor Project	**Site Location: Munster, IN**	**Project No.** 60321036

Photo No. 68	**Date:** 09/30/15	
Direction Photo Taken: West		
Description: **Wetland 32**		

Photo No. 69	**Date:** 09/30/15	
Direction Photo Taken: West		
Description: **Wetland 32**		

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 70	Date: 09/30/15

Direction Photo Taken:

Southwest

Description:

Wetland 33

Photo No. 71	Date: 09/30/15

Direction Photo Taken:

West

Description:

Wetland 33

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. **72**

Date: 09/30/15

Direction Photo Taken:

Southwest

Description:

Wetland 34

Photo No. **73**

Date: 09/30/15

Direction Photo Taken:

Northeast

Description:

Wetland 34

Soil Sample

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 74	Date: 09/30/15
Direction Photo Taken: Northeast	
Description: **Wetland 35**	

Photo No. 75	Date: 09/30/15
Direction Photo Taken: North	
Description: **Wetland 35**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 76	Date: 09/30/15

Direction Photo Taken:

Southwest

Description:

Wetland 36

Photo No. 77	Date: 09/30/15

Direction Photo Taken:

Northeast

Description:

Wetland 36

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 78	Date: 09/30/15

Direction Photo Taken:

Northeast

Description:

Wetland 37

Photo No. 79	Date: 09/30/15

Direction Photo Taken:

Southwest

Description:

Wetland 37

AECOM **PHOTOGRAPHIC LOG**

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 80	Date: 10/27/15
Direction Photo Taken: South	
Description: **Wetland 38**	

Photo No. 81	Date: 10/27/15
Direction Photo Taken: East	
Description: **Wetland 38** Soil Sample	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 82	Date: 10/27/15
Direction Photo Taken: East	
Description: **Wetland 39**	

Photo No. 83	Date: 10/27/15
Direction Photo Taken: North	
Description: **Wetland 39**	

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. **84**	Date: 10/27/15
Direction Photo Taken: West	
Description: **Wetland 40**	

Photo No. **85**	Date: 10/27/15
Direction Photo Taken: Northeast	
Description: **Wetland 40**	

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 86	Date: 10/27/15

Direction Photo Taken:

Southwest

Description:

Wetland 41

Photo No. 87	Date: 10/27/15

Direction Photo Taken:

Northeast

Description:

Wetland 41

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 88	Date: 10/27/15

Direction Photo Taken:

Northeast

Description:

Wetland 42

Photo No. 89	Date: 10/27/15

Direction Photo Taken:

Northeast

Description:

Wetland 42

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 90	Date: 10/27/15

Direction Photo Taken:

South

Description:

Wetland 43

Photo No. 91	Date: 10/27/15

Direction Photo Taken:

East

Description:

Wetland 43

AECOM

PHOTOGRAPHIC LOG

Project: NICTD West Lake Corridor Project	Site Location: Munster, IN	Project No. 60321036

Photo No. 92 **Date:** 10/27/15

Direction Photo Taken:

East

Description:

Wetland 44

Photo No. 93 **Date:** 10/27/15

Direction Photo Taken:

West

Description:

Wetland 44

APPENDIX E
Floristic Quality Inventory Reports

SITE: NICTD
LOCALE: Wetland 1
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS
MEAN C (NATIVE SPECIES)	2.15	SPECIES RICHNESS (ALL)	22
MEAN C (ALL SPECIES)	1.27	SPECIES RICHNESS (NATIVE)	13
MEAN C (NATIVE TREES)	n/a	% NON-NATIVE	0.41
MEAN C (NATIVE SHRUBS)	7.00	WET INDICATOR (ALL)	-0.41
MEAN C (NATIVE HERBACEOUS)	1.75	WET INDICATOR (NATIVE)	-0.77
FQAI (NATIVE SPECIES)	7.77	% HYDROPHYTE (MIDWEST)	0.68
FQAI (ALL SPECIES)	5.97	% NATIVE PERENNIAL	0.36
ADJUSTED FQAI	16.56	% NATIVE ANNUAL	0.18
% C VALUE 0	0.64	% ANNUAL	0.32
% C VALUE 1-3	0.18	% PERENNIAL	0.59
% C VALUE 4-6	0.14		
% C VALUE 7-10	0.05		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
agralb	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
arclap	Arctium lappa	ARCTIUM LAPPA	Great Burdock	0	UPL	UPL	2	Forb	Biennial	Adventive
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
cirarv	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
glehed	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
heltub	Helianthus tuberosus	Helianthus tuberosus	Jerusalem-Artichoke	3	FACU	FACU	1	Forb	Perennial	Native
ipohed	Ipomoea hederacea	IPOMOEA HEDERACEA	Ivy-Leaf Morning-Glory	0	FAC	FAC	0	Forb	Annual	Adventive
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
oenbie	Oenothera biennis	Oenothera biennis	King's-Cureall	0	FACU	FACU	1	Forb	Biennial	Native
polamp	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
polhyd	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
pollap	Persicaria lapathifolia	Polygonum lapathifolium; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
salpet	Salix petiolaris	Salix petiolaris	Meadow Willow	7	OBL	FACW	-2	Shrub	Perennial	Native
setgla	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native

solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
sonole	Sonchus oleraceus	SONCHUS OLERACEUS	Common Sow-Thistle	0	FACU	FACU	1	Forb	Annual	Adventive
urtdio	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	FAC	-1	Forb	Perennial	Native

SITE: NICTD
LOCALE: Wetland 2
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.13	SPECIES RICHNESS (ALL)	18
MEAN C (ALL SPECIES)	2.61	SPECIES RICHNESS (NATIVE)	15
MEAN C (NATIVE TREES)	2.83	% NON-NATIVE	0.17
MEAN C (NATIVE SHRUBS)	n/a	WET INDICATOR (ALL)	-0.44
MEAN C (NATIVE HERBACEOUS)	4.00	WET INDICATOR (NATIVE)	-0.40
FQAI (NATIVE SPECIES)	12.14	% HYDROPHYTE (MIDWEST)	0.78
FQAI (ALL SPECIES)	11.08	% NATIVE PERENNIAL	0.67
ADJUSTED FQAI	28.60	% NATIVE ANNUAL	0.17
% C VALUE 0	0.22	% ANNUAL	0.17
% C VALUE 1-3	0.50	% PERENNIAL	0.78
% C VALUE 4-6	0.22		
% C VALUE 7-10	0.06		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
cirvul	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
cramol	Crataegus mollis	Crataegus mollis	Downy Hawthorn	2	FAC	FAC	0	Tree	Perennial	Native
cypfla	Cyperus flavescens	Cyperus flavescens poaeformis	Yellow Flat Sedge	9	OBL	OBL	-2	Sedge	Annual	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
geulac	Geum laciniatum	Geum laciniatum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
heltub	Helianthus tuberosus	Helianthus tuberosus	Jerusalem-Artichoke	3	FACU	FACU	1	Forb	Perennial	Native
parqui	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2	FACU	FACU	1	Vine	Perennial	Native
polhyd	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
quealb	Quercus alba	Quercus alba	Northern White Oak	5	FACU	FACU	1	Tree	Perennial	Native
quemac	Quercus macrocarpa	Quercus macrocarpa	Burr Oak	5	FAC	FACU	0	Tree	Perennial	Native
astsim	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
rhurad	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ulmrub	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 3
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.59	SPECIES RICHNESS (ALL)	24
MEAN C (ALL SPECIES)	1.13	SPECIES RICHNESS (NATIVE)	17
MEAN C (NATIVE TREES)	2.00	% NON-NATIVE	0.29
MEAN C (NATIVE SHRUBS)	1.00	WET INDICATOR (ALL)	-0.13
MEAN C (NATIVE HERBACEOUS)	1.54	WET INDICATOR (NATIVE)	-0.24
FQAI (NATIVE SPECIES)	6.55	% HYDROPHYTE (MIDWEST)	0.63
FQAI (ALL SPECIES)	5.51	% NATIVE PERENNIAL	0.50
ADJUSTED FQAI	13.37	% NATIVE ANNUAL	0.21
% C VALUE 0	0.50	% ANNUAL	0.25
% C VALUE 1-3	0.42	% PERENNIAL	0.71
% C VALUE 4-6	0.08		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
acesau	Acer saccharum	Acer saccharum	Sugar Maple	3	FACU	FACU	1	Tree	Perennial	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	FAC	0	Forb	Annual	Native
arclap	Arctium lappa	ARCTIUM LAPPA	Great Burdock	0	UPL	UPL	2	Forb	Biennial	Adventive
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
catspe	Catalpa speciosa	CATALPA SPECIOSA	Northern Catalpa	0	FACU	FACU	1	Tree	Perennial	Adventive
cirarv	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
elyvir	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	FACW	-1	Grass	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
heltub	Helianthus tuberosus	Helianthus tuberosus	Jerusalem-Artichoke	3	FACU	FACU	1	Forb	Perennial	Native
impcap	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
ipohed	Ipomoea hederacea	IPOMOEA HEDERACEA	Ivy-Leaf Morning-Glory	0	FAC	FAC	0	Forb	Annual	Adventive
moralb	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
phyame	Phytolacca americana	Phytolacca americana	American Pokeweed	1	FACU	FACU	1	Forb	Perennial	Native
samcan	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	1	FACW	FACW	-1	Shrub	Perennial	Native
solame	Solanum americanum	Solanum americanum	American Black Nightshade	0	FACU	FACU	1	Forb	Annual	Native

solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
astpil	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	FACU	1	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
urtdio	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	FAC	-1	Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 4
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.50	SPECIES RICHNESS (ALL)	15
MEAN C (ALL SPECIES)	1.00	SPECIES RICHNESS (NATIVE)	10
MEAN C (NATIVE TREES)	1.25	% NON-NATIVE	0.33
MEAN C (NATIVE SHRUBS)	n/a	WET INDICATOR (ALL)	-0.27
MEAN C (NATIVE HERBACEOUS)	1.50	WET INDICATOR (NATIVE)	-0.20
FQAI (NATIVE SPECIES)	4.74	% HYDROPHYTE (MIDWEST)	0.73
FQAI (ALL SPECIES)	3.87	% NATIVE PERENNIAL	0.67
ADJUSTED FQAI	12.25	% NATIVE ANNUAL	0.00
% C VALUE 0	0.53	% ANNUAL	0.00
% C VALUE 1-3	0.33	% PERENNIAL	1.00
% C VALUE 4-6	0.13		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
lysnum	Lysimachia nummularia	LYSIMACHIA NUMMULARIA	Creeping-Jenny	0	FACW	FACW	-1	Forb	Perennial	Adventive
moralb	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
parqui	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2	FACU	FACU	1	Vine	Perennial	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
salfra	Salix fragilis	SALIX FRAGILIS	Crack Willow	0	UPL	UPL	2	Tree	Perennial	Adventive
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
astpil	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	FACU	1	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ulmrub	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 5
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.22	SPECIES RICHNESS (ALL)	21
MEAN C (ALL SPECIES)	1.90	SPECIES RICHNESS (NATIVE)	18
MEAN C (NATIVE TREES)	1.00	% NON-NATIVE	0.14
MEAN C (NATIVE SHRUBS)	5.00	WET INDICATOR (ALL)	-0.71
MEAN C (NATIVE HERBACEOUS)	2.31	WET INDICATOR (NATIVE)	-0.78
FQAI (NATIVE SPECIES)	9.43	% HYDROPHYTE (MIDWEST)	0.90
FQAI (ALL SPECIES)	8.73	% NATIVE PERENNIAL	0.67
ADJUSTED FQAI	20.57	% NATIVE ANNUAL	0.19
% C VALUE 0	0.43	% ANNUAL	0.24
% C VALUE 1-3	0.24	% PERENNIAL	0.76
% C VALUE 4-6	0.33		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
desili	Desmanthus illinoensis	Desmanthus illinoensis	Prairie Bundle-Flower	3	FACU	FACU	1	Forb	Perennial	Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
elyvir	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	FACW	-1	Grass	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
solgra	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
glehed	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
plarug	Plantago rugelii	Plantago rugelii	Black-Seed Plantain	0	FAC	FAC	0	Forb	Annual	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native

saleri	Salix eriocephala	Salix eriocephala	Missouri Willow	5	FACW	FACW	-1	Shrub	Perennial	Native
scival	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	5	OBL	OBL	-2	Sedge	Perennial	Native
setgla	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 6
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.29	SPECIES RICHNESS (ALL)	21
MEAN C (ALL SPECIES)	1.86	SPECIES RICHNESS (NATIVE)	17
MEAN C (NATIVE TREES)	1.33	% NON-NATIVE	0.19
MEAN C (NATIVE SHRUBS)	7.00	WET INDICATOR (ALL)	-0.90
MEAN C (NATIVE HERBACEOUS)	2.40	WET INDICATOR (NATIVE)	-0.94
FQAI (NATIVE SPECIES)	9.46	% HYDROPHYTE (MIDWEST)	0.95
FQAI (ALL SPECIES)	8.51	% NATIVE PERENNIAL	0.62
ADJUSTED FQAI	20.64	% NATIVE ANNUAL	0.19
% C VALUE 0	0.38	% ANNUAL	0.19
% C VALUE 1-3	0.48	% PERENNIAL	0.81
% C VALUE 4-6	0.10		
% C VALUE 7-10	0.05		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
ailalt	Ailanthus altissima	AILANTHUS ALTISSIMA	Tree-of-Heaven	0	FACU	UPL	1	Tree	Perennial	Adventive
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
cramol	Crataegus mollis	Crataegus mollis	Downy Hawthorn	2	FAC	FAC	0	Tree	Perennial	Native
epicol	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
impcap	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
polhyd	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
pollap	Persicaria lapathifolia	Polygonum lapathifolium; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ribame	Ribes americanum	Ribes americanum	Wild Black Currant	7	FACW	FACW	-1	Shrub	Perennial	Native
sculat	Scutellaria lateriflora	Scutellaria lateriflora	Mad Dog Skullcap	5	OBL	OBL	-2	Forb	Perennial	Native

astsim	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ulmame	Ulmus americana	Ulmus americana	American Elm	3	FACW	FACW	-1	Tree	Perennial	Native

SITE: NICTD
LOCALE: Wetland 7
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.26	SPECIES RICHNESS (ALL)	22
MEAN C (ALL SPECIES)	1.95	SPECIES RICHNESS (NATIVE)	19
MEAN C (NATIVE TREES)	1.00	% NON-NATIVE	0.14
MEAN C (NATIVE SHRUBS)	1.00	WET INDICATOR (ALL)	-0.73
MEAN C (NATIVE HERBACEOUS)	2.71	WET INDICATOR (NATIVE)	-0.63
FQAI (NATIVE SPECIES)	9.86	% HYDROPHYTE (MIDWEST)	0.91
FQAI (ALL SPECIES)	9.17	% NATIVE PERENNIAL	0.73
ADJUSTED FQAI	21.03	% NATIVE ANNUAL	0.14
% C VALUE 0	0.32	% ANNUAL	0.14
% C VALUE 1-3	0.41	% PERENNIAL	0.86
% C VALUE 4-6	0.23		
% C VALUE 7-10	0.05		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
alitri	Alisma triviale	Alisma triviale	Northern Water-Plantain	4	OBL	OBL	-2	Forb	Perennial	Native
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
bidfro	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
geucan	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
helgig	Helianthus giganteus	Helianthus giganteus	Giant Sunflower	9	FACW	FACW	-1	Forb	Perennial	Native
lapcan	Laportea canadensis	Laportea canadensis	Canadian Wood-Nettle	3	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
moralb	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
panvir	Panicum virgatum	Panicum virgatum	Wand Panic Grass	5	FAC	FAC	0	Grass	Perennial	Native
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
rhuhir	Rhus hirta	Rhus typhina	Staghorn Sumac	1	UPL	UPL	2	Tree	Perennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native

typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0 OBL	OBL	-2 Forb	Perennial	Adventive

SITE: NICTD
LOCALE: Wetland 8
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.95	SPECIES RICHNESS (ALL)	26
MEAN C (ALL SPECIES)	1.58	SPECIES RICHNESS (NATIVE)	21
MEAN C (NATIVE TREES)	1.00	% NON-NATIVE	0.19
MEAN C (NATIVE SHRUBS)	1.00	WET INDICATOR (ALL)	-0.58
MEAN C (NATIVE HERBACEOUS)	2.19	WET INDICATOR (NATIVE)	-0.62
FQAI (NATIVE SPECIES)	8.95	% HYDROPHYTE (MIDWEST)	0.81
FQAI (ALL SPECIES)	8.04	% NATIVE PERENNIAL	0.65
ADJUSTED FQAI	17.55	% NATIVE ANNUAL	0.15
% C VALUE 0	0.38	% ANNUAL	0.23
% C VALUE 1-3	0.42	% PERENNIAL	0.77
% C VALUE 4-6	0.15		
% C VALUE 7-10	0.04		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	4	OBL	OBL	-2	Forb	Perennial	Native
allcer	Allium cernuum	Allium cernuum	Nodding Onion	7	FACU	FACU	1	Forb	Perennial	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	FAC	0	Forb	Annual	Native
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
bidfro	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
cxvulp	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
ipohed	Ipomoea hederacea	IPOMOEA HEDERACEA	Ivy-Leaf Morning-Glory	0	FAC	FAC	0	Forb	Annual	Adventive
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
phyame	Phytolacca americana	Phytolacca americana	American Pokeweed	1	FACU	FACU	1	Forb	Perennial	Native
poaann	Poa annua	POA ANNUA	Annual Blue Grass	0	FACU	FACU	1	Grass	Annual	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native

robpse	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0 FACU	FACU	1 Tree	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1 FACW	FACW	-1 Shrub	Perennial	Native
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1 FACU	FACU	1 Forb	Perennial	Native
astsim	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3 FAC	FACW	0 Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0 OBL	OBL	-2 Forb	Perennial	Adventive
verhas	Verbena hastata	Verbena hastata	Simpler's-Joy	4 FACW	FACW	-1 Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2 FACW	FAC	-1 Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 9
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.82	SPECIES RICHNESS (ALL)	24
MEAN C (ALL SPECIES)	2.00	SPECIES RICHNESS (NATIVE)	17
MEAN C (NATIVE TREES)	0.00	% NON-NATIVE	0.29
MEAN C (NATIVE SHRUBS)	5.00	WET INDICATOR (ALL)	-0.63
MEAN C (NATIVE HERBACEOUS)	2.64	WET INDICATOR (NATIVE)	-1.00
FQAI (NATIVE SPECIES)	11.64	% HYDROPHYTE (MIDWEST)	0.79
FQAI (ALL SPECIES)	9.80	% NATIVE PERENNIAL	0.67
ADJUSTED FQAI	23.76	% NATIVE ANNUAL	0.04
% C VALUE 0	0.42	% ANNUAL	0.04
% C VALUE 1-3	0.29	% PERENNIAL	0.92
% C VALUE 4-6	0.21		
% C VALUE 7-10	0.08		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
arclap	Arctium lappa	ARCTIUM LAPPA	Great Burdock	0	UPL	UPL	2	Forb	Biennial	Adventive
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
catspe	Catalpa speciosa	CATALPA SPECIOSA	Northern Catalpa	0	FACU	FACU	1	Tree	Perennial	Adventive
epicol	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
rhafra	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
polamp	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
pyrcal	Pyrus calleryana	PYRUS CALLERYANA	Ornamental Pear	0	UPL	UPL	2	Tree	Perennial	Adventive
pyrcom	Pyrus communis	PYRUS COMMUNIS	Pear	0	UPL	UPL	2	Tree	Perennial	Adventive
ribame	Ribes americanum	Ribes americanum	Wild Black Currant	7	FACW	FACW	-1	Shrub	Perennial	Native
rospal	Rosa palustris	Rosa palustris	Swamp Rose	7	OBL	OBL	-2	Shrub	Perennial	Native
samcan	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	1	FACW	FACW	-1	Shrub	Perennial	Native
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
spapec	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4	FACW	FACW	-1	Grass	Perennial	Native

astvim	Symphyotrichum racemosum	Aster vimineus	Fragile-Stem American-Aste	5	FACW	FACW	-1	Forb	Perennial	Native
toxrad	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
verhas	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 10
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.95	SPECIES RICHNESS (ALL)	26
MEAN C (ALL SPECIES)	1.58	SPECIES RICHNESS (NATIVE)	21
MEAN C (NATIVE TREES)	1.00	% NON-NATIVE	0.19
MEAN C (NATIVE SHRUBS)	1.00	WET INDICATOR (ALL)	-0.58
MEAN C (NATIVE HERBACEOUS)	2.19	WET INDICATOR (NATIVE)	-0.62
FQAI (NATIVE SPECIES)	8.95	% HYDROPHYTE (MIDWEST)	0.81
FQAI (ALL SPECIES)	8.04	% NATIVE PERENNIAL	0.65
ADJUSTED FQAI	17.55	% NATIVE ANNUAL	0.15
% C VALUE 0	0.38	% ANNUAL	0.23
% C VALUE 1-3	0.42	% PERENNIAL	0.77
% C VALUE 4-6	0.15		
% C VALUE 7-10	0.04		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	4	OBL	OBL	-2	Forb	Perennial	Native
allcer	Allium cernuum	Allium cernuum	Nodding Onion	7	FACU	FACU	1	Forb	Perennial	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	FAC	0	Forb	Annual	Native
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
bidfro	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
cxvulp	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
ipohed	Ipomoea hederacea	IPOMOEA HEDERACEA	Ivy-Leaf Morning-Glory	0	FAC	FAC	0	Forb	Annual	Adventive
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
phyame	Phytolacca americana	Phytolacca americana	American Pokeweed	1	FACU	FACU	1	Forb	Perennial	Native
poaann	Poa annua	POA ANNUA	Annual Blue Grass	0	FACU	FACU	1	Grass	Annual	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native

robpse	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	FACU	1 Tree	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1 Shrub	Perennial	Native
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1 Forb	Perennial	Native
astsim	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0 Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2 Forb	Perennial	Adventive
verhas	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1 Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1 Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 12
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS
MEAN C (NATIVE SPECIES)	2.15	SPECIES RICHNESS (ALL)	15
MEAN C (ALL SPECIES)	1.87	SPECIES RICHNESS (NATIVE)	13
MEAN C (NATIVE TREES)	n/a	% NON-NATIVE	0.13
MEAN C (NATIVE SHRUBS)	3.50	WET INDICATOR (ALL)	-0.93
MEAN C (NATIVE HERBACEOUS)	1.91	WET INDICATOR (NATIVE)	-0.77
FQAI (NATIVE SPECIES)	7.77	% HYDROPHYTE (MIDWEST)	0.87
FQAI (ALL SPECIES)	7.23	% NATIVE PERENNIAL	0.67
ADJUSTED FQAI	20.05	% NATIVE ANNUAL	0.20
% C VALUE 0	0.40	% ANNUAL	0.20
% C VALUE 1-3	0.27	% PERENNIAL	0.80
% C VALUE 4-6	0.33		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
coralb	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
solame	Solanum americanum	Solanum americanum	American Black Nightshade	0	FACU	FACU	1	Forb	Annual	Native
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
verhas	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native

SITE: NICTD
LOCALE: Wetland 15
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.00	SPECIES RICHNESS (ALL)	12
MEAN C (ALL SPECIES)	1.50	SPECIES RICHNESS (NATIVE)	9
MEAN C (NATIVE TREES)	2.00	% NON-NATIVE	0.25
MEAN C (NATIVE SHRUBS)	0.00	WET INDICATOR (ALL)	-1.08
MEAN C (NATIVE HERBACEOUS)	2.00	WET INDICATOR (NATIVE)	-1.00
FQAI (NATIVE SPECIES)	6.00	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)	5.20	% NATIVE PERENNIAL	0.58
ADJUSTED FQAI	17.32	% NATIVE ANNUAL	0.17
% C VALUE 0	0.50	% ANNUAL	0.17
% C VALUE 1-3	0.33	% PERENNIAL	0.83
% C VALUE 4-6	0.17		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii	Common Spike-Rush	2	OBL	OBL	-2	Sedge	Perennial	Native
helgro	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	2	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
solrug	Solidago rugosa	Solidago rugosa	Wrinkle-Leaf Goldenrod	6	FAC	FAC	0	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE:	NICTD
LOCALE:	Wetland 18
BY:	Anna Hochhalter
NOTES:	

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)		2.67	SPECIES RICHNESS (ALL)	5
MEAN C (ALL SPECIES)		1.60	SPECIES RICHNESS (NATIVE)	3
MEAN C (NATIVE TREES)	n/a		% NON-NATIVE	0.40
MEAN C (NATIVE SHRUBS)	n/a		WET INDICATOR (ALL)	-1.80
MEAN C (NATIVE HERBACEOUS)		2.67	WET INDICATOR (NATIVE)	-1.67
FQAI (NATIVE SPECIES)		4.62	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)		3.58	% NATIVE PERENNIAL	0.40
ADJUSTED FQAI		20.66	% NATIVE ANNUAL	0.20
% C VALUE 0		0.40	% ANNUAL	0.20
% C VALUE 1-3		0.40	% PERENNIAL	0.80
% C VALUE 4-6		0.20		
% C VALUE 7-10		0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii	Common Spike-Rush	2	OBL	OBL	-2	Sedge	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive

SITE: NICTD
LOCALE: Wetland 19
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.60	SPECIES RICHNESS (ALL)	13
MEAN C (ALL SPECIES)	2.77	SPECIES RICHNESS (NATIVE)	10
MEAN C (NATIVE TREES)	5.50	% NON-NATIVE	0.23
MEAN C (NATIVE SHRUBS)	3.50	WET INDICATOR (ALL)	-0.62
MEAN C (NATIVE HERBACEOUS)	3.00	WET INDICATOR (NATIVE)	-1.00
FQAI (NATIVE SPECIES)	11.38	% HYDROPHYTE (MIDWEST)	0.77
FQAI (ALL SPECIES)	9.98	% NATIVE PERENNIAL	0.62
ADJUSTED FQAI	31.57	% NATIVE ANNUAL	0.15
% C VALUE 0	0.23	% ANNUAL	0.15
% C VALUE 1-3	0.38	% PERENNIAL	0.85
% C VALUE 4-6	0.31		
% C VALUE 7-10	0.08		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
CORALB	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
elaumb	Elaeagnus umbellata	ELAEAGNUS UMBELLATA	Autumn-Olive	0	UPL	UPL	2	Shrub	Perennial	Adventive
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii	Common Spike-Rush	2	OBL	OBL	-2	Sedge	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
polhyd	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
picabi	Picea abies	0	Norway Spruce	0	UPL	UPL	2	Tree	Perennial	Adventive
pinban	Pinus banksiana	Pinus banksiana	Jack Pine	9	FACU	FACU	1	Tree	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native

SITE:	NICTD
LOCALE:	Wetland 20
BY:	Anna Hochhalter
NOTES:	

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS
MEAN C (NATIVE SPECIES)	2.33	SPECIES RICHNESS (ALL)	11
MEAN C (ALL SPECIES)	1.91	SPECIES RICHNESS (NATIVE)	9
MEAN C (NATIVE TREES)	n/a	% NON-NATIVE	0.18
MEAN C (NATIVE SHRUBS)	1.00	WET INDICATOR (ALL)	-1.36
MEAN C (NATIVE HERBACEOUS)	2.57	WET INDICATOR (NATIVE)	-1.22
FQAI (NATIVE SPECIES)	7.00	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)	6.33	% NATIVE PERENNIAL	0.73
ADJUSTED FQAI	21.11	% NATIVE ANNUAL	0.09
% C VALUE 0	0.36	% ANNUAL	0.09
% C VALUE 1-3	0.36	% PERENNIAL	0.91
% C VALUE 4-6	0.27		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii	Common Spike-Rush	2	OBL	OBL	-2	Sedge	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
scipun	Schoenoplectus pungens	Scirpus pungens	Three-Square	5	OBL	OBL	-2	Sedge	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 21
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.86	SPECIES RICHNESS (ALL)	9
MEAN C (ALL SPECIES)	3.00	SPECIES RICHNESS (NATIVE)	7
MEAN C (NATIVE TREES)	n/a	% NON-NATIVE	0.22
MEAN C (NATIVE SHRUBS)	3.50	WET INDICATOR (ALL)	-1.44
MEAN C (NATIVE HERBACEOUS)	4.00	WET INDICATOR (NATIVE)	-1.43
FQAI (NATIVE SPECIES)	10.21	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)	9.00	% NATIVE PERENNIAL	0.67
ADJUSTED FQAI	34.02	% NATIVE ANNUAL	0.11
% C VALUE 0	0.22	% ANNUAL	0.11
% C VALUE 1-3	0.22	% PERENNIAL	0.89
% C VALUE 4-6	0.56		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
CORALB	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii	Common Spike-Rush	2	OBL	OBL	-2	Sedge	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lysnum	Lysimachia nummularia	LYSIMACHIA NUMMULARIA	Creeping-Jenny	0	FACW	FACW	-1	Forb	Perennial	Adventive
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
scipun	Schoenoplectus pungens	Scirpus pungens	Three-Square	5	OBL	OBL	-2	Sedge	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native

SITE: NICTD
LOCALE: Wetland 26
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.93	SPECIES RICHNESS (ALL)	55
MEAN C (ALL SPECIES)	3.15	SPECIES RICHNESS (NATIVE)	44
MEAN C (NATIVE TREES)	2.43	% NON-NATIVE	0.20
MEAN C (NATIVE SHRUBS)	3.00	WET INDICATOR (ALL)	-0.60
MEAN C (NATIVE HERBACEOUS)	4.39	WET INDICATOR (NATIVE)	-0.73
FQAI (NATIVE SPECIES)	26.08	% HYDROPHYTE (MIDWEST)	0.78
FQAI (ALL SPECIES)	23.33	% NATIVE PERENNIAL	0.71
ADJUSTED FQAI	35.17	% NATIVE ANNUAL	0.09
% C VALUE 0	0.24	% ANNUAL	0.09
% C VALUE 1-3	0.31	% PERENNIAL	0.91
% C VALUE 4-6	0.36		
% C VALUE 7-10	0.09		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
agralb	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	4	OBL	OBL	-2	Forb	Perennial	Native
allcer	Allium cernuum	Allium cernuum	Nodding Onion	7	FACU	FACU	1	Forb	Perennial	Native
andger	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	FACU	0	Grass	Perennial	Native
aspoff	Asparagus officinalis	ASPARAGUS OFFICINALIS	Asparagus	0	FACU	FACU	1	Forb	Perennial	Adventive
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
bidcor	Bidens trichosperma	Bidens coronata	Crowned Beggarticks	9	OBL	OBL	-2	Forb	Annual	Native
cxproj	Carex projecta	Carex projecta	Necklace Sedge	4	FACW	FACW	-1	Sedge	Perennial	Native
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
ciralp	Circaea alpina	Circaea alpina	Small Enchanter's-Nightshade	10	FACW	FACW	-1	Forb	Perennial	Native
coralb	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
cramol	Crataegus mollis	Crataegus mollis	Downy Hawthorn	2	FAC	FAC	0	Tree	Perennial	Native
cypfla	Cyperus flavescens	Cyperus flavescens poaeformis	Yellow Flat Sedge	9	OBL	OBL	-2	Sedge	Annual	Native
elaang	Elaeagnus angustifolia	ELAEAGNUS ANGUSTIFOLIA	Russian-Olive	0	FACU	FACU	1	Shrub	Perennial	Adventive
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
equhye	Equisetum hyemale	Equisetum hyemale	Tall Scouring-Rush	3	FACW	FAC	-1	Fern	Perennial	Native
eupper	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4	OBL	FACW	-2	Forb	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
rhafra	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
geulac	Geum laciniatum	Geum laciniatum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native

heltub	Helianthus tuberosus	Helianthus tuberosus	Jerusalem-Artichoke	3	FACU	FACU	1	Forb	Perennial	Native
impcap	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
irivir	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lapcan	Laportea canadensis	Laportea canadensis	Canadian Wood-Nettle	3	FACW	FACW	-1	Forb	Perennial	Native
lobsip	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	6	OBL	FACW	-2	Forb	Perennial	Native
lonmaa	Lonicera maackii	LONICERA MAACKII	Amur Honeysuckle	0	UPL	UPL	2	Shrub	Perennial	Adventive
lycame	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	5	OBL	OBL	-2	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
moralb	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
pentub	Penstemon tubaeflorus	PENSTEMON TUBAEFLORUS	Western Beardstongue	0	UPL	UPL	2	Forb	Perennial	Adventive
pensed	Penthorum sedoides	Penthorum sedoides	Ditch-Stonecrop	5	OBL	OBL	-2	Forb	Perennial	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
pruser	Prunus serotina	Prunus serotina	Black Cherry	1	FACU	FACU	1	Tree	Perennial	Native
quemac	Quercus macrocarpa	Quercus macrocarpa	Burr Oak	5	FAC	FACU	0	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
rhuhir	Rhus hirta	Rhus typhina	Staghorn Sumac	1	UPL	UPL	2	Tree	Perennial	Native
rubocc	Rubus occidentalis	Rubus occidentalis	Black Raspberry	2	UPL	UPL	2	Shrub	Perennial	Native
rudtri	Rudbeckia triloba	Rudbeckia triloba	Brown-Eyed-Susan	3	FACU	FACU	1	Forb	Annual	Native
saglat	Sagittaria latifolia	Sagittaria latifolia	Duck-Potato	4	OBL	OBL	-2	Forb	Perennial	Native
sagrig	Sagittaria rigida	Sagittaria rigida	Sessile-Fruit Arrowhead	10	OBL	OBL	-2	Forb	Perennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
scipun	Schoenoplectus pungens	Scirpus pungens	Three-Square	5	OBL	OBL	-2	Sedge	Perennial	Native
silint	Silphium integrifolium	Silphium integrifolium deamii	Entire-Leaf Rosinweed	5	UPL	FAC	2	Forb	Perennial	Native
solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
astsim	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native
tilame	Tilia americana	Tilia americana	American Basswood	5	FACU	FACU	1	Tree	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
typlat	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	1	OBL	OBL	-2	Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 27
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.56	SPECIES RICHNESS (ALL)	23
MEAN C (ALL SPECIES)	2.78	SPECIES RICHNESS (NATIVE)	18
MEAN C (NATIVE TREES)	4.50	% NON-NATIVE	0.22
MEAN C (NATIVE SHRUBS)	2.00	WET INDICATOR (ALL)	-0.43
MEAN C (NATIVE HERBACEOUS)	3.50	WET INDICATOR (NATIVE)	-0.33
FQAI (NATIVE SPECIES)	15.08	% HYDROPHYTE (MIDWEST)	0.83
FQAI (ALL SPECIES)	13.34	% NATIVE PERENNIAL	0.74
ADJUSTED FQAI	31.45	% NATIVE ANNUAL	0.04
% C VALUE 0	0.30	% ANNUAL	0.04
% C VALUE 1-3	0.26	% PERENNIAL	0.96
% C VALUE 4-6	0.35		
% C VALUE 7-10	0.09		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ailalt	Ailanthus altissima	AILANTHUS ALTISSIMA	Tree-of-Heaven	0	FACU	UPL	1	Tree	Perennial	Adventive
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
geulac	Geum laciniatum	Geum laciniatum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
helgro	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	2	FACW	FACW	-1	Forb	Perennial	Native
irivir	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
onosen	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	8	FACW	FACW	-1	Fern	Perennial	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
poptre	Populus tremuloides	Populus tremuloides	Quaking Aspen	4	FAC	FAC	0	Tree	Perennial	Native
quemac	Quercus macrocarpa	Quercus macrocarpa	Burr Oak	5	FAC	FACU	0	Tree	Perennial	Native
querub	Quercus rubra	Quercus rubra	Northern Red Oak	7	FACU	FACU	1	Tree	Perennial	Native
rubocc	Rubus occidentalis	Rubus occidentalis	Black Raspberry	2	UPL	UPL	2	Shrub	Perennial	Native
salbab	Salix babylonica	SALIX BABYLONICA	Chinese Willow	0	FAC	FACW	0	Tree	Perennial	Adventive
silint	Silphium integrifolium	Silphium integrifolium deamii	Entire-Leaf Rosinweed	5	UPL	FAC	2	Forb	Perennial	Native
solrug	Solidago rugosa	Solidago rugosa	Wrinkle-Leaf Goldenrod	6	FAC	FAC	0	Forb	Perennial	Native

typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0 OBL	OBL	-2 Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2 FACW	FAC	-1 Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 28
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.83	SPECIES RICHNESS (ALL)	35
MEAN C (ALL SPECIES)	3.29	SPECIES RICHNESS (NATIVE)	30
MEAN C (NATIVE TREES)	2.67	% NON-NATIVE	0.14
MEAN C (NATIVE SHRUBS)	3.33	WET INDICATOR (ALL)	-0.83
MEAN C (NATIVE HERBACEOUS)	4.13	WET INDICATOR (NATIVE)	-0.93
FQAI (NATIVE SPECIES)	21.00	% HYDROPHYTE (MIDWEST)	0.86
FQAI (ALL SPECIES)	19.44	% NATIVE PERENNIAL	0.71
ADJUSTED FQAI	35.49	% NATIVE ANNUAL	0.14
% C VALUE 0	0.20	% ANNUAL	0.14
% C VALUE 1-3	0.31	% PERENNIAL	0.86
% C VALUE 4-6	0.34		
% C VALUE 7-10	0.14		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	4	OBL	OBL	-2	Forb	Perennial	Native
allcer	Allium cernuum	Allium cernuum	Nodding Onion	7	FACU	FACU	1	Forb	Perennial	Native
andger	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	FACU	0	Grass	Perennial	Native
anecan	Anemone canadensis	Anemone canadensis	Round-Leaf Thimbleweed	4	FACW	FACW	-1	Forb	Perennial	Native
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
bidcor	Bidens trichosperma	Bidens coronata	Crowned Beggarticks	9	OBL	OBL	-2	Forb	Annual	Native
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
ciralp	Circaea alpina	Circaea alpina	Small Enchanter's-Nightshade	10	FACW	FACW	-1	Forb	Perennial	Native
cypery	Cyperus erythrorhizos	Cyperus erythrorhizos	Red-Root Flat Sedge	2	OBL	OBL	-2	Sedge	Annual	Native
elyvir	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	FACW	-1	Grass	Perennial	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
impcap	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
lapcan	Laportea canadensis	Laportea canadensis	Canadian Wood-Nettle	3	FACW	FACW	-1	Forb	Perennial	Native
lobsip	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	6	OBL	FACW	-2	Forb	Perennial	Native
lycuni	Lycopus uniflorus	Lycopus uniflorus	Northern Water-Horehound	7	OBL	OBL	-2	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
polhyd	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native

quemac	Quercus macrocarpa	Quercus macrocarpa	Burr Oak	5	FAC	FACU	0	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ribame	Ribes americanum	Ribes americanum	Wild Black Currant	7	FACW	FACW	-1	Shrub	Perennial	Native
robpse	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	FACU	1	Tree	Perennial	Adventive
rubocc	Rubus occidentalis	Rubus occidentalis	Black Raspberry	2	UPL	UPL	2	Shrub	Perennial	Native
rudhir	Rudbeckia hirta	Rudbeckia hirta	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
saglat	Sagittaria latifolia	Sagittaria latifolia	Duck-Potato	4	OBL	OBL	-2	Forb	Perennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native
thadas	Thalictrum dasycarpum	Thalictrum dasycarpum hypoglaucum	Purple Meadow-Rue	5	FACW	FACW	-1	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ulmpum	Ulmus pumila	ULMUS PUMILA	Siberian Elm	0	UPL	FACU	2	Tree	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 30
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)		1.00	SPECIES RICHNESS (ALL)	1
MEAN C (ALL SPECIES)		1.00	SPECIES RICHNESS (NATIVE)	1
MEAN C (NATIVE TREES)	n/a		% NON-NATIVE	0.00
MEAN C (NATIVE SHRUBS)	n/a		WET INDICATOR (ALL)	-1.00
MEAN C (NATIVE HERBACEOUS)		1.00	WET INDICATOR (NATIVE)	-1.00
FQAI (NATIVE SPECIES)		1.00	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)		1.00	% NATIVE PERENNIAL	1.00
ADJUSTED FQAI		10.00	% NATIVE ANNUAL	0.00
% C VALUE 0		0.00	% ANNUAL	0.00
% C VALUE 1-3		1.00	% PERENNIAL	1.00
% C VALUE 4-6		0.00		
% C VALUE 7-10		0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native

SITE: NICTD
LOCALE: Wetland 31
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.94	SPECIES RICHNESS (ALL)	22
MEAN C (ALL SPECIES)	1.41	SPECIES RICHNESS (NATIVE)	16
MEAN C (NATIVE TREES)	1.40	% NON-NATIVE	0.27
MEAN C (NATIVE SHRUBS)	3.50	WET INDICATOR (ALL)	-0.68
MEAN C (NATIVE HERBACEOUS)	1.89	WET INDICATOR (NATIVE)	-0.75
FQAI (NATIVE SPECIES)	7.75	% HYDROPHYTE (MIDWEST)	0.86
FQAI (ALL SPECIES)	6.61	% NATIVE PERENNIAL	0.64
ADJUSTED FQAI	16.52	% NATIVE ANNUAL	0.09
% C VALUE 0	0.55	% ANNUAL	0.09
% C VALUE 1-3	0.23	% PERENNIAL	0.91
% C VALUE 4-6	0.23		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	4	OBL	OBL	-2	Forb	Perennial	Native
cxbebb	Carex bebbii	Carex bebbii	Bebb's Sedge	6	OBL	OBL	-2	Sedge	Perennial	Native
CORALB	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
FRAALN	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
frapen	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
lonjap	Lonicera japonica	LONICERA JAPONICA	Japanese Honeysuckle	0	FACU	FACU	1	Vine	Perennial	Adventive
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
malcor	Malus coronaria	Malus coronaria	Wild Sweet Crab Apple	4	UPL	UPL	2	Tree	Perennial	Native
perhyr	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
robpse	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	FACU	1	Tree	Perennial	Adventive
salbab	Salix babylonica	SALIX BABYLONICA	Chinese Willow	0	FAC	FACW	0	Tree	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native

typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive

SITE: NICTD
LOCALE: Wetland 33
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.25	SPECIES RICHNESS (ALL)	11
MEAN C (ALL SPECIES)	1.64	SPECIES RICHNESS (NATIVE)	8
MEAN C (NATIVE TREES)	2.00	% NON-NATIVE	0.27
MEAN C (NATIVE SHRUBS)	6.00	WET INDICATOR (ALL)	-0.27
MEAN C (NATIVE HERBACEOUS)	1.60	WET INDICATOR (NATIVE)	-0.63
FQAI (NATIVE SPECIES)	6.36	% HYDROPHYTE (MIDWEST)	0.82
FQAI (ALL SPECIES)	5.43	% NATIVE PERENNIAL	0.73
ADJUSTED FQAI	19.19	% NATIVE ANNUAL	0.00
% C VALUE 0	0.45	% ANNUAL	0.00
% C VALUE 1-3	0.36	% PERENNIAL	1.00
% C VALUE 4-6	0.18		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aspoff	Asparagus officinalis	ASPARAGUS OFFICINALIS	Asparagus	0	FACU	FACU	1	Forb	Perennial	Adventive
coralb	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
elaang	Elaeagnus angustifolia	ELAEAGNUS ANGUSTIFOLIA	Russian-Olive	0	FACU	FACU	1	Shrub	Perennial	Adventive
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
solrug	Solidago rugosa	Solidago rugosa	Wrinkle-Leaf Goldenrod	6	FAC	FAC	0	Forb	Perennial	Native
typlat	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	1	OBL	OBL	-2	Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 34
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.91	SPECIES RICHNESS (ALL)	14
MEAN C (ALL SPECIES)	2.29	SPECIES RICHNESS (NATIVE)	11
MEAN C (NATIVE TREES)	2.00	% NON-NATIVE	0.21
MEAN C (NATIVE SHRUBS)	6.00	WET INDICATOR (ALL)	-1.29
MEAN C (NATIVE HERBACEOUS)	2.67	WET INDICATOR (NATIVE)	-1.18
FQAI (NATIVE SPECIES)	9.65	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)	8.55	% NATIVE PERENNIAL	0.64
ADJUSTED FQAI	25.79	% NATIVE ANNUAL	0.14
% C VALUE 0	0.36	% ANNUAL	0.14
% C VALUE 1-3	0.29	% PERENNIAL	0.86
% C VALUE 4-6	0.29		
% C VALUE 7-10	0.07		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
CORALB	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
FRAALN	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
geulact	Geum laciniatum var. trichocarpum	Geum laciniatum trichocarpum	Rough Avens	2	FACW	FACW	-1	Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lycuni	Lycopus uniflorus	Lycopus uniflorus	Northern Water-Horehound	7	OBL	OBL	-2	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
polhyd	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive

SITE: NICTD
LOCALE: Wetland 36
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.00	SPECIES RICHNESS (ALL)	11
MEAN C (ALL SPECIES)	2.45	SPECIES RICHNESS (NATIVE)	9
MEAN C (NATIVE TREES)	2.00	% NON-NATIVE	0.18
MEAN C (NATIVE SHRUBS)	n/a	WET INDICATOR (ALL)	-1.18
MEAN C (NATIVE HERBACEOUS)	3.13	WET INDICATOR (NATIVE)	-1.00
FQAI (NATIVE SPECIES)	9.00	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)	8.14	% NATIVE PERENNIAL	0.64
ADJUSTED FQAI	27.14	% NATIVE ANNUAL	0.18
% C VALUE 0	0.36	% ANNUAL	0.18
% C VALUE 1-3	0.18	% PERENNIAL	0.82
% C VALUE 4-6	0.36		
% C VALUE 7-10	0.09		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
bidcer	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lycuni	Lycopus uniflorus	Lycopus uniflorus	Northern Water-Horehound	7	OBL	OBL	-2	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
pollap	Persicaria lapathifolia	Polygonum lapathifolium ; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
astnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive

SITE: NICTD
LOCALE: Wetland 38
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.06
MEAN C (ALL SPECIES)	1.74
MEAN C (NATIVE TREES)	1.25
MEAN C (NATIVE SHRUBS)	2.75
MEAN C (NATIVE HERBACEOUS)	2.14
FQAI (NATIVE SPECIES)	8.25
FQAI (ALL SPECIES)	7.57
ADJUSTED FQAI	18.93
% C VALUE 0	0.42
% C VALUE 1-3	0.37
% C VALUE 4-6	0.16
% C VALUE 7-10	0.05

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	19
SPECIES RICHNESS (NATIVE)	16
% NON-NATIVE	0.16
WET INDICATOR (ALL)	-0.32
WET INDICATOR (NATIVE)	-0.25
% HYDROPHYTE (MIDWEST)	0.68
% NATIVE PERENNIAL	0.79
% NATIVE ANNUAL	0.05
% ANNUAL	0.05
% PERENNIAL	0.95

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
acesai	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
ascsyr	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
cxbebb	Carex bebbii	Carex bebbii	Bebb's Sedge	6	OBL	OBL	-2	Sedge	Perennial	Native
coralb	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
equflu	Equisetum fluviatile	Equisetum fluviatile	Water Horsetail	7	OBL	OBL	-2	Fern	Perennial	Native
fravir	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	1	FACU	FACU	1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
MALCOR	Malus coronaria	Malus coronaria	Wild Sweet Crab Apple	4	UPL	UPL	2	Tree	Perennial	Native
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
pruser	Prunus serotina	Prunus serotina	Black Cherry	1	FACU	FACU	1	Tree	Perennial	Native
rubocc	Rubus occidentalis	Rubus occidentalis	Black Raspberry	2	UPL	UPL	2	Shrub	Perennial	Native
saldis	Salix discolor	Salix discolor	Pussy Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
salfra	Salix fragilis	SALIX FRAGILIS	Crack Willow	0	UPL	UPL	2	Tree	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: NICTD
LOCALE: Wetland 39
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.80	SPECIES RICHNESS (ALL)	8
MEAN C (ALL SPECIES)	1.13	SPECIES RICHNESS (NATIVE)	5
MEAN C (NATIVE TREES)	1.00	% NON-NATIVE	0.38
MEAN C (NATIVE SHRUBS)	3.50	WET INDICATOR (ALL)	-0.25
MEAN C (NATIVE HERBACEOUS)	0.50	WET INDICATOR (NATIVE)	-0.40
FQAI (NATIVE SPECIES)	4.02	% HYDROPHYTE (MIDWEST)	0.75
FQAI (ALL SPECIES)	3.18	% NATIVE PERENNIAL	0.63
ADJUSTED FQAI	14.23	% NATIVE ANNUAL	0.00
% C VALUE 0	0.50	% ANNUAL	0.00
% C VALUE 1-3	0.38	% PERENNIAL	1.00
% C VALUE 4-6	0.13		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
coralb	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
moralb	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
phrausm	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
pruser	Prunus serotina	Prunus serotina	Black Cherry	1	FACU	FACU	1	Tree	Perennial	Native
salfra	Salix fragilis	SALIX FRAGILIS	Crack Willow	0	UPL	UPL	2	Tree	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native

SITE: NICTD
LOCALE: Wetland 40
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)		2.33	SPECIES RICHNESS (ALL)	7
MEAN C (ALL SPECIES)		2.00	SPECIES RICHNESS (NATIVE)	6
MEAN C (NATIVE TREES)	n/a		% NON-NATIVE	0.14
MEAN C (NATIVE SHRUBS)		1.00	WET INDICATOR (ALL)	-0.71
MEAN C (NATIVE HERBACEOUS)		2.60	WET INDICATOR (NATIVE)	-0.50
FQAI (NATIVE SPECIES)		5.72	% HYDROPHYTE (MIDWEST)	0.71
FQAI (ALL SPECIES)		5.29	% NATIVE PERENNIAL	0.71
ADJUSTED FQAI		21.60	% NATIVE ANNUAL	0.00
% C VALUE 0		0.29	% ANNUAL	0.00
% C VALUE 1-3		0.43	% PERENNIAL	0.86
% C VALUE 4-6		0.29		
% C VALUE 7-10		0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
CXSTRI	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
epicil	Epilobium ciliatum	Epilobium ciliatum	Fringed Willowherb	3	FACW	FACW	-1	Forb	Perennial	Native
fravir	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	1	FACU	FACU	1	Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	FACW	-1	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
oenbie	Oenothera biennis	Oenothera biennis	King's-Cureall	0	FACU	FACU	1	Forb	Biennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native

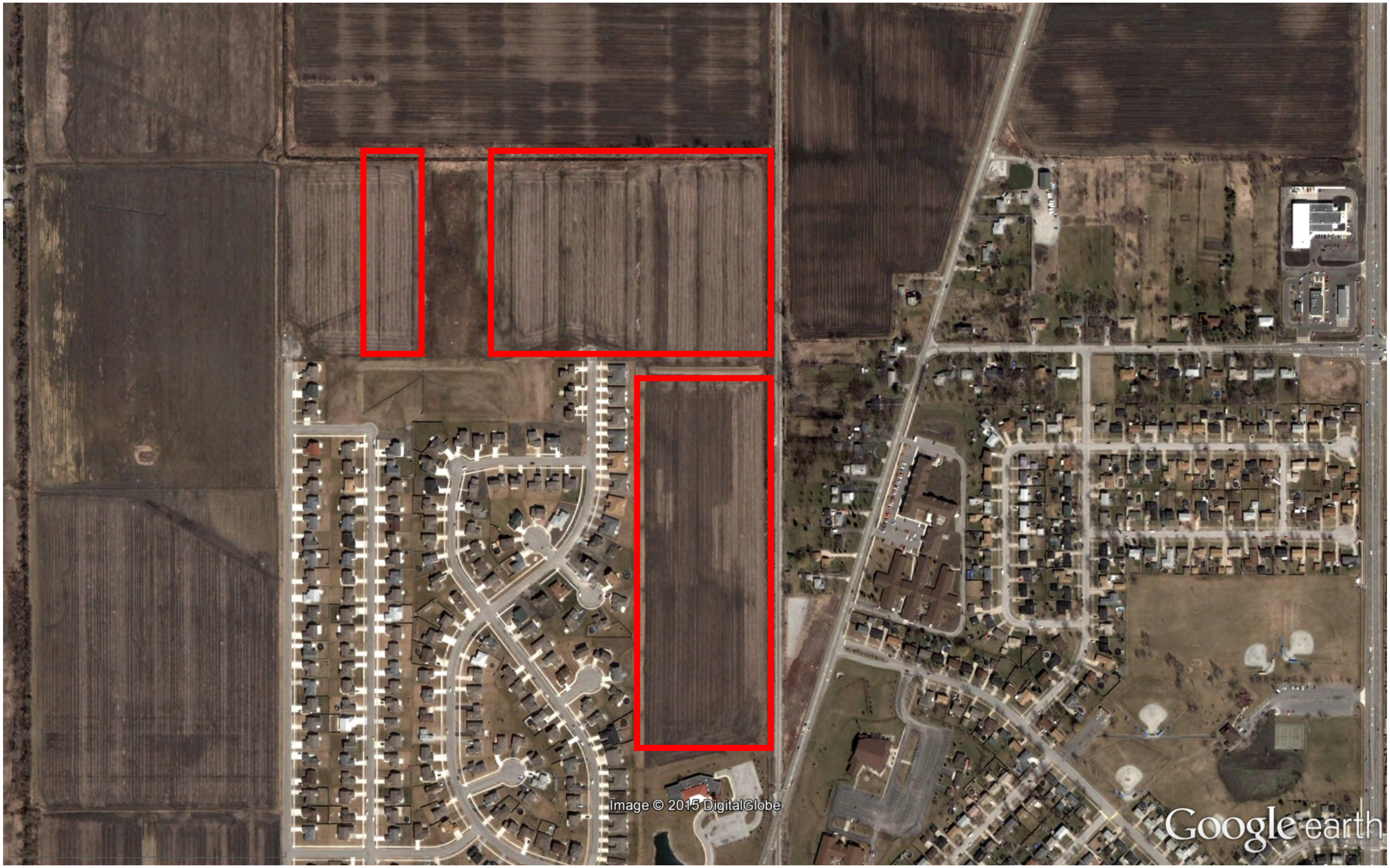
SITE: NICTD
LOCALE: Wetland 44
BY: Anna Hochhalter
NOTES:

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)		2.20	SPECIES RICHNESS (ALL)	8
MEAN C (ALL SPECIES)		1.38	SPECIES RICHNESS (NATIVE)	5
MEAN C (NATIVE TREES)	n/a		% NON-NATIVE	0.38
MEAN C (NATIVE SHRUBS)		2.67	WET INDICATOR (ALL)	-1.00
MEAN C (NATIVE HERBACEOUS)		1.00	WET INDICATOR (NATIVE)	-0.80
FQAI (NATIVE SPECIES)		4.92	% HYDROPHYTE (MIDWEST)	1.00
FQAI (ALL SPECIES)		3.89	% NATIVE PERENNIAL	0.63
ADJUSTED FQAI		17.39	% NATIVE ANNUAL	0.00
% C VALUE 0		0.38	% ANNUAL	0.00
% C VALUE 1-3		0.50	% PERENNIAL	1.00
% C VALUE 4-6		0.13		
% C VALUE 7-10		0.00		

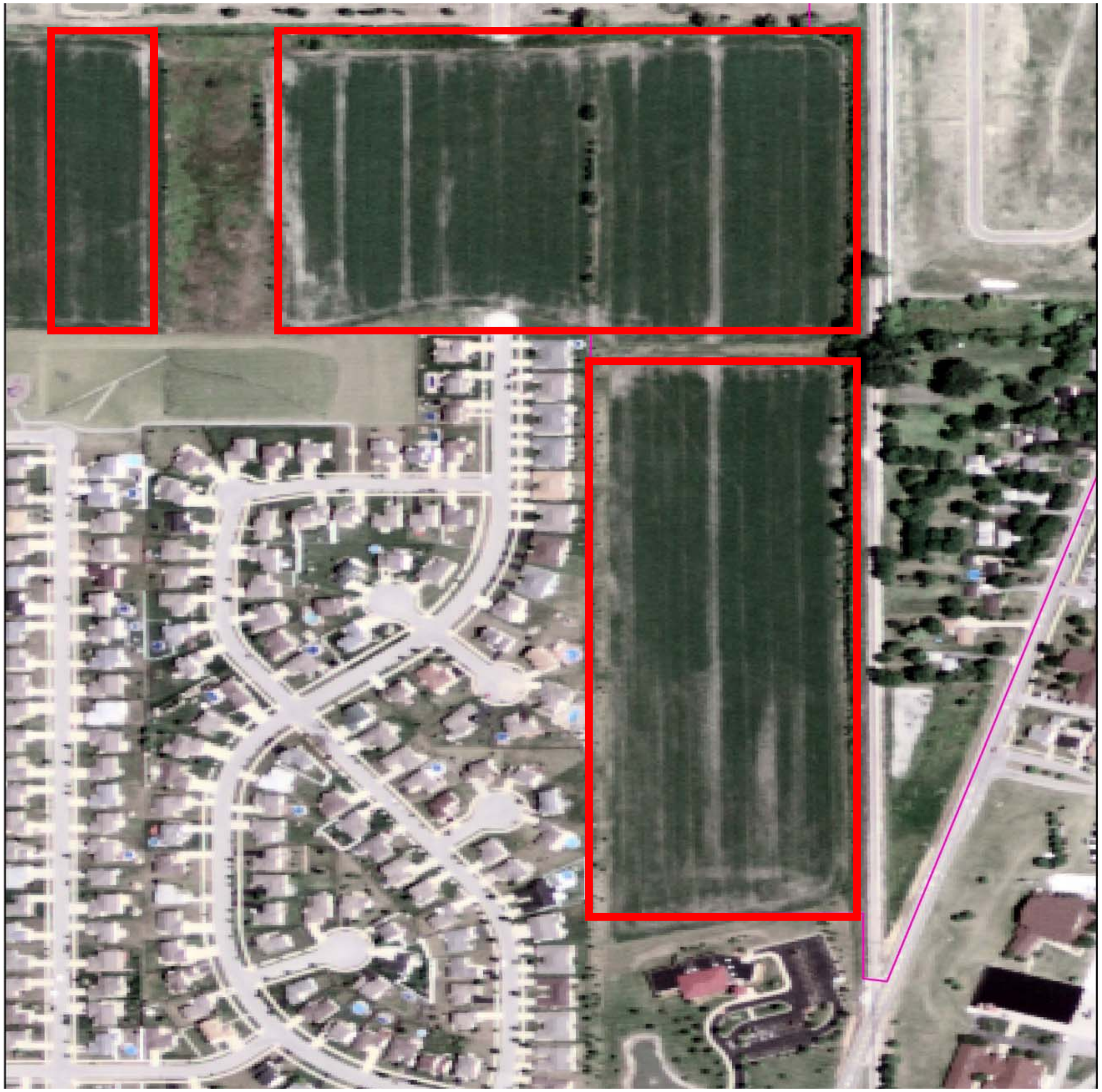
SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
CORALB	Cornus alba	Cornus stolonifera	Red Osier	6	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VITRIP	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

APPENDIX F
Agricultural Land Assessment

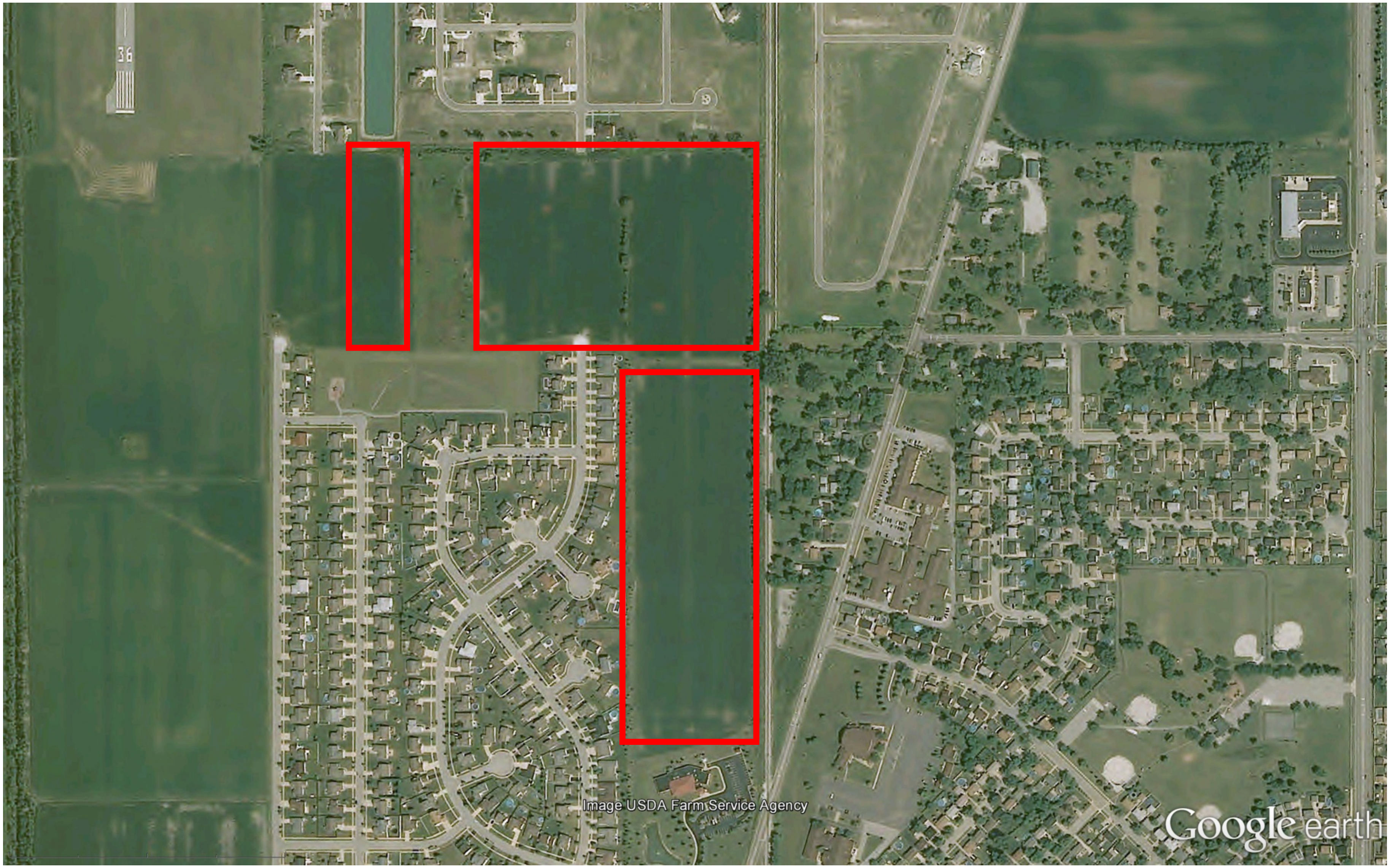
April 1998 – Normal Rainfall Year for Munster, IN Image Source: Google Earth Pro



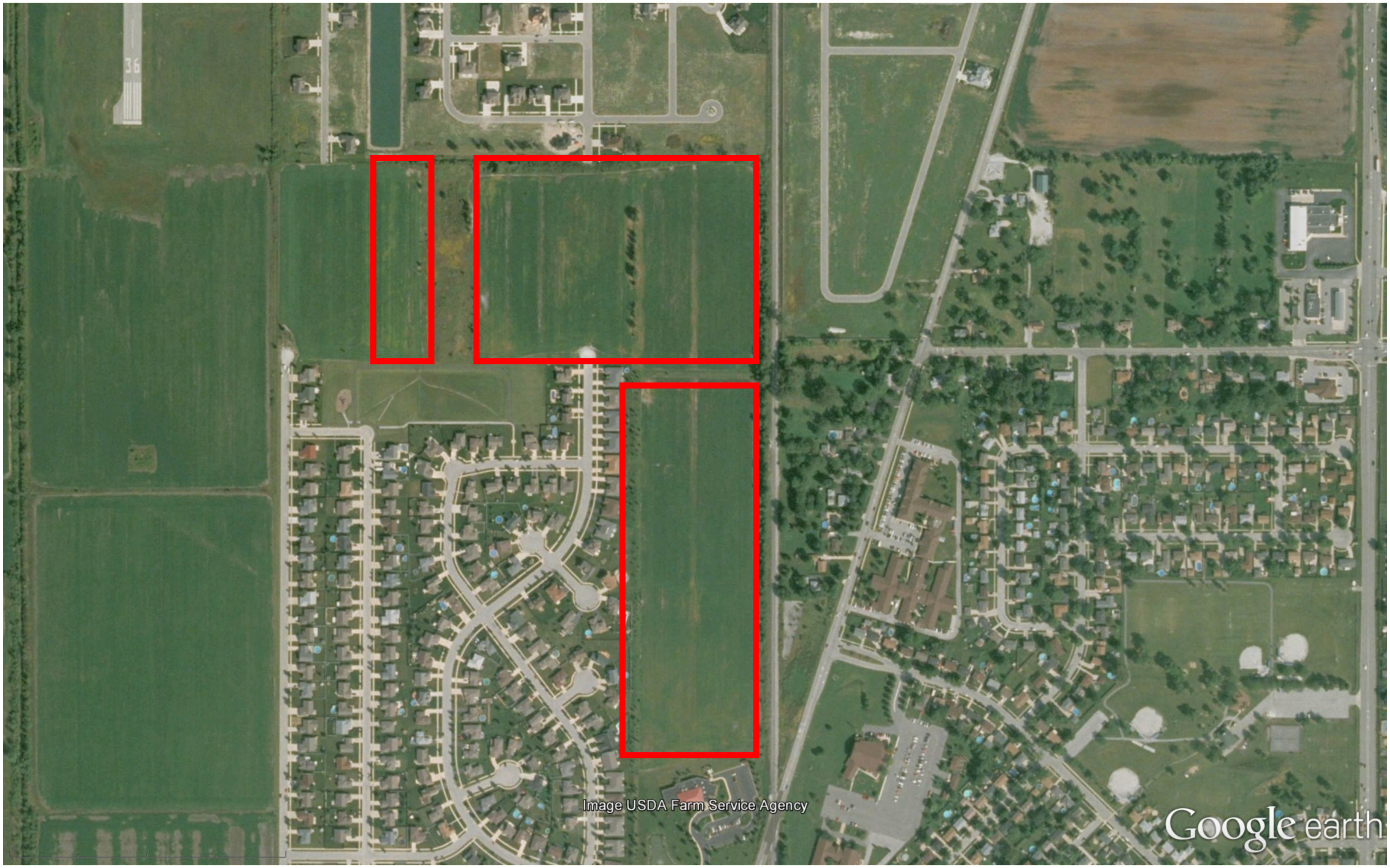
April 2002 – Wet Rainfall Year for Munster, IN Image Source: Google Earth Pro



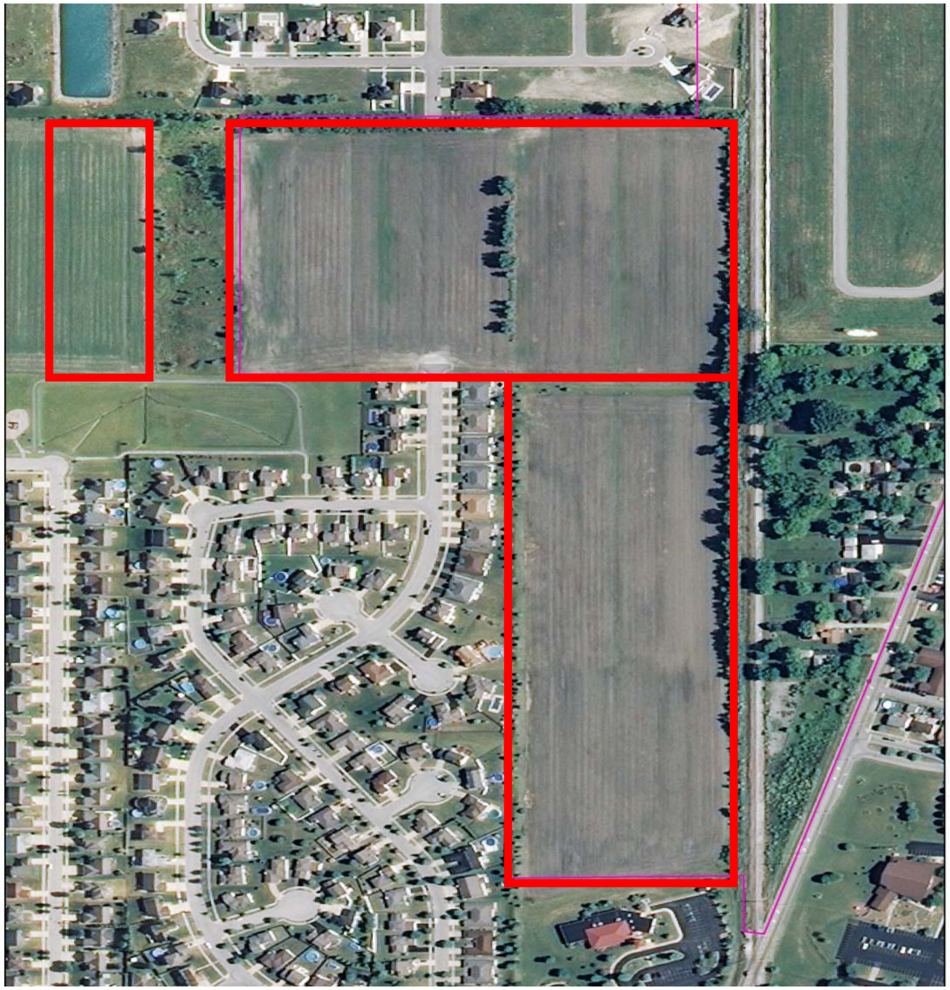
July 2007 – Normal Rainfall Year for Munster, IN Image Source: NAIP



June 2008 – Normal Rainfall Year for Munster, IN Image Source: Google Earth Pro



June 2009 – Normal Rainfall Year for Munster, IN Image Source: Google Earth Pro



June 2012 – Normal Rainfall Year for Munster, IN Image Source: NAIP

APPENDIX G
Resource Agency Coordination

United States Department of the Interior
Fish and Wildlife Service

Bloomington Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

November 4, 2014

NICTD
West Lake Corridor Project
33 East U.S. Highway 12
Chesterton, Indiana 46304

Dear Sir:

This is in reference to the September 30, 2014 Federal Register Notice of Intent to Prepare an Environmental Impact Statement for development of a commuter rail line within an approximate 9-mile corridor between Dyer and Hammond, with a possible extension southeast to St. John, all in Lake County, Indiana. The U.S. Fish and Wildlife Service (FWS) offers the following comments.

A coalition of the Northern Indiana Commuter Transportation District (NICTD), Town of Munster, and City of Hammond owns the abandoned right-of-way of the Monon Railroad between the 45th/Fisher Streets area in Munster and Sibley Street in Hammond and proposes using this corridor, in conjunction with the active CSX track, currently utilized by Amtrak and freight trains, south of 45th Street, as the primary route of the proposed commuter rail line. New tracks will be required beyond Sibley Street. Use of a portion of the existing South Shore Line (SSL) and Metra Electric District (MED) facilities or alternative existing rail lines between Hammond and Chicago will also be addressed. Several alternatives for a rail yard/maintenance facility will be considered, including near US 41 at St. John, near Main Street in Dyer, and at the site of the former Monon rail yard in southern Hammond.

There may be wetlands in the Fisher/45th Streets area in southern Munster because numerous other proposed developments in that area have encountered wetlands. However, we do not know what specific parcel has already been purchased by the NICTD/Munster/Hammond coalition in anticipation of a passenger station in that area, so we do not know if wetlands are involved or not. Wetland delineations will therefore be necessary in this area.

There may also be wetlands associated with the proposed crossings of the West Branch Little Calumet River, West Branch Grand Calumet River, and/or Calumet River/Calumet Sag Channel, depending upon the route chosen. The crossing of the West Branch Little Calumet will likely be at the site of the existing abandoned bridge, and a crossing of the Calumet River/Cal Sag Channel would be in the vicinity of the existing Indiana Harbor Belt (IHB) Railroad bridge in Burnham. The IHB route bisects Beaubien Woods Forest Preserve in Illinois, which contains numerous wetlands, including adjacent to the existing single railroad track; in Burnham, the IHB is also adjacent to wetlands, plus the Burnham Prairie Nature Preserve. Since entirely new tracks will be required in the downtown Hammond area to connect the old Monon right-of-way with the existing SSL tracks north of the West Branch Grand Calumet River, it is currently unknown where there may be a new crossing of the West Branch Grand Calumet.

The existing bridge over the West Branch Little Calumet River includes several piers within the river channel which are known to collect debris and contribute to flooding problems during high water events. Therefore, the DEIS needs to evaluate the impacts of leaving this bridge in place to serve the commuter line versus removing it and replacing it at the same site with a clear span bridge with no in-channel piers.

The FWS will request mitigation for wetland losses; the mitigation ratio for the loss of forested wetland is 4:1, with 2: or 3:1 for emergent and scrub-shrub wetlands. The U.S. Army Corps of Engineers, Chicago District, will have to determine whether or not a Section 404 permit would be required for the filling of wetlands due to the rail project. However, the Federal Transit Administration has an obligation to minimize the destruction, loss, or degradation of wetlands pursuant to Executive Order 11990, as amended by Executive Order 12608, concerning protection of wetlands, regardless of the need for a wetland fill permit.

Of particular concern to the FWS is the possibility of a new crossing of the West Branch Grand Calumet River in Hammond. The FWS, in conjunction with the other Natural Resources Trustees (Indiana Departments of Natural Resources and Environmental Management) has been working with the U.S. Environmental Protection Agency (EPA) to remediate the severely polluted sediments within both the West and East Branches of the Grand Calumet River in Indiana utilizing Great Lakes Legacy Act and the Great Lakes Restoration Initiative funding. This multi-year project has been proceeding along various distinct segments of the river, with the westernmost portion, Reaches 6 and 7 between Hohman Avenue and the State Line, being the last segment to be remediated within the West Branch Grand Calumet; permits have been received and work will begin shortly. The work involves dredging of some of the contaminated sediments and capping of the remaining sediments with a geosynthetic grid, organoclay, and/or granulated activiated carbon a minimum of 2 feet deep, topped with several feet of clean sand. Because of the dredging and capping, the Trustees are opposed to any construction activities that could compromise the integrity of the cap, including the placement of piers and abutments for a new railroad bridge. If it is determined by the FTA that a new bridge will be necessary to cross the West Branch Grand Calumet within Hammond, this bridge must be a clear span, with no piers or abutments within the river channel. We are not aware of similar constraints to the construction of a new bridge over the river in Illinois, because to our knowledge the State of Illinois has not proposed to dredge and cap the river in that state.

Executive Order 13186, issued on January 10, 2001, directs each Federal agency taking actions having or likely to have a negative impact on migratory bird populations to work with the FWS to develop an agreement to conserve those birds under the Migratory Bird Treaty Act (MBTA). In addition to avoiding or minimizing impacts to migratory bird populations, agencies will be expected to take reasonable steps that include restoring and enhancing habitat and incorporating migratory bird conservation into agency planning processes whenever possible. Therefore, the DEIS you are preparing will need to address this issue. Included in the migratory bird issue is the presence of bald eagles nesting/attempting to nest within wetland and woodland habitats in the Grand Calumet/Cal-Sag Channel/Lake Calumet area in Illinois during the past 4-5 years. An adult eagle pair has attempted to nest at several locations in this area, but we do not have information about the success of the most recent nesting attempt, although the first several attempts were not successful. Bald eagles are protected by the MBTA and also by the Bald and Golden Eagle Protection Act; please refer to the National Bald Eagle Management Guidelines available on the U.S. Fish and Wildlife Service's Website.

As discussed in the Federal Transit Administration's October 1, 2014 letter to the U.S. Fish and Wildlife Service, our agency agrees to be a Participating Agency during the EIS process. Staff at our Northern Indiana Suboffice is available to attend the interagency meetings and/or field reviews and to provide early coordination comments on the proposal. Please address correspondence to Mrs. Elizabeth McCloskey, U.S. Fish and Wildlife Service, Northern Indiana Suboffice, P.O. Box 2616, Chesterton, Indiana 46304, phone (219) 983-9753, elizabeth_mccloskey@fws.gov.

ENDANGERED SPECIES

Lake County, Indiana is within the range of the Federally endangered Indiana bat (Myotis sodalis) and Karner blue butterfly (Lycaeides melissa samuelis), the proposed endangered northern long-eared bat (Myotis septentrionalis), and the threatened Pitcher's thistle (Cirsium pitcheri) and Mead's milkweed (Asclepias meadii). Cook County, Illinois is within the range of the Federally endangered piping plover (Charadrius melodus), Hine's emerald dragonfly (Somatochlora hineana), and leafy-prairie clover (Dalea foliosa), the proposed endangered northern long-eared bat, the threatened prairie bush clover (Lespedeza leptostachya), eastern prairie fringed orchid (Platanthera leucophaea), and Mead's milkweed, and the candidate eastern massasauga rattlesnake (Sistrurus catenatus) and rattlesnake-master borer moth (Papaipema eryngii). Also in Cook County there is designated Critical Habitat for the Hine's emerald dragonfly.

None of the Lake County listed species are known within the West Lake Corridor Project Study Area. Most of the Cook County listed species are also not known within the Corridor, including the Hine's emerald dragonfly and its Critical Habitat. However, we do not know the status of some of the species within the Forest Preserves, Nature Preserves, and other protected habitats within the Corridor.

We appreciate the opportunity to provide input during this environmental scoping process. If you have any questions about our comments, please contact Elizabeth McCloskey at (219) 983-9753 or elizabeth_mccloskey@fws.gov.

Sincerely yours,

Elizabeth S. McCloskey

Acting for Scott E. Pruitt
Supervisor

cc: Regional Director, FWS, Ft. Snelling, MN (HC/EC/NWI) (ER 14/0622)
USDI, Office of Environmental Policy and Compliance, Washington, DC. (PEP/NRM)
Shawn Cirton, USFWS, Chicago Field Office, Barrington, IL
Carl Wodrich, IDNR, Land Acquisition, Indianapolis, IN
Lori White, IDNR, Regional Environmental Biologist, West Lafayette, IN
Christie Stanifer, IDNR, Environmental Coordinator, Indianapolis, IN
Marty Maupin, IDEM, Office of Water Quality, Indianapolis, IN
Paul Leffler, USACE, Regulatory Branch, Chicago, IL
Kenneth Westlake, USEPA, NEPA Implementation Section, Chicago, IL

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State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-17897 **Request Received:** October 6, 2014

Requestor: US Department of Transportation
Mark Assam
Federal Transit Administration
200 West Adams Street, Suite 320
Chicago, IL 60606-5253

Project: West Lake Corridor Project, Lake Co., IN and Cook Co., IL EIS: new track improvements, four (4) new stations, and a maintenance facility along a 9 mile southern extension along the Northern Indiana Commuter Transportation District (NICTD) existing South Shore Line (SSL) between Dyer and Hammond, IN

County/Site info: Lake

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: This proposal may require the formal approval of our agency pursuant to the Flood Control Act (IC 14-28-1) for any proposal to construct, excavate, or fill in or on the floodway of a stream or other flowing waterbody which has a drainage area greater than one square mile, or the Lake Preservation Act (IC 14-26-2) for any construction that will take place at or lakeward of the legal shoreline of a public freshwater lake. Please submit more detailed plans to the Division of Water's Technical Services Section if you are unsure whether or not a permit will be required.

Natural Heritage Database: The Natural Heritage Program's data have been checked.
This project does not impact any DNR owned nature preserves. Also, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur within the proposed corridor. However, a historical record of the northern leopard frog (Lithobates pipiens), a state species of special concern, and a wet-mesic sand prairie "between EJE Railroad and Conrail Railroad tracks" near Dyer about 0.4 mile east of project, have been documented with 1/2 mile of the proposed corridor.

This review is based on the current proposed alignment. Once stations and maintenance sites are determined, or if the proposed alignment is changed, further review and comments may be needed.

Fish & Wildlife Comments: We do not foresee any impacts to the Northern leopard frog as a result of this project.

Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) Stream Crossings:
Utilizing existing structures will produce fewer impacts to streams, wetlands, and surrounding habitats. If the rehabilitation of an existing structure is not feasible, consider the following:

Using a three span structure without piers within the Little Calumet River could provide benefits to the river by removing the existing structure and piers and allowing the river to flow unobstructed. Locating a new structure within the footprint of the existing structure and minimizing impacts to surrounding habitat will aid to further minimize impacts to the river, wetlands, and surrounding habitat.

For purposes of maintaining fish passage through a crossing structure, the Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried a minimum of 6" (or 20% of the culvert height/pipe diameter, whichever is greater up to a maximum of 2') below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the bankful width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth and water velocities during low-flow conditions that are approximate to those in the natural stream channel.

2) Bank Stabilization:
Establishing vegetation along the banks is critical for stabilization and erosion control. In addition to vegetation, some other form of bank stabilization may be needed. While hard armoring alone (e.g. riprap or glacial stone) may be needed in certain instances, soft armoring and bioengineering techniques should be considered first. In many instances, one or more methods are necessary to increase the likelihood of vegetation establishment. Combining vegetation with most bank stabilization methods can provide additional bank protection while not compromising the benefits to fish and wildlife. Information about bioengineering techniques can be found at http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf. Also, the following is a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: http://directives.sc.egov.usda.gov/17553.wba.

The new, replacement, or rehabbed structure, and any bank stabilization under or around the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to the current conditions. A level area of natural ground under the structure is ideal for wildlife passage. If hard armoring is needed, we recommend a smooth-surfaced material such as articulated concrete mats (or riprap at the toe and turf reinforcement mats above the riprap toe protection) be placed on the side-slopes instead of riprap. Such materials will not impair wildlife movement along the banks under the bridge.

Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). Riprap may be used only at the toe of the sideslopes up to the ordinary high water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Northern Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion.

3) Riparian Habitat:
We recommend a mitigation plan be developed (and submitted with the permit application, if required) if habitat impacts will occur. The DNR's Floodway Habitat Mitigation guidelines (and plant lists) can be found online at: http://www.in.gov/legislative/iac/20140806-IR-312140295NRA.xml.pdf.

Impacts to non-wetland forest over one (1) acre should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees).

Remediation efforts along the west and east branches of the Grand Calumet River under the Great Lakes Legacy Act and Great Lakes Restoration Initiative have been on-going, and the last segment of remediation work along the Grand Calumet River from Hohman Avenue to the state line will begin soon. Any work proposed within the Grand Calumet River floodway for this project should avoid impacts to any mitigation planting areas from the remediation project.

4) Wetlands:
A formal wetland delineation should be conducted in order to determine the presence of and extent of any wetland habitat within the project corridor. Impacts should be avoided and minimized to the greatest extent possible.
Due to the presence or potential presence of wetlands on site, we recommend contacting and coordinating with the Indiana Department of Environmental Management (IDEM) 401 program and also the US Army Corps of Engineers (USACE) 404 program. Impacts to wetlands should be mitigated at the appropriate ratio (see guidelines above).

5) Exposed Soils:
All exposed soil areas must be stabilized with temporary or permanent vegetation by November 1. Between November 1 and April 1, all exposed soils idle for longer than 7 days must be stabilized with erosion control blankets or with a bonded fiber matrix hydro-mulch. Sites must be protected from seasonal flooding by keeping traffic areas covered with stone and soil stockpiles seeded, stable and contained with silt fencing.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:
1. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion.
2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.
5. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.
6. Do not construct any temporary runarounds, causeways, or cofferdams.
7. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
8. Do not use broken concrete as riprap.
9. Minimize the movement of resuspended bottom sediment from the immediate project area.
10. Do not deposit or allow demolition materials or debris to fall or otherwise enter the waterway.
11. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
12. Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with

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erosion control blankets (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

Christie L. Stanifer

Date: November 7, 2014

Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife