300-3000
ITEM 3

COPY

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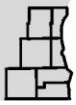

May 22, 2015

Mr. David S. Gulgowski, P.E.
Facilities Management Division
Milwaukee County City Campus
2711 W. Wells Street, 2nd Floor
Milwaukee, WI 53208

Re: SEWRPC No. CA-406-39

Dear Mr. Gulgowski:

This will respond to your electronic mail message of September 4, 2014, requesting that the Commission staff conduct a field inspection of the Milwaukee River Parkway between W. Bender Road and W. Good Hope Road. The project area is located in parts of northeast and southeast one-quarters of U.S. Public Land Survey Section 19, and in parts of the northeast one-quarter of Section 30, Township 8 North, Range 22 East, City of Glendale, Milwaukee County, Wisconsin. The purpose of the field inspection was to identify and stake the boundaries of any wetlands within the project area.

Pursuant to your request, Commission staff identified and staked the wetland boundaries within the project area on October 27 and 28, 2014. A copy of the wetland delineation report is attached for your reference. It is the Commission staff's expectation that the wetland boundaries will be surveyed and identified on forthcoming design plans attendant to the proposed parkway improvements.

Should you have any questions regarding this information, please do not hesitate to contact Mr. Christopher J. Jors, Specialist-Biologist (*cjors@sewrpc.org* or 262-953-3246).

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/TMS/CJJ/pk
CA406-39 MILWAUKEE RIVER PARKWAY IMPROVMENTS LETTER (00225936).DOCX

Enclosure (#226047)

cc: Mr. Richard E. Maslowski, City of Glendale
Mr. Kevin Haley, Milwaukee County Department of Parks
Ms. April Marcangeli, Wisconsin Department of Natural Resources
Mr. Anthony Jernigan, U.S. Army Corps of Engineers

WETLAND DELINEATION REPORT

MILWAUKEE RIVER PARKWAY AND OAK LEAF TRAIL RECONSTRUCTION
From W. Bender Road to W. Good Hope Road

NE and SE Quarter, Section 19 and
NE Quarter, Section 30, T8N, R22E
CITY OF GLENDALE
MILWUAKEE COUNTY
WISCONSIN

Prepared by:

Christopher Jors
Jennifer Dietl
Daniel Carter
Zofia Noe

Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607

WETLAND DELINEATION REPORT OVERVIEW

(Based upon WDNR WETLAND Delineation Confirmation Request Check List)

INTRODUCTION

- Who requested the delineation – **David Gulgowski, Facilities Mgmt Division, Milwaukee County**
- Why the delineation was undertaken – **Milwaukee River Pkwy & Oak Leaf Trail reconstruction**
- Date the field work was completed – **October 27 and 28, 2014**
- Who conducted field work – **Christopher Jors, Jennifer Dietl, Daniel Carter, Zofia Noe**
- Statement of Qualifications

METHODS

- Description of Methods
- Sources Reviewed
    - Topographic Map – **Exhibit 1**
    - Wisconsin Wetland Inventory (WWI) Map – **Exhibit 2**
    - Soil Survey and Floodplain Map – **Exhibit 3**
    - Historical Aerial Photos – **Exhibits 4A to 4G**
    - Sanitary Sewer Service Map – **Not Applicable**
    - ADID Wetland Map – **Exhibit 5**
- Description of any site specific agency guidance (site meetings, etc.) – **None**

RESULTS AND DISCUSSION

- Antecedent hydrologic condition analysis – **Normal conditions**
- Previous wetland delineation mapping – **None**
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetland located within the project area
- Wetland/upland boundary explanation
- Disturbed and problematic areas encountered
- Other water resources located in the project area
- Other considerations

LITERATURE CITED

Wetland Delineation Map – **Exhibit 6**

Vegetation Survey and Wetland Delineation Data Forms

- Preliminary Vegetation Survey – **Exhibit 7**
- Wetland Determination Data Forms – Midwest Region – **Exhibit 8**

Site Photos – **Exhibit 9**

Farm Service Agency Slide Review - **Not Applicable**

INTRODUCTION

This wetland delineation report responds to Milwaukee County's electronic mail request to identify the boundaries of any wetland along the Milwaukee River Parkway and Oak Leaf Trail between West Bender Road and West Good Hope Road. The project area is located in the Northeast and Southeast quarters of U.S. Public Land Survey Section 19 and the Northeast quarter of Section 30, Township 8 North, Range 22 East, City of Glendale, Milwaukee County, Wisconsin.

Statement of Qualifications

Christopher Jors, Specialist-Biologist, has worked at SEWRPC since 1993, and has been part of the wetland delineation team since 1994. He received a Bachelor's degree in Conservation Aspects of Biology from the University of Wisconsin – Milwaukee in 1993. Prior to working at SEWRPC, Chris worked at the UWM Field Station at the Cedarburg Bog in Saukville, WI, where he learned methods of sampling wetland plant communities within the Bog. Chris has attended various wetland training workshops including a U.S. Army Corps of Engineers Workshop on the Midwest Supplement to the 1987 Wetland Delineation Manual (2009) and a Wisconsin Department of Natural Resources Workshop on Techniques for Identifying Wetland Features on Farm Service Agency Aerial Slides (2009).

Daniel Carter, PhD, Senior Biologist, has worked at SEWRPC since 2013. He graduated with honors from Grinnell College with a Bachelor's degree in Biology. He later received a PhD in Biology from Kansas State University. Daniel has published several plant ecology articles in peer-reviewed journals, serves on the botany team for the Wisconsin Wildlife Action Plan, and co-teaches the UW-La Crosse Basic Wetland Plant Identification course. He has completed both basic and advanced wetland delineation training as well as Wisconsin Natural Heritage Inventory training. Prior to working for the Commission, Daniel served as project coordinator for a grassland restoration project overseen jointly by the United States Department of Agriculture and The Nature Conservancy and taught high school Biology.

Jennifer Dietl, Specialist-Biologist, earned a Bachelor's degree in Biology and Environmental Science from Carroll University in 1992. Jennifer has worked at the Commission from 1992 to 1997 and from 2006 to the present conducting wetland delineations, primary environmental corridor delineations, and vegetation surveys. In between years of service at the Commission she worked for the Wisconsin Department of Transportation – Green Bay as an LTE Environmental Analysis and Review Specialist –and the Wisconsin Department of Natural Resources – Green Bay as an LTE Hydrologist.

Zofia Noe, Specialist-Biologist, earned a Bachelor's degree in Biology and Chemistry from St. Mary's College of Maryland in 2003. She earned a Masters Degree in Coastal Marine and Wetland Studies from Coastal Carolina University in 2009. Zofia has experience in a variety of environmental assessments including water quality, aquatic plant, and upland vegetation surveys. Zofia began assisting with wetland delineations in the summer of 2013.

METHODS

Description of Methods

The wetland boundary determinations were based upon the criteria and methodologies set forth in the 1987 *Corps of Engineers Wetlands Delineation Manual*; the August 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest* (Version 2.0); the Wisconsin Department of Administration Coastal Management Program's 1995 *Basic Guide to Wisconsin's Wetlands and their Boundaries*; and the State of Wisconsin 2014 Wetland Plant List.

Specific methods used to field identify wetland boundaries included the U.S. Department of the Army Corps of Engineers Routine Onsite Determination Method – Plant Community Assessment Procedure. This procedure requires an initial identification of representative plant community types in the project area followed by a characterization of vegetation, soils, and hydrology for each type.

Sources Reviewed

Prior to conducting field work, Commission staff reviewed the following data sources: Milwaukee County's topographic mapping (Exhibit 1); Wisconsin Wetland Inventory mapping (Exhibit 2); Natural Resource Conservation Service's (NRCS) soil survey and FEMA Floodplain mapping (Exhibit 3); Commission aerial photography (Exhibits 4A – 4D); ADID Wetland Map (Exhibit 5), and United States Department of Agriculture (USDA) and National Climatic Data Center (NCDC) data for antecedent and observed precipitation.

RESULTS AND DISCUSSION

Christopher Jors, lead investigator, and Jennifer Dietl, Dr. Daniel Carter, and Zofia Noe, identified and staked the boundaries of the wetlands contained within the project area on October 27 and 28, 2014.

The results of the wetland delineation field inspection for this project area are shown on Exhibit 6, which includes staked and surveyed wetland boundaries, sample site numbers and locations, primary environmental corridor, and Natural Areas.

Antecedent Hydrologic Conditions

WETS Station: MILWAUKEE MT MARY CLG, WI 5474 GHCND Station: same as WETS station

Climatological data were taken from the nearest WETS station with relevant data. Observed precipitation amounts were taken from the nearest GHCND weather station with monthly precipitation summaries.

	Month	3 yrs. In 10 less than	Normal	3 yrs. In 10 more than	Observed precip.	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month	October	1.29	2.28	2.78	3.2	wet	3	3	9
2nd prior month	September	1.57	3.38	4.13	1.39	dry	1	2	2
3rd prior month	August	2.81	3.98	4.72	4.45	normal	2	1	2
								sum	13

If sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion

Antecedent precipitation was normal.

Previous wetland delineation mapping – None

Existing Environmental Mapping

The Milwaukee County topographic map (Exhibit 1) indicates that the project area is located within the western portion of the Milwaukee River Valley. The western portion of the project area encompasses a fairly level terrace occupied by the Milwaukee River Parkway and Oak Leaf Trail, dropping in elevation to the Milwaukee River channel and associated floodplain lands on the eastern portion of the project area. Surface water flows from north to south within the parkway. On the northern portion of the project area elevations range from 644 feet above sea level at the parkway road to 629 feet at the river channel. At the south end elevations range from 640 feet at the road suface to 617 feet at the river channel. Two ravines are evident on the topographic maps carrying flows from the west and discharging into the Milwaukee River just south of Good Hope Road and just north of some park buildings in Kletzsch Park.

The Wisconsin Wetland Inventory map (WWI) (Exhibit 2) indicates several forested wetlands (T3K) adjacent to the river within the project area. Also, an emergent/wet meadow wetland (E1K) and a scrub/shrub wetland (S3K) are mapped along the west side of the parkway.

The NRCS Soil Survey map (Exhibit 3) shows that the project area contains somewhat poorly drained Mundelein silt loam (MzfA) with 1-3% slopes, Matherton silt loam (MmA) with 1-3% slopes, and Alluvial land (Am) with 0-2% slopes. Other mapped soils in the project area include: Loamy land (Lu) or fill, Casco loam (CeB and CeC2) with 2-6% and 6-12% slopes, Fox silt loam (FoB) with 2-6% slopes, and Grays silt loam (GrA) with 0-2% slopes.

Historical aerial photos of the project area were reviewed going back to 1956 (Exhibits 4A-4G). This review indicated that the landscape has changed significantly on the northern portion of the project area between W. Good Hope Road and W. Green Tree Road. The W. Good Hope Road bridge over the Milwaukee River had not been constructed at the time the 1963 photo was taken. Also, the Milwaukee River Parkway road had not been constructed at that time connecting W. Good Hope Road and W. Green Tree Road. Additional residential development occurred after the 1963 photo just west of the northern portion of the project area.

Park improvements are already evident on the 1956 photo south of W. Green Tree Road, including a parkway road connecting W. Green Tree Road and W. Bender Road. Also, the W. Bender Road bridge over the Milwaukee River had already been constructed over the Milwaukee River by 1956. The most significant change to lands south of W. Green Tree Road occurs on the west side of the parkway where a large pond shown on 1956 aerial photo is subsequently drained. Water levels are significantly lower when the 1963 photo was taken when compared to 1956 photo. Sometime after the 1963 photo was taken, a ditch was constructed through the wetland, directing flows into a culvert under the parkway road. This culvert discharges into a ravine which drains to the Milwaukee River. Aerial photos for years 1956, 1963, 1995, 2000, 2005, 2007, and 2010 are attached (see Exhibits 4A to 4G).

The ADID wetland map (Exhibit 5) indicates that the wetlands within the project area east of the parkway road are all located within a designated Primary Environmental Corridor (PEC) and have been designated as ADID wetlands under the Section 404(b)(1) Guidelines of the Clean Water Act.

Amount and Types of Wetlands in the Project Area

Three wetlands were identified on the eastern portion of the project area between the parkway road and the river channel. These three wetlands, Plant Community Area (PCA) Numbers 1, 4, and 5, are contained within the one-percent annual probability (100-year) floodplain for the river. PCA Nos. 1 and 5 are forested wetlands measuring 2.6- and 0.8-acres, respectively. PCA No. 4, measuring 0.1-acre, consists of fresh (wet) meadow at the bottom of a ravine draining to the Milwaukee River. A portion of PCA No. 4 is contained within a natural area of local significance (NA-3) known as Kletzsch Park Woods, identified in SEWRPC's 2010 Amendment to the *Natural*

Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region. The other two wetlands (PCA Nos. 3 and 6), located west of the parkway road, are outside of the floodplain. PCA No. 3 consists of shallow marsh and fresh (wet) meadow with scattered lowland hardwoods and measures 0.5-acre. PCA No. 6, measuring 0.04-acre, consists of lowland hardwoods on both sides of the Union Pacific Railroad right-of-way.

In addition, the western upland portion of Kletzsch Park Woods was inventoried for this project. PCA No. 2, measuring 1.4-acre, consists of second-growth, Southern dry-mesic hardwoods. Forked aster (*Aster furcatus*), a State-designated Threatened species, was observed during the field inspection within PCA No. 2.

A list of the observed vascular plant species, plant community types, and disturbances for each plant community area are listed in Exhibit 7. The lists of vascular plant species were prepared using a meander method on the days of the field inspections.

Wetland/Upland Boundary Explanation

Fifteen representative sample sites were identified within the project area. The Wetland Determination Data Forms describing the findings at each sample site are attached as Exhibit 8. The locations of the sample sites are shown on Exhibit 6. The wetland boundary was determined using breaks in topography, changes in vegetation composition, visual identification of wetland hydrology, and presence of hydric soils.

Disturbed and Problematic Areas Encountered

While disturbances have occurred along the parkway, it was determined that none of the disturbances led to a misleading or "Significantly Disturbed" finding for vegetation, soils, or hydrology. Wetland sample sites 3, 9, and 10 were determined to have "Naturally Problematic" vegetation based upon a lack of vegetative cover due to flowing water. Wetland sample sites 4 and 5 were found to have "Naturally Problematic" soils due to the fluvial nature of the soils at those sites. Also, while sample site 8 had both hydrophytic vegetation and hydric soils, it was determined these indicators were misleading. Sample site 8 did not have wetland hydrology. Further, it was determined that the hydric soils indicators were relict. Historical aerial photography revealed that a large water body had once occupied this site (see attached 1956 aerial photo) which would explain the formation of hydric soils. Over time this water body was drained via a culvert under the parkway road leading to a ravine which discharges into the Milwaukee River. A ditch is also evident on aerial photos since 1995. With these circumstances, sample site 8 was determined to be upland. All sample sites were found to meet "Normal Circumstances" based upon long-term, well-established conditions.

Other Water Resources Located in the Project Area

Two ravines discharge into the Milwaukee River within the project area. A ravine just south of W. Good Hope Road likely carries stormwater flows from the residential lands west of the parkway in that area. A ravine on the southern edge of Kletzsch Park Woods receives flows from a culvert draining the wetland on the west side of the parkway road.

Other Considerations

The wetlands located within the recorded Primary Environmental Corridor (PEC) east of the parkway road, as shown on the Exhibit 6 maps, have been designated as Advanced Delineation and Identification (ADID) wetlands under the Section 404(b)(1) Guidelines of the Clean Water Act and are deemed generally unsuitable for the discharge of dredge and fill material. In addition, recent revisions of the nonagricultural performance standards set forth in Section NR 151.125 of the *Wisconsin Statutes*, requires establishment of a 75-foot impervious surface protective area to protect these higher quality wetlands. PCA nos. 3 and 6, located west of the parkway road, requires establishment of a 50-foot protective area due to the presence of "moderately susceptible" wetlands including shallow marsh and fresh (wet) meadow in PCA 3 and early successional forested wetland in PCA 6.

This designated protective area boundary is measured horizontally from the delineated wetland boundary to the closest impervious surface. The protective area requirements should be taken into consideration for any planned improvements on the subject property and it is suggested that you contact WDNR regarding approaches to meet the requirements. Finally, please be advised that no Federal or State regulatory jurisdiction determinations relative to any wetland permits or certifications are made under this report.

LITERATURE CITED

Southeastern Wisconsin Regional Planning Commission, 2010, *The Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region.*

U.S. Army Corps of Engineers, 2014, State of Wisconsin Wetland Plant List

U.S. Army Corps of Engineers, 2012, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest* (Version 2.0). U.S. Army Engineer Research and Development Center.

U.S. Army Corps of Engineers, 1987, U.S. Army Corps of Engineers wetlands delineation manual. Wetlands Research Program Technical Report Y-87-1.

Wisconsin Coastal Management Program, 1995, *Basic Guide to Wisconsin's Wetland and their Boundaries.*

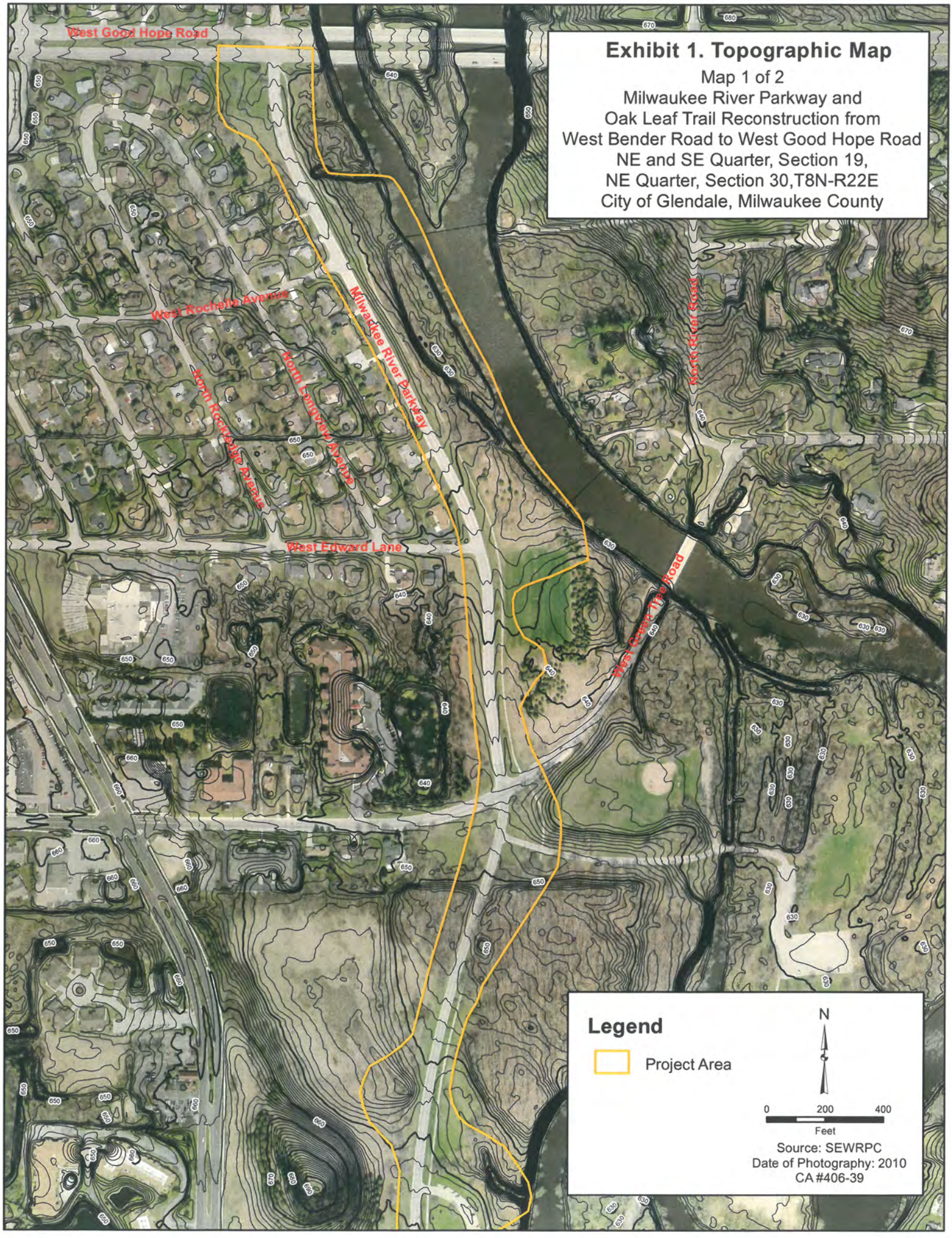
Exhibit 1. Topographic Map
Map 1 of 2
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rochelle Avenue
North Longview Avenue
Milwaukee River Parkway
West Edward Lane
North River Road
West Green Tree Road
Legend
Project Area
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39


Exhibit 1. Topographic Map
Map 2 of 2
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
STH 57 North Green Bay Avenue
Milwaukee River Parkway
North Sunny Point Lane
North Sunny Point Road
West Mill Road
West Fairfield Court
West Bender Road
Legend
Project Area
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39

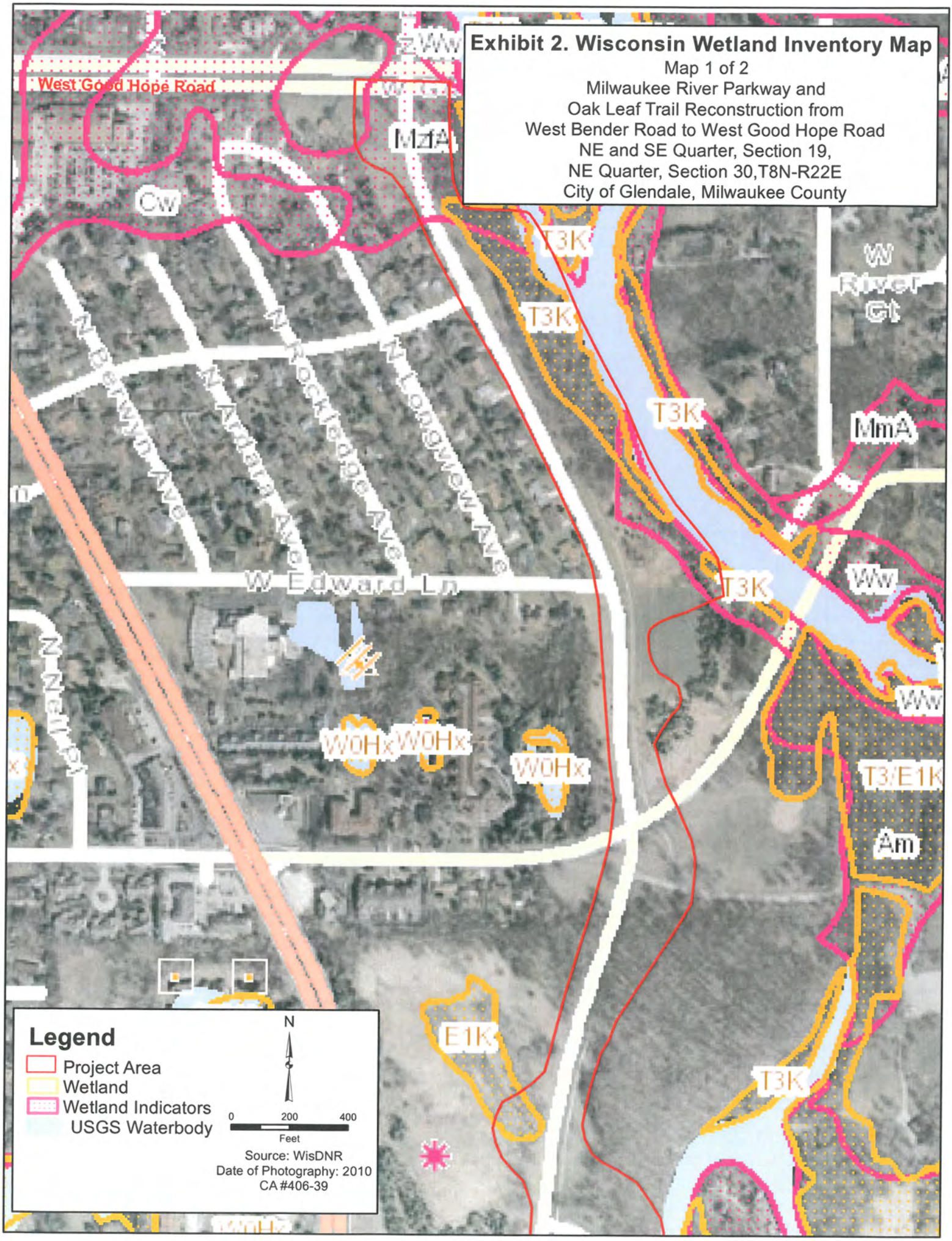
Exhibit 2. Wisconsin Wetland Inventory Map
Map 1 of 2
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
Cw
MzA
T3K
W River Ct
MmA
Ww
T3/E1K
Am
E1K
W0Hx
N Lockridge Ave
N Longview Ave
W Edward Ln
Legend
Project Area
Wetland
Wetland Indicators
USGS Waterbody
N
0
200
400
Feet
Source: WisDNR
Date of Photography: 2010
CA #406-39

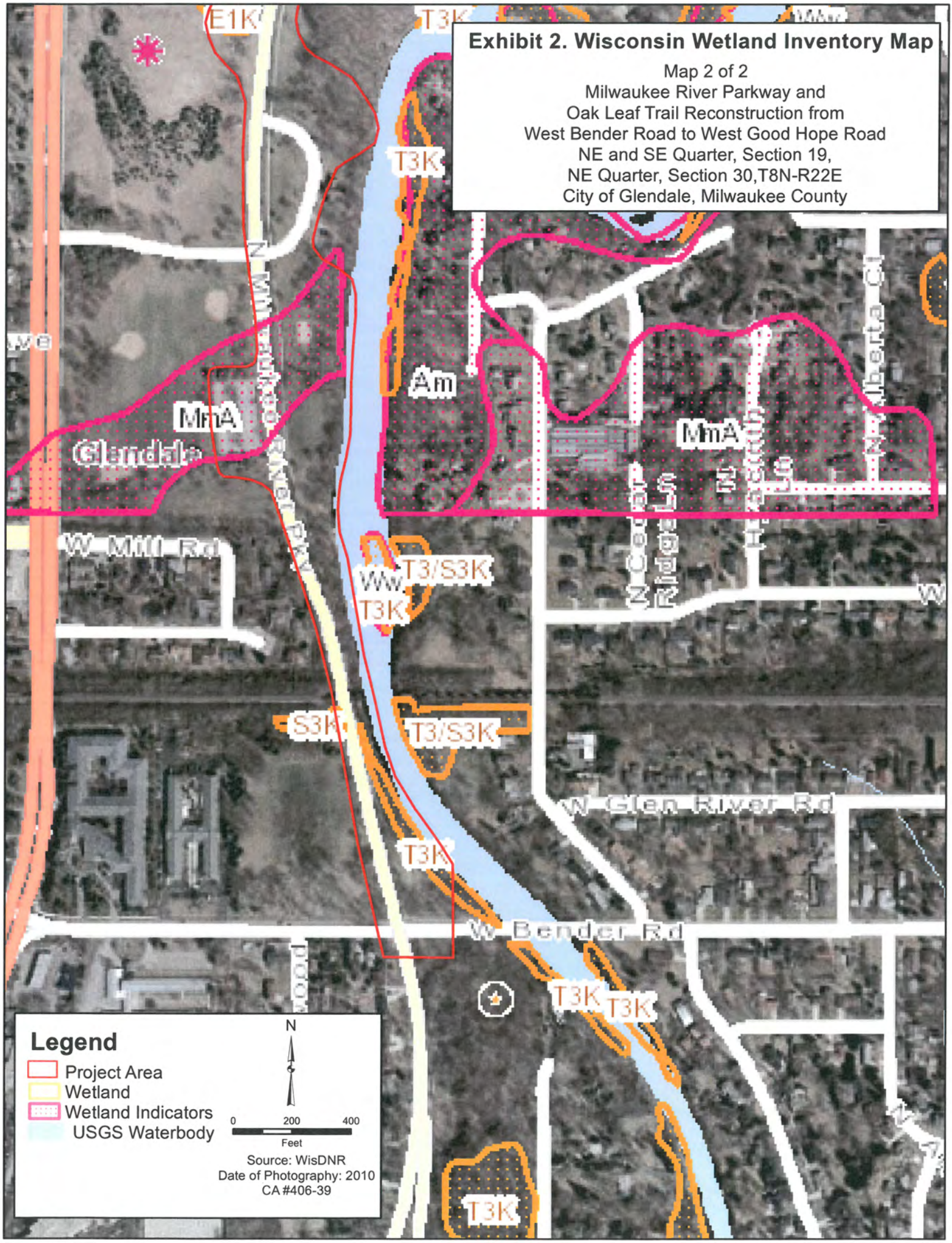
Exhibit 2. Wisconsin Wetland Inventory Map
Map 2 of 2
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
E1K
T3K
T3K
Am
MmA
MmA
Glendale
N Milwaukee River Pkwy
W Mill Rd
T3/S3K
T3K
S3K
T3/S3K
W Glen River Rd
T3K
W Bender Rd
T3K
T3K
T3K
Legend
Project Area
Wetland
Wetland Indicators
USGS Waterbody
N
0
200
400
Feet
Source: WisDNR
Date of Photography: 2010
CA #406-39

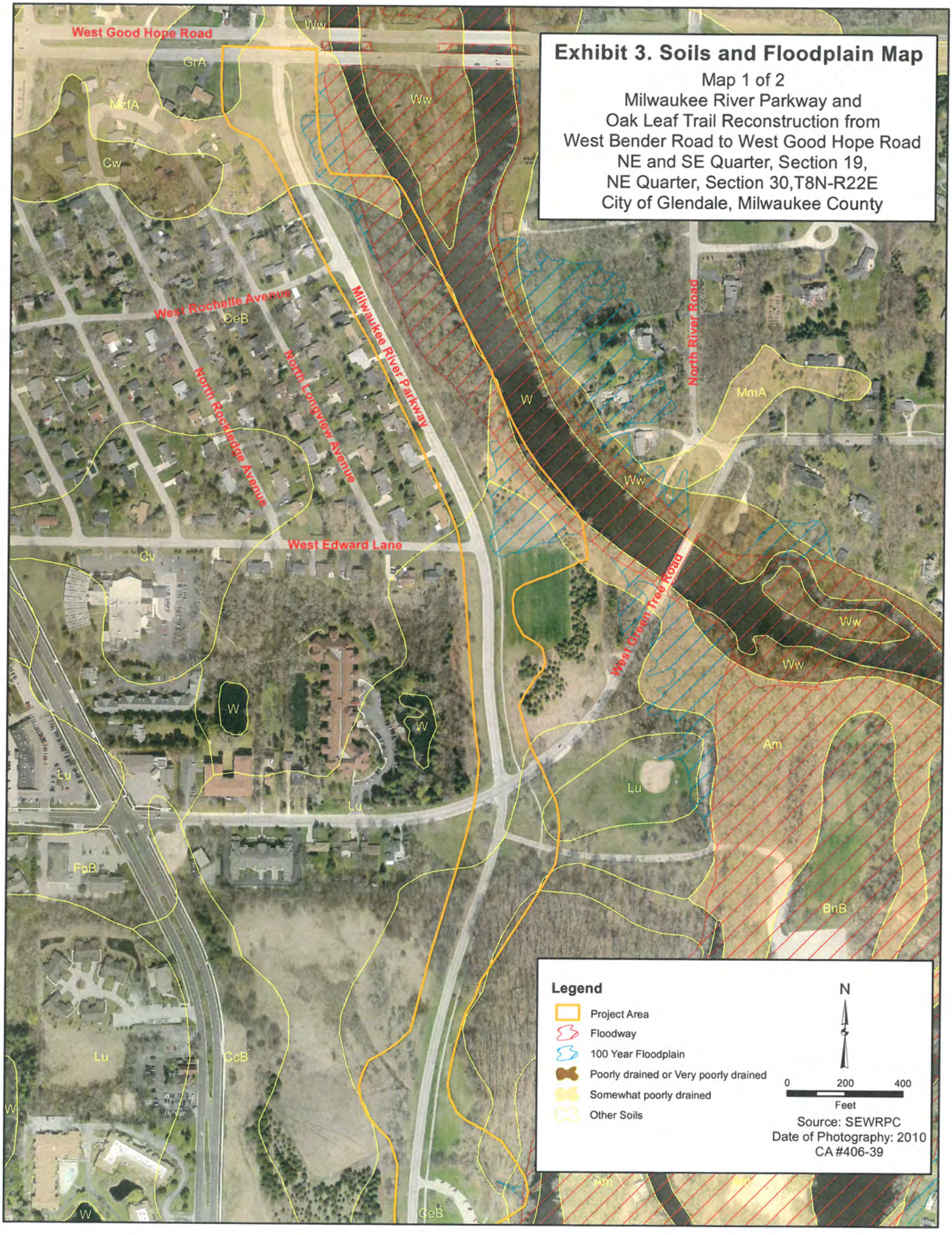
Exhibit 3. Soils and Floodplain Map
Map 1 of 2
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
West Edward Lane
West Green Tree Road
North River Road
North Rockledge Avenue
North Longview Avenue
Milwaukee River Parkway
GrA
MzfA
Cw
CeB
Cv
Ww
W
MmA
Am
Lu
FoB
BnB
Legend
Project Area
Floodway
100 Year Floodplain
Poorly drained or Very poorly drained
Somewhat poorly drained
Other Soils
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39


Exhibit 3. Soils and Floodplain Map
Map 2 of 2
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
Am
BnB
FoB
CeC2
CeB
CcB
W
STH 57 North Green Bay Avenue
Milwaukee River Parkway
North Sunny Point Lane
North Sunny Point Road
Lu
MmA
Ww
UA
West Mill Road
West Fairfield Court
West Bender Road
Legend
Project Area
Floodway
100 Year Floodplain
Poorly drained or Very poorly drained
Somewhat poorly drained
Other Soils
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39


Exhibit 4A. 2010 Orthophotograph
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rockledge Avenue
North Longview Avenue
Milwaukee River Parkway
North River Road
West Edward Lane
West Green Tree Road
Green Bay Road
West Bender Road
Legend
Project Area
N
0
230
460
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39


Exhibit 4B. 2007 Orthophotograph
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rockledge Avenue
North Longview Avenue
Milwaukee River Parkway
North River Road
West Edward Lane
West Green Tree Road
Green Bay Road
West Bender Road
Legend
Project Area
N
0
230
460
Feet
Source: SEWRPC
Date of Photography: 2007
CA #406-39


Exhibit 4C. 2005 Orthophotograph
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rockridge Avenue
North Longview Avenue
Milwaukee River Parkway
North River Road
West Edward Lane
West Green Tree Road
Green Bay Road
West Bender Road
Legend
Project Area
N
0
230
460
Feet
Source: SEWRPC
Date of Photography: 2005
CA #406-39


Exhibit 4D. 2000 Orthophotograph
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rochledge Avenue
North Longview Avenue
Milwaukee River Parkway
North River Road
West Edward Lane
West Green Tree Road
Green Bay Road
West Bender Road
Legend
Project Area
N
0
230
460
Feet
Source: SEWRPC
Date of Photography: 2000
CA #406-39


Exhibit 4E. 1995 Orthophotograph
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Ridge View Avenue
North Rockridge Avenue
West Edward Lane
Milwaukee River Parkway
North River Road
West Green Tree Road
Green Bay Road
West Bender Road
Legend
Project Area
N
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230
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Feet
Source: SEWRPC
Date of Photography: 1995
CA #406-39

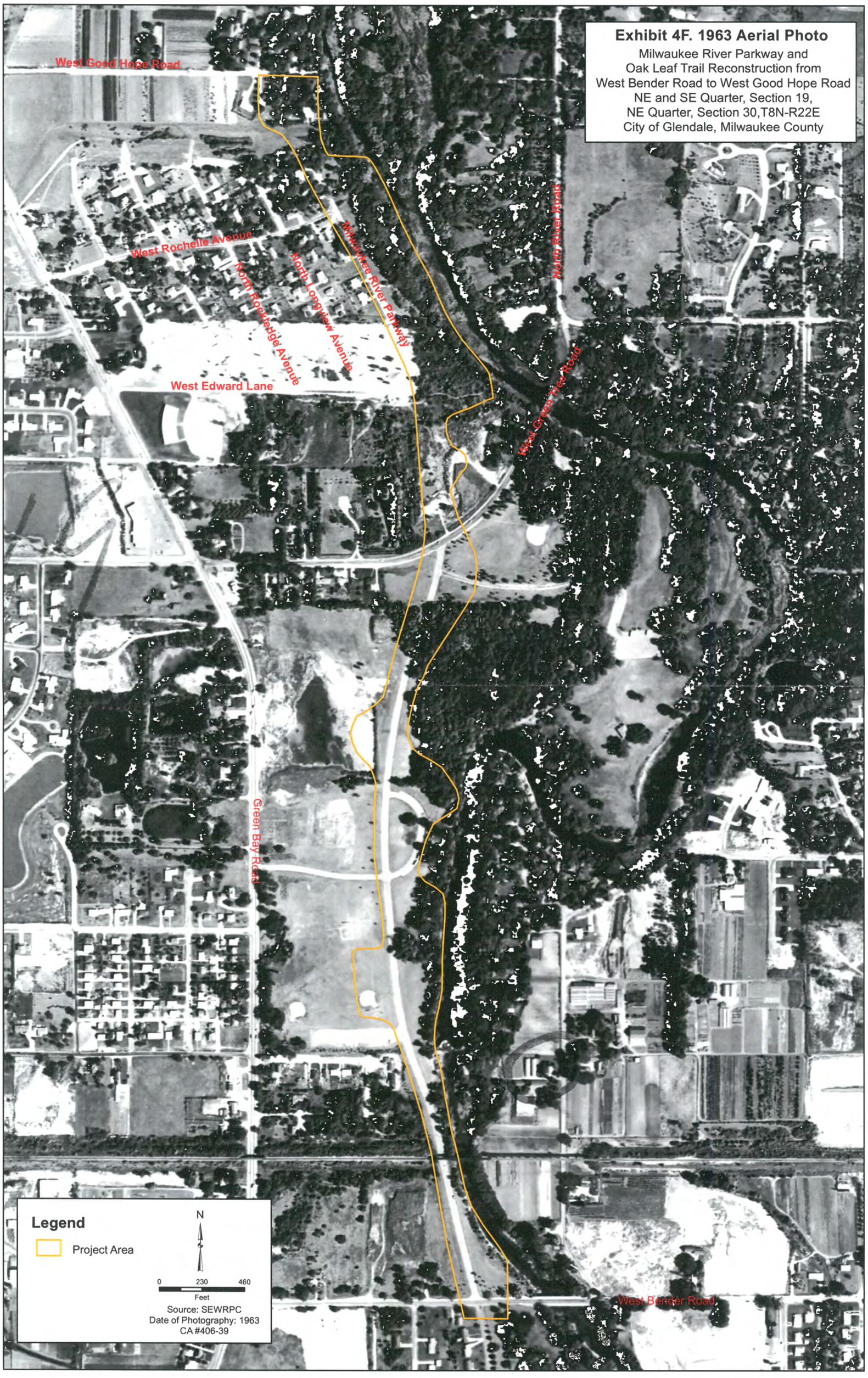


Exhibit 4F. 1963 Aerial Photo
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rockledge Avenue
North Longview Avenue
Milwaukee River Parkway
North River Road
West Edward Lane
West Green Tree Road
Green Bay Road
West Bender Road
Legend
Project Area
N
0
230
460
Feet
Source: SEWRPC
Date of Photography: 1963
CA #406-39

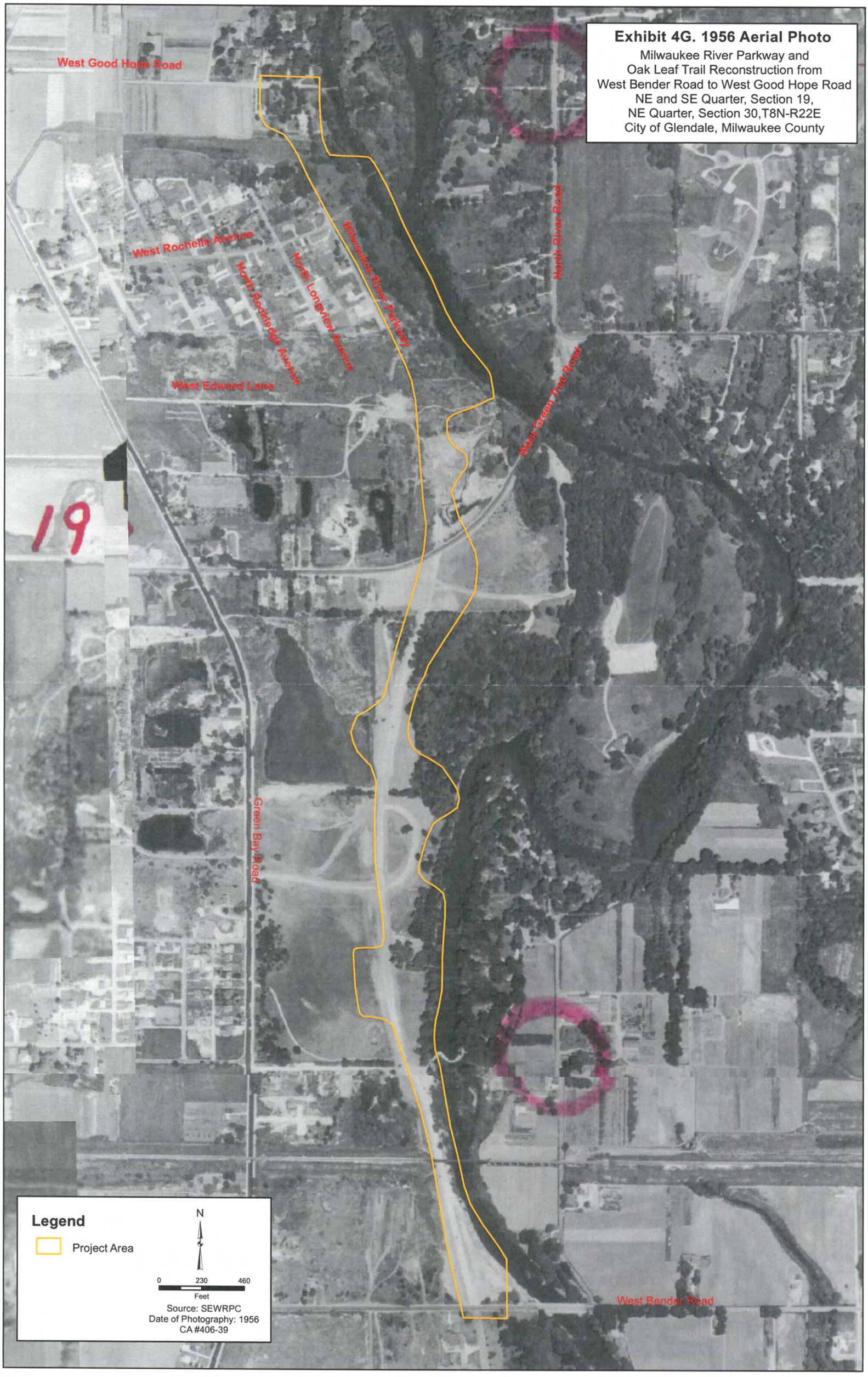


Exhibit 4G. 1956 Aerial Photo
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
West Rochelle Avenue
North Rochledge Avenue
North Longview Avenue
Milwaukee River Parkway
North River Road
West Edward Lane
West Green Tree Road
Green Bay Road
West Bender Road
19
Legend
Project Area
N
0
230
460
Feet
Source: SEWRPC
Date of Photography: 1956
CA #406-39

EXHIBIT 5. ADID Wetland Map

Milwaukee River Parkway and Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19
NE Quarter, Section 30, T8N-R22E
City of Glendale, Milwaukee County

ADID Wetlands In Southeast Wisconsin

Legend

- 2010 Wetlands
- ADID Wetlands
- ADID Lakes and Ponds
- 2010 Primary Environmental Corridors

1 inch = 978 feet

N
W E
S

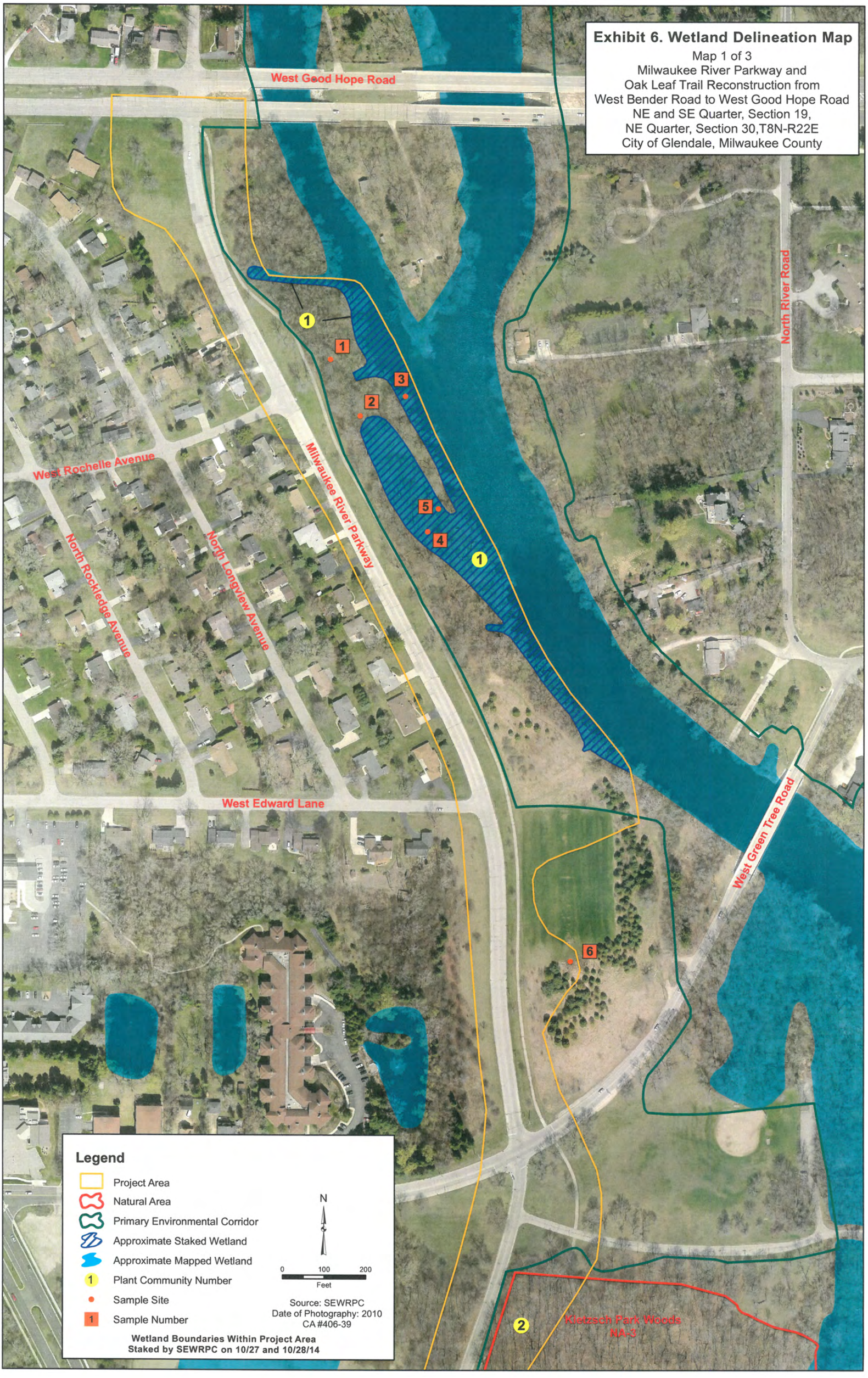
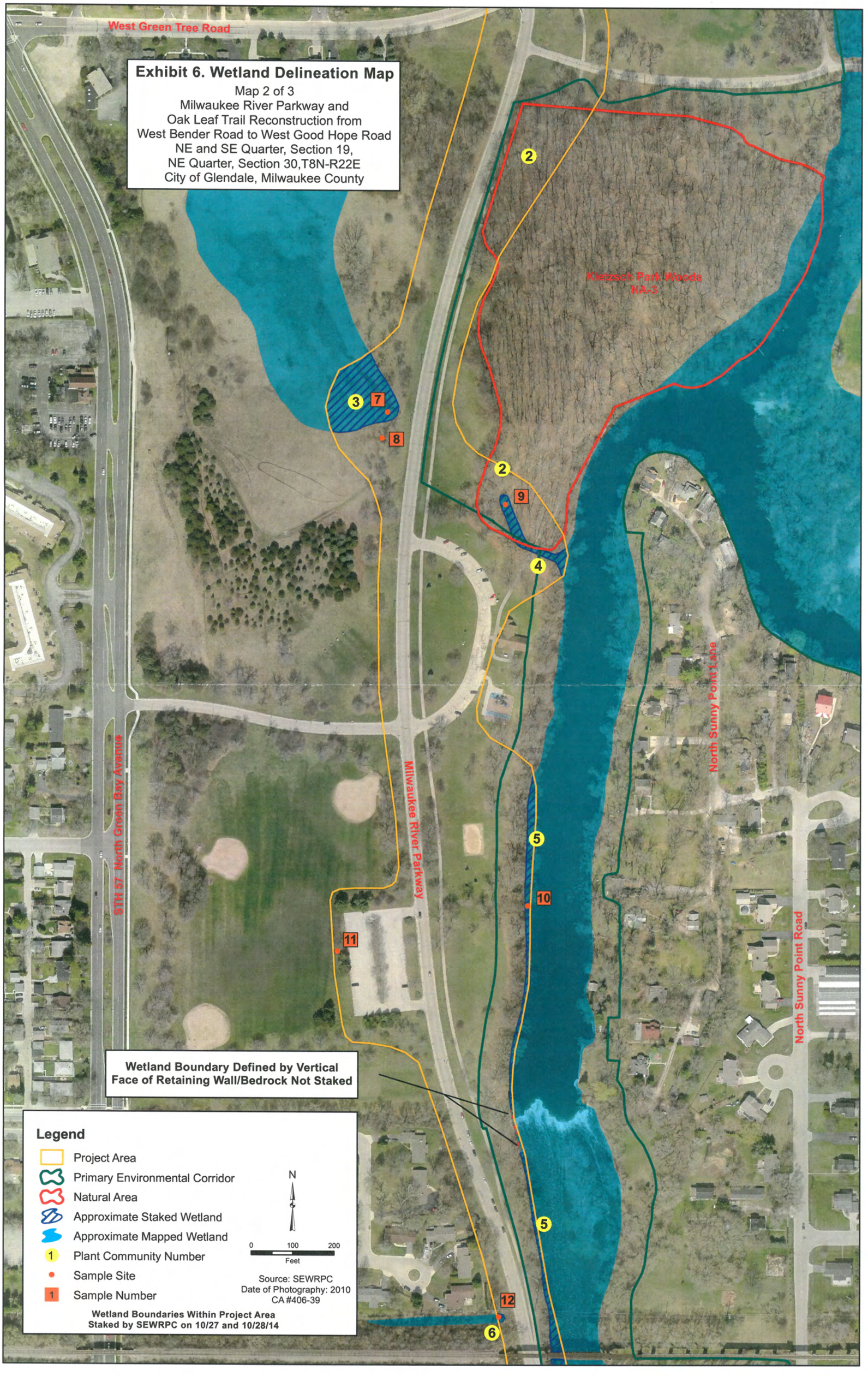


Exhibit 6. Wetland Delineation Map
Map 1 of 3
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
West Good Hope Road
North River Road
West Rochelle Avenue
North Rockledge Avenue
North Longview Avenue
Milwaukee River Parkway
West Edward Lane
West Green Tree Road
Kletzsch Park Woods
NA-3
Legend
Project Area
Natural Area
Primary Environmental Corridor
Approximate Staked Wetland
Approximate Mapped Wetland
Plant Community Number
Sample Site
Sample Number
N
0
100
200
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39
Wetland Boundaries Within Project Area
Staked by SEWRPC on 10/27 and 10/28/14


West Green Tree Road
Exhibit 6. Wetland Delineation Map
Map 2 of 3
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
Kletzsch Park Woods
NA-3
STH 57 North Green Bay Avenue
Milwaukee River Parkway
North Sunny Point Lane
North Sunny Point Road
Wetland Boundary Defined by Vertical
Face of Retaining Wall/Bedrock Not Staked
Legend
Project Area
Primary Environmental Corridor
Natural Area
Approximate Staked Wetland
Approximate Mapped Wetland
Plant Community Number
Sample Site
Sample Number
Wetland Boundaries Within Project Area
Staked by SEWRPC on 10/27 and 10/28/14
N
0
100
200
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39

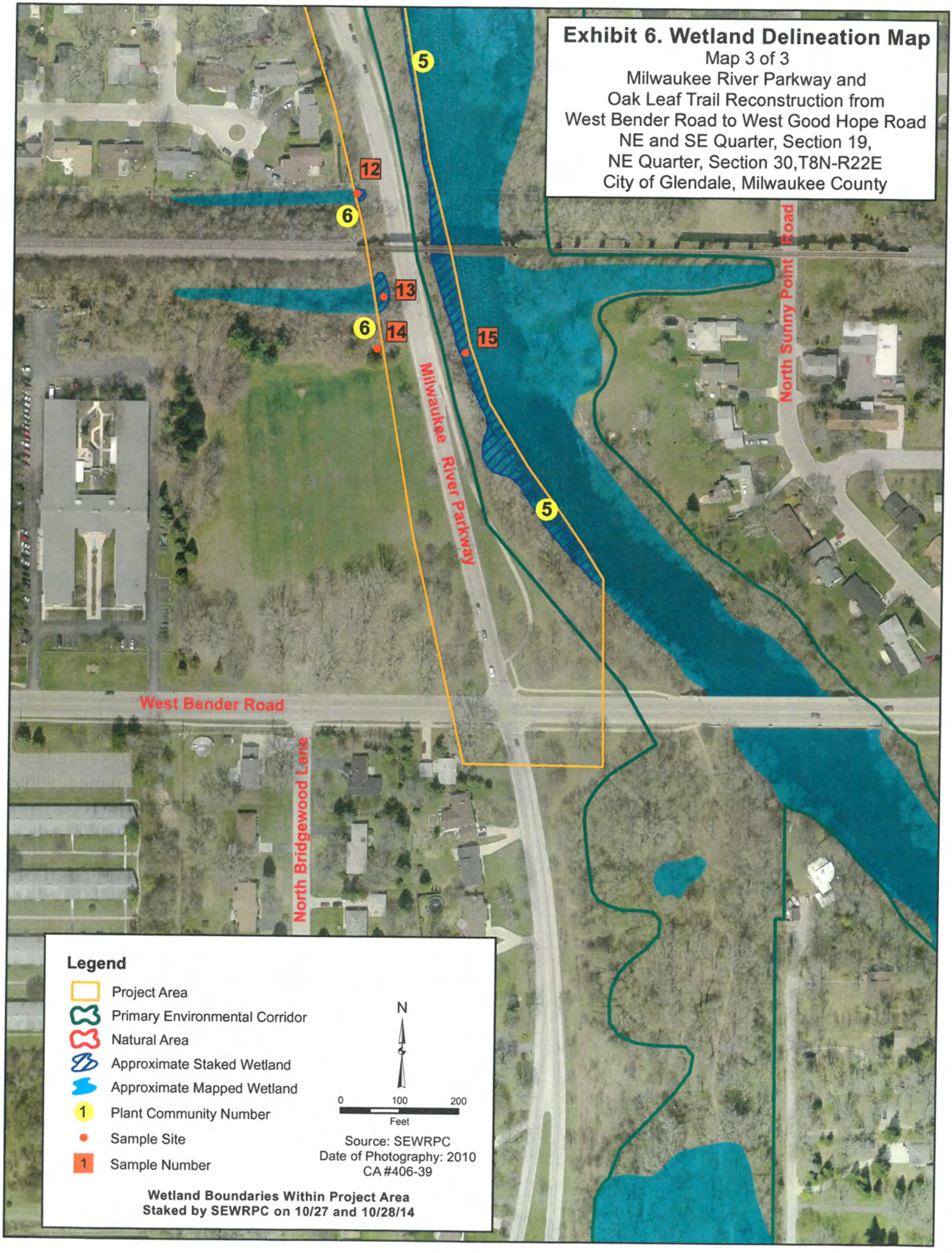


Exhibit 6. Wetland Delineation Map
Map 3 of 3
Milwaukee River Parkway and
Oak Leaf Trail Reconstruction from
West Bender Road to West Good Hope Road
NE and SE Quarter, Section 19,
NE Quarter, Section 30,T8N-R22E
City of Glendale, Milwaukee County
5
12
6
13
6
14
15
5
Milwaukee River Parkway
North Sunny Point Road
West Bender Road
North Bridgewood Lane
Legend
Project Area
Primary Environmental Corridor
Natural Area
Approximate Staked Wetland
Approximate Mapped Wetland
1 Plant Community Number
Sample Site
1 Sample Number
N
0 100 200
Feet
Source: SEWRPC
Date of Photography: 2010
CA #406-39
Wetland Boundaries Within Project Area
Staked by SEWRPC on 10/27 and 10/28/14

SVY4190
CA406-39

EXHIBIT 7

PRELIMINARY VEGETATION SURVEY
MILWAUKEE RIVER PARKWAY AND OAK LEAF TRAIL RECONSTRUCTION
FROM WEST BENDER ROAD TO WEST GOOD HOPE ROAD

Dates: October 27 and 28, 2014

Observers: Daniel L. Carter, PhD., Senior Biologist
Christopher J. Jors, Biologist
Jennifer L. Dietl, Biologist
Zofia Noe, Biologist
Southeastern Wisconsin Regional Planning Commission

Location: City of Glendale in parts of U.S. Public Land Survey Sections 19 and 30, Township 8 North, Range 22 East, Milwaukee County, Wisconsin.

Species List: PLANT COMMUNITY AREA NO. 1 - NATIVE PLANT SPECIES

Co-dominant plant species

***Acer negundo*--Boxelder**
Acer saccharinum--Silver maple
Aster ontarionis--Ontario aster
Clematis virginiana—Virgin's bower
Elymus virginicus--Virginia wild rye
***Fraxinus pennsylvanica*--Green ash**
Hydrophyllum virginianum--Virginia waterleaf
Impatiens capensis--Jewelweed
Laportea canadensis--Wood nettle
Lysimachia ciliata--Fringed loosestrife
Populus deltoides--Cottonwood
Quercus bicolor--Swamp white oak
***Ribes americanum*--Wild black currant**
Rudbeckia laciniata--Green-headed coneflower
Sambucus canadensis--Elderberry
Solidago gigantea--Giant goldenrod
Thalictrum dasycarpum--Tall meadow rue
Ulmus americana--American elm
Urtica dioica--Stinging nettle
Viburnum lentago--Nannyberry

NON-NATIVE PLANT SPECIES

Acer platanoides--Norway maple
Alliaria officinalis--Garlic-mustard
Fallopia japonica--Japanese knotweed
Glechoma hederacea--Creeping Charlie
Hesperis matronalis--Dames rocket
Iris pseudacorus--Yellow iris
Lonicera X bella--Hybrid honeysuckle
Lysimachia nummularia--Moneywort
Phalaris arundinacea--Reed canary grass
***Rhamnus cathartica*--Common buckthorn**
Salix fragilis--Crack willow

Total number of plant species: 31
Number of alien, or non-native, plant species: 11 (35 percent)

This approximately 2.6-acre plant community area is part of the Milwaukee River floodplain- wetland complex and consists of open water and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include the establishment of footpaths, side casting of dredge spoil material, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to ditching. While no Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection, this reach of the Milwaukee River has record of Striped shiner (*Luxilus chrysocephalus*), a State-designated Endangered fish species; and Greater redhorse (*Moxostoma valenciennesi*), a State-designated Special Concern fish species.

PLANT COMMUNITY AREA NO. 2 - NATIVE PLANT SPECIES

***Acer saccharum*--Sugar maple**
Anemone virginiana--Thimbleweed
Aster furcatus--Forked aster (A State-designated Threatened species)
Aster lateriflorus--Calico aster
Aster sagittifolius--Arrowleaf aster
Carex pensylvanica--Pennsylvania sedge
Carya cordiformis--Yellowbud hickory
Caulophyllum thalictroides--Blue cohosh
Cornus alternifolia--Pagoda dogwood
Cornus racemosa--Grey dogwood
Fagus grandifolia--American beech
Fraxinus americana--White ash
Fraxinus pennsylvanica--Green ash
Geranium maculatum--Wild geranium
Geum canadense--White avens
Hackelia virginiana--Stickseed
Hamamelis virginiana--Witch-hazel
Hydrophyllum virginianum--Virginia waterleaf
Hystrix patula--Bottlebrush grass
Ostrya virginiana--Ironwood
Prunus serotina--Black cherry
***Prunus virginiana*--Chokecherry**
Quercus alba--White oak
***Quercus rubra*--Northern red oak**
Ribes americanum--Wild black currant
***Solidago flexicaulis*--Zig-zag goldenrod**
Solidago gigantea--Giant goldenrod
Thalictrum dasycarpum--Tall meadow rue
Thalictrum dioicum--Woodland meadow rue
Tilia americana--Basswood
Ulmus americana--American elm
Viburnum lentago--Nannyberry
Viburnum rafinesquianum--Downy arrowwood
Vitis riparia--Riverbank grape

NON-NATIVE PLANT SPECIES

Acer platanoides--Norway maple
Alliaria officinalis--Garlic-mustard
Leonurus cardiaca--Motherwort
Lonicera X bella--Hybrid honeysuckle

PCA No. 2 NON-NATIVE PLANT SPECIES cont'

Rhamnus cathartica--Common buckthorn
Viburnum opulus--European highbush-cranberry

Total number of plant species: 40
Number of alien, or non-native, plant species: 6 (15 percent)

This approximately 1.4-acre upland plant community area is part of a larger primary environmental corridor and consists of second growth, Southern dry-mesic hardwoods. Disturbances to the plant community area include the establishment of footpaths. Forked aster (*Aster furcatus*), a State-designated Threatened species, was observed during the field inspection. In addition, SEWRPC's 2010 Amendment to the *Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region* identifies this plant community area as part of the Kletzsch Park Woods, a natural area of local significance (NA-3).

PLANT COMMUNITY AREA NO. 3 - NATIVE PLANT SPECIES

Aster lucidulus--Swamp aster
Aster novae-angliae--New England aster
Aster simplex--Marsh aster
Cornus stolonifera--Red-osier dogwood
***Fraxinus pennsylvanica*--Green ash**
Geum laciniatum--Rough avens
Juncus dudleyi--Dudley's rush
Lysimachia ciliata--Fringed loosestrife
Salix discolor--Pussy willow
Solidago altissima--Tall goldenrod
Solidago gigantea--Giant goldenrod

NON-NATIVE PLANT SPECIES

Agrostis stolonifera--Creeping bentgrass
Festuca elatior--Tall fescue
Lythrum salicaria--Purple loosestrife
Phalaris arundinacea--Reed canary grass
***Poa pratensis*--Kentucky bluegrass**
Rhamnus frangula--Glossy buckthorn
Typha angistifolia--Narrow-leaved cattail

Total number of plant species: 18
Number of alien, or non-native, plant species: 7 (39 percent)

This approximately 0.5-acre plant community area is part of a larger wetland complex and consists of shallow marsh and fresh (wet) meadow with scattered lowland hardwoods. Disturbances to the plant community area include past filling, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

PLANT COMMUNITY AREA NO. 4 - NATIVE PLANT SPECIES

***Impatiens capensis*--Jewelweed**
***Ribes americanum*--Wild black currant**
Sambucus canadensis--Elderberry

NON-NATIVE PLANT SPECIES

Rhamnus cathartica--Common buckthorn

Total number of plant species: 4
Number of alien, or non-native, plant species: 1 (25 percent)

This approximately 0.1-acre plant community area is part of the Milwaukee River floodplain- wetland complex and consists of a narrow drainage way (gully) with fresh (wet) meadow. Disturbances to the plant community area include the establishment of footpaths, past filling, and siltation and sedimentation due to stormwater runoff from adjacent lands. While no Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection, this reach of the Milwaukee River has record of Striped shiner (*Luxilus chrysocephalus*), a State-designated Endangered fish species; and Greater redhorse (*Moxostoma valenciennesi*), a State-designated Special Concern fish species. In addition, SEWRPC's 2010 Amendment to the *Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region* identifies this plant community area as part of the Kletzsch Park Woods, a natural area of local significance (NA-3).

PLANT COMMUNITY AREA NO. 5 - NATIVE PLANT SPECIES

Acer negundo--Boxelder
Acer saccharinum--Silver maple
Aster lateriflorus--Calico aster
Aster ontarionis--Ontario aster
Elymus virginicus--Virginia wild rye
Epilobium coloratum--Willow-herb
Equisetum arvense--Common horsetail
Fraxinus pennsylvanica--Green ash
Hydrophyllum virginianum--Virginia waterleaf
Impatiens capensis--Jewelweed
Iris sp.--Iris
Lemna minor--Lesser duckweed
***Populus deltoides*--Cottonwood**
Ribes americanum--Wild black currant
Sambucus canadensis--Elderberry
Solidago gigantea--Giant goldenrod
Ulmus americana--American elm
Viburnum lentago--Nannyberry
Vitis riparia--Riverbank grape

NON-NATIVE PLANT SPECIES

Alliaria officinalis--Garlic-mustard
Epipactis helleborine--Helleborine
Euonymus europaeus--European spindle tree
Glechoma hederacea--Creeping Charlie
Lonicera X bella--Hybrid honeysuckle
Myosotis scorpioides--Forget-me-not
Myriophyllum spicatum--European water-milfoil

PCA No. 5 - NON-NATIVE PLANT SPECIES cont'

Phalaris arundinacea--Reed canary grass
***Rhamnus cathartica*--Common buckthorn**
Rhamnus frangula--Glossy buckthorn
Robinia pseudoacacia--Black locust
Salix fragilis--Crack willow
Solanum dulcamara--Deadly nightshade
Viburnum opulus--European highbush-cranberry

Total number of plant species: 33
Number of alien, or non-native, plant species: 14 (42 percent)

This approximately 0.8-acre plant community area is part of the Milwaukee River floodplain- wetland complex and consists of second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include siltation and sedimentation due to stormwater runoff from adjacent lands and placement of rock rip-rap. While no Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection, this reach of the Milwaukee River has record of Striped shiner (*Luxilus chrysocephalus*), a State-designated Endangered fish species; and Greater redhorse (*Moxostoma valenciennesi*), a State-designated Special Concern fish species.

PLANT COMMUNITY AREA NO. 6 - NATIVE PLANT SPECIES

***Acer negundo*--Boxelder**
Aster simplex--Marsh aster
Cornus stolonifera--Red-osier dogwood
Fraxinus pennsylvanica--Green ash
Geum canadense--White avens
Hackelia virginiana--Stickseed
Ribes americanum--Wild black currant
Solidago gigantea--Giant goldenrod
Vitis riparia--Riverbank grape

NON-NATIVE PLANT SPECIES

Alliaria officinalis--Garlic-mustard
Glechoma hederacea--Creeping Charlie
***Rhamnus cathartica*--Common buckthorn**
***Solanum dulcamara*--Deadly nightshade**

Total number of plant species: 13
Number of alien, or non-native, plant species: 4 (31 percent)

This approximately 0.04-acre plant community area is part of a larger wetland complex and consists of second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include ditching, dumping and filling along the wetland edge, and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

EXHIBIT 8
WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 1
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: T3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☐ Yes	☒No
Hydric Soils Present?	☐Yes	☒No			
Wetland Hydrology Present?	☐Yes	☒No			

Remarks: Sample site taken at this location as WWI mapping indicated wetland (T3K) but field visit determined sample area to be upland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Tilia americana**	**40**	☒	**FACU**
2. **Juglans nigra**	**30**	☒	**FACU**
3. Fraxinus pennsylvanica	15	☐	FACW
4. Ulmus americana	10	☐	FACW
5. ____	____	☐	____
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. **Rhamnus cathartica**	**35**	☒	**FAC**
2. **Lonicera x bella**	**15**	☒	**FACU**
3. Acer negundo	10	☐	FAC
4. Ribes americanum	10	☐	FACW
5. ____	____	☐	____
	70	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. **Solidago gigantea**	**30**	☒	**FACW**
2. Rhamnus cathartica	10	☐	FAC
3. Alliaria officinalis	8	☐	FAC
4. Hesperis matrionalis	6	☐	FACU
5. Hydrophyllum virginianum	5	☐	FAC
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	59	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. **Clematis virginiana**	**35**	☒	**FAC**
2. **Vitis riparia**	**10**	☒	**FAC**
	45	= 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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Upland hardwoods with a shrub-thicket understory.

SOIL

Sampling Point: 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 Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-7	10YR 2/2	100					Clay loam	
7-19	10YR 4/4	100					Sand and gravel	
19-21	10YR 4/4	100					Sand	
21-24	10YR 2/2	95	7.5YR 5/8	5	C	PL M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3),

Remarks: While the sample site is located in the Milwaukee River floodway, it is not on a concave surface. Also the site is 4 to 5 feet higher in elevation that the surrounding wet swale and river channel. Finally, soils are permeable.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 2
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: T3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☐ Yes ☒No
Hydric Soils Present?	☐Yes	☒No		
Wetland Hydrology Present?	☐Yes	☒No		

Remarks: Sample site was selected as elevation is lower than sample 1 and wetland vegetation is present. Sample located just outside the wetland boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Acer negundo**	40	☒	FAC
2. **Rhamnus cathartica**	25	☒	FAC
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. **Rhamnus cathartica**	80	☒	FAC
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	80	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. **Alliaria officinalis**	40	☒	FAC
2. **Hydrophyllum virginianum**	25	☒	FAC
3. Ribes americanum	15	☐	FACW
4. Hesperis matrionalis	2	☐	FACU
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	82	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Buckthorn thicket and lowland hardwoods.

SOIL

Sampling Point: 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 Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-11	10YR 2/2	100					Clay loam	
11-13	10YR 3/2	50					Loam	
	10YR 5/4	50						
13-18	10YR 3/2	90	7.5YR 5/8	10	C	PL M	Loam	
18-27	10YR 2/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Sample site is located in the Milwaukee River floodway (D2).

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 3
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): Milwaukee River Local relief (concave, convex, none): none
Slope (%): -- Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Water (W) NWI classification: T3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation X, Soil ____, or Hydrology ____ naturally problematic? (If, needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	☒Yes	☐No	**Is the Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks: No vegetation present in flowing water of the Milwaukee River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) No vegetation present in flowing water of the Milwaukee River. Meets description of problematic hydrophytic vegetation in riparian areas.

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ No ☐

Remarks: Soils of the Milwaukee River inundated with 9 inches of water, hydric by definition - Criteria 3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? **Yes** ☒ **No** ☐ Depth (inches): 9

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

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

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Sample is located in the Milwaukee River floodway.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 4
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): concave
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: T3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ____, Soil X, or Hydrology ____ naturally problematic? (If, needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	☒Yes	☐No	**Is the Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks: Problematic Fluvial soils. Sample site located in a low basin and was chosen as a clear wetland sample point, although, problematic fluvial soils were not expected.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Acer negundo**	**30**	☒	**FAC**
2. **Acer saccharinum**	**30**	☒	**FACW**
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Ribes americanum	4	☐	FACW
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	4	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. Lysimachia nummularia	**5**	☒	**FACW**
2. Rhamnus cathartica	**2**	☒	**FAC**
3. Aster ontarionis	1	☐	FAC
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	8	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loam	
8-11	10YR 3/1	100					Loam	
11-17	10YR 3/2	100					Clay	
17-24	10YR 3/1	95	10YR 4/6	5	C	PL M	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ No ☐

Remarks: Problematic Fluvial soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? **Yes** ☒ No ☐ Depth (inches): 17

Saturation Present? (includes capillary fringe) **Yes** ☒ No ☐ Depth (inches): 11

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Sample site is located in the Milwaukee River floodway.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 5
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): footslope Local relief (concave, convex, none): linear
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: T3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ____, Soil X, or Hydrology ____ naturally problematic? (If, needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	☒Yes	☐No	**Is the Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks: Problematic Fluvial soils. Sample site is located just inside the wetland boundary. The sample was taken at this location as a change in vegetation occurred and the area is higher in elevation than sample site 4.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Fraxinus pennsylvanica**	25	☒	FACW
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. **Ribes americanum**	25	☒	FACW
2. **Rhamnus cathartica**	15	☒	FAC
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	40	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. **Alliaria officinalis**	30	☒	FAC
2. **Hesperis matrionalis**	20	☒	FACU
3. **Rudbeckia laciniata**	20	☒	FACW
4. Thalictrum dasycarpum	15	☐	FACW
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	85	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Fresh (wet) meadow and shrub-carr with scattered, lowland hardwoods.

SOIL

Sampling Point: 5

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-11	10YR 2/1	100					Clay loam	
11-18	10YR 3/1	100					Loam	
18-24	10YR 3/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ No ☐

Remarks: Problematic Fluvial soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Sample site is located in the Milwaukee River floodway.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 6
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): slightly concave
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: T3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☐ Yes	☒No
Hydric Soils Present?	☐Yes	☒No			
Wetland Hydrology Present?	☐Yes	☒No			

Remarks: Sample site chosen in slight depression indicated on topographic map.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Fraxinus pennsylvanica**	10	☒	FACW
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	10	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. **Fraxinus pennsylvanica**	18	☒	FACW
2. Rhamnus cathartica	4	☐	FAC
3. Acer negundo	2	☐	FAC
4. ____	____	☐	____
5. ____	____	☐	____
	24	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. **Poa pratensis**	70	☒	FAC
2. Phalaris arundinacea	15	☐	FACW
3. Cirsium arvense	5	☐	FACU
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	90	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Old field with scattered lowland shrubs and hardwoods.

SOIL

Sampling Point: 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 Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Loam	
3-8	10YR 3/1	100					Gravelly sandy loam	
8+							Gravel	Refusal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 8

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: While the sample site is located in a slight depression, the rapid permeability of the soils (gravelly sandy loam and gravel) and lacking a near surface water table indicates that Geomorphic Position (D2) would not apply.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 7
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: E1K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Fraxinus pennsylvanica	**50**	☒	**FACW**
2. Cornus stolonifera	10	☐	FACW
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	60	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. Agrostis stolonifera	**60**	☒	**FACW**
2. Poa pratensis	**40**	☒	**FAC**
3. Typha angustifolia	15	☐	OBL
4. Juncus dudleyi	10	☐	FACW
5. Aster lucidulus	3	☐	OBL
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	128	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Fresh (wet) meadow and shrub-carr.

SOIL

Sampling Point: 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[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					Mucky loam	
11-14	10YR 5/2	59	10YR 5/8	2	C	PL M	Clay	
	10YR 4/3	39						
14-18	10YR 5/2	67	10YR 5/8	5	C	PL M	Silt	
	10YR 4/3	38						
18+								Refusal: Too wet to pull up

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Tight silt soils too wet to pull up with probe

Depth (inches): 18

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? **Yes** ☒ No ☐ Depth (inches): 6

Saturation Present? (includes capillary fringe) **Yes** ☒ No ☐ Depth (inches): 0 (at surface)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 8
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): linear
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☐ Yes	☒No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☐Yes	☒No			

Remarks: Determined that soils have relict hydric soil indicators at this site based upon a review of historical aerial photography. The 1956 photo shows a large waterbody covering the site. Since then the site has been drained and ditched via a culvert carrying flows under the parkway road to a ravine leading to the Milwaukee River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Fraxinus pennsylvanica**	**25**	☒	**FACW**
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. **Fraxinus pennsylvanica**	**5**	☒	**FACW**
2. Rhamnus frangula (mostly cut)	1	☐	FACW
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	6	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. **Poa pratensis**	**60**	☒	**FAC**
2. **Solidago altissima**	**35**	☒	**FACU**
3. Aster pilosus	15	☐	FACU
4. Geum canadense	15	☐	FAC
5. Plantago major	10	☐	FACU
6. Rhamnus frangula	10	☐	FACW
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	145	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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: 4 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Old field with scattered lowland hardwoods.

SOIL

Sampling Point: 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[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Clay loam	
6-8	10YR 3/2	99	10YR 4/6	1	C	PL M	Clay loam	
8-14	10YR 3/2	95	10YR 5/8	5	C	PL M	Gravelly sandy loam	
14-15	10YR 6/3	50					Silty clay	
	5YR 5/4	50						
15+								Refusal: Dry silt soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Dry silt soils

Depth (inches): 15

Hydric Soil Present? Yes ☒ No ☐

Remarks: Relict hydric soil indicator from a time when water levels were high.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 9
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): drainage way Local relief (concave, convex, none): concave
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Fox loam (FoB) NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation X, Soil ____, or Hydrology ____ naturally problematic? (If, needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	☒Yes	☐No	**Is the Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks: No vegetation present in narrow wet drainage way.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) While no vegetation was present in narrow drainage way, Cornus racemosa (FAC), Fraxinus pennsylvanica (FACW), Acer saccharum (FACU), and Rhamnus cathartica (FAC) were observed growing along the steep banks. Meets description for problematic vegetation in riparian areas.

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks: Rock and concrete rubbled bottom of drainage way inundated with 3 inches of water, hydric be definition - Criteria 3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? **Yes** ☒ No ☐ Depth (inches): 3

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

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

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: A majority of the drainage way contains standing water. The bottom half of the waterway is located in the Milwaukee River 100 year floodplain.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 10
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): Milwaukee River Local relief (concave, convex, none): none
Slope (%): – Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Water (W) NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation X, Soil ____, or Hydrology ____ naturally problematic? (If, needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	☒Yes	☐No	**Is the Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks: No vegetation observed in the Milwaukee River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) While no vegetation was observed in the Milwaukee River, Vitis riparia (FACW) and Rhamnus cathartica (FAC) were observed growing along the steep banks for the river. Meets description of problematic vegetation in Riparian areas.

SOIL

Sampling Point: 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[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ No ☐

Remarks: Soils of Milwaukee River inundated with 8 inches of water, hydric by definition - Criteria 3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? **Yes** ☒ No ☐ Depth (inches): 8

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

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

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Sample located in the Milwaukee River floodway.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 11
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
Slope (%): 2-6% Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Casco loam (CeB) NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☐ Yes	☒No
Hydric Soils Present?	☐Yes	☒No			
Wetland Hydrology Present?	☐Yes	☒No			

Remarks: Disturbed vegetation due to regular mowing and heavy foot traffic.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. Poa pratensis	**40**	☒	**FAC**
2. Trifolium pratense	**40**	☒	**FACU**
3. Plantago lanceolata	5	☐	FACU
4. Plantago major	5	☐	FACU
5. Taraxacum officinale	5	☐	FACU
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	95	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☐ **No** ☒

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

SOIL

Sampling Point: 11

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-11	10YR 2/1	100					Sandy loam	
11+							Sand and gravel	Refusal: Old fill material?

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Sand and gravel fill material?

Depth (inches): 11

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction | City/County: City of Glendale/Milwaukee County | Sampling Date: 10/27/2014
Applicant/Owner: ____ | State: WI | Sampling Point: 12
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC | Section, Township, Range: Section 19, T8N, R22E
Landform (hillslope, terrace, etc.): drainage way | Local relief (concave, convex, none): concave
Slope (%): -- | Lat: ____ | Long: ____ | Datum: ____
Soil Map Unit Name: Unmapped area (UA) | NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? **Yes** ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Fraxinus pennsylvanica**	15	☒	FACW
2. **Acer negundo**	10	☒	FAC
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. **Glechomea hederacea**	30	☒	FACU
2. **Geum canadense**	15	☒	FAC
3. Hackelia virginiana	5	☐	FACU
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. **Vitis riparia**	5	☒	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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Lowland hardwoods along a narrow drainage way.

SOIL

Sampling Point: 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[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	98	10YR 4/6	2	C	PL M	Silt loam	
5-8	10YR 5/1	80	7.5YR 4/6	20	C	PL M	Clay loam	
8-14	10YR 3/2	90	5YR 4/6	10	C	PL M	Sandy loam with gravel	
14+								Refusal: Gravel and rocks - fill material?

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel and rock

Depth (inches): 14

Hydric Soil Present? **Yes** ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Water marks observed on culvert.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 13
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 30, T8N, R22E
Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none
Slope (%): = Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Unmapped Area (UA) NWI classification: S3K
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Fraxinus pennsylvanica	**5**	☒	**FACW**
2. Cornus stolonifera	**4**	☒	**FACW**
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	9	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. Solanum dulcamara	**40**	☒	**FAC**
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.) Fresh (wet) meadow with scattered lowland shrubs.

SOIL

Sampling Point: 13

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	75	5YR 4/6	**10**	C	PL M	Mucky loam	
	10YR 3/2	15						
10-20	2.5Y 3/1	98	10YR 4/6	**2**	C	PL M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? **Yes** ☒ No ☐ Depth (inches): 6

Saturation Present? (includes capillary fringe) **Yes** ☒ No ☐ Depth (inches): 0 (at surface)

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 14
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 30, T8N, R22E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
Slope (%): – Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Unmapped Area (UA) NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☐ Yes ☒No
Hydric Soils Present?	☐Yes	☒No		
Wetland Hydrology Present?	☐Yes	☒No		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Populus deltoides**	**45**	☒	**FAC**
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. **Rhamnus cathartica**	**45**	☒	**FAC**
2. **Rhamnus frangula**	**45**	☒	**FACW**
3. Fraxinus pennsylvanica	5	☐	FACW
4. ____	____	☐	____
5. ____	____	☐	____
	95	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. Rhamnus cathartica	3	☐	FAC
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	3	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

SOIL

Sampling Point: 14

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					Loam	
9-17	10YR 3/2	100					Gravelly loam	
17+							Gravel and glass	Refusal: Old fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel and glass fill material

Depth (inches): 17

Hydric Soil Present? Yes ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ☐ **No** ☒ Depth (inches): ____

Water Table Present? Yes ☐ **No** ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ **No** ☒ Depth (inches): ____

Wetland Hydrology Present? Yes ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Milwaukee River Pkwy and Oak Leaf Trail Reconstruction City/County: City of Glendale/Milwaukee County Sampling Date: 10/27/2014
Applicant/Owner: ____ State: WI Sampling Point: 15
Investigator(s): Jennifer Dietl and Zofia Noe; SEWRPC Section, Township, Range: Section 30, T8N, R22E
Landform (hillslope, terrace, etc.): Milwaukee River Local relief (concave, convex, none): none
Slope (%): -- Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Water (W) NWI classification: --
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
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 Sampled Area within a Wetland?**	☒ Yes	☐No
Hydric Soils Present?	☒Yes	☐No			
Wetland Hydrology Present?	☒Yes	☐No			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. ____	____	☐	____
2. ____	____	☐	____
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
	0	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. Lemna minor	**25**	☒	**OBL**
2. Miryophyllum spicatum	5	☐	OBL
3. ____	____	☐	____
4. ____	____	☐	____
5. ____	____	☐	____
6. ____	____	☐	____
7. ____	____	☐	____
8. ____	____	☐	____
9. ____	____	☐	____
10. ____	____	☐	____
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

SOIL

Sampling Point: 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[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of Hydrophytic vegetation and Wetland hydrology must be present, Unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ☒ No ☐

Remarks: Soils inundated with 18 inches of water, hydric by definition - Criteria 3.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? **Yes** ☒ No ☐ Depth (inches): 18

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

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

Wetland Hydrology Present? **Yes** ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo Map (Exhibit 1), WWI Map (Exhibit 2), Soil Survey Map (Exhibit 3).

Remarks: Sample site is located in the Milwaukee River floodway.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19
NE Quarter, Section 30, T8N-R22E
City of Glendale, Milwaukee County

Photo 1. Sample point 1.

Photo 2. Sample point 2.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19

NE Quarter, Section 30, T8N-R22E

City of Glendale, Milwaukee County

Photo 3. Sample point 3.

Photo 4. Sample point 4.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19

NE Quarter, Section 30, T8N-R22E

City of Glendale, Milwaukee County

Photo 5. Sample point 5.

Photo 6. Sample point 6.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19
NE Quarter, Section 30, T8N-R22E
City of Glendale, Milwaukee County

Photo 7. Sample point 7.

Photo 8. Sample point 8.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19

NE Quarter, Section 30, T8N-R22E

City of Glendale, Milwaukee County

Photo 9. Sample point 9.

Photo 10. Water in creek down stream of sample point 9.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19

NE Quarter, Section 30, T8N-R22E

City of Glendale, Milwaukee County

Photo 11. East view of creek from foot bridge.

Photo 12. Sample point 10.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19

NE Quarter, Section 30, T8N-R22E

City of Glendale, Milwaukee County

Photo 13. Sample point 12.

Photo 14. Sample point 13.

EXHIBIT 9

Milwaukee River Parkway and Oak Leaf Trail Reconstruction (W Bender Rd to W Good Hope Rd)

NE and SE Quarter, Section 19

NE Quarter, Section 30, T8N-R22E

City of Glendale, Milwaukee County

Photo 15. Sample point 14.

COPY

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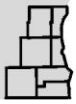

May 5, 2015

Ms. Melissa Phillips
Landscape Architect
West Bend Park, Recreation & Forestry Department
1115 S. Main Street
West Bend, WI 53095

Re: SEWRPC No. CA-618-129

Dear Ms. Phillips:

This will respond to your electronic mail message of August 7, 2014, requesting that the Commission staff conduct a field inspection of the Downtown Riverwalk project area along the Milwaukee River between the river impoundment north of STH 33 and a point just south of the Walnut Street bridge. The project area is located in parts of the southeast and northeast one-quarters of U.S. Public Land Survey Sections 11 and 14, respectively, Township 11 North, Range 19 East, City of West Bend, Washington County, Wisconsin. The purpose of the field inspection was to identify and stake the boundaries of any wetlands within the project area.

Pursuant to your request, Commission staff identified and staked the wetland boundaries within the project area on October 9, 2014. It is the Commission staff's expectation that the wetland boundaries will be surveyed and identified on forthcoming design plans attendant to the proposed riverwalk improvements. A copy of the wetland delineation report is attached for your reference.

Should you have any questions regarding this information, please do not hesitate to contact Mr. Christopher J. Jors, Specialist-Biologist (*cjors@sewrpc.org* or 262-953-3246).

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/TMS/CJJ/pk
CA618-129 DOWNTOWN RIVERWALK LETTER (00225380).DOCX

Enclosure (#225415)

cc: Ms. Kathleen Kramasz, Wisconsin Department of Natural Resources
Mr. Anthony Jernigan, U.S. Army Corps of Engineers

WETLAND DELINEATION REPORT

CITY OF WEST BEND
DOWNTOWN RIVERWALK RENOVATION

SE Quarter, Section 11,
And NE Quarter, Section 14, T11N, R19E
CITY OF WEST BEND
WASHINGTON COUNTY
WISCONSIN

Prepared by:

Christopher Jors
Jennifer Dietl
Daniel Carter
Zofia Noe

Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607

WETLAND DELINEATION REPORT OVERVIEW

(Based upon WDNR WETLAND Delineation Confirmation Request Check List)

INTRODUCTION

- Who requested the delineation – **Melissa Philipps, Landscape Architect, City of West Bend**
- Why the delineation was undertaken – **Renovation of Downtown Riverwalk**
- Date the field work was completed – **October 9, 2014**
- Who conducted field work – **Christopher Jors, Jennifer Dietl, Zofia Noe**
- Statement of Qualifications

METHODS

- Description of Methods
- Sources Reviewed
    - Topographic Map – **Exhibit 1**
    - Wisconsin Wetland Inventory (WWI) Map – **Exhibit 2**
    - Soil Survey and Floodplain Map – **Exhibit 3**
    - Historical Aerial Photos – **Exhibits 4A to 4D**
    - Sanitary Sewer Service Map – **Exhibits 5**
    - Advanced Delineation and Identification (ADID) Wetland Map – **Exhibit 6**
- Description of any site specific agency guidance (site meetings, etc.) – **None**

RESULTS AND DISCUSSION

- Antecedent hydrologic condition analysis – **Drier than normal**
- Previous wetland delineation mapping – **Exhibit 7**
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetland located within the project area
- Wetland/upland boundary explanation
- Disturbed and problematic areas encountered
- Other water resources located in the project area

LITERATURE CITED

Wetland Delineation Map – **Exhibit 8**

Vegetation Survey and Wetland Delineation Data Forms

- Preliminary Vegetation Survey – **Exhibit 9**
- Wetland Determination Data Forms – NE/NC Region – **Exhibit 10**

Site Photos – **Exhibit 11**

Farm Service Agency Slide Review – **Not Applicable**

INTRODUCTION

This wetland delineation report responds to a request from Melissa Philipps, Landscape Architect with the City of West Bend, to identify and stake the boundaries of any wetlands along the Milwaukee River in downtown West Bend. The project area includes the river and adjacent shoreline from the impoundment just north of State Highway 33 to a point just south of the Walnut Street bridge in the Southeast and Northeast one-quarters of U.S. Public Land Survey Sections 11 and 14, respectively, Township 11 North, Range 19 East, City of West Bend, Washington County, Wisconsin.

Statement of Qualifications

Christopher Jors, Specialist-Biologist, has worked at SEWRPC since 1993, and has been part of the wetland delineation team since 1994. He received a Bachelor's degree in Conservation Aspects of Biology from the University of Wisconsin – Milwaukee in 1993. Prior to working at SEWRPC, Chris worked at the UWM Field Station at the Cedarburg Bog in Saukville, WI, where he learned methods of sampling wetland plant communities within the Bog. Chris has attended various wetland training workshops including a U.S. Army Corps of Engineers Workshop on the Midwest Supplement to the 1987 Wetland Delineation Manual (2009) and a Wisconsin Department of Natural Resources Workshop on Techniques for Identifying Wetland Features on Farm Service Agency Aerial Slides (2009).

Daniel Carter, PhD, Senior Biologist, has worked at SEWRPC since 2013. He graduated with honors from Grinnell College with a Bachelor's degree in Biology. He later received a PhD in Biology from Kansas State University. Daniel has published several plant ecology articles in peer-reviewed journals, serves on the botany team for the Wisconsin Wildlife Action Plan, and co-teaches the UW-La Crosse Basic Wetland Plant Identification course. He has completed both basic and advanced wetland delineation training as well as Wisconsin Natural Heritage Inventory training. Prior to working for the Commission, Daniel served as project coordinator for a grassland restoration project overseen jointly by the United States Department of Agriculture and The Nature Conservancy and taught high school Biology.

Jennifer Dietl, Specialist-Biologist, earned a Bachelor's degree in Biology and Environmental Science from Carroll University in 1992. Jennifer has worked at the Commission from 1992 to 1997 and from 2006 to the present conducting wetland delineations, primary environmental corridor delineations, and vegetation surveys. In between years of service at the Commission she worked for the Wisconsin Department of Transportation – Green Bay as an LTE Environmental Analysis and Review Specialist – and the Wisconsin Department of Natural Resources – Green Bay as an LTE Hydrologist.

Zofia Noe, Specialist-Biologist, earned a Bachelor's degree in Biology and Chemistry from St. Mary's College of Maryland in 2003. She earned a Masters Degree in Coastal Marine and Wetland Studies from Coastal Carolina University in 2009. Zofia has experience in a variety of environmental assessments including water quality, aquatic plant, and upland vegetation surveys. Zofia began assisting with wetland delineations in the summer of 2013.

METHODS

Description of Methods

The wetland boundary determinations were based upon the criteria and methodologies set forth in the 1987 *Corps of Engineers Wetlands Delineation Manual*; the January 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0); the Wisconsin Department of Administration Coastal Management Program's 1995 *Basic Guide to Wisconsin's Wetlands and their Boundaries*; and the State of Wisconsin 2014 Wetland Plant List.

Specific methods used to field identify wetland boundaries included the U.S. Department of the Army Corps of Engineers Routine Onsite Determination Method – Plant Community Assessment Procedure. This procedure requires an initial identification of representative plant community types in the project area followed by a characterization of vegetation, soils, and hydrology for each type.

Sources Reviewed

Prior to conducting field work, Commission staff reviewed the following data sources: Washington County's topographic mapping (Exhibit 1), Wisconsin Wetland Inventory (Exhibit 2), Natural Resource Conservation Service's (NRCS) soil survey and FEMA Floodplains (Exhibit 3), Commission aerial photography (Exhibits 4A – 4D), Sanitary Sewer Service Area Map (Exhibit 5), ADID Wetland Map (Exhibit 6), and United States Department of Agriculture (USDA) and National Climatic Data Center (NCDC) data for antecedent and observed precipitation.

RESULTS AND DISCUSSION

Christopher Jors, lead investigator, along with Jennifer Dietl and Zofia Noe, identified and staked the boundaries of the wetland contained within the project area on October 9, 2014.

The results of the wetland delineation field inspection for this project area are shown on Exhibit 8, which includes sample site numbers and locations, approximate staked wetland boundaries, approximate wetland boundaries defined by concrete/rock retaining walls, and the primary environmental corridor.

Antecedent Hydrologic Conditions

WETS Station: HARTFORD 2 W, WI3453 GHCND Station: USC00479053 (West Bend, WI)

Climatological data were taken from the nearest WETS station with relevant data. Observed precipitation amounts were taken from the nearest GHCND weather station with monthly precipitation summaries.

	Month	3 yrs. In 10 less than	Normal	3 yrs. In 10 more than	Observed precip.	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month	September	1.91	3.61	4.41	1.74	dry	1	3	3
2nd prior month	August	3.03	4.15	4.88	3.42	normal	2	2	4
3rd prior month	July	2.89	4.13	4.9	3.78	normal	2	1	2
								sum	9

If sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion

Antecedent precipitation was drier than normal.

Previous Wetland Delineation Mapping

The wetlands on the northern portion of the project area were previously identified and staked in the field by the Commission staff on August 5, 2010, and October 1, 2002. These previous wetland delineations were performed at the request of the Wisconsin Department of Transportation related to the State Highway 33 bridge reconstruction project. The 2010 project area and wetland boundaries staked by the Commission at that time are shown on Exhibit 7.

Existing Environmental Mapping

The Washington County topographic map (Exhibit 1) depicts a project area encompassing the Milwaukee River channel with a vertical or nearly vertical shoreline in much of the project area. The river flows from northwest to southeast within the project area. Developed lands immediately adjacent to the river are fairly level. Lands outside of the project area rise steadily westward while lands east of the project area rise more gently. Elevations on the north side of the project area range from 908 feet above sea level west of the river, dropping to a surface water elevation of 890 feet above the impoundment, and rising to an elevation of 896 feet east of the river. Just below the impoundment the surface water elevation is approximately 884 feet. On the south side of the project area, elevations range from 896 feet west of the river, 880 feet at the water surface, and 892 feet east of the river.

The Wisconsin Wetland Inventory (WWI) map (Exhibit 2) indicates four small wetlands in the northern portion of the project area based upon a previous Commission wetland delineation in 2010 as noted above (Exhibit 7). All four are classified as forested wetlands (T3K) and are part of the Milwaukee River complex.

The NRCS Soil Survey map (Exhibit 3) shows that, outside the river channel itself, soil types within the project area include Grays silt loam (GrB) with 2 to 6% slopes and Theresa silt loam (ThB2) with 2 to 6% slopes, both well-drained soils.

Historical aerial photos of the project area were reviewed back to 1941. This review indicated that lands adjacent to the river were already largely developed by 1941. Lands west of the river were in commercial uses. Lands east of the river appear more industrial, including a major railroad complex. The dam and impoundment are evident on the 1941 photo, including a separate spillway west of the main channel. By 1970 very little had changed in terms of land use within the project area. The only obvious change was removal of the west spillway below the dam. By 1990 the Walnut Street bridge was re-aligned on the south end of the project area. Two Pedestrian bridges were also added by 1990 between STH 33 and Walnut Street. Also, a large industrial site was redeveloped on the east bank of the river. By 2010 lands east of the river underwent a major transformation. The railroad complex was demolished with the railroad itself converted to a recreational trail. Other buildings were removed in preparation for a mixed-use re-development of those lands. Since 2010 some of these vacant lands have been re-developed, including commercial and residential development. Aerial photos for years 2010, 1990, 1970, and 1941 are attached (see Exhibits 4A to 4D).

SEWRPC's sanitary sewer map (Exhibit 5) shows that the project area is located within the City of West Bend and Environs planned sanitary sewer service area.

The ADID wetland map (Exhibit 6) indicates that the wetlands in the project area are located within a designated Primary Environmental Corridor (PEC) and have been designated as ADID wetlands under the Section 404(b)(1) Guidelines of the Clean Water Act.

Amount and Types of Wetlands in the Project Area

A large floodplain-wetland complex along the Milwaukee River was identified and inventoried within the project area. The wetland consists of open water, fresh (wet) meadow and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the wetland include dumping, filling, siltation and sedimentation due to stormwater runoff from adjacent lands, water level changes due to river impoundment, and placement of rock rip-rap and concrete retaining walls along the shoreline. It is important to note that there was active erosion observed

on the stream bank of the Milwaukee River that may need to be addressed to protect existing walkway (See Photo 7 in Exhibit 11). While no Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection, Greater redhorse (*Moxostoma valenciennesi),* a State-designated special concern fish species, has been recorded in this reach of the Milwaukee River.

Exhibit 9 contains a list of the vascular plant species observed within the wetland. A list of vascular plant species observed during the field inspection was prepared for the wetland plant community area using a meander method on the day of the field inspection.

Wetland/Upland Boundary Explanation

Five representative sample sites were identified within the project area. The Wetland Determination Data Forms describing the findings at each sample site are attached as Exhibit 10. The locations of the sample sites are shown on Exhibit 8. The wetland boundary was determined using breaks in topography, changes in vegetation composition, visual identification of wetland hydrology, and presence of hydric soils. In some cases the wetland boundary was determined to follow a vertical retaining wall at the river's edge. In those cases it was not possible to physically stake the wetland boundary as shown on Exhibit 8.

Disturbed and Problematic Areas Encountered

None

Other Water Resources Located in the Project Area

None

Other Considerations

All wetlands located within the project area are contained within a recorded Primary Environmental Corridor (PEC). Accordingly, these wetlands have been designated as Advanced Delineation and Identification (ADID) wetlands under the Section 404(b)(1) Guidelines of the Clean Water Act and are deemed generally unsuitable for the discharge of dredge and fill material. The nonagricultural performance standards set forth in Section NR 151.125 of the *Wisconsin Statutes*, requires establishment of a 75-foot impervious surface protective area to protect these higher quality wetlands. This designated protective area boundary is measured horizontally from the delineated wetland boundary to the closest impervious surface. The protective area requirements should be taken into consideration for any planned improvements within the project area and it is suggested that you contact WDNR regarding approaches to meet the requirements. Finally, please be advised that no Federal or State regulatory jurisdiction determinations relative to any wetland permits or certifications are made under this report.

LITERATURE CITED

U.S. Army Corps of Engineers, 2014, State of Wisconsin Wetland Plant List

U.S. Army Corps of Engineers, 2012, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0). U.S. Army Engineer Research and Development Center, January 2012.

U.S. Army Corps of Engineers, 1987, U.S. Army Corps of Engineers wetlands delineation manual. Wetlands Research Program Technical Report Y-87-1.

Wisconsin Coastal Management Program, 1995, *Basic Guide to Wisconsin's Wetlands and their Boundaries.*


Exhibit 1. Topographic Map
City of West Bend Downtown
Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
North Street
East Washington Street
Cedar Street
Edgewood Lane
Wisconsin Street
Elm Street
South 7th Avenue
Hickory Street
East Water Street
Walnut Street
Legend
Project Area
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA# 618-129


Exhibit 2. Wisconsin Wetland Inventory Map
City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
DoA
Linden St
Beech St
Elm St
Hickory St
Mayer St
Wilson Ave
Edgewood Ln
Willow Ln
Milwaukee River
T3K
Legend
Project Area
Wetland
Wetland Indicators
USGS Waterway
N
0
200
400
Feet
Date of Photography: 2010
Source: USGS, WIDNR
CA#618-129


Exhibit 3. Soils and Floodplain Map
City of West Bend Downtown
Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
North Street
East Washington Street
Cedar Street
Edgewood Lane
Wisconsin Street
Elm Street
South 7th Avenue
Hickory Street
East Water Street
Walnut Street
HmC2
HmD2
HmB2
DaA
DsA
CeC2
CrE
FsA
CeG2
CrD2
FsB
SvC2
SvB2
SvD2
GrB
ZuB2
TnB2
DgA
CwA
Legend
Project Area
Floodway
100 Year Floodplain
Other Soils
Poorly drained or Very poorly drained
Somewhat poorly drained
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA# 618-129


Exhibit 4A. 2010 Orthophotograph
City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
Legend
Project Area
N
Source: SEWRPC
CA#618-129
0
200
400
Feet


Exhibit 4B. 1990 Aerial Photograph
City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
Legend
Project Area
N
Source: SEWRPC
CA#618-129
0
200
400
Feet


Exhibit 4C. 1970 Aerial Photograph
City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
Legend
Project Area
N
Source: SEWRPC
CA#618-129
0
200
400
Feet


Exhibit 4D. 1941 Aerial Photograph
City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
Legend
Project Area
N
Source: SEWRPC
CA#618-129
0
200
400
Feet

Exhibit 5. Sanitary Sewer Service Map

City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County

Exhibit 5 cont. Sanitary Sewer Service Map

City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County

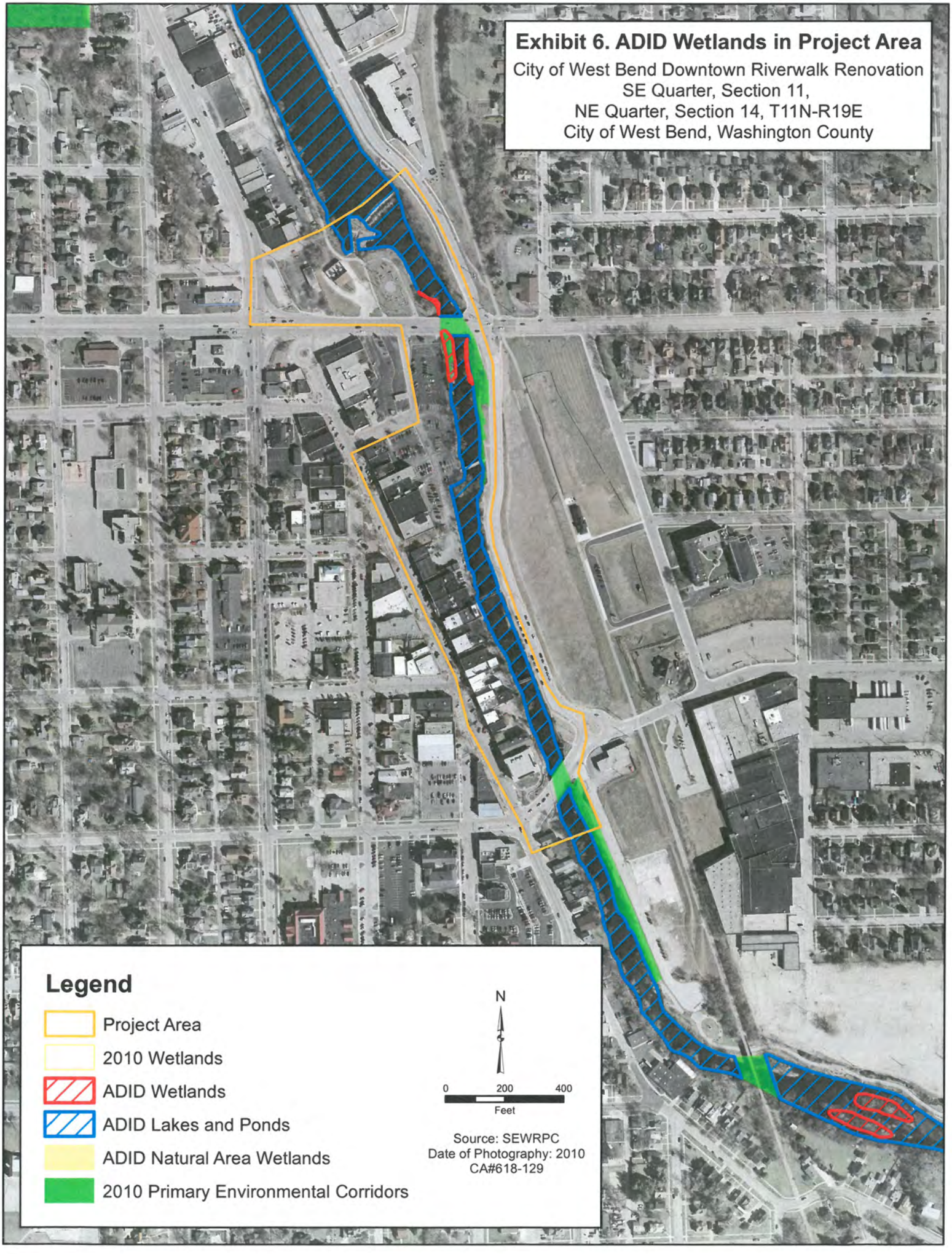
Exhibit 6. ADID Wetlands in Project Area
City of West Bend Downtown Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
Legend
Project Area
2010 Wetlands
ADID Wetlands
ADID Lakes and Ponds
ADID Natural Area Wetlands
2010 Primary Environmental Corridors
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA#618-129

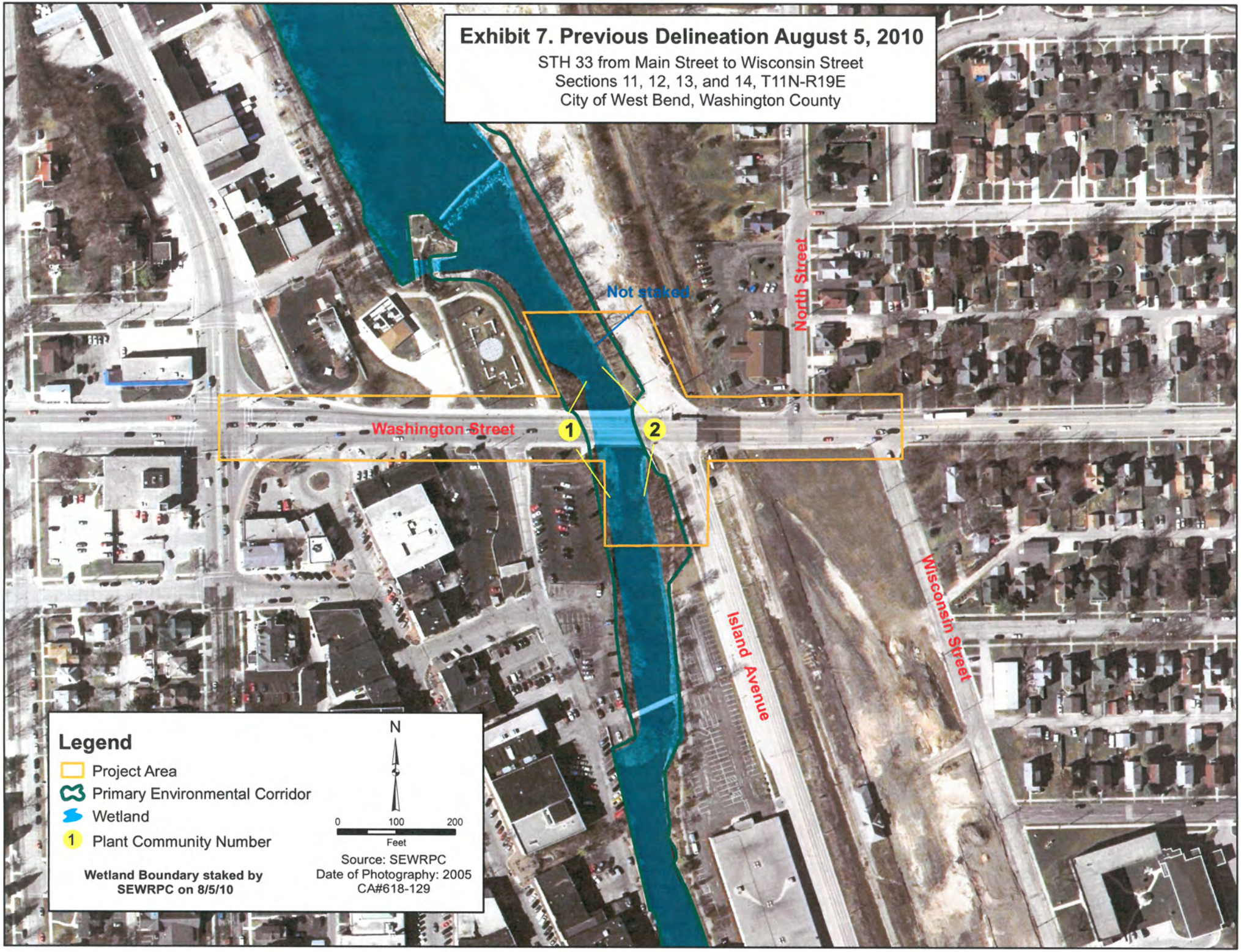
Exhibit 7. Previous Delineation August 5, 2010
STH 33 from Main Street to Wisconsin Street
Sections 11, 12, 13, and 14, T11N-R19E
City of West Bend, Washington County
Not staked
North Street
Washington Street
1
2
Island Avenue
Wisconsin Street
Legend
Project Area
Primary Environmental Corridor
Wetland
1 Plant Community Number
Wetland Boundary staked by SEWRPC on 8/5/10
N
0 100 200
Feet
Source: SEWRPC
Date of Photography: 2005
CA#618-129

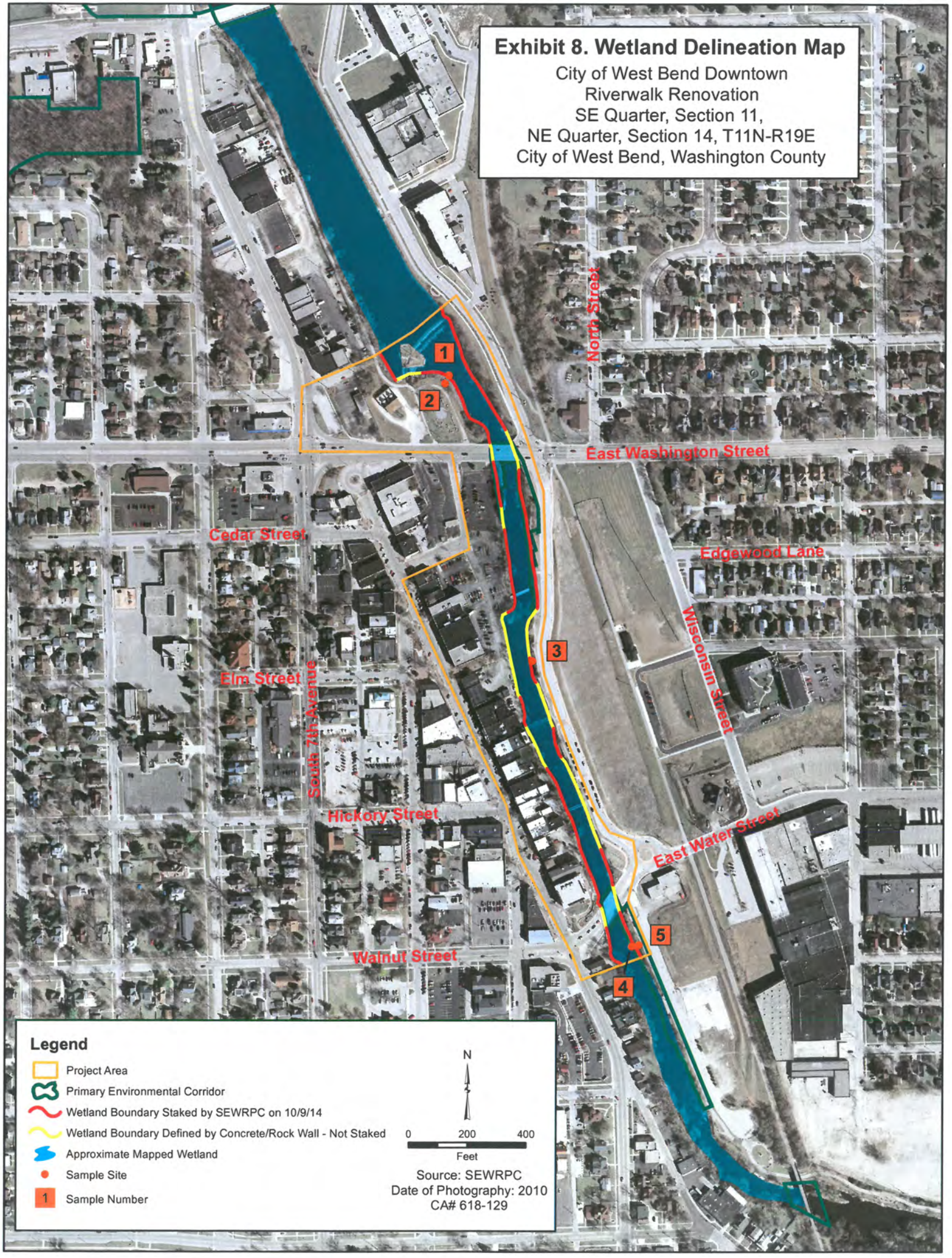
Exhibit 8. Wetland Delineation Map
City of West Bend Downtown
Riverwalk Renovation
SE Quarter, Section 11,
NE Quarter, Section 14, T11N-R19E
City of West Bend, Washington County
North Street
East Washington Street
Cedar Street
Edgewood Lane
Wisconsin Street
Elm Street
South 7th Avenue
Hickory Street
East Water Street
Walnut Street
1
2
3
4
5
Legend
Project Area
Primary Environmental Corridor
Wetland Boundary Staked by SEWRPC on 10/9/14
Wetland Boundary Defined by Concrete/Rock Wall - Not Staked
Approximate Mapped Wetland
Sample Site
Sample Number
N
0
200
400
Feet
Source: SEWRPC
Date of Photography: 2010
CA# 618-129

SVY4186
CA618-129

EXHIBIT 9

PRELIMINARY VEGETATION SURVEY
CITY OF WEST BEND DOWNTOWN RIVERWALK RENOVATION

Date: October 9, 2014

Observers: Christopher J. Jors, Biologist
Jennifer L. Dietl, Biologist
Zofia Noe, Biologist
Southeastern Wisconsin Regional Planning Commission

Location: City of West Bend in parts of the Southeast and Northeast one-quarters of U.S. Public Land Survey Sections 11 and 14, respectively, Township 11 North, Range 19 East, Washington County, Wisconsin.

Species List: Native Plant Species

Co-dominant Plant Species

***Acer negundo*--Boxelder**
Aster lateriflorus--Calico aster
Bidens vulgata--Tall beggars-ticks
Carex pellita--Woolly sedge
Cornus amomum--Silky dogwood
Cornus stolonifera--Red-osier dogwood
Elymus virginicus--Virginia wild rye
***Fraxinus pennsylvanica*--Green ash**
Impatiens capensis--Jewelweed
Iris virginica--Virginia blueflag
Lemna minor--Lesser duckweed
Lycopus americanus--Cutleaf bugleweed
Oenothera biennis--Evening-primrose
Parthenocissus quinquefolia--Virginia creeper
Populus deltoides--Cottonwood
Populus tremuloides--Quaking aspen
Prunus americana--Wild plum
Rubus occidentalis--Black raspberry
Salix amygdaloides--Peach-leaved willow
Salix interior--Sandbar willow
Salix nigra--Black willow
Scirpus validus--Soft-stemmed bulrush
Solidago altissima--Tall goldenrod
Solidago gigantea--Giant goldenrod
Tilia americana--Basswood
Ulmus americana--American elm
Verbena hastata--Blue vervain
Verbena urticifolia--White vervain
Vitis riparia--Riverbank grape

NON-Native Plant Species

Arctium minus--Common burdock
Cirsium arvense--Canada thistle
Cirsium vulgare--Bull thistle
Glechoma hederacea--Creeping Charlie
Hemerocallis fulva--Day-lily
Hesperis matronalis—Dame's rocket
Lactuca serriola--Prickly wild lettuce
Lonicera X bella--Hybrid honeysuckle
Nepeta cataria--Catnip

NON-Native Plant Species cont'

***Phalaris arundinacea*--Reed canary grass**
Poa pratensis--Kentucky bluegrass
Polygonum persicaria--Lady's thumb
***Rhamnus cathartica*--Common buckthorn**
Rhamnus frangula--Glossy buckthorn
Solanum dulcamara--Deadly nightshade
Typha angustifolia--Narrow-leaved cat-tail
Viburnum opulus--European highbush-cranberry

Total number of plant species: 46
Number of alien, or non-native, plant species: 17 (37 percent)

This approximately 4.1-acre wetland plant community area is part of the Milwaukee River floodplain-wetland complex and consists of fresh (wet) meadow and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include dumping, filling, siltation and sedimentation due to stormwater runoff from adjacent lands, water level changes due to river impoundment, and placement of rock rip-rap and concrete retaining walls along the shoreline. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection. Greater redhorse (*Moxostoma valenciennesi*), a State-designated Special Concern species, has been recorded in this reach of the Milwaukee River.