

Waters of the U.S. Determination Addendum

North Split Project

1. PROJECT INFORMATION

Date(s) of Field Reconnaissance: 10/3/2017, 10/4/2017, 10/12/2018, 4/10/2019, and 6/26/2019

Des. Nos.: 1592385 & 1600808

A Waters of the U.S. Report was completed for this project in October 2017 and was approved by Indiana Department of Transportation (INDOT) Ecology Waterway and Permitting Office (EWPO) on February 1, 2018. Subsequent to the completion of this report, the project area was expanded and additional field investigations for the expanded project area were completed. This is an addendum to the originally approved Waters of the U.S. Report. An Overall Setting Map (Attachments, page 1) as well as an Additional Water Resources Map (Attachments, page 4) are attached.

There are no mapped National Wetlands Inventory (NWI) wetlands or waterways within the additional project areas and soils were identified as Urban land-complex soils which are generally non-hydric. The Additional Water Resources Map (Attachments, page 4) illustrates where three wetlands were delineated within the roadside ditches of I-70. In this location, four Urban land complex soils are mapped.

According to the Soil Survey Geographic (SSURGO) Database for Marion County, Indiana, the following mapped soils series are within the additional project area (Attachments, Pages 5-9).

- **Urban land-Crosby-treaty complex, 0 to 2 percent slopes (UC):** very deep, somewhat poorly drained soils that are moderately deep to dense till. Formed in as much as 56 cm of loess or other silty material and in the underlying loamy till. These soils are not considered hydric; however, hydric inclusions of Treaty-Drained are known within depressions. This soil type has a hydric rating of 15%.
- **Urban land-Miami complex, 0 to 6 percent slopes (UmB):** very deep, moderately well drained soils that are moderately deep to dense till. Miami soils formed in as much as 46 cm of loess or silty material and in the underlying loamy till. They are on till plains. This soil series is not considered hydric. It has a hydric rating of 0%.
- **Urban land-Miami complex, 6 to 12 percent slopes (UmC):** very deep, moderately well drained soils that are moderately deep to dense till. Miami soils formed in as much as 46 cm of loess or silty material and in the underlying loamy till. They are on till plains. This soil series is not considered hydric. It has a hydric rating of 0%.
- **Urban land-Westland complex, 0 to 1 percent slopes (Uw):** very deep, very poorly drained soils that are deep to calcareous, stratified gravelly and sandy outwash. Formed in loamy material that can be capped with as much as 51 cm of loess or silty material. Urban-land soils are not considered hydric; however, hydric inclusions of Westland are known within depressions on outwash plains. This soil type has a hydric rating of 30%.

Attachments page 2 and 3 show the section of additional area that was surveyed along I-70 EB/WB for this addendum, this is the only additional area in which wetlands were delineated. The remaining additional area to be surveyed (referred to as "New Project Limits" in the attachments) was surveyed, however they did not contain additional water resources, as they are primarily roadway and other transportation use. The additional survey area along I-70 is located within the Pogue's Run – White River Watershed (12-HUC 051202011201). It is also not within a 100-year floodplain or regulatory floodway.

2. ADDITIONAL WATER RESOURCES

During the April 10, 2019 and June 26, 2019 field investigation, representatives of HNTB visited the expanded project area of the North Split Project and assessed the area for water resources, three wetlands were delineated within the roadside ditches of I-70, north of the interstate via six data points. One non-wetland data point was also taken to illustrate non-wetland condition within a roadside - cattail dominated - ditch (Attachments, page 4).

Wetlands W, X, and Y are palustrine, emergent (PEM) wetlands of poor quality. These wetlands appear to be incidental features that have formed as a result of stormwater ponding in roadside ditches. Additionally, these incidental features appear to have artificial hydrology resultant from the failure of stormwater drainage infrastructure; insufficient drainage from drop inlets in the roadside ditches create ponding and the recruitment of wetland hydrophytes. Wetland characteristics are summarized in Table 1, below.

3. REGULATORY STATEMENTS

The April 10, 2019 and the June 26, 2019 field reviews of the North Split project identified three wetlands within the investigated area: Wetland W, Wetland X, and Wetland Y.

Wetland W, Wetland X, and Wetland Y are likely Waters of the State. Historic aerial photography from 1936, 1941, 1950, 1956, and 1962 and the Indianapolis West 7.5 Minute USGS Topographic Quadrangle map from 1959 were reviewed to determine if historic drainage patterns were present prior to construction of I-70. I-70 is not evident on any of the historic aerials or the 1959 Indianapolis West 7.5 Minute USGS Topographic Quadrangle map. No streams or wetlands were noted within the expanded project area on the aerial photography prior to or after the interstate construction. As part of the I-70 construction, roadside drainage including concrete channels and drains were constructed in upland soils. Wetland W, Wetland X, and Wetland Y are incidental wetlands that formed as a result of ponding in manmade drainage conveyance infrastructure (stormwater ditches) and do not have a connection to a traditional navigable waterway. As such, these resources are identified as isolated incidental features and are exempt from federal regulations.

Reference Point 9 (RP-9) (Attachments, page 4) was taken in the roadside ditch at Valley Avenue. The area was dominated by narrow leaf cattail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*). Hydrology available to recruit these hydrophytes is temporary in nature and sourced from the numerous underdrain outlets upslope of the ditch. Hydrophytes extend from these stormwater outlets downslope on top of riprap, draining to Valley Avenue. A soil pit was not taken as soils were not accessible due to the depth of riprap. This area was not identified as a wetland due to lack of wetland hydrology or wetland soils.

Small drainage swales were noted at the toe of slopes on the south side of I-70. Multiple stormwater drainage inlets and underdrains were located along the ditch, creating drainage patterns in the area. Soil pits were not excavated due to a lack of wetland hydrology and hydrophytic vegetation in the area. Photos 22-24 demonstrate the topography and vegetation typical to the roadside south of I-70. These areas did not contain hydrophytes nor were there indicators of relatively permanent waters. Obvious positive drainage appears to drain the roadside effectively to adjacent storm sewers along Valley Ave to the east, and Roosevelt Ave to the west.

If construction exceeds the limits of the survey review area illustrated in this document, further field investigation will be needed. This addendum is this office's best judgment of water resources that are likely to be under federal jurisdiction, based on the guidelines set forth by the U.S. Army Corps of Engineers (USACE). The final determination of jurisdictional waters is ultimately the responsibility of the USACE. The INDOT Office of Environmental Services should be contacted immediately if impacts occur.

This waters determination has been prepared based on the best available information, interpreted in the light of the investigator's training, experience and professional judgement in conformance with the 1987 Corps of Engineers Wetlands Delineation Manual, the appropriate regional supplement, the USACE Jurisdictional Determination Form Instructional Guidebook, and other appropriate agency guidelines.



Kate Lucier, PWS
Science Project Manager

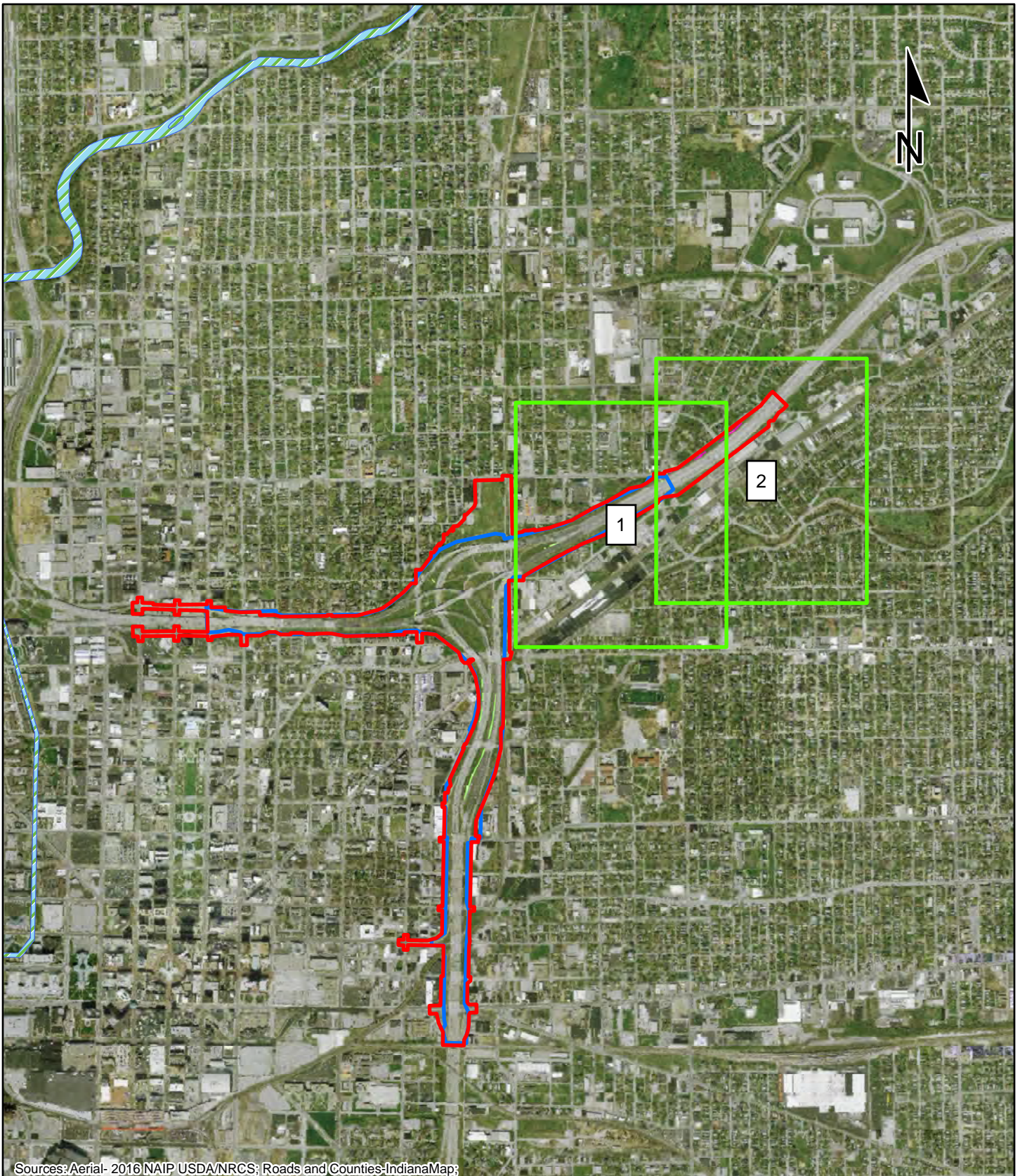


Table 1: Wetland Summary Table

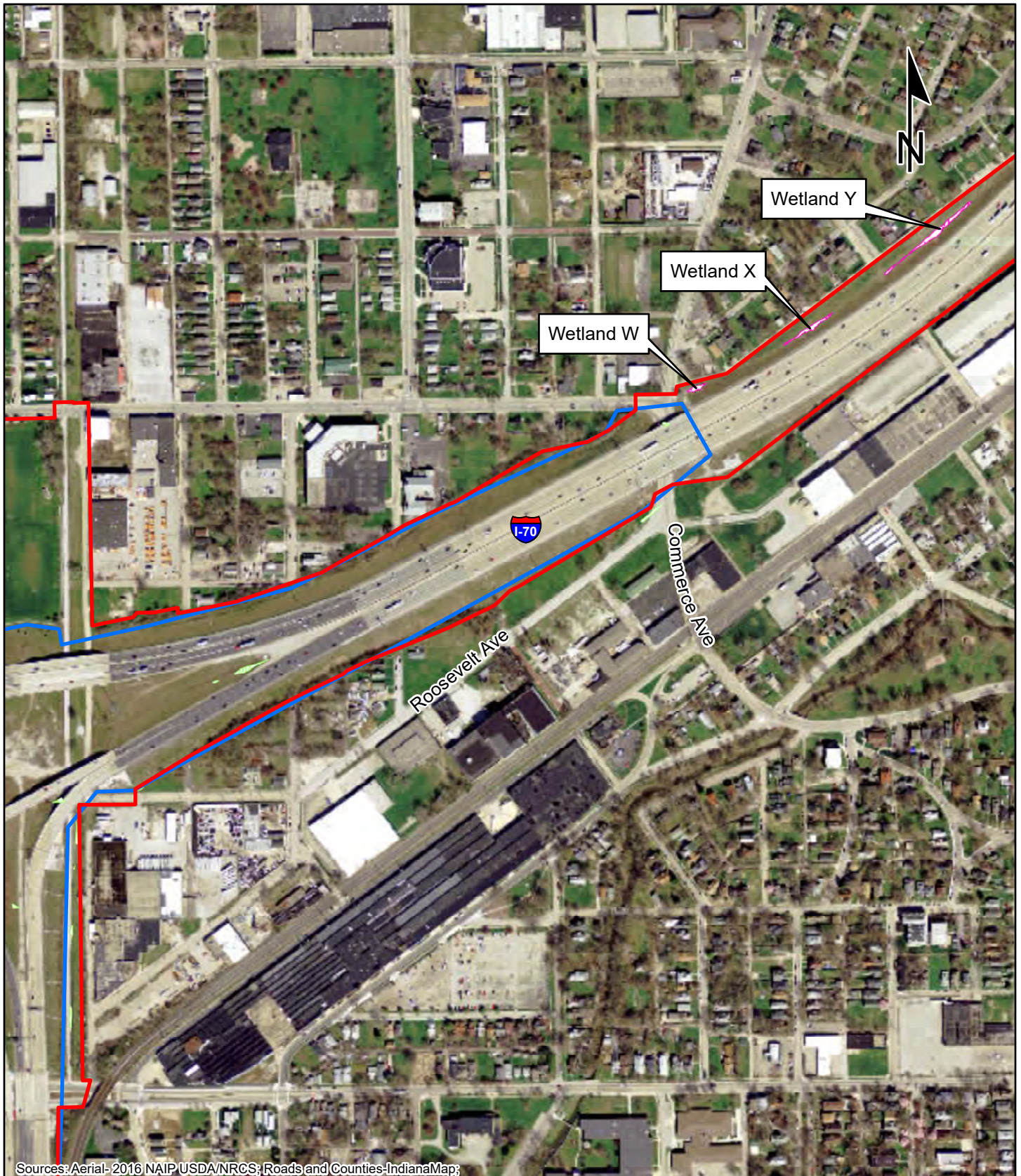
Wetland	Latitude	Longitude	Data Points	Photos	Cowardin Classification	Area (Acres)	Quality	Water of the U.S?	Class
W	39.788678	-86.131395	DP-W-IN, DP-W-OUT	1-4	PEM1A	0.02	Poor	No	Isolated, Class I Likely Exempt
X	39.789305	-86.129785	DP-X-IN, DP-X-OUT	5-9	PEM1A	0.04	Poor	No	Isolated, Class I Likely Exempt
Y	39.790232	-86.128159	DP-Y-IN, DP-Y-OUT	10-13	PEM1A	0.09	Poor	No	Isolated, Class I Likely Exempt

Table 2: Wetland Data Point Summary

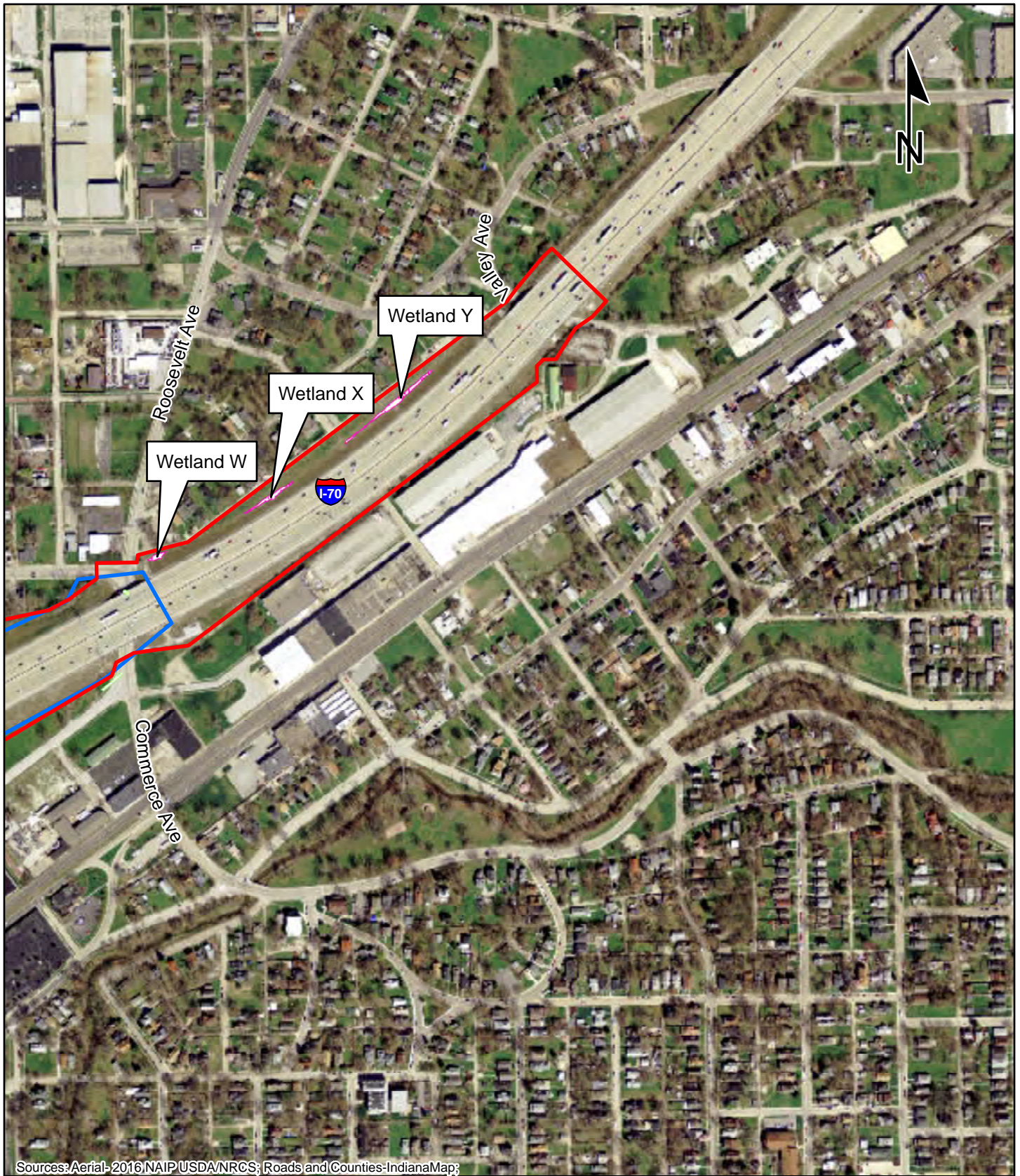
Data Point ID	Wetland Hydrology	Wetland Vegetation?	Wetland Soil Indicators?	Within a Wetland?
DP-W-IN	Yes	Yes	Yes	Yes, Wetland W
DP-W-OUT	No	No	No	No
DP-X-IN	Yes	Yes	Yes	Yes, Wetland X
DP-X-OUT	No	No	No	No
DP-Y-IN	Yes	Yes	Yes	Yes, Wetland Y
DP-Y-OUT	No	No	Yes	No
RP 9	No	Yes	No	No



<div> <div>Study Area Sections</div> <div>New Project Limits (8/21/19)</div> <div>Original Project Area (WOTUS Report)</div> <div>Previously Identified Wetlands</div> <div>New Wetlands</div> <div>Wetlands NWI (USFWS)</div> </div> <div> <div>01,0002,000</div> <div>Feet</div> </div>	<div> <div>Project Area Aerial-Map Index</div> <div>North Split Project</div> <div>Marion County, Indiana</div> </div> <div> <div>Des. No. 1592385 & 1600808</div> <div>1 inch = 2,000 feet</div> </div> <div> <div>HNTB</div> <div>Graphics created by HNTB Corporation (2019)</div> </div>	
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Page 1 of 2		Project Area Aerial North Split Project Marion County, Indiana	
<div> <div></div> New Project Area (8/21/19) <div></div> Original Project Area (WOTUS Report) <div></div> Previously Identified Wetlands <div></div> New Wetlands <div></div> Wetlands NWI (USFWS) </div>	<div> <div>0</div> <div>260</div> <div>520</div> <div>Feet</div> </div>	Des. No. 1592385 & 1600808	<div> <div>HNTB</div> <div>Graphics created by HNTB Corporation (2019)</div> </div>
		1 inch = 521 feet	



Project Area Aerial
North Split Project
Marion County, Indiana

- New Project Area (8/21/19)
- Original Project Area (WOTUS Report)
- Previously Identified Wetlands
- New Wetlands
- Wetlands NWI (USFWS)

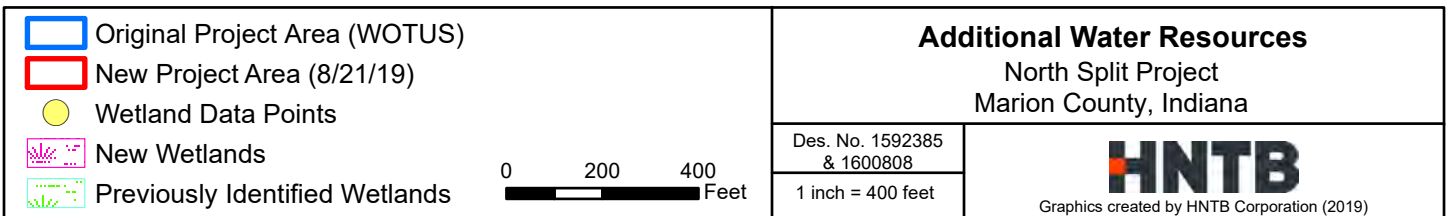
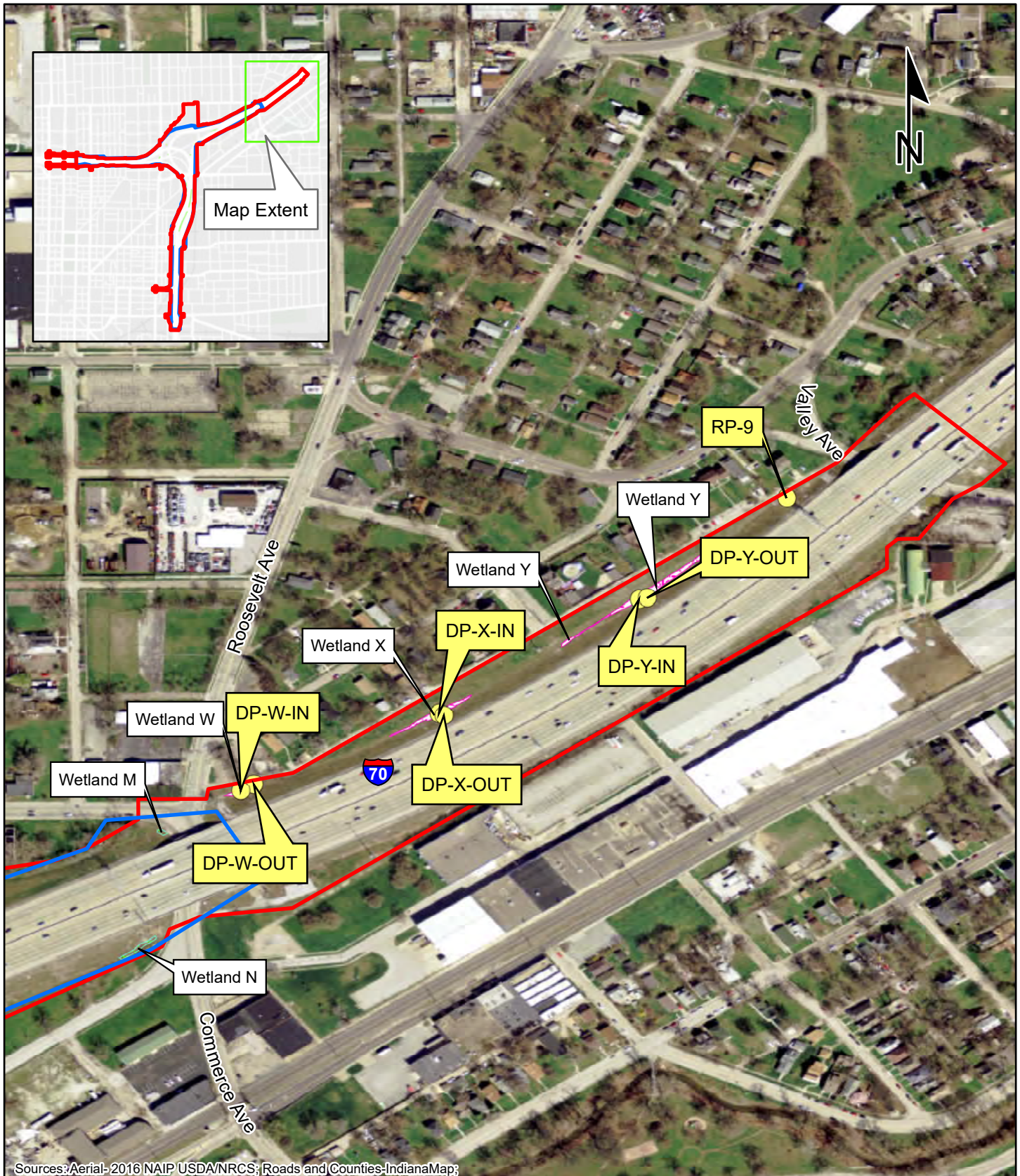
0 260 520
Feet

Des. No. 1592385
& 1600808

1 inch = 521 feet

HNTB

Graphics created by HNTB Corporation (2019)



Soil Map—Marion County, Indiana
(Des. Nos. 1592385 & 1600808)




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Marion County, Indiana

Survey Area Data: Version 23, Sep 7, 2018

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

Date(s) aerial images were photographed: Jun 27, 2014—Aug 28, 2014

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Uc	Urban land-Crosby-Treaty complex, fine loamy subsoil, 0 to 2 percent slopes	0.8	4.9%
UmB	Urban land-Miami complex, 0 to 6 percent slopes	11.5	74.5%
UmC	Urban land-Miami complex, 6 to 12 percent slopes	2.8	18.0%
Uw	Urban land-Westland complex	0.4	2.6%
Totals for Area of Interest		15.5	100.0%

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Uc	Urban land-Crosby-Treaty complex, fine loamy subsoil, 0 to 2 percent slopes	15	0.8	4.9%
UmB	Urban land-Miami complex, 0 to 6 percent slopes	0	11.5	74.5%
UmC	Urban land-Miami complex, 6 to 12 percent slopes	0	2.8	18.0%
Uw	Urban land-Westland complex	30	0.4	2.6%
Totals for Area of Interest			15.5	100.0%

Report—Hydric Soil List - All Components

Hydric Soil List - All Components—IN097-Marion County, Indiana					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
Uc: Urban land-Crosby-Treaty complex, fine loamy subsoil, 0 to 2 percent slopes	Urban land	55-85	—	Unranked	—
	Treaty-Drained	5-20	Swales,water-lain moraines,depressions	Yes	2,3
	Crosby	10-25	Ground moraines,recessionial moraines,water-lain moraines	No	—
UmB: Urban land-Miami complex, 0 to 6 percent slopes	Urban land	50	Till plains	No	—
	Miami	30	Till plains	No	—
UmC: Urban land-Miami complex, 6 to 12 percent slopes	Urban land	50	Till plains	No	—
	Miami	30	Till plains	No	—
Uw: Urban land-Westland complex	Urban land	50	Outwash plains	No	—
	Westland	30	Depressions on outwash plains	Yes	2,3

Data Source Information

Soil Survey Area: Marion County, Indiana
 Survey Area Data: Version 23, Sep 7, 2018

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split Project, Des. No. 1592385 & 1500808 City/County: Indianapolis Sampling Date: 6/26/2019
 Applicant/Owner: INDOT State: IN Sampling Point: DP-W-IN
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16N, 4E
 Landform (hillside, terrace, etc.): drainage swale Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.788678 Long: -86.131395 Datum: NAD83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: This wetland developed within a constructed drainage swale due to blockage of a drop inlet. This is not a natural wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1. <u>Lonicera tatarica</u>		2	No	FACU
2. <u>Rosa multiflora</u>		1	No	FACU
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		3	=Total Cover	
Herb Stratum	(Plot size: <u>5</u>)			
1. <u>Typha latifolia</u>		60	Yes	OBL
2. <u>Typha angustifolia</u>		40	Yes	OBL
3. <u>Schedonorus arundinaceus</u>		10	No	FACU
4. <u> </u>				
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
		110	=Total Cover	
Woody Vine Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
			=Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>100</u>	x 1 = <u>100</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>13</u>	x 4 = <u>52</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>113</u> (A)	<u>152</u> (B)
Prevalence Index = B/A = <u>1.35</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: DP-W-IN

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 4/2	60	10YR 4/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
			10YR 3/1	35	D	M		
5-7	10YR 3/1	90	10YR 3/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
7-12	2.5YR 4/1	95	10YR 3/6	5	C	PL/M	Sandy	Prominent redox concentrations

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

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

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

Restrictive Layer (if observed): Type: <u>Roadside fill</u> Depth (inches): <u>12</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Shovel refusal encountered at 12 inches due to roadside fill.

HYDROLOGY

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

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

Remarks:
The hydrology source for this wetland is the stormwater outfall pipe on the adjacent roadway embankment slope, and general precipitation runoff from fill slopes along the constructed drainage swale. Water ponds during storm events due to near complete blockage of the drop inlet.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split project City/County: Indianapolis Sampling Date: 04/10/2019
 Applicant/Owner: INDOT Des. No. 1592385 & 1500808 State: IN Sampling Point: DP-W-OUT
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16N, 4E
 Landform (hillside, terrace, etc.): drainage swale Local relief (concave, convex, none): concave
 Slope (%): 2-4 Lat: 39.788729 Long: -86.131289 Datum: NAD 83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: upland data point paired with wetland data point 3W1. Located within the drainage swale, but along a section of steeper slope ranging from 2-6 %.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Herb Stratum	(Plot size: <u>10 x 30</u>)			
1. <u>Dipsacus fullonum</u>		30	Yes	FACU
2. <u>Daucus carota</u>		30	Yes	UPL
3. <u>Apocynum cannabinum</u>		25	Yes	FAC
4. <u>Toxicodendron radicans</u>		10	No	FAC
5. <u>Festuca rubra</u>		10	No	FACU
6. <u>Asclepias syriaca</u>		5	No	FACU
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
		110	=Total Cover	
Woody Vine Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
		=Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>30</u>	x 5 = <u>150</u>
Column Totals: <u>110</u> (A)	<u>435</u> (B)
Prevalence Index = B/A = <u>3.95</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

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

SOIL

Sampling Point: DP-W-OUT

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 5/3	100					Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators:							Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)				<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)				<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Dark Surface (S7)				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Mucky Mineral (F1)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)				³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if observed):								
Type: _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Depth (inches): _____								
Remarks: Shovel refusal encountered at approximately 10 inches. Soil consists of fill material with an abundance of small gravel.								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: manmade drainage swale constructed for conveyance of stormwater runoff from multiple stormwater outfall pipes downslope to a drop inlet.			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split Project, Des. Nos. 1592385 & 1500808 City/County: Indianapolis Sampling Date: 4/10/2019
 Applicant/Owner: INDOT State: IN Sampling Point: DP-X-IN
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16N, 4E
 Landform (hillside, terrace, etc.): drainage swale Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.789305 Long: -86.129785 Datum: NAD83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: This is a wetland that has been artificially created by a lack of maintenance of the constructed drainage swale. Sediment deposition from stormdrains is masking the soil indicators and blocking drainage to create the wetland conditions.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Herb Stratum	(Plot size: <u>5</u>)			
1.	<u>Typha angustifolia</u>	<u>70</u>	<u>Yes</u>	<u>OBL</u>
2.	<u>Typha angustifolia</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
3.	<u>Cyperus esculentus</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
4.	<u>Echinochloa crus-galli</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u> </u>)			
1.				
2.				
		=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>80</u>	x 1 = <u>80</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>120</u> (B)
Prevalence Index = B/A = <u>1.20</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: DP-X-IN

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 2/2	100					Loamy/Clayey	
1-3	10YR 6/2	100					Sandy	
3-6	10YR 4/2	90	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
6-12	10YR 4/2	90	10YR 4/4	10	C	M	Loamy/Clayey	Distinct redox concentrations

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

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

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

Restrictive Layer (if observed): Type: <u>Roadside Fill</u> Depth (inches): <u>12</u>	Hydric Soil Present? Yes <u>X</u> No <u> </u>
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Remarks:
Shovel refusal encountered at 12 inches due to roadside fill. Soils are somewhat problematic. The wetland occurs in a man-made drainage swale that receives sediment deposition from the stormwater outfalls on the adjacent side slopes. The upper layers of loamy and sandy material are likely the result of recent depositional events.

HYDROLOGY

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

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
This wetland only exists because the drainage swale is not maintained.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split Project. Des. Nos. 1592385 & 1500808 City/County: Indianapolis Sampling Date: 4/10/2019
 Applicant/Owner: INDOT State: IN Sampling Point: DP-X-OUT
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16 N, 4E
 Landform (hillside, terrace, etc.): Hillslope drainage swale Local relief (concave, convex, none): concave
 Slope (%): 0-5 Lat: 39.789305 Long: -86.129785 Datum: NAD 83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: Data point was taken just above grade from wetland 2 in ditchline. Obvious vegetation gradient change.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5</u>)			
1.	<i>Poa pratensis</i>	30	Yes	FAC
2.	<i>Schedonorus arundinaceus</i>	15	Yes	FACU
3.	<i>Cirsium arvense</i>	5	No	FACU
4.	<i>Euphorbia peplus</i>	2	No	UPL
5.				
6.				
7.				
8.				
9.				
10.				
		52	=Total Cover	
Woody Vine Stratum	(Plot size: <u> </u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>2</u>	x 5 = <u>10</u>
Column Totals: <u>52</u> (A)	<u>180</u> (B)
Prevalence Index = B/A = <u>3.46</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

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

SOIL

Sampling Point: DP-X-OUT

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	99	10YR 3/3	1	C	M		Faint redox concentrations
4-13	10YR 4/3	90	10YR 5/4	10	C	M		Faint redox concentrations

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

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

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Shovel refusal encountered at 13 inches due to roadside fill

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split Project, Des. Nos. 1592385 & 1500808 City/County: Indianapolis Sampling Date: 4/10/2019
 Applicant/Owner: INDOT State: IN Sampling Point: DP-Y-IN
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16N, 4E
 Landform (hillside, terrace, etc.): drainage swale Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.790232 Long: -86.128159 Datum: NAD83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland was artificially created due to a lack of maintenance of the constructed drainage swale that conveys stormwater from the outfall pipes to the drop inlets.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u> </u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>																					
		=Total Cover																			
Sapling/Shrub Stratum (Plot size: <u> </u>)					Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u> 70 </u></td> <td>x 1 = <u> 70 </u></td> </tr> <tr> <td>FACW species <u> 0 </u></td> <td>x 2 = <u> 0 </u></td> </tr> <tr> <td>FAC species <u> 0 </u></td> <td>x 3 = <u> 0 </u></td> </tr> <tr> <td>FACU species <u> 5 </u></td> <td>x 4 = <u> 20 </u></td> </tr> <tr> <td>UPL species <u> 0 </u></td> <td>x 5 = <u> 0 </u></td> </tr> <tr> <td>Column Totals: <u> 75 </u> (A)</td> <td><u> 90 </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u> 1.20 </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u> 70 </u>	x 1 = <u> 70 </u>	FACW species <u> 0 </u>	x 2 = <u> 0 </u>	FAC species <u> 0 </u>	x 3 = <u> 0 </u>	FACU species <u> 5 </u>	x 4 = <u> 20 </u>	UPL species <u> 0 </u>	x 5 = <u> 0 </u>	Column Totals: <u> 75 </u> (A)	<u> 90 </u> (B)	Prevalence Index = B/A = <u> 1.20 </u>	
Total % Cover of:	Multiply by:																				
OBL species <u> 70 </u>	x 1 = <u> 70 </u>																				
FACW species <u> 0 </u>	x 2 = <u> 0 </u>																				
FAC species <u> 0 </u>	x 3 = <u> 0 </u>																				
FACU species <u> 5 </u>	x 4 = <u> 20 </u>																				
UPL species <u> 0 </u>	x 5 = <u> 0 </u>																				
Column Totals: <u> 75 </u> (A)	<u> 90 </u> (B)																				
Prevalence Index = B/A = <u> 1.20 </u>																					
1. <u> </u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>																					
		=Total Cover																			
Herb Stratum (Plot size: <u> 5 </u>)					Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> X </u> 2 - Dominance Test is >50% <u> X </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u><i>Typha angustifolia</i></u>		60	Yes	OBL																	
2. <u><i>Schoenoplectus tabernaemontani</i></u>		10	No	OBL																	
3. <u><i>Schedonorus arundinaceus</i></u>		5	No	FACU																	
4. <u> </u>																					
5. <u> </u>																					
6. <u> </u>																					
7. <u> </u>																					
8. <u> </u>																					
9. <u> </u>																					
10. <u> </u>																					
		75	=Total Cover																		
Woody Vine Stratum (Plot size: <u> </u>)																					
1. <u> </u>																					
2. <u> </u>																					
		=Total Cover																			
Remarks: (Include photo numbers here or on a separate sheet.)																					

SOIL

Sampling Point: DP-Y-IN

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/2	95	10YR 4/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
4-8	10YR 4/2	90	10YR 4/4	10	C	PL/M	Loamy/Clayey	Distinct redox concentrations
8-16	10YR 4/2	98	10YR 4/4	2	C	M	Sandy	Distinct redox concentrations

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

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

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <u>X</u> No _____
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Remarks:
Soils are not natural. This area is a constructed drainage swale along the base of roadway embankments.

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>x</u> Depth (inches): _____ Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split Project Des. No. 1592385 & 1500808 City/County: Indianapolis Sampling Date: 6/26/2019
 Applicant/Owner: INDOT State: IN Sampling Point: DP-Y-OUT
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16N, 4E
 Landform (hillside, terrace, etc.): Hillslope drainageway Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.790232 Long: -86.128159 Datum: NAD 83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>x</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Herb Stratum	(Plot size: <u>5</u>)			
1.	<u>Schedonorus arundinaceus</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Lotus corniculatus</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Gleditsia triacanthos</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>37</u> =Total Cover		
Woody Vine Stratum	(Plot size: <u> </u>)			
1.				
2.				
		=Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>37</u>	x 4 = <u>148</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>37</u> (A)	<u>148</u> (B)
Prevalence Index = B/A = <u>4.00</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No x

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

SOIL

Sampling Point: DP-Y-OUT

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/2	100					Loamy/Clayey	
5-13	10YR 5/2	75	10YR 5/6	25	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Shovel refusal was encountered at 13 inches due to the presence of gravel

HYDROLOGY

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-65/I-70 North Split Project, Des. Nos. 1592385 & 1500808 City/County: Indianapolis Sampling Date: 6/26/2019
 Applicant/Owner: INDOT State: IN Sampling Point: RP-9
 Investigator(s): K. Lucier, C. Tegeler Section, Township, Range: 31, 16N, 4F
 Landform (hillside, terrace, etc.): Hillslope drainage swale Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.789768 Long: -86.129077 Datum: NAD 83
 Soil Map Unit Name: Udorthents NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5</u>)			
1.	<u>Phalaris arundinacea</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>
2.	<u>Typha angustifolia</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Festuca rubra</u>	<u>15</u>	<u>No</u>	<u>FACU</u>
4.	<u>Solidago altissima</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
5.	<u>Rumex crispus</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
6.				
7.				
8.				
9.				
10.				
		<u>102</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u> </u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>50</u>	x 1 = <u>50</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>2</u>	x 3 = <u>6</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>102</u> (A)	<u>206</u> (B)
Prevalence Index = B/A = <u>2.02</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: RP-9

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

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

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

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u> x </u>
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Remarks:
Shovel test was not available due to the abundance of gravel and sedimentation at the surface.

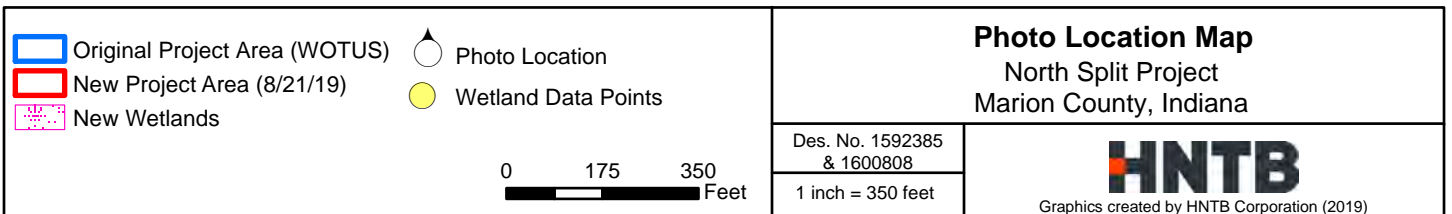
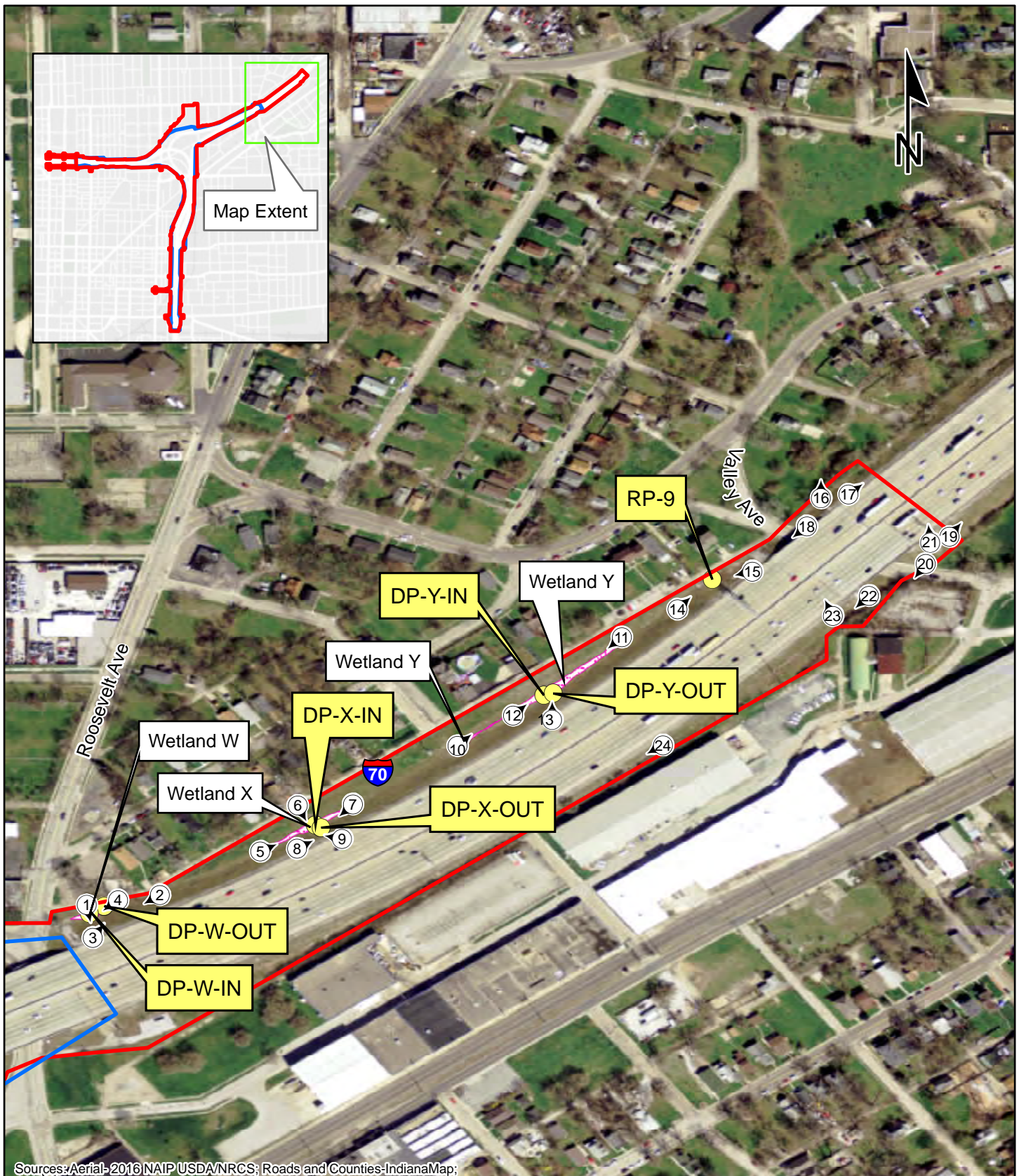
HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u> x </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is constantly drained by slope to Valley Avenue.





1. Facing south towards Wetland W and underdrain (4/10/2019)



2. Facing southwest towards Wetland W (4/10/2019)



3. Soil profile at DP-W-IN (6/26/2019)



4. Soil profile at DP-W-OUT (6/26/2019)



5. Facing northeast towards Wetland X (4/10/2019)



6. Looking southeast to underdrain across Wetland X (4/10/2019)



7. Looking southwest towards Wetland X (4/10/2019)



8. Soil profile at DP-X-IN (6/26/2019)



9. Soil profile at DP-X-OUT (6/26/2019)



10. Looking northeast towards Wetland Y (4/10/2019)



11. Looking southwest towards Wetland Y (4/10/2019)



12. Soil profile at data point DP-Y-IN (6/26/2019)



13. Soil profile at data point DP-Y-OUT (6/26/2019)



14. Facing northeast towards ditch by Valley Avenue (4/10/2019)



15. Soil profile at data point RP-9 (4/10/2019)



16. Looking north to drainage area within right of way (6/26/2019)



17. Looking northeast towards interstate right of way (6/26/2019)



18. Looking southwest to Valley Avenue (6/26/2019)



19. Looking east within right of way (6/26/2019)



20. Looking southwest to Valley Avenue (6/26/2019)



21. Looking north to drainage inlet (6/26/2019)



22. Looking southwest within interstate right of way (4/10/2019)



23. Looking northwest to under drain (4/10/2019)



24. Looking southwest towards roadside drainage feature (4/10/2019)