

# NDDOT WETLAND REPORTS

Office & Field

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Environmental Scientist



# Design Manual, Chapter II – Section IV (Manual)

Design Manual

## Chapter II – Section IV: WETLANDS, VEGETATION & ENVIRONMENTAL PERMITTING

North Dakota Department of Transportation

2014

### 7.5 US Army Corps of Engineers

- 7.5.1 Wetlands and Other Waters
- 7.5.2 USACE Jurisdictional Determination
- 7.5.3 Requesting a Jurisdictional Determination
- 7.5.4 Determining Need for a 404 Permit
- 7.5.5 Determining Wetland Impacts
- 7.5.6 Types of Wetland Impacts
- 7.5.7 Section 10 of the Rivers and Harbors Act
- 7.5.8 Wetland Mitigation Plan – 12 Components
- 7.5.9 Documentation

### 7.6 US Coast Guard

### 7.7 US Fish and Wildlife Service

- 7.7.1 USFWS Easement Land
- 7.7.2 USFWS Fee Owned Land

### 7.8 State of North Dakota

- 7.8.1 Wetlands
- 7.8.2 Sovereign Lands
- 7.8.3 Dike Modification
- 7.8.4 Floodplain Development
- 7.8.5 Floodways

### 8.0 Emergency Projects

### 9.0 Woody Vegetation Mitigation

### Appendix A – Wetland Report Examples

- A1 Example Wetland Report - Field Delineation
- A2 Example Wetland Report - Office Delineation
- A3 GIS Attribute Table
- A4 Wetland/OW Table Template
- A5 Wetland/OW Impact Table Template
- A6 Wetland Mitigation Monitoring and Success Criteria
- A7 Mitigation Monitoring Report Example
- A8 Mitigation Monitoring Letter to Landowner Template
- A9 USACE - 12 Components of Mitigation Plan Guidelines
- A10 USACE - 12 Components of Mitigation Example Plan

### Appendix B – Wetland Resources

- B1 USACE 404 Jurisdictional Information and Examples
- B2 Request of USACE 404 Jurisdictional Determination
- B3 Additional Information For Wetland Jurisdictional Requests on NDDOT Projects
- B4 Wetland Classification Illustrations and Charts
- B5 Wetlands Example - Typical Impact Sections
- B6 Stream Mitigation Culvert Detail
- B7 Standard Format for Wetland Delineation Attribute Tables

# STRUCTURAL IMPROVEMENTS

Project No.

PCN

SS-1-234(567)890

12345

RP 44.5 to 45.8 and RP 295.5 to 297.5

2 Eddy & LaMoure County



Prepared by

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
BISMARCK, NORTH DAKOTA

<http://www.dot.nd.gov/>

3 DIRECTOR  
Grant Levi, P.E.

4 PROJECT DEVELOPMENT DIRECTOR  
Robert Fode, P.E.

5 Principal Author: John Doe  
Environmental Reviewer: Bill Wetland, NDDOT ETS  
Current Date (mm/yyyy)

23 USC § 409

NDDOT Reserves All Objections

# Changes to Reports

1. The type was added to the cover.
2. Includes the county(s) the project area is in.
3. Director has been updated.
4. Project Development Director has been updated.
5. Environmental Reviewer has been added.

❖ Appendix A (A1 – Field & A2 – Office). **Manual**

# Table of Contents

❖ New items have been added.

## TABLE OF CONTENTS

I. Introduction .....	1
II. Methods .....	1
III. Results .....	1
IV. References .....	3
V. Delineator's Credentials .....	5

### Tables

Table 1 - Wetlands .....	6
Table 2 - Other Waters .....	8

### Exhibits

Exhibit 1 - Project Location Map	
Exhibit 2 - Wetland Map	
Exhibit 3 - USGS Topo Map	
Exhibit 4 - Hydric Rating by Map Unit	

### Appendices

Appendix A - Additional Information for Jurisdictional Requests	
Appendix B - Other Waters Information	
Appendix C - Site Photos	
Appendix D - Wetland Determination Data Forms	

# EXAMPLE SECTION I.

## INTRODUCTION

### I. Introduction

The North Dakota Department of Transportation (NDDOT), in cooperation with the Federal Highway Administration (FHWA), is planning roadway improvements on (Highway Name, Vicinity, Description). ***Please refer to Exhibit 1, Project Location Map.*** The project consists of (Scope of Work). The project is planned to be built during the (yyyy) construction season.

(Jane Doe and John Doe of the Consulting firm name) conducted a field wetland and other waters delineation for the proposed project on (enter date). Supplementary project area information can be found in ***Appendix A, Additional Information for Jurisdictional Requests and Appendix B for Other Waters Information.***

## SECTION II. METHODS

- Update the name of the **Manual** in the Methods section.
- Always include the size of the project area.

# Section III. Results

Discuss types of maps used i.e. USGS Topo Maps, NWI Maps, & Hydric Rating by Map Unit, and the number of wetlands each type of map indicated.

A discussion on each wetland and if they are natural or artificial. If they are artificial were they created in uplands, do they drain only upland, and do they have relatively permanent flow. Are the wetlands connected to another wetland via a culvert?

## III. Results

Thirty wetlands were identified within the project area. Approximately 34.05 acres of wetlands were delineated *Please refer to Table 1, Wetlands*. Some wetlands extended beyond the limits of the project area; however, wetlands were only delineated to the boundary of the project area. *Please see Appendices C and D for Site Photos and Wetland Determination Data Forms.*

### USGS Topo Map:

The USGS Topo Map was examined for indications of wetland conditions within the project corridor. The topographic map indicates Medicine Lake (OW4a and OW4d) and the James River (OW6c) within the project area. Medicine Lake is indicated as intermittent lake and the James River is a permanent river. Wetland 2c, 4h, 5a, 5e and 5f, are indicated as marsh on the map within or near the project corridor. *Please refer to Exhibit 3, USGS Topo Map.*

### NWI:

NWI maps are utilized as an off-site tool in identifying areas of potential wetlands. These maps were generated in the early 1980's. In all cases NWI maps under delineated wetland boundaries compared to the on-site determination. *Please refer to Exhibit 2, Wetland Map.*

### Hydric Rating by Map Unit:

#### Eddy County:

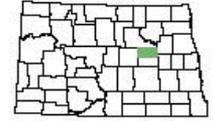
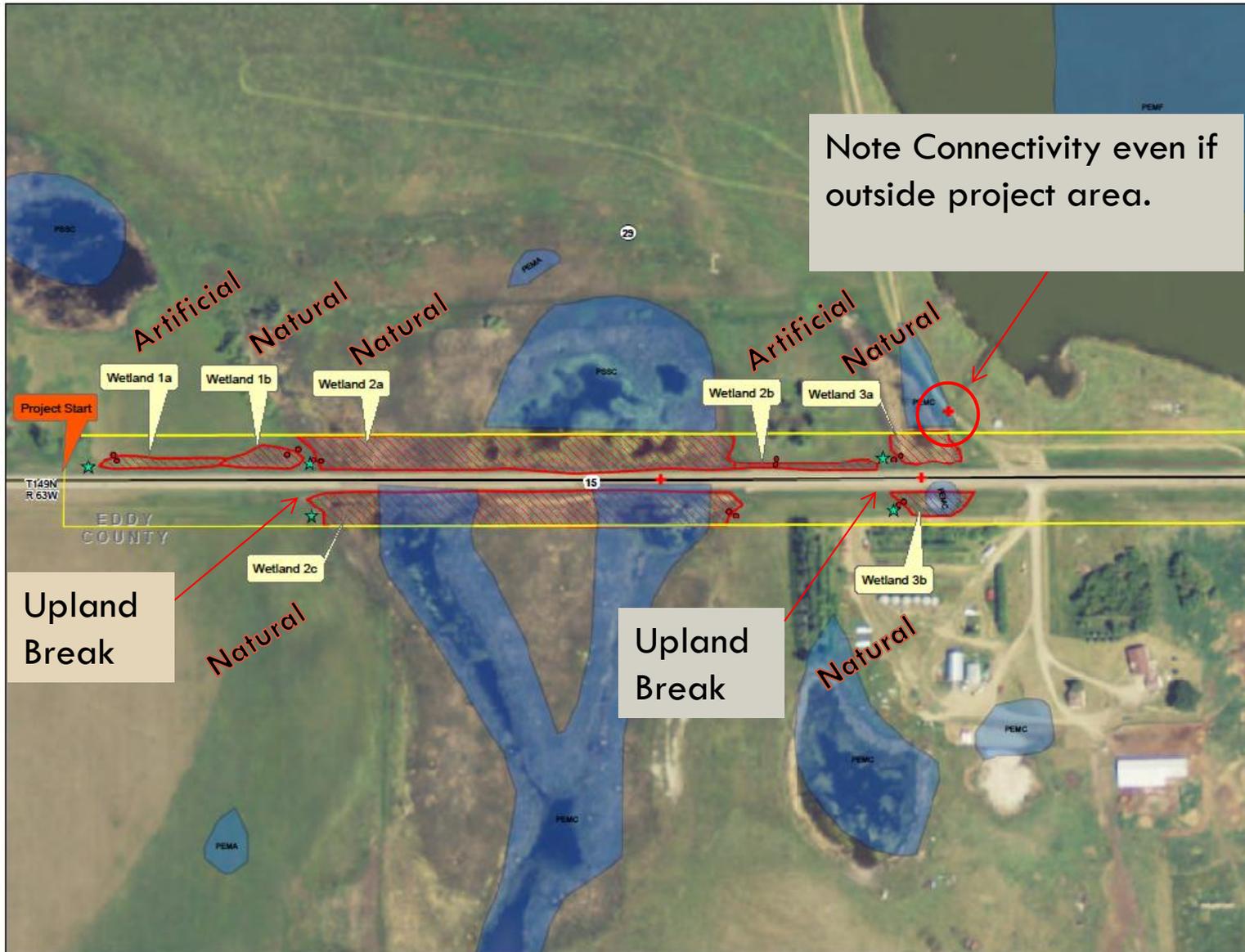
Eddy County Soil Survey: The Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) (<http://websoilsurvey.nrcs.usda.gov/app/>) identified areas of mapped hydric soils within the project boundary. Wetlands 2a, 2c, 4e and 4h are included in soil map units that are considered predominantly (66 to 99%) hydric. The remaining wetlands are included in map units that are predominately non hydric (1 to 32%). *Please refer to Exhibit 4, Hydric Rating by Map Unit Map.*

Wetlands 1a and 1b: Wetland 1a is an artificial wetland constructed as part of ND 15. It was constructed in upland, drains only upland and does not have a relatively permanent flow (RPF). However it is an extension of wetland 1b which is a natural wetland. There is an upland break between wetland 1a/1b and wetlands 2a/2b.

Wetlands 2a, 2b and 2c: Wetland 2a and 2c are natural wetlands. Wetland 2b is an artificial wetland constructed as part of ND 15 and connects to wetland 2a. It was constructed in upland, drains only upland and does not have a relatively permanent flow (RPF). However it is an extension of wetland 2a which is a natural wetland. Wetland 2a and 2c are connected by a culvert through ND 15. There is an upland break between wetlands 2a, 2b, and 2c and wetlands 3a.

Wetlands 3a and 3b: Wetland 3a and 3b are natural wetlands. Wetland 3a and 3b are connected by a culvert through ND 15. Wetland 3a is connected to Medicine Lake with no upland break via a 24 inch culvert under the road between wetlands 3a and Medicine Lake.

# Section III. Results



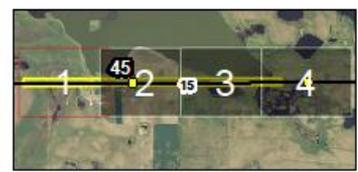
Eddy County,  
North Dakota

Note Connectivity even if  
outside project area.

- NWI Data
- NDHUB Linear Wetlands
- Photo Points
- Project Boundary
- Testholes
- Project Delineations
- Reference Pts
- Center Line Pipes
- Interstate Highway
- State Highway
- US Highway
- Bypass
- County Boundaries
- PLSS Sections
- PLSS Townships

Upland  
Break

Upland  
Break



Orthophoto Source: NAIP  
Date of Photography: 2012  
Data Source: NDGIS Hub & NDDOT

Exhibit 2 - Wetland Map			
Drawn By: KSB	Date: 2/28/14	Project ID: SS-1-234(567)890	PCN Sheet: 12345 1
 <b>NDDOT</b> North Dakota Department of Transportation			



## SECTION IV. REFERENCES

## SECTION V. DELINEATOR'S CREDENTIALS

- No changes were made to the example reports.



# Wetland Tables and Other Water Tables

- Updated Wetland Tables on the Design Manual, Reference and Forms page.
- A # was added in front of individual numbers.
- West and North were moved to the column headings instead of each line.
- RPF, Ditch constructed in uplands, & Ditch drains only uplands were added.

## Example Wetland Table for Office Delineation Report

The office wetland delineation for PCN 12345 was conducted on November 6, 2013 by John Doe of the North Dakota Department of Transportation. The wetland delineations were conducted using a combination of NWI maps, aerial photography, USGS Topo Layer and NRCS Web Soil Surve, assuming a 100 foot buffer around the project area.

Wetland Number	Location	LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	NWI Cowardin Classification	Wetland Type	Wetland Size (acres)	Wetland Feature	*RPF Potential	Ditch Constructed in Uplands	Ditch drains only upland
#1	Sec.19, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMCx	Ditch	5.00	Artificial	No	No	Y
#2	Sec. 6, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMA	Basin	2.00	Natural	NA	NA	NA
#3	Sec.6, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMA	Slope	6.00	Natural	NA	NA	NA
*RPF - Relatively Permanent Flow . May require field verification.						<b>Totals</b>	<b>13.00</b>			

## Example Wetland Table for Field Delineation Report

The wetland delineation for PCN 67890 was conducted on September 24, 2013 by John Doe of the North Dakota Department of Transportation. The wetland delineations were conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. Observations at each sample location were recorded on the Wetland Delineation Data Form - Great Plains Region Version 2.0. Wetland boundaries and paired sample locations were recorded by GPS. The project is located within the LAKE SAKAKAWEA (10110101) Hydrologic Unit Code (HUC).

Wetland Number	Test Hole (in wetland)	Location	LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	Field Cowardin Classification	Wetland Type	Wetland Size (acres)	Wetland Feature	*RPF	Ditch Constructed in Uplands	Ditch drains only upland
#1	11	Sec.19, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMCx	Ditch	5.00	Artificial	N	Y	Y
#2	9	Sec. 6, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMA	Basin	2.00	Natural	NA	NA	NA
#3	7	Sec.6, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMB	Slope	6.00	Natural	NA	NA	NA
#5	5	Sec.30, T146N, R95W	-xxx.xxxxxx	xx.xxxxxx	PEMBx	Slope	0.02	Artificial	Y	NA	NA
*RPF - Relatively Permanent Flow . May require field verification.						<b>Totals</b>	<b>13.02</b>				

## Example Other Waters Table for Office or Field Delineation Report

Place below Office or Field Wetland Table if needed.

* OTHER WATERS									
Number	Location	LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	Local Waterway Name	Tributary To	Field or NWI Cowardin Classification	OW Size (acres)	OW Length (feet)	Feature
#OW 1	Sec.19, T146N, R95W	-xxx.xxxxxx	-xxx.xxxxxx	Deep Creek	Heart River	R2UB1	0.64	340	River
#OW 2	Sec. 6, T146N, R95W	-xxx.xxxxxx	-xxx.xxxxxx	Tributary	Deep Creek	R2AB1	0.06	15	Stream
#OW 3	Sec.30, T146N, R95W	-xxx.xxxxxx	-xxx.xxxxxx	Rice Lake	NA	L2ABF	5.00	NA	Lake
#OW 4	Sec. 6, T146N, R95W	-xxx.xxxxxx	-xxx.xxxxxx	Tributary	Deep Creek	R4SBCx	0.30	250	Artificial Straightened Stream
#OW 5	Sec. 19, T146N, R95W	-xxx.xxxxxx	-xxx.xxxxxx	NA	NA	L2ABF	0.50	NA	Lake
<b>TOTALS</b>							<b>6.50</b>	<b>605.00</b>	

\*\* Other Waters (OW) can include traditional navigable waters (named rivers, streams, and lakes); non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and deepwater habitat (greater than 2 meters) not dominated by persistent, emergent vegetation.

-xxx.xxxxxx

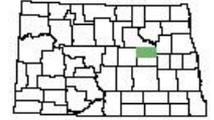
# WETLAND NUMBERING

**Wetland Numbering** - All wetlands will be individually numbered. Wetlands segmented by road feature such as approaches, culverts, intersections, etc. will use an alpha numeric system. Segments of the same wetland will be labeled using alpha characters (e.g. 1 a, 1 b, 1 c). Linear wetlands will receive one number per reach segment unless segmented by road features such as: approaches; culverts; intersections; etc. Segmented reaches will use an alpha numeric system. Numbering will begin on the west or south ends of a linear project proceeding east or north, ensuring that when complete, you have collected information on both sides of the road.

❖ Information above is taken directly from the **Manual**.

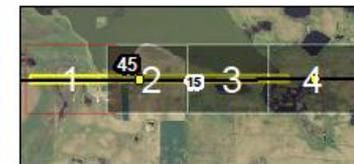
Manual (2.4.2).

# Wetland Numbering



**Eddy County,  
North Dakota**

- NWI Data
- NDHUB Linear Wetlands
- Photo Points
- Project Boundary
- Testholes
- Project Delineations
- Reference Pts
- Center Line Pipes
- Interstate Highway
- State Highway
- US Highway
- Bypass
- County Boundaries
- PLSS Sections
- PLSS Townships

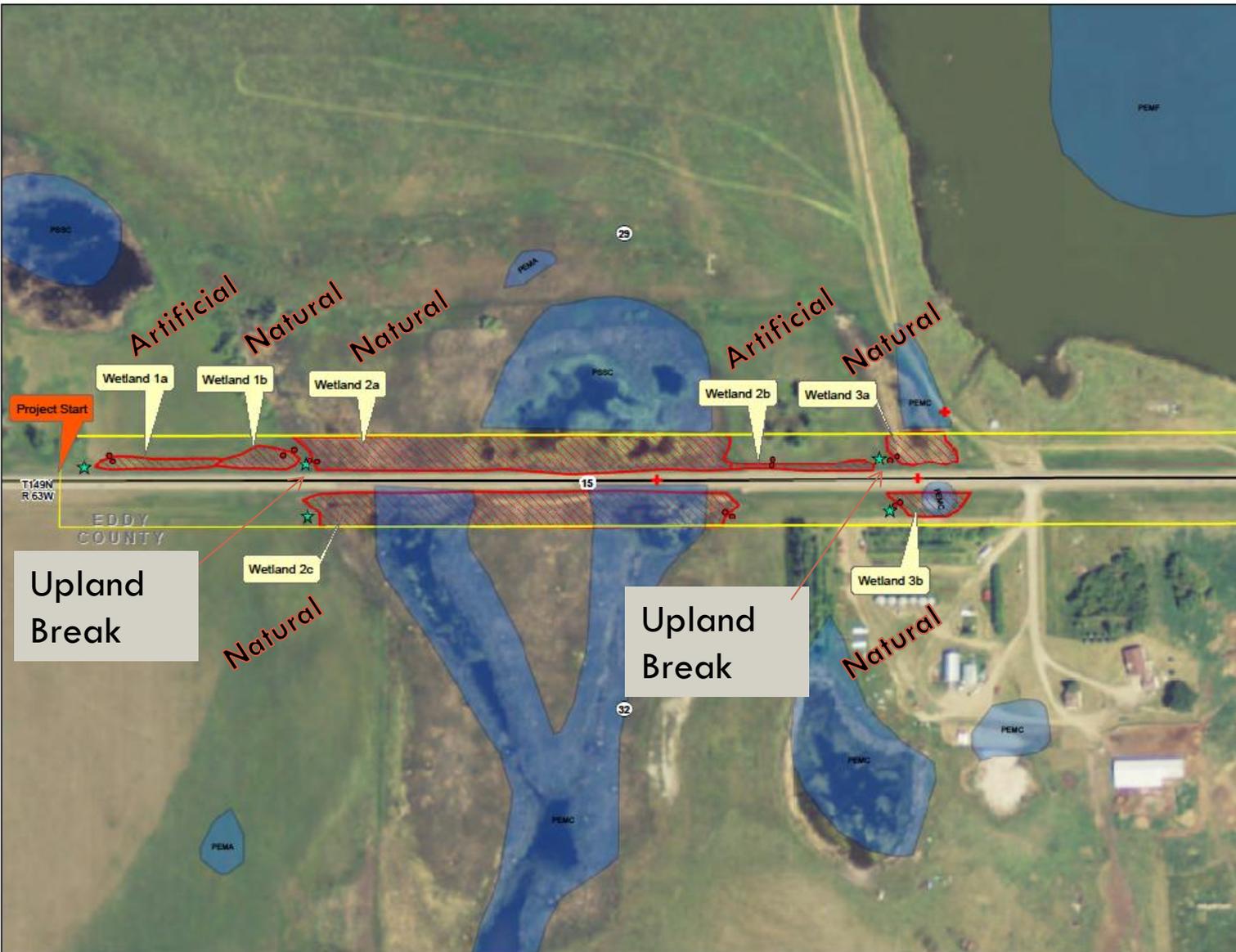


Orthophoto Source: NAIP  
Date of Photography: 2012  
Data Source: NDGIS Hub & NDDOT

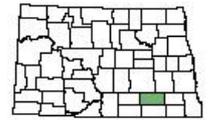
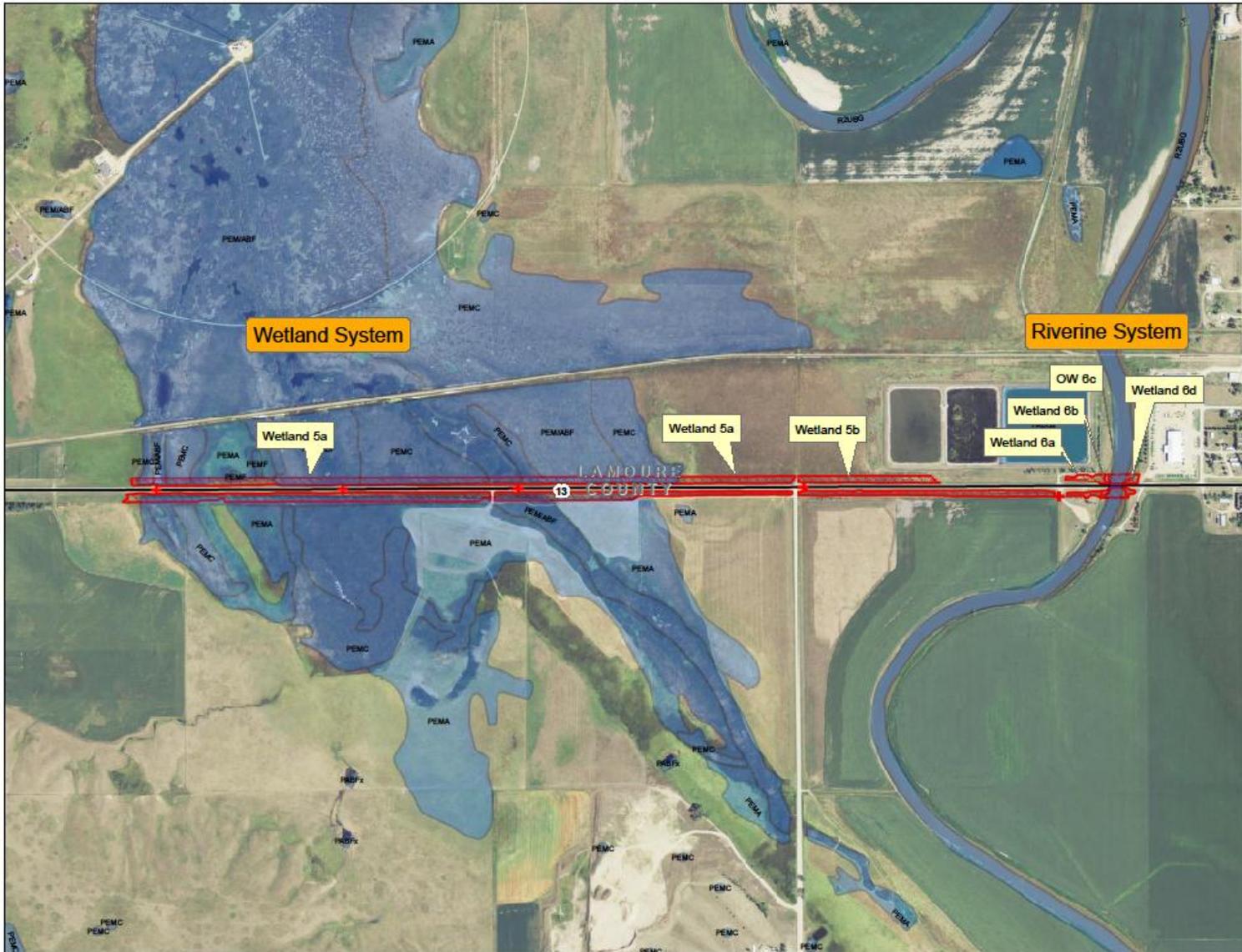
Exhibit 2 - Wetland Map			
Drawn By:	Date:	Project ID:	PCN: Sheet:
KBS	2/28/14	SS-1-234(567)890	12345 1

**NDDOT**  
North Dakota  
Department of Transportation

0 60 120 240 360 480 Feet



# Wetland Numbering



LaMoure County,  
North Dakota

- NWI Data
- ▨ Project Delineations
- + Center Line Pipes
- Interstate Highway
- State Highway
- US Highway
- Bypass
- County Boundaries



Orthophoto Source: NAIP  
Date of Photography: 2012  
Data Source: NDGIS Hub & NDDOT

Exhibit 1 - Project Location Map			
Drawn By: KSS	Date: 2/28/14	Project ID: 1-234/567/890	PCN: 12345 Sheet: 1
 <b>NDDOT</b> North Dakota Department of Transportation			

0 240 480 960 1,440 1,820 Feet

# WETLAND TYPE & WETLAND FEATURE

## ■ Natural Wetlands

- Basin
- Slope
- Riverine
- Fringe

## ❧ Artificial Wetlands

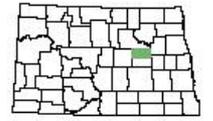
- Ditch

❖ Example photos and definitions for each Wetland Type are provided in the **Manual**.

# OTHER WATERS

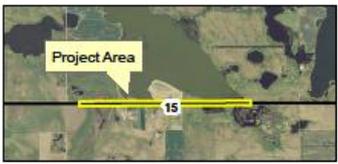
- Traditional navigable waters (named rivers, streams, and lakes)
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Lakes – Deepwater habitat (greater than 2 meters) not dominated by persistent, emergent vegetation. NDDOT determines deepwater at the time of design survey.
- Typically classified as riverine or lacustrine by NWI.

# PROJECT LOCATION MAP



**Eddy County,  
North Dakota**

- Project Boundary
- Interstate Highway
- State Highway
- US Highway
- Bypass
- Corporate Boundaries
- County Boundaries

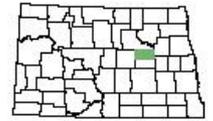
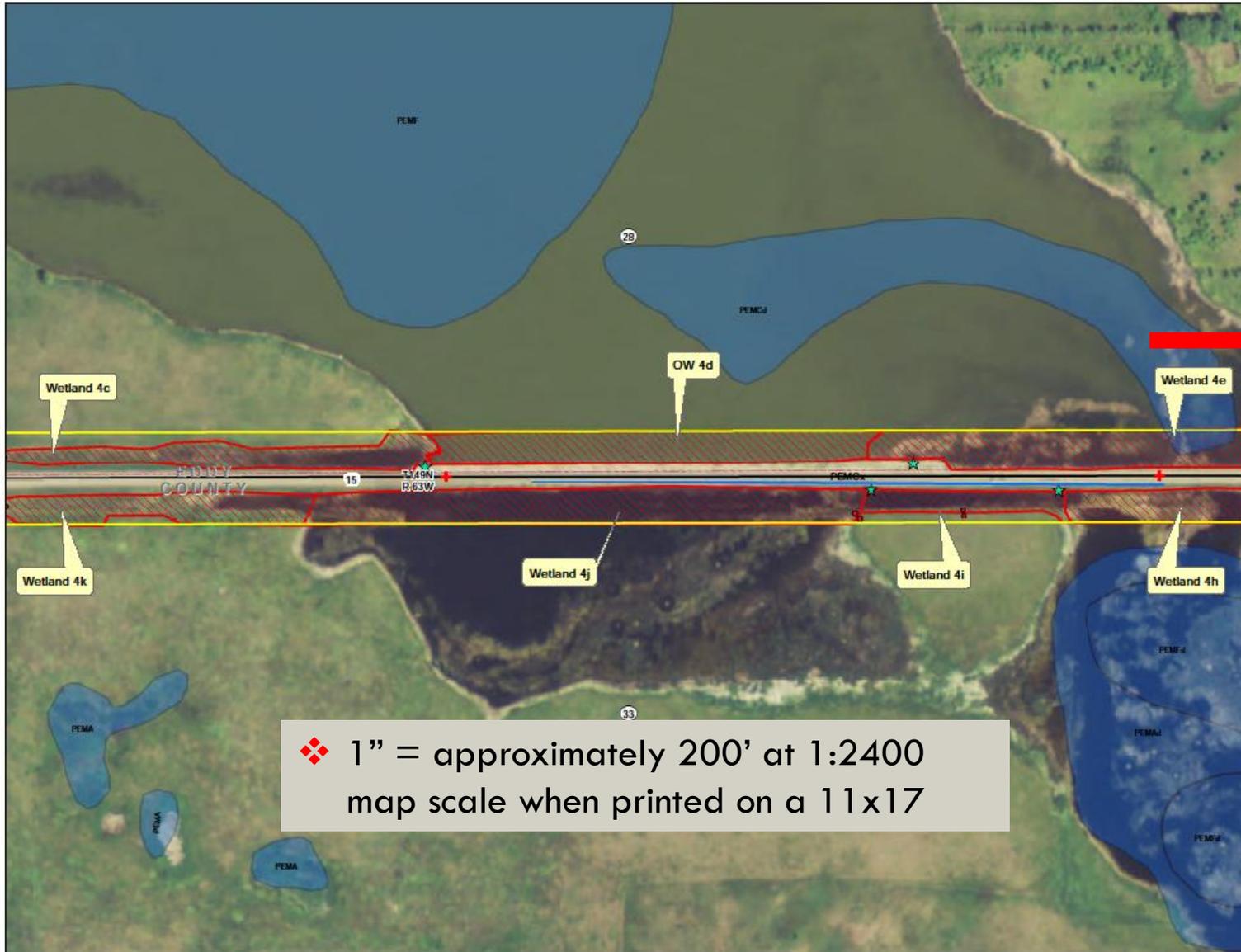


Orthophoto Source: NAIP  
Date of Photography: 2012  
Data Source: NDIS Hub & NDDOT

Exhibit 1 - Project Location Map			
Drawn By: KBS	Date: 2/28/14	Project ID: SS-1-234(567)890	PCN: 12345 Sheet: 1
 <b>North Dakota Department of Transportation</b>			

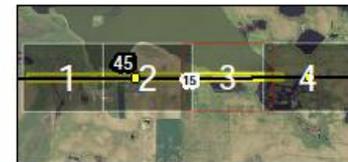


# WETLAND MAPS



Eddy County,  
North Dakota

- NWI Data
- NDHUB Linear Wetlands
- Photo Points
- Project Boundary
- Project Delineations
- Testholes
- Reference Pits
- Center Line Pipes
- Interstate Highway
- State Highway
- US Highway
- Bypass
- County Boundaries
- PLSS Sections
- PLSS Townships



❖ 1" = approximately 200' at 1:2400 map scale when printed on a 11x17

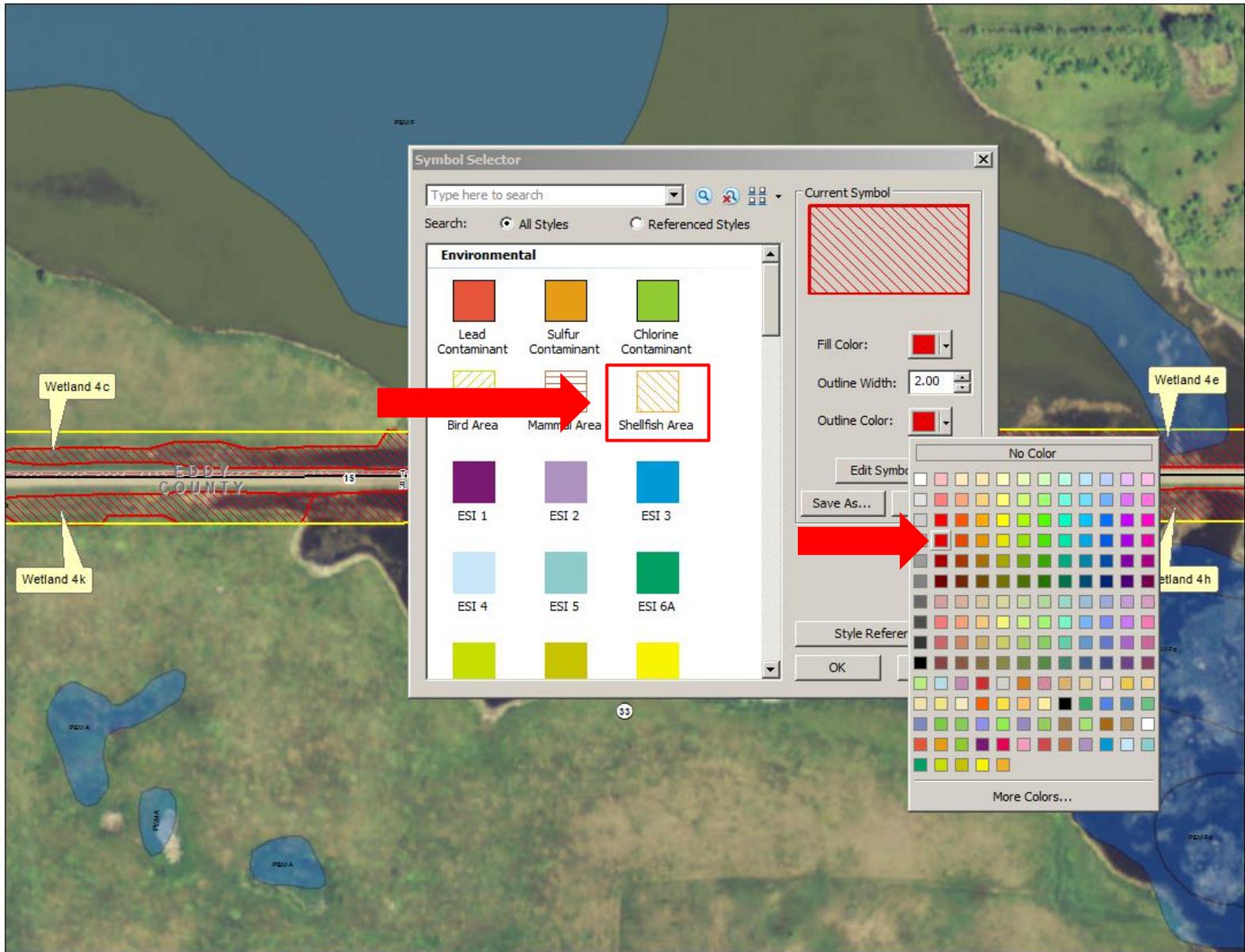
Orthophoto Source: NAIP  
Date of Photography: 2012  
Data Source: NDGIS Hub & NDDOT

Exhibit 2 - Wetland Map			
Drawn By: KSS	Date: 2/20/14	Project ID: SS-1-234(667)890	PCN: 12345
			Sheet: 3

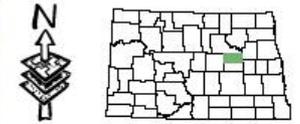
**NDDOT**  
North Dakota  
Department of Transportation



# Wetland Shapefile



# TOPO MAPS



Eddy County,  
North Dakota

- NWI Data
- NDHUB Linear Wetlands
- Project Boundary
- Testholes
- Project Delineations
- Reference Pts
- Center Line Pipes
- Interstate Highway
- State Highway
- US Highway
- Bypass
- County Boundaries
- PLSS Sections
- PLSS Townships



Orthophoto Source: NAIP  
Date of Photography: 2012  
Data Source: NDGIS Hub & NDDOT

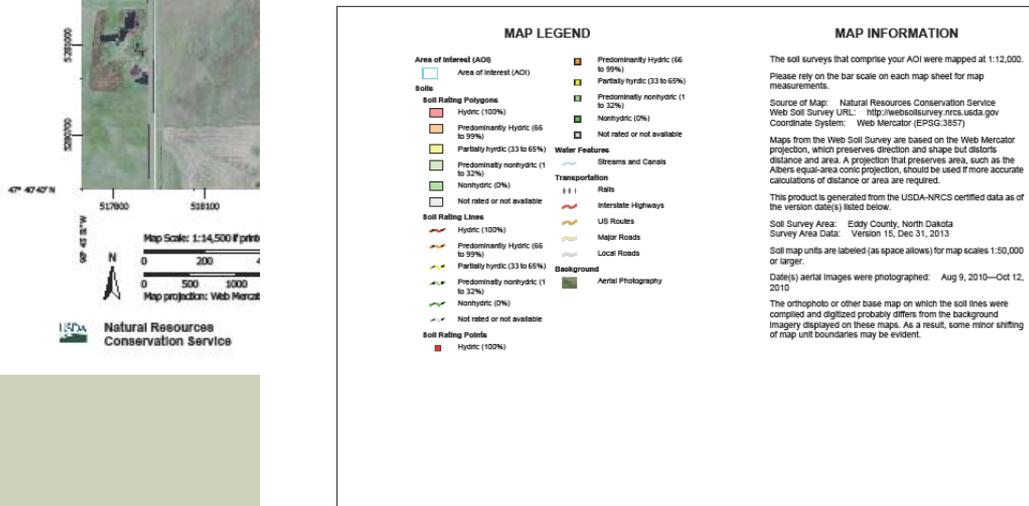
Exhibit 3 - USGS Top Map			
Drawn By: KSS	Date: 2/28/14	Project ID: SS-1-234(867)890	Sheet: 12345 3
 <b>NDDOT</b> North Dakota Department of Transportation			



# HYDRIC RATING BY MAP UNIT



Hydric Rating by Map Unit—Eddy County, North Dakota  
(Hydric Rating by Map Unit)



USDA Natural Resources Conservation Service

Hydric Rating by Map Unit—Eddy County, North Dakota

Hydric Rating by Map Unit

## Hydric Rating by Map Unit

Hydric Rating by Map Unit—Summary by Map Unit—Eddy County, North Dakota (ND027)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
G4A	Southern silty clay loam, 0 to 1 percent slopes	92	4.8	2.5%
G6A	Vallers loam, 0 to 1 percent slopes	83	3.9	2.0%
G12A	Vallers, saline-Parnell complex, 0 to 1 percent slopes	91	20.7	11.0%
G25A	Marysland loam, 0 to 1 percent slopes	86	0.0	0.0%
G27A	Marysland loam, shaly, 0 to 1 percent slopes	87	3.9	2.0%
G28A	Marysland loam, shaly, very poorly drained, 0 to 1 percent slopes	94	6.2	3.3%
G210A	Fram-Tonka complex, 0 to 3 percent slopes	37	0.1	0.1%
G211A	Fram-Wyand loams, 0 to 3 percent slopes	13	20.9	11.1%
G216A	Fram loam, saline, 0 to 3 percent slopes	12	6.6	3.5%
G229A	Heimdal-Ermick loams, 0 to 3 percent slopes	6	1.1	0.6%
G229B	Heimdal-Ermick loams, 3 to 6 percent slopes	6	11.7	6.2%
G229C	Heimdal-Esmond-Sisseton loams, 6 to 9 percent slopes	6	6.3	3.3%
G229F	Esmond-Heimdal loams, 15 to 35 percent slopes	6	0.5	0.3%
G230B	Heimdal-Esmond loams, 3 to 6 percent slopes	8	5.1	2.7%
G231A	Embsen-Heimdal complex, 0 to 3 percent slopes	6	11.6	6.1%
G231B	Embsen-Heimdal complex, 3 to 6 percent slopes	3	20.7	10.9%
G231C	Heimdal-Embsen-Esmond complex, 6 to 9 percent slopes	3	1.9	1.0%
G254A	Divide loam, shaly, 0 to 2 percent slopes	14	6.8	3.6%

USDA Natural Resources Conservation Service

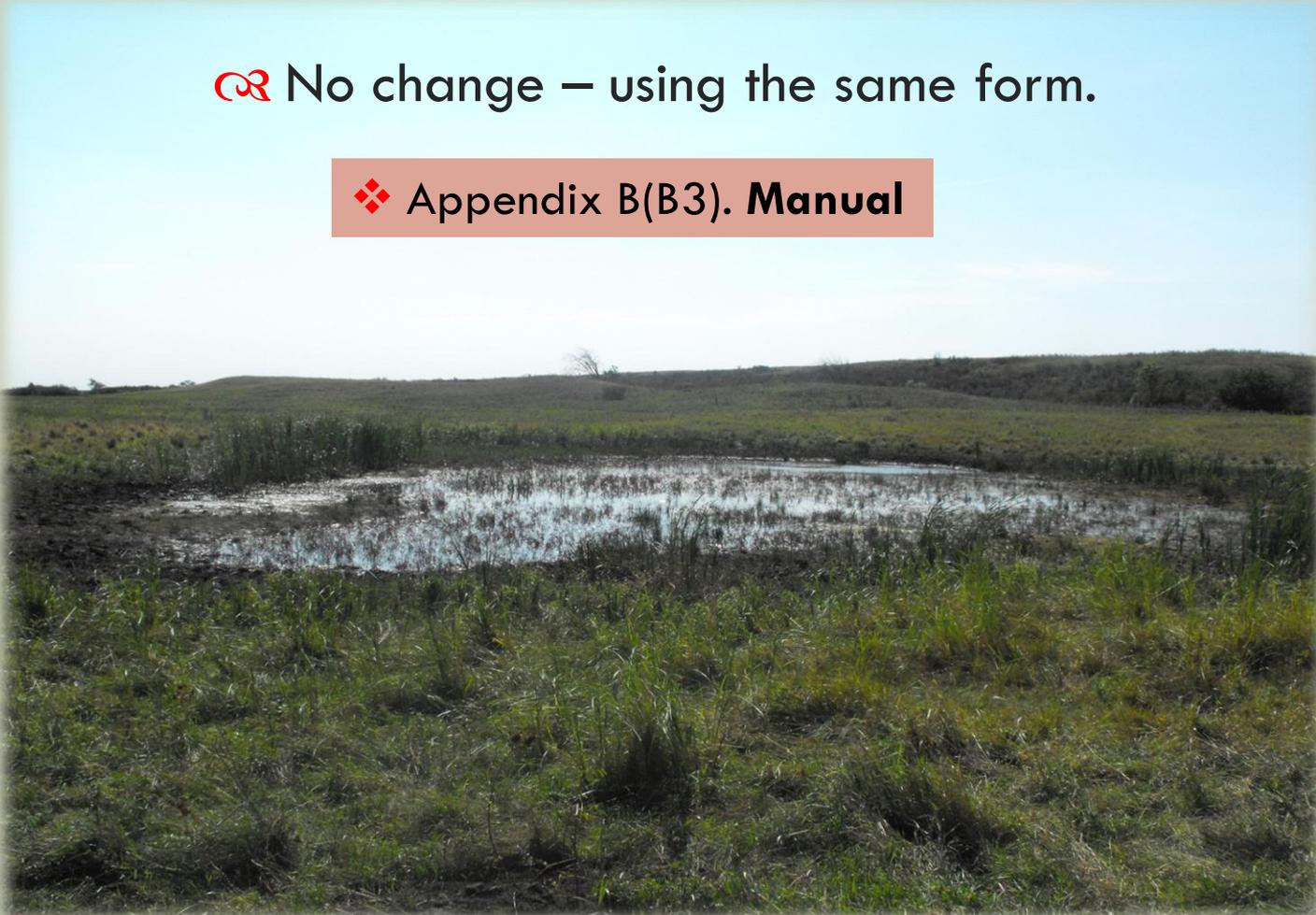
Web Soil Survey National Cooperative Soil Survey

5/6/2014 Page 3 of 6

# ADDITIONAL INFORMATION FOR JURISDICTIONAL REQUESTS

🌀 No change – using the same form.

❖ Appendix B(B3). **Manual**



# Other Waters Information

❖ Use the Other Waters Information form for Office and Field Delineations.

❖ There should be one Other Waters Information form for each Other Water.

Stream/Waterbody Name (if known):

Waterbody ID #:

Associated Wetland #:

Date:		Project Name & No.:			Reference pt.:		
Investigators:			State/County:		Quad Name:		
PHYSICAL ATTRIBUTES							
Waterbody Type	Lake	Pond	Borrow Pit	River	Stream	Other:	
Flow type	Perennial (Flows year round)			Subsurface Flow?	Yes	No	Unknown
	Seasonal (Continuous flow ≥ 3 months)						
	Intermittent (Flows <3 months)			OHWM Width (ft.):			
	Ephemeral (Flows only in response to rainfall)						
Stream Width (ft.)	Top of Bank (at Impact location):				Water Surface (at Impact location):		
Stream Depth (in.)	0 - 3		3 - 6		6 - 12		12 - 18
OHWM Indicator (check all applicable)	Natural Line Impress on bank		Sediment Sorting		Shelving		Litter disturbed or washed away
	Changes in character of soil soil		Scour		Destruction of terrestrial vegetation		Deposition
	Presence of litter or debris		Multiple observed flow events		Wracking		Bed and bank
	Vegetation matted down, bent or absent		Water staining		Change in plant community		
Bank Height (ft.) (looking downstream)	Left:			0 - 2		2 - 4	
	Right:			0 - 2		2 - 4	
QUALITATIVE ATTRIBUTES							
Stream Substrate %	Silt		Cobbles		Bedrock		Sands
	Concrete		Muck		Vegetation		Gravel
	Other - Explain:						
Aquatic Habitats (check all applicable)	Sand Bar		Gravel Riffles		In-stream emergent plants		
	Gravel Bar		Deep Pools		In-stream submerged plants		
	Mud Bar		Bank root systems				
	Undercut Banks		Overhanging trees/shrubs		Fringing Wetlands		
Stream is:	Natural		Artificial (Man-Made)		Manipulated		
LAKES AND OTHER DEEPWATER HABITAT							
Shoreline Type:	Silt	Cobbles	Bedrock	Concrete	Muck	Vegetation	
Other (explain):							



☞ No change to Site Photos (Forms 2. **Manual**) or the USACE GP Regional Supplement Data Form (Forms 3. **Manual**).

WETLAND  
MITIGATION  
BOUNDARY

NDDOT/LANDOWNER  
PARTNERSHIP

# WOODY VEGETATION COUNTS

- ☞ Woody vegetation counts will be collected at the time of the wetland delineation if requested by a municipality or resource agency (contact NDDOT Tech Support).
- ☞ Methodology to use for counts is included in the **Manual** and can vary depending on the location of the project.
- ☞ Information to include in the Wetland Delineation Report:  
Methods Section – how woody vegetation was counted, Results Section – the number and types counted, & Exhibits Section - a map showing locations.

# WERE LANDOWNERS NOTIFIED?

- If the project extends outside of the NDDOT right of way, were the adjoining landowners notified?
- Was the NDDOT District Office notified?
- <http://www.dot.nd.gov/public/contacts.htm>

## **District Offices**

Bismarck District	(701) 328-6950
Devils Lake District	(701) 665-5100
Dickinson District	(701) 227-6500
Fargo District	(701) 239-8900
Grand Forks District	(701) 787-6500
Minot District	(701) 857-6925
Valley City District	(701) 845-8800
Williston District	(701) 774-2700

# CONTACT INFORMATION

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NDDOT Environmental Specialist

608 East Boulevard Avenue,

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701-328-3704

[ksperry@nd.gov](mailto:ksperry@nd.gov)



QUESTIONS?