

# APPENDIX H. ENVIRONMENTAL REVIEW DOCUMENTS

- ▶ List of Potential Permits Required for Bridge Construction / Modification
- Initial Environmental Review
- ▶ NGPC and USFWS Draft Environmental Review Report
- Iowa DNR Environmental Review Coordination Emails
- ▶ LWCF 6(f) Boundary Map
- ► Historic Evaluation Coordination Letters
- Wetland Delineation Report
- Wellhead Protection Areas Map
- ► Hazardous Materials Memorandum
- ► FEMA Flood Insurance Rate Maps
- ▶ Environmental Justice EJSCREEN Summary Report



#### **Bellevue Bridge Alternatives Study**

#### **List of Potential Permits and Other Applicable Regulations**

#### **Potential Permits & Clearances Needed**

- Clean Water Act Section 404 Permit (U.S. Army Corps of Engineers [USACE])
  - o Required for impacts to wetlands and Waters of the U.S.
- Clean Water Act Section 401 Individual Water Quality Certification (Nebraska Department of Environmental Quality [NDEQ] & Iowa Department of Natural Resources [IDNR])
  - Required for impacts to waters of the State
- Sovereign Lands Construction Permit (Iowa DNR)
  - Required for impacts to state-owned lands and waters, including the Missouri River.
- Clean Water Act **Section 408 Permit** (USACE)
  - o Required for any alterations to or occupancy of a USACE federally authorized civil works project (i.e., levees)
- Rivers and Harbors Act **Section 9 Permit** (U.S. Coast Guard)
  - Required for construction or modification of bridges over navigable waters of the U.S.
- Rivers and Harbors Act **Section 10 Permit** (USACE)
  - Required for structures constructed in the Missouri River that do not span it (cofferdams, falsework bents, test piles, work dikes, etc.)
- Floodplain Development Permit (Local Authority City of Bellevue and Mills County)
  - o Required for construction within 100-year (Zone A) floodplain
- Conditional Letter of Map Revision (Federal Emergency Management Agency [FEMA])
  - Required for floodway encroachment
- National Pollutant Discharge Elimination System Permit (NDEQ and IDNR)
  - Required for construction in Waters of the U.S. for activities that disturb 1 or more acres of land
- Section 4(f) Evaluation U.S. Department of Transportation [DOT] Act (FHWA)
  - Required for U.S. DOT Actions (including federally funded projects) that result in a "use" of a publicly-owned recreational resource, including permanent incorporation or temporary occupancy
- Threatened and Endangered Species Clearance (U.S. Fish & Wildlife Service, Nebraska Game & Parks Commission, IDNR)
  - o Pallid sturgeon, lake sturgeon, sturgeon chub, northern long-eared bat, barn owl
- Section 106 Clearance (Nebraska and Iowa State Historic Preservation Offices)
  - o Bellevue Bridge has been determined NOT eligible for listing on the National Register of Historic Places

#### **Other Applicable Regulations**

- Federal Aviation Regulation Part 77 Compliance
  - o Project is in the Conical Surface of the Offutt Airforce Base and subject to height restrictions.
- Clean Water Act 303(d) Impaired Waters
  - o E. coli and sulfa
- Section 6(f) Land and Water Conservation Fund (LWCF) (National Park Service)
  - Haworth Park has received LWCF funds which prevent conversion to anything other than recreational resources.
- Bald Eagle & Golden Eagle Protection Act & Migratory Bird Treaty Act (U.S. Fish & Wildlife Service)
  - Bald eagle nesting and roosting habitat; migratory bird nesting habitat
- **Prime & Unique Farmland** Farmland Protection Policy Act (U.S. Department of Agriculture Natural Resources Conservation Service [NRCS])
  - Required for federally funded action that irreversibly converts farmland (directly or indirectly).



#### **General Project Information**

Project No. MAPA-5002(3)	Control No. 22755	Bridge No.: S370 01918	East Mission Avenue and County Road H10 (former Stat	e Hwy 370)		
Project Name:	Bellevue Bridge Alternatives Study					
Prepared By:	Kody Unstad – Environment	3 January 2019				
Reviewed By:	Allison Sambol – Senior Envi	ironmental Scientist, FHU	Date:	8 January 2019		

#### **Project Location:**

The Bellevue Bridge spans the Missouri River connecting Olde Towne Bellevue in Sarpy County, Nebraska with Mills County, Iowa. The bridge is located along the former route of State Highway 370, which is now East Mission Avenue in Nebraska and County Road H10 in Iowa.

#### **Project Description:**

A study of the Bellevue Bridge is being conducted to determine whether future conditions in the area warrant replacement of the bridge, potential alternatives for reconstruction of the bridge, and the potential impacts of closing the bridge. Since this is a preliminary study, specific work activities have not yet been determined. However, alternatives being considered include:

- 1) preservation and maintenance of existing bridge;
- 2) demolition of existing bridge without replacement;
- 3) construction of new bridge;
- 4) conversion of existing bridge to a recreational trail facility;
- 5) upgrading the existing bridge to have separate lanes for vehicles and a pedestrian trail; or
- 6) expansion of piers on existing bridge to create twin bridges.

Threatened, Endangered, and Protected Species				
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments
Nebraska Game & Parks Commission (NGPC) / U.S. Fish & Wildlife Service (USFWS) Conservation and Environmental Review Tool (CERT) Review for State & Federally listed Species				A draft CERT was prepared for the project. The CERT indicated that the project may result in impacts on listed species and further consultation with NGPC and USFWS is warranted.
Source: https://cert.outdoornebraska.gov/				
State listed species range in project area?				In Nebraska, state-listed species with ranges in the project ESA: lake sturgeon, sturgeon chub, American ginseng, river otter.
<b>Source:</b> http://outdoornebraska.gov/naturalheritageprogram/ https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx lowa DNR Environmental Review – 1 Nov 2018 (No. 16090)				In lowa, state-listed species include: barn owl, Henslow's sparrow, plains pocket mouse, southern bog lemming, biscuit root, slender ladies'-tresses, great plains skink, ornate box turtle, western massasauga. However, the lowa DNR did not find any site-specific records in the project area.
Federal listed species range in project area?				
<b>Source:</b> http://outdoornebraska.gov/naturalheritageprogram/ https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx				Pallid sturgeon, western prairie fringed orchid, northern long-eared bat, least tern.
Federal designated critical habitat identified within the project study area?		$\boxtimes$		
Source: http://ecos.fws.gov/crithab/				
Potential for Bald Eagles and/or migratory birds?  Source: https://www.google.com/earth/				The forested areas in the vicinity of the project are potential nesting and winter roosting habitat for bald eagles. If construction activities will occur during potential nesting or roosting periods for bald eagles, it is recommended that preconstruction surveys be conducted by a qualified biologist.  Migratory birds may nest in trees, shrubs or areas of unmaintained vegetation throughout the study area. Swallows may also nest under the project bridge. Raptors may potentially nest in mature trees, including the riparian corridor along the Missouri River and the forested area on the west side of the railroad tracks. If activities will occur during the primary nesting season for migratory birds, including raptors, it is recommended that pre-construction surveys be conducted by a qualified biologist. The primary nesting season is generally considered to be April 1st to July 15th (February 1st to July 15th for raptors).

General Habitat Review  Source: https://www.google.com/earth/ (Google Earth Imagery)				The Missouri River provides habitat for listed species including the pallid sturgeon, lake sturgeon, sturgeon chub, and river otter.  Wooded areas in the project ESA are potential habitat for the northern long-eared bat and barn owl (state listed in lowa).  Due to disturbances from agriculture and past bridge/road construction, native vegetation communities are generally lacking in the project area. Therefore, species that rely on these native plant communities are unlikely to be present. These include southern bog lemming, great plains skink, plains pocket mouse, ornate box turtle, Henslow's sparrow, western massasauga, western prairie fringed orchid, biscuitroot, and slender ladies' tresses.
Section 4(f) and 6(f)				
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments
Does the study area contain, or is it adjacent to a designated park, open space, or trail?				Two City of Bellevue parks are present within the ESA, both located on the Nebraska side of the Missouri River. Haworth Park is located directly south of the project bridge and American Heroes Park is located directly north. A recreational trail circles the lake at American Heroes Park. The Keystone South Trail begins at Haworth Park (outside the ESA) and heads south. This trail is operated by the Papio-Missouri River Natural Resources District (PMRNRD)
Is the study area within an area that utilized Land and Water Conservation (LWCF) Grant funds?  Source: http://www.nps.gov/lwcf/index.htm http://projects.invw.org/data/lwcf/grants-ne.html				Two areas within the ESA were developed or purchased with Section 6(f) funds. The first area is located on the south side of Mission Avenue and west of Payne Drive. The second area is located on the north side of Mission Avenue west of the Missouri River and east of the American Heroes Park lake. These areas are not permitted for conversion to anything other than public outdoor recreation use without approval of the Secretary of the Department of Interior.
Is the study area in or near a known historic resource? (see next section for further information)				
<ul> <li>a. Is it in the proximity of a recreational area (i.e., park, playground, trail, greenbelt, etc.) or wildlife refuge? If Yes, answer the following questions: <ol> <li>Is the property used as a recreational area or wildlife refuge?</li> <li>Yes No</li> <li>Is the property publicly owned?</li> <li>Yes No</li> </ol> </li> <li>(3) If a recreational area, is it open to the public?</li> <li>Yes No</li> </ul>				Both Haworth Park and American Heroes Park are publicly owned (City of Bellevue) and open to the public. The trails on the park properties are also publicly owned and open to the public.

Hist	toric and Archaeological Preservation							
	Published Maps and/or GIS Data Review	Yes	No	N/A	Comments			
b.	Will the project likely involve any undisturbed land, either public or private, including new borrow areas?	$\boxtimes$			Land on the Nebraska side of the river has largely been disturbed for development of the park properties and the railroad. However, agricultural fields are present on the lowa side and could potentially contain archeological resources. Further evaluation would be needed.			
c.	Is the project in the proximity of any known archaeological site?		$\boxtimes$		The locations of archeological sites are not available in public databases. Further evaluation and coordination should occur with the Nebraska and Iowa State Historic Preservation Offices (SHPOs) and the Tribal Historic Preservation Offices (THPOs) regarding the potential for archeological resources.			
d.	Is the project in the proximity of any house, building, bridge, or other structure more than 50 years old?				The project bridge (Bridge No. S370 01918) was constructed in 1952 and reconstructed in 2004. In 2002, an intensive survey of the bridge was conducted by an architectural historian with the Louis Berger Group for the lowa Department of Transportation. It was determined not eligible for the NRHP. Both the Nebraska and Iowa SHPOs have concurred with this determination.			
http http	Is the project in the proximity of any known historic building, district, bridge, roadway, or structure?  (1) Does the project involve an historic roadway?  Yes No  (2) Does the project involve an historic bridge?  Yes No  Irce:  D://www.nationalregisterofhistoricplaces.com/ne/sarpy/state.html Dos://history.nebraska.gov/historic-preservation D://sarpycountymuseum.org/				The Burlington Depot (NRHP #70000375) was once located in the vicinity of the project, but in 1987 was relocated approximately a mile to the west, across from the Sarpy County Museum.			
We	tlands							
	Published Maps and/or GIS Data Review	Yes	No	N/A	Comments			
wat	WS National Wetland Inventory (NWI) identified wetlands or other ter resources within the project study area?  Irce: http://www.fws.gov/wetlands/Data/State-Downloads.html	$\boxtimes$			Freshwater emergent wetlands, freshwater forested/shrub wetlands, and freshwater ponds are mapped in the project area.			
	OA Soil Survey hydric soils within the project study area?  Irce: http://websoilsurvey.sc.egov.usda.gov/				The hydric soils components included Albaton – occasionally flooded, Albaton – rarely flooded, and Fluvaquents – silty, frequently flooded.			

SGS 7.5 Minute Quadrangle Topographic Map and/or National Hydrography Dataset (NHD) identified streams and/or other water features within the project study area?							
Identified Perennial Streams  Source: http://nhd.usgs.gov/data.html				The Missouri River is mapped as a perennial channel in the NHD data.			
Identified Intermittent Streams	П						
Source: http://nhd.usgs.gov/data.html							
Was a wetland delineation conducted?				The wetland delineation identified palustrine emergent temporarily/seasonally flooded (PEMA/C) wetlands, palustrine forested temporarily flooded (PFOA) wetlands, palustrine scrub-shrub (PSSA) wetlands, and agricultural (farmed) wetlands.			
Will the project likely involve placement of fill in waters of the United States, including wetlands?				Wetland impacts would depend on the design of the selected alternative. Based on the delineation, impacts would likely occur to PEMA/C, PSSA, and PFOA wetlands.			
Wild and Scenic Rivers							
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments			
Are there any Wild and Scenic Rivers within 1.5 miles?  Source: http://www.rivers.gov/mapping-gis.php		$\boxtimes$					
<ul> <li>Are there Nationwide Rivers Inventory (NRI) Rivers or on a tributary within 0.5 mile?</li> <li>Source: http://www.nps.gov/ncrc/programs/rtca/nri/index.html</li> </ul>		$\boxtimes$					
Water Quality							
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments			
303(d) impaired water bodies identified within the project study area? If so, list all impairments: <b>Sulfate</b> , <i>E. coli</i> <b>Source:</b> http://www.epa.gov/waters/ir/index.html 2018 Water Quality Integrated Report, Nebraska Department of Environmental Quality				In the project area, the Missouri River is listed as a Category 5 impaired waterbody for Public Drinking Water Supply (Sulfate) and Recreation ( <i>E. coli</i> ). (MT1-1000). TMDLs have not been developed.			
Wellhead Protection Areas?	П	$\boxtimes$					

Will the project disturb one or more acres of land?				The amount of soil disturbance would depend upon which alternative is implemented.		
Regulated Materials						
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments		
Are there regulated materials sites within the study area with known or potential to impact the project?  Source: Nebraska Department of Environmental Quality, Environmental Protection agency Facility Registry System, State Fire Marshall Records				The former site of the Bellevue Wastewater Treatment Plant is located within the ESA.  The project bridge could contain lead and therefore may require waste materials management.		
Are there regulated sites with potential for large scale plumes within 0.5 mile of the study area?  Source: Nebraska Department of Environmental Quality, Environmental Protection agency Facility Registry System, State Fire Marshall Records		$\boxtimes$		The Bellevue Public Schools Transportation Site is a superfund site located approximately 0.9 miles down-gradient of the project; the Offutt Air Force Base is a superfund site located approximately 1.25 miles down-gradient of the project.		
Floodplains and Floodways						
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments		
Published Maps and/or GIS Data Review  FEMA identified Floodplains and/or Floodways within the project study area		No	N/A	Comments		
•		No	N/A	Comments  The ESA overlaps Zone A, Zone AE, and Zone AH floodplain.		
FEMA identified Floodplains and/or Floodways within the project study area  • "Zone A" Floodplain encountered?	?	No	,			
FEMA identified Floodplains and/or Floodways within the project study area  • "Zone A" Floodplain encountered?  Source: http://www.floodmaps.fema.gov/NFHL/status.shtml  • Floodway encountered?	?	No		The ESA overlaps Zone A, Zone AE, and Zone AH floodplain.  Floodway is present along the Missouri River and is approximately 0.5 miles wide at the		
FEMA identified Floodplains and/or Floodways within the project study area  • "Zone A" Floodplain encountered?  Source: http://www.floodmaps.fema.gov/NFHL/status.shtml  • Floodway encountered?  Source: http://www.floodmaps.fema.gov/NFHL/status.shtml	?	No No		The ESA overlaps Zone A, Zone AE, and Zone AH floodplain.  Floodway is present along the Missouri River and is approximately 0.5 miles wide at the		

Title VI (Civil Rights) and Environmental Justice						
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments		
<ul> <li>Are there any potential low-income or minority populations potentially affected by the project?</li> <li>Source: https://ejscreen.epa.gov/mapper/</li> </ul>	$\boxtimes$			Within a one-mile radius of the project, the low-income population is approximately 38%, which is higher than the state average of 30%. The minority population is lower than the state average.		
Are there any potential populations with Limited English     Proficiency (LEP) affected by the project?  Source: https://ejscreen.epa.gov/mapper/		$\boxtimes$		Within a one-mile radius of the project, no LEP populations were identified above the thresholds of 5% of the population or 1,000 individuals.		
Airports						
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments		
Are there any airports located within 4 miles of the project?	$\boxtimes$			The Offutt Airforce Base is located approximately 1.5 miles southwest of the Bellevue Bridge. The ESA falls within the Conical Surface of the Airspace Control Surface Plan. The Conical Surface has variable height restrictions ranging from 150 to 500 feet depending on the location. The height of the bridge structure and any equipment used in construction activities will need to comply with the Airspace Control Surface Plan.		
Farmlands						
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments		
Is the study area in or near any potential prime or unique farmlands?  Source: http://datagateway.nrcs.usda.gov/				Prime Farmland, Prime Farmland if Drained, and Farmland of Statewide Importance are mapped within the ESA. While the areas on the Nebraska side have been developed as parkland, the areas on the Iowa side remain as farmland. Form NRCS CPA-106 for Corridor Type Project may need to be completed for the project.		
Permits and Clearances Likely to be Needed						
Published Maps and/or GIS Data Review	Yes	No	N/A	Comments		
rubiisileu waps aliu/or dis Data Review	162	NO	N/A			
CWA Section 404 Permit (USACE)	$\boxtimes$			<ul> <li>Wetlands and other Waters of the U.S. are located in the project area, including the Missouri River and adjacent riparian habitat. Impacts will require a Section 404 Permit from the USACE.</li> <li>If permanent impacts to WOUS remain below 0.5 acre, the project would qualify for a Nationwide Permit. Project impacts could potentially qualify under a NWP 14 for Linear Transportation Project or NWP 15 for U.S. Coast Guard Approved Bridges.</li> <li>If permanent impacts to WOUS exceed 0.5 acres, the project would require an Individual Permit.</li> <li>If permanent impacts to wetlands exceed 0.1 acres, wetland mitigation would likely be required.</li> </ul>		

Individual 401 Water Quality Certification	$\boxtimes$		If an Individual Permit for Section 404 is required, then an Individual 401 Water Quality Certification would be required from the Nebraska Department of Environmental Quality and the Iowa Department of Natural Resources.
Sovereign Lands Construction Permit	$\boxtimes$		This permit is required from the Iowa DNR for construction on State-owned land and construction below the ordinary high water mark.
CWA Section 408 Permit (USACE)	$\boxtimes$		A Section 408 Permit is required to make alterations to, or temporarily or permanently occupy or use, any USACE federally authorized civil works project. Alterations proposed within a federally-constructed flood risk reduction project (FRRP) right-of-way are subject to Section 408. The project would be within the following levees:  • L-611-614_MoRiv LB & Upper Pony Creek Ditch LB & L1BLB  • R-616 – Missouri River RB  A National Environmental Policy Act (NEPA) document is required as part of the 408 application; however, Categorical Permissions for Section 408 Alterations are in place in both Nebraska and Iowa. For both states, Highway/Street Bridge Replacement is included in the list of categorical permissions. If environmental impacts would be greater than minor (e.g., an Individual Section 404 Permit) then the Categorical Permission would not apply, and an Environmental Assessment would be required.
Rivers and Harbors Act – Section 9 Permit (USCG)			The Missouri River is subject to Section 9 of the Rivers and Harbors Act, which is administered by the U.S. Coast Guard. Construction of a new bridge or modification of the existing bridge that changes vertical or horizontal clearance would require a Section 9 Permit. NEPA documentation would be required for a Section 9 Permit. Bridge modifications that do not alter navigation clearances would still need USCG approval, but no permit.
Rivers and Harbors Act – Section 10 Permit (USACE)	$\boxtimes$		The Missouri River is subject to Section 10 of the Rivers and Harbors Act, which is administered by USACE. If the project requires the construction of structures in the Missouri River that do not span it, these would require a Section 10 Permit. Such structures include cofferdams, falsework bents, brackets, temporary dolphins, survey towers, test piles, work dikes, etc.
Floodplain Development Permit (Local Authority)			Required by FEMA National Flood Insurance Program for construction within 100-year floodplain. Will need to be obtained from the City of Bellevue and Mills County.
Conditional Letter of Map Revision (CLOMR)			If there is any modification to the floodway boundaries or if the project would result in greater than a one-foot rise in Zone A floodplain, a CLOMR would be required from FEMA for compliance with floodway encroachment regulations.
National Pollutant Discharge Elimination System (NPDES) Permit			Required for construction in water and soil disturbance greater than 1 acre. Will be needed from both the NDEQ and IDNR.
LWCF Section 6(f) Conversion Approval			Required from the Secretary of the Department of Interior if converting a Section 6(f) property to a non-recreation use.
Section 4(f) Evaluation	$\boxtimes$		Required by FHWA if there is a 'use' of a Section 4(f) property. Some activities may qualify as an exception. Negligible impacts could be considered De minimis. More substantial impacts could require an Individual Section 4(f) Evaluation.

Agency Consultation			
US Fish and Wildlife Service	$\boxtimes$		May require coordination with both the Nebraska and Rock Island USFWS offices.
Nebraska Game and Parks Commission	$\boxtimes$		
• Iowa Department of Natural Resources	$\boxtimes$		
• Iowa State Historic Preservation Office	$\boxtimes$		
Nebraska State Historic Preservation Office	$\boxtimes$		
Tribal Historic Preservation Offices	$\boxtimes$		Coordination with tribes that have historical or cultural ties to the area.

#### **Summary of Potential Impacts**

Habitat for state and federally listed species is present in the Missouri River and within the wooded riparian corridor along the river. Habitat is also present for bald eagles and migratory birds. Adverse impacts to these species can generally be avoided through the implementation of standard mitigation, such as timing certain construction activities to when species are not active, conducting species surveys prior to construction, or capturing bridge debris from falling into the river. Further coordination with the USFWS, NGPC, and IDNR would be needed in later phases.

Section 4(f) properties are present within the project study area on the west side of the Missouri River, including Haworth Park, American Heroes Park and Trail, and the Keystone South Trail. Portions of these recreational resources used LWCF Section 6(f) funding for their development or purchase. Conversion of any Section 6(f) property to a non-recreational resource would require approval from the Secretary of the Department of Interior. Depending on the nature of impacts to Section 4(f) properties, the project could qualify for an exception or De minimis; if impacts are more than negligible, an Individual Section 4(f) evaluation could be required.

Both the Nebraska and Iowa State Historic Preservation Offices concurred that the Bellevue Bridge is not historic. No other known NRHP sites are located within the ESA, but there may be potential for archeological resources. Coordination with the Nebraska and Iowa SHPOs and relevant THPOs should be conducted in later phases of project planning.

Wetlands and channels (including the Missouri River) are present within the study area. Impacts to these resources will depend on the scope of work, but could require a Nationwide Permit, mitigation, or an Individual Permit depending on the design of the alternative that is implemented.

The Missouri River is listed as a Category 5 impaired waterbody for Public Drinking Water Supply (Sulfate) and Recreation (E. coli) (MT1-1000). TMDLs have not been developed.

Regulated materials sites in the vicinity of the project include the former site of the Bellevue Wastewater Treatment Plant and two superfund sites located down-gradient. The project bridge has the potential to contain lead.

FEMA designated Floodway and Floodplain are present within the ESA. Any encroachments of the Floodway or Floodplain will require a floodplain development permit and could potentially require a CLOMR.

A low-income population is present within the vicinity of the project. Potential indirect impacts from the project should be evaluated in later phases.

Offutt Airforce Base is located approximately 1.5 miles southwest of the Bellevue Bridge. Height restrictions are in place which could limit the bridge structure and any equipment used in construction activities. Further coordination should occur with Offutt in later phases.

Prime and Unique Farmland is present within the ESA. Form NRCS CPA-106 for Corridor Type Project may need to be completed for the project.

Depending on the alternative that is selected, and the scope of work required, potential permits for the project may include: 404 Permit from USACE; 401 WQC Permit from NDEQ and IDNR; Sovereign Lands Construction Permit from IDNR; Section 408 Permit from USACE; Section 9 Permit from USACE; Section 10 Permit from USACE; Floodplain Development Permit from local floodplain administrators; CLOMR from FEMA; NPDES permit. Federal funding for the project would require NEPA documentation, which could be an Environmental Impact Statement if impacts are considered significant (potentially for a new bridge), or an Environmental Assessment or Categorical Exclusion if impacts are not significant. Even without federal funding, NEPA documentation would still be required for certain permit applications (e.g., Section 408 or Section 9).





# **Environmental Review Report**

# **Project Information**

Report Generation Date: 8/27/2018 11:12:22 AM

Project Title: Bellevue Bridge

User Project Number(s):

System Project ID: NE-CERT-000742

Project Type: Transportation, Roads/Bridges/Trails - County (Not NDOT or FHWA)

Project Activities: Bridge - new, replacement, or extension - County

Bridge or Culvert Repair or Maintenance - County Clearing & Grubbing Non-woody Vegetation - County

Clearing & Grubbing Trees or Shrubs - County

Earth Shoulder Construction - County

**Erosion Control - County** 

Grading - County

Guardrail Repair, Replacement, or Installation - County

Pavement Marking - County

Pavement Removal and/or Paving - County

Stream Channel Impact - County

Temporary Crossing, Causeway, or Work Platform - County

Trails

Trails - County 156.21 acres

Project Size: 156.21 County(s): Sarpy

Watershed(s): Missouri Tributaries
Watershed(s) HUC 8: Big Papillion-Mosquito

Watershed(s) HUC 12: Folsom Lake-Missouri River; Mud Creek-Papillion Creek

Biologically Unique Landscape(s): Missouri River Township/Range and/or Section(s): T14R14ES31

Latitude/Longitude: 41.139455 / -95.877278

# **Contact Information**

Organization: Felsburg Holt & Ullevig

Contact Name: Kody Unstad
Contact Phone: 402-445-4405

Contact Email: kody.unstad@fhueng.com

Contact Address: 11422 Miracle Hills Drive Suite 115 Omaha NE 68154

Prepared By:

Submitted On Behalf Of: Bellevue Bridge Commission

#### **Project Description**

The project is located at the Bellevue Toll Bridge over the Missouri River on East Mission Avenue (formerly Highway 370) in the City of Bellevue, Sarpy County, Nebraska, and in rural Mills County, Iowa. The project is in the early phases of planning and specific improvements are unknown at this time. However, the project could involve, at most, construction of a new bridge across the Missouri River. Other options would likely involve repairs and modifications to the existing bridge across the Missouri River.

### Introduction

The Nebraska Game and Parks Commission (Commission) and the U.S. Fish and Wildlife Service (Service) have special concerns for endangered and threatened species, migratory birds, and other fish and wildlife and their habitats. Habitats frequently used by fish and wildlife species are wetlands, streams, riparian areas, woodlands, and grasslands. Special attention is given to proposed projects which modify wetlands, alter streams, result in loss of riparian habitat, convert/remove grasslands, or contaminate habitats. When this occurs, the Commission and Service recommend ways to avoid, minimize, or compensate for adverse effects to fish and wildlife and their habitats.

# CONSULTATION PURSUANT TO THE NEBRASKA NONGAME AND ENDANGERED SPECIES CONSERVATION ACT (NESCA)

The Commission has responsibility for protecting state-listed endangered and threatened species under authority of the Nongame and Endangered Species Conservation Act (NESCA) (Neb. Rev. Stat. § 37-801 to 37-811). Pursuant to § 37-807 (3) of NESCA, all state agencies shall, in consultation with the Commission, ensure projects they authorize (i.e., issue a permit for), fund or carry out do not jeopardize the continued existence of state-listed endangered or threatened species or result in the destruction or modification of habitat of such species which is determined by the Commission to be critical. If a proposed project may affect state-listed species or designated critical habitat, further consultation with the Commission is required.

Informal consultation pursuant to NESCA can be completed by using the Conservation and Environmental Review Tool (CERT). The CERT analyzes the project type and location, and based on the analysis, provides information about potential impacts to listed species, habitat questions and/or conservation conditions. Project proponents can agree to implement conservation conditions as outlined in the report and applicable to the project type by signing in the designated areas and uploading the signed PDF as part of their "final" project submittal. By agreeing to and implementing the conservation conditions as outlined (if applicable), then further consultation with the Commission is not required. If the report indicates the project may have impacts on listed species, then further consultation with the Commission is required.

TECHNICAL ASSISTANCE AND CONSULTATION PURSUANT TO THE ENDANGERED SPECIES ACT (ESA) The Service has responsibility for conservation and management of fish and wildlife resources for the benefit of the American public under the following authorities: 1) Endangered Species Act of 1973 (ESA); 2) Fish and Wildlife Coordination Act; 3) Bald and Golden Eagle Protection Act; and 4) Migratory Bird Treaty Act. The National Environmental Policy Act (NEPA) requires compliance with all of these statutes and regulations.

Pursuant to section 7(a)(2) of ESA, every federal agency, shall in consultation with the Service, ensure that an action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. If a proposed project may affect federally listed species or designated critical habitat, section 7 consultation is required with the Service. It is the responsibility of the lead federal action agency to fully evaluate all potential effects (direct and indirect) that may occur to listed species and critical habitat in the action area. The lead federal agency provides their effect determination to the Service for concurrence. If federally listed species and/or designated/proposed critical habitat would be adversely affected by implementation of the project, the lead federal agency will need to formally request further section 7 consultation with the Service prior to making any irretrievable or irreversible commitment of federal funds (section 7(d) of ESA), or issuing any federal permits or licenses.

At this time, the information generated in this report DOES NOT satisfy consultation obligations between the lead federal agency and the Service pursuant to ESA. For the purposes of ESA, the information in this report should be considered as TECHNICAL ASSISTANCE, and does not serve as the Service's concurrence letter, even if the user signs and agrees to implement conservation conditions in order to satisfy the consultation requirements of NESCA.

### **Overall Results**

The following result is based on a detailed analysis of your project.

 Potential impacts on listed species may occur as a result of this project. Please sign and date the certification section, upload the document as "final," and contact the Nebraska Game and Parks Commission and U.S. Fish and Wildlife Service for further information.

### **Additional Information**

This project or activity "May Adversely Affect" listed endangered or threatened species. Further consultation with the Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service is required.

## Certification

I certify that ALL of the project information in this report (including project location, project size/configuration, project type, project activities, answers to questions) is true, accurate, and complete. If the project type, activities, location, size, or configuration of the project change, or if any of the answers to any questions asked in this report change, then this information is no longer valid and we recommend running the revised project through CERT to get an updated report.

report.		
Applicant/project proponent signature	Date	

### **Additional Considerations**

#### **Bald and Golden Eagle Protection Act**

The federal Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668c) provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). Under the Eagle Act, "take" of eagles, their parts, nests or eggs is prohibited. Disturbance resulting in injury to an eagle or a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior is a form of "take."

Bald eagles use mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska. The bald eagle southward migration begins as early as October and the wintering period extends from December-March. The golden eagle is found in arid open country with grassland for foraging in western Nebraska and usually near buttes or canyons which serve as nesting sites. Golden eagles are often a permanent resident in the Pine Ridge area of Nebraska. Additionally, many bald and golden eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-miles of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Both bald and golden eagles frequent river systems in Nebraska during the winter where open water and forested corridors provide feeding, perching, and roosting habitats, respectively. The frequency and duration of eagle use of these habitats in the winter depends upon ice and weather conditions. Human disturbances and loss of wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These affects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species.

To comply with the Eagle Act, it is recommended that the project proponent determine if the proposed project would impact bald or golden eagles or their habitats. This can be done by conducting a habitat assessment, surveying nesting habitat for active and inactive nests, and surveying potential winter roosting habitat to determine if it is being used by eagles. The area to be surveyed is dependent on the type of project; however for most projects we recommend surveying the project area and a ½ mile buffer around the project area. If it is determined that either species could be affected by the proposed project, the Commission recommends that the project proponent notify the Nebraska Game and Parks Commission as well as the Nebraska Field Office, U.S. Fish and Wildlife Service for

recommendations to avoid "take" of bald and golden eagles.

#### Migratory Bird Treaty Act and Nebraska Revised Statute §37-540

We recommend the project proponent compliy with the Migratory Bird Treaty Act (16 U.S.C. 703-712: Ch. 128 as amended) (MBTA). The project proponent should also comply with Nebraska Revised Statute §37-540, which prohibits take and destruction of nests or eggs of protected birds (as defined in Nebraska Revised Statute §37-237.01). Construction activities in grassland, wetland, stream, woodland, and river bank habitats that would result in impacts on birds, their nests or eggs protected under these laws should be avoided. Although the provisions of these laws are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of April 1 to July 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15, whereas sedge wrens, which occur in some wetland habitats, normally nest from July 15 to September 10. If development in this area is planned to occur during the primary nesting season or at any other time which may result in impacts to birds, their nests or eggs protected under these laws, we request that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the absence or presence of nesting migratory birds. If a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities, the Nebraska Game and Parks Commission and the Nebraska Field Office, U.S. Fish and Wildlife Service should be contacted immediately. For more information on avoiding impacts to migratory birds, their nests and eggs, or to report active bird nests that cannot be avoided by planned construction activities, please contact the U.S. Fish and Wildlife Service and/or the Nebraska Game and Parks Commission (contact information within report). Adherence to these guidelines will help avoid unnecessary impacts on migratory birds.

#### Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) requires consultation with the U.S. Fish and Wildlife Service (Service) and the State fish and wildlife agency (i.e., Nebraska Game and Parks Commission) for the purpose of preventing loss of and damage to fish and wildlife resources in the planning, implementation, and operation of federal and federaly funded, permitted, or licensed water resource development projects. This statute requires that federal agencies take into consideration the effect that the water related project would have on fish and wildlife resources, to take action to prevent loss or damage to these resources, and to provide for the development and improvement of these resources. The comments in this letter are provided as technical assistance only and are not the document required of the Secretary of the Interior pursuant to Section 2(b) of FWCA on any required federal environmental review or permit. This technical assistance is valid only for the described conditions and will have to be revised if significant environmental changes or changes in the proposed project take place. In order to determine whether the effects to fish and wildlife resources from the proposed project are being considered under FWCA, the lead federal agency must notify the Service in writing of how the comments and recommendations in this technical assistance letter are being considered into the proposed project.

#### Section 404 of the Clean Water Act

In general, the Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service have concerns for impacts to wetlands, streams and riparian habitats. We recommend that impacts to wetlands, streams, and associated riparian corridors be avoided and minimized, and that any unavoidable impacts to these habitats be mitigated. If any fill materials will be placed into waterways or wetlands, the U.S. Army Corps of Engineers Regulatory Office in Omaha should be contacted to determine if a 404 permit is needed.

# **Agency Contact Information**

**Nebraska Game and Parks Commission** 

Carey Grell 2200 North 33rd Street Lincoln, NE 68503 phone: (402) 471-5423

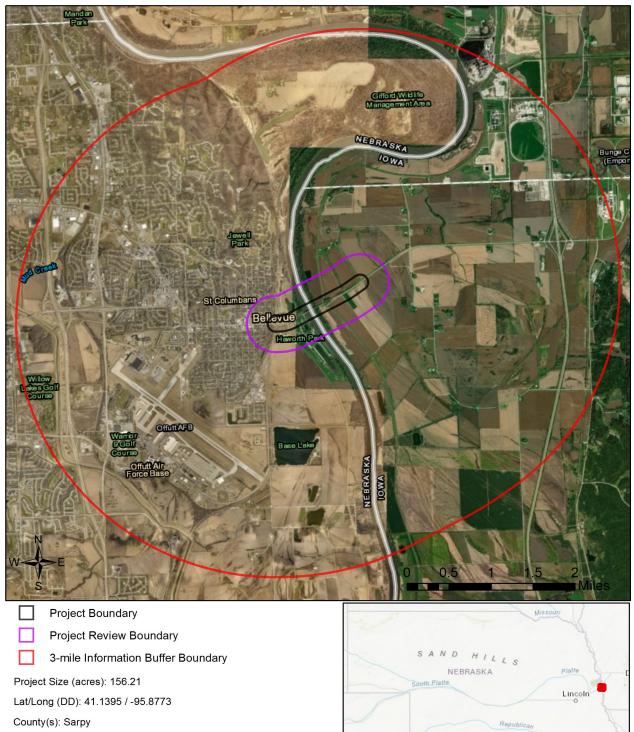
email: <a href="mailto:carey.grell@nebraska.gov">carey.grell@nebraska.gov</a>

U.S. Fish and Wildlife Service

Eliza Hines 9325 South Alda Road Wood River, NE 68883

phone: (308) 382-6468 ext. 204 email: eliza hines@fws.gov

Bellevue Bridge Aerial Image Basemap With Locator Map

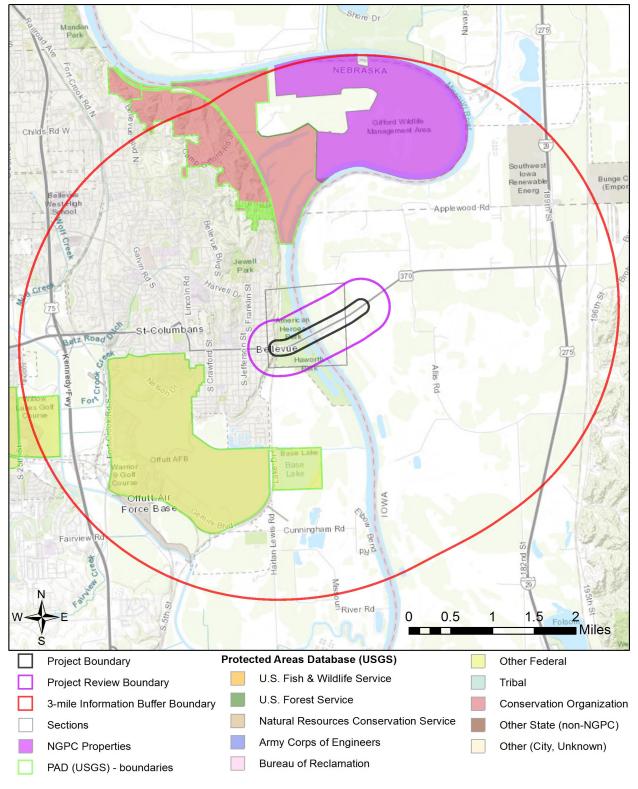


Township/Range/Section(s): T14R14ES31

BUL(s): Missouri River

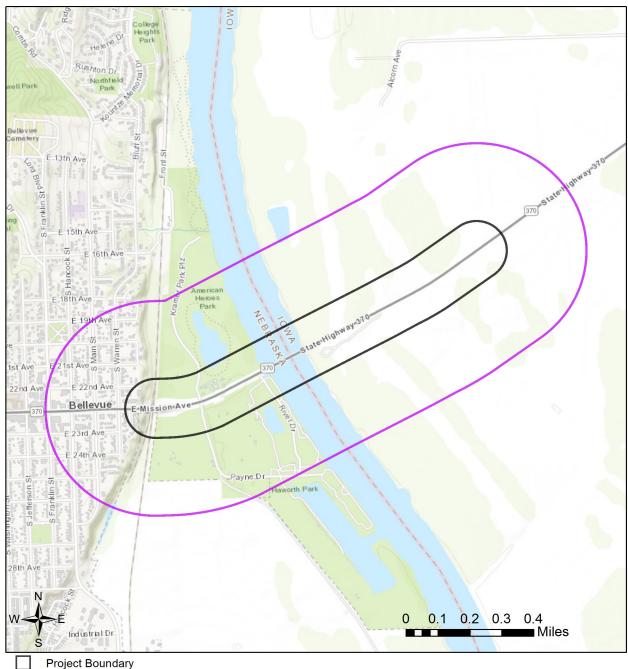
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Bellevue Bridge
Topographic Basemap With Sections and Protected Areas



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Bellevue Bridge Web Map As Submitted By User



Project Review Boundary

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

# Table 1 Protected Areas in Immediate Vicinity of Project (project review area)

This table has no results.

Table 2

Documented Occurrences in Immediate Vicinity of Project (project review area):

Natural communities and special areas

Name	Other Information	SRank	GRank
Missouri River Biologically Unique Landscape	Link to BUL document		

Table 3

Township-level Documented Occurrences of Species within 1 Mile of Project Review Area

Acipenser fulvescens	Lake Sturgeon					SRank	GRank
	_a g. a		Т	Tier 1		S1	G3G4
Aesculus glabra var. arguta	Ohio Buckeye			Tier 2		S1S2	G5T4?Q
Anaxyrus americanus	American Toad		NC	Tier 2		S1	G5
Anguilla rostrata	American Eel			Tier 2		SNR	G4
Aralia racemosa	Spikenard			Tier 2		S1	G5
Arnoglossum atriplicifolium	Pale Indian-plantain			Tier 2		S2	G4G5
Asclepias amplexicaulis	Clasping-leaf Milkweed			Tier 2		S1	G5
Brachyelytrum erectum	Bearded Short-husk			Tier 2		S2	G5
Buteo lineatus	Red-shouldered Hawk			Tier 2		S1	G5
Carphophis vermis	Worm Snake		NC	Tier 2		S2	G5
Certhia americana	Brown Creeper			Tier 2		S2	G5
Charadrius melodus	Piping Plover	Т	Т	Tier 1		S2	G3
Claytonia virginica	Virginia Spring-beauty			Tier 2		S1	G5
Corallorhiza odontorhiza	Autumn Coral-root			Tier 2		S1?	G5
Cycleptus elongatus	Blue Sucker			Tier 1		S1	G3G4
Cygnus buccinator	Trumpeter Swan			Tier 1	S	S2	G4
Dryocopus pileatus	Pileated Woodpecker			Tier 2		S1	G5
Emydoidea blandingii	Blanding's Turtle		NC	Tier 1		S4	G4
Equisetum fluviatile	Water Horsetail			Tier 2		S1	G5
Euphyes dion	Dion Skipper			Tier 2		S2	G4

Table 3

Township-level Documented Occurrences of Species within 1 Mile of Project Review Area

Scientific Name	Common Name	USFWS	State	SGCN	USFS	SRank	GRank
Feniseca tarquinius	Harvester			Tier 2		S2	G5
Haliaeetus leucocephalus	Bald Eagle			Tier 2	S	S3	G5
Hybognathus placitus	Plains Minnow			Tier 2	S	S2	G4
Lilium michiganense	Michigan Lily					S2S4	G5
Macrhybopsis gelida	Sturgeon Chub		E	Tier 1	S	S1	G3
Macrhybopsis meeki	Sicklefin Chub			Tier 1		S1	G3
Microtus pinetorum	Woodland Vole			Tier 2		S1	G5
Monotropa uniflora	Indian-pipe			Tier 2		S1	G5
Muhlenbergia tenuiflora	Slim-flower Muhly			Tier 2		S1	G5
Myotis septentrionalis	Northern Long-eared Myotis	Т	Т	Tier 1 Provisional		SNR	G1G2
Panax quinquefolius	American Ginseng		Т	Tier 1		S1	G3G4
Parkesia motacilla	Louisiana Waterthrush			Tier 2		S1	G5
Patis racemosa	Black-seed Ricegrass			Tier 2		S2	G5
Pedicularis lanceolata	Swamp Lousewort					S3	G5
Pimephales notatus	Bluntnose Minnow			Tier 2		S3	G5
Platygobio gracilis	Flathead Chub			Tier 2	S	S2	G5
Polyodon spathula	Paddlefish			Tier 2		S2	G4
Pompeius verna	Little Glassywing			Tier 2		S2S3	G5
Protonotaria citrea	Prothonotary Warbler			Tier 2		S2	G5
Scaphirhynchus albus	Pallid Sturgeon	E	E	Tier 1		S1	G2
Setophaga cerulea	Cerulean Warbler			Tier 1		SNA	G4
Sternula antillarum athalassos	Interior Least Tern	E	E	Tier 1		S2	G4T2Q
Triphora trianthophoros var. trianthophoros	Nodding-pogonia			Tier 1		S1	G3G4T3T4
Ulmus thomasii	Rock Elm					S2S4	G5
Vireo bellii	Bell's Vireo			Tier 1		S4	G5
Vireo flavifrons	Yellow-throated Vireo			Tier 2		S3	G5
Vireo griseus	White-eyed Vireo			Tier 2		SNA	G5
Zizania palustris	Northern Wild-rice					S3	G5

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	USFS	SRank	GRank
Acipenser fulvescens	Lake Sturgeon	Model		Т	Tier 1		S1	G3G4
Ammodramus henslowii	Henslow's Sparrow	Range			Tier 1		S1	G4
Atrytone arogos iowa	Iowa Skipper	Range			Tier 1		S1	G3T3
Catocala nuptialis	Married Underwing	Range			Tier 1		SNR	G3G4
Catocala whitneyi	Whitney Underwing	Range			Tier 1		S1	G3G4
Cycleptus elongatus	Blue Sucker	Range			Tier 1		S1	G3G4
Emydoidea blandingii	Blanding's Turtle	Range		NC	Tier 1		S4	G4
Erynnis martialis	Mottled Duskywing	Range			Tier 1		S2	G3
Fundulus sciadicus	Plains Topminnow	Range			Tier 1	S	S3	G4
Haliaeetus leucocephalus	Bald Eagle	Range			Tier 2	S	S3	G5
Hesperia ottoe	Ottoe Skipper	Range			Tier 1	S	S2	G3G4
Hylocichla mustelina	Wood Thrush	Range			Tier 1		S3	G4
Lanius Iudovicianus	Loggerhead Shrike	Range			Tier 1	S	S2S3	G4
Lontra canadensis	River Otter	Model		Т	Tier 1	S	S2	G5
Macrhybopsis gelida	Sturgeon Chub	Model		Е	Tier 1	S	S1	G3
Macrhybopsis meeki	Sicklefin Chub	Range			Tier 1		S1	G3
Myotis lucifugus	Little Brown Myotis	Range			Tier 1 Provisional		SNR	G3
Myotis septentrionalis	Northern Long-eared Myotis	Range	Т	Т	Tier 1 Provisional		SNR	G1G2
Perimyotis subflavus	Tricolored Bat	Range			Tier 1 Provisional		S1	G2G3
Platanthera praeclara	Western Prairie Fringed Orchid	Range	Т	Т	Tier 1		S2	G3
Scaphirhynchus albus	Pallid Sturgeon	Model	E	Е	Tier 1		S1	G2
Speyeria idalia	Regal Fritillary	Range			Tier 1	S	S3	G3
Triphora trianthophoros var. trianthophoros	Nodding-pogonia	Range			Tier 1		S1	G3G4T3T4
Tryngites subruficollis	BUFF-BREASTED SANDPIPER	Range			Tier 1		S2N	G4

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	USFS SRank	GRank
Vireo bellii	Bell's Vireo	Range			Tier 1	S4	G5

From: <u>colleen.conroy@dnr.iowa.gov</u> on behalf of <u>Sov Land and Env Review, DNR</u>

To: Kody.Unstad
Cc: Unknown Unknown

Subject: (SL 16090) Re: Env Review Request - Bellevue Bridge

**Date:** Thursday, November 1, 2018 10:04:38 AM

Attachments: image001.pnq

image001.png

Bridge Replacement Mills County Section 11, Township 73 N, Range 44 W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

Please reference the following DNR Environmental Review/Sovereign Land Program tracking number assigned to this project in all future correspondence related to this project: 16090.

If you have questions about this letter or require further information, please contact me at (515) 725-8464.

Environmental Review requests can be submitted electronically to: <u>SLER@dnr.iowa.gov</u>.



**Seth Moore** | Environmental Specialist lowa Department of Natural Resources P 515-725-8464 | F 515-725-8201 502 E 9th St, Des Moines, IA 50319 www.iowadnr.gov

On Thu, Aug 30, 2018 at 4:34 PM Kody. Unstad < Kody. Unstad@fhueng.com > wrote:

Please find the attached request for an Environmental Review for the Omaha-Council Bluffs MAPA – Bellevue Bridge Alternatives Study. If any additional information is required, please let me know. I would appreciate confirmation of you received this request.

## Thank you,

# full color with tag



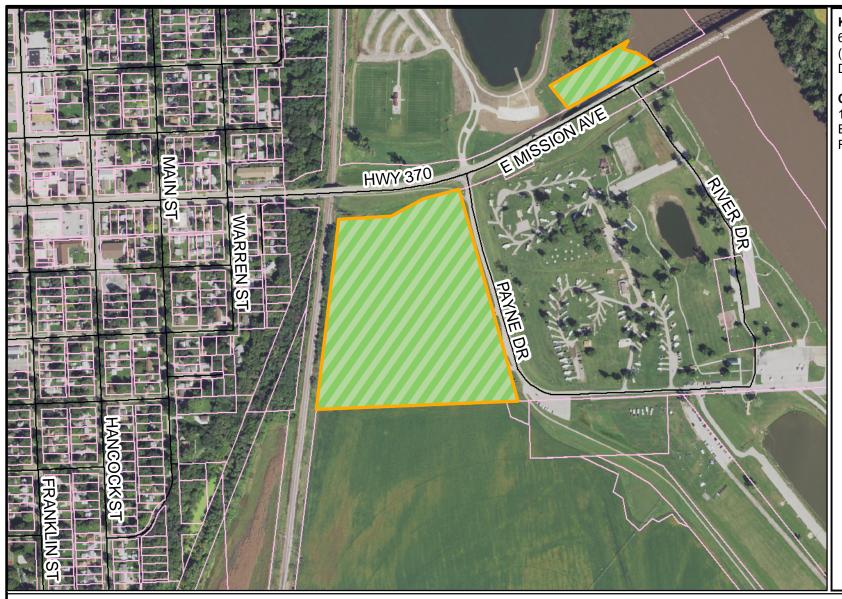
### Kody Unstad

**Environmental Scientist** 

office: 402.445.4405

11422 Miracle Hills Dr., Ste. 115 kody.unstad@fhueng.com

www.fhueng.com



#### Known Rights:

60' Easment for utility (electrical) R.O.W. and Drainage Way

#### Comments/Notes:

1 - unoffical Map; 2 - 60' Easment for utility (electrical) R.O.W. and Drainage Way



Project Name: Addition to Hawthorn Park - West

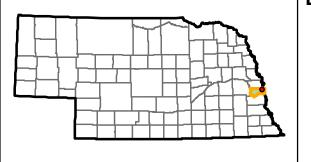
Project Number: 31-00106 Project Sponsor: City of Bellevue

Site Name: Hawthorn Park # of Acres: 24.27 +/- (GIS)/ +/- (Deed/ParcelData)

City, State: Bellevue, NE Lat: , Long: SLO/ASLO: Schuyler Sampson (ASLO)

Signature: \_\_\_\_\_\_
Date: \_\_\_\_\_

**Date Printed:** 11/20/2018





975

1,300

0 162.5325

650

# STATE OF NEBRASKA

DEPARTMENT OF READS

John L. Craig, D ector 1500 Highway 2 PO Box 94759 Lincoln NE 68509-1759 Phone (402)471-45 FAX (402)479-4325

www.dor.state.ne.us

July 23, 2003



Mike Johanns Governor

L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historical Society
1500 "R" St
PO Box 82554
Lincoln NE 68501

Re:

Bellevue Bridge, Sarpy County, Nebraska

Highway N-370 over the Missouri River

Structure No. S370 01918

Attn:

Bill Callahan

0307-093-01

HISTORIC PRESERVATION OFFICE

JUL

A historic evaluation of this bridge was completed by Camilla Deiber, Architectural Historian, Louis Berger Group, Marion, Iowa. This report was prepared for the Iowa Department of Transportation (dated November 26, 2002) and a copy is attached. The evaluation determined that the structure was not eligible for listing on the National Register of Historic Places.

Your concurrence in this determination is requested.

Thank you for your assistance.

Sincerely,

Leonard J. Sand

Environmental Program Manager Nebraska Department of Roads

LJS/D3-A1

**Attachment** 

BEPUTY STATE HISTORIC PRESERVATION OFFICE

DATES 8/19/83

### NEBRASKA STATE HISTORICAL SOCIETY

1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554 (402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

Michael J. Smith, Director/CEO

September 3, 2008

Herb Barelman Bellevue Bridge Commission 601 East Mission Bellevue, NE 68005-5121

Dear Mr. Barelman:

Thank you for submitting information to our office regarding the Bellevue Grand Army of the Republic Bridge over the Missouri. The bridge has an interesting history and is obviously of great importance to your commission. I'd also like to thank you for the time and effort you put into completing the survey form. It was very thorough and well-written.

Unfortunately, the bridge has already been deemed ineligible for listing on the National Register of Historic Places during a 2002 intensive survey by an architectural historian with the Louis Berger Group for the Iowa Department of Transportation. The Nebraska State Historical Society concurred with this decision in a latter round of correspondence dated 2003.

In Nebraska, our office administers the National Register for the National Park Service. As a Federal program, the guidelines for evaluating historic properties are quite strict. In this case, the bridge does not meet Criterion B (association with a significant person) because it does not represent Vice-President Nixon's contributions to history as well as other historic sites around the nation. It is also not eligible for listing under Criterion C (design/construction) because the South Omaha Bridge and Brownsville Bridge, earlier examples of the cantilevered warren through truss bridges over the Missouri, have already been listed as representatives of this type.

Criterion A (associations with a historic event or pattern) is possibly the most subjective of the three you have suggested, and sometimes the most difficult to understand when it is not accepted. In this case, the survey authors and the State Historic Preservation Offices in Nebraska and Iowa did not feel that the bridge had a sufficiently significant impact on the *historical* development of Bellevue.

Please know that although this property does not fit within the strict parameters of Park Service guidelines, that does <u>not</u> mean it is not important or that it should not be treated sensitively.

We urge you to continue your efforts at documenting the history and significance of the Believue Bridge, as well as searching for ways to keep it as part Nebraska's cultural landscape.



#### NEBRASKA STATE HISTORICAL SOCIETY

1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554 (402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

Michael J. Smith, Director/CEO

Thank you once again. The information that you submitted will be added to the Nebraska Historic Buildings Survey database as part of the permanent record of the State's built environment. If you have any questions, please feel free to call me at 1-800-833-6747 or 402-471-4775.

Sincerely,

Jessie Nunn

Jesse Num

National Register Coordinator Nebraska State Historic Preservation Office Nebraska State Historical Society jnunn@nebraskahistory.org

# **Wetland Delineation Report**

# **Bellevue Bridge Alternatives Study**

Project No. MAPA-5002(3); Control No. 22755

Sarpy County, Nebraska; Mills County, Iowa



View east toward the Bellevue Bridge from the west side of the Missouri River.

#### **Prepared for:**

Metropolitan Area Planning Agency 2222 Cuming Street Omaha, NE 68102

#### Prepared by:

Felsburg Holt & Ullevig 11422 Miracle Hills Drive, Suite 115 Omaha, Nebraska 68154



February 2019

TABLE OF CO	ONTENTS	Page
1.0	INTRODUCTION	1
2.0	WETLAND/WATER RESOURCE DELINEATION METHODS	2
3.0	DELINEATION RESULTS	5
4.0	DISCUSSION	7
5.0	REFERENCES (Cited or Searched)	8
List of Table	es ·	
TABLE 1	HYDRIC SOILS	3
TABLE 2	DELINEATED WETLANDS	
TABLE 3	OTHER WATER RESOURCES	6
List of Appe	ndices	
APPENDIX A	FIGURES FIGURE 1 – VICINITY MAP FIGURE 2 – RESOURCE MAP (SHEET INDEX and SHEETS 1-6)	
APPENDIX B	WETLAND DETERMINATION DATA FORMS — MIDWEST REGION	
APPENDIX C	PHOTOGRAPHIC LOG	

#### 1.0 INTRODUCTION

#### 1.1 Summary

Felsburg Holt & Ullevig (FHU) has prepared this wetland delineation report for the Bellevue Bridge Alternatives Study. The Bellevue Bridge spans the Missouri River linking the City of Bellevue in Sarpy County, Nebraska with western Mills County, Iowa (**Appendix A**; **Figure 1**). The study involves an inventory of existing bridge conditions and analysis of potential alternatives for the aging bridge including preservation and maintenance, demolition, replacement, or modification.

The purpose of this report is to identify the type, location, and extent of wetlands and channels located within the environmental study area (ESA). The ESA has been defined as extending from the BNSF Railway corridor on the west to the unnamed road 0.5 miles east of the bridge, and from the edge of a 100-foot buffer south of the bridge alignment to the edge of a 200-foot buffer north of the bridge that extends to 300 feet along the central portion of the alignment (see **Appendix A; Figure 2 Index Map**). Based on this delineation, wetlands are present within the ESA and consist of palustrine emergent temporarily/semi-permanently flooded (PEMA/PEMC), farmed PEMA/PEMC, palustrine scrub-shrub temporarily flooded (PSSA), and palustrine forested temporarily flooded (PFOA) wetlands. The project crosses the Missouri River.

#### 1.2 Regulatory Framework

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates impacts to waters of the U.S. (WOUS). Any project that requires the placement of dredged or fill material into WOUS, including wetlands, must obtain a Section 404 permit from USACE before initiating construction. As part of the permit program, the project is also reviewed for compliance with Section 401 Water Quality Certification as implemented by the Nebraska Department of Environmental Quality (NDEQ).

#### 2.0 WETLAND/WATER RESOURCE DELINEATION METHODS

#### 2.1 Review of Existing Resources

Several published and/or on-line resources were reviewed as part of the wetland evaluation:

- Natural Resource Conservation Service (NRCS), National Cooperative Soil Survey, Web Soil
  Survey and Digital Aerial Photographs, Lancaster County. U.S. Department of Agriculture.
  Accessed from: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm (NRCS 2018).
- U.S. Fish and Wildlife Service (USFWS) Wetlands Online Mapper, National Wetland Inventory (NWI) Layer. Accessed from: http://www.fws.gov/wetlands/Data/Mapper.html (USFWS 2018).
- U.S. Geological Service (USGS), The National Map Viewer with 1 arc-second National Elevation
  Dataset (NED) and National Hydrography Dataset (NHD). Accessed from:
  http://viewer.nationalmap.gov/viewer/ (USGS 2018).
- Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Esri 2018a).
- 1:24,000 scale metric Topographic Map; Omaha South 1994, Council Bluffs South 1994, Plattsmouth 1994, Pacific Junction 1994 (Esri 2018b).

#### Topography

This project is located within the Valleys Topographic Region of Nebraska (IANR 1973) which generally consists of flat-lying land along the major streams and rivers. Elevations within the ESA range from a low of approximately 960 feet (293 meters [m]) above sea level (asl) along both banks of the Missouri River to a high of 990 feet (302 m) asl near the far southwest corner of the ESA.

#### Drainage

The project lies within the Big Papillion – Mosquito Creek HUC 8 Watershed. The Missouri River is the main drainage feature and is approximately 650 to 680 feet wide in the vicinity of the bridge. Some minor drainages are also present within the ESA; all lead to the Missouri River.

#### Vegetation

The major NRCS Ecological Site Designations (NRCS 2018) mapped within the ESA include Loamy floodplain prairie; Sandy or silty lowland; Clayey overflow; Loamy floodplain forest; and Clayey floodplain prairie. The historic plant communities at the site would have included species such as Eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), common hackberry (*Celtis occidentalis*), American bladdernut, (*Staphylea trifolia*), buttonbrush (*Cephalanthus occidentalis*), Canadian wood nettle (*Laportea canadensis*), and rice cutgrass (*Leersia oryzoides*). As a result of drainage and clearing for agriculture and urban development floodplain forests have been degraded and have a high prevalence of invasive species such as white mulberry (*Morus alba*) and Siberian elm (*Ulmus pumila*).

#### Wetlands

National Wetland Inventory wetlands mapped within the ESA include riverine (R2UBH) and freshwater emergent (PEM1A) wetlands.

#### **Land Use**

The project occurs within the Iowa and Missouri Deep Loess Hills Major Land Resource Area (Land Resource Region M [Central Feed Grains and Livestock]) (NRCS 2006). Land uses within the ESA are primarily recreational on the west side of the Missouri River with American Heroes Park located north of East Mission Avenue and Haworth Park located to the south. Land uses on the east side of the river are primarily row-crop agriculture.

#### Soils

Many Soil Survey Geographic database (SSURGO) map units are present within the ESA (NRCS 2018). Those soil types which include hydric components are listed in **Table 1**.

**TABLE 1: HYDRIC SOILS WITHIN THE ESA** 

SOIL TYPE	PORTION CONSIDERED HYDRIC	LOCATION			
Haynie silt loam,	Albaton – occasionally flooded	hydric soils components may compose 5% of the			
0 to 2 percent slopes, occasionally flooded		soil type and are located on floodplains			
Blake silty clay loam,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains			
Onawa silty clay,	Albaton – rarely flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains.			
Modale silt loam,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains.			
Albaton silty clay,	Albaton – occasionally flooded	hydric soil components may compose 90% of the			
0 to 2 percent slopes, occasionally flooded		soil type and are located on floodplains.			
Sarpy loamy fine sand,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
1 to 3 percent slopes		soil type and are located on floodplains.			
Sarpy fine loamy sand,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains.			
Grable silt loam,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains.			
Percival silty clay,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains.			
Vore silty clay loam,	Albaton – occasionally flooded	hydric soil components may compose 5% of the			
0 to 2 percent slopes		soil type and are located on floodplains.			
	Fluvaquents - silty, frequently flooded	hydric soil components may compose 13% of the			
Onawa silty clay, occasionally flooded		soil type and are located on floodplains.			
Onawa siity ciay, occasionally hooded	Albaton - occasionally flooded	hydric soil components may compose 7% of the			
		soil type and are located on floodplains.			
Onawa-Lossing silty clays,	Albaton - occasionally flooded	hydric soil components may compose 9% of the			
occasionally flooded		soil type and are located on floodplains.			

#### 2.2 Field Survey

The site visit for the project was conducted on 6 September 2018 by FHU scientists/biologists Kody Unstad and Adam Behmer. Field data was collected to: (1) delineate wetlands and (2) document other water resources.

#### **Wetland Delineation Methodology**

Wetland delineation procedures follow protocols described in the:

- 1. U.S. Army Corps of Engineers Wetland Delineation Manual (USACE 1987)
- 2. Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Midwest Region (USACE 2010)

A point method is used to collect at least one sample point per wetland and at least one sample point in the uplands near the upland/wetland interface. Sample points are examined for the presence or absence of the three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point data are recorded on USACE Wetland Determination Data Forms (USACE 2010). Delineated wetlands are classified according to the *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin et al. 1979) based on field conditions.

Vegetation at each sample point is identified to the species level, when possible, and recorded. The wetland indicator status of each plant identified is also recorded and used to determine if hydrophytic vegetation is present (USACE 2016).

Where possible, soils are examined by excavating to the depth needed to identify hydric soils or a minimum of 20 inches. The soil profile is documented for changes in soil horizons, matrix and mottle colors, and redoximorphic features. Redoximorphic concentrations are the apparent accumulation of iron and manganese oxides within the soil profile. Redoximorphic depletions are areas of low chroma and high value that indicate the removal of reduced iron from the soil. Concentrations or depletions of iron are usually an indication of periodically, seasonally, or permanently saturated soil conditions.

Indicators of wetland hydrology (high water table and saturated or inundated soils), along with signs of previous prolonged saturation or inundation during the growing season, are also noted at each sampling location.

#### **Channel Delineation Methodology**

Areas with flowing water or a defined bed and bank are assessed for an ordinary high water mark (OHWM) when the channels are determined to be wider than 3 feet. The OHWM in a stream channel is generally an area free of vegetation along the bank below the 2-year channel-forming storm event (USACE 2005). Additionally, there is often a visible impression or scour line on the bank that is an indication of the OHWM. When a channel less than 3 feet wide is identified, the center of the channel is mapped to document its location.

#### **Documentation**

Locations of the wetland/upland boundary, sample points, channels, and other features within the ESA were mapped using a Trimble GeoXH or similar Global Positioning System (GPS) unit with sub-meter accuracy.

#### 3.0 DELINEATION RESULTS

Seventeen wetlands and one channel were delineated within the ESA. The locations of delineated wetland boundaries, sample points, and photograph locations are shown on **Figure 2** in **Appendix A**. Wetland Determination Data Forms were completed for each sample point and are included in **Appendix B** with all sample point photographs found in **Appendix C**.

Summary data for wetlands is shown in **Table 2**, including wetland classification and acreage for delineated wetlands. Summary data for other water resources is included in **Table 3**. Delineated wetlands are primarily PEMA/PEMC, PSSA, and PFOA wetlands located within the floodplain of the Missouri River. Dominant species in the PEMA/PEMC wetlands include yellow nutsedge (*Cyperus esculentus*), reed canary grass (*Phalaris arundinacea*), and lady's thumb (*Persicaria maculosa*). Dominant species in the PSSA wetlands include roughleaf dogwood (*Cornus drummondii*) and white mulberry (*Morus alba*). Dominant species in the PFOA wetlands include white mulberry (*Morus alba*), eastern cottonwood (*Populus deltoides*), and silver maple (*Acer saccharinum*).

**TABLE 2: DELINEATED WETLANDS** 

RESOURCE NUMBER	FIGURE 2 SHEET NO.	WETLAND CLASSIFICATION <sup>1</sup>	NEBRASKA WETLAND SUBCLASS	AREA <sup>2</sup> (acres)	POSSIBLY NON- JURISDICTIONAL <sup>3</sup>
Wetland 2	1	PEMA/PEMC	Floodplain Depression	2.2730	No
Wetland 3	1	PEMA/PEMC	Floodplain Depression	0.3218	No
Wetland 5	1,2	PEMA/PEMC	Floodplain Depression	0.0639	No
Wetland 7	2	PEMA/PEMC	Riverine Channel	0.1499	No
Wetland 8	2	PEMA/PEMC	Floodplain Depression	0.0346	No
Wetland 9	2,3	PFOA	Riverine Floodplain	0.7832	No
Wetland 11	2,3	PEMA/PEMC	Riverine Floodplain	0.2457	No
Wetland 12	3	PFOA	Riverine Floodplain <sup>4</sup>	0.6661	No
Wetland 13	3,4	PFOA	Riverine Floodplain <sup>4</sup>	0.3518	No
Wetland 14	3,4	PEMA/PEMC	Riverine Floodplain <sup>4</sup>	2.6097	No
Wetland 15	3,4	Farmed PEMA/PEMC	Riverine Floodplain <sup>4</sup>	2.2689	No
Wetland 17	4	PFOA	Floodplain Depression <sup>4</sup>	0.7031	No
Wetland 18	4,5	PSSA	Floodplain Depression <sup>4</sup>	0.1457	No
Wetland 20	4	PFOA	Floodplain Depression <sup>4</sup>	0.9787	No
Wetland 21	4,5,6	PSSA	Floodplain Depression <sup>4</sup>	0.7678 <sup>2</sup>	No
Wetland 22	4,5,6	PEMA/PEMC	Floodplain Depression <sup>4</sup>	7.7940	No
Wetland 24	5,6	PEMA/PEMC	Floodplain Depression <sup>4</sup>	0.5285	No

<sup>&</sup>lt;sup>1</sup> Cowardin classification as follows: PEMA - Palustrine Emergent Temporarily Flooded, PEMC - palustrine emergent semi-permanently flooded, and PFOA - palustrine forested temporarily flooded.

TABLE 3: OTHER WATER RESOURCES<sup>1</sup>

RESOURCE NUMBER	FIGURE 2 SHEET NO.	NAME	ТҮРЕ	FLOW REGIME	POSSIBLY NON- JURISDICTIONAL <sup>2</sup>
Channel 7	2	Unnamed Tributary	Channel	Intermittent	No
Channel 11	3	Missouri River	Channel	Perennial	No

 $<sup>^{\</sup>rm 1}$  Other Water Resources are non-wetland water resources such as channels, ponds, and canals.

<sup>&</sup>lt;sup>2</sup>The wetland is represented by multiple delineated areas. Wetland acreage provided in **Table 2** represents the total acreage of all delineated

<sup>&</sup>lt;sup>3</sup> All wetlands assumed to be jurisdictional under Section 404 of the Clean Water Act, unless a USACE Jurisdictional Determination is received indicating otherwise.

<sup>&</sup>lt;sup>4</sup> Wetlands are in Iowa.

<sup>&</sup>lt;sup>2</sup> All Water Resources are assumed to be jurisdictional under Section 404 of the Clean Water Act, unless a USACE Jurisdictional Determination is received indicating otherwise.

### 4.0 DISCUSSION

Much of the environmental study area was inundated a few weeks prior to the delineation due to heavy rains and flooding from elevated water levels in the Missouri River. Water levels had since receded but many low-lying areas still contained standing water at the time of the delineation. Most of these areas were determined to be wetlands, but likely do not contain standing water under normal hydrologic conditions.

Wetlands identified in this delineation are assumed to be jurisdictional and regulated by USACE under Section 404 of the Clean Water Act (see **Section 1.2**), unless a Jurisdictional Determination is received from USACE stating otherwise. Based on historical and current aerials, National Hydrography Dataset (NHD), LIDAR, and USGS topographic maps, it is likely that all wetlands and channels within the ESA are jurisdictional.

## 5.0 REFERENCES (Cited or Searched)

- Cowardin, L.M., V. Carter V., F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, D.C.
- Esri. 2018a. Aerial Image Service: Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.
- Esri. 2018b. 2013 National Geographic Society, i-cubed. 1:24,000 scale metric Topographic Map; Davey 1978, Lincoln 1980.
- GretagMacbeth. 2000. Munsell Soil Color Charts. New Windsor, New York.
- Institute of Agriculture and Natural Resources (IANR). 1973. Topographic Regions Map of Nebraska. Conservation and Survey Division, University of Nebraska Lincoln. Accessed from: http://digitalcommons.unl.edu/caripubs/62/.
- LaGrange, T. 2010. Wetland Program Plan for Nebraska. U.S. Environmental Protection Agency. Accessed from:

  http://water.epa.gov/type/wetlands/upload/ne\_wetland\_program\_plan\_2010.pdf
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- Natural Resource Conservation Service (NRCS). 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture.
- Natural Resource Conservation Service (NRCS). 2018. National Cooperative Soil Survey, Web Soil Survey and Digital Aerial Photographs, Lancaster County. U.S. Department of Agriculture. Accessed from: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.
- Olsson Associates and Wright Water Engineers. 2000. Beal Slough Basin Stormwater Master Plan.

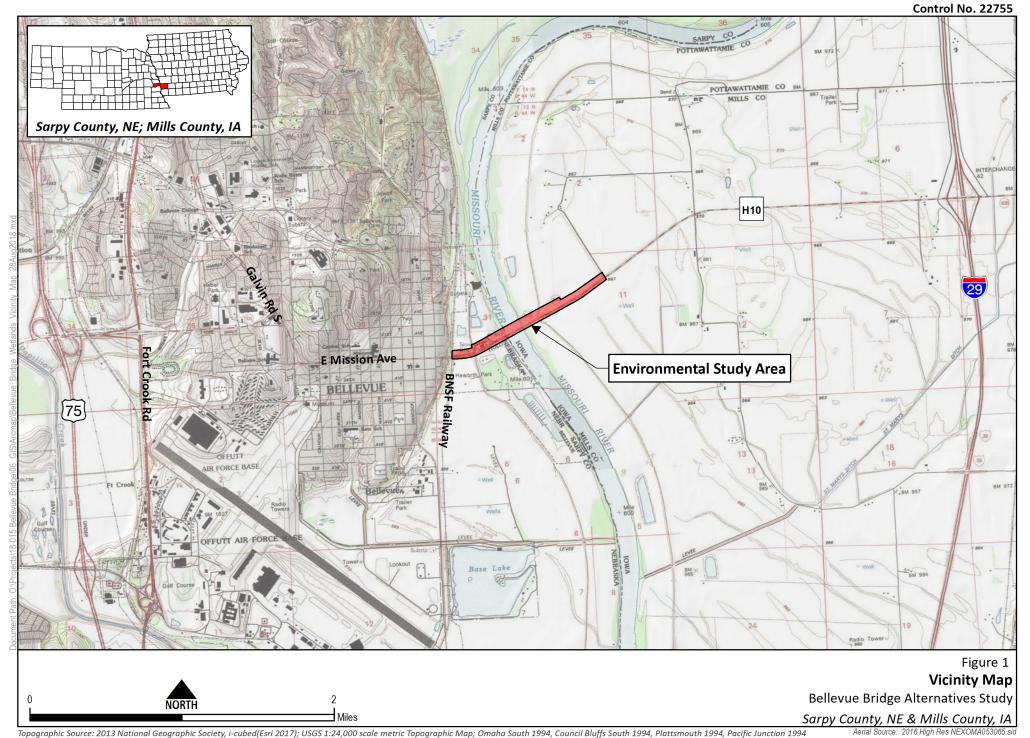
  Prepared for the City of Lincoln, Nebraska and the Lower Platte South Natural Resource District.

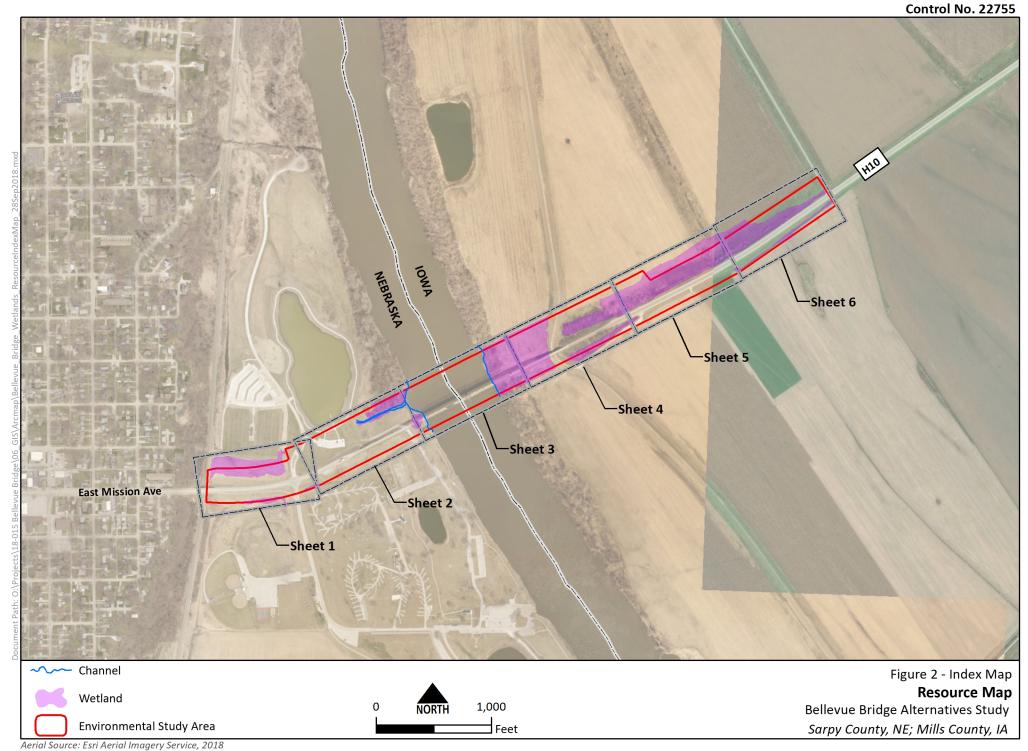
  Accessed from: https://lincoln.ne.gov/city/pworks/watershed/master-plan/beal-slough/.
- Rolfsmeier, S.B. and G. Steinauer. 2010. Systems and Natural Communities of Nebraska. Nebraska Natural Heritage Program, Nebraska Game and Parks Commission. Accessed from: http://outdoornebraska.ne.gov/wildlife/programs/legacy/pdfs/Terrestrial%20Ecological%20Syst ems.pdf
- Schneider, R., K. Stoner, G. Steinauer, M. Panella, and M. Humpert (Eds). 2011. The Nebraska natural legacy project: State wildlife action plan. 2<sup>nd</sup> Ed. The Nebraska Game and Parks Commission, Lincoln, NE.
- U.S. Army USACE of Engineers (USACE). 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual, Environmental Laboratory. Waterways Experiment Station, Vicksburg, MS.
- U.S. Army Corps of Engineers (USACE). 2005. Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification. U.S. Army Corps of Engineers.
- U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, ERDC/EL TR-10-16. Wetlands Regulatory Assistance Program, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

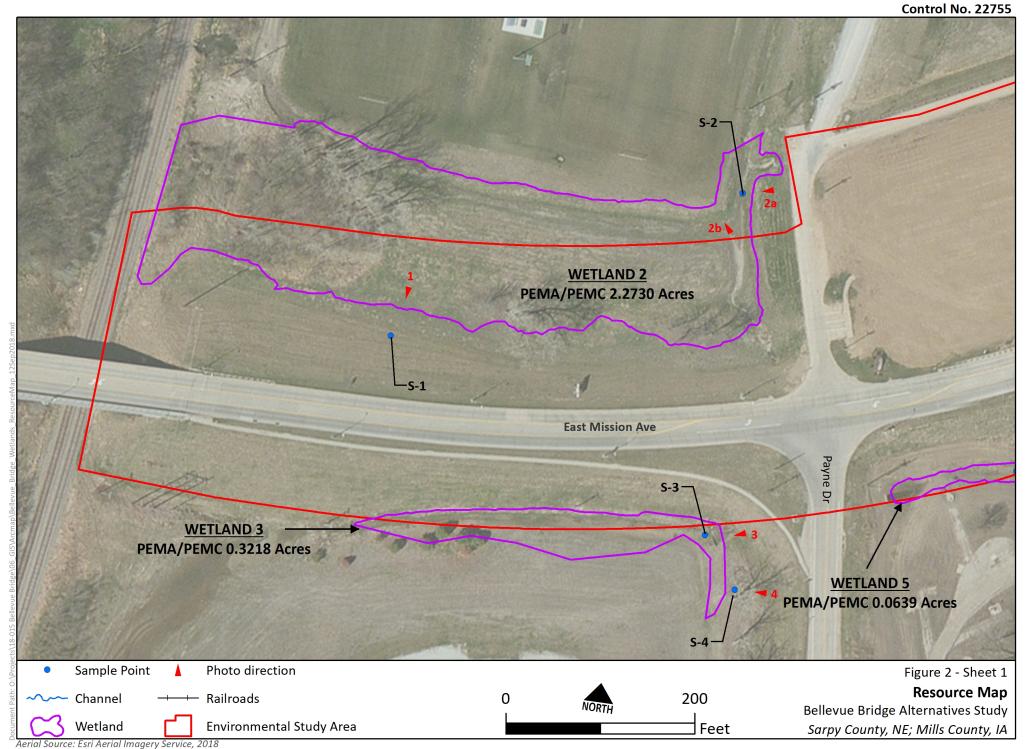
- Sarpy County, Nebraska; Mills County, Iowa
- U.S. Army Corps of Engineers (USACE). 2016. Regional Wetland Plant List. Engineer Research and Development Center/Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.
- U.S. Fish and Wildlife Service (USFWS). 2018. Wetlands Online Mapper, National Wetland Inventory (NWI) Layer. Accessed from: http://www.fws.gov/wetlands/Data/Mapper.html.
- United States Geological Service (USGS). 2018. The National Map Viewer with 1 arc-second National Elevation Dataset (NED) and National Hydrography Dataset (NHD). Accessed from: http://viewer.nationalmap.gov/viewer/.

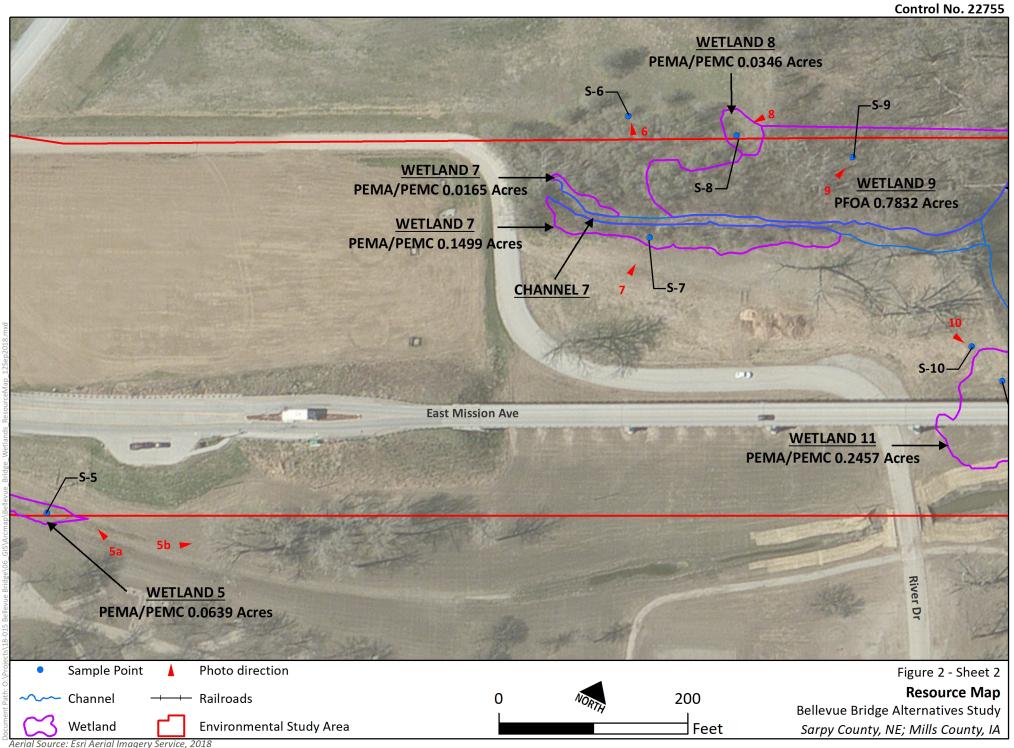
## **APPENDIX A:**

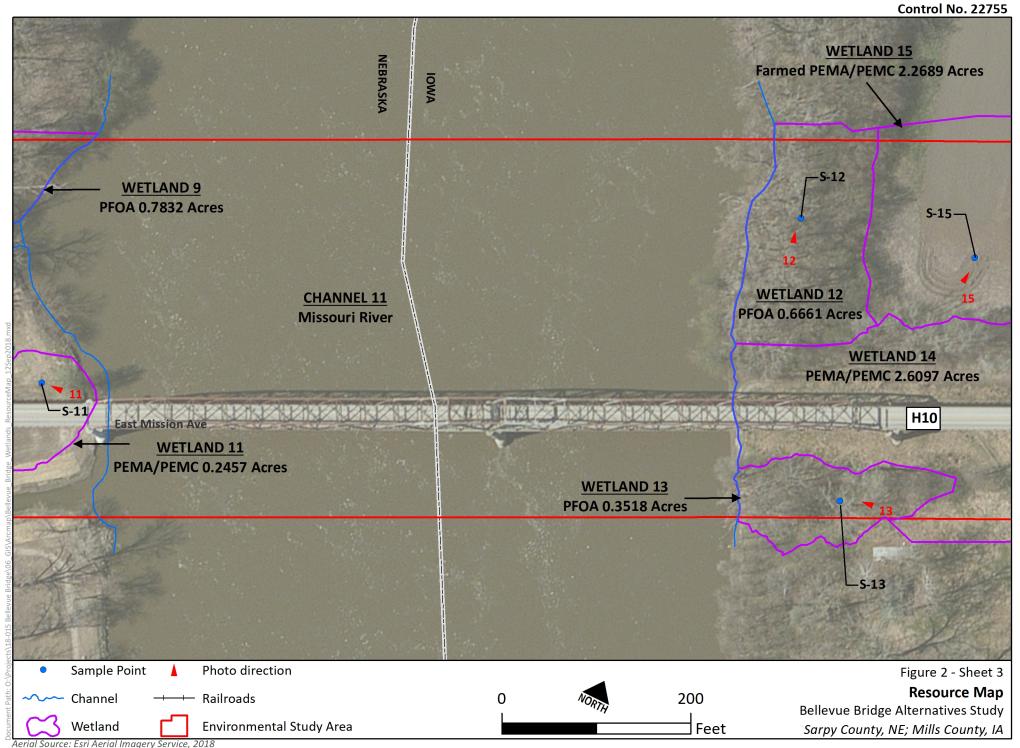
**FIGURES** 

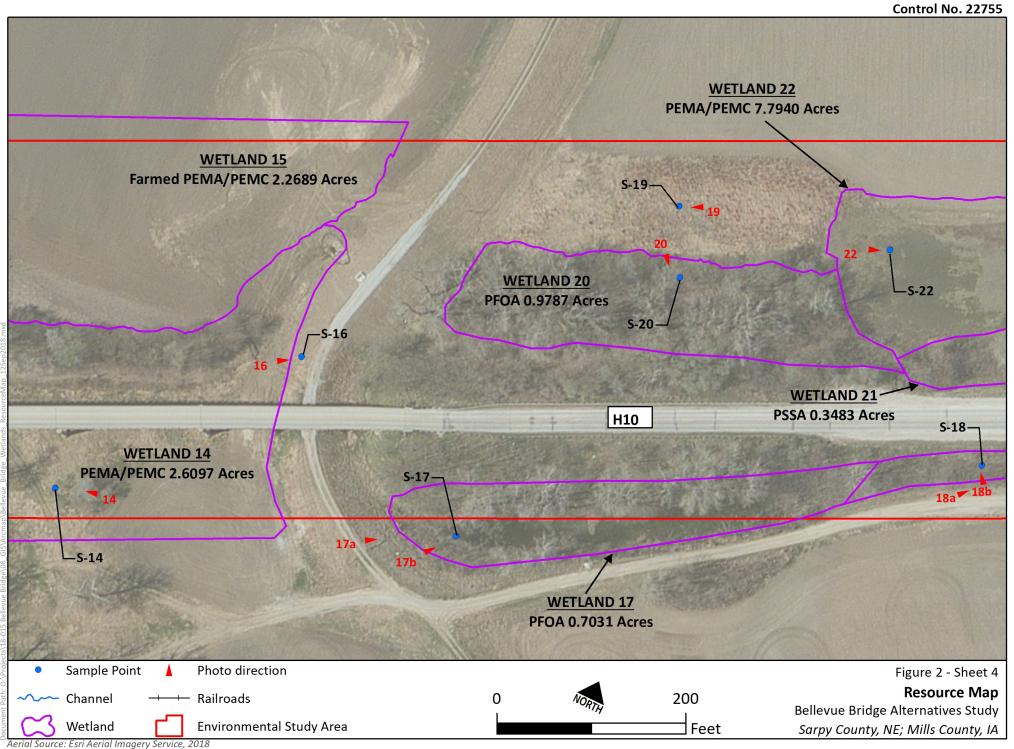


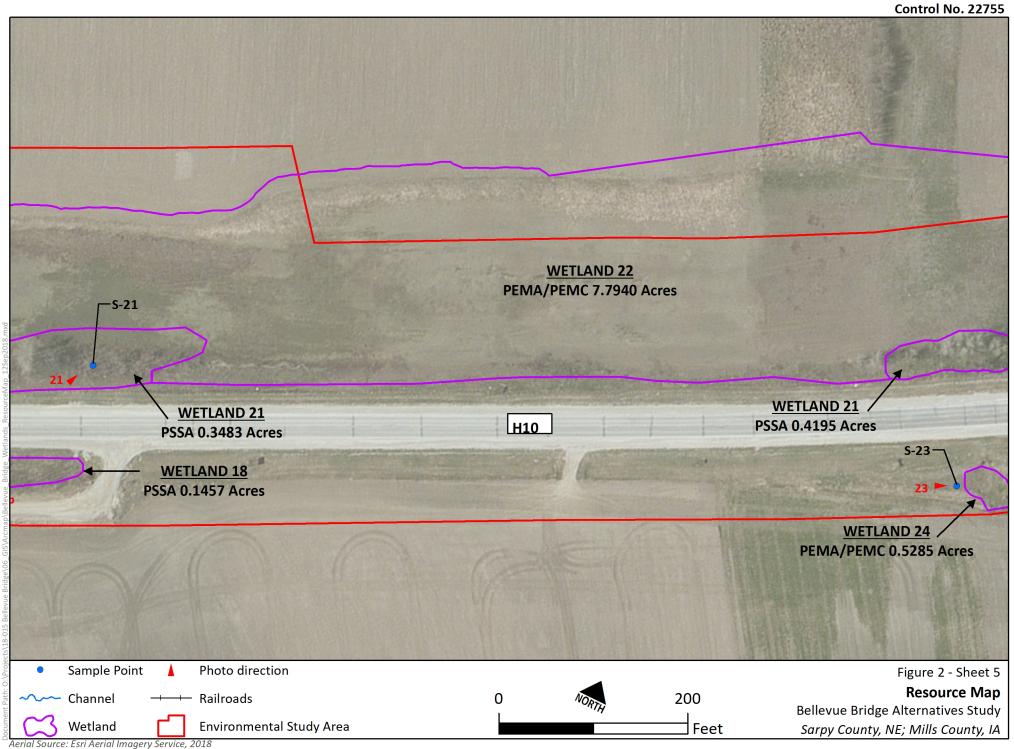


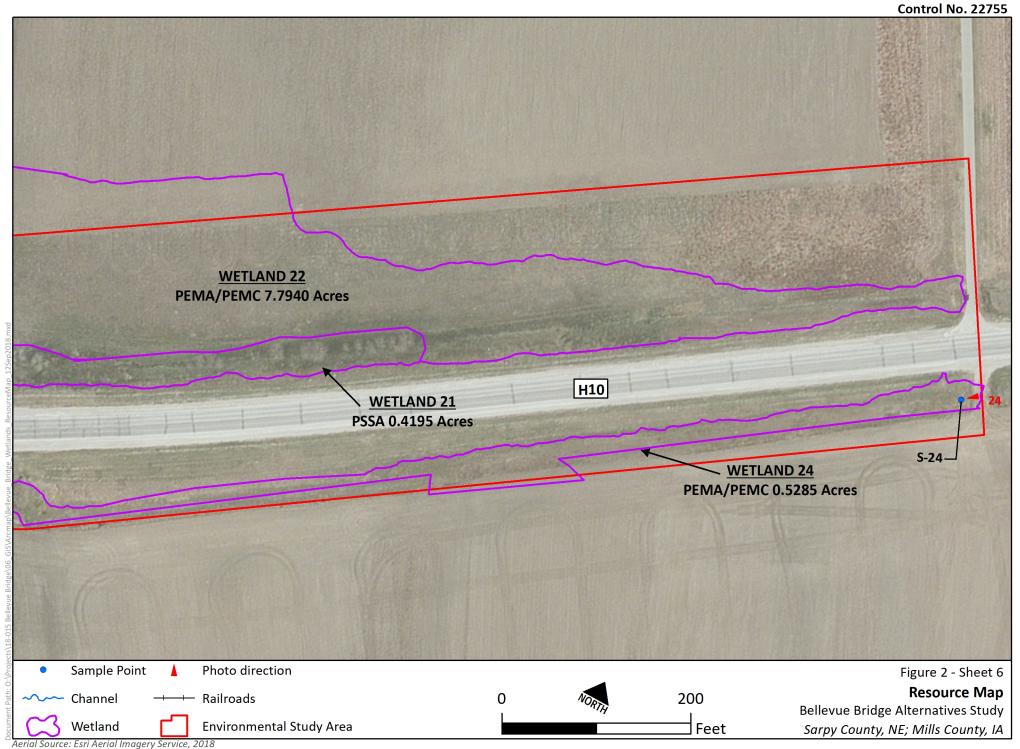












## **APPENDIX B:**

# WETLAND DETERMINATION DATA FORMS MIDWEST REGION

Project/Site: Bellevue Bridge	City/	County:	Sarpy Co	unty Samplin	ıg Date:	9/06/2018	8
Applicant/Owner: Metropolitan Area Planning Agen			Nebra			S-1	
Investigator(s): KMU ATB	,		ion, Townsh		S31, T14	N, R14E	
Landform (hillslope, terrace, etc.): sideslop	ре	Local relief	(concave,	convex, none):		Slope (%):	40
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.136724	4185133 I	Long: -95.8 <mark>8625</mark>	56341859	Datum: NAI	D 83
Soil Map Unit Name: Onawa silty clay, occasionally flo	oded		NWI	classification:	1	None	
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ (	(If no, explain in Rem	narks.)		
Are Vegetation, SoilX, or Hydro	logy	significantly	disturbed?	Are "Normal Circu	mstances" pr	esent? Ye	es
Are Vegetation , Soil , or Hydro	logy	naturally pro	blematic?	(If needed, explai	in answers in	Remarks.)	<u>.</u>
SUMMARY OF FINDINGS - Attach site map sho	owing samp	oling point lo	cations, tra	nsects, important fo	eatures, etc.		
Hydrophytic Vegetation Present? N							
Hydric Soil Present? Y	_	Is the S	ampled Ar	ea Within a Wetlar	nd?	N	
Indicators of Wetland Hydrology Present? N		If yes, o	ptional wetla	and site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
	•						
Sample point S-1 is the upland outpoint for Wetland 2					venue road	way. Soils in	the
area do not appear to be natural as they were part of	the constru	cted roadway	embankme	nt.			
VEGETATION Use scientific names of plan	ts						
	Absolute	Dominant	Indicator	Dominance Tes	st Workshee	et .	
Tree Stratum (Plot size: )	% Cover	Species	Status	Number of Domina			
1		•		that are OBL, FAC	•	1	(A)
2				Total Number of Do	ominant		• '
3				Species Across all	Strata:	2	(B)
4				Percent of Domina	nt Species		
5				that are OBL, FAC	W, or FAC:	50.00%	(A/B)
	0	= Total Cover	:				-
Sapling/Shrub Stratum (Plot size:	)			Prevalence Inde	ex Workshe	eet	
1				Total % Cover o		tiply by:	
2		· ———		OBL species	0 x 1		
3				FACW species	5 x 2		
4				FAC species	65 x 3		•
5		- T-4-1 O		FACU species	10 x 4		•
Harb Stratum (Diet size:	0	= Total Cover		UPL species Column Totals	25 x 5		(D)
Herb Stratum (Plot size:	)		<b>540</b>	-	105 (A)		(B)
1 Poa pratensis	65	· <del>Y</del>	FAC	Prevalence Inde	X = B/A =	3.52	•
2 Setaria viridis 3 Lotus corniculatus	25 10	· <u>Y</u>	UPL	Lludrambutia Va	andation in	diaatawa.	
3 Lotus corniculatus 4 Phalaris arundinacea	5	- N	FACU FACW	Hydrophytic Ve	_	uicators. hytic Vegetat	ion
5			TACVV	2 - Dominand			.1011
6				l	ce Index is ≤		
7				4 Manushala			_
8	-			4 - Morpholog supporting da	gicai Adapiai ata in Remar	ilons (provid ks.or.on.a.se	e narate
9				sheet)	ata iii rtoiriai	NO 01 011 0 00	parato
10				Problematic	Hvdrophvtic '	Vegetation <sup>1</sup>	
	105	= Total Cover		(Explain)	, , ,	3	
Woody Vine Stratum (Plot size:	)	•		<sup>1</sup> Indicators of hydi	ric soil and we	etland hydrolo	av must
1						ed or problema	
2				Hydrophytic			
	0	= Total Cover		Vegetation			
Damanda, (In aluda alasta and I	-414 \			Present?	N		
Remarks: (Include photo numbers here or on a separa	ate sheet.)						

Profile Desc	cription: (Descri	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm th	ne absenc	e of indicators.)
Depth	Matrix			lox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Э	Remarks
0-6	10YR 3/3	75	10YR 5/8	15	С	М	Loamy clay		Gravel present
0.0	10111070		10YR 6/2	10	D	M	Louiny day		Graver processis
6-20	10YR 3/4	75	10YR 5/8	255	С	M	Loamy clay		Sand and gravel present
4							2		
		= Depleti	on, RM = Reduce	ed Matrix	, MS = N	1asked S			L = Pore Lining, M = Matrix
Hydric Soil									ematic Hydric Soils³:
	osol (A1)				ed Matrix	(S4)		Prairie Rec	· · · · · ·
	ic Epipedon (A2)			dy Redo				urface (S7	•
	ck Histic (A3)			oped Ma	. ,			•	Masses (F12)
	rogen Sulfide (A4			•	ky Minera	. ,			k Surface (TF12)
	tified Layers (A5)	)	Loa	my Gley	ed Matrix	(F2)	X Other (	Explain in	Remarks)
	n Muck (A10)				atrix (F3)				
	leted Below Dark		· · · —		Surface	. ,			
	ck Dark Surface (				ırk Surfa		<sup>3</sup> Indicato	rs of hydro	phytic vegetation and wetland
	dy Mucky Minera			lox Depr	essions (	(F8)	hydrolog	gy must be	e present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3						1	oroblematic.
Restrictive	Layer (if observe	ed):							
Type:		,-					Hydric Sc	oil Present	t? Y
Depth (inche	es):						,		<u> </u>
Remarks:									
								se it meets	s indicators for a hydric soil but
has been o	disturbed as evide	enced by	the presence of	mixed-in	gravel a	nd sand.			
<b>HYDROLO</b>	OGY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum	of one is	required; check a	all that a	(vlaa		Seco	ndary Indi	cators (minimum of two required)
_	Water (A1)				—— Fauna (B	13)			Soil Cracks (B6)
	ter Table (A2)				uatic Plar				Patterns (B10)
Saturation	` '			•		Odor (C		_ ~	on Water Table (C2)
	arks (B1)		-				Living Roots	_	Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)				_	n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)
	t or Crust (B4)						illed Soils		hic Position (D2)
	osits (B5)			(C6)				_	tral Test (D5)
	on Visible on Aeria	l Imagery	y (B7)	Thin Mu	ck Surfac	e (C7)			` '
Sparsely	Vegetated Conca	ve Surfa	ce (B8)		r Well Da				
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	vations:								
Surface Wat		Yes	No	Х	Depth (i	nches):			
Water Table		Yes	No	X	Depth (i			Indi	icators of Wetland
Saturation P	resent?	Yes	No	Х	Depth (i			Ну	drology Present? N
(includes ca	pillary fringe)				·			<u> </u>	
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial	photos, ı	previous	inspections), if a	available:	
	,			•			. ,		
Remarks:									
There are	no wetland hydro	logy indi	cators present.						

Project/Site: Bellevue Bridge	City/	County:	Sarpy Co	ınty Sampling [	Date: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen		State:	Nebra		
Investigator(s): KMU ATB	,	Sect	ion, Townsh		S21, T14N, R14E
Landform (hillslope, terrace, etc.): Ditch / draina	ge path	Local relief	(concave, c	onvex, none): Con	ncave Slope (%): 0-8
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.1372832	2310737 L	ong: -95.8849700	940134 Datum: NAD 83
Soil Map Unit Name: Onawa-Lossing silty clays, occas	ionally flood	ded	NWI	classification:	None
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	N (	f no, explain in Remar	ks.)
Are Vegetation, Soil, or Hydro	logy	significantly	disturbed?	Are "Normal Circums	tances" present? Yes
Are Vegetation , Soil , or Hydro	logy	naturally pro	blematic?	(If needed, explain a	answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point lo	cations, trai	sects, important feat	ures, etc.
Hydrophytic Vegetation Present? Y	_				
Hydric Soil Present? Y		Is the S	ampled Are	ea Within a Wetland?	? <u>Y</u>
Indicators of Wetland Hydrology Present?		If yes, o	ptional wetla	nd site ID: Wet	tland 2
Remarks: (Explain alternative procedures here or in a	separate re	eport.)		<u> </u>	
Sample documents a PEMA/PEMC wetland located wadjacent field north of E Mission Ave. The ditch was flaerial imagery indicates the ditch is not typically inunc	ooded due tated.				
VEGETATION Use scientific names of plan	ts.				
	Absolute	Dominant	Indicator	Dominance Test V	Norksheet
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Dominant that are OBL, FACW,	•
2				Total Number of Dom	inant
3				Species Across all St	rata: 4 (B)
4				Percent of Dominant	Species
5				that are OBL, FACW,	or FAC: 100.00% (A/B)
	0	= Total Cover	•		
Sapling/Shrub Stratum (Plot size:	)			Prevalence Index	
1 Cornus drummondii	3	Y	FAC	Total % Cover of:	Multiply by:
2 Fraxinus pennsylvanica	2	<u>Y</u>	FACW	OBL species	0 x 1 = 0
3				· —	62 x 2 = 124
4				FAC species FACU species	$\frac{3}{5}$ x 3 = $\frac{9}{20}$
3		= Total Cover			$\frac{3}{10}$ x 5 = $\frac{20}{50}$
Herb Stratum (Plot size:	\ <del></del>	- Total Cover		· -	80 (A) 203 (B)
1 Cyperus esculentus	, 35	Υ	FACW	Prevalence Index =	
2 Persicaria maculosa	25	<u> </u>	FACW	Frevalence index -	- D/A - 2.34
3 Setaria viridis	10		UPL	Hydrophytic Vege	etation Indicators:
4 Amaranthus retroflexus	5		FACU		or Hydrophytic Vegetation
5				X 2 - Dominance	
6			-	X 3 - Prevalence I	
7				4 - Morphologic	al Adaptations <sup>1</sup> (provide
8					in Remarks or on a separate
9				sheet)	
10	75	= Total Cover		Problematic Hy (Explain)	drophytic Vegetation <sup>1</sup>
Woody Vine Stratum (Plot size:	\ <del></del>	- Total Cover			
1	,			•	soil and wetland hydrology must ss disturbed or problematic.
2				Hydrophytic	
	0	= Total Cover		Vegetation Present?	Y
Remarks: (Include photo numbers here or on a separa	ate sheet.)			ļ	
	/				
The sample point was within the ditch. Other areas of	the wetland	d were domina	ated by <i>Pha</i>	laris arundinacea.	

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	e absence of indica	itors.)
Depth	<u>Matrix</u>		Re	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-8	10YR 2/2	100					Loamy clay		
8-12	10YR 2/2	95	10YR 5/8	5	С	М	Loamy clay		
12-20	10YR 3/2	100		1			Loamy clay		
12 20	10111 0/2	100					Louiny olay		
<sup>1</sup> Type: C = C	Concentration, D	= Depleti	on, RM = Reduc	ed Matrix	. MS = N	lasked S	and Grains. <sup>2</sup> Lo	cation: PL = Pore Li	ning, M = Matrix
Hydric Soil			,		,			or Problematic Hyd	
_	osol (A1)		Sa	ndy Gleye	ed Matrix	(S4)		rairie Redox (A16)	
	ic Epipedon (A2)			ndy Redo		,		rface (S7)	
	ck Histic (A3)			ipped Ma				nganese Masses (F´	12)
	rogen Sulfide (A	1)		amy Mucl	. ,	al (F1)		allow Dark Surface (	*
	tified Layers (A5			amy Gley				xplain in Remarks)	,
	n Muck (A10)		De	pleted Ma	atrix (F3)		<del></del>		
Dep	leted Below Dark	Surface	(A11) X Re	dox Dark	Surface	(F6)			
Thic	k Dark Surface (	A12)	De	pleted Da	ark Surfa	ce (F7)	<sup>3</sup> Indicator	s of hydrophytic veg	etation and wetland
San	dy Mucky Minera	l (S1)	Re	dox Depr	essions	(F8)		y must be present, ι	
5 cr	n Mucky Peat or	Peat (S3						problemation	<b>)</b> .
Restrictive	Layer (if observe	eq):							
Type:							Hydric Soi	I Present? Y	
Depth (inche	es).				_		,		_
Remarks:									
The soil sa	ample was taken	in the are	ea of the wetland	l dominat	ed by <i>Ph</i>	alaris arı	<i>undinacea</i> where	soils were saturated	but not inundated.
	'				,				
HYDROLO									
Wetland Hy	drology Indicate	rs:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		<u>Secor</u>	ndary Indicators (mir	nimum of two required)
X Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface Soil Cracks	(B6)
	ter Table (A2)				uatic Plar			Drainage Patterns (B	,
X Saturation					n Sulfide	-		Dry-Season Water T	` '
	arks (B1)				d Rhizosp	heres on	Living Roots	Crayfish Burrows (C8	
	t Deposits (B2)			(C3)	f D l		(04)	Saturation Visible on	
	osits (B3)			_	e of Red			Stunted or Stressed	
	t or Crust (B4) osits (B5)			(C6)	iron Real	iction in i		Geomorphic Position FAC-Neutral Test (D	` '
	on Visible on Aeria	ıl İmager	/ (B7)		ck Surfac	e (C7)		TAC-Neutral Test (D	3)
	Vegetated Conca			_	or Well Da				
	tained Leaves (B9			_	xplain in		)		
Field Obser	vations:	,			•		,		
Surface Wat		Yes	X No		Depth (i	nches):	1		
Water Table	Present?	Yes	No	X	Depth (i			Indicators of	Wetland
Saturation P	resent?	Yes	X No		Depth (i		0	Hydrology Pi	resent? Y
(includes ca	pillary fringe)								
Describe Re	corded Data (stre	eam gau	ge, monitoring w	ell, aerial	photos,	previous	inspections), if a	/ailable:	
Damanda									
Remarks:									
The ditch s	was flooded due	o water	hacking up from	the culve	rt leading	n to the N	Niccouri Divar Ah	ove the ditch many	other areas of the
	ontained up to an			uie cuive	i i icauii (	y to tile I\	məsouri Niver. AD	ove the ditch, many	טנווטו מוכמס טו נוופ
wGuanu CC	mamou up to att		andoc water.						

Project/Site: Bellevue Bridge	City/Co	ounty:	Sarpy Cou	unty S	Sampling Date:	9/06/2018
Applicant/Owner: Metropolitan Area Planning Agency (Ma	APA)	State:	Nebra	ska S	Sampling Point:	S-3
Investigator(s): KMU ATB		Secti	on, Townsh	ip, Range:	S31, T1	4N, R14E
Landform (hillslope, terrace, etc.): Drainage path		Local relief	-		e): Concave	Slope (%): 0-3
<u> </u>		41.1362785			5.8849528372288	Datum: NAD 83
Soil Map Unit Name: Onawa-Lossing silty clays, occasionally				classification		None
Are climatic/hydrologic conditions on the site typical for this		_			n in Remarks.)	
Are Vegetation, Soil, or Hydrology		significantly of			nal Circumstances" p	
Are Vegetation, Soil , or Hydrology		naturally prob		•	d, explain answers	,
SUMMARY OF FINDINGS - Attach site map showing	samplir	ng point loc	ations, trar	sects, imp	ortant features, et	S
Hydrophytic Vegetation Present? Y						
Hydric Soil Present? Y		Is the Sa	ampled Are	a Within a	Wetland?	Υ
Indicators of Wetland Hydrology Present? Y		If yes, op	otional wetla	nd site ID:	Wetland 3	
Remarks: (Explain alternative procedures here or in a separ	rate repo	ort.)				
Sample documents a PEMA/PEMC wetland located in the E high flows in the Missouri River backing up water into the wand Payne Drive intersection. Historic aerial imagery indicates	etland th	nrough a rei	nforced cor	ncrete pipe		
<b>VEGETATION</b> Use scientific names of plants.						
,	olute [	Dominant	Indicator	Domina	nce Test Worksh	eet
		Species	Status	Number of	Dominant Species	
1					BL, FACW, or FAC:	2 (A)
2				Total Numl	ber of Dominant	
3				Species Ad	cross all Strata:	2 (B)
4					<b>Dominant Species</b>	
5				that are OE	BL, FACW, or FAC:	100.00% (A/B)
	0 = 7	Total Cover		<u> </u>		
Sapling/Shrub Stratum (Plot size:)					nce Index Worksh	
						ultiply by:
3				OBL spe FACW s		
				FACW S		
5				FACU spe		
	0 = 7	Total Cover		UPL spe		
Herb Stratum (Plot size: )				Column		
· ———·	30	Υ	FACW		nce Index = B/A =	2.08
	<u>25</u>	<u> </u>	FACW	1 TOVAION	ioo maax Birt	2.00
	5		FAC	Hydroph	nytic Vegetation I	ndicators:
4	<del></del>	<del></del> -			apid Test for Hydro	
5					ominance Test is >	
6				X 3-P	revalence Index is:	≤3.0 <sup>1</sup>
7					lorphological Adapt	ations <sup>1</sup> (provide
8						arks or on a separate
9				shee	et)	
10	30 = 7	Total Cover		Prob (Expl	lematic Hydrophytic lain)	: Vegetation <sup>1</sup>
Woody Vine Stratum (Plot size:)					rs of hydric soil and v resent, unless disturb	vetland hydrology must bed or problematic.
2					rophytic	
	0 =7	Total Cover		_	etation sent? Y	_
Remarks: (Include photo numbers here or on a separate sh	eet.)					
The wetland is approximately 40 news at hear arranged	wota-					
The wetland is approximately 40 percent bare ground/open	water.					

Profile Desc	cription: (Descri	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm th	e absence of i	ndicators.)
Depth	<u>Matrix</u>		<u>Re</u>	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
1	\	D1-4	DM D	1 1 1 1 - 4 - 1 1	. MC - N	111 0	21		ana Limin n. NA — NAstrin
	Concentration, D	= Depleti	on, Rivi = Reduc	ed Matrix	i, IVIS = IV	lasked S			ore Lining, M = Matrix
Hydric Soil			0	1 01	1 1 1 1 - 4 1	(04)			c Hydric Soils <sup>3</sup> :
	osol (A1)			ndy Gleye		(54)		rairie Redox (A	(16)
	ic Epipedon (A2)			ndy Redo				ırface (S7)	(F40)
	ck Histic (A3)			pped Ma	. ,	1 (54)		nganese Mass	` ,
	rogen Sulfide (A4			amy Mucl	-			allow Dark Sur	` ,
	tified Layers (A5)	)		amy Gley			Other (E	Explain in Rema	arks)
	n Muck (A10)	. 0		oleted Ma	, ,				
	leted Below Dark ck Dark Surface (		· /	dox Dark oleted Da		` '	3, ,, ,		
	,	•				. ,			c vegetation and wetland
	dy Mucky Minera n Mucky Peat or l			dox Depr	essions (	(60)	nyarolog		sent, unless disturbed or
			)					proble	ematic.
Restrictive	Layer (if observe	ed):							
Type:					_		Hydric So	il Present?	
Depth (inche	es):				<u>-</u>				
Remarks:									
	mple was taken d and standing wa		resence of surfac	ce water.	Howeve	r, soils a	re assumed hydri	c based on the	presence of hydrophytic
HYDROLO									
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seco	ndary Indicators	s (minimum of two required)
X Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface Soil Cr	acks (B6)
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)		Drainage Patte	rns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	1)	Dry-Season Wa	ater Table (C2)
	arks (B1)				d Rhizosp	heres on	Living Roots	Crayfish Burrov	
	t Deposits (B2)			(C3)					ole on Aerial Imagery (C9)
	oosits (B3)			_	e of Redu		· · ·	_	essed Plants (D1)
	t or Crust (B4)				Iron Redu	iction in T		Geomorphic Po	` '
	osits (B5)		· (DZ)	(C6)		(07)	<u>X</u>	FAC-Neutral Te	est (D5)
	on Visible on Aeria		· · · ·	_	ck Surfac				
	Vegetated Conca tained Leaves (B9			_	or Well Da Explain in		<b>\</b>		
	`	)		Other (E	хріаін ін	Remarks	7)		
Field Obser		.,			D " "		40		
Surface Wat		Yes	X No		Depth (i		10	lu di a ata	us of Madleys d
Water Table		Yes	No		Depth (i		<u>na</u>		rs of Wetland
Saturation P		Yes	No		Depth (i	ncnes):	<u>na</u>	Hydroid	ogy Present? Y
	pillary fringe)							<u> </u>	
	corded Data (stre	eam gau	ge, monitoring we	ell, aerial	photos,	previous	inspections), if a	vailable:	
Remarks:									
	pically be inundate	_							erts. Although the wetland oport hydrophytic

Project/Site: Bellevue Bridge	City/	County:	Sarpy Co	unty Samp	ling Date:	9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen	icy (MAPA)	State:	Nebra	aska Samp	ling Point:	S-4
Investigator(s): KMU ATB		Sec	tion, Townsl	nip, Range:	S31, T1	4N, R14E
Landform (hillslope, terrace, etc.): Toe of the h	illslope	Local relief	(concave,	convex, none):	None	Slope (%): 0-3
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.136132	3589264	Long: -95.884	8320441071	Datum: NAD 83
Soil Map Unit Name: Onawa-Lossing silty clays, occas	sionally flood	ded	NW	l classification:		None
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ	(If no, explain in R	emarks.)	
	logy			Are "Normal Cir	•	
Are Vegetation, Soil, or Hydro	logy	naturally pro	oblematic?	(If needed, exp	lain answers	n Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point lo	cations, tra	nsects, importan	t features, etc	o.
Hydrophytic Vegetation Present? N	_					
Hydric Soil Present? N		Is the S	Sampled Ar	ea Within a Wet	and?	N
Indicators of Wetland Hydrology Present? N		If yes, c	ptional wetla	and site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Sample is the upland outpoint to Wetland 3, located a	t the toe of	the roadway	slope and a	at a higher elevati	on than the a	djacent wetland.
VEGETATION Use scientific names of plan	its.					
·	Absolute	Dominant	Indicator	Dominance T	est Workshe	eet
<u>Tree Stratum</u> (Plot size:)	% Cover	Species	Status	Number of Dom	inant Species	
1				that are OBL, FA	ACW, or FAC:	1 (A)
2				Total Number of		
3				Species Across		3 (B)
4				Percent of Domi	•	00.000/ ///D)
5	0	= Total Cove		that are OBL, FA	ACW, or FAC:	33.33% (A/B)
Sapling/Shrub Stratum (Plot size:	\	- Total Cove	I	Prevalence Ir	nday Warkeh	unnt .
1	)			Total % Cove		ultiply by:
2				OBL species	0 x 2	
3				FACW specie		
4				FAC species	30 x 3	
5				FACU species	55 x 4	1 = 220
	0	= Total Cove	r	UPL species	15 x 5	5 = 75
Herb Stratum (Plot size:	)			Column Totals	100 (A	) 385 (B)
1 Sorghastrum nutans	35	Υ	FACU	Prevalence In	dex = B/A =	3.85
2 Schedonorus arundinaceus	20	Υ	FACU			
3 Poa pratensis	20	Υ	FAC	Hydrophytic	Vegetation I	ndicators:
4 Setaria viridis	15	N	UPL	l — ·	•	phytic Vegetation
5 Andropogon gerardii	10	<u>N</u>	FAC	l ——	ance Test is >	
6				— ·	ence Index is	
7						ations <sup>1</sup> (provide
8				supporting sheet)	data in Rema	arks or on a separate
10				l — ′		v 1
	100	= Total Cove		(Explain)	ic Hydrophytic	vegetation
Woody Vine Stratum (Plot size:	)	Total Govo	•	I — · · · ·		
1	,					vetland hydrology must bed or problematic.
2				Hydrophy		'
	0	= Total Cove	r	Vegetation	n	
				Present?	N	
Remarks: (Include photo numbers here or on a separa	ate sheet.)					

Profile Desc		ibe to th	e depth needed	to docu	ment the	indicat	or or confirm the a	absence of indicators.)
Depth	<u>Matrix</u>			dox Featı		_		
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/2	100					Loamy clay	
4-16	10YR 4/2	100					Loamy clay	
16-20	10YR 4/2	90	10YR 5/8	10	С	М	Loamy clay	
	10		10111212	<u> </u>	<u> </u>		Louis, c.e.,	+
		<del> </del>	<del> </del>	<del> </del>	<del>                                     </del>	<del> </del>		
		├──		├──	<del>                                     </del>	<b> </b>		
		<u> </u>	ļ	<u> </u>	<u> </u>			
						ا		
<sup>1</sup> Type: C = C	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S	and Grains. <sup>2</sup> Loca	ation: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils <sup>3</sup> :
Hist	osol (A1)		San	ıdy Gleye	ed Matrix	(S4)	Coast Prai	rie Redox (A16)
Hist	ic Epipedon (A2)			ndy Redo			Dark Surfa	, ,
	ck Histic (A3)			pped Ma	. ,			anese Masses (F12)
	rogen Sulfide (A	•		•	ky Minera	. ,		ow Dark Surface (TF12)
	tified Layers (A5	)			ed Matrix		Other (Exp	olain in Remarks)
	n Muck (A10)				atrix (F3)			
	leted Below Dark		· · · —		Surface	. ,	2	
	ck Dark Surface (				ark Surfa			of hydrophytic vegetation and wetland
	dy Mucky Minera			lox Debr	essions (	(F8)	hydrology i	must be present, unless disturbed or
	n Mucky Peat or		·)					problematic.
	Layer (if observ	ed):		_	_			
Type:					=		Hydric Soil F	Present? N
Depth (inche	es):				_			
Remarks:								
No redevi		أطافاني سيم	in the common 10 in	abaa af a	م المحمد المح	م اسلمانا م	aail indiaatara ara n	ant
No redox o	concentrations oc	cur withi	n the upper 12 in	cnes of s	soli and n	io nyaric	soil indicators are n	net.
HYDROLO	OGY							
Wetland Hy	drology Indicate	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seconda	ary Indicators (minimum of two required)
-	Water (A1)				Fauna (B	13)		urface Soil Cracks (B6)
	ter Table (A2)				uatic Plar			rainage Patterns (B10)
Saturation	on (A3)		_		en Sulfide		1)Dı	ry-Season Water Table (C2)
	arks (B1)				l Rhizosp	heres on	0	rayfish Burrows (C8)
	t Deposits (B2)			(C3)				aturation Visible on Aerial Imagery (C9)
	posits (B3)			-	e of Redu			tunted or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	iction in T		eomorphic Position (D2)
	osits (B5) on Visible on Aeris	- Imager	·· /D7\	(C6)	-l. Curfoc	- (07)	F	AC-Neutral Test (D5)
	on Visible on Aeria  Vegetated Conca		· · · · <u></u>	_	ck Surfac or Well Da	` '		
	tained Leaves (B9			_	or well Da Explain in		1	
Field Obser	`	<del>)</del>		- , , , , , ,	.лрісіі і і і	Tomana	, 	
Surface Wat		Yes	No	X	Depth (i	nches):		
Water Table		Yes	No	$\frac{\lambda}{X}$	Depth (i	•	<del></del>	Indicators of Wetland
Saturation P		Yes	No	$\frac{X}{X}$	Depth (i		<del></del>	Hydrology Present? N
	pillary fringe)					•		
		eam gau	ae, monitoring we	ell, aerial	photos,	previous	inspections), if avai	lable:
	,		<b>5</b> -,		F	, · · -	,,	
Remarks:								
A								
Area drain	s toward Wetland	13.						

Project/Site: Bellevue Bridge		County:	Sarpy Co	<u> </u>
Applicant/Owner: Metropolitan Area Planning Agend			Nebra	
Investigator(s): KMU ATB	,		ion, Townsh	
Landform (hillslope, terrace, etc.): Drainage of	ditch	Local relief	(concave, o	convex, none): Concave Slope (%): 0-5
Subregion (LRR): M (Central Feed Grains & Livesto		41.1366363	•	· · · · · · · · · · · · · · · · · · ·
Soil Map Unit Name: Onawa-Lossing silty clays, occasi	<u> </u>			classification: None
Are climatic/hydrologic conditions on the site typical fo				If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrol		significantly		Are "Normal Circumstances" present? Yes
Are Vegetation , Soil , or Hydrol		naturally pro	blematic?	(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	wing samp	oling point loc	cations, trai	nsects, important features, etc.
Hydrophytic Vegetation Present? Y	_			
Hydric Soil Present? Y		Is the S	ampled Are	ea Within a Wetland? Y
Indicators of Wetland Hydrology Present? Y	-	If yes, o	ptional wetla	and site ID: Wetland 5
Remarks: (Explain alternative procedures here or in a	separate re	eport.)		
Sample documents a PEMA/PEMC wetland located in River. The entire area was recently inundated due to v ditch. No upland outpoint was sampled because the action of the property of the sample of the property	vater backiı	ng up from the	e river, and	standing water was still present throughout the
<b>VEGETATION</b> Use scientific names of plant	ts.			
	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size:)	% Cover	Species	Status	Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across all Strata: 2 (B)
4				Percent of Dominant Species
5				that are OBL, FACW, or FAC: 100.00% (A/B)
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: )		ı		Prevalence Index Worksheet
1				Total % Cover of: Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species 100 x 2 = 200
4				FAC species $0 \times 3 = 0$
5		·		FACU species 0 x 4 = 0
	0	= Total Cover	•	UPL species 0 x 5 = 0
Herb Stratum (Plot size:)				Column Totals 100 (A) 200 (B)
1 Echinochloa crus-galli	70	Υ	FACW	Prevalence Index = B/A = 2.00
2 Cyperus esculentus	20	Y	FACW	
3 Persicaria maculosa	8	N	FACW	Hydrophytic Vegetation Indicators:
4 Persicaria lapathifolia	2	N	FACW	1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.0¹
7				4 - Morphological Adaptations <sup>1</sup> (provide
8				supporting data in Remarks or on a separate
9				sheet)
10	100	= Total Cover		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: )		. Total Cover		<del></del>
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				Hydrophytic
	0	= Total Cover		Vegetation Present? Y
Remarks: (Include photo numbers here or on a separa	ate sheet.)			·
	,			
Typha angustifolia was present near the culvert at the	west end o	of the wetland	l, but not in	the sample point area.

Profile Desc	cription: (Descr	be to th	e depth n	eeded	to docu	ment the	indicat	or or confirm	n the absence	e of indicators.)
Depth Matrix Redox Features								,		
(Inches)	Color (moist)	%	Color (r	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Text	ture	Remarks
1	)	D l . t'	DM	D 1	1.84.4.5.	140		1000	21	N. D I is is a M. Markin
		- Depleti	on, Rivi =	Reduce	ed Matrix	, IVIS = IV	iasked S			PL = Pore Lining, M = Matrix
Hydric Soil				0		1.84.4.5.	(0.4)			ematic Hydric Soils <sup>3</sup> :
	osol (A1)		_			ed Matrix	(S4)		st Prairie Red	
	ic Epipedon (A2)		_		dy Redo				k Surface (S7	
	ck Histic (A3)		_		oped Ma	, ,	1 (54)		•	Masses (F12)
	rogen Sulfide (A4		_		-	y Minera	. ,			rk Surface (TF12)
	tified Layers (A5)		_			ed Matrix	( (F2)	X Othe	er (Explain in	Remarks)
	n Muck (A10)	0 (	(444) -			atrix (F3)	<b>(</b> 50)			
	leted Below Dark		(ATT) _			Surface	. ,	3		
	k Dark Surface (	•	_			rk Surfa			•	ophytic vegetation and wetland
	dy Mucky Minera		, <u> </u>	Rec	iox Depr	essions (	F8)	nyar		e present, unless disturbed or
	n Mucky Peat or		)							problematic.
Restrictive	Layer (if observe	ed):								
Type:								Hydric	Soil Presen	t? <u>Y</u>
Depth (inche	es):									
Remarks:										
Soils were	not campled due	to the n	recence o	f etandi	na water	through	out the w	etland Howe	ver soils are	assumed hydric based on the
	of hydrophytic ve					unougn	out the w	elianu. Howe	ever, sons are	assumed flydric based on the
presence	or riyaropriyac ve	getation	and Stand	ing wat	51.					
LIVEROLO	)CV									
HYDROLO										
_	drology Indicato									
-	cators (minimum	<u>of one is</u>	required;	check				<u>S</u>		icators (minimum of two required)
X Surface						Fauna (B				Soil Cracks (B6)
	ter Table (A2)					uatic Plar	` ,			Patterns (B10)
Saturatio						n Sulfide	•			son Water Table (C2)
	arks (B1)					Rnizosp	neres on	Living Roots		Burrows (C8)
	t Deposits (B2)				(C3)	e of Redu	lood Iron	(C4)		n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
	osits (B3) t or Crust (B4)				•			illed Soils		ohic Position (D2)
	osits (B5)				(C6)	ion Redu	Cuon III I	illed Solls		utral Test (D5)
	on Visible on Aeria	l Imager	/ (B7)			ck Surfac	e (C7)	-	X I AO-NCC	iliai Test (Do)
	Vegetated Conca					r Well Da				
	tained Leaves (B9		( - /			xplain in		)		
Field Obser	•	,				<u>'</u>		,	<u> </u>	
Surface Wat		Yes	X	No		Depth (i	nches).	4		
Water Table		Yes		No		Depth (i	-	na	Ind	icators of Wetland
Saturation P		Yes		No		Depth (i	-	na		drology Present? Y
(includes ca				-		(.	/-			<u> </u>
	corded Data (stre	am dau	ge, monito	rina we	II. aerial	photos	orevious	inspections)	if available:	
20001100110	טונט בטונט (טוופ	an gaa	,oiiit	y wc	, aonai	p.10.00, j	J. 0 11003		available.	
Remarks:										
The stand	na water is due t	n floodin	a from the	Misson	ıri Divor	The area	a je likalı	alwave a wa	tland but doo	s not usually have standing
water pres	-	J HOOUIII	9 11 01111 11116	wii55Ul	411 1 XIVEI.	ine ale	u io likely	aiways a WE	tiana but u06	s not usually have stallully
water pres	J. 16.									

Project/Site: Bellevue Bridge		County:	Sarpy Co	•	ling Date:	9/06/2018	
Applicant/Owner: Metropolitan Area Planning Agen		State:	Nebra		ing Point:	S-6	
Investigator(s): KMU ATB	, , ,	Sect	ion, Townsh		_	4N, R14E	
Landform (hillslope, terrace, etc.): Terrace	e	Local relief	(concave, o	convex, none):	None	Slope (%):	0-2
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.138458	=	· ·	437640248	Datum: NAD 8	33
Soil Map Unit Name: Carr-Ticonic-Scroll complex, occa	asionally flo	oded	NWI	classification:		None	
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Y (	If no, explain in Re	emarks.)		_
Are Vegetation , Soil , or Hydrol	logy	significantly	disturbed?	Are "Normal Cire	cumstances" p	resent? Yes	
Are Vegetation , Soil , or Hydrol	logy	naturally pro	blematic?	(If needed, exp	lain answers i	n Remarks.)	_
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point lo	cations, trai	nsects, important	features, etc	<b>)</b> .	
Hydrophytic Vegetation Present? N	_						
Hydric Soil Present? N	_	Is the S	ampled Are	ea Within a Wetl	and?	N	
Indicators of Wetland Hydrology Present? N	_	If yes, o	ptional wetla	ind site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Compute point C C is the unload outpoint for Wetland 7	0 amd 0 1	t in Innatad in	the Missey	ri Diver fleedaleis	. Dasad on h	siatawia aawial	
Sample point S-6 is the upland outpoint for Wetland 7 imagery, this area may have been disturbed in recent						nistoric aeriai	
imagery, this area may have been disturbed in resem	ycars duc t	o construction	ii oi a boiiii	and trail just to ti	ic west.		
VEGETATION Use scientific names of plan	ts.						
	Absolute	Dominant	Indicator	Dominance T	est Workshe	eet	
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Domi	•		
				that are OBL, FA		1 (A	(،
3				Total Number of Species Across		2 (B	٤١
4				'		(D	)
5				Percent of Domithat are OBL, FA	•	50.00% (A	/B)
	0	= Total Cover		, , , , , , , , , , , , , , , , , , , ,		(1.0	. – ,
Sapling/Shrub Stratum (Plot size:	)			Prevalence In	dex Worksh	eet	
1 Ulmus pumila	4		UPL	Total % Cover	of: Mu	ıltiply by:	
2				OBL species	0 x 1	= 0	
3				FACW species	s 16 x 2	2 = 32	
4				FAC species	50 x 3	3 = 150	
5				FACU species			
	4	= Total Cover	•	UPL species	29 x 5		
Herb Stratum (Plot size:)	)			Column Totals			')
1 Poa pratensis	50	<u>Y</u>	FAC	Prevalence Inc	dex = B/A =	3.51	
2 Convolvulus arvensis	15	<u>Y</u>	UPL				
3 Setaria viridis	10	N	UPL	Hydrophytic V	_		
4 Cyperus esculentus 5 Humulus japonicus	10	<u>N</u> N	FACW FACU		est for Hydro ance Test is >:	phytic Vegetation	1
6 Solidago gigantea	6	N	FACW		nce lest is ∕		
7 Solidago canadensis	4		FACU	<b>—</b>			
8			17100			ations <sup>1</sup> (provide irks or on a sepai	rate
9				sheet)	data in recinic	into or on a separ	aic
10					c Hydrophytic	: Vegetation <sup>1</sup>	
	105	= Total Cover	-	(Explain)		· · · · · · · · · · · · · · · · · · ·	
Woody Vine Stratum (Plot size:	)			<sup>1</sup> Indicators of h	vdric soil and v	vetland hydrology	must
1						ed or problematic	
2				Hydrophy			
	0	=Total Cover	•	Vegetatio			
Demontos (Include photo numbero horo or on a concreto	oto oboot \			Present?	N	_	
Remarks: (Include photo numbers here or on a separa	ate sneet.)						
Many annual weedy species are present in this area,	which may !	be indicative	of recent dis	sturbance.			

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm the	e absence of	indicators.)
Depth	Matrix		Red	dox Feat	ures				·
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-4	10YR 3/3	100	, ,				Sand		
_									
4-12	10YR 3/3	50					Loamy clay		
	10YR 5/3	50							
<sup>1</sup> Type: C = C	Concentration, D :	= Depleti	on, RM = Reduce	ed Matrix	, MS = M	lasked S	and Grains. <sup>2</sup> Lo	ocation: PL = F	Pore Lining, M = Matrix
Hydric Soil	Indicators:						Indicators f	or Problemat	ic Hydric Soils³:
Hist	osol (A1)		San	dy Gleye	ed Matrix	(S4)	Coast P	rairie Redox ( <i>i</i>	A16)
Hist	ic Epipedon (A2)		San	dy Redo	x (S5)		Dark Su	ırface (S7)	•
	ck Histic (A3)			pped Ma				nganese Mass	ses (F12)
	rogen Sulfide (A	1)		•	ky Minera	al (F1)		allow Dark Su	, ,
	tified Layers (A5	,		-	ed Matrix	. ,		Explain in Rem	
	n Muck (A10)	•			atrix (F3)	- (- –)			,
	leted Below Dark	Surface			Surface	(F6)			
	ck Dark Surface (		· · · —		rk Surface	. ,	3Indicator	o of budrophyt	ic vegetation and wetland
	dy Mucky Minera				essions (				sent, unless disturbed or
	n Mucky Peat or			iox Debi	cssions (	10)	riyurolog		ematic.
			)					ргові	ematic.
	Layer (if observe	ed):							
	ompact, dense						Hydric So	il Present?	N
Depth (inche	es): 12							_	
Remarks:	·								
rtomanto.									
HYDROLO									
Wetland Hy	drology Indicate	rs:							
Primary India	cators (minimum	of one is	required; check	all that a	pply)		Secon	ndary Indicator	s (minimum of two required)
Surface '	Water (A1)			Aquatic	Fauna (B	13)		Surface Soil C	racks (B6)
High Wa	ter Table (A2)			True Aqu	uatic Plar	ts (B14)		Drainage Patte	erns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	1)	Dry-Season W	ater Table (C2)
Water M	arks (B1)			Oxidized	l Rhizosp	heres on	Living Roots	Crayfish Burro	ws (C8)
Sedimen	t Deposits (B2)			(C3)				Saturation Vis	ible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Presenc	e of Redu	iced Iron	(C4)	Stunted or Str	essed Plants (D1)
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils	Geomorphic P	osition (D2)
	osits (B5)			(C6)				FAC-Neutral T	
	on Visible on Aeria	l Imagery	/ (B7)	Thin Mu	ck Surfac	e (C7)		-	,
Sparsely	Vegetated Conca	ve Surfa	ce (B8)		r Well Da				
Water-St	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	vations:	-					•	I	
Surface Wat		Yes	No	Х	Depth (i	nches):			
Water Table		Yes	No	$\frac{\lambda}{X}$	Depth (i			Indicato	ers of Wetland
Saturation P		Yes	No	$\frac{\lambda}{X}$	Depth (i				ogy Present? N
	pillary fringe)	-				- /-			
		am dalio	ge, monitoring we	ll aerial	nhotos r	revious	inspections) if a	vailable.	
Becombe 14e	oorded Data (otre	Jan gaa	go, monitoring wo	ii, aoriai	priotos, p	JI C VI C G G	mopodionoj, n d	valiable.	
Remarks:									
Area is ge	nerally flat, but m	ay slope	slightly toward ad	djacent v	vetland a	reas.			

Project/Site: Bellevue Bridge	City/	County:	Sarpy Co	unty Samp	oling Date:	9/06/2018
Applicant/Owner: Metropolitan Area Planning Ager	ncy (MAPA)	State:	Nebra	ska Samp	oling Point:	S-7
Investigator(s): KMU ATB		Sec	tion, Townsh	ip, Range:	S31, T14	4N, R14E
Landform (hillslope, terrace, etc.): channel fi		Local relief	(concave, c	convex, none):		Slope (%): 0-5
Subregion (LRR): M (Central Feed Grains & Livest			9552486 L		1741806973	Datum: NAD 83
Soil Map Unit Name: Onawa-Lossing silty clays, occas				classification:		None
Are climatic/hydrologic conditions on the site typical f	or this time	-		If no, explain in R	Remarks.)	
<u> </u>	ology	significantly			rcumstances" p	
Are Vegetation, Soil, or Hydro		naturally pro			plain answers i	,
SUMMARY OF FINDINGS - Attach site map sh	owing samp	ling point lo	cations, trai	nsects, importan	nt features, etc	•
Hydrophytic Vegetation Present? Y						
Hydric Soil Present? Y		Is the S	Sampled Are	ea Within a Wet	land?	Υ
Indicators of Wetland Hydrology Present? Y		If yes, c	ptional wetla	and site ID:	Wetland 7	
Remarks: (Explain alternative procedures here or in a	a separate re	eport.)				
Sample documents a PEMA/PEMC wetland located on twidth of the channel at the time of sampling was much nup into the area. The culvert outlets were entirely submedrainages located at Wetland 2 and from the parking lot	the fringe of a nore than is t erged. One cu	a channel (Ch typical (about ulvert drains fi	40 feet wide rom the pond	) due to high flow	s from the Miss	ouri River backing
VEGETATION Use scientific names of plan	nts.					
	Absolute	Dominant	Indicator	Dominance 1	Γest Workshe	et
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Dom	•	
1				that are OBL, F	ACW, or FAC:	4 (A)
2				Total Number of		4 (5)
3				Species Across		4 (B)
4				Percent of Dom	•	100 000/ (A/D)
<sup>3</sup>	0	= Total Cove		that are OBL, F	ACW, OF FAC.	100.00% (A/B)
Sapling/Shrub Stratum (Plot size:	,——	- Total Cove	I	Provalence II	ndex Worksh	oot .
1 Cornus drummondii	<i>)</i> 5	Υ	FAC	Total % Cove		Itiply by:
2 Fraxinus pennsylvanica	4	<u> </u>	FACW	OBL species	0 x 1	
3 Platanus occidentalis	2		FACW	FACW specie		
4 Morus alba	2	N	FAC	FAC species	27 x 3	
5 Gleditsia triacanthos	2	N	FACU	FACU specie	s 2 x 4	= 8
	15	= Total Cove		UPL species	0 x 5	= 0
Herb Stratum (Plot size:	)			Column Total	s 115 (A)	261 (B)
1 Phalaris arundinacea	80	Υ	FACW	Prevalence In	ndex = B/A =	2.27
2 Apocynum cannabinum	20	Υ	FAC			
3				Hydrophytic	Vegetation In	dicators:
4				1 - Rapid	Test for Hydrop	hytic Vegetation
5					ance Test is >5	
6				X 3 - Preval	ence Index is ≤	3.0 <sup>1</sup>
7				4 - Morph	ological Adapta	itions <sup>1</sup> (provide
8						rks or on a separate
9				sheet)		
10					tic Hydrophytic	Vegetation <sup>1</sup>
	100	= Total Cove	r	(Explain)		
Woody Vine Stratum (Plot size:1	)					etland hydrology must ed or problematic.
2				Hydroph		
	0	= Total Cove	r	Vegetatio		
				Present?	Y	_
Remarks: (Include photo numbers here or on a separ	ate sheet.)					
The trees were small (<3-inch DBH) and were therefo	ore included	in the saplin	g/shrub stra	tum.		

Depth (Inches) Color (moist) % Color (moist) % Type¹ Loc² Texture Remarks  0-8 10YR 2/1 30 10YR 6/8 25 C M Loam Sand/gravel prevalent  10YR 4/2 25									
0-8 10YR 2/1 30 10YR 6/8 25 C M Loam Sand/gravel prevalent  10YR 4/2 25  10 YR 3/3 20  1 Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.   2 Location: PL = Pore Lining, M = Matrix  Hydric Soil Indicators:  Histosol (A1) Sandy Gleyed Matrix (S4)  Coast Prairie Redox (A16)									
10YR 4/2 25 10 YR 3/3 20 YR									
10YR 4/2 25 10 YR 3/3 20 YR									
10 YR 3/3 20									
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. <sup>2</sup> Location: PL = Pore Lining, M = Matrix  Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)									
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16)									
Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7)									
Black Histic (A3)  Stripped Matrix (S6)  Iron-Manganese Masses (F12)									
Hydrogen Sulfide (A4)  Loamy Mucky Mineral (F1)  Very Shallow Dark Surface (TF12)									
Stratified Layers (A5)  Loamy Gleyed Matrix (F2)  Other (Explain in Remarks)									
2 cm Muck (A10)  Depleted Matrix (F3)									
Depleted Below Dark Surface (A11) X Redox Dark Surface (F6)									
Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Depleted Dark Surface (F7)  January 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
Sandy Mucky Mineral (S1)  Redox Depressions (F8)  hydrology must be present, unless disturbed or									
5 cm Mucky Peat or Peat (S3) problematic.									
Restrictive Layer (if observed):									
Type: Gravel, fill Hydric Soil Present? Y									
Depth (inches): 8									
Remarks:									
Remarks:									
Remarks:									
Remarks:  Could not get beyond 8 inches due to presence of gravel in soil.									
Could not get beyond 8 inches due to presence of gravel in soil.									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Secondary Indicators (minimum of two required)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Drainage Patterns (B10)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Sufface Soil Cracks (B6)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  Caylish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Surface Soil Cracks (B6)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Drawel Indicators (minimum of two required (minimum of two requ									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Secondary Indicators (minimum of two required (									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Wetland Hydrology Indicators (minimum of two required Secondary Indicators (minimum of two required Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Recent Iron Reduction in Tilled Soils  X Geomorphic Position (D2)  FAC-Neutral Test (D5)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Wetland Hydrology Indicators (minimum of two required Secondary Indicators (minimum of two required Secondary Indicators (minimum of two required Secondary Indicators (minimum of two required Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Wetland Hydrogen Sulfide Odor (C1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Thin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Secondary Indicators (minimum of two required Secondary Indicators (minimum of two re									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water (Bayer (Bayer)  Could not get beyond 8 inches due to presence of gravel in soil.  Secondary Indicators (minimum of two required Surface (B8)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Gauge or Well Data (D9)  Water-Stained Leaves (B9)  Other (Explain in Remarks)									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Secondary Indicators (minimum of two required (B13)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Drainage Patterns (B10)  Drainage Patterns (B10)  Dray-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Field Observations:									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Inon Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Valer (Inandators (minimum of two required)  Secondary Indicators (minimum of two required)  Secondary Indicators (minimum of two required)  Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Dray-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present?  Yes X No Depth (inches):									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Secondary Indicators (minimum of two required two required to prainage Patterns (B10)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  Sediment Deposits (B2)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  (C6)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  Indicators of Wetland									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Dry-Season Water Table (C2)  Saturation (A3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Dry-Season Water Table (C2)  Saturation (C4)  Recent Iron Reduction in Tilled Soils  (C6)  X FAC-Neutral Test (D5)  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Stained Leaves (B9)  Tiel Observations:  Surface Water Present?  Yes  No  Depth (inches):  Water Table Present?  Yes  No  Depth (inches):  Inal Indicators (minimum of two required Surface (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Drainage Patterns (B10)  Drainage Patterns (B10)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Toracks (B6)  Preseason Vater Table C2  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  Inal Indicators of Wetland  Hydrology Present?  Y									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Dry-Season Water Table (C2)  Saturation (A3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Dry-Season Water Table (C2)  Saturation (C4)  Recent Iron Reduction in Tilled Soils  (C6)  X FAC-Neutral Test (D5)  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X. Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dovidized Rhizospheres on Living Roots  Crayfish Burrows (C8)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)  Algal Mat or Crust (B4)  Food (C6)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  Mater Table Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Yes  No  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) X Surface Water (A1) Aquatic Fauna (B13) Saturation (A3) Author Table (A2) True Aquatic Plants (B14) Drainage Patterns (B10) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Sediment Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Iron Deposits (B5) C(6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9)  Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Mater Table Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:  Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Dry-Geason Water Table (C2) Curface Soil Cracks (B6) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) X FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Other (Explain in Remarks)  Field Observations: No Depth (inches): Mater Table Present? Yes No Depth (inches): Mater Table Pr									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Secondary Indicators (minimum of two required)  X Surface Soil Cracks (B6)  Drainage Patterns (B10)  Sutrace Soil Cracks (B6)  Saturation Visible on Aerial Imagery (C9)  Sturted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Thin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Thin Muck Surface (C7)  Squared Present? Yes No Depth (inches):  No Depth (inches):  Inal Indicators of Wetland Hydrology Present? Yes No Depth (inches):  No Depth (inches):  Inal Indicators of Wetland Hydrology Present? Yes No Depth (inches):  No Depth (inches):  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:  Based on historical aerial imagery, the channel is likely only a few feet wide under typical hydrologic conditions; the OHWM was estimate									
Could not get beyond 8 inches due to presence of gravel in soil.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) X Surface Water (A1) Aquatic Fauna (B13) Saturation (A3) Author Table (A2) True Aquatic Plants (B14) Drainage Patterns (B10) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Sediment Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Iron Deposits (B5) C(6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9)  Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Mater Table Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:  Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Dry-Geason Water Table (C2) Curface Soil Cracks (B6) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) X FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Other (Explain in Remarks)  Field Observations: No Depth (inches): Mater Table Present? Yes No Depth (inches): Mater Table Pr									

Project/Site: Bellevue Bridge	Citv/	County:	Sarpy Co	unty Sampling Date: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen		State:	Nebra	<del></del>
Investigator(s): KMU ATB	,	Sec	tion, Townsl	
Landform (hillslope, terrace, etc.): Floodplain De	pression	Local relief	(concave,	convex, none): Concave Slope (%): 0-
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.138459	9162443	Long: -95.8820613635208 Datum: NAD 83
Soil Map Unit Name: Ticonic-Sarpy-Carr complex, occ	asionally flo	oded	NW	classification: None
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ	(If no, explain in Remarks.)
Are Vegetation , Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circumstances" present? Yes
Are Vegetation , Soil X , or Hydro	logy	naturally pro	oblematic?	(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point lo	cations, tra	nsects, important features, etc.
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y		Is the S	Sampled Ar	ea Within a Wetland?
Indicators of Wetland Hydrology Present?	_	If yes, o	ptional wetla	and site ID: Wetland 8
Remarks: (Explain alternative procedures here or in a	senarate re		<u> </u>	<del></del>
Tromano. (Explain anomalivo procedures note of in a	ooparato re	<b>, port.</b>		
Sample documents a PEMA/PEMC wetland located in	a floodolai	n denression	outside the	canony of a PEOA wetland (Wetland 9)
Cample documents at LiviAt Livio wetland located in	ι α ποσαριαι	ii depression	i outside tile	e canopy of a 1 1 OA wettand (wettand 3).
VEGETATION Use scientific names of plan	te			
VECETATION Ose scientific flames of plant	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (Plot size: )	% Cover	Species	Status	Number of Dominant Species
1	70 0010.	орос.ос		that are OBL, FACW, or FAC: 5 (A)
2				Total Number of Dominant
3				Species Across all Strata: 5 (B)
4				Percent of Dominant Species
5				that are OBL, FACW, or FAC: 100.00% (A/B
	0	= Total Cove	r	
Sapling/Shrub Stratum (Plot size:				Prevalence Index Worksheet
1 Fraxinus pennsylvanica	10	Y	FACW	Total % Cover of: Multiply by:
2 Cornus drummondii	10	Υ	FAC	OBL species0x 1 =0
3 Ulmus thomasii	5	Υ	FAC	FACW species 60 x 2 = 120
4				FAC species <u>25</u> x 3 = <u>75</u>
5				FACU species 0 x 4 = 0
	25	= Total Cove	r	UPL species 0 x 5 = 0
Herb Stratum (Plot size:	)			Column Totals <u>85</u> (A) <u>195</u> (B)
1 Cyperus esculentus	30	<u>Y</u>	FACW	Prevalence Index = B/A = 2.29
2 Phalaris arundinacea	20	<u>Y</u>	FACW	
3 Toxicodendron radicans	10	N	FAC	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				$\frac{X}{X}$ 2 - Dominance Test is >50% $\frac{X}{X}$ 3 - Prevalence Index is $\leq 3.0^{1}$
6				I <del></del>
8				4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separat
9				sheet)
10				Problematic Hydrophytic Vegetation <sup>1</sup>
	60	= Total Cove	r	(Explain)
Woody Vine Stratum (Plot size:	)			<sup>1</sup> Indicators of hydric soil and wetland hydrology mu
1	,			be present, unless disturbed or problematic.
2				Hydrophytic
	0	= Total Cove	r	Vegetation
				Present? Y
Remarks: (Include photo numbers here or on a separa	ate sheet.)			
All species are FAC or FACW.				
This openies are the or thow.				

Depth   Matrix   Color (moist)	Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm t	he absence	e of indicators.)
0-2 10YR 3/3 100										•
2-6 10YR 3/3 100		Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e	Remarks
2-6 10YR 3/3 100	0-2	10YR 3/3	100					Sandv Ioam		
6-14 10YR 4/3 100	2-6							-		
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. *Location: PL = Pore Lining, M = Matrix Hydric Soil Indicators:  Hydric Soil Indicators:  Histosol (A1) Histic Epipedon (A2) Sandy Gleyed Matrix (S4) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A5) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Depressions (F8)  Restrictive Layer (if observed): Type: Compact, dense Depth (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposition from historical river flooding. Aerial imagery fro										
Hydric Soil Indicators:	6-14	10YR 4/3	100					Sand		
Hydric Soil Indicators:										
Hydric Soil Indicators:										
Hydric Soil Indicators:										
Hydric Soil Indicators:										
Hydric Soil Indicators:										
Hydric Soil Indicators:	1 <sub>Tym</sub> 2, C = (	l Composition D	– Damlati	on DM – Doduce	l Matrix	MC - M	laskad C	and Crains 2	Laastiani Di	- Dave Lining M - Metrix
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7) Black Histic (A3) Stripped Matrix (S6) Iron-Manganese Masses (F12) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) Stratified Layers (A5) Loamy Micky Mineral (F1) Very Shallow Dark Surface (TF12) Type John Muck (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Andicators of hydrophytic vegetation and wetland hydrology mub be present, unless disturbed or problematic.  Restrictive Layer (if observed): Type: Compact, dense Pet (S3) Present? Y  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) X Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3) Presence of Reduced Iron (C4) Sutraced Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Iron Deposits (B5) (C6) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)			= Depleti	on, RIVI = Reduce	ed iviatrix	i, IVIS = IV	iasked S			
Histic Epipedon (A2) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (F1) Thick Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sestrictive Layer (if observed): Type: Compact, dense Depth (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Frimary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots Saturation Visible on Aerial Imagery (C9) Trib Poposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Face on Aerial Imagery (B7) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)	-			Cam	du Class	ad Matrix	(C4)			_
Black Histic (A3)							(54)			
Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F2) Z cm Muck (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Depleted Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sem Mucky Peat or Peat (S3)  Redox Depressions (F8) Pepth (inches): Type: Compact, dense Depth (inches): The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydrosolid indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Sediment Deposits (B2) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)  Loamy Gleved Matrix (F2) X Other (Explain in Remarks)  A Other (Explain in Remarks)  A Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Hydric Soil Present? Y  Hydric Soil Present? Y  Hydric Soil Present? Y  Bedox Dark Surface (F6)  Alpdrogensors  Hydric Soil Present? Y  Bedox Dark Surface (F7)  Alpdrogensors  Aprice (F6)  Alpdrogensors  Frimary Indicators (minimum of two required to problematic file of the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydrophytic vegetation and wetland hydrology indicato										
Stratified Layers (A5)		, ,	4\			, ,	J (E4)		-	, ,
2 cm Muck (A10) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Phydrology must be present, unless disturbed or problematic.  Restrictive Layer (if observed): Type: Compact, dense Peptin (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand depositis in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C3) Sediment Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils X Geomorphic Position (D2) Iron Deposits (B5) (C6) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)		•	,		-	-	. ,			
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Restrictive Layer (if observed): Type: Compact, dense Depth (inches): The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Saturation Leposits (B1) Defit Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Petaloge or Well Data (D9)  Redox Dark Surface (F7) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Problematic.  Redox Depressions (F8) hydrology must be present, unless disturbed or problematic.  hydrology must be present, unless disturbed or problematic.  Hydric Soil Present? Y  Hydric Soil Present? Y  Hydric Soil Present? Y   Hydric Soil Present? Y  Secondary Indicators (minimum of two required Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Diry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Gauge or Well Data (D9)			)				(FZ)	X Other	(Explain in	Remarks)
Thick Dark Surface (A12)			Curfood			. ,	(E6)			
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless disturbed or 5 cm Mucky Peat or Peat (S3) Problematic.  Restrictive Layer (if observed): Type: Compact, dense Pueh (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) X Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3) Sediment Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils X Geomorphic Position (D2) Iron Deposits (B5) (C6) X FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)				· · ·			. ,	31		
Restrictive Layer (if observed): Type: Compact, dense Depth (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (C3) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils In Deposits (B5) GC6 Gauge or Well Data (D9)  FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)										
Restrictive Layer (if observed): Type: Compact, dense Depth (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) (C3) Sediment Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Aguatic Fauna (B13) Surface Soil Cracks (B6) Sediment Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) X FAC-Neutral Test (D5)			. ,		iox pebi	essions (	(FO)	riyarok		
Type: Compact, dense Depth (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Saturation (A3) Oxidized Rhizospheres on Living Roots Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots Sediment Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Iron Deposits (B5) Gauge or Well Data (D9)  Hydrogen Sulface (C7) Gauge or Well Data (D9)				')					١	orobiematic.
Depth (inches): 14  Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Sediment Deposits (B3)  Gauge or Well Data (D9)			ed):							_
Remarks:  The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  High Water Table (A2)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  C(3)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Saturation In Tilled Soils  Gauge or Well Data (D9)						-		Hydric S	oil Present	? <u>Y</u>
The soils are considered a problematic hydric soil based on the presence of hydrophytic vegetation and wetland hydrology indicators. The absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  True Aquatic Flants (B13)  Sutration (A3)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Secondary Indicators (minimum of two required Sulface Soil Cracks (B6)  True Aquatic Plants (B14)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Gauge or Well Data (D9)	Depth (inche	es): <u>14</u>				=				
absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Indicators (minimum of two required (B3))  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Again Mat or Crust (B4)  Sediment Deposits (B3)  Algal Mat or Crust (B4)  Factoria From historical river flooding. Aerial imagery from 2012 shows sand deposits (rack (B6))  Secondary Indicators (minimum of two required (B13))  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Recent Iron Reduction in Tilled Soils  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)	Remarks:									
absence of hydric soil indicators is likely due to sand deposition from historical river flooding. Aerial imagery from 2012 shows sand deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Indicators (minimum of two required (B3))  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Again Mat or Crust (B4)  Sediment Deposits (B3)  Algal Mat or Crust (B4)  Factoria From historical river flooding. Aerial imagery from 2012 shows sand deposits (rack (B6))  Secondary Indicators (minimum of two required (B13))  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Recent Iron Reduction in Tilled Soils  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)										
deposits in this area which may have covered over hydric soil layers.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Wetland Hydrogen Sulfide Apply Aquatic Plants (B13) Secondary Indicators (minimum of two required Source (C1) Secondary Indicators (minimum of two required Surface Soil Cracks (B6) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) X FAC-Neutral Test (D5)										
HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Wetland Hydrology Aquatic Fauna (B13) Aquatic Fauna (B13) Surface Soil Cracks (B6) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) X FAC-Neutral Test (D5) Gauge or Well Data (D9)							istorical	river flooding. A	verial image	ry from 2012 shows sand
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required plants)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       X Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       X Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       X FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)	deposits in	n this area which	may hav	e covered over hy	dric soil	layers.				
Wetland Hydrology Indicators:Primary Indicators (minimum of one is required; check all that apply)Secondary Indicators (minimum of two required for primary Indicators	HYDROL	OGY								
Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Aquatic Fauna (B13)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)			ors:							
Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Water Marks (B2)  Crayfish Burrows (C8)  Sediment Deposits (B2)  Drift Deposits (B3)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Gauge or Well Data (D9)	_			required: check	all that a	nnly)		Soo	ondony India	cators (minimum of two required)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  True Aquatic Plants (B14)  Alydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)	-	•	OI OIIC IS	required, check			12)	<u>3ec</u>	-	
Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Saturation Visible on Aerial Imagery (C9)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)		, ,				-		_		
Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Oxidized Rhizospheres on Living Roots (C3)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Gauge or Well Data (D9)		` '					,			
Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  (C3)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  X FAC-Neutral Test (D5)  Gauge or Well Data (D9)							•	·		
Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  (C6)  (C6)  Thin Muck Surface (C7)  Squage or Well Data (D9)  Stunted or Stressed Plants (D1)  X  FAC-Neutral Test (D5)		` '								
Iron Deposits (B5) (C6) X FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)						e of Redu	iced Iron	(C4)		
Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Thin Muck Surface (C7)  Gauge or Well Data (D9)	Algal Ma	at or Crust (B4)			Recent I	Iron Redu	ction in T	illed Soils	Geomorp	hic Position (D2)
Sparsely Vegetated Concave Surface (B8)  Gauge or Well Data (D9)	Iron Dep	oosits (B5)			(C6)			$\overline{}$	FAC-Neut	tral Test (D5)
				· · · · <u> </u>					<del></del>	
X Water-Stained Leaves (B9) Other (Explain in Remarks)	<del></del>	_		ce (B8)				_		
<u> </u>	X Water-S	stained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Observations:										
Surface Water Present? Yes No X Depth (inches):										
Water Table Present? Yes No X Depth (inches): Indicators of Wetland										
Saturation Present? Yes No X Depth (inches): Hydrology Present? Y			Yes	No	X	_∪epth (i	ncnes):		Hy	urology Present? Y
(includes capillary fringe)										
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Describe Re	ecorded Data (stre	eam gau	ge, monitoring we	ll, aerial	photos, p	orevious	inspections), if	available:	
	Domarica									
Demonitor	remarks:									
Remarks:	_									
	Dead veg		_				_			
Remarks:  Dead vegetation is present on the ground surface and is an indication of recent inundation, but no surface water was present at the time of the site visit.	_	•	on the g	round surface and	d is an in	dication	of recent	inundation, but	no surface	water was present at the time of

Project/Site: Bellevue Bridge		ON DATA F 'County:	Sarpy Co	•	06/2018
Applicant/Owner: Metropolitan Area Planning Agend			Nebra	<u> </u>	S-9
Investigator(s): KMU ATB	, , ,		ion, Townsh	· · ·	
Landform (hillslope, terrace, etc.): Floodpla	ain			convex, none): Concave Slope	
Subregion (LRR): M (Central Feed Grains & Livesto		41.1385529	-		m: NAD 83
Soil Map Unit Name: Ticonic-Sarpy-Carr complex, occa				classification: None	
Are climatic/hydrologic conditions on the site typical fo				If no, explain in Remarks.)	
Are Vegetation , Soil , or Hydrol		significantly		Are "Normal Circumstances" present?	Yes
Are Vegetation , Soil X , or Hydrol		naturally pro		(If needed, explain answers in Rema	arks.)
SUMMARY OF FINDINGS - Attach site map sho				nsects, important features, etc.	
Hydrophytic Vegetation Present? Y	_				
Hydric Soil Present? Y	·	Is the Sa	ampled Ar	ea Within a Wetland?	
Indicators of Wetland Hydrology Present? Y	- I	If yes, or	ptional wetla	and site ID: Wetland 9	_
Remarks: (Explain alternative procedures here or in a	separate re				
` '	·	. ,			
Sample documents a PFOA wetland located in a ripari				f the Missouri River (Channel 11). Th	e topography
is undulating due to uneven depostion of sand from pe	eriodic Miss	ouri River floo	oding.		
NECETATION III-s rejentific nomes of plan	4				
<b>VEGETATION</b> Use scientific names of plant				T Deminerate Test Monkehoot	
T Ctratura /Diot size:	Absolute	Dominant	Indicator	Dominance Test Worksheet	
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Dominant Species	· (Δ)
1 Morus alba	60	· Y	FAC		6 (A)
2 Populus deltoides	20	· Y	FAC	Total Number of Dominant	- (D)
3 Fraxinus pennsylvanica	10	N	FACW	<u> </u>	6 (B)
4				Percent of Dominant Species	(*/5)
5				that are OBL, FACW, or FAC: 100.	.00% (A/B)
,	90	= Total Cover		- 10 Maria - 10 Maria	
Sapling/Shrub Stratum (Plot size:)	, -	. ,		Prevalence Index Worksheet	ļ
1 Cornus alternifolia	8	<u> </u>	FAC	Total % Cover of: Multiply by	-
2 Morus alba	2	<u> </u>	FAC	OBL species 3 x 1 =	3
3		· <del></del> -		FACW species 32 x 2 =	64
4		·		·	345
5	40	Tutal Cover		FACU species 10 x 4 =	40
(Dist = 170)	10	= Total Cover		UPL species 0 x 5 =	0 450 (B)
Herb Stratum (Plot size:)	1 - 2				452 (B)
1 Teucrium canadense	20	. <u>Y</u>	FACW	Prevalence Index = B/A = 2.	83
2 Viola sororia	15	Y	FAC		
3 Commelina communis	10	. <u>N</u>	FACU	Hydrophytic Vegetation Indicato	
4 Eupatorium serotinum	5	N	FAC	1 - Rapid Test for Hydrophytic V	egetation/
5 Toxicodendron radicans	5	N	FAC	X 2 - Dominance Test is >50%	
6 Persicaria punctata	3	N	OBL	X 3 - Prevalence Index is ≤3.0¹	
7 Sicyos angulatus	2	N	FACW	4 - Morphological Adaptations <sup>1</sup> (	
8				supporting data in Remarks or o	on a separate
9				sheet)	
10		<del></del> .		Problematic Hydrophytic Vegeta	ation <sup>1</sup>
	60	= Total Cover		—— (Explain)	
Woody Vine Stratum (Plot size:)	1			<sup>1</sup> Indicators of hydric soil and wetland h	
1		. <u> </u>		be present, unless disturbed or pr	oblematic.
2				Hydrophytic	
	0	= Total Cover		Vegetation Present? Y	
Demontos (Includo abete aumboro boro er en a coner	oto oboot \			FIGSCIIL:	
Remarks: (Include photo numbers here or on a separa	ate sneed.)				
Area has a mix of upland and hydrophytic species in the					nigher
proportion of hydrophytic species than level areas, but	t the overall	l vegetation is	hydrophyt	C.	

Profile Desc	cription: (Descri	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm th	e absence	of indicators.)
Depth	Matrix		Red	lox Feat	<u>ures</u>				-
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	)	Remarks
0-4	10YR 2/2	100					Silt loam		
4-20	10YR 4/2	100					Sand		
4-20	10111 4/2	100					Janu		
1- 0 0									
		= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S			= Pore Lining, M = Matrix
Hydric Soil			_			(O.1)			natic Hydric Soils <sup>3</sup> :
	osol (A1)				ed Matrix	(S4)		Prairie Redo	ox (A16)
	ic Epipedon (A2)			dy Redo				urface (S7)	(=
	ck Histic (A3)			oped Ma	. ,			•	asses (F12)
	rogen Sulfide (A4			-	ky Minera	. ,			Surface (TF12)
	tified Layers (A5)	)			ed Matrix		X Other (I	Explain in R	lemarks)
	n Muck (A10)				atrix (F3)				
	leted Below Dark		· · · —		Surface	. ,	•		
	k Dark Surface (				ırk Surfa			, ,	hytic vegetation and wetland
	dy Mucky Minera			lox Depr	essions (	(F8)	hydrolog		present, unless disturbed or
5 cn	n Mucky Peat or	Peat (S3	)					pr	oblematic.
Restrictive	Layer (if observe	ed):							
Type:							Hydric So	il Present?	Y
Depth (inche	es):				•		-		
Remarks:									
absence o	f hydric soil indica	ators is li		dic sand	deposition				nd hydrology indicators. The from 2012 show sand deposits
HYDROLO	)GV								
	drology Indicate	re.							
_			manufinadi abaali	all that a			0		
-	•	or one is	required; check a			40\	Seco	-	ators (minimum of two required)
	Water (A1)		<u>X</u>		Fauna (B uatic Plar				oil Cracks (B6)
Saturatio	ter Table (A2)					Odor (C			Patterns (B10) n Water Table (C2)
	arks (B1)					•	Living Roots	_	urrows (C8)
	it Deposits (B2)			(C3)	i i tilizosp	neres on		_	Visible on Aerial Imagery (C9)
	osits (B3)			i	e of Redu	uced Iron	(C4)	_	Stressed Plants (D1)
	t or Crust (B4)			i)				_	ic Position (D2)
	osits (B5)			(C6)				FAC-Neutr	
	on Visible on Aeria	l Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		_	,
Sparsely	Vegetated Conca	ve Surfa	ce (B8)		r Well Da				
X Water-St	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	vations:								
Surface Wat	er Present?	Yes	No	X	Depth (i	nches):			
Water Table	Present?	Yes	No	Х	Depth (i	nches):		Indic	ators of Wetland
Saturation P	resent?	Yes	No	Χ	Depth (i	nches):		Hyd	rology Present? Y
(includes cap	oillary fringe)				-'				
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial	photos, ¡	previous	inspections), if a	vailable:	
Remarks:									
Due to the leaves.	undulating topog	ıraphy, th	nere are numerou	s depres	sions tha	at likely a	re periodically in	undated as	evidenced by water-stained

Project/Site: Bellevue Bridge		County:	Sarpy Co	_	ling Date:	9/06/201	18
Applicant/Owner: Metropolitan Area Planning Agen		State:	Nebra		ing Point:	S-10	
Investigator(s): KMU ATB		Sect	ion, Townsh	nip, Range:	S31, T14	4N, R14E	
Landform (hillslope, terrace, etc.): Terrace/Floo	odplain	Local relief	(concave, o	convex, none):	None	Slope (%):	0-3
Subregion (LRR): M (Central Feed Grains & Livesto		41.138210	-	· -	3911704224	Datum: NA	
Soil Map Unit Name: Ticonic-Sarpy-Carr complex, occi				classification:		None	
Are climatic/hydrologic conditions on the site typical for			Υ (	If no, explain in Re	emarks.)		
Are Vegetation , Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circ	cumstances" p	resent? Y	'es
Are Vegetation , Soil , or Hydro	logy	naturally pro	blematic?	(If needed, exp	lain answers i	n Remarks.)	_
SUMMARY OF FINDINGS - Attach site map sho	wing samp	oling point lo	cations, trai	nsects, important	features, etc	·.	
Hydrophytic Vegetation Present? N	_						
Hydric Soil Present? N	_	Is the S	ampled Are	ea Within a Wetl	and?	N	
Indicators of Wetland Hydrology Present? N	_	If yes, o	ptional wetla	and site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Sample point S-10 is the upland outpoint for Wetland Bridge.	11 located	on an open te	errace in the	e Missouri River fl	oodplain nort	h of the Belle	evue
<b>VEGETATION</b> Use scientific names of plan	ts.						
·	Absolute	Dominant	Indicator	Dominance T	est Workshe	et	
Tree Stratum (Plot size:) 1	% Cover	Species	Status	Number of Domithat are OBL, FA	•	0	(A)
2				Total Number of	Dominant		_ ` `
3				Species Across a	all Strata:	1	(B)
4				Percent of Domir	•		
5				that are OBL, FA	CW, or FAC:	0.00%	_(A/B)
Sanling/Shrub Stratum (Diet size:	<u> </u>	= Total Cover		Prevalence In	dov Morkob		
Sapling/Shrub Stratum (Plot size:	1			Total % Cover		ltiply by:	
2				OBL species	0 x 1		
3				FACW species			_
4				FAC species	20 x 3		_
5				FACU species			_
	0	= Total Cover	•	UPL species	70 x 5	= 350	_
Herb Stratum (Plot size:	)	•		Column Totals	100 (A)	450	(B)
1 Setaria viridis	70	Υ	UPL	Prevalence Inc	dex = B/A =	4.50	_
2 Andropogon gerardii	10	N	FAC				_
3 Panicum virgatum	10	N	FAC	Hydrophytic \	/egetation Ir	dicators:	
4 Setaria faberi	10	N	FACU	1 - Rapid T	est for Hydrop	ohytic Vegeta	ation
5					nce Test is >5		
6				3 - Prevale	nce Index is ≤	3.0 <sup>1</sup>	
7					logical Adapta		
8					data in Rema	rks or on a se	eparate
9				sheet)		1	
10	100	= Total Cover		Problemati (Explain)	c Hydrophytic	Vegetation '	
Woody Vine Stratum (Plot size:) 1	)			<sup>1</sup> Indicators of hy be present,	dric soil and w unless disturb		
2				Hydrophy			
		= Total Cover	•	Vegetatio Present?	n <u>N</u>	_	
Remarks: (Include photo numbers here or on a separa	ate sheet.)			-			

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm t	he absenc	e of indicators.)
Depth	<u>Matrix</u>			dox Featı	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	re	Remarks
0-4	10YR 2/2	100					Loamy clay		Saturated
4-8	10YR 4/2	95	10YR 6/1	5	D	М	Loamy clay		
8-12	10YR 3/3	100					Sand		
·	10						34.2		
		<del> </del>					<u> </u>		
		├──		ļ					
		<u> </u>					ļ		
							<u> </u>		
<sup>1</sup> Type: C = C	Concentration, D	= Depleti	ion, RM = Reduce	ed Matrix	, MS = N	lasked S	Sand Grains. 2	Location: P	L = Pore Lining, M = Matrix
Hydric Soil	Indicators:								ematic Hydric Soils³:
Hist	osol (A1)		San	ndy Gleye	ed Matrix	(S4)	_Coast	Prairie Red	lox (A16)
Hist	ic Epipedon (A2)		San	ndy Redo	x (S5)			Surface (S7	•
Blad	ck Histic (A3)			pped Ma	. ,			-	Masses (F12)
	rogen Sulfide (A	•		my Mucł	-	. ,			k Surface (TF12)
	tified Layers (A5	)		my Gley			Other	(Explain in	Remarks)
	n Muck (A10)			oleted Ma	. ,				
	leted Below Dark			dox Dark		. ,	3		
	ck Dark Surface (			oleted Da					ophytic vegetation and wetland
	dy Mucky Minera			dox Depr	essions (	(F8)	hydroid		e present, unless disturbed or
	n Mucky Peat or	•	·) 						oroblematic.
	Layer (if observe	ed):		_	_			_	
	ompact, dense				_		Hydric S	oil Presen	t? <u>N</u>
Depth (inche	es): 12				_				
Remarks:									
HYDROLO	OGY		<del></del>					<del>_</del>	
Wetland Hy	drology Indicate	ors:							
Primary Indi	ca <u>tors (minimum</u>	of one is	required; check	a <u>ll that a</u>	pply)		Sec	ondary Indi	cators (minimum of two required)
	Water (A1)		<del></del>		Fauna (B	13)			Soil Cracks (B6)
	ter Table (A2)				uatic Plar	•			Patterns (B10)
Saturation				Hydroge	n Sulfide	Odor (C	1)		on Water Table (C2)
	arks (B1)				l Rhizosp	heres on	Living Roots	,	Burrows (C8)
	t Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
	oosits (B3)			-	e of Redu		` '	_	or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	iction in I	Filled Soils		hic Position (D2)
	osits (B5)	al Imagar	(D7)	(C6)	-l. Curfoe	- (07)			tral Test (D5)
	on Visible on Aeria  Vegetated Conca		· · · <u></u>	-	ck Surfac or Well Da				
	tained Leaves (B9			_	xplain in		:1		
Field Obser	,	,		Other (=	.хріант	Nomana	·)	1	
Surface Wat		Yes	No	Х	Depth (i	nches).			
Water Table		Yes	No	$\frac{\lambda}{X}$	Depth (i	-		Ind	icators of Wetland
Saturation P		Yes	No	$\frac{\lambda}{X}$	Depth (i				drology Present?
	pillary fringe)	-				,		-	
		eam gau	ge, monitoring we	II. aerial	nhotos,	nrevious	inspections), if	available:	
	, , , , , , , , , , , , , , , , , , ,	, J	<b>30</b> ,		p,	P1 - 1	,,	<b>415</b>	
Remarks:									
<b>-</b>			187 (1 1 4 4						
i ne area i	s at a nigner elev	ation tha	n Wetland 11 and	ו arains נ	toward tr	ie wetiar	nd and the Misso	ouri River.	

Project/Site: Bellevue Bridge	City/	County:	Sarpy Co	unty Sampling Da	ate: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Agend			Nebra		
Investigator(s): KMU ATB	-, ,		tion, Townsh		31, T14N, R14E
Landform (hillslope, terrace, etc.):				convex, none):	Slope (%): 0-5
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	•	4952443 L		
Soil Map Unit Name: Ticonic-Sarpy-Carr complex, occa		oded	NWI	classification:	None
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ (	(If no, explain in Remarks	;.)
Are Vegetation, Soil, or Hydrol	logy	significantly	disturbed?	Are "Normal Circumsta	nces" present? Yes
Are Vegetation , Soil , or Hydrol	logy	naturally pro	blematic?	(If needed, explain an	swers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	owing samp	oling point lo	cations, tra	nsects, important featur	res, etc.
Hydrophytic Vegetation Present? Y					
Hydric Soil Present? Y	_	Is the S	ampled Ar	ea Within a Wetland?	Υ
Indicators of Wetland Hydrology Present? Y	_		-	and site ID: Wetland 11,	Channel 11
Remarks: (Explain alternative procedures here or in a	separate re	-			
Sample documents the Missouri River (Channel 11) a					
the Missouri River. The Missouri River is a perennial r	river approx	imately /00-to	eet wide at	the location of the Belle	vue Bridge.
VEGETATION Use scientific names of plan	ıts.				
<u> </u>	Absolute	Dominant	Indicator	Dominance Test Wo	orksheet
<u>Tree Stratum</u> (Plot size: )	% Cover	Species	Status	Number of Dominant Sp	
1				that are OBL, FACW, o	•
2				Total Number of Domin	ant
3				Species Across all Stra	ta: 4 (B)
4				Percent of Dominant Sp	
5				that are OBL, FACW, o	or FAC: 100.00% (A/B)
		= Total Cover			- ,
Sapling/Shrub Stratum (Plot size:)	)			Prevalence Index W	
1				Total % Cover of:	Multiply by:
2				OBL species 18	
3				FAC species 15	<del></del>
5				FACU species 0	
] 3	0	= Total Cover		UPL species 0	
<u>Herb Stratum</u> (Plot size: )	<del>ر</del>	- 10tal 0010.		Column Totals 85	
1 Cyperus esculentus	, 20	Υ	FACW	Prevalence Index = E	<del></del> `'
2 Panicum dichotomiflorum	20	Y	FACW	FIEVAIGING INGO.	5/A - <u>2.00</u>
3 Persicaria lapathifolia	15	Y	FACW	Hydrophytic Vegeta	ation Indicators:
4 Populus deltoides	15	<u> </u>	FAC		Hydrophytic Vegetation
5 Bidens cernua	10	N	OBL	X 2 - Dominance Te	- · · · ·
6 Amaranthus tuberculatus	5	N	OBL	X 3 - Prevalence Inc	
7				4 - Morphological	Adaptations <sup>1</sup> (provide
8					Remarks or on a separate
9				sheet)	
10				Problematic Hydr	ophytic Vegetation <sup>1</sup>
	85	= Total Cover	-	(Explain)	
Woody Vine Stratum (Plot size:)	)				oil and wetland hydrology must
1				•	disturbed or problematic.
2		<del></del>		Hydrophytic Vegetation	
	0	= Total Cover		Present?	Υ
Remarks: (Include photo numbers here or on a separa	ate sheet.)				<u> </u>
Tromano. (moidad prioto manifeste ma	ato 55,				
Populus deltoides saplings are less than 3 feet tall an	d therefore	included in th	ne herbaced	ous stratum.	

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm	the absence	e of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	ures_				
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Text	ure	Remarks
0-6	10YR 3/2	100					Sand		
6-14	10YR 4/2	40	10YR 5/8	30	С	М	Clay loam		
	10YR 2/2	30					,		
<sup>1</sup> Type: C = C	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = M	lasked S			L = Pore Lining, M = Matrix
Hydric Soil									matic Hydric Soils³:
	osol (A1)			-	ed Matrix	(S4)		st Prairie Red	-
	ic Epipedon (A2)			dy Redo				Surface (S7)	
	ck Histic (A3)			pped Ma	. ,			•	Masses (F12)
	rogen Sulfide (A4	•		•	ky Minera	. ,			k Surface (TF12)
	tified Layers (A5)	)			ed Matrix	(F2)	Othe	r (Explain in l	Remarks)
	n Muck (A10)	. 0			atrix (F3)	(FC)			
	leted Below Dark ck Dark Surface (		· · ·		Surface ork Surface	. ,	31		
	dy Mucky Minera				essions (				phytic vegetation and wetland present, unless disturbed or
	n Mucky Peat or			юх Бері	cssions (	10)	riyurc		problematic.
			,			1			riobiomano.
	Layer (if observe	ed):					l lordei e	Call Dragger	2 /
	ompact, dense				•		Hydric	Soil Present	?? <u>Y</u>
Depth (inche	es): 14				•				
Remarks:									
11)/0.001.6	201/								
HYDROLO									
_	drology Indicato								
-	•	of one is	required; check				<u>Se</u>	-	cators (minimum of two required)
	Water (A1)				Fauna (B	•	_		foil Cracks (B6)
	ter Table (A2)				uatic Plar	, ,			Patterns (B10)
Saturation Water M	arks (B1)				n Sulfide	-	Living Roots		on Water Table (C2) Burrows (C8)
	t Deposits (B2)			(C3)	ι πιιιΖυσρ	neres on	_		n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	iced Iron	(C4)		r Stressed Plants (D1)
	t or Crust (B4)						illed Soils		hic Position (D2)
Iron Dep	osits (B5)			(C6)			_	X FAC-Neut	tral Test (D5)
	on Visible on Aeria		· · ·		ck Surfac	. ,	_		
	Vegetated Conca		ce (B8)		r Well Da				
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser		.,			<b>5</b>				
Surface Wat		Yes	No	X	Depth (i	•		l!!	actors of Motler d
Water Table Saturation P		Yes Yes	No No	X	Depth (i Depth (i	-			cators of Wetland drology Present? Y
	pillary fringe)	162			Dehiii (i	1101165).		'19'	arology riesent!
		am dali	ge, monitoring we	اداتود اا	nhotos r	revious	inspections) i	f available.	
Pescine i/e	Corded Data (Stre	zam yau	go, monitoring we	ıı, acııdı	priotos, p	JI G VIOUS	mapeodona), i	i avallabic.	
Remarks:									
The area is	s near the edge o	of the Mis	souri River (Char	nnel 11),	a perenr	nial river	that is approxi	imately 700 fe	eet wide in the vicinity of the
project.									

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	unty Sampling Date: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen		State:	low	
Investigator(s): KMU ATB	, ,	Sect	ion, Townsh	
Landform (hillslope, terrace, etc.): Terrace / Flo	odplain			convex, none): Concave/Convex Slope (%): -
Subregion (LRR): M (Central Feed Grains & Liveste	ock) Lat:	41.1402666	•	
Soil Map Unit Name: Sarpy fine sandy loam, 0 to 2 per	rcent slopes		NWI	classification: None
Are climatic/hydrologic conditions on the site typical for	or this time o	of the year?	<u>Y</u> (	(If no, explain in Remarks.)
Are Vegetation , Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circumstances" present? Yes
Are Vegetation , Soil , or Hydro	ology	naturally pro	blematic?	(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point loc	cations, tra	nsects, important features, etc.
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y		Is the S	ampled Ar	ea Within a Wetland?
Indicators of Wetland Hydrology Present?	_	If yes, o	ptional wetla	and site ID: Wetland 12
Remarks: (Explain alternative procedures here or in a	– ı separate re	eport.)		
(	. oopa.a.o	, , , , ,		
Sample documents a PFOA wetland located in the wo	ooded riparia	an corridor ald	ong the eas	t bank of the Missouri River. The local relief is
variable with both concave and convex areas.				
VEGETATION Use scientific names of plan	nts			
Coo colonialio names el plan	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size: )	% Cover	Species	Status	Number of Dominant Species
1 Acer saccharinum	30	Υ	FACW	that are OBL, FACW, or FAC: 4 (A)
2 Morus alba	10	Υ	FAC	Total Number of Dominant
3 Populus deltoides	5	N	FAC	Species Across all Strata: 4 (B)
4				Percent of Dominant Species
5				that are OBL, FACW, or FAC:100.00%_ (A/B)
	45	= Total Cover		
Sapling/Shrub Stratum (Plot size:	)			Prevalence Index Worksheet
1 Acer saccharinum	5	<u> </u>	FACW	Total % Cover of: Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species 105 x 2 = 210 FAC species 30 x 3 = 90
				FAC species 30 x 3 = 90 FACU species 5 x 4 = 20
		= Total Cover		UPL species $0 \times 5 = 0$
Herb Stratum (Plot size:	,——	TOTAL GOVE		Column Totals 140 (A) 320 (B)
1 Phalaris arundinacea	, 65	Υ	FACW	Prevalence Index = B/A = 2.29
2 Eupatorium serotinum	15		FAC	Trevalence mack = B//Y = 2.25
3 Humulus japonicus	5		FACU	Hydrophytic Vegetation Indicators:
4 Urtica dioica	3		FACW	1 - Rapid Test for Hydrophytic Vegetation
5 Sicyos angulatus	2	N	FACW	X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (provide
8				supporting data in Remarks or on a separate
9				sheet)
10				Problematic Hydrophytic Vegetation <sup>1</sup>
	90	= Total Cover		(Explain)
Woody Vine Stratum (Plot size:	)			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2		=		Hydrophytic Vegetation
	0	= Total Cover		Present? Y
Remarks: (Include photo numbers here or on a separ	ate sheet.)			·
	,			
The canopy is relatively open, but contains more than	n 30 percent	t cover.		
İ				

Profile Desc		ibe to th	e depth needed			e indicat	or or confirm tl	he absence of	ndicators.)
Depth	<u>Matrix</u>			dox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	е	Remarks
0-2	10YR 3/3	100					Loamy clay		
2-12	10YR 2/2	90	10YR 5/8	5	С	М	Clay loam		
	10YR 4/2	5							
12-20	10YR 4/2	90					Sandy clay		
	10YR 2/2	10							
	1011(2/2	10							
								<u> </u>	
		= Depleti	ion, RM = Reduce	ed Matrix	k, MS = $N$	lasked S			ore Lining, M = Matrix
Hydric Soil									c Hydric Soils <sup>3</sup> :
	osol (A1)			-	ed Matrix	(S4)		Prairie Redox (A	A16)
	ic Epipedon (A2)			ndy Redo	. ,			Surface (S7)	
	ck Histic (A3)				trix (S6)			anganese Mass	` '
	rogen Sulfide (A			-	ky Minera	. ,		hallow Dark Su	
	tified Layers (A5	)			ed Matrix		Other (	(Explain in Rem	arks)
	n Muck (A10)	. 0			atrix (F3)				
	leted Below Dark		· · ·		Surface	. ,	3		
	ck Dark Surface ( dy Mucky Minera	•			ark Surfa essions (	. ,			ic vegetation and wetland
	n Mucky Minera	. ,		юх рерг	essions	(ГО)	nyarolo		sent, unless disturbed or ematic.
	•	•	?) 					ргоон	smalic.
	Layer (if observe	ed):							
Type:					=		Hydric So	oil Present?	<u>Y</u>
Depth (inche	es):				_				
Remarks:						•			
I									
HYDROLO	OGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seco	ondarv Indicator	s (minimum of two required)
-	Water (A1)				Fauna (B	(13)		Surface Soil C	
	ter Table (A2)			•	uatic Plar	,		 Drainage Patte	* *
Saturation	on (A3)			Hydroge	en Sulfide	Odor (C	1)	Dry-Season W	ater Table (C2)
Water M	arks (B1)			Oxidized	d Rhizosp	heres on	Living Roots	Crayfish Burro	ws (C8)
Sedimer	t Deposits (B2)			(C3)					ble on Aerial Imagery (C9)
	osits (B3)			Presenc	e of Redu	uced Iron			essed Plants (D1)
	t or Crust (B4)				Iron Redu	iction in T		Geomorphic P	
	osits (B5)		(D7)	(C6)		(0=)	<u> X</u>	FAC-Neutral T	est (D5)
	on Visible on Aeria		· · · · · · · · · · · · · · · · · · ·	-	ck Surfac				
	Vegetated Conca tained Leaves (B9			_	or Well Da Explain in		\		
	,	')		Other (E	хріант ін	Remarks	)	T	
Field Obser		Vas	Na		Danth /	:b\.			
Surface Wat Water Table		Yes Yes	No	X	Depth (i Depth (i			Indicato	rs of Wetland
Saturation P		Yes	No	X X	Depth (i	-			ogy Present?
	pillary fringe)	103			- Dopui (i	1101103).		i i yui o k	
		eam dalle	ge, monitoring we	ıll aerial	nhotos	nrevious	inspections) if a	_l available:	
Describe Ne	colded Data (Stre	sam gau	ge, monitoring we	ii, acriai	priotos,	previous	mapections), ii e	avallable.	
Remarks:									
The area h	nas undulating top	pography	/ with many depre	essions,	likely due	e to depo	sition of materia	is from periodic	river flooding.

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	inty Sampling Date: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Ager		State:	low	
Investigator(s): KMU ATB	, ,	Sect	ion, Townsh	
Landform (hillslope, terrace, etc.): Drainage	path	Local relief	(concave,	convex, none): Concave Slope (%): 0-5
Subregion (LRR): M (Central Feed Grains & Livest	ock) Lat:	41.138873	620336 I	ong: -95.8777725033853 Datum: NAD 83
Soil Map Unit Name: Sarpy fine sandy loam, 0 to 2 per	rcent slops		NW	classification: PEMA
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ	If no, explain in Remarks.)
Are Vegetation , Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circumstances" present? Yes
Are Vegetation , Soil , or Hydro	ology	naturally pro	blematic?	(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map she	owing samp	ling point lo	cations, tra	nsects, important features, etc.
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y		Is the S	ampled Ar	ea Within a Wetland?
Indicators of Wetland Hydrology Present?		If yes, o	ptional wetla	and site ID: Wetland 13
Remarks: (Explain alternative procedures here or in a	separate re	eport.)		
Comanie (Explain alternative prosedures note of infe	r coparato re	5 <b>p</b> 011.7		
Wetland 13 is a PFOA wetland located along a draina	age pathway	leading to th	e Missouri	River (Channel 11). There is evidence of overland
flow through the wetland.				
VEGETATION Use scientific names of plar	nts			
Coo estername marries et plai	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (Plot size:	% Cover	Species	Status	Number of Dominant Species
1 Morus alba	70	Y	FAC	that are OBL, FACW, or FAC: 3 (A)
2 Populus deltoides	20	Υ	FAC	Total Number of Dominant
3				Species Across all Strata: 3 (B)
4				Percent of Dominant Species
5				that are OBL, FACW, or FAC:100.00% (A/B)
	90	= Total Cover		
Sapling/Shrub Stratum (Plot size:	)			Prevalence Index Worksheet
1				Total % Cover of: Multiply by:
2				OBL species 0 x 1 = 0
3				FACW species 43 x 2 = 86 FAC species 92 x 3 = 276
				FAC species 92 x 3 = 276 FACU species 10 x 4 = 40
	0	= Total Cover		UPL species $0 \times 5 = 0$
Herb Stratum (Plot size:	,	rotal Govel		Column Totals 145 (A) 402 (B)
1 Phalaris arundinacea	30	Υ	FACW	Prevalence Index = B/A = 2.77
2 Commelina communis	10		FACU	Trevalence mack = B/Y = 2.77
3 Urtica dioica	10		FACW	Hydrophytic Vegetation Indicators:
4 Sicyos angulatus	3		FACW	1 - Rapid Test for Hydrophytic Vegetation
5 Rumex crispus	2	N	FAC	X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.01
7				4 - Morphological Adaptations <sup>1</sup> (provide
8				supporting data in Remarks or on a separate
9				sheet)
10				Problematic Hydrophytic Vegetation <sup>1</sup>
	55	= Total Cover		(Explain)
Woody Vine Stratum (Plot size:	)			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2		<del></del>		Hydrophytic Vegetation
	0	= Total Cover		Present? Y
Remarks: (Include photo numbers here or on a separ	ate sheet.)			<del></del> -
, , , , , , , , , , , , , , , , , , , ,	/			
The area has approximately 40 percent bare ground.				
İ				

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	bsence of indicators.)
Depth	<u>Matrix</u>		Red	lox Feat	<u>ures</u>			
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/2	100					Sandy clay	
4-10	10YR 2/2	90	10YR 5/8	10	С	М	Sandy clay loam	
10-20	10YR 3/3	95	10YR 5/8	5	С	М	Loamy clay	
10 20	10111 0/0	- 00	10111 0/0			141	Louiny olay	
$^{1}$ Type: C = C	Concentration. D	= Depleti	on, RM = Reduce	ed Matrix	. MS = N	lasked S	and Grains. <sup>2</sup> Loca	tion: PL = Pore Lining, M = Matrix
Hydric Soil			,		,			Problematic Hydric Soils <sup>3</sup> :
_	osol (A1)		San	dv Gleve	ed Matrix	(S4)		ie Redox (A16)
	ic Epipedon (A2)			dy Redo		. ( )	Dark Surfa	
	ck Histic (A3)			pped Ma				nese Masses (F12)
	lrogen Sulfide (A	1)		•	ky Minera	al (F1)		ow Dark Surface (TF12)
	ntified Layers (A5			•	ed Matrix	. ,		ain in Remarks)
	n Muck (A10)	•			atrix (F3)	. ,		,
	oleted Below Dark	Surface			Surface			
Thic	k Dark Surface (	A12)	`Dep	leted Da	ark Surfa	ce (F7)	<sup>3</sup> Indicators o	f hydrophytic vegetation and wetland
—— San	dy Mucky Minera	ıl (S1)	Rec	lox Depr	essions (	(F8)		nust be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3		-			,	problematic.
Restrictive	Layer (if observe	aq).				I		
Type:	Layer (ii oboorv	ou).					Hydric Soil P	resent? Y
Depth (inche	<i>is)</i> .				-		riyano con r	<u> </u>
					•			
Remarks:								
HYDROLO								
Wetland Hy	drology Indicate	rs:						
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		<u>Seconda</u>	ry Indicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		rface Soil Cracks (B6)
	iter Table (A2)				uatic Plar			ainage Patterns (B10)
Saturation					n Sulfide	-	· ·	y-Season Water Table (C2)
	arks (B1)				l Rhizosp	heres on		ayfish Burrows (C8)
	nt Deposits (B2)			(C3)	f Dd-			turation Visible on Aerial Imagery (C9)
	oosits (B3) it or Crust (B4)			•	e of Redu			unted or Stressed Plants (D1) comorphic Position (D2)
	osits (B5)			(C6)	ion Redu	iction in i		C-Neutral Test (D5)
	on Visible on Aeria	ıl Imager	v (B7)		ck Surfac	e (C7)		O-Nedital Test (D3)
	Vegetated Conca		· · · ·		or Well Da	. ,		
	tained Leaves (B9			_	xplain in		)	
Field Obser	,	,		. `			,	
Surface Wat		Yes	No	Х	Depth (i	nches):		
Water Table		Yes	No	X	Depth (i			Indicators of Wetland
Saturation P	resent?	Yes	No	X	Depth (i			Hydrology Present? Y
(includes ca	pillary fringe)				-			
Describe Re	corded Data (stre	eam gau	ge, monitoring we	II, aerial	photos,	previous	inspections), if avail-	able:
	,							
Remarks:								
There is e	vidence of overla	nd flow t	hrough the area b	ased on	bent and	d matted	down vegetation and	d the presence of debris on the ground.
	there are no char		-					-

Project/Site: Bellevue Bridge	City/0	County:	Mills Cou	nty Sampling Date: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Agency		State:	low	
Investigator(s): KMU ATB		Sect	ion, Townsh	ip, Range: S11, T73N, R44W
Landform (hillslope, terrace, etc.): Terrace / Floodp	olain	Local relief	(concave, c	convex, none): None Slope (%): 0-3
Subregion (LRR): M (Central Feed Grains & Livestock	:) Lat:	41.1391473	8894891 L	ong: -95.8771335030898 Datum: NAD 83
Soil Map Unit Name: Haynie silt loam, 0 to 2 percent slope	es, occas	sionally floode	ed NWI	classification: PEMA
Are climatic/hydrologic conditions on the site typical for the	his time c	of the year?	Υ (	If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrolog	у	significantly		Are "Normal Circumstances" present? Yes
Are Vegetation, Soil X, or Hydrolog		naturally pro		(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showi	ing samp	ling point loc	ations, trar	sects, important features, etc.
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y		Is the Sa	ampled Are	ea Within a Wetland? Y
Indicators of Wetland Hydrology Present? Y		If yes, or	otional wetla	nd site ID: Wetland 14
Remarks: (Explain alternative procedures here or in a se	parate re	port.)		
Wetland 14 is a PEMA/PEMC wetland located in the floo Bridge. Wetland 14 supports natural vegetation, but is a				
bridge. Wetland 14 supports flatural vegetation, but is a	Continuat	ion or lanned	i wellanus i	o the north and south.
<b>VEGETATION</b> Use scientific names of plants.				
А	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (Plot size:) %	% Cover	Species	Status	Number of Dominant Species
1				that are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across all Strata: 2 (B)
				Percent of Dominant Species
5	0 :	= Total Cover		that are OBL, FACW, or FAC:100.00%_ (A/B)
Sanling/Shruh Stratum (Plot size:		- Total Cover		Prevalence Index Worksheet
Sapling/Shrub Stratum (Plot size:)				Total % Cover of: Multiply by:
2				OBL species $0 \times 1 = 0$
3				FACW species 105 x 2 = 210
				FAC species $0 \times 3 = 0$
5				FACU species 0 x 4 = 0
	0 :	Total Cover		UPL species 0 x 5 = 0
Herb Stratum (Plot size: )				Column Totals 105 (A) 210 (B)
1 Echinochloa crus-galli	60	Υ	FACW	Prevalence Index = B/A = 2.00
2 Panicum dichotomiflorum	30	Y	FACW	
3 Persicaria lapathifolia	10	N	FACW	Hydrophytic Vegetation Indicators:
4 Cyperus esculentus	5	N	FACW	1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.0¹
7				4 - Morphological Adaptations <sup>1</sup> (provide
8				supporting data in Remarks or on a separate
9				sheet)
10	105 :	= Total Cover		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: )	105	- Total Cover		
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology mus- be present, unless disturbed or problematic.
2				Hydrophytic
	0 :	= Total Cover		Vegetation
	Ū			Present? Y
Remarks: (Include photo numbers here or on a separate	sheet.)			
Based on historical imagery, much of Wetland 14 will be	planted v	with crops in o	drier years,	but appears to have been left fallow in 2018 as
natural vegetation is present.				

Profile Desc	ription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence of indicate	ors.)
Depth	<u>Matrix</u>		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	) I	Remarks
0-6	10YR 2/2	95	10YR 6/1	5	D	М	Clay loam		
6-20	10YR 4/4	100					Clay loam		
0 20	10111111	100					Olay loam		
1	\	D1-4	an DM - Dadwa	-	MC - N	1	21		in a Managara
		= Depleti	on, Rivi = Reduce	ed iviatrix	, IVIS = IV	lasked S		ocation: PL = Pore Lini	
Hydric Soil			0	-1 01	1 1 1 1 - 4 - 1	(04)		for Problematic Hydri	ic Solis :
	osol (A1)				ed Matrix	(54)		Prairie Redox (A16)	
	ic Epipedon (A2)			dy Redo				urface (S7)	
	ck Histic (A3)	4.		pped Ma	. ,	1 (54)		inganese Masses (F12	•
	rogen Sulfide (A			-	ky Minera			nallow Dark Surface (T	F12)
	tified Layers (A5	)			ed Matrix		X Other (	Explain in Remarks)	
	n Muck (A10)	. 0			atrix (F3)				
	leted Below Dark k Dark Surface (		· · · · · · · · · · · · · · · · ·		Surface	. ,	3, ,, ,		
					ark Surfa			rs of hydrophytic veget	
	dy Mucky Minera n Mucky Peat or			юх рерг	essions (	(F0)	nyarolog	gy must be present, un	less disturbed or
			)					problematic.	
Restrictive	Layer (if observ	ed):							
Type:					_		Hydric So	oil Present? Y	
Depth (inche	es):								
Remarks:						1			
			uring recent flood n) supports a pro					c vegetation and wetlar	nd hydrology
HYDROLO									
Wetland Hy	drology Indicate	rs:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seco	ndary Indicators (minir	num of two required)
X Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface Soil Cracks (E	
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)		Drainage Patterns (B1	0)
X Saturation	n (A3)			Hydroge	n Sulfide	Odor (C	1)	Dry-Season Water Tal	ole (C2)
	arks (B1)				l Rhizosp	heres on	Living Roots	Crayfish Burrows (C8)	
	t Deposits (B2)			(C3)				Saturation Visible on A	• • • •
	osits (B3)			•)	e of Redu			Stunted or Stressed Pl	
	t or Crust (B4)				ron Redu	iction in T		Geomorphic Position (	•
	osits (B5)		· (DZ)	(C6)		(07)	<u>X</u>	FAC-Neutral Test (D5)	
	on Visible on Aeria		· · ·		ck Surfac				
	Vegetated Conca				or Well Da		Λ.		
	ained Leaves (B9	)		Other (E	xplain in	Remarks	5)	_	
Field Obser		<b>V</b>	N. N.		D		0		
Surface Wat		Yes	X No		Depth (i		2	Indiantors of M	lation d
Water Table Saturation P		Yes	X No	X	Depth (i			Indicators of W	
(includes ca		Yes	X No	-	Depth (i	nches).	0	Hydrology Pre	sent? Y
							· · · · · · · · · · · · · · · · · · ·	9.11.	
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ell, aeriai	photos,	previous	inspections), if a	vallable:	
Remarks:									
resembled	a channel, this f	eature er		r a few h				ckwater area was preso magery, it appears to f	

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	unty Samplin	g Date:	9/06/2018	8
Applicant/Owner: Metropolitan Area Planning Agen			low			S-15	
Investigator(s): KMU ATB	,		tion, Townsl			8N, R44W	
Landform (hillslope, terrace, etc.): Terrace	e	Local relief	(concave,	convex, none):	None	Slope (%):	0-3
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.139562	4982115	Long: -95.87838	54112953	Datum: NAI	D 83
Soil Map Unit Name: Percival silty clay, 0 to 2 percent	slopes		NW	classification:		None	
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	N	(If no, explain in Rem	narks.)		<u>-</u>
Are Vegetation X, Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circur	mstances" p	resent? Ye	es
Are Vegetation , Soil , or Hydro	logy	naturally pro	blematic?	(If needed, explain	n answers i	n Remarks.)	
SUMMARY OF FINDINGS - Attach site map sho	owing samp	oling point lo	cations, tra	nsects, important fe	eatures, etc	<b>).</b>	
Hydrophytic Vegetation Present? Y	_						
Hydric Soil Present? Y		Is the S	ampled Ar	ea Within a Wetlan	ıd?	Υ	
Indicators of Wetland Hydrology Present?		If yes, o	ptional wetla	and site ID: W	etland 15		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Sample documents a farmed PEMA/PEMC wetland in earlier in the year, but after flooding due to high river I the wetland was still covered in standing water.	evels and h						
VEGETATION Use scientific names of plan	ts.			T			
T 01 1 (D) 1	Absolute	Dominant	Indicator	Dominance Tes		et	
Tree Stratum (Plot size:) 1	% Cover	Species	Status	Number of Domina that are OBL, FAC	•	1	(A)
2				Total Number of Do			
3				Species Across all	Strata:	1	(B)
5				Percent of Dominal that are OBL, FAC	•	100.00%	(A/B)
Operation of Ohmats Objects and Ohmats of Ohmats are	<u> </u>	= Total Cover	ſ	Duestalanas Inda	\4/	4	
Sapling/Shrub Stratum (Plot size:	)			Prevalence Inde			
2	-			Total % Cover of	i: Mu 40 x 1	Iltiply by: = 40	
3				OBL species FACW species	0 x 2		
4				FAC species	22 x 3		•
5	-			FACU species	15 x 4		
	0	= Total Cove		UPL species	0 x 5		
Herb Stratum (Plot size:	)			Column Totals	77 (A)		(B)
1 Amaranthus tuberculatus	40	Υ	OBL	Prevalence Inde	``	2.16	. ` ′
2 Xanthium strumarium	15	N	FAC				
3 Abutilon theophrasti	15	N	FACU	Hydrophytic Ve	getation Ir	ndicators:	
4 Populus deltoides	5	N	FAC	1 - Rapid Tes	st for Hydrop	ohytic Vegetat	ion
5 Morus alba	2	N	FAC	X 2 - Dominano			
6				X 3 - Prevalence	e Index is ≤	3.0 <sup>1</sup>	
7				4 - Morpholog	gical Adapta	ations <sup>1</sup> (provid	е
8				supporting da	ata in Rema	rks or on a se	parate
9				sheet)			
10	77	= Total Cove		Problematic I (Explain)	Hydrophytic	Vegetation <sup>1</sup>	
Woody Vine Stratum (Plot size:	)			<sup>1</sup> Indicators of hydr	ric soil and w	etland hydrolo	gy must
1				· ·		ed or problema	atic.
2	0	= Total Cove	<u> </u>	Hydrophytic Vegetation			
Demonstra (Include abote as Included	-4l- · · 4 \			Present?	<u> Y</u>		
Remarks: (Include photo numbers here or on a separa	ate sneet.)						
Areas where the floodwaters had receded were domir soybeans ( <i>Glycine max</i> ) earlier in the year. However,	-	-	•	• • •			ded in
the herb stratum.			-a 01 til	sample point and	31010 W	STO HOL HIGH	III

	cription: (Descr Matrix	ibe to th		to docu dox Feat		e indicat	or or confirm th	ne absence of indicators.)
Depth (Inches)	Color (moist)	%	Color (moist)	<u>лох геаг</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
0-4	10YR 2/1	100	Color (moles)	1	. , , , ,	1	Clay loam	, terrisine
4-8	10YR 2/1	95	10YR 5/8	5	С	М	Clay loam	
4-0	1011(2/1	95	1011376	3	C	IVI	Clay Ioaiii	
	Concentration, D	= Depleti	ion, RM = Reduce	ed Matrix	, MS = N	/lasked S		ocation: PL = Pore Lining, M = Matrix
Hydric Soil								for Problematic Hydric Soils <sup>3</sup> :
	tosol (A1)				ed Matrix	(S4)		Prairie Redox (A16)
	tic Epipedon (A2)			ndy Redo				urface (S7)
	ck Histic (A3)	1)			atrix (S6)			anganese Masses (F12)
	lrogen Sulfide (A⁄ atified Layers (A5			•	ky Minera red Matrix	. ,		hallow Dark Surface (TF12) Explain in Remarks)
	m Muck (A10)	,			atrix (F3)			Explain in Nemarks)
	oleted Below Dark	Surface			Surface			
	ck Dark Surface (		· /		ark Surfa	` '	<sup>3</sup> Indicato	ors of hydrophytic vegetation and wetland
	ndy Mucky Minera	•			essions	. ,		gy must be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	<u>—</u>				•	problematic.
Restrictive	Layer (if observe	ed):						
	ompact, dense	,					Hydric Sc	oil Present? Y
Depth (inche	es): 8				_		_	
Remarks:					_			
Hydric soil	ls indicators were	present	within the top 8 i	nches.				
HYDROLO	OGY							
	drology Indicate	rs:						
_	cators (minimum		required; check	all that a	ipply)		Seco	ondary Indicators (minimum of two requir
χ Surface			•		Fauna (B	313)		Surface Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plai	nts (B14)		Drainage Patterns (B10)
Saturation						Odor (C		Dry-Season Water Table (C2)
	larks (B1)				d Rhizosp	heres on	Living Roots	Crayfish Burrows (C8)
	nt Deposits (B2) posits (B3)			(C3)	e of Red	uced Iron		Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
	at or Crust (B4)			-			Filled Soils	Geomorphic Position (D2)
	oosits (B5)			(C6)				FAC-Neutral Test (D5)
	on Visible on Aeria	-	· · · · · <u> </u>	Thin Mu	ick Surfac	ce (C7)		_
	/ Vegetated Conca		ce (B8)	_	or Well Da	. ,		
	tained Leaves (B9	)		Other (E	xplain in	Remarks	5)	
Field Obser Surface Wat		V	V N-		D = == 41= /3	:\.	4	
Water Table		Yes Yes	X No		Depth (i	inches):	4 na	Indicators of Wetland
Saturation P		Yes	No		Depth (i	-	na	Hydrology Present? Y
	pillary fringe)				(			
Describe Re	ecorded Data (stre	eam gau	ge, monitoring we	ell, aerial	photos,	previous	inspections), if a	available:
Remarks:								
Based on	historical aerial ir	nagery, t	the field contains	wet sign	atures in	many ye	ears. The entire f	ield was inundated a few weeks prior to
delineatior	n. Large areas of	standing	water were still բ	oresent a	at the time	e of the o	delienation.	

Project/Site: Bellevue Bridge		County:	Mills Cou	•	ing Date:	9/06/2018	8
Applicant/Owner: Metropolitan Area Planning Agen		State:	low		ing Point:	S-16	
Investigator(s): KMU ATB		Sec	tion, Townsh	nip, Range:	S11, T73	8N, R44W	
Landform (hillslope, terrace, etc.): Sideslop	oe	Local relief	(concave, o	convex, none):	None	Slope (%):	50
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.139804	2542731 l	ong: -95.8764	558794332	Datum: NAI	D 83
Soil Map Unit Name: Haynie silt loam, 0 to 2 percent sl	opes, occa	sionally flood	ed NWI	classification:		None	
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ (	If no, explain in Re	emarks.)		
Are Vegetation , Soil , or Hydrol	logy	significantly	disturbed?	Are "Normal Circ	cumstances" p	resent? Ye	es
Are Vegetation , Soil , or Hydrol	logy	naturally pro	blematic?	(If needed, expl	lain answers i	n Remarks.)	
SUMMARY OF FINDINGS - Attach site map sho	wing samp	oling point lo	cations, trai	nsects, important	features, etc		
Hydrophytic Vegetation Present? N							
Hydric Soil Present? N		Is the S	ampled Are	ea Within a Wetla	and?	N	
Indicators of Wetland Hydrology Present? N	_	If yes, o	ptional wetla	and site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Sample point S-16 is the upland outpoint for Wetlands	: 12 13 14	and 15. The	sampled a	rea is located on t	the riverside	slone of the le	
Because of the continuous nature of the wetlands on t			•			•	
			,			<u>'</u>	
<b>VEGETATION</b> Use scientific names of plan				<del></del>			
Tree Ctreture (Diet size)	Absolute	Dominant	Indicator	Dominance To		et	
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Doming that are OBL, FA	•	0	(A)
2				Total Number of			(八)
3				Species Across a		2	(B)
4				Percent of Domir	nant Species		, , ,
5				that are OBL, FA	•	0.00%	(A/B)
	0	= Total Cove	-				
Sapling/Shrub Stratum (Plot size:)				Prevalence In	dex Worksh	eet	
1				Total % Cover	of: Mu	ıltiply by:	
2				OBL species	0 x 1		
3				FACW species	s <u>6</u> x 2	= 12	•
4				FAC species	10 x 3	= 30	•
5				FACU species			•
	0	= Total Cove		UPL species	0 x 5		
Herb Stratum (Plot size:)	)			Column Totals	`	390	(B)
1 Setaria faberi	40	Y	FACU	Prevalence Inc	dex = B/A =	3.79	•
2 Sorghastrum nutans	35	<u>Y</u>	FACU				
3 Abutilon theophrasti	10	N	FACU	Hydrophytic \	-		
4 Panicum virgatum	10	<u>N</u>	FAC			ohytic Vegetat	ion
5 Phalaris arundinacea	6	<u>N</u>	FACW		nce Test is >: nce Index is ≤		
6 Chenopodium album	2	N	FACU	<b> </b> —			
8						ations <sup>1</sup> (provide	
9				supporting sheet)	uata in Kema	rks or on a se	parate
10				l — ′	c Hydrophytic	Vegetation <sup>1</sup>	
	103	= Total Cove		(Explain)	c riyaropriyac	vegetation	
Woody Vine Stratum (Plot size:				¹Indicators of hy	dric soil and w	etland hydrolo	av must
1						ed or problema	
2				Hydrophy			
	0	= Total Cove		Vegetation Present?	n N		
Remarks: (Include photo numbers here or on a separa	ate sheet )			Tresent		_	
	5						
A small amount of <i>Phalaris arundinacea</i> is creeping u	pslope from	n the wetland	s, but overa	II vegetation is up	oland.		

Profile Des	cription: (Descr	be to th	e depth needed	to docu	ment the	indicat	or or confirm the	absence of indi	cators.)
Depth	Matrix			dox Feat					,
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
,	,		, ,		<u> </u>				
<sup>1</sup> Type: C = 0	Concentration, D =	- Depleti	on. RM = Reduce	d Matrix	. MS = N	lasked S	and Grains. <sup>2</sup> Loc	ation: PL = Pore	Lining, M = Matrix
Hydric Soil			,		,			r Problematic H	
	tosol (A1)		San	dy Gleve	ed Matrix	(S4)		airie Redox (A16)	
	tic Epipedon (A2)			dy Redo		(04)	Dark Surf		
	ck Histic (A3)			-	trix (S6)			ganese Masses (	E12\
	, ,	11			, ,	J (E1)		•	,
	lrogen Sulfide (A4			•	ky Minera	. ,		llow Dark Surface	
	atified Layers (A5)	)			ed Matrix		Other (Ex	plain in Remarks	5)
	m Muck (A10)	0 (			atrix (F3)				
	oleted Below Dark				Surface	. ,	3		
	ck Dark Surface (				rk Surfa	. ,			egetation and wetland
	ndy Mucky Minera			lox Depr	essions (	(F8)	hydrology	•	, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	)					problema	tic.
Restrictive	Layer (if observe	ed):							
	ip rap	•					Hydric Soil	Present? N	
Depth (inche					•		•		
	,				•				
Remarks:									
Unable to	take a soil sample	e due to	the presence of r	ip rap. S	oils are a	assumed	to be non-hydric sl	based on the lac	k of hydrophytic
vegetation	and wetland hyd	rology in	dicators.						
HYDROLO	OGY								
Wetland Hy	drology Indicate	rs:							
1	cators (minimum		required: check	all that a	nnly)		Socono	lary Indicators (n	ninimum of two required)
-	Water (A1)	OI OIIC IS	required, check			12)	· · · · · · · · · · · · · · · · · · ·	Burface Soil Crack	
	ater Table (A2)				Fauna (B uatic Plar	-		Drainage Patterns	• •
Saturation	` '				n Sulfide	, ,		Dry-Season Water	,
	larks (B1)					-		Crayfish Burrows (	
	nt Deposits (B2)			(C3)	i ixilizosp	licies oii			on Aerial Imagery (C9)
	posits (B3)				e of Redu	lood Iron		Stunted or Stresse	
	at or Crust (B4)			•				Seomorphic Positi	• •
	osits (B5)			(C6)	ion Redu	iction in i		AC-Neutral Test	• •
	on Visible on Aeria	l Imagen	(B7)		ck Surfac	o (C7)	<u>—</u> '	AC-Neutral Test	(00)
	/ Vegetated Conca				or Well Da	` '			
	tained Leaves (B9			_	xplain in		١		
	,	)		Other (L	.хріант ін	i Ciliai KS	,		
Field Obser		V- ·	KI.	v	Da=# "	mak - : \			
Surface Wa		Yes	No	<u> X</u>	Depth (i	-		ا معامدات ا	f Motlon-
Water Table		Yes	No	X	Depth (i	-		Indicators of	
Saturation P		Yes	No	X	Depth (i	ncnes):		Hydrology	Present? N
	pillary fringe)								
Describe Re	corded Data (stre	am gau	ge, monitoring we	II, aerial	photos,	previous	inspections), if ava	ilable:	
Remarks:				<del></del>					
1	n lavae elem m	ا الله	nataint						
Located of	n levee slope, no	ลมแเร เ0	retain water.						

Project/Site: Bellevue Bridge		County:	Mills Cou	
Applicant/Owner: Metropolitan Area Planning Agen		State:	low	
Investigator(s): KMU ATB	,	Sect	ion, Townsh	
Landform (hillslope, terrace, etc.): Ditch / depre	ession			convex, none): Concave Slope (%): 0-5
Subregion (LRR): M (Central Feed Grains & Livesto		41.1393548	-	· · · · · · · · · · · · · · · · ·
Soil Map Unit Name: Haynie silt loam, 0 to 2 percent si	<u>_</u>			classification: None
Are climatic/hydrologic conditions on the site typical for	or this time of	of the year?	Υ (	(If no, explain in Remarks.)
Are Vegetation , Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circumstances" present? Yes
Are Vegetation , Soil , or Hydro	logy	naturally pro	blematic?	(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point loc	ations, trai	nsects, important features, etc.
Hydrophytic Vegetation Present? Y	_ [			
Hydric Soil Present? Y	_ [	Is the Sa	ampled Ar	ea Within a Wetland?
Indicators of Wetland Hydrology Present?	_ [	If yes, or	ptional wetla	and site ID: Wetland 17
Remarks: (Explain alternative procedures here or in a	separate re	eport.)		
Sample documents a PFOA wetland dominated by a t wetland was inundated.	tree canopy	of <i>Populus de</i>	<i>eltoides</i> an	d Salix amygdaloides. The central portion of the
VEGETATION Use scientific names of plan	ts.			
	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size:)	% Cover	Species	Status	Number of Dominant Species
1 Populus deltoides	40	Y	FAC	that are OBL, FACW, or FAC:5 (A)
2 Salix amygdaloides	15	<u>Y</u>	FACW	Total Number of Dominant
3 Salix interior	5	N	FACW	Species Across all Strata: 5 (B)
4				Percent of Dominant Species
5	60	- Total Cover		that are OBL, FACW, or FAC: 100.00% (A/B)
Sapling/Shrub Stratum (Plot size:	, 60	= Total Cover		Prevalence Index Worksheet
Sapling/Shrub Stratum (Plot size:)  1 Salix interior	) 15	Υ	FACW	Total % Cover of: Multiply by:
2 Cornus drummondii	10	<u> </u>	FAC	OBL species 8 x 1 = 8
3		<u> </u>	1710	FACW species 75 x 2 = 150
4				FAC species 52 x 3 = 156
5				FACU species $0 \times 4 = 0$
	25	= Total Cover		UPL species 0 x 5 = 0
Herb Stratum (Plot size:	)			Column Totals 135 (A) 314 (B)
1 Phalaris arundinacea	40	Υ	FACW	Prevalence Index = B/A = 2.33
2 Lemna minor	8	N	OBL	
3 Equisetum arvense	2		FAC	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (provide
8				supporting data in Remarks or on a separate
9				sheet)
10	50	= Total Cover	<u> </u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:	)	10101 00101		<sup>1</sup> Indicators of hydric soil and wetland hydrology mu
1	,			be present, unless disturbed or problematic.
2				Hydrophytic
	0	= Total Cover		Vegetation Present? Y
Remarks: (Include photo numbers here or on a separa	ate sheet.)			<del></del>
Much of the vegetation was growing near the edges o				
time of the delineation, many of the trees were growin typical.	g within the	area of stand	aing water.	However, water levels were likely higher than is

Depth	cription: (Descri			dox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Э	Remarks
4									
	Concentration, D =	= Depleti	on, RM = Reduce	ed Matrix	k, MS = $N$	/lasked S			ore Lining, M = Matrix
Hydric Soil	Indicators:						Indicators	for Problemation	C Hydric Soils <sup>3</sup> :
	tosol (A1)		Sar	idy Gleye	ed Matrix	(S4)	Coast I	Prairie Redox (A	16)
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark S	urface (S7)	
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Ma	anganese Masse	es (F12)
— Hyd	lrogen Sulfide (A4	1)	Loa	my Mucl	ky Minera	al (F1)	Very S	hallow Dark Surf	face (TF12)
Stra	atified Layers (A5)	)	Loa	my Gley	ed Matri	x (F2)	Other (	Explain in Rema	ırks)
2 cı	n Muck (A10)		Dep	leted Ma	atrix (F3)				
Dep	oleted Below Dark	Surface	e (A11) Red	lox Dark	Surface	(F6)			
Thi	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	<sup>3</sup> Indicato	ors of hydrophytic	c vegetation and wetland
——Sar	idy Mucky Minera	I (S1)	Red	lox Depr	essions	(F8)	hydrolo	gy must be pres	ent, unless disturbed or
5 cı	m Mucky Peat or	Peat (S3					-	proble	matic.
Poetrictivo	Layer (if observe	2 <b>4</b> ).				1			
Type:	Layer (II Observe	<del>z</del> u).					Hydric Sc	oil Present?	V
	20):				_		nyunc sc	— —	<u>Y</u>
Depth (inche	=5).				_				
	nytic vegetation ar			_	iter tilled	griodi iri	o wettand. Gons t	are assumed fly	dric based on the presence
HYDROLO	nev								
_	drology Indicato						_		
	cators (minimum	of one is	required; check				Seco	-	(minimum of two required
χ Surface					Fauna (B			Surface Soil Cr	* *
	iter Table (A2)		<u>X</u>		uatic Plai			Drainage Patter	
Saturation						Odor (C	· ·	Dry-Season Wa	. ,
	larks (B1)				Rnizosp	neres on	Living Roots	Crayfish Burrov	, ,
	nt Deposits (B2)			(C3)	o of Dod	upod Iron	(C1)		ole on Aerial Imagery (C9)
	oosits (B3) at or Crust (B4)					uced Iron	· · ·	Geomorphic Po	ssed Plants (D1)
	osits (B5)			(C6)	IIOII Reut			FAC-Neutral Te	* *
	on Visible on Aeria	ıl İmaner	(B7)		ck Surfac	e (C7)		- I'AC-Neullai Te	St (D0)
<u> </u>	Vegetated Conca		· · · · <u></u>		or Well Da				
	tained Leaves (B9					Remarks	;)		
	`	,		011101 (2	лріант ні	rtornanto	· )	1	
Field Obser Surface Wa		Yes	X No		Depth (i	inchee).	12-24		
Water Table		Yes	X No	-	Depth (i		na	Indicator	s of Wetland
Saturation F		Yes	No		Depth (i	-	na		gy Present?
	pillary fringe)	100				1101100).		","	<u> </u>
•	corded Data (stre	eam gau	ge, monitoring we	ll, aerial	photos,	previous	inspections), if a	available:	
Remarks:									
The Journ	of otopy discount		time at a start to the		J., 4 ± . ^	fort D	المنابعة الممام	aprial i '	4 anno ano 414 41- · · · · 41 · · · ·
	_				-				t appears that the wetland
	anis some standi	ig water	, but affes up per	ouically.	At the th	iile oi the	s delineation, the	water levels we	re likely higher than is
typical.									

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	inty Samp	oling Date:	9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen		State:	low		oling Point:	S-18
Investigator(s): KMU ATB		Sect	ion, Townsh	nip, Range:	S11, T7	3N, R44W
Landform (hillslope, terrace, etc.): Ditch		Local relief	(concave, o	convex, none):	Concave	Slope (%): 0-4
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.1404171		<u> </u>	7555255624	Datum: NAD 83
Soil Map Unit Name: Onawa silty clay, 0 to 2 percent s	-		NWI	classification:		None
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ (	If no, explain in R	•	
Are Vegetation , Soil , or Hydro	·· —	significantly		Are "Normal Ci	•	
Are Vegetation , or Hydro		naturally pro		(If needed, exp		· ·
SUMMARY OF FINDINGS - Attach site map sho	wing samp	ling point loc	cations, trai	nsects, importan	nt features, etc	C
Hydrophytic Vegetation Present? Y	_					
Hydric Soil Present? Y	_	Is the S	ampled Ar	ea Within a Wet	land?	Υ
Indicators of Wetland Hydrology Present? Y	_	If yes, o	ptional wetla	and site ID:	Wetland 18	
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Sample documents a PSSA wetland located in the roa	adside ditch	. The wetland	l is located	directly east of a	PFOA wetlar	nd (Wetland 17).
<b>VEGETATION</b> Use scientific names of plan	ts.					
	Absolute	Dominant	Indicator	Dominance 1	Test Worksho	eet
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Dom	•	
1 Morus alba	10	<u> </u>	FAC	that are OBL, F	ACW, or FAC:	4 (A)
2				Total Number of		4 (5)
3				Species Across		(B)
4				Percent of Dom	•	400 000/ (A/D)
] <sup>5</sup>	10	= Total Cover		that are OBL, F	ACVV, OI FAC.	100.00% (A/B)
Sapling/Shrub Stratum (Plot size:	10	- Total Cover		Prevalence I	ndex Worksh	eet
1 Cornus drummondii	, 100	Υ	FAC	Total % Cove		ultiply by:
2	100		1710	OBL species	0 x	
3				FACW specie	es 40 x 2	2 = 80
4				FAC species	110 x 3	3 = 330
5				FACU specie	s 0 x 4	1 = 0
	100	= Total Cover		UPL species	0 x 5	5 = 0
Herb Stratum (Plot size:)	)			Column Total	s <u>150</u> (A	) <u>410</u> (B)
1 Phalaris arundinacea	30	Υ	FACW	Prevalence In	ndex = B/A =	2.73
2 Solidago gigantea	10	Y	FACW			
3				Hydrophytic	-	
4					-	phytic Vegetation
5					ance Test is > ence Index is s	
0				<del></del>		
8				4 - Morpho	ological Adapta	ations <sup>1</sup> (provide arks or on a separate
9				sheet)	g data ili Kellia	irks of off a separate
10				l — ′	tic Hydrophytic	· Vegetation <sup>1</sup>
	40	= Total Cover		(Explain)	iic i iyaropiiyiic	vegetation
Woody Vine Stratum (Plot size:				l <del></del> ' ' '	ovdric soil and w	vetland hydrology must
1						ped or problematic.
2				Hydroph		
	0	= Total Cover		Vegetation		
				Present?	ΥΥ	
Remarks: (Include photo numbers here or on a separa	ate sheet.)					
The herbaceous vegetation is sparse at the base of the	ie Cornus d	rummondii , a	nd is mostly	y present along t	the edge of st	anding water in the
bottom of the ditch.						

Depth   Matrix   Redox Features   Texture   Remarks	Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	indicat	or or confirm the abse	nce of indicators.)
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.  **Location: PL = Pore Lining, M = Matrix Hydric Soil Indicators:  Histosoil Indicators:  Histosoil (A1)  Histo: Epipedon (A2)  Sandy Redox (S5)  Black Histos (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A6)  2 am Muck (A10)  Depleted Blow Dark Surface (A11)  Thick Dark Surface (A11)  Thick Dark Surface (A11)  Thick Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Thick Dark Surface (A12)  Depleted Blow Dark Surface (A11)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Thick Dark Surface (A12)  Type:  Depleted Dark Surface (F7)  Planticators of hydrophytic vegetation and wetland the presence of trydrophytic vegetation and wetland the presence of hydrophytic vegetation and wetland thydrology indicators.  Hydric Soil Present?  Water Marks (B1)  X Surface Water (A1)  High Water Table (A2)  True Appate Plants (B14)  York progens Sulfide Codor (C1)  True Appate Plants (B14)  Surface Water (A12)  True Appate Plants (B14)  Surface Soil Cracks (B8)  Surface Water (A12)  Surface		<u>Matrix</u>		Red	dox Feat	<u>ures</u>			
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Sendy Muck (A10)  Depleted Below Dark Surface (A11)  Entrol Dark Surface (A12)  Sandy Muck Mineral (F1)  Sendy Muck Mineral (S1)  Sendy Muck Mineral (S1)  Sendy Muck Mineral (S1)  Sendy Muck Mineral (S1)  Fedox Depressions (F8)  Phydric Soil Present?  Hydric Soil Present?  Hydric Soil Present?  Physica Surface (A11)  Wery Shallow Dark Surface (F12)  Wery Shallow Dark Surface (F12)  Wery Shallow Dark Surface (F12)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Endow Dark Surface (F7)  Endow Dark Surface (F7)  Endow Dark Surface (F7)  Endow Dark Surface (F7)  Endow Depressions (F8)  Phydrology must be present, unless disturbed or problematic.  Restrictive Layer (if observed):  Type:  Depth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Phmary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Hydrogen Sulfide Odor (C1)  Depleted Parks (B1)  Sediment Deposits (B2)  (C3)  Presence of Reduced Iron (C4)  Saturation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Table Present?  Yes  No  Depth (inches):  Gauge or Well Data (D9)  Water Mark Leyer (F9)  Saturation Present?  Yes  No  Depth (inches):  na  Indicators fraite Rodx (A16)  Inch (Explain in Remarks)  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Y  Inch Audicators (F12)  Inch Audicators (F12)  Inch Audicators (F12)  Inch Hydrology Indicators (F12)  Inch Audicators (F12)  Inch Hydrology Indicators (Inches):  Secondary Indicators (Inches):  Secondary Indicators (Inches):  Secondary Indicators (Inches):  Secondary Indicat	(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Sendy Muck (A10)  Depleted Below Dark Surface (A11)  Entrol Dark Surface (A12)  Sandy Muck Mineral (F1)  Sendy Muck Mineral (S1)  Sendy Muck Mineral (S1)  Sendy Muck Mineral (S1)  Sendy Muck Mineral (S1)  Fedox Depressions (F8)  Phydric Soil Present?  Hydric Soil Present?  Hydric Soil Present?  Physica Surface (A11)  Wery Shallow Dark Surface (F12)  Wery Shallow Dark Surface (F12)  Wery Shallow Dark Surface (F12)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Endow Dark Surface (F7)  Endow Dark Surface (F7)  Endow Dark Surface (F7)  Endow Dark Surface (F7)  Endow Depressions (F8)  Phydrology must be present, unless disturbed or problematic.  Restrictive Layer (if observed):  Type:  Depth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Phmary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Hydrogen Sulfide Odor (C1)  Depleted Parks (B1)  Sediment Deposits (B2)  (C3)  Presence of Reduced Iron (C4)  Saturation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Table Present?  Yes  No  Depth (inches):  Gauge or Well Data (D9)  Water Mark Leyer (F9)  Saturation Present?  Yes  No  Depth (inches):  na  Indicators fraite Rodx (A16)  Inch (Explain in Remarks)  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Y  Inch Audicators (F12)  Inch Audicators (F12)  Inch Audicators (F12)  Inch Hydrology Indicators (F12)  Inch Audicators (F12)  Inch Hydrology Indicators (Inches):  Secondary Indicators (Inches):  Secondary Indicators (Inches):  Secondary Indicators (Inches):  Secondary Indicat									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Pedox Dark Surface (F7)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Phydrogen Sulfide (A2)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (if observed):  Type:  Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B3)  Fersence of Reduced Inon (C4)  Hydrogen Sulfide Odor (C1)  Dy-Season Water Table (A2)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Fresence of Reduced Inon (C4)  Sparsely Vegetated Concave Surface (B8)  Water Table (Pesent?  Yes  No  Depth (inches):  Budded Report Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  10  Depth (inc									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Pedox Dark Surface (F7)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Phydrogen Sulfide (A2)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (if observed):  Type:  Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B3)  Fersence of Reduced Inon (C4)  Hydrogen Sulfide Odor (C1)  Dy-Season Water Table (A2)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Fresence of Reduced Inon (C4)  Sparsely Vegetated Concave Surface (B8)  Water Table (Pesent?  Yes  No  Depth (inches):  Budded Report Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  10  Depth (inc									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Pedox Dark Surface (F7)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Phydrogen Sulfide (A2)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (if observed):  Type:  Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B3)  Fersence of Reduced Inon (C4)  Hydrogen Sulfide Odor (C1)  Dy-Season Water Table (A2)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Fresence of Reduced Inon (C4)  Sparsely Vegetated Concave Surface (B8)  Water Table (Pesent?  Yes  No  Depth (inches):  Budded Report Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  10  Depth (inc									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Pedox Dark Surface (F7)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Phydrogen Sulfide (A2)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (if observed):  Type:  Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B3)  Fersence of Reduced Inon (C4)  Hydrogen Sulfide Odor (C1)  Dy-Season Water Table (A2)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Fresence of Reduced Inon (C4)  Sparsely Vegetated Concave Surface (B8)  Water Table (Pesent?  Yes  No  Depth (inches):  Budded Report Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  10  Depth (inc									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Perbeted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sem Mucky Micral (S1)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (in observed):  Type:  Depth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B2)  Hydrogen Sulfide Odor (C1)  Depleted Rhize Apple Sediment Deposits (B2)  (C3)  Gauge or Well Data (D9)  Water Marks (B1)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Saluration (Visible on Aerial Imagery (B7)  Sparsely Vsgetated Concave Surface (B8)  Water Table Present?  Yes  No  Depth (inches):  Remarks:  Indicators frair Redox (A16)  Dark Surface Redox (A16)  Dark Surface Redox (A16)  Problematic Hydric Soils*:  Coast Prairie Redox (A16)  Problematic Hydric (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology indicators.  Hydric Soil Present?  Y  Hydric Soil Present?  Y  Secondary Indicators (minimum of two required)  Surface Roos (Caches (B6)  Surface Soil Cracks (B6)  Dirth Deposits (B3)  Presence of Reduced Iron (C4)  Saluration Visible on Aerial Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbi									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Perbeted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sem Mucky Micral (S1)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (in observed):  Type:  Depth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B2)  Hydrogen Sulfide Odor (C1)  Depleted Rhize Apple Sediment Deposits (B2)  (C3)  Gauge or Well Data (D9)  Water Marks (B1)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Saluration (Visible on Aerial Imagery (B7)  Sparsely Vsgetated Concave Surface (B8)  Water Table Present?  Yes  No  Depth (inches):  Remarks:  Indicators frair Redox (A16)  Dark Surface Redox (A16)  Dark Surface Redox (A16)  Problematic Hydric Soils*:  Coast Prairie Redox (A16)  Problematic Hydric (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology indicators.  Hydric Soil Present?  Y  Hydric Soil Present?  Y  Secondary Indicators (minimum of two required)  Surface Roos (Caches (B6)  Surface Soil Cracks (B6)  Dirth Deposits (B3)  Presence of Reduced Iron (C4)  Saluration Visible on Aerial Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbi									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Perbeted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sem Mucky Micral (S1)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (in observed):  Type:  Depth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B2)  Hydrogen Sulfide Odor (C1)  Depleted Rhize Apple Sediment Deposits (B2)  (C3)  Gauge or Well Data (D9)  Water Marks (B1)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Saluration (Visible on Aerial Imagery (B7)  Sparsely Vsgetated Concave Surface (B8)  Water Table Present?  Yes  No  Depth (inches):  Remarks:  Indicators frair Redox (A16)  Dark Surface Redox (A16)  Dark Surface Redox (A16)  Problematic Hydric Soils*:  Coast Prairie Redox (A16)  Problematic Hydric (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology indicators.  Hydric Soil Present?  Y  Hydric Soil Present?  Y  Secondary Indicators (minimum of two required)  Surface Roos (Caches (B6)  Surface Soil Cracks (B6)  Dirth Deposits (B3)  Presence of Reduced Iron (C4)  Saluration Visible on Aerial Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbi									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Perbeted Below Dark Surface (A11)  Depleted Below Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sem Mucky Micral (S1)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (in observed):  Type:  Depth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B2)  Hydrogen Sulfide Odor (C1)  Depleted Rhize Apple Sediment Deposits (B2)  (C3)  Gauge or Well Data (D9)  Water Marks (B1)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Saluration (Visible on Aerial Imagery (B7)  Sparsely Vsgetated Concave Surface (B8)  Water Table Present?  Yes  No  Depth (inches):  Remarks:  Indicators frair Redox (A16)  Dark Surface Redox (A16)  Dark Surface Redox (A16)  Problematic Hydric Soils*:  Coast Prairie Redox (A16)  Problematic Hydric (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology indicators.  Hydric Soil Present?  Y  Hydric Soil Present?  Y  Secondary Indicators (minimum of two required)  Surface Roos (Caches (B6)  Surface Soil Cracks (B6)  Dirth Deposits (B3)  Presence of Reduced Iron (C4)  Saluration Visible on Aerial Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbital Imagery (C9)  Shired Orbi									
Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histo Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Pedox Dark Surface (F7)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Phydrogen Sulfide (A2)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Thick Dark Surface (A12)  Sendy Mucky Mineral (S1)  Fedox Depressions (F8)  Property (if observed):  Type:  Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Sediment Deposits (B3)  Fersence of Reduced Inon (C4)  Hydrogen Sulfide Odor (C1)  Dy-Season Water Table (A2)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Presence of Reduced Inon (C4)  Sediment Deposits (B3)  Fresence of Reduced Inon (C4)  Sparsely Vegetated Concave Surface (B8)  Water Table (Pesent?  Yes  No  Depth (inches):  Budded Report Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  10  Depth (inc	<sup>1</sup> Typo: C = (	Concentration D :	- Doploti	on DM - Doduce	l Natriy	MS - N	lacked S	and Crains 21 coation	: DL = Boro Lining M = Matrix
Histosol (A1) Histo Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Stratified Layers (A5) Depleted Bellow Dark Surface (A11) Depleted Bellow Dark Surface (A11) Pepleted Bellow Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Deat or Peat (S3) Redox Depressions (F8)  Redox Depressions (F8)  With Common Mucky Peat or Peat (S3) Restrictive Layer (If observed): Type: Hydric Soil Present?  Wetland Hydrology Indicators:  Hydric Soil Present?  Wetland Hydrology Indicators:  Hydrogen Surface (A12) Sandy Mucky Peat or Peat (S3) Hydrogen Surface (F7) Sandy Mucky Peat or Peat (S3) Restrictive Layer (If observed): Type: Hydric Soil Present?  Wetland Hydrology Indicators:  Hydric Soil Present?  Wetland Hydrology Indicators:  Hydric Soil Present?  Wetland Hydrology Indicators:  Hydric Soil Present?  Wetland Hydrology Indicators:  Hydric Soil Present?  Y  Secondary Indicators (minimum of two required) Surface Water (A1) Dy-Season Water Table (C2) Dy-Season Water Table (C2) Dy-Season Water Table (C2) Dy-Season Water Table (C2) Dy-Season Water Table (C2) Dy-Season Water Table (C2) True Aquatic Plants (B1) Dy-Season Water Table (C2) Dy-Season Water Table (C2) Dirth Deposits (B3) Presence of Reduced Iron (C4) Surface Cyrish Burrows (C8) Sediment Deposits (B3) Presence of Reduced Iron (C4) Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Water-Stained Leaves (B9) Other (Explain in Remarks)  Indicators of Wetland Hydrology Present? Yes No Depth (inches):  Ina Indicators of Wetland Hydrology Present? Y  Depth (inches):  Ina Indicators of Wetland Hydrology Present? Y  Depth (inches):  Ina Indicators of Wetland Hydrology Present? Y  Depth (inches):  Ina Indicators of Wetland Hydrology Present? Y  Depth (inches): Ina Indicators of Wetland Hydrology Present? Y  Depth (inches): Ina Indicators of Wetland Hydrology Present? Y  Depth (i			- Depleti	on, Rivi – Reduce	u Mainx	., IVIS – IV	iaskeu s		
Histic Epipedon (A2)  Black Histic (A3)  Black Histic (A3)  Black Histic (A3)  Black Histic (A3)  Black Histic (A3)  Black Histic (A3)  Black Histic (A3)  Black Histic (A3)  Black Histic (A4)  Brain Muck (A10)  Depleted Matrix (F2)  Depleted Matrix (F2)  Depleted Matrix (F3)  Depleted Matrix (F3)  Depleted Matrix (F3)  Depleted Matrix (F3)  Depleted Matrix (F3)  Bedox Dark Surface (A11)  Redox Dark Surface (F6)  Thick Dark Surface (A12)  Depleted Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Redox Depressions (F8)  Restrictive Layer (if observed):  Type:  Beth (inches):  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required: check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Dorft Deposits (B2)  Indicator Silva read (C7)  Sparsely Vegetated Concave Surface (B8)  Water Salar Layer (B7)  Water Table Present?  Yes  No  Depth (inches):  Depth (inches):  Reacent Iron Redox Depth (inches):  Gauge or Well Data (D9)  Water Table Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology indicators of Metland  Hydro	-			Con	dy Clay	ad Matrix	(04)		_
Black Histic (A3) Stripped Matrix (S6) Inco-Manganese Masses (F12) Uvery Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface Shallow Dark Surface (F12) Uvery Shallow Dark Surface Shallow Dark Shallow Dark		· ·					(34)		
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Dark Surface (F6) Depleted Dark Surface (F7) Stor Mucky Mineral (S1) Redox Depressions (F8) Problematic Stor Mucky Peat or Peat (S3) Redox Depressions (F8) Problematic Problem					-			`	•
Stratified Layers (A5)		• •	4.			. ,	-1 (54)		` ,
2 cm Muck (A10) Depleted Matrix (F3) Redox Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Redox Depressions (F8) Populated Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Populated Dark Surface (F7) Redox Depressions (F8) Problematic.  Restrictive Layer (if observed): Type: Hydric Soil Present? Y  Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) X Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) X Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Dorft Deposits (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3) Surface (C3) Sutnated or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils X Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Sparsely Vegetated Onciave Surface (B8) Gauge or Well Data (D9) Water-Stained Leaves (B9) Other (Explain in Remarks)  Field Observationes: Surface Water Present? Yes X No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inc					-	-			
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Set Mucky Peat or Peat (S3)  Redox Depressions (F8)  Redox Depressions (F8)  Redox Depressions (F8)  Redox Depressions (F8)  Redox Depressions (F8)  Redox Depressions (F8)  Represent:  Restrictive Layer (if observed): Type: Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) Saturation (A3) Hydrogen Sulfide Odor (C1) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Sediment Deposits (B3) Presence of Reduced Iron (C4) Sutnet of Stitessed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Seaturation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Stalined Leaves (B9) Water Stalined Leaves (B9)  Water Table (Present? Yes No Depth (inches):  Oepth (inches):  Ina Indicators of hydrophytic vegetation and wetland hydrology must be present; and hydrology present? and hydrology must be present and hydrology must be present; and hydrology must be present; and hydrology must be present; and hydrology must be present; and hydrology must be present; and hydrology must be present; and hydrology must be present; and hydrology present? and hydrology must be present and hydrology must be present and hydro			)					X Other (Explain	in Remarks)
Thick Dark Surface (A12)		, ,	Curtosa						
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless disturbed or problematic.  Restrictive Layer (if observed): Type:				` ′			` '	3, ,, ,	
Restrictive Layer (if observed): Type:		,	,						
Restrictive Layer (if observed): Type: Depth (inches): Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) True Aquatic Plants (B14) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B11) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8) Sediment Deposits (B2) (C3) Sediment Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Inundation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9) Other (Explain in Remarks)  Field Observations: Surface Water Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): Na Hydrology Present		, ,	` '		юх рерг	essions	(ГО)	nyarology musi	
Type: Depth (inches):  Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  High Water Table (A2)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Water-Stained Leaves (B9)  Teleful Observations:  Surface Water Present?  Y  Hydric Soil Present?  Y  Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  Surface Soil Cracks (B6)  X Presence on Living Roots  Craylish Burrows (C8)  Saturation (C4)  Surface Soil Cracks (B6)  Saturation in Tilled Soils  X Geomorphic Position (D2)  FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Gauge or Well Data (D9)  Water Table Present?  Yes  No  Depth (inches):  Gauge or Well Data (D9)  Water Table Present?  Yes  No  Depth (inches):  Gauge or Well Data (D9)  Saturation Present?  Yes  No  Depth (inches):  Ina  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y  Indicators of Wetland  Hydrology Present?  Y				)					problematic.
Depth (inches):		Layer (if observe	ed):						
Remarks:  No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Diff Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water -Stained Leaves (B9)  Water -Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Yes  No  Depth (inches):  na  Indicators of Wetland  Hydrology Present?  Yes  No  Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:						_		Hydric Soil Pres	ent? Y
No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required: check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Water-Stained Leaves (B9)  Water Table Present? Yes X No Depth (inches): Selfield Observations: Surface Water Present? Yes X No Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	Depth (inche	es):				_			
No soil sample was taken due to the presence of standing water throughout the wetland. Soils are assumed hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators.  HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required: check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Water-Stained Leaves (B9)  Water Table Present? Yes X No Depth (inches): Selfield Observations: Surface Water Present? Yes X No Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	Remarks:								
HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  High Water Table (A2)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  C3)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inon Deposits (B5)  Inon Deposits (B5)  Water-Stained Leaves (B8)  Water-Stained Leaves (B8)  Field Observations:  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  FAC-Neutral Test (D5)  Field Observations:  Surface Water Present?  Yes X No Depth (inches):  Surface Water Present?  Yes No Depth (inches):  Gauge or Well Data (D9)  Water Table Present?  Yes No Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes No Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes No Depth (inches):  Remarks:									
HYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  High Water Table (A2)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  C3)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inon Deposits (B5)  Inon Deposits (B5)  Water-Stained Leaves (B8)  Water-Stained Leaves (B8)  Field Observations:  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  FAC-Neutral Test (D5)  Field Observations:  Surface Water Present?  Yes X No Depth (inches):  Surface Water Present?  Yes No Depth (inches):  Gauge or Well Data (D9)  Water Table Present?  Yes No Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes No Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes No Depth (inches):  Remarks:	No soil so	manla waa takan d	40 464	. mraaamaa af ata	مرين مرانم	ta= tb==	ماد در داد	a watland Caila ara aasi	unced by drie becoders the presence
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Place (C2)  Oxidized Rhizospheres on Living Roots  (C3)  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present? Yes X No Depth (inches): 6  Water Table (PC2)  Oxidized Rhizospheres on Living Roots  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Field Observations:  Surface Water Present? Yes X No Depth (inches): 6  Water Table Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Y  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:						ter throu	gnout the	e welland. Solls are assi	amed hydric based on the presence
Primary Indicators (minimum of one is required; check all that apply)   Secondary Indicators (minimum of two required)	oi fiyatopi	iylic vegetation a	iu wellal	ia riyarology iriak	aiuis.				
Primary Indicators (minimum of one is required; check all that apply)   Secondary Indicators (minimum of two required)	LIVEROL (	201							
Primary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Drift Deposits (B3)  Induction (B3)  Water Stained Leaves (B8)  Water-Stained Leaves (B9)  Water-Stained Leaves (B9)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Secondary Indicators (minimum of two required)  Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Indicators of Wetland  Hydrology Present? Yes X No Depth (inches): na Indicators of Wetland  Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes No Depth (inches): na Hydrology Present? Yes Remarks:									
X Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Water (A1)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  FAC-Neutral Test (D5)  Fact-Neutral Test (D5)  Field Observations:  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  FAC-Neutral Test (D5)  Field Observations:  Surface Soil Cracks (B6)  True Aquatic Plants (B14)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  X Geomorphic Position (D2)  FAC-Neutral Test (D5)  Fact-Neutral Test (D5)  Field Observations:  Surface Soil Cracks (B6)  True Aquatic Plants (B10)  Tory-Season Water Test (D5)  Tinh Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface Soil Cracks (B6)  True Aquatic Plants (B10)  Tory-Season Water Test (D5)  Indicators of Wetland  Hydrology Present? Y  Indicators of Wetland  Hydrology Present? Y  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	1								
High Water Table (A2) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9)  Field Observations: Surface Water Table Present? Water Table Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  True Aquatic Plants (B14) Txue Aquatic Plants (B14) Txue Aquatic Plants (B14) Txue Aquatic Plants (B14) Txue Aquatic Plants (B14) Txue Aquatic Plants (B14) Txue Aquatic Plants (B14) Txue Aquatic Plants (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquatic Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Txue Aquatic Plants (B10) Txue Aquatic Plants (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquatic Plants (D2) Txue Aquatic Plants (D2) Txue Aquatic Plants (D2) Txue Aquatic Plants (D2) Txue Aquatic Plants (D2) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Txue Aquation Visible on Aerial Imagery (C4) Txue Acquation Visible on Aerial Imagery (C9) Txue Acquation Visible on Aerial Imagery (C4) Txue Acquation Visible on Aeri	Primary Indi	cators (minimum	of one is	required; check					
Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots  Sediment Deposits (B3)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present? Yes X No Depth (inches): 6  Water Table Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Y (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	χ Surface	Water (A1)			Aquatic	Fauna (B	13)		
Water Marks (B1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots Sediment Deposits (B3) Orift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9)  Field Observations: Surface Water Present? Water Table Present? Yes No Depth (inches): Surface No Depth (inches): No Depth (inch									
Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Water Table Present?  Yes X No Depth (inches):  Surface Water Present?  Yes No Depth (inches):  Saturation Visible on Aerial Imagery (C9)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Indicators of Wetland  Hydrology Present?  Yes No Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:							•	·	` '
Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes X No Depth (inches): 6  Water Table Present?  Yes No Depth (inches): na Indicators of Wetland Saturation Present?  Yes No Depth (inches): na Hydrology Present?						l Rhizosp	heres on		` ,
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  Saturation Present?  Yes  No  Depth (inches):  Saturation Present?  Yes  No  Depth (inches):  Indicators of Wetland  Hydrology Present?  Yes  No  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Recent Iron Reduction in Tilled Soils  X  Geomorphic Position (D2)  X  FAC-Neutral Test (D5)									• • • •
Iron Deposits (B5) (C6) X FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9) Water-Stained Leaves (B9) Other (Explain in Remarks)  Field Observations: Surface Water Present? Yes X No Depth (inches): 6 Water Table Present? Yes No Depth (inches): na Indicators of Wetland Saturation Present? Yes No Depth (inches): na Hydrology Present? Yes (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:								` '	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9) Other (Explain in Remarks)  Field Observations: Surface Water Present? Yes X No Depth (inches): 6 Water Table Present? Yes No Depth (inches): na Indicators of Wetland Saturation Present? Yes No Depth (inches): na Hydrology Present? Yes (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:						ron Redu	iction in 1		
Sparsely Vegetated Concave Surface (B8)  Gauge or Well Data (D9)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present? Yes X No Depth (inches): 6  Water Table Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:		` '		. (DZ)	. ' '	- I- O	(07)	X FAC-N	leutral Test (D5)
Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface Water Present? Yes X No Depth (inches): 6  Water Table Present? Yes No Depth (inches): na Indicators of Wetland Hydrology Present? Yes (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:				· · · · <u></u>	_		` '		
Field Observations:  Surface Water Present? Yes X No Depth (inches): 6  Water Table Present? Yes No Depth (inches): na Indicators of Wetland Saturation Present? Yes No Depth (inches): na Hydrology Present? Y (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:		-					. ,	Λ.	
Surface Water Present? Yes X No Depth (inches): 6 Water Table Present? Yes No Depth (inches): na Indicators of Wetland Saturation Present? Yes No Depth (inches): na Hydrology Present? Y  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	<del></del>	,	)		Other (E	хріаін ін	Remarks		
Water Table Present? Yes No Depth (inches): na Indicators of Wetland Saturation Present? Yes No Depth (inches): na Hydrology Present? Y (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:						D " "			
Saturation Present? Yes No Depth (inches): na Hydrology Present? Y (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:									and and are a CNM and are al
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:			res	No		Debtu (i	ncnes):	na	nyurology Present? Y
Remarks:	-								
	Describe Re	ecorded Data (stre	eam gau	ge, monitoring we	ll, aerial	photos,	previous	inspections), if available	<b>)</b> :
	D								
The ditch is full of standing water.	kemarks:								
The ditch is full of standing water.									
a	The ditch	is full of standing	water						
	31011	3. C.a.i.a.i.g							

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	inty Sampl	ling Date:	9/06/2018	3
Applicant/Owner: Metropolitan Area Planning Agend			low		ing Point:	S-19	
Investigator(s): KMU ATB		Sect	ion, Townsh	nip, Range:	S11, T73	N, R44W	
Landform (hillslope, terrace, etc.): Floodpla	in	Local relief	(concave, o	convex, none):	None	Slope (%):	0-2
Subregion (LRR): M (Central Feed Grains & Liveston	ock) Lat:	41.1406716	6684297 l	ong: -95.8754	1408912135	Datum: NAI	D 83
Soil Map Unit Name: Vore silty clay loam, 0 to 2 percer	nt slopes		NWI	classification:		None	
Are climatic/hydrologic conditions on the site typical for	r this time	of the year?	Υ (	If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrol	ogy	significantly	disturbed?	Are "Normal Circ	cumstances" p	resent? Ye	es
Are Vegetation , Soil , or Hydrol		naturally pro		(If needed, exp		· ·	
SUMMARY OF FINDINGS - Attach site map sho	wing samp	oling point lo	cations, trai	nsects, important	features, etc	i.	
Hydrophytic Vegetation Present? Y	_						
Hydric Soil Present? N	_	Is the S	ampled Are	ea Within a Wetl	and?	N	
Indicators of Wetland Hydrology Present? N	_	If yes, o	ptional wetla	and site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Sample point S-19 is the upland outpoint to Wetlands field (Wetland 18) and the PFOA wetland (Wetland 20 and hydric soils despite having a plant community don	). The area	was determi	ned to be u				
<b>VEGETATION</b> Use scientific names of plan	ts.						,
	Absolute	Dominant	Indicator	Dominance T	est Workshe	et	
Tree Stratum (Plot size:) 1	% Cover	Species	Status	Number of Domithat are OBL, FA	•	2	(A)
2 3				Total Number of Species Across a		2	(B)
4				Percent of Domin			. (5)
5				that are OBL, FA	•	100.00%	(A/B)
Conline/Chruh Ctratum (Diet cize:	0	= Total Cover		Prevalence In	dov Morkob		
Sapling/Shrub Stratum (Plot size:)  1 Cornus drummondii	10	Υ	FAC	Total % Cover		eet Itiply by:	
2			FAC	OBL species	0 x 1		
3				FACW species			•
<u></u>				FAC species	80 x 3		•
5				FACU species			
	10	= Total Cover	•	UPL species	5 x 5		•
Herb Stratum (Plot size: )		,		Column Totals			(B)
1 Poa pratensis	70	Y	FAC	Prevalence Inc	``	3.21	. ` ′
2 Solidago canadensis	15	N	FACU	T TOVALOTICO ITI	JON BITT	0.21	•
3 Phalaris arundinacea	8	N	FACW	Hydrophytic \	/egetation Ir	dicators:	
4 Setaria viridis	5	N	UPL	1	est for Hydron		ion
5 Sorghastrum nutans	5	N	FACU	X 2 - Domina	nce Test is >5	50%	
6 Chamaecrista fasciculata	2	N	FACU	3 - Prevale	nce Index is ≤	3.0 <sup>1</sup>	
7				4 - Morpho	logical Adapta	ations <sup>1</sup> (provide	e
8					data in Rema		
9				sheet)			
10				Problemati	c Hydrophytic	Vegetation <sup>1</sup>	
	105	= Total Cover	•	(Explain)			
Woody Vine Stratum (Plot size:) 1				<sup>1</sup> Indicators of hy be present,	dric soil and w unless disturb		
2				Hydrophy			
	0	= Total Cover		Vegetatio Present?	n Y		
Remarks: (Include photo numbers here or on a separa	ite sheet.)			!			
	,						

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	bsence of indicators.)
Depth	<u>Matrix</u>			dox Feat		_		
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 3/2	100					Loamy clay	
4-8	10YR 3/1	80					Loamy clay	
	10YR 3/3	10	10YR 6/2	10	D	М		
8-22	10YR 3/1	100					Loamy clay	
							, ,	
1- 0	<u> </u>				140		10 : 2	
		= Depleti	on, RM = Reduce	ed Matrix	, MS = N	lasked S		tion: PL = Pore Lining, M = Matrix
Hydric Soil			Son	dy Clay	ad Matrix	(84)		Problematic Hydric Soils <sup>3</sup> :
	tosol (A1) tic Epipedon (A2)			idy Gleye idy Redo	ed Matrix	(34)	Dark Surfa	rie Redox (A16)
	ck Histic (A3)			pped Ma				anese Masses (F12)
	lrogen Sulfide (A	1)			ky Minera	al (F1)		ow Dark Surface (TF12)
	atified Layers (A5	•		-	ed Matrix	. ,		plain in Remarks)
	n Muck (A10)	,			atrix (F3)			nam m remane)
	leted Below Dark	Surface			Surface			
	ck Dark Surface (		· /		ark Surfa	,	<sup>3</sup> Indicators of	of hydrophytic vegetation and wetland
	ndy Mucky Minera				essions (	. ,		must be present, unless disturbed or
	m Mucky Peat or					. ,	, 0,	problematic.
Restrictive	Layer (if observ	ed):						
Type:		,-					Hydric Soil F	Present? N
Depth (inche	es):				•		•	
Remarks:					-			
rtomants.								
HYDROLO	ngy							
	drology Indicate	re.						
_			roquirod: obook	all that a	nnlu)		0	
		or one is	required; check		<del>рргу)</del> Fauna (B	12)		ary Indicators (minimum of two required)
	Water (A1) iter Table (A2)				гаипа (в uatic Plar	•		urface Soil Cracks (B6) rainage Patterns (B10)
Saturatio	` '				n Sulfide			y-Season Water Table (C2)
	larks (B1)					-		rayfish Burrows (C8)
	nt Deposits (B2)			(C3)	оор		3	aturation Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu	uced Iron		unted or Stressed Plants (D1)
	at or Crust (B4)			•			` '	eomorphic Position (D2)
Iron Dep	osits (B5)			(C6)			F	AC-Neutral Test (D5)
	on Visible on Aeria	-	· · · · <u> </u>		ck Surfac			
	Vegetated Conca		ce (B8)		or Well Da	. ,		
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser								
Surface Wat		Yes	No	X	Depth (i			In Protein of Walland
Water Table		Yes	No	X	Depth (i			Indicators of Wetland
Saturation P	pillary fringe)	Yes	No	X	Depth (i	ncnes):		Hydrology Present? N
		aam gall	ne monitoring we	ll aerial	photos	previous	inspections), if avai	able:
Describe Ne	corded Data (Sire	ani yau	ge, monitoring we	ii, aeriai	priotos, į	previous	mspections), ii avai	able.
Remarks:								
	=							
The area h	nas a relatively fla	at, unifori	n topography.					

Project/Site: Bellevue Bridge		ON DATA F County:	Mills Cou	_
Applicant/Owner: Metropolitan Area Planning Agen		State:	low	<del></del>
Investigator(s): KMU ATB	oy ( ,		tion, Townsh	
Landform (hillslope, terrace, etc.): Depressi	ion			convex, none): concave Slope (%): 0-3
Subregion (LRR): M (Central Feed Grains & Livesto		41.140529	-	Long: -95.8753503292646 Datum: NAD 83
Soil Map Unit Name: Vore silty clay loam, 0 to 2 percer				I classification: None
Are climatic/hydrologic conditions on the site typical for		of the year?	N (	(If no, explain in Remarks.)
Are Vegetation , Soil , or Hydro		significantly		Are "Normal Circumstances" present? Yes
Are Vegetation , Soil , or Hydro	· —	naturally pro		(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map sho				nsects, important features, etc.
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y	_ [	Is the S	ampled Are	ea Within a Wetland?
Indicators of Wetland Hydrology Present? Y	-		ptional wetla	
Remarks: (Explain alternative procedures here or in a	separate re			
(	00 p a	,pc,		
Sample documents a PFOA wetland. The wetland is v	very similar	to Wetland 1	7, but on the	e opposite side of the road. The central portion of
the wetland was inundated.				
VECETATION Use accontific names of plan	.1.			
<b>VEGETATION</b> Use scientific names of plan			,	Dominance Test Worksheet
Tree Stratum (Plot size: )	Absolute % Cover	Dominant Species	Indicator Status	
`		•		Number of Dominant Species
1 Morus alba	40	<u> </u>	FAC	that are OBL, FACW, or FAC: 5 (A)
2 Populus deltoides	35	<u>Y</u>	FAC	Total Number of Dominant
3 Acer saccharinum	<u>10</u>	N	FACU	Species Across all Strata: 6 (B)
4 Gleditsia triacanthos	5	N	FACU	Percent of Dominant Species
5	90	= Total Cover	<del> </del>	that are OBL, FACW, or FAC: 83.33% (A/B)
Carling/Church Christian / Plot size:	\ <del></del> _	= Total Cover		Prevalence Index Worksheet
Sapling/Shrub Stratum (Plot size:)	10	V	EAC	
1 Cornus drummondii	10	<u> </u>	FAC	Total % Cover of: Multiply by:  OBL species 5 x 1 = 5
3				OBL species 5 x 1 = 5 FACW species 40 x 2 = 80
3				FACW species 40 x2 - 80 FAC species 105 x 3 = 315
<u> </u>				FACU species 20 x 4 = 80
] 3	10	= Total Cover	-	UPL species $0 \times 5 = 0$
Herb Stratum (Plot size:	\ <del></del>	- 10tai 0010.		Column Totals 170 (A) 480 (B)
	, 25	Υ	FACW	Prevalence Index = B/A = 2.82
1 Phalaris arundinacea		<u>Y</u> Y		Prevalence index – D/A – 2.02
2 Toxicodendron radicans 3 Solidago canadensis	20 15	<u>Y</u> Y	FACU	Hydrophytic Vegetation Indicators:
4 Lemna minor	5	<u> </u>	OBL	1 - Rapid Test for Hydrophytic Vegetation
5 Cyperus esculentus	5		FACW	X 2 - Dominance Test is >50%
6 Cyperus esculentus			IACVV	X 3 - Prevalence Index is ≤3.0¹
7				<del></del>
8				4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate
9				supporting data in Remarks or on a separate sheet)
10				Problematic Hydrophytic Vegetation <sup>1</sup>
	70	= Total Cover		(Explain)
Woody Vine Stratum (Plot size:	,	1000. 2		<del></del>
1	,			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				Hydrophytic
	0	= Total Cover		Vegetation
	U	- 10tai 00vo.		Present? Y
Remarks: (Include photo numbers here or on a separa	ate sheet.)			<del></del>
, ,				
With the exception of <i>Lemna minor</i> , most vegetation v	was arowing	near the edu	nes of the o	open water. Many of the trees were growing in the
standing water at the time of the delineation, but water				

Profile Desc	cription: (Descr	ibe to th	e depth ne	eded	to docu	ment the	indicat	or or confirm t	he absence	of indicators.)
Depth	<u>Matrix</u>		-	Red	dox Featı	<u>ures</u>				-
(Inches)	Color (moist)	%	Color (m	oist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e	Remarks
1- 0 0										
		= Depleti	on, RM = F	educe	ed Matrix	, MS = N	lasked S			= Pore Lining, M = Matrix
Hydric Soil				_			(0.4)			matic Hydric Soils <sup>3</sup> :
	osol (A1)		_	_		ed Matrix	(S4)		Prairie Red	
	ic Epipedon (A2)		_		dy Redo				Surface (S7)	
	ck Histic (A3)		_		pped Ma	, ,			•	Masses (F12)
	rogen Sulfide (A4		_		-	ky Minera	. ,			Surface (TF12)
	tified Layers (A5)	)	_	_		ed Matrix	(F2)	Other (	(Explain in F	Remarks)
	n Muck (A10)		<del>-</del>			atrix (F3)	·=-			
	leted Below Dark		(A11)			Surface	. ,	2		
	ck Dark Surface (		_			ırk Surfa				phytic vegetation and wetland
	dy Mucky Minera		_	Rec	lox Depr	essions (	F8)	hydrolo		present, unless disturbed or
5 cm	n Mucky Peat or	Peat (S3	)						р	roblematic.
Restrictive	Layer (if observe	ed):								
Type:								Hydric S	oil Present	? Y
Depth (inche	es):					•				
Remarks:										
Remarks.										
l										
						ter throu	ghout the	wetland. Soils	are assume	d hydric based on the presence
or nyaropn	ytic vegetation ar	nd wetiar	na nyarolog	y inaic	cators.					
HYDROLO										
Wetland Hy	drology Indicate	rs:								
Primary India	cators (minimum	of one is	required; o	heck a	all that a	pply)		Seco	ondary Indic	cators (minimum of two required)
X Surface	Water (A1)					Fauna (B			Surface So	oil Cracks (B6)
High Wa	ter Table (A2)			X	True Aq	uatic Plar	nts (B14)		Drainage F	Patterns (B10)
Saturation					Hydroge	n Sulfide	Odor (C	)	Dry-Seaso	on Water Table (C2)
	arks (B1)					l Rhizosp	heres on	Living Roots		urrows (C8)
	t Deposits (B2)				(C3)				_	Visible on Aerial Imagery (C9)
	osits (B3)				•	e of Redu				Stressed Plants (D1)
	t or Crust (B4)					ron Redu	ction in T			nic Position (D2)
	osits (B5)		(5-1)		(C6)			<u> </u>	FAC-Neut	ral Test (D5)
	on Visible on Aeria					ck Surfac				
	Vegetated Conca		ce (B8)			r Well Da	. ,			
	tained Leaves (B9	)			Otner (E	xplain in	Remarks	)		
Field Obser		.,						10.01		
Surface Wat		Yes	X	No		Depth (i	-	12-24	1	and an and Watter d
Water Table		Yes		No		Depth (i	,	na		cators of Wetland
Saturation P		Yes		No		Depth (i	nches):	na	Нус	Irology Present? Y
	oillary fringe)									
Describe Re	corded Data (stre	eam gau	ge, monitor	ing we	ll, aerial	photos, p	orevious	inspections), if a	available:	
D										
Remarks:										
The denth	of standing water	r was est	timated to b	e ann	roximata	lv 1 to 2	feet Ras	ed on historical	aerial imaa	ery, it appears that the wetland
-	_					-			_	s were likely higher than is
typical.	standi	3		, po.,				55511, 410		
,										

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	nty Samplir	ng Date:	9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen	cy (MAPA)	State:	low	a Samplir	ng Point:	S-21
Investigator(s): KMU ATB		Sec	tion, Townsh	ip, Range:	S11, T73	3N, R44W
Landform (hillslope, terrace, etc.): Ditch			•	convex, none):	None	Slope (%): 0
Subregion (LRR): M (Central Feed Grains & Liveston		41.140567	1974276 L		111008296	Datum: NAD 83
Soil Map Unit Name: Percival silty clay, 0 to 2 percent				classification:		None
Are climatic/hydrologic conditions on the site typical for	or this time	=		lf no, explain in Rer	-	
<u> </u>	logy	significantly		Are "Normal Circu	•	
Are Vegetation, Soil, or Hydro		naturally pro		(If needed, expla		•
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point lo	cations, trai	sects, important f	eatures, etc	). 
Hydrophytic Vegetation Present? Y	_					
Hydric Soil Present? Y	_	Is the S	ampled Are	ea Within a Wetla	nd?	Υ
Indicators of Wetland Hydrology Present? Y		If yes, o	ptional wetla	nd site ID: V	Vetland 20	
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
	•	. ,				
Sample documents a PSSA wetland located in the roa	ad ditch. The	e area was in	undated at	the time of the deli	neation.	
VEGETATION Use scientific names of plan	ts.					
[	Absolute	Dominant	Indicator	Dominance Te	st Workshe	eet
Tree Stratum (Plot size: )	% Cover	Species	Status	Number of Domina	ant Species	
1 Morus alba	5	Υ	FAC	that are OBL, FAC	•	6 (A)
2				Total Number of D	ominant	
3				Species Across al	l Strata:	6 (B)
4				Percent of Domina	ant Species	
5				that are OBL, FAC	CW, or FAC:	100.00%(A/B)
	5	= Total Cover	-			
Sapling/Shrub Stratum (Plot size:	)			Prevalence Ind	lex Worksh	eet
1 Cornus drummondii	20	Υ	FAC	Total % Cover of		ıltiply by:
2 Salix interior	15	Υ	FACW	OBL species	20x1	
3 Morus alba	5	N	FAC	FACW species	40 x 2	
4				FAC species	x 3	
<sup>5</sup>	40	- Total Cavas		FACU species	0 x 4	
Herb Stratum (Plot size:	40	= Total Cover		UPL species Column Totals	0 x 5	
	05		E4014/			
1 Phalaris arundinacea	25	<u>Y</u>	FACW	Prevalence Inde	ex = B/A =	2.27
2 Equisetum arvense	20	<u>Y</u>	FAC OBL	Hydrophytic Ve	actation l	adicatora
3 Lemna minor			OBL		•	phytic Vegetation
5				X 2 - Dominan	-	-
6				X 3 - Prevalen		
7				—		_
8						ations <sup>1</sup> (provide arks or on a separate
9				sheet)		o. o. o a oopa.a.o
10				Problematic	Hydrophytic	: Vegetation <sup>1</sup>
	65	= Total Cover	-	(Explain)	,	
Woody Vine Stratum (Plot size:				1Indicators of hyd	dric soil and v	vetland hydrology must
						ed or problematic.
2				Hydrophyti		
	0	= Total Cover		Vegetation		
				Present?	Y	_
Remarks: (Include photo numbers here or on a separa	ate sheet.)					

Depth	cription: (Descri Matrix	ibe to th	•	dox Feat		muicat	or or commit	the absence o	i iliuicators.)
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ıre	Remarks
,	- ( )		- ( )						
T 0 0	)	D l t	DM D	1.84.4.5	NO 1	1		21	Daniel Salam M. Mater
	Concentration, D =	= Depleti	on, RIVI = Reduce	ed Matrix	, MS = N	lasked S			Pore Lining, M = Matrix
•	Indicators:		Cor	du Class	ad Matrix	(04)			tic Hydric Soils <sup>3</sup> :
	osol (A1)				ed Matrix	(54)		t Prairie Redox	(A16)
	ic Epipedon (A2)			dy Redo				Surface (S7)	(540)
	ck Histic (A3)			pped Ma	. ,	. (= 4)		Manganese Mas	` '
	lrogen Sulfide (A4	•		•	ky Minera	` '		Shallow Dark S	, ,
	atified Layers (A5)	)			ed Matri		Other	r (Explain in Rei	marks)
	m Muck (A10)	0 (			atrix (F3)				
	leted Below Dark		· · ·		Surface	. ,	3		
	ck Dark Surface (	•			ırk Surfa	. ,			ytic vegetation and wetland
	dy Mucky Minera			iox Depr	essions	(F8)	hydro		esent, unless disturbed or
	n Mucky Peat or		<del>)</del> )					prot	olematic.
Restrictive	Layer (if observe	ed):							
Туре:					_		Hydric	Soil Present?	Y
Depth (inche	es):				-				
Remarks:									
	ytic vegetation ar			_		g			nydric based on the presence
HYDROLO	OGY								
	drology Indicato	rs:							
_	cators (minimum		required: check	all that a	nnly)		90	condon/Indicat	ors (minimum of two required
χ Surface	•	OI OHE IS	required, crieck		<del>рріу)</del> Fauna (В	13)	<u>3e</u>	Surface Soil	
	iter Table (A2)				•	nts (B14)	_	Drainage Pat	, ,
Saturation	, ,					Odor (C	_		Water Table (C2)
	arks (B1)					•	Living Roots	Crayfish Buri	, ,
	nt Deposits (B2)			(C3)	· · · · · · · · · · · · · · · ·	110100 011			sible on Aerial Imagery (C9)
	oosits (B3)				e of Red	uced Iron	(C4)		tressed Plants (D1)
	it or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils	X Geomorphic	Position (D2)
	osits (B5)			(C6)				X FAC-Neutral	
χ Inundation	on Visible on Aeria	l Imager	y (B7)	Thin Mu	ck Surfac	e (C7)	_		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge of	r Well Da	ata (D9)			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser									
	ter Present?	Yes	X No		Depth (i		8		
Water Table		Yes	No		Depth (i	,	na		tors of Wetland
Saturation P		Yes	No		Depth (i	nches):	na	Hydro	ology Present? Y
(includes ca	pillary fringe)								
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial	photos,	previous	inspections), i	f available:	
Remarks:									
Standing :	vator filla much =	the rec	d ditab Dasad an	oorial im	200021 2	oorly of	of the wetlerd	was inundated	a faw wooka bafara tha
_						-			a few weeks before the b be saturated or inundated a
			•	-		-		aerial imagery.	

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	inty Sampling Date: 9/06/2018
Applicant/Owner: Metropolitan Area Planning Agen	icy (MAPA)	State:	low	a Sampling Point: S-22
Investigator(s): KMU ATB		Sec	tion, Townsl	ip, Range: S11, T73N, R44W
Landform (hillslope, terrace, etc.): Depress	ion	Local relief	(concave,	convex, none): None Slope (%): 0-2
Subregion (LRR): M (Central Feed Grains & Livesto	ock) Lat:	41.142528	0254163	ong: -95.8699614915116 Datum: NAD 83
Soil Map Unit Name: Haynie silt loam, 0 to 2 percent s	lopes, occas	sionally flood	ed NW	classification: None
Are climatic/hydrologic conditions on the site typical for	or this time o	of the year?	N	If no, explain in Remarks.)
Are Vegetation , Soil , or Hydro	logy	significantly	disturbed?	Are "Normal Circumstances" present? Yes
Are Vegetation , Soil , or Hydro	logy	naturally pro	oblematic?	(If needed, explain answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map she	owing samp	ling point lo	cations, tra	nsects, important features, etc.
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y	_	Is the S	Sampled Ar	ea Within a Wetland?
Indicators of Wetland Hydrology Present?	_	If yes, o	ptional wetla	and site ID: Wetland 22
Remarks: (Explain alternative procedures here or in a	separate re	eport.)	<u> </u>	
	'	' /		
Sample documents a PEMA/PEMC wetland located in	n an inundat	ed area betw	een an agr	cultural field and a roadside ditch.
'			J	
VEGETATION Use scientific names of plan	ıts.			
·	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size: )	% Cover	Species	Status	Number of Dominant Species
1				that are OBL, FACW, or FAC:3 (A)
2				Total Number of Dominant
3				Species Across all Strata: 3 (B)
5				Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)
<u> </u>	0	= Total Cove		(AB)
Sapling/Shrub Stratum (Plot size:	,——			Prevalence Index Worksheet
1 Cornus drummondii	5	Υ	FAC	Total % Cover of: Multiply by:
2				OBL species 3 x 1 = 3
3				FACW species 50 x 2 = 100
4				FAC species 20 x 3 = 60
5				FACU species 0 x 4 = 0
	5	= Total Cove	r	UPL species 0 x 5 = 0
Herb Stratum (Plot size:	)			Column Totals 73 (A) 163 (B)
1 Phalaris arundinacea	50	Υ	FACW	Prevalence Index = B/A = 2.23
2 Polygonum coccineum	15	Υ	FAC	
3 Phyla lanceolata	3	N	OBL	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				X 2 - Dominance Test is >50%
6				X 3 - Prevalence Index is ≤3.0¹
7				4 - Morphological Adaptations <sup>1</sup> (provide
8				supporting data in Remarks or on a separate
9				sheet)
10	68	= Total Cove		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size:	)	- Total Gove		
1	,			<sup>1</sup> Indicators of hydric soil and wetland hydrology mus be present, unless disturbed or problematic.
2				Hydrophytic
	0	= Total Cove	r	Vegetation
Demontor (Include al. 1 and 1 al. 1	_41			Present? Y
Remarks: (Include photo numbers here or on a separate	ate sheet.)			

Profile Desc	cription: (Descri	ibe to th	e depth	needed	to docu	ment the	e indicat	tor or confirm	the absenc	ce of indicators.)
Depth	<u>Matrix</u>			Red	dox Featı	<u>ures</u>				
(Inches)	Color (moist)	%	Color (	moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
<sup>1</sup> Type: C = C	concentration, D =	= Depleti	ion, RM =	Reduce	ed Matrix	, MS = N	lasked S	Sand Grains. <sup>2</sup>	Location: F	PL = Pore Lining, M = Matrix
Hydric Soil										ematic Hydric Soils <sup>3</sup> :
_	osol (A1)			Sar	dy Gleye	ed Matrix	(S4)		Prairie Re	_
	ic Epipedon (A2)		•		dy Redo		- ( )		Surface (S7	
	ck Histic (A3)		-		pped Ma				•	Masses (F12)
	rogen Sulfide (A4	1)			my Mucł	. ,	al (E1)		-	rk Surface (TF12)
	itified Layers (A5)				my Gley	•	. ,		(Explain in	` '
	n Muck (A10)	,							(Lxpiaiii iii	itemarks)
	` ,	Curtosa	. (Δ11)		oleted Ma lox Dark	. ,				
	leted Below Dark		(A11)				` '	3		
	k Dark Surface (	•			oleted Da		. ,			ophytic vegetation and wetland
	dy Mucky Minera			Rec	lox Depr	essions (	(F8)	hydrol		e present, unless disturbed or
5 cn	n Mucky Peat or I	Peat (S3	3)							problematic.
Restrictive	Layer (if observe	ed):								
Type:	•	•						Hydric S	Soil Presen	it? Y
Depth (inche	es):					•		,		·
						•				
Remarks:										
No soil sar	mple was taken d	ue to the	e presenc	e of star	nding wa	ter throu	ghout the	e wetland. Soils	are assum	ned hydric based on the presence
of hydroph	ytic vegetation ar	nd wetla	nd hydrol	ogy indic	cators.					
HYDROLO	)GY									
	drology Indicato	re.								
1					. 11 41					
-	cators (minimum	of one is	required	; check				Sec		icators (minimum of two required)
X Surface \						Fauna (B		_		Soil Cracks (B6)
	ter Table (A2)					uatic Plar				Patterns (B10)
Saturatio	, ,						Odor (C			son Water Table (C2)
	arks (B1)					l Rhizosp	heres on	Living Roots		Burrows (C8)
	t Deposits (B2)				(C3)					on Visible on Aerial Imagery (C9)
	osits (B3)				•)		uced Iron	· · · · · —		or Stressed Plants (D1)
	t or Crust (B4)					ron Redu	ıction in 1	Tilled Soils		phic Position (D2)
	osits (B5)				(C6)				X FAC-Neu	utral Test (D5)
	on Visible on Aeria					ck Surfac				
	Vegetated Conca		ce (B8)			or Well Da				
Water-St	tained Leaves (B9	)			Other (E	xplain in	Remarks	s)		
Field Obser	vations:									
Surface Wat	er Present?	Yes	X	No		Depth (i		6		
Water Table	Present?	Yes		No		Depth (i	inches):	-	Ind	licators of Wetland
Saturation P	resent?	Yes		No		Depth (i	inches):		Hy	/drology Present? Y
(includes cap	oillary fringe)									
Describe Re	corded Data (stre	eam gau	ge, monit	oring we	ll, aerial	photos,	previous	inspections), if	available:	
Demonto										
Remarks:										
	e wetland is locat	ted in a l	hroad fla	t ditch th	at is den	erally of	a lower	elevation than t	he adiacen	t agricultural field. However, the
Much of th										t agricultural field. However, the
Much of the wetland ex	tends into the ag	ricultura	l field at s	ome loc	ations. E	Based or	n aerial ir	magery, nearly	all of the we	t agricultural field. However, the etland was inundated a few the wetland appears to be

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	inty Sam	pling Date:	9/06/2018
Applicant/Owner: Metropolitan Area Planning Agenda	cy (MAPA)	State:	low	a Samp	oling Point:	S-23
Investigator(s): KMU ATB		Sec	tion, Townsh	ip, Range:	S11, T7	3N, R44W
Landform (hillslope, terrace, etc.): Ditch		Local relief	(concave, o	convex, none):	Concave	Slope (%): 0-8
Subregion (LRR): M (Central Feed Grains & Liveston	<u>-</u>	41.141556	3803446 l	<u> </u>	6487573929	Datum: NAD 83
Soil Map Unit Name: Vore silty clay loam, 0 to 2 percer				classification:		None
Are climatic/hydrologic conditions on the site typical for				If no, explain in F	-	
	logy	significantly		Are "Normal C		
Are Vegetation , Soil , or Hydrol		naturally pro		(If needed, ex	•	,
SUMMARY OF FINDINGS - Attach site map sho	wing samp	ling point lo	cations, trai	nsects, importar	nt features, et	c.
Hydrophytic Vegetation Present? N	_					
Hydric Soil Present? Y	_	Is the S	ampled Are	ea Within a We	tland?	N
Indicators of Wetland Hydrology Present? N	_	If yes, o	ptional wetla	and site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
	. 1 4 . 12.				OMP	
Sample point S-23 is the outpoint to Wetland 24 and is drainage under the road.	s located in	an upland ar	ea in the di	ich west of wher	e a CMP culv	ert takes ditch
dramage under the road.						
<b>VEGETATION</b> Use scientific names of plan	ts.					
	Absolute	Dominant	Indicator	Dominance 1	Test Worksh	eet
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of Dom	ninant Species	
1				that are OBL, F	ACW, or FAC:	0 (A)
2				Total Number o		
] 3				Species Across	all Strata:	1 (B)
4				Percent of Dom		0.000/ (A/D)
5				that are OBL, F	ACW, or FAC:	0.00% (A/B)
Capling/Chruh Ctratum (Diet size:	0	= Total Cove		Prevalence I	nday Markak	and the same of th
Sapling/Shrub Stratum (Plot size:)				Total % Cove		ultiply by:
2				OBL species		1 = 0
3				FACW species		2 = 16
4				FAC species		3 = 42
5				FACU specie		4 = 20
	0	= Total Cove	-	UPL species		5 = 390
Herb Stratum (Plot size:				Column Total	ls 105 (A	468 (B)
1 Setaria viridis	75	Υ	UPL	Prevalence Ir	ndex = B/A =	4.46
2 Panicum virgatum	12	N	FAC			
3 Echinochloa crus-galli	8	N	FACW	Hydrophytic	Vegetation I	ndicators:
4 Chamaecrista fasciculata	5	N	FACU	1 - Rapid	Test for Hydro	phytic Vegetation
5 Helianthus maximiliani	3	N	UPL		ance Test is >	_
6 Andropogon gerardii	2	N	FAC	3 - Preval	ence Index is:	≤3.0 <sup>1</sup>
7						ations <sup>1</sup> (provide
8					g data in Rema	arks or on a separate
9				sheet)		4
10	405	- T-4-1 O			tic Hydrophytic	c Vegetation '
Moody Vine Stratum (Diet size:	105	= Total Cove		(Explain)		
Woody Vine Stratum (Plot size:)						wetland hydrology must bed or problematic.
2				Hydroph	-	oca or problematic.
		= Total Cove	<u> </u>	Vegetati	•	
	3	101010000		Present		
Remarks: (Include photo numbers here or on a separa	ate sheet.)			•		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	<u>Matrix</u>		Red	lox Feat	ures_					
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks	
0-4	10YR 3/1	95	10YR 5/8	5	С	М	Clay loam			
4-8	10YR 3/1	100					Clay loam			
8-10	10YR 3/1	95	10YR 5/8	5	С	М	Clay Ioam			
							,			
1 <sub>Tyme</sub> , C = C	`anaantration D	- Domloti	on DM – Doduce	d Matrix	MC - M	laskad C	and Crains 2	21 apptions DI	- Dava Lining M - Matrix	
Hydric Soil		- Depleti	on, RM = Reduce	u Mairix	, IVIS – IV	iaskeu S			_ = Pore Lining, M = Matrix matic Hydric Soils³:	
_	osol (A1)		San	dv Gleve	ed Matrix	(S4)		t Prairie Red	-	
	ic Epipedon (A2)			dy Redo		(04)		Surface (S7)		
	ck Histic (A3)			oped Ma					Masses (F12)	
	rogen Sulfide (A	1)			ky Minera	al (F1)		•	Surface (TF12)	
	tified Layers (A5)	•		-	ed Matrix	. ,	Other	(Explain in F	Remarks) `	
2 cr	n Muck (A10)		Dep	leted Ma	atrix (F3)					
Dep	leted Below Dark	Surface	` '		Surface	,				
	k Dark Surface (				ırk Surfa				phytic vegetation and wetland	
	dy Mucky Minera			lox Depr	essions (	(F8)	hydrol		present, unless disturbed or	
5 cr	n Mucky Peat or	Peat (S3	)					p	roblematic.	
	Layer (if observe	ed):								
	ompact, dense				•		Hydric S	Soil Present	? <u>Y</u>	
Depth (inche	es): 10				•					
Remarks:										
HYDROLO										
1	drology Indicato									
-	•	of one is	required; check			40)	<u>Sec</u>	-	cators (minimum of two required)	
Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)							` ,			
High Water Table (A2)  Saturation (A3)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Drainage Patterns (B10)  Dry-Season Water Table (C2)						` '				
	arks (B1)					-	Living Roots		Burrows (C8)	
	it Deposits (B2)			(C3)	<u>.</u>	110100 011			Visible on Aerial Imagery (C9)	
Drift Deposits (B3)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)									• • • •	
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils	X Geomorph	nic Position (D2)	
	osits (B5)			(C6)			_	FAC-Neut	ral Test (D5)	
	on Visible on Aeria		· · ·		ck Surfac					
	Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Gauge or Well Data (D9)  Other (Explain in Remarks)									
Field Obser	•	,		Other (L	.хріант ін	Remarks	)	1		
Surface Wat		Yes	No	Χ	Depth (i	nches):				
Water Table		Yes	No	X	Depth (i			Indi	cators of Wetland	
Saturation P		Yes	No	X	Depth (i				drology Present? N	
(includes ca	pillary fringe)									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks:										
i terriarită.										
The area is	s at a higher elev	ation tha	n the adjacent we	etland to	the east.					

Project/Site: Bellevue Bridge	City/	County:	Mills Cou	inty Samp	ling Date:	9/06/2018	
Applicant/Owner: Metropolitan Area Planning Agen		State:	low		ing Point:	S-24	
Investigator(s): KMU ATB	,	Sect	tion, Townsh		_	BN, R44W	
Landform (hillslope, terrace, etc.): Ditch		Local relief	(concave,	convex, none):	Concave	Slope (%): 0-3	
Subregion (LRR): M (Central Feed Grains & Liveston	ock) Lat:	41.141549	5431185 I	ong: -95.8704	1902090989	Datum: NAD 83	
Soil Map Unit Name: Vore silty clay loam, 0 to 2 percer	nt slopes		NWI	classification:		None	
Are climatic/hydrologic conditions on the site typical for	or this time	of the year?	Υ (	If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrol	logy	significantly	disturbed?	Are "Normal Cire	cumstances" p	resent? Yes	
Are Vegetation , Soil , or Hydro	logy	naturally pro	blematic?	(If needed, exp	lain answers i	n Remarks.)	
SUMMARY OF FINDINGS - Attach site map sho	owing samp	ling point lo	cations, tra	nsects, important	t features, etc	<b>).</b>	
Hydrophytic Vegetation Present? Y							
Hydric Soil Present? Y		Is the Sampled Area Within a Wetland?					
Indicators of Wetland Hydrology Present? Y	If yes, optional wetland site ID: Wetland 24						
Remarks: (Explain alternative procedures here or in a	separate re	eport.)		-			
Wetland 24 is a PEMA/PEMC wetland located in a floolocation of the sample point.	oded ditch v	with OBL veg	etation. The	ere is a CMP culv	ert that drain	s into the ditch at the	
VEGETATION Use scientific names of plan	ts.						
	Absolute	Dominant	Indicator	Dominance T	est Worksho	et	
<u>Tree Stratum</u> (Plot size: )	% Cover	Species	Status	Number of Domi	nant Species		
1				that are OBL, FA	•	3 (A)	
2				Total Number of	Dominant		
3				Species Across	all Strata:	3 (B)	
4				Percent of Domin			
5				that are OBL, FA	CW, or FAC:	100.00% (A/B)	
	0	= Total Cover	•				
Sapling/Shrub Stratum (Plot size:)				Prevalence In			
				Total % Cover		ıltiply by:	
2				OBL species	11x1		
3				FACW species FAC species	s <u>5</u> x 2 24 x 3		
5				FACU species			
	0	= Total Cover		UPL species	$\frac{0}{0}$ x 5		
Herb Stratum (Plot size: )		10101 00101		Column Totals			
1 Polygonum coccineum	15	Υ	FAC	Prevalence Inc		2.51	
2 Echinodorus berteroi	10	<u> </u>	OBL	1 Tovalence in	ucx – b//\	2.01	
3 Apocynum cannabinum	9	<u> </u>	FAC	Hydrophytic \	Vegetation I	ndicators:	
4 Desmanthus illinoensis	5	N	FACU		-	phytic Vegetation	
5 Dichanthelium scoparium	5	N	FACW	X 2 - Domina	-	-	
6 Typha sp.	1	N	OBL	X 3 - Prevale	ence Index is	3.0 <sup>1</sup>	
7				4 - Morpho	logical Adapta	ations <sup>1</sup> (provide	
8						rks or on a separate	
9				sheet)			
10					ic Hydrophytic	Vegetation <sup>1</sup>	
	45	= Total Cover	=	(Explain)			
Woody Vine Stratum (Plot size:)						etland hydrology must	
1						ed or problematic.	
2		<del></del>		Hydrophy Vegetatio			
	0	= Total Cover		Present?	 Y		
Remarks: (Include photo numbers here or on a separa	ate sheet.)			1		_	
	,						
				a			
The area has approximately 55 percent open water. T	ne <i>Desman</i>	tnus Illinoens	is is dead i	n the standing wa	ater.		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abser	nce of indicators.)
Depth	<u>Matrix</u>		Rec	dox Featı	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
								+
		<u> </u>		<u> </u>				<u> </u>
				<u> </u>				
		l		l!				
<sup>1</sup> Type: C = (	Concentration. D :	= Depleti	on. RM = Reduce	ed Matrix	. MS = N	lasked S	and Grains. <sup>2</sup> Location:	PL = Pore Lining, M = Matrix
Hydric Soil		200.00			.,			Dlematic Hydric Soils <sup>3</sup> :
-	tosol (A1)		San	ndy Gleye	ed Matrix	(S4)	Coast Prairie R	_
	tic Epipedon (A2)			idy Redo		. ( )	Dark Surface (S	
	ck Histic (A3)			pped Ma			Iron-Manganes	•
	lrogen Sulfide (A	1)		my Muck				ark Surface (TF12)
	atified Layers (A5)			my Gley	-		Other (Explain i	
	n Muck (A10)	,		oleted Ma				
	leted Below Dark	ς Surfacε		lox Dark				
	ck Dark Surface (		` ′	oleted Da		` '	<sup>3</sup> Indicators of hyd	drophytic vegetation and wetland
— Sar	ndy Mucky Minera	ıl (S1)		dox Depre				be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	<u> </u>	•		,	, 0,	problematic.
Postrictive	Layer (if observe	od).				l		
Type:	Layer (II Observ	suj.					Hydric Soil Prese	ent? Y
Depth (inche	oc).				•		Hydric con i 1000	
,	=5). 				• 			
Remarks:								
Soils are a	esumed hydric b	ased on	the presence of h	wdrophy	tic vegeta	ation and	l wetland hydrology.	
00110 410 5	assumou myana	3504 51.	110 processes s	yurop.i,	lio vogo.	auon and	Wolland Hydrology.	
HYDROLO								
Wetland Hy	drology Indicate	rs:	<del></del>	_	_	_		
Primary Indi	cators (minimum	of one is	required; check a	all that a	pply)		Secondary In	dicators (minimum of two required)
X Surface	Water (A1)		<del>_</del> :	Aquatic	Fauna (B	13)		e Soil Cracks (B6)
	iter Table (A2)		X	True Aqu	uatic Plar	nts (B14)	Drainag	ge Patterns (B10)
Saturation	on (A3)		_	Hydroge	n Sulfide	Odor (C		ason Water Table (C2)
	Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8)							` ,
	Sediment Deposits (B2) (C3) Saturation Visible on Aerial Imagery (C9)							
	Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)							
	Algal Mat or Crust (B4)  Recent Iron Reduction in Tilled Soils  X Geomorphic Position (D2)							
	osits (B5)			(C6)		:==\	χ FAC-N	eutral Test (D5)
	on Visible on Aeria		· · · · · · · · · · · · · · · · · · ·	-	ck Surfac			
	Vegetated Conca		ce (R8)	_	or Well Da		<b>.</b>	
	tained Leaves (B9	)		Otner (=	xplain in	Remarks	)	
Field Obser			··· NI=		5 - 1 - /:		40	
Surface Wat		Yes	X No		Depth (i		10	dississ of Metland
Water Table Saturation P		Yes	No No		Depth (i			dicators of Wetland Hydrology Present?
	resent? pillary fringe)	Yes	INU		Depth (i	ncries).	<del></del>   '	lydrology Present? Y
				" - s riel	·	·laua	'·····································	
Describe Ne	corded Data (Sire	am gau	ge, monitoring we	II, aeriai	pnotos, <sub>l</sub>	previous	inspections), if available	
Remarks:								
Memarke.								
The ditch	was filled with wa	ter at the	time of the wetla	and delin	eation. C	bligate s	species, including <i>Echino</i>	dorus berteroi, were present.

## APPENDIX C: PHOTOGRAPHIC LOG



**Photograph 1.** View south toward sample point S-1, the upland outpoint for Wetland 2, located on slope leading up to East Mission Avenue. This area is dominated by *Poa pratensis* and *Setaria pumila*.



**Photograph 2a.** View west toward sample point S-2 and Wetland 2, a PEMA/PEMC wetland located between a soccer field and East Mission Avenue. Drainage swales within the wetland contained standing water; dominants included *Cyperus esculentus* and *Persicaria maculosa*. Areas above the swales were dominated by *Phalaris arundinacea*.



**Photograph 2b.** View northwest toward Wetland 2, overlooking the ditch/drainage swale. The ditch drains into a culvert under 15<sup>th</sup> Street and ultimately leading to the Missouri River.



**Photograph 3.** View west toward sample point S-3 and Wetland 3, a PEMA/PEMC wetland dominated by *Phalaris arundinacea* and *Persicaria maculosa*. Standing water was present throughout much of the wetland.



**Photograph 4.** View west toward sample point S-4, the upland outpoint for Wetland 3, located above the wetland. This area is dominated by *Sorghastrum nutans*, *Schedonorus arundinaceus*, and *Poa pratensis*.



**Photograph 5a.** View west toward Wetland 5, a PEMA/PEMC wetland located in a drainage ditch leading to the Missouri River. The wetland is dominated by *Echinochloa crus-galli* and *Cyperus esculentus*. The surrounding area was recently inundated from high river levels, but waters had since receded. At the time of the site visit, standing water remained only within the ditch containing the wetland. The area surrounding the wetland had been tilled.



**Photograph 5b.** View northeast toward the drainage ditch associated with Wetland 5. This portion of the ditch was not delineated due to being outside the ESA; however, Wetland 5 appears to continue outside the ESA along the drainage ditch until it enters a culvert under River Drive and then drains into the Missouri River.



**Photograph 6.** View northwest toward sample point S-6, the upland outpoint for Wetlands 7, 8, and 9. This area is dominated by *Poa pratensis* and *Convolvulus arvensis*.



**Photograph 7.** View north toward sample point S-7, Channel 7, and Wetland 7. Wetland 7 is a PEMA/PEMC wetland located along the fringes of Channel 7, which is an intermittent tributary ditch leading to the Missouri River. The wetland is dominated *Phalaris arundinacea* and *Apocynum cannabinum*. The channel is the outlet from the drainage ditches on the west side of 15<sup>th</sup> Street, and also from the pond and the parking lot at American Heroes Park.



**Photograph 8.** View south toward sample point S-8 and Wetland 8, a PEMA/PEMC wetland located in a floodplain depression. Dominant species include *Fraxinus pennsylvanica, Cornus drummondii, Cyperus esculentus*, and *Phalaris arundinacea*.



**Photograph 9.** View north toward sample point S-9 and Wetland 9, a PFOA wetland located in the riparian corridor along the west bank of the Missouri River. Dominant species included *Cornus alternifoilia*, *Morus alba*, *Populus deltoides*, *Fraxinus pennsylvanica*, and *Teucrium canadense*.



**Photograph 10.** View east toward sample point S-10, the upland outpoint for Wetland 11. This area is dominated by *Setaria viridis*. The Missouri River (Channel 11) is present in the background.



**Photograph 11.** View west toward sample point S-11 and Wetland 11, a PEMA/PEMC wetland located under the Bellevue Bridge along the west bank of the Missouri River (Channel 11). Dominant species are *Populus deltoides, Cyperus esculentus, Panicum dichotomiflorum,* and *Persicaria lapathifolia*.



**Photograph 12.** View northwest toward sample point S-12 and Wetland 12, a PFOA wetland located in the riparian corridor along the east bank of the Missouri River. Dominant species are *Acer saccharinum*, *Morus alba*, and *Phalaris arundinacea*.



**Photograph 13.** View west toward sample point S-13 and Wetland 13, a PFOA wetland located in the riparian corridor along the east bank of the Missouri River. There is evidence of overland flow through the area, but no channel or erosional features. Dominant species are *Morus alba, Populus deltoides,* and *Phalaris arundinacea*.



**Photograph 14.** View west toward sample point S-14 and Wetland 14, a PEMA/PEMC wetland located in the floodplain of the Missouri River. Dominant species are *Echinochloa crus-galli* and *Panicum dichotomiflorum*.



**Photograph 15.** View north toward sample point S-15 and Wetland 15, a farmed PEMA/PEMC wetland that appears to have been planted in soybeans earlier in the year. The area has since been colonized by weedy annuals, including *Amaranthus tuberculatus* and *Xanthium strumarium*.



**Photograph 16.** View northeast toward sample point S-16, the upland outpoint for Wetlands 12, 13, 14, and 15. The point is located on the riverside slope of the levee and is dominated by *Setaria faberi* and *Sorghastrum nutans*.



**Photograph 17a.** View northeast toward the edge of Wetland 17, a PFOA wetland located on the south side of H10 and the Bellevue Bridge embankment. Dominant species are *Populus deltoides*, *Salix amygdaloides*, *Salix interior*, *Cornus drummondii*, and *Phalaris arundinacea*.



**Photograph 17b.** View northeast toward sample point S-17 and the center of Wetland 17. Much of the wetland was inundated during the site visit.



**Photograph 18a.** View north toward Wetland 18, a PSSA wetland located in the ditch between County Road H10 and a gravel levee access road. Dominant species are *Cornus drummondii, Morus alba, Phalaris arundinacea*, and *Solidago gigantea*.



**Photograph 18b.** View northwest toward sample point S-18 and Wetland 18. Standing water was present in the bottom of the ditch. Most herbaceous vegetation was restricted to the fringes of the water.



**Photograph 19.** View southwest toward sample point S-19, the upland outpoint for Wetlands 20, 21 and 22, located on a flat area that is at a higher elevation than the adjacent wetlands. This area is dominated by *Poa pratensis* and *Cornus drummondii*.



**Photograph 20.** View southeast toward sample point S-20 and Wetland 20. This PFOA wetland is dominated by *Morus alba, Populus deltoides, Cornus drummondii, Phalaris arundinacea, Solidago canadensis* and *Toxicodendron radicans*.



**Photograph 21.** View north toward sample point S-21 and Wetland 21, a PSSA wetland located in the ditch on the north side of County Road H10. Dominant species include *Morus alba, Cornus drummondii, Salix interior, Phalaris arundinacea, Equisetum arvense,* and *Lemna minor*.



**Photograph 22.** View east toward sample point S-22 and Wetland 22, a PEMA/PEMC wetland located between an agricultural field on the north and County Road H10 on the south. Dominant species include *Phalaris arundinacea, Polygonum coccineum,* and *Cornus drummondii*.

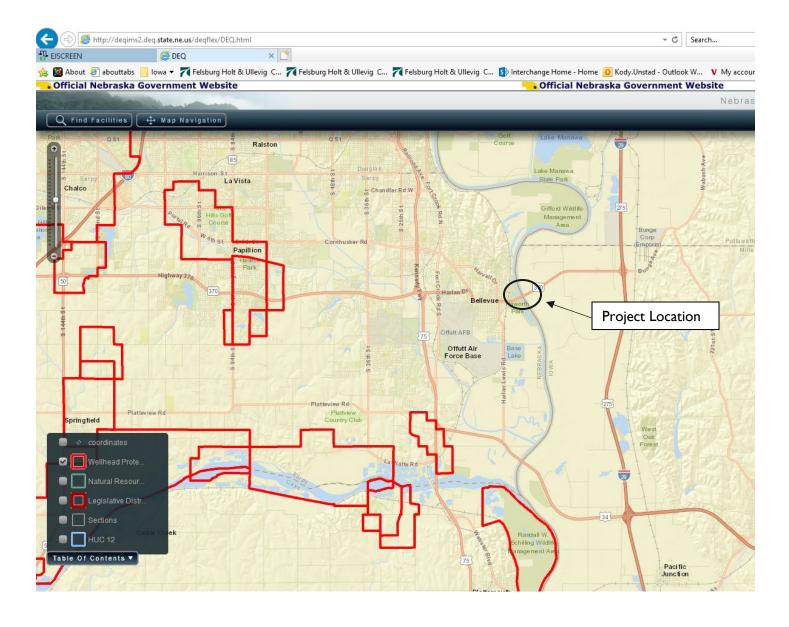


**Photograph 23.** View northeast toward sample point S-23, the upland outpoint for Wetland 24. This area is dominated by *Setaria viridis*.



**Photograph 24.** View southwest toward sample point S-24 and Wetland 24, a PEMA/PEMC wetland located in the ditch on the south side of County Road H10. Dominant species include *Polygonum coccineum*, *Echinodorus berteroi*, and *Apocynum cannabinum*.

### Wellhead Protection Areas





#### **MEMORANDUM**

TO: Metropolitan Area Planning Agency

FROM: Adam Behmer, Environmental Scientist, FHU

**DATE:** October 23, 2018

**SUBJECT:** Hazardous Materials Search

Project Name: Bellevue Bridge Alternatives Study

Project No: MAPA-5002(3)

Control No: 22755

FHU Project No.: 118015-01

Adam Behmer, an Environmental Scientist with Felsburg Holt & Ullevig (FHU), conducted a site visit and desktop Hazardous Materials Search as part of the environmental review and planning effort for the Bellevue Bridge Alternatives Study. A site visit was completed on September 6, 2018. The Bellevue Bridge spans the Missouri River linking the City of Bellevue in Sarpy County, Nebraska with western Mills County, lowa (Figure 1). The alternatives study involves an inventory of existing conditions of the bridge and its uses, and analysis of alternative actions that could be taken as the bridge ages; including preservation and maintenance, bridge closure, or bridge reconstruction. The Hazardous Materials Search environmental study area within Nebraska is at the edge of a fully developed urban corridor lined with residential neighborhoods, commercial businesses, and recreational parks. Within lowa, the Hazardous Materials Search environmental study area is rural, consisting of fields of agricultural row crops.

**Methodology.** The methodologies used to identify the presence of regulated Hazardous Materials sites within the project area included the following steps:

- A site reconnaissance for existing potential hazardous materials concerns
- Review Nebraska Department of Environmental Quality (NDEQ) records
- Environmental Protection Agency (EPA)-Facility Registry System (FRS),
- Review State Fire Marshall (SFM) records
- Review other readily available regulatory records from local, state, and federal agency records for properties within the project area.

The results of the NDEQ IMS, EPA-FRS, and SFM review are listed in **Table 1**. The table includes facilities listed in regulatory databases related to hazardous substance and/or petroleum product use, storage, or transfers. These types of sites may include, but are not limited to, underground storage tanks (UST), leaking underground storage tank (LUST), Petroleum Release Remediation (PRR), Release Assessment (RA), Resource Conservation and Recovery Act (RCRA) sites with reported violations, and Tier 2 Chemical Reporting/Superfund Amendments and Reauthorization Act (SARA) Title III sites (TL3). These types of sites were included in **Table 1** if they are located adjoining to and/or within 0.1 mile of the project footprint. National Priority List or Superfund (SF) sites were identified and included if they were located adjoining to and/or within 1 mile of the project footprint.

**Environmental Settings.** The project is located within the Missouri River floodplain, with portions of the project being located in between the Missouri River levee system. Surface runoff is generally directed toward the Missouri River. Nebraska Department of Natural Resources (NDNR) files for registered wells within the project vicinity indicate that groundwater static water levels vary between 11 feet below ground surface (bgs) and 20 feet bgs (NDNR, 2018). Based on the general topographic slope of the area and groundwater static levels, groundwater flow would generally be toward the Missouri River. Regional geology is primarily Pennsylvanian-aged sandstone, shale, and limestone from the Kansas City group covered by unconsolidated glacial till (USGS, 2018).

**Site Observations.** During the site visit, it was observed that the bridge substructure contains painted steel I-beams as support structures. The project bridge was constructed in 1952 and reconstructed in 2004. Because of its construction date, lead-based materials may be present. Therefore, the bridge itself would have the potential to impact the proposed project construction and materials management.

Pole- and pad-mounted electrical transformers were observed throughout the study area. Prior to 1979, polychlorinated biphenyl (PCB) materials were used to manufacture electrical transformers. They have since been banned due to their environmental toxicity. The United States Environmental Protection Agency (USEPA) defines PCB equipment as containing greater than 500 parts per million (ppm) PCBs; "PCB contaminated equipment" as containing 50 to 500 ppm PCBs; and "non-PCB equipment" as containing less than 50 ppm PCBs. Any electrical equipment with no label or unknown concentration is assumed to be "PCB contaminated equipment" per EPA regulation and should be managed accordingly. No indication of leaks or spills, such as stressed vegetation or areas devoid of vegetation, were visible in the surrounding area.

**Regulatory Database Review.** The regulatory database review identified three sites with the potential for contamination that could cause a risk to human health and safety (**Table 1**; **Figure 2**). All three sites were identified as being under NDEQ's LUST program and two sites were identified as having SF status.

Table 1. Identified Sites within the Hazardous Materials Search Area

Facility	Address <sup>1</sup>	Regulator Facility Status	Relative Distance and Direction from the Project		
Bellevue Wastewater Treatment Plant NDEQ IIS #42197	1001 E. Mission Avenue	LUST,	10 feet north of Mission Ave; up-gradient		
Bellevue Public Schools Transportation NDEQ IIS #42047	104 E. 34 <sup>th</sup> Avenue	LUST, Inactive; PRR RCRA, Activ	0.9 miles southwest; down-gradient		
Offutt Air Force Base NDEQ IIS #58390	106 Peacekeeper	SF, Inactive, and Active; RCRA, Inactive and Inactive; RA, Inactive and Active; LUST, Inactive		1.25 miles south; down-gradient	
Notes:		4	RCRA = Resource Cor	servation and	
1 Address = Bellevue, NE		Recovery Act			
2 LUST = Leaking Underground Storage Tank		5	SF = Resource Conservation and Recovery		
4 PRR = Resource Conservation and Recovery Act			Act		

Discussion and Findings. This Hazardous Materials Search memo is a cursory review of existing conditions and publicly available information and is limited in its scope. However, it is unknown where additional right-of-way (ROW) would be necessary. The property acquisition process and NEPA environmental review process may require additional assessments and field investigations based on the proposed project description and associated project activities, in conjunction with the information identified during this cursory review. Based on the site visit, regulatory program information (identified sites), local topography, groundwater flow direction and depth, a more detailed review should be made during the planning and design process in compliance with NDOT's Hazardous Materials Review guidance. The review findings would then be used to identify, if necessary, avoidance options, when possible, and, to assist with the development of materials management or mitigation measures.

Figure 1. Topographic Vicinity Map

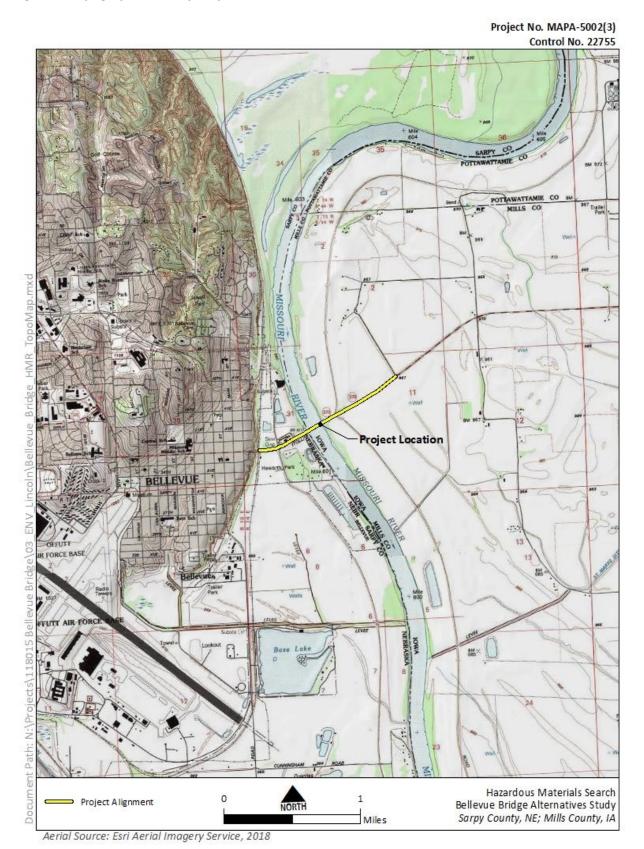
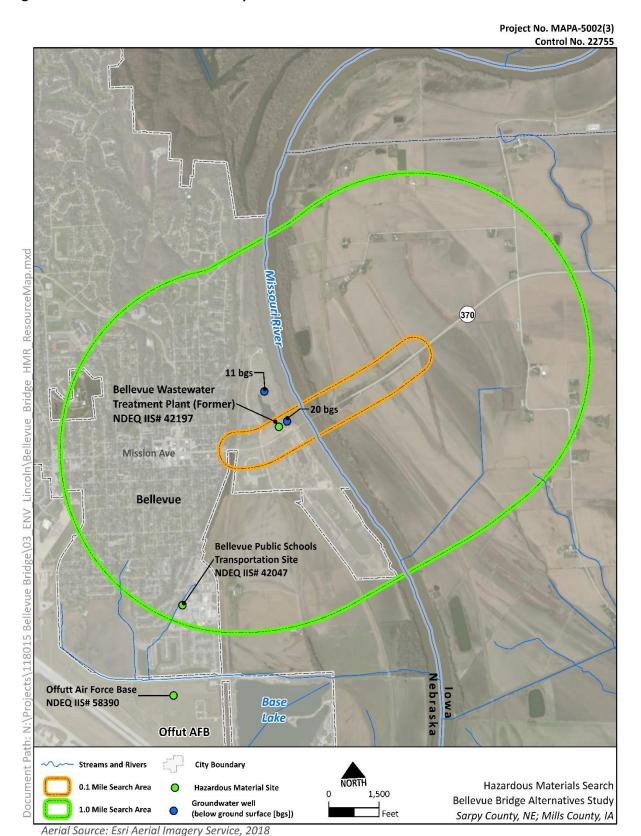


Figure 2. Hazardous Materials Site Map





**Photograph 1**. View southwest toward a typical residence near the western extent of the environmental study area. Houses in the area appear to be 40-50 years old.



**Photograph 2**. View north toward American Heroes Park near the location of the former Bellevue Waste Water Treatment Plant. South of this park is Haworth Park, which consists of baseball fields, marina, and camp sites.



**Photograph 3**. View southeast toward the Bellevue Bridge. Bellevue Bridge is a continuous truss bridge over the Missouri River connecting Mills County, Iowa and Sarpy County, Nebraska near the city of Bellevue, Nebraska.



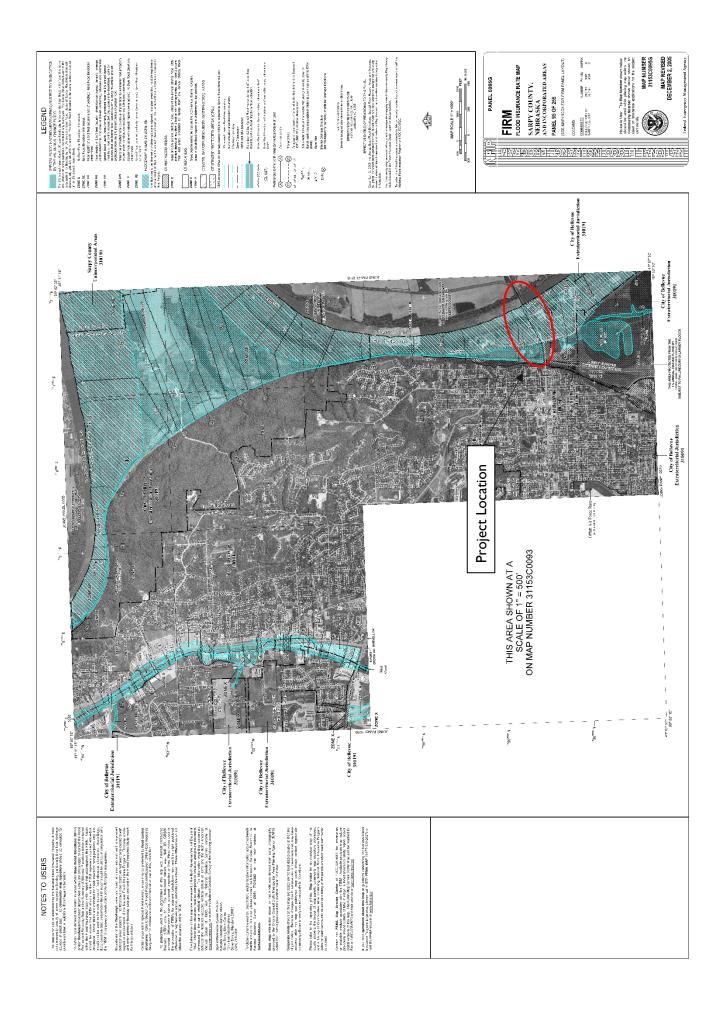
**Photograph 4.** View toward the bridge support substructure, which are painted. Paint on the materials used during the time of the bridge's construction may have contained lead-based materials. A lead inspection may be needed if paint removal or disposal is necessary.

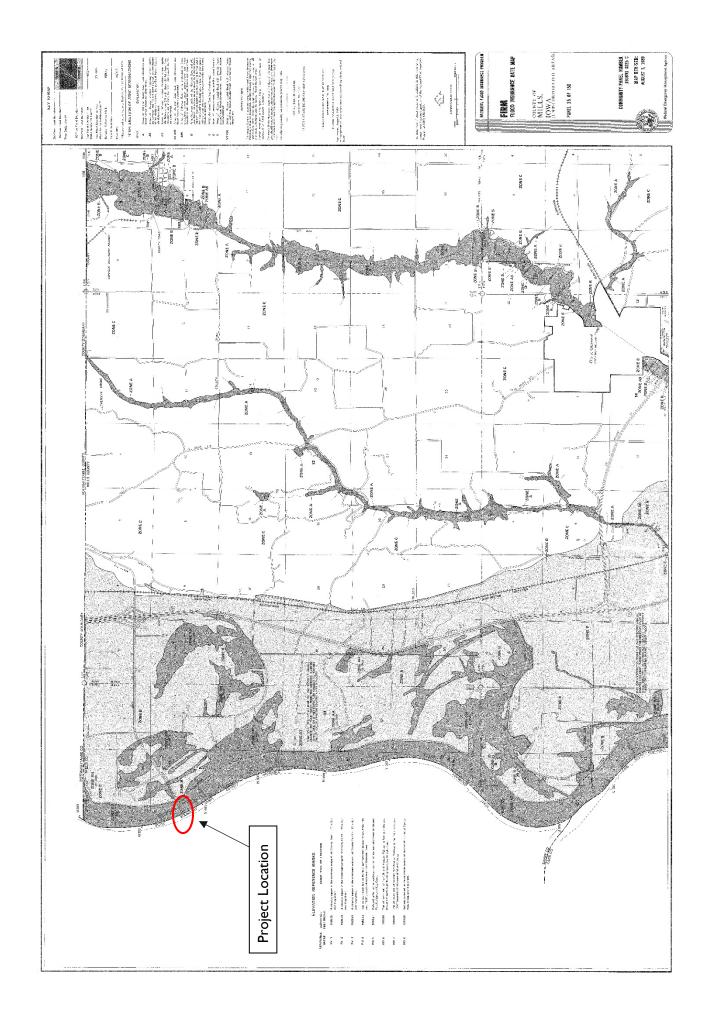


**Photograph 5**. View north toward a petroleum pipeline marker located north of Highway 370, in Iowa. Several utility markers such as this are present within the study area.



**Photograph 6**. View southeast toward row crop agricultural fields south of Highway 370, in Iowa. The Iowa side of the environmental study area is dominated by agricultural fields that contain wetlands.







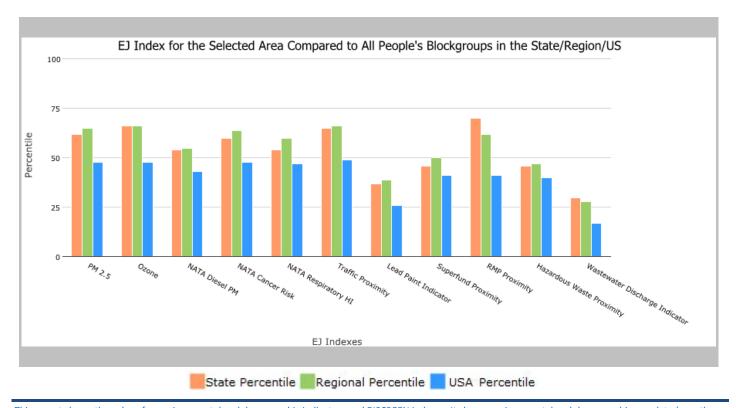
## **EJSCREEN Report (Version 2018)**



#### 1 mile Ring around the Area, NEBRASKA, EPA Region 7

Approximate Population: 7,116
Input Area (sq. miles): 5.34
Bellevue Bridge

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile		
EJ Indexes					
EJ Index for PM2.5	62	65	48		
EJ Index for Ozone	66	66	48		
EJ Index for NATA* Diesel PM	54	55	43		
EJ Index for NATA* Air Toxics Cancer Risk	60	64	48		
EJ Index for NATA* Respiratory Hazard Index	54	60	47		
EJ Index for Traffic Proximity and Volume	65	66	49		
EJ Index for Lead Paint Indicator	37	39	26		
EJ Index for Superfund Proximity	46	50	41		
EJ Index for RMP Proximity	70	62	41		
EJ Index for Hazardous Waste Proximity	46	47	40		
EJ Index for Wastewater Discharge Indicator	30	28	17		



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

September 10, 20 1/3

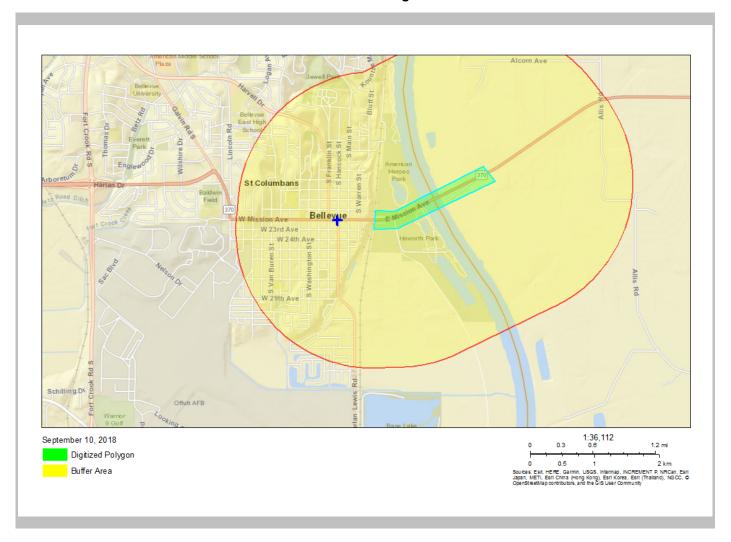


# **EJSCREEN Report (Version 2018)**



1 mile Ring around the Area, NEBRASKA, EPA Region 7

Approximate Population: 7,116
Input Area (sq. miles): 5.34
Bellevue Bridge



Sites reporting to EPA			
Superfund NPL	0		
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0		

September 10, 20 2/3



## **EJSCREEN Report (Version 2018)**



1 mile Ring around the Area, NEBRASKA, EPA Region 7

Approximate Population: 7,116 Input Area (sq. miles): 5.34 Bellevue Bridge

Selected Variables		State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)		8.37	79	9.45	34	9.53	40
Ozone (ppb)		41.8	11	42.8	22	42.5	35
NATA* Diesel PM (µg/m³)		0.759	49	0.78	50-60th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)		31	68	38	<50th	40	<50th
NATA* Respiratory Hazard Index		1.2	70	1.5	50-60th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	19	130	33	490	31	600	25
Lead Paint Indicator (% Pre-1960 Housing)	0.49	0.37	63	0.35	69	0.29	75
Superfund Proximity (site count/km distance)		0.12	68	0.091	59	0.12	54
RMP Proximity (facility count/km distance)		1.5	16	0.92	34	0.72	43
Hazardous Waste Proximity (facility count/km distance)		0.6	54	0.82	52	4.3	44
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)		0.53	64	2.4	65	30	72
Demographic Indicators							
Demographic Index	28%	25%	67	26%	66	36%	45
Minority Population	17%	20%	61	19%	64	38%	35
Low Income Population	38%	30%	69	32%	65	34%	62
Linguistically Isolated Population		3%	63	2%	71	4%	49
Population With Less Than High School Education		9%	58	10%	51	13%	42
Population Under 5 years of age		7%	68	6%	74	6%	75
Population over 64 years of age		14%	35	15%	27	14%	34

<sup>\*</sup> The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

September 10, 20 3/3