WETLAND DELINEATION TECHNICAL REPORT

FOR THE

I-25 (US 36 to 104th Avenue) Environmental Assessment





Table of Contents

			Page						
1.0	Project Description1								
2.0	Previous Studies								
3.0	Applicable Statutes and Regulations4								
	3.1	Clean V	Vater Act4						
	3.2	Executi	ve Order 119904						
4.0	Metho	ds	4						
5.0	Previo	ously De	lineated Wetlands5						
6.0	Newly	Deline	ated Wetlands						
	6.1	Wetlan	d 21180-00113						
		6.1.1	Wetland 21180-001: Vegetation						
		6.1.2	Wetland 21180-001: Soils						
		6.1.3	Wetland 21180-001: Hydrology						
	6.2	Wetlan	d 21180-00213						
		6.2.1	Wetland 21180-002: Vegetation						
		6.2.2	Wetland 21180-002: Soils14						
		6.2.3	Wetland 21180-002: Hydrology14						
	6.3	Wetlan	d 21180-003						
		6.3.1	Wetland 21180-003: Vegetation14						
		6.3.2	Wetland 21180-003: Soils						
		6.3.3	Wetland 2/180-003: Hydrology15						
	6.4	Wetlan	d 21180-00415						
		6.4.1	Wettand 21180-004: Vegetation15						
		6.4.2	Wettand 21180-004: Soils15						
		6.4.3	Wetland 21180-004 Hydrology15						
	6.5	Wetlan	d 21180-00516						
		6.5.1	Wetland 21180-005: Vegetation16						
		6.5.2	Wetland 21180-005: Soils16						
		6.5.3	Wetland 21180-005 Hydrology16						
7.0	Chang	es to P	revious Delineations						
8.0	Summ	ary							
9.0	Conclu	usions a	nd Next Steps						
10.0	Refere	ences .							



Appendices

Appendix A - Photos Appendix B - Wetland Delineation Forms Appendix C - US Army Corps of Engineers Correspondence

List of Figures

		Page
Figure 1.	Project Vicinity	2
Figure 2.	Project Area	3
Figure 3.	Wetland Index Map	6
Figure 4.	Wetland Map Sheet 1	7
Figure 5.	Wetland Map Sheet 2	8
Figure 6.	Wetland Map Sheet 3	9
Figure 7.	Wetland Map Sheet 4	10
Figure 8.	Wetland Map Sheet 5	11
Figure 9.	Wetland Map Sheet 6	12
Figure 10.	Overall Wetland Impacts Map	20
Figure 11.	Northern Wetland Impacts	21
Figure 12.	Southern Wetland Impacts	22
List of P	Photos 20	

List of Photos

Photo 1.	Previously Delineated Wetlands 777 and 781 - 783	5
Photo 2.	Previously Delineated Wetlands 674 - 677 and 679 - 681	5
Photo 3.	Wetland 21180 001	13
Photo 4.	Soil Redex characteristics in Wetland 21180-001	13
Photo 5.	Wetland 2/180-002	14
Photo 6.	Wetland 21180-003 Complex	15
Photo 7.	Wetland 21180-005	16
Photo 8.	Previously Delineated Wetland that is No Longer a Wetland	17

List of Tables

Table 1.	Wetland Classifications and Descriptions	5
Table 2.	Wetlands Delineated or Verified within the Project Area1	7
Table 3.	Summary of Impacts on Wetland Resources1	8
Table 4.	Mitigation Commitments for Wetland Resources1	8



List of Acronyms and Abbreviations

BMP	best management practice
CatEx	Categorical Exclusion
CDOT	Colorado Department of Transportation
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
FEIS	Final Environmental Impact Statement
FHU	Felsburg Holt & Ullevig
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	geographic Information system
I-25	Interstate 25
NEPA	National Environmental Policy Act
NWI	National Wetland Inventory
PEL	Planning and Environmental Linkages
PEM	Palustrine Emergent
PSS	Palustrine Scrub/Shrub
PUB	Palustrine Unconsolidated Bottom
ROD	Record of Decision
RTD	Regional Transportation District
US 36	United States Highway 36
USACE	United States Army Corps of Engineers
WUS	waters of the U.S.
	A



1.0 Project Description

A wetland delineation evaluation was completed for the Interstate 25 (I-25) North, United States Highway 36 (US 36) to 104th Avenue project. Colorado Department of Transportation (CDOT), in cooperation with the Federal Highway Administration (FHWA), is preparing a template Environmental Assessment (EA) for the I-25 North, US 36 to 104th Avenue project. The Regional Transportation District (RTD) is a cooperating agency.

The I-25 North, US 36 to 104th Avenue project includes improvements to relieve congestion and improve safety on I-25 from US 36 to 104th Avenue in Adams County and the City of Thornton, Colorado (Figure 1 and Figure 2). The project will provide improvements to an approximately 4-mile segment of I-25 between US 36 and 104th Avenue. The current cross section of I-25 between US 36 and 104th Avenue generally includes three generalpurpose lanes and one Express Lane along the inside shoulder, with an auxiliary lane between US 36 and 84th Avenue. The inside shoulder varies in width between 2 and 12 feet, and the outside shoulder varies between 10 and 12 feet. There is a 2-foot inside shoulder and a 2-foot buffer between the Express Lane and the nearest general purpose lane.

The proposed improvements associated with this project are as follows:

- Adding a fourth general-purpose lane in each direction from 84th Avenue to Thornton Parkway, with the northbound general-purpose lane extending to 104th Avenue;
- Constructing continuous acceleration and deceleration lanes between the I-25/84th Avenue interchange and the I-25/Thornton Parkway interchange;
- Widening the inside and outside shoulder to a consistent 12-foot width;

- Accommodating a proposed median transit station and pedestrian bridge for the Thornton Park-n-Ride just south of 88th Avenue; and
- Replacing the 88th Avenue bridge over I-25.

The proposed typical section on I-25 will consist of four 12-foot general-purpose lanes, a 12-foot Express Lane along the inside traveled way, and a 12-foot outside auxiliary lane between each interchange. Additionally, the inside and outside shoulders will be widened to 12 feet and the Express Lane buffer will be extended to 4 feet. A 2-foot concrete barrier will surround the median station to separate the through-lanes from the bus station and bus lanes.

This report describes the wetlands of the project area, including resources delineated through previous surveys (CDOT, FTA, and FHWA, 2010; CDOT and FHWA, 2011a; CDOT and FHWA, 2014a). This report also includes resources identified from federal, state, and local agencies. Lastly, information is included based on site conditions during field surveys conducted on February 14, 2017, and on July 2, 2018. A biological resources report was also completed as a part of this analysis.

2.0 Previous Studies

Several other studies have been completed in the project area. These studies include the North I-25 Final Environmental Impact Statement (EIS) (CDOT, FTA, and FHWA, 2010), I-25/84th Avenue Bridge Reconstruction Project Non-Programmatic Categorical Exclusion (CatEx) (CDOT and FHWA, 2010), and I-25 Managed Lanes Project ROD Re-evaluation (CDOT and FHWA, 2014a).

Appendix C includes a correspondence letter with the United States Army Corps of Engineers (USACE) discussing why this project is being considered separately from the previous studies.



Figure 1. Project Vicinity





Figure 2. Project Area



Source: FHU, 2019





The National Environmental Policy Act (NEPA) requires projects with federal oversight or projects pursuing federal funding assistance to evaluate the environmental consequences of proposed actions. Other federal regulations also require coordination with federal agencies to identify impacts on other sensitive biological resources.

3.1 Clean Water Act

Passed by the United States Congress in 1972, the Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into waters of the U.S. (WUS). Any discharge of dredged or fill materials into a WUS, including wetlands, requires authorization by the USACE pursuant to Section 404 of the CWA. The CWA also protects the removal of wetlands from dredging activities.

A WUS is defined under Section 404 as all traditional navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. This definition does not include wetlands that lack a significant nexus or surface connection to a regulated water, such as a perennial stream.

For regulatory purposes under the CWA, wetlands are defined as:

...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas (EPA, 2018).

More specifically, an area is considered a wetland when three parameters are met: hydrophytic vegetation, hydric soils, and wetland hydrology.

3.2 Executive Order 11990

In addition to CWA requirements, projects with federal funding or oversight must comply with Executive Order (EO) 11990–Protection of Wetlands. EO 11990 directs the lead federal agencies to protect wetlands by avoiding direct or indirect support of construction in wetlands when a practicable alternative is available. Therefore, regardless of CWA jurisdiction, FHWA is responsible for ensuring the avoidance, minimization, and compensatory mitigation of all wetlands within transportation projects having a federal nexus.

4.0 Methods

Felsburg Holt and Ullevig (FHU) staff, including Keith Hildalgo, Neal Goffinet, Brian Fauver, and Haley Stratton, completed the wetland delineation using the latest USAGE delineation methodology. FHU staff used routipe wetland determination forms from the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (USACE, 2010). The manual outlines methods used to determine the presence of wetlands based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. FAU staff used the National Wetland Plant List (USACE, 2016) to determine wetland indicator status within the Great Plains Region for each plant. Hydric soils were field identified based on hydric soil indicators, such as gleving, low chroma colors, mottling, sulfuric odor, and inundation and saturation levels. FHU staff also used a Munsell Soil Color Chart (1998) to determine soil color. Routine wetland determination forms were completed for each wetland community type, and photographs document each representative wetland.

Wetlands that had been delineated for other studies were located within this project area. FHU staff visually inspected these wetlands on February 14, 2017, and again on July 2, 2018, to ensure that there were no changes in wetland characteristics or size from the previous delineation. Because all wetland boundaries were clearly defined, no upland points were collected (Appendix A, Photos).

On February 14, 2017, FHU staff used a Trimble® GeoXH[™] global positioning system with ESRI® ArcPad[™] version 10.0 mobile geographic information system (GIS) to collect wetland boundaries. FHU staff then mapped the data in the office with ESRI® ArcMap[™] GIS v.10.



FHU staff field verified 64 previously delineated wetlands within the corridor on February 14, 2017, and again on July 2, 2018. As shown in **Table 1**, these wetlands included Palustrine Emergent (PEM), Palustrine Unconsolidated Bottom, commonly referred to as a pond (PUB), and Palustrine Scrub/Shrub (PSS). The National Wetland Inventory (NWI) has classified these wetlands similarly (NWI, 2017).

Table 1.Wetland Classificationsand Descriptions

Wetland Classification	Description
PEM	PEM wetlands are located along irrigation and roadway ditches and swales, along edges of detention ponds, and adjacent to perennial and intermittent waterways.
PUB/PAB (commonly referred to as a pond)	PUB or PAB wetlands are ponds or lakes occurring within the corridor.
PSS	PSS wetlands are located close to Niver Creek and contain a more dominant tree and shrub stratum than PEM wetlands.

The field verified wetlands were visually confirmed as having both the same wetland characteristics and the same boundaries as when they were previously delineated. **Photo 1** and **Photo 2** show some of the previously delineated wetlands that were field verified.

For additional details, refer to the following technical documents associated with those previous studies:

- North I-25 EIS Technical Memorandum Wetlands and Other Waters (CDOT, 2008)
- North I-25 EIS Technical Memorandum Addendum Wetlands and Other Waters of the U.S. (CDOT, 2011c)
- North I-25 PEL: Corridor Conditions Report (CDOT, 2014b)

Photo 1. Previously Delineated Wetlands 777 and 781 – 783



Photo 2. Previously Delineated Wetlands 674 – 677 and 679 - 681



6.0 Newly Delineated Wetlands

Five new wetlands were delineated during a field visit on February 14, 2017. **Appendix B** includes these wetland delineation forms.

Figure 3 provides an index map of all previously and newly delineated wetlands. Figure 4 through Figure 9 show both previously delineated wetlands and newly delineated wetlands.



Figure 3. Wetland Index Map



Source: FHU,2019



Figure 4. Wetland Map Sheet 1



Source: FHU, 2019



Figure 5. Wetland Map Sheet 2



Source: FHU, 2019



Figure 6. Wetland Map Sheet 3



Source: FHU, 2019



Figure 7. Wetland Map Sheet 4



Source: FHU, 2019



Figure 8. Wetland Map Sheet 5



Source: FHU, 2019



Figure 9. Wetland Map Sheet 6



Source: FHU,2019



6.1 Wetland 21180-001

FHU staff identified and delineated Wetland 21180-001 in the middle of the project area as shown on **Figure 3**. Wetland conditions include a drainage swale draining into a water quality pond. FHU staff analyzed one sample point and compiled a wetland determination form for Wetland 21180-001. This wetland determination form is described as SP-1 (**Appendix B**). SP-1 showed wetland characteristics.

FHU staff identified that Wetland 21180-001 should be classified as a PEM wetland under the Cowardin classification system (Cowardin et al., 1979).

The total size of Wetland 21180-001 is 0.06 acre. Detailed wetland characteristics are described below.

Photo 3. Wetland 21180-001



6.1.1 Wetland 21180-001: Vegetation

Herbs dominate the vegetation in Wetland 21180-001 at SP-1. The shrub stratum contained sandbar willow (*Salix interior*) (FACW) (5 percent). The herb stratum contained narrowleaf cattail (*Typha angustifolia*) (OBL) (60 percent), broadleaf cattail (*Typha latifolia*) (OBL) (30 percent), and reed canarygrass (*Phalaris arundinacea*) (FACW) (5 percent). SP-1 passed the Dominance Test and the Prevalence Index; therefore, the area contains a predominance of hydrophytic vegetation.

6.1.2 Wetland 21180-001: Soils

FHU staff downloaded a Web Soil Survey showing this area having a soil type of "Samsil-Shingle complex, 3 to 35 percent slopes." During the field survey, FHU staff dug a soil pit at SP-1 to investigate the soil profile. From 0 to 10 inches, the soil profile included a saturated clay layer with two colors in the matrix: 10YR 5/2 (95 percent) and 2.5YR 5/8 (5 percent) as redox features. Deeper than 10 inches, a restrictive layer of rock was present preventing any further soil analysis. According to USACE guidelines, these soil conditions qualify this soil as hydric due to the presence of redox depressions and a depleted matrix (**Appendix B**).

Photo 4. Soil Redox Characteristics in Wetland 21180-001



6.1.3 Wetland 21180-001: Hydrology

Primary hydrologic indicators for SP-1 include saturation (0 to 12 inches within the soil profile) and oxidized rhizospheres on living roots. Secondary indicators include drainage patterns, geomorphic position, and passing the FAC-Neutral Test. Therefore, wetland hydrology is present at Wetland 21180-001.

6.2 Wetland 21180-002

FHU staff identified and delineated Wetland 21180-002 in the middle of the project area as shown on **Figure 3**. This wetland was located on both sides of Niver Creek. FHU staff analyzed one sample point and compiled a wetland determination form for Wetland 21180-002. This wetland determination form is described as SP-2 (**Appendix B**), which showed wetland characteristics.

FHU staff identified that Wetland 21180-002 should be classified as a PEM wetland under the Cowardin classification system (Cowardin et al., 1979).



The total size of Wetland 21180-002 is 0.33 acre. Detailed wetland characteristics are described below.

6.2.1 Wetland 21180-002: Vegetation

Trees, shrubs, and herbs dominate the vegetation in Wetland 21180-002 at SP-2. The tree stratum contained crack willow (*Salix fragilis*) (Not Listed) (4 percent) and Siberian elm (*Ulmus pumila*) (UPL) (3 percent). The shrub stratum contained sandbar willow (FACW) (10 percent). The herb stratum contained broadleaf cattail (OBL) (70 percent), poison hemlock (*Conium maculatum*) (FACW) (9 percent), wild licorice (*Glycyrrhiza lepidota*) (FACU) (1 percent), and common teasel (*Dipsacus fullonum*) (FACU). SP-2 passed the Dominance Test and the Prevalence Index; therefore, the area contains a predominance of hydrophytic vegetation.

6.2.2 Wetland 21180-002: Soils

FHU staff downloaded a Web Soil Survey showing this area having "Samsil-Shingle complex, 3 to 35 percent slopes and Ulm loam, 3 to 5 percent slopes" soil types.

During the field survey, FHU staff dug soil pits at SP-2 to investigate the soil profile. At SP-2, from 0 to 2 inches the soil profile was an organic layer of cattail material. From 2 to 14 inches, the soil profile included a saturated clay toamy sand layer with one color in the matrix: 10 YR 3/2 (100 percent). No restrictive layer was present. According to USACE guidelines, these soil conditions qualify this soil as hydric due to the presence of a depleted matrix (**Appendix B**).

6.2.3 Wetland 21180-002: Hydrology

Primary hydrologic indicators for SP-2 include a high water table, surface water (approximately 14 inches deep), and saturation (2 to 14 inches within the soil profile), sediment deposits, and dry-season water table. Secondary indicators include drainage patterns and geomorphic position. Therefore, wetland hydrology is present at Wetland 21180-002.

Photo 5. Wetland 21180-002



6.3 Wetland 21180-003

FHU staff identified and delineated the Wetland 21180-003 complex in the middle of the project area as shown on Figure 3. Wetland conditions include a drainageway that flows into a water quality pond. FHU staff analyzed one sample point and compiled a wetland determination form for the Wetland 21180-003 complex. This wetland determination form is described as SP-3 (Appendix B). SP-3 showed wetland characteristics.

FHU staff identified that the Wetland 21180-003 complex should be classified as one PEM wetland and one PUB wetland (commonly referred to as a pond) under the Cowardin classification system (Cowardin et al., 1979).

The total size of the Wetland 21180-003 complex is 0.18 acre. Detailed wetland characteristics are described below.

6.3.1 Wetland 21180-003: Vegetation

The only plants found in the Wetland 21180-003 complex were common spike rush (*Eleocharis palustris*) (OBL) (98 percent) and common teasel (FACU) (2 percent). Both of these plant species were in the herb stratum. SP-3 passed the Dominance Test and the Prevalence Index; therefore, the area contains a predominance of hydrophytic vegetation.



6.3.2 Wetland 21180-003: Soils

FHU staff downloaded a Web Soil Survey showing this area having a soil type of "Samsil-Shingle complex, 3 to 35 percent slopes." During the field survey, FHU staff dug soil pits at SP 3 to investigate the soil profile.

At SP 3 from 0 to 2 inches, the soil profile included a moist clay layer with one color in the matrix: 10 YR 3/2. From 2 to 14 inches, the soil profile included a moist clay layer with one color in the matrix: 10 YR 5/4. Deeper than 14 inches, a restrictive layer of soil compaction was present preventing any further soil analysis. The soil profile contained a depleted matrix. This sample indicated a problematic hydric soil with a darker layer on top, suggesting that a possible liner soil layer, likely Bententite, was placed on the site previously.

6.3.3 Wetland 21180-003: Hydrology

Primary hydrologic indicators for SP-3 included water marks. Secondary indicators included drainage patterns and geomorphic position. Therefore, wetland hydrology is present at Wetland 21180-003.

Photo 6. Wetland 21180-003 Complex



6.4 Wetland 21180-004

FHU staff identified and delineated Wetland 21180-004 in the middle of the project area as shown on **Figure 3**. This wetland was on either side of a man-made drainage. FHU staff analyzed one sample point and compiled a wetland determination form for Wetland 21180-004. This wetland determination form is described as SP-4 (**Appendix B**), which showed wetland characteristics.

FHU staff identified that Wetland 21180-004 should be classified as a PSS wetland under the Cowardin classification system (Cowardin et al., 1979).

The total size of Wetland 21180-004 is 0.05 acre. Detailed wetland characteristics are described below.

6.4.1 Wetland 21180-004: Vegetation

Trees, shrubs, and herbs dominate the vegetation in Wetland 21180-004 at SP-4. The tree stratum contained Siberian elm (UPL) (7 percent) and Russian olive (*Elaeangnus angustifolia*) (Not Listed) (3 percent). The shrub stratum contained crack willow (Not Listed) (20 percent). The herb stratum contained common teasel (FACU) (40 percent), poison hemlock (FACW) (20 percent), narrowleaf cattail (OBL) (5 percent), and common spikerush (OBL) (5 percent). SP-4 passed the Prevalence Index; therefore, the area did contain a predominance of hydrophytic vegetation.

6.4.2 Wetland 21180-004: Soils

FHU staff downloaded a Web Soil Survey showing this area having a soil type of "Ulm loam 3 to 5 percent slopes."

During the field survey, FHU staff dug soil pits at SP-4 to investigate the soil profile. At SP-4, from 0 to 8 inches, the soil profile was a saturated loamy clay layer with one color in the matrix: 10 YR 3/1 (100 percent). A restrictive layer of riprap was present below 8 inches. According to USACE guidelines, these soil conditions qualify this soil as hydric due to the presence of a depleted matrix (**Appendix B**).

6.4.3 Wetland 21180-004 Hydrology

Primary hydrologic indicators for SP-4 include high water table, sediment deposits, and drift deposits. Secondary indicators include drainage patterns. Therefore, wetland hydrology is present at Wetland 21180-004.



6.5 Wetland 21180-005

FHU staff identified and delineated Wetland 21180-005 in the middle of the project area as shown on **Figure 3**. This wetland was a water quality drainage site. FHU staff analyzed one sample point and compiled a wetland determination form for Wetland 21180-005. This wetland determination form is described as SP-5 (**Appendix B**), which showed wetland characteristics.

FHU staff identified that Wetland 21180-005 should be classified as a PEM wetland under the Cowardin classification system (Cowardin et al., 1979).

The total size of Wetland 21180-005 is 0.08 acre. Detailed wetland characteristics are described below.

Photo 7. Wetland 21180-005



6.5.1 Wetland 21180-005: Vegetation

Only plants in the herb stratum were present in Wetland 21180-005 at SP-5. This wetland area had been mowed, making plant identification down to the species difficult. The herb stratum contained common spikerush (OBL) (90 percent) and an unidentified cattail species (OBL) (*Typha* ssp.) (10 percent). SP-5 passed the Dominance Test and the Prevalence Index; therefore, the area contains a predominance of hydrophytic vegetation.

6.5.2 Wetland 21180-005: Soils

FHU staff downloaded a Web Soil Survey showing this area having "Ulm loam 3 to 5 percent slopes" soil types.

During the field survey, FHU staff dug a soil pit at SP-5 to investigate the soil profile. At SP-5, from 0 to 18 inches, the soil profile was a clay layer with two colors in the matrix: 10YR 3/2 (95 percent) and 7.5YR 5/8 (5 percent) as redox features. According to USACE guidelines, these soil conditions qualify this soil as hydric due to the presence of redox depressions and a depleted matrix (**Appendix B**).

6.5.3 Wetland 21180-005 Hydrology

Primary hydrologic indicators for SP-5 include surface water and salt crusts. Secondary indicators include drainage patterns and geomorphic position. Therefore, wetland hydrology is present at Wetland 21180-005.

7.0 Changes to Previous Delineations

Only one previously delineated wetland was determined to no longer meet the criteria of a wetland. This previously delineated wetland is located in the northeast guadrant of I-25 and Thornton Parkway. It is a small drainage ditch on the side of the I-25 on-ramp. However, it was observed that most of the wetland had been displaced by a retaining wall on the eastern and southern boundary of the wetland. In addition, a grate drained the wetland located on the northern boundary of the wetland. Additionally, mowing activity occurred before FHU's observation. This wetland was 0.057 acre in size; however, due to the absence of the wetland, it was not included in the total acreage of wetlands within the project area.



Photo 8. Previously Delineated Wetland that is No Longer a Wetland



8.0 Summary

In total, 69 wetlands were found within the study area. Five new wetlands were delineated February 14, 2017, and 64 were from previous delineations, but verified as still intact. **Table 2** summarizes all delineated wetlands within the project area.



Table 2. Wetlands Delineated or Verified within the Project Area

Wetland IDs	Newly or Previously Delineated	Coverdin Classification and	Total Acreage
127, 848, 849, 850, 223, 225, 226, 229, 230, 234, 493, 496, 497, 498, 499, 500, 501, 526, 574, 674, 677, 679, 681, 721, 723, 725, 727, 731, 732, 735, 784, **	Previously Delineated	PEM	1.81
126, 845, 847, 224, 227, 228, 231, 232, 233, 494, 495, 525, 573, 675, 676, 678, 680, 719, 720, 722, 724, 726, 728, 729, 730, 733, 734, 736, 777, 781, 782, 783	Previously Delineated	PSS	2.80
504	Previously Delineated	Open Water (PUB/PAB - commonly referred to as a pond)	1.49
21180-001, 21180-002, 21180-003, 21180-005	Newly Delineated	PEM	0.49
21180-004	Newly Delineated	PSS	0.05

**One previously delineated wetland was determined to no longer have wetland characteristics during visual inspection. This wetland was 0.057 acre in size; however, due to the absence of the wetland, it was not included in the total acreage of wetlands within the project area.

PEM = Palustrine Emergent

PUB/PAB = Palustrine Unconsolidated Bottom, commonly referred to as a pond

PSS = Palustrine Scrub/Shrub.

Table 3 documents the expected impacts for wetland resources associated with the Proposed Action.**Table 3** documents the mitigation commitments for the wetland resources associated with the Proposed Action.



Table 3.Summary of Impacts on Wetland Resources

Context	No Action Alternative	Proposed Action
Wetlands within the project area are associated with water quality ponds, Niver Creek, and roadside swales. There are 69 wetlands, with a total of 6.64 acres, delineated within the project	Permanent Impacts The No Action Alternative would result in no impacts to wetlands or other WUS.	Permanent Impacts The Proposed Action would likely have a permanent impact on approximately 0.4 acre of wetlands within the project area.
area.		<u>Temporary impacts</u> Construction of impervious surfaces has the potential for indirect impacts by increasing runoff, exposing the surrounding vegetation, including wetlands and other WUS, to higher levels of pollutants during construction. Increased runoff may also lead to increased soil ension during construction.

Table 4. Mitigation Commitments for Wetland Resources

Impact	Mitigation Commitment	Responsible Branch	Timing/Phase That Mitigation Will Be Implemented
Direct and/or indirect impacts on wetlands and other Waters of the United States	Impacts on wetlands and jurisdictional open water will be avoided and minimized to the greatest extent possible during final design.	CDOT	Design
Direct and/or indirect impacts on wetlands and other Waters of the United States	Prepare a Clean Water Act Section 404 Permit for CDOT review, approval and submittal to USACE.	CDOT/Contractor	Design
Direct and/or indirect impacts on wetlands and other Waters of the United States	Mitigate for temporary impacts by restoring areas to pre- existing conditions. Depending on approval by the USACE, permanent impacts will be mitigated through onsite mitigation, offsite mitigation, purchase of wetland bank credits, or use of a separate strategy, to both jurisdictional and non-jurisdictional wetlands on a 1:1 basis.	CDOT/Contractor	Design
Direct and/or indirect impacts on wetlands and other Waters of the United States	During construction, BMPs will be used to avoid indirect construction impacts on wetlands. Materials and equipment will be stored a minimum of 50 feet from wetlands, drainages, and ditches that could carry toxic materials into wetlands. Construction fencing and appropriate sediment control BMPs will be used to mark wetland boundaries and sensitive habitats during construction. Sediment and erosion control will be required to be placed during all construction phases and will remain in place until all disturbed areas have reached 70 percent of pre-construction vegetative cover.	Contractor	Construction



9.0 Conclusions and Next **Steps**

Based on the information provided in this report, 69 wetlands are present in the project area.

Based on the current roadway design, the Proposed Action would result in permanent impacts of approximately 0.4 acre of wetlands within the project area.

Figure 10, Figure 11, and Figure 12 show the locations of the wetland impacts.

Before construction, the appropriate documentation will be provided and will include:

- A Wetland Finding Report and FACWet Analysis due to permanent wetland impacts exceeding 0.10 acre;
- A CWA Section 404 Pre-Construction Notification/Permit Request; and
- Native plant seed mix for CDOT right-of-way and appropriate plantings for wetland areas.

PRAFT NOT COOT APPROVIES



Figure 10. Overall Wetland Impacts Map



Source: FHU, 2019



Figure 11. Northern Wetland Impacts



Source: FHU, 2019



Figure 12. Southern Wetland Impacts



Source: FHU, 2019



10.0 References

- Colorado Department of Transportation (CDOT), Federal Transit Administration (FTA), and the Federal Highway Administration (FHWA). 2010. North I-25 Draft Environmental Impact Statement (EIS). October.
- CDOT. 2008. North I-25 EIS Technical Memorandum Wetlands and Other Waters. Prepared by Jacobs October 2008.
- CDOT and FHWA. 2010. I-25/84th Avenue Bridge Reconstruction Project Non-Programmatic Categorical Exclusion (CatEx). June.
- CDOT and FHWA. 2011a. North I-25 Final EIS. August. Prepared by Jacobs & FHU.
- CDOT and FHWA. 2011b. North I-25 EIS Record of Decision (ROD). December. 🧹
- CDOT. 2011c. Wildlife Technical Report Addendum for North I-25 Adams, Boulder, Broomfield, Denver, Larimer, and Weld Counties, Colorado. Prepared by ERO Resources August 2011.
- CDOT and FHWA. 2014a. I-25 Managed Lanes Project ROD Re-evaluation. August.
- CDOT and FHWA. 2014b. North I-25, US 36 to SH 7 Planning and Environmental Linkages (PEL) Study. December.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitat of the United States. FWS/OBS-79/31. DS Fish and Wildlife Service (USFWS). Washington D.C.
- Environmental Protection Agency. 2018. Section 404 of the Clean Water Act. Accessed September 2018 online from <u>https://www.epa.gov/cwa-404/section-404-clean-water-act-how-wetlands-are-defined-and-identified</u>
- Felsburg Holt & Ullevig (FHU). 2019. Graphics, figures, and tables prepared in support of the Environmental Assessment for the I-25 (US 36 to 104th Avenue) Project. June.
- Munsell Soil Color Charts. 1998. Revised Edition. Munsell Color, New Windsor, NY.
- Natural Resources Conservation Service (NRCS). 2017. Web Soil Survey. Accessed February 2017 from: http://websoilsurvey.nrcs.usda.gov/app
- National Wetland Inventory (NWI). 2017. Wetland Mapper V2. Accessed February 2017 from: https://www.fws.gov/wetlands/data/mapper.html
- United States Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains (Version 2.0) ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center. The National Wetland Plant List (USACE 2016)
- USACE. 2016. State of Colorado 2016 Wetland Plant List. The National Wetland Plant List: 2016 Update of Wetland Ratings.
- United States Geological Survey (USGS). 2017. The Hydrography Viewer. Accessed February 2017 from: https://viewer.nationalmap.gov/viewer/nhd.html?p=nhd



Appendix A – Photos

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Appendix B - Wetland Delineation Forms

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WETLAND DETERMINAT	ION DATA FORM - Great Plains Region
Project/Site: US85	City/County: Henderson/Adams Sampling Date: 7/17/18
Applicant/Owner: CDOT	State: Colorado Sampling Point: SP1
Investigator(s): Tamara Keefe and Alex Nelson	Section, Township, Range: 15, 2S, 67W
Landform (hillslope, terrace, etc.): hillslope	Local relief (concave, convex, none): concave Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrigate	edLat:39.88262817 Long:104.8842411 Datum: NAD 83
Soil Map Unit Name: Nunn Ioam	
Are climatic/hydrologic conditions on the site typical for this time of	of the year? Y (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology	significantly disturbed? Are normal circumstances present? Yes
SUMMART OF FINDINGS - Attach site map showing sa	impling point locations, transects, important features, etc.
Hydrophytic Vegetation Present?	
Hydric Soil Present? N	Is the Sampled Area Within a Wetland?
Indicators of Wetland Hydrology Present?N	If yes, optional wetland site ID: <u>Outpoint for Wetland 1</u>
Remarks:	
Point located on the up-slope of a drainage area along US 85 (on-ramp from I-76 to US 85.
	alute Deminante Indicatore Dominance Test Worksheet
Tree Stratum (Plot size:) % C	Cover Species Status Sumbar of Dominant Species
1	that are OBL, FACW, or FAC: 0 (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: 0.00% (A/B)
(0 = Total Cover
Sapling/Shrub Stratum (Plot size:)	Prevalence Index Worksheet
1	Total % Cover of: Multiply by:
2	$\begin{array}{c} \bullet \\ \bullet $
3	
5	
	= Total Cover UPI species 55 x 5 = 275
Herb Stratum (Plot size:	Column totals 55 (A) 275 (B)
1 Bromus tectorum	15 Y LIPL Prevalence Index – $B/A = 5.00$
2 Onopordum acanthium	$\frac{1}{15}$ Y NI
3 Convolvulus arvensis	0 N UPL Hydrophytic Vegetation Indicators:
4	1 - Rapid Test for Hydrophytic Vegetation
5	2 - Dominance Test is >50%
6	3 - Prevalence Index is ≤3.0 ¹
7	4 - Morphological Adaptations ¹ (provide
8	supporting data in Remarks or on a
9	separate sheet)
10	Problematic Hydrophytic Vegetation ¹
$\frac{7}{2}$	<u>'0 = Iotal Cover</u> (Explain)
Woody Vine Stratum (Plot size:) 1	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2	Hydrophytic
(0 = Total Cover Vegetation
% Bare Ground in Herb Stratum	Present? N
Remarks:	

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth <u>Matrix</u>			Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	10YR 5/4	100					silty clay loam	
							compaction and gravel	Restrictive laver
							compaction and graver	Restrictive layer
1								
'Type: C = C	oncentration, D =	Depletior	, RM = Reduced N	latrix, CS	= Covere	ed or Coa	ted Sand Grains. ² Location	on: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators: (App	licable t	o all LRRs, unle	ss other	wise not	ed.)	Indicators for Prob	lematic Hydric Soils ³ :
Hist	tosol (A1)		Sar	ndy Gleye	d Matrix ((S4)	1 cm Muck (A9) (LRR I, J)
Hist	ic Epipedon (A2)		Sar	ndy Redox	k (S5)		Coast Prairie Rec	dox (A16) (LRR F, G, H)
Blac	ck Histic (A3)		Stri	pped Mat	rix (S6)		Dark Surface (S7) (LRR G)
Hyd	Irogen Sulfide (A4)		Loa	my Muck	y Mineral	(F1)	High Plains Depr	essions (F16)
Stra	atified Layers (A5)	(LRR F)	Loa	my Gleye	ed Matrix	(F2)	(LRR A outside	e of MLRA 72 & 73)
1 cr	n Muck (A9) (LRR	F, G, H)	Dep	pleted Ma	trix (F3)		Reduced Vertic (F18)
Dep	leted Below Dark	Surface (A11)Red	lox Dark	Surface (F6)	Red Parent Mate	rial (TF2)
Thio	ck Dark Surface (A	.12)	Dep	pleted Da	rk Surfac	e (F7)	Very Shallow Da	k Surface (TF12)
Sar	ndy Mucky Mineral	(S1)	Rec	dox Depre	essions (F	-8)	Other (Explain in	Remarks)
2.5	cm Mucky Peat or	Peat (S2	!)Hig	h Plains [Depressio	ons (F16)	³ Indicators of hydro	phytic vegetation and wetland
(L	RR G, H)		(N	ILRA 72 8	& 73 of L		hydrology must be	present, unless disturbed or
<u> </u>	m Mucky Peat or I	Peat (S3)	(LRR F)		1	<	р	roblematic.
Restrictive	Layer (if observe	ed):						
Type: C	ompaction and gi	avel			\sim		Hydric Soil Prese	nt? N
Depth (inche	es): 5			C	\mathbf{N}			
Remarks:	Remarks:							
			. (
	DGY		``					
Wetland Hy	drology Indicate	ors:						
Drimony Indi	antore (minimum	of one is	roguined: shock	all that an			Secondary In	diastara (minimum of two required)
Filmary Indi			Tequired, check a	Solt Cru	ot (D11)		Secondary In	Seil Creeke (R6)
	vvaler (AT)				SL (DII) Invortobr	atos (B12	Surface	Vegetated Conceive Surface (B8)
	$\Delta (\Delta 3)$			Hydroge	n Sulfida	Odor (C1) Sparser I) Drainag	Patterns (B10)
Water M	larks (B1)	•		Drv-Sea	son Wate	r Table ((C2) Oxidizer	Rhizospheres on Living
Sedimer	nt Deposits (B2)				Rhizosp	heres on	Living Roots	(C3) (where tilled)
Drift Der	(B3)			Roots ((C3) (whe	ere not til	lled) Cravfish	Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturati	on Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	e (C7)	Geomor	phic Position (D2)
Inundati	on Visible on Aeria	I Imager	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	utral Test (D5)
Water-S	tained Leaves (B9)		-	•		Frost-He	eave Hummocks (D7) (LRR F)
Field Obser	vations:				D			
Surface Wa	ter Present?	Yes	No	<u> </u>	Depth (i	nches):		diantone of Motley d
vvater Table	Present?	Yes	No	<u> </u>	Depth (I	ncnes):	Inc	vicators of wetland
Saturation F	nesent?	res	NO	Χ		ncnes):	^H	
Describe Re	ecorded Data (stre	eam gau	ge, monitoring we	II, aerial p	photos, p	orevious i	nspections), if available:	
Remarks:								
1								

WETLAND DETERMIN	ATION D	ATA FOR	RM - Great	t Plains Ro	egion	
Project/Site: US85	City/Co	ounty: H	lenderson/A	Adams S	Sampling Date:	7/17/18
Applicant/Owner: CDOT		State:	Colora	ado S	ampling Point:	SP2
Investigator(s): Tamara Keefe and Alex Nelson		Secti	ion, Townshi	ip, Range:	16, 23	S, 67W
Landform (hillslope, terrace, etc.): drainage basin	۱	Local relief	(concave, co	onvex, none)	: concave	Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrig	gated La	it: 39.8	8827624	Long:	-104.8843436	Datum: NAD 83
Soil Map Unit Name: Nunn Ioam		-	NWI	classification	n:	PEM
Are climatic/hydrologic conditions on the site typical for this tim	ne of the yea	ır?	Y (I	If no, explain	in Remarks.)	
Are Vegetation, Soil, or Hydrolog	jy s	ignificantly of	disturbed?	Are "norma	al circumstances" pr	esent? Yes
Are Vegetation, Soil X, or Hydrolog	ју <u></u> п	aturally pro	blematic?	(It neeaea	, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	j sampling p	point locati	ions, transe	cts, importa	nt 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, op	ptional wetla	nd site ID:	Wetland 1	
Remarks:	<u> </u>					
Located on the east side of US 85, by the on-ramp from I-70	6 to US 85.			, ()		
A	Ahsolute [Ominant	Indicator	Dominand	e Test Workshee	t
Tree Stratum (Plot size:) 9	% Cover	Species	Status	Number of [Dominant Species	
<i>1</i>			X	that are OBI	L, FACW, or FAC:	3 (A)
2				Total Numb	er of Dominant	
3			₹	Species Acr	ross all Strata:	4 (B)
4			\$ ⁷	Percent of D	Dominant Species	
5		\sim		that are OB	L, FACW, or FAC:	75.00% (A/B)
	0 =T	otal Cover				
Sapling/Shrub Stratum (Plot size:)				Prevalen	ce Index Worksh	eet
1 Populus deltoides	20	Y	FAC	Total % C	over of: Mu	ıltiply by:
2 Salix amygdaloides 🥂 📈	5	Y	FACW	OBL spec	ies <u>30</u> x 1	= 30
3				FACW sp	ecies <u>5</u> x 2	2 = 10
4				FAC spec	ies <u>25</u> x 3	$B = \frac{75}{100}$
5				FACU spe	ecies <u>25</u> x 4	= 100
	25 = 1	otal Cover		UPL spec	$\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$	$\dot{b} = 0$
Herb Stratum (Plot size:)				Column to	otals <u>85</u> (A) <u>215</u> (B)
1 typha latifolia	30	Y	OBL	Prevalence	e Index = B/A =	2.53
2 cirsium arvense	15	Υ	FACU			
3 erigeron canadensis	10	N	FACU	Hydrophy	tic Vegetation I	ndicators:
4 rumex crispus	5	N	FAC	1 - Ra	pid Test for Hydro	phytic Vegetation
5				X 2 - Do	minance Test is >	50%
		<u> </u>		<u>X</u> 3 - Pre	evalence index is s	3.0
7		<u> </u>		4 - Mo	orphological Adap	tations ¹ (provide
8		<u> </u>		suppo	orting data in Rem	arks or on a
9		<u> </u>		separ	ate sheet)	1
10		otal Cover		Proble (Expla	ematic Hydrophyt	ic Vegetation
Woody Vine Stratum (Plot size:)				1, "		· · · · · ·
1				'Indicators pre	of hydric soil and we esent, unless disturbe	tland hydrology must be d or problematic
2				Hydro	ophytic	
	0 = T	otal Cover	,	Vege	tation	
% Bare Ground in Herb Stratum 40				Prese	ent? Y	_
Remarks:				<u>I</u>		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docur	nent the	indicato	or or confirm the absen	ce of indicators.)		
Depth Matrix Redox Features										
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-4	10YR 4/2	100					silty clay loam			
4.12	10VR 2/2	00	10VP 4/6	-	<u> </u>	N/	cilty clay loam			
4-12	101R 3/2	90	101K 4/0	2		IVI	Silly Clay IOam			
12+							compaction	Restrictive layer		
<u> </u>										
¹ Type: $C = C$	oncentration, D =	Depletior	, RM = Reduced M	/latrix, CS	= Covere	ed or Coa	ted Sand Grains. ² Loca	tion: PL = Pore Lining, M = Matrix		
Hydric Soil	Indicators: (App	licable t	o all LRRs, unle	ss other	wise not	ed.)	Indicators for Pro	blematic Hydric Soils ³ :		
Hist	osol (A1)		Sa	ndy Gleye	d Matrix ((S4)	1 cm Muck (A9)) (LRR I, J)		
Hist	ic Epipedon (A2)		Sa	Sandy Redox (S5)			Coast Prairie Redox (A16) (LRR F, G, H)			
Blac	ck Histic (A3)		Str	Stripped Matrix (S6)			Dark Surface (S7) (LRR G)			
Hyd	Irogen Sulfide (A4)	1	Loa	my Muck	y Mineral	(F1)	High Plains De	pressions (F16)		
Stra	atified Layers (A5)	(LRR F)	Loa	amy Gleye	ed Matrix	(F2)	(LRR H outsi	de of MLRA 72 & 73)		
1 cr	n Muck (A9) (LRR	F, G, H)	De	oleted Ma	trix (F3)		Reduced Vertic	(F18)		
Dep	leted Below Dark	Surface (A11) Re	dox Dark	Surface (F6)	Red Parent Ma	terial (TF2)		
Thio	ck Dark Surface (A	.12)	De	oleted Da	rk Surfac	e (F7)	Very Shallow D	ark Surface (TF12)		
Sar	dy Mucky Mineral	(S1)	Re	dox Depre	essions (F	-8)	Other (Explain i	n Remarks)		
2.5	cm Mucky Peat or	Peat (S2	2) Hig	h Plains [Depressio	ons (F16)	³ Indicators of hydr	ophytic vegetation and wetland		
(L	RR G, H)		(N	ILRA 72 8	& 73 of L		hydrology must b	e present, unless disturbed or		
5 c	m Mucky Peat or I	Peat (S3)	(LRR F)				, , ,	problematic.		
	Lavor (if obsorv	od).						-		
Type		eu).					Hudria Sail Bras	ont? V		
Dopth (inch)					\sim		Hydric Soli Fres			
Depth (Inche	es). <u>12</u>									
Remarks:				~ ~						
				\sim						
Due to proximity to the roadway, it is likely that these sols were road fill and too young to present typical hydric indicators.										
HYDROLO	DGY									
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one is	required: check	all that ar	vla		Secondary I	ndicators (minimum of two required)		
V Surface	Water ($\Delta 1$)			Salt Cru	et (B11)		Surfac	e Soil Cracks (B6)		
High Wa	ater Table (A2)		\sim -		Invertebr	ates (R13	Sparse	ly Vegetated Concave Surface (B8)		
X Saturatio	(A3)			-Hydrone	n Sulfide	Odor (C1	I) X Draina	ige Patterns (B10)		
Water M	larks (B1)	•		Drv-Sea	son Wate	er Table ((2) (2) (2) (2) (2)	ed Rhizospheres on Living		
Sedimer	nt Deposits (B2)				l Rhizosp	heres on	Living Root	s (C3) (where tilled)		
Drift Der	posits (B3)			Roots ((C3) (whe	ere not ti	lled) Cravfis	sh Burrows (C8)		
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Satura	tion Visible on Aerial Imagery (C9)		
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	e (C7)	X Geom	orphic Position (D2)		
Inundati	on Visible on Aeria	I Imager	/ (B7)	Other (E	xplain in	Remarks) FAC-N	leutral Test (D5)		
Water-S	tained Leaves (B9)		-			Frost-I	Heave Hummocks (D7) (LRR F)		
Field Obser	vations:									
Surface Wa	ter Present?	Yes	X No		Depth (i	nches):	<u> </u>	ndiantana of Matters I		
vvater Table	Present?	Yes	NO NO	X	Depth (I	ncnes):	'			
Saturation F	riesent?	r es	<u> </u>		Deptn (I	ncnes):	I	nyurology Present? Y		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks:										
Destrict	and an Hard State									
Roadside ru	non collects in the	e area								

WETLAND DETERMINATIO	N DATA FORM - Grea	at Plains Region						
Project/Site: US85 C	ity/County: Henderson/	Adams Sampling Date:	7/17/18					
Applicant/Owner: CDOT	State: Color	ado Sampling Point:	SP3					
Investigator(s): I amara Keefe and Alex Nelson	Section, Towns	hip, Range: 15, 2	2S, 67W					
Landform (hillslope, terrace, etc.): drainge swale	Local relief (concave,	convex, none): concave	Slope (%): 1-3					
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: <u>39.88433116</u>	Long: -104.882478	Datum: NAD 83					
Soil Map Unit Name: Nunn Ioam	NVV		NA					
Are climatic/hydrologic conditions on the site typical for this time of the	he year? Y	(If no, explain in Remarks.)	Vee					
Are Vegetation , Soli , or Hydrology	significantly disturbed?	Are normal circumstances p	vere in Romarka					
			wers in Remarks.)					
SUMMARY OF FINDINGS - Attach site map showing samp	ling point locations, trans	ects, important features, etc.						
Hydrophytic Vegetation Present? N								
Hydric Soil Present? N	Is the Sampled Ar	Is the Sampled Area Within a Wetland? N						
Indicators of Wetland Hydrology Present? Y	If yes, optional wetl	If yes, optional wetland site ID:						
Remarks:								
wet area off roadway (not a wetland)								
VEGETATION Use scientific names of plants.								
Absolu	te Dominant Indicator	Dominance Test Workshe	et					
Tree Stratum (Plot size:) % Cove	er Species Status	Number of Dominant Species	6					
1		that are OBL, FACW, or FAC	: 0 (A)					
2		Total Number of Dominant						
3		Species Across all Strata:	<u>3</u> (B)					
4		Percent of Dominant Species	6					
5		that are OBL, FACW, or FAC	: <u>0.00%</u> (A/B)					
Sapling/Shrub Stratum (Plot size:	= Total Cover	Prevalence Index Works	heet					
	\mathbf{N}	Total % Cover of:	Aultiply by:					
2	▶	OBL species 0 x	1 = 0					
3		FACW species 0 x	2 = 0					
4		FAC species 0 x	3 = 0					
5		FACU species 15 x	4 = 60					
0	= Total Cover	UPL species 60 x	5 = 300					
Herb Stratum (Plot size:)		Column totals 75 (/	A) <u>360</u> (B)					
1 convolvulus arvensis	Y UPI	Prevalence Index = B/A =	4 80					
2 bromus tectorum 20			1.00					
3 erigeron canadensis	Y FACU	Hydrophytic Vegetation	Indicators:					
4		1 - Rapid Test for Hvdr	ophytic Vegetation					
5		2 - Dominance Test is	>50%					
6		3 - Prevalence Index is	≤3.0 ¹					
7		4 - Morphological Ada	ntations ¹ (provide					
8		supporting data in Re	marks or on a					
9		separate sheet)						
10		Problematic Hydrophy	tic Vegetation ¹					
75	= Total Cover	(Explain)						
Woody Vine Stratum (Plot size:) 1		¹ Indicators of hydric soil and w present, unless disturb	etland hydrology must be ed or problematic					
2		Hydrophytic						
0	= Iotal Cover	Vegetation						
% Bare Ground in Herb Stratum								
Remarks:								
Profile Des	cription: (Descr	ibe to th	e depth needed	to docur	nent the	indicato	or or confirm the absenc	e of indicators.)
----------------------------	--------------------------	-----------	-------------------	--------------	--------------------------	------------------	--	--
Depth	Matrix		Redox Features					<u> </u>
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/2	100					silty clay	
								1
			l	<u> </u>	<u> </u>			1
			 	 '	───			_
			L		_			
				T	Γ			T
								1
¹ Type: $C = C$	Concentration D =	Depletion	RM - Reduced N	Aatrix C.S	L Cover	ed or Coa	Leted Sand Grains ² Locatio	L op: PL – Pore Lining M = Matrix
Hydric Soil	Indicators: (Anr	Depietion	all I RRs unle	es other			Indicators for Proh	$\frac{1}{10000000000000000000000000000000000$
Hist	togol (A1)		Sar	ody Gleve	Mise net	(\$4)	1 cm Muck (A9)	
Hist	tic Eninedon (A2)		Sar	ndy Redo	v (95)	(34)	Coast Prairie Re	dov (A16) (I RR F G H)
Blac	ne Hietic (Δ3)		Stri	inned Mat	(00) riv (S6)		Dark Surface (S7	/) (I RR G)
Hvd	frogen Sulfide (A4)	1	Lor	amv Muck	W Minera	l (F1)	High Plains Depr	ressions (F16)
Stra	atified Lavers (A5)	(LRR F)	Loa	amv Gleve	-d Matrix	(F2)	(LRR H outside	e of MLRA 72 & 73)
1 cr	n Muck (A9) (LRR	F.G.H)	Der	oleted Ma	trix (F3)	(1 2)	Reduced Vertic (F18)
Der	leted Below Dark	Surface (A11) Rec	dox Dark	Surface (F6)	Red Parent Mate	rial (TF2)
	ck Dark Surface (A	.12)	Der	oleted Da	rk Surfac	e (F7)	Very Shallow Da	rk Surface (TF12)
San	ndv Mucky Mineral	, (S1)	Rec	dox Depre	essions (F	F8)	Other (Explain in	Remarks)
2.5	cm Mucky Peat or	Peat (S2	2) Hig	h Plains [Depressic	ons (F16	³ Indicators of hydro	phytic vegetation and wetland
(LI	RR G, H)) (N	ILRA 72 (& 73 of L		hydrology must be	present, unless disturbed or
5 c	m Mucky Peat or I	Peat (S3)	(LRR F)			χ X .	p p	roblematic.
Restrictive	l aver (if observe	ed):			-ċ			
Type: Cr	ompaction	<i></i>					Hvdric Soil Prese	nt? N
Depth (inche	<u>es): 8</u>				\mathbf{S}			
Domarke:					<u> </u>			
Nemarka.				\	-			
			. ()、				
			~					
	JGY							
Wetland Hy	drology Indicate	ns.						
Drimary Indi	cators (minimum	of one is	required check :	oll that ar	noly)		Secondary In	diastors (minimum of two required)
Surface	Motor ($\Delta 1$)			Salt Cru	<u>)piy)</u> et (B11)		<u>Surface</u>	Soil Cracke (R6)
High Wa	ater Table (A2)	\sim	\sim $-$		Invertebr	ates (B13	N Sparsel	v Venetated Concave Surface (B8)
X Saturatio	on (A3)	\sim		Hvdroge	an Sulfide	Odor (C1	1) Drainag	e Patterns (B10)
Water M	larks (B1)			Dry-Sea	son Wate	er Table (C2) Oxidized	d Rhizospheres on Living
Sedimer	nt Deposits (B2)			Oxidized	Rhizosp	pheres on	Living Roots	(C3) (where tilled)
Drift Dep	posits (B3)			Roots ((C3) (wh r	ere not ti	lled) Crayfish	Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Red	uced Iron	(C4) Saturati	on Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	ce (C7)	Geomor	phic Position (D2)
Inundatio	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	utral Test (D5)
Water-S	tained Leaves (B9)					Frost-He	eave Hummocks (D7) (LKK F)
Field Obser	vations;							
Surface Wat	ter Present?	Yes	No	х	Depth (i	inches):		
Water Table	Present?	Yes	No	X	Depth (i	inches):	In	dicators of Wetland
Saturation P	resent?	Yes	X No		Depth (i	inches):	0 H	ydrology Present? Y
(includes ca	pillary fringe)				-			
Describe Re	corded Data (stre	am gau	ge, monitoring we	II, aerial r	photos, r	previous i	nspections), if available:	
		-					• •	
Remarks:								

WETLAND DETERMINATIO	N DATA FORM - Great Plains Region							
Project/Site: US85 C	ity/County: Henderson/Adams Sampling Date: 7/17/18							
Applicant/Owner: CDOT	State: Colorado Sampling Point: SP4							
Investigator(s): Haley Stratton, Neal Goffinet	Section, Township, Range: 10, 2S, 67W							
Landform (hillslope, terrace, etc.): drainage swale	Local relief (concave, convex, none): Concave Slope (%):1-3							
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: 39.88554718 Long: -104.8830982 Datum: NAD 83							
Soil Map Unit Name: Vona sandy loam	NWI classification: PEM							
Are climatic/hydrologic conditions on the site typical for this time of th	ie year? Y (If no, explain in Remarks.)							
Are Vegetation, Soli, or Hydrology	significantly disturbed? Are normal circumstances present? Yes							
Solitivian Tor Findings - Attach site map showing samp	ning point locations, transects, important leatures, etc.							
	le the Compled Area Within a Wetland?							
Indicators of wetland Hydrology Present? Y If yes, optional wetland site ID: Wetland 7								
Remarks:								
	\land							
VEGETATION Use scientific names of plants.								
Absolu	te Dominant Indicator Dominance Test Worksheet							
I ree Stratum (Plot size:) % Cov	er Species Status Number of Dominant Species							
2								
3	I otal Number of Dominant 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:)	Prevalence Index Worksheet							
1	Total % Cover of: Multiply by:							
2	OBL species <u>30</u> x 1 = <u>30</u>							
3	FACW species 0 x 2 = 0							
4	$\begin{array}{c} \hline \\ \hline $							
⁵	$\frac{1}{1} = \frac{1}{1} = \frac{1}$							
Herb Stratum (Plot size:								
1 Turpho lotifolio	$V \qquad OPI \qquad Provelence Index = P/A = -\frac{2.21}{2.21}$							
3 Echinochloa crus-galli	N FAC Hydrophytic Vegetation Indicators:							
4 Bromus inermis 5	N UPL 1 - Rapid Test for Hydrophytic Vegetation							
5 Asclepias speciosa 5	N FAC X 2 - Dominance Test is >50%							
6 Melilotus indicus 1	N FACU χ 3 - Prevalence Index is $\leq 3.0^{1}$							
7	4 - Morphological Adaptations ¹ (provide							
8	supporting data in Remarks or on a							
9	separate sheet)							
10	Problematic Hydrophytic Vegetation ¹							
71	_= I otal Cover(Explain)							
<u>vvoody vine Stratum</u> (Piot size:) 1	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic							
2	Hydrophytic							
0	= Total Cover Vegetation							
% Bare Ground in Herb Stratum	Present? Y							
Remarks:	!							



Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Rec	lox Featu	ures					
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-3	10YR 2/1	100					organic	Muck		
3-10	10YR 5/3	85	10YR 5/8	15	С	М	silty loam			
10-18	10VP 5/3	85	7.5VP 4/6	15	C C	M	silty clay loam			
10-18	10110/3	00	7.511(4/0	15	<u> </u>	IVI	Silly Clay Ioan			
¹ Type: $C = C$	oncentration, D =	Depletior	, RM = Reduced N	latrix, CS	= Covere	ed or Coa	ted Sand Grains. ² Locatio	n: PL = Pore Lining, M = Matrix		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :										
Hist	osol (A1)		San	dy Gleve	d Matrix ((S4)	1 cm Muck (A9) (LRR I, J)		
Hist	ic Epipedon (A2)		San	dy Redox	(S5)	`	Coast Prairie Rec	lox (A16) (LRR F, G, H)		
Blac	k Histic (A3)		Strip	oped Mat	rix (S6)		Dark Surface (S7) (LRR G)		
Hyd	rogen Sulfide (A4)	1	Loa	my Muck	y Mineral	(F1)	High Plains Depr	essions (F16)		
Stra	tified Layers (A5)	(LRR F)	Loa	my Gleye	ed Matrix	(F2)	(LRR H outside	e of MLRA 72 & 73)		
<u>X</u> 1 cm	n Muck (A9) (LRR	F, G, H)	Dep	leted Ma	trix (F3)		Reduced Vertic (I	⁼ 18)		
Dep	leted Below Dark	Surface (A11) Red	ox Dark \$	Surface (I	F6)	Red Parent Mate	rial (TF2)		
Thic	k Dark Surface (A	.12)	Dep	leted Da	rk Surface	e (F7)	Very Shallow Dar	k Surface (TF12)		
San	dy Mucky Mineral	(S1)	Red	ox Depre	essions (F	-8)	Other (Explain in	Remarks)		
2.5	cm Mucky Peat or	Peat (S2	2) High	n Plains E	Depressio	ons (F16)	³ Indicators of hydrop	phytic vegetation and wetland		
(LF	RR G, H)		(M	LRA 72 8	& 73 of L		hydrology must be	present, unless disturbed or		
<u> </u>	m Mucky Peat or I	Peat (S3)	(LRR F)		1	<	р	roblematic.		
Restrictive Layer (if observed):										
Туре:					\sim		Hydric Soil Preser	nt? <u>Y</u>		
Depth (inche	es):									
Remarks:				~						
				\sim						
)						
			~ ~ ~							
HYDROLO	DGY		· ·							
Wetland Hy	drology Indicato	ors:	X							
Primary Indi	<u>cators (minimum</u>	of one is	required; check a	II that ap	oply)		Secondary Inc	dicators (minimum of two required)		
X Surface	Water (A1)		~ _	Salt Cru	st (B11)		Surface	Soil Cracks (B6)		
High Wa	iter Table (A2)	$\langle \rangle$	• <u> </u>	Aquatic	Invertebra	ates (B13) Sparsely	Vegetated Concave Surface (B8)		
X Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	I) Drainage	e Patterns (B10)		
	arks (B1)		V	Dry-Sea	son wate Phizoco	er Table (U2) Uxidized	(C2) (where tilled)		
Drift Der	(B2)		<u>X</u>	Roots ((C3) (wh	re not til	Living Roots (Burrows (C8)		
Algal Ma	ot or Crust (B4)			Presenc	e of Redu	iced Iron	(C4) Clayish	on Visible on Aerial Imagery (C9)		
Iron Dep	osits (B5)			Thin Mu	ck Surfac	e (C7)	Geomor	phic Position (D2)		
Inundatio	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	utral Test (D5)		
X Water-S	tained Leaves (B9)			•		Frost-He	eave Hummocks (D7) (LRR F)		
Field Obser	vations:	Var	V N-		Denth "	nohoc):				
Surface Wat	Present?	res			Depth (I	nches):	In/	licators of Wetland		
Saturation P	resent?	Yes			Depth (i	nches).	——— ""	vdrology Present? V		
(includes capillary fringe)										
Describe Ro	corded Data (stre	am dau	ne monitoring wel	l aerial r	notos n	revious i	nspections) if available.			
	John Dala (Sile	Juni yau		i, acriai f	510105, p		nopooliono, ii avaliabie.			
Remarks	Pomorko									
1										

WETLAND DETERMINATIO	N DATA FOR	M - Great Plains I	Region	
Project/Site: US85 C	City/County: He	enderson/Adams	Sampling Date:	7/17/18
Applicant/Owner: CDOT	State:	Colorado	Sampling Point:	SP5
Investigator(s): Haley Stratton, Neal Goffinet	Sectio	on, Township, Range:	10, 2	S, 67W
Landform (hillslope, terrace, etc.): slope	Local relief (concave, convex, non	e): concave	Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat:39.88	572321 Long:	-104.8829409	Datum: NAD 83
Soil Map Unit Name: Vona sandy loam		NWI classificati	on:	
Are climatic/hydrologic conditions on the site typical for this time of the	ne year?	Y (If no, explai	n in Remarks.)	
Are Vegetation , Soil , or Hydrology	significantly di	Isturbed? Are norn	nal circumstances" pr	esent? Yes
				ers in Remarks.)
SUMMART OF FINDINGS - Attach site map showing same	ling point locatio	ins, transects, impor	tant features, etc.	
Hydrophytic Vegetation Present? N				
Hydric Soll Present? N	Is the Sal	mpled Area within a	wetland?	N
Indicators of Wetland Hydrology Present? N	If yes, opt	ional wetland site ID:	Outpoint for Wetla	nd 7
Remarks:				
VEGETATION Use scientific names of plants.				
Absolu	te Dominant I	ndicator Domina	nce Test Workshee	t
Tree Stratum (Plot size:) % Cov	er Species	Status Number of	Dominant Species	
1		that are O	BL, FACW, or FAC:	(A)
2		Total Num	ber of Dominant	
3		Species A	cross all Strata:	<u> </u>
4		Percent of	Dominant Species	0.00% (A/P)
<u> </u>	- Total Cover		BL, FACW, OFFAC.	0.00% (A/B)
Sapling/Shrub Stratum (Plot size:)		Prevale	nce Index Worksh	eet
1	\mathbf{N}	Total %	Cover of: Mi	ultiply by:
2		OBL spe	ecies 0 x 1	= 0
3		FACW s	pecies 0 x 2	2 = 0
4		FAC spe	ecies 0 x 3	3 = 0
5		FACU s	pecies 0 x 4	= 0
0	= Total Cover	UPL spe	cies <u>50</u> x 5	5 = 250
Herb Stratum (Plot size:)		Column	totals 50 (A) <u>250</u> (B)
1 convolvulus arvensis 20	Y	UPL Prevaler	nce Index = B/A =	5.00
2 bromus tectorum 20	Y	UPL		
3 Bouteloua curtipendula 10	<u> </u>	UPL Hydrop	hytic Vegetation I	ndicators:
4		1 - F	apid Test for Hydro	phytic Vegetation
5		2 - L	ominance Test is >	50% ~2 0 ¹
8				. 1
8		4 - N	Norphological Adap	tations' (provide
9		sup	arate sheet)	ans of off a
10		0000	alematic Hydrophyt	ic Vegetation ¹
50	= Total Cover	(Exp	plain)	ovegetation
Woody Vine Stratum (Plot size:) 1		¹ Indicato P	rs of hydric soil and we resent, unless disturbe	tland hydrology must be d or problematic
2	Tetal O	Hyd	rophytic	
0	= I otal Cover	Veg	etation	
% Bare Ground in Herb Stratum 50		Pres		-
Remarks:				

Profile Des	cription: (Descr	ibe to th	e depth needed	o docun	nent the	indicato	or or confirm the absence	e of indicators.)
Depth Matrix			Red	Redox Features				, ,
(Inches)	Color (moist)	%	Color (moist) % Type ¹ Loc ²			Loc ²	Texture	Remarks
0-4	10YR 7/2	100					silty clay loam	
1							2	
'Type: C = C	oncentration, D =	Depletior	i, RM = Reduced N	latrix, CS	= Covere	ed or Coa	ted Sand Grains. ² Locatio	on: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators: (App	licable f	o all LRRs, unle	ss other	wise not	ed.)	Indicators for Prob	ematic Hydric Soils':
Hist	osol (A1)		Sar	idy Gleye	d Matrix ((S4)	1 cm Muck (A9) (LRR I, J)
Hist	ic Epipedon (A2)		Sar	dy Redo	k (S5)		Coast Prairie Rec	lox (A16) (LRR F, G, H)
Blac	ck Histic (A3)		Stri	oped Mat	rix (S6)		Dark Surface (S7) (LRR G)
Hyd	lrogen Sulfide (A4)		Loa	my Muck	y Mineral	(F1)	High Plains Depr	essions (F16)
Stra	atified Layers (A5)	(LRR F)	Loa	my Gleye	ed Matrix	(F2)	(LRRH outside	e of MLRA 72 & 73)
1 cr	n Muck (A9) (LRR	н, G, H)	Dep	leted Ma	trix (F3)		Reduced Vertic (-18)
	leted Below Dark	Surface (A11)Rec	lox Dark	Surface (F6)	Red Parent Mate	rial (TF2)
	ck Dark Surface (A	(24)		leted Dai	rk Surfac	e (F7)	Very Shallow Dar	k Surface (TF12)
San	dy Mucky Mineral	(51)		IOX Depre	essions (F	-8)	Other (Explain in	Remarks)
2.5	CM MUCKY Peat or	Peat (S2	()Hig	n Plains L		ons (F16)	Indicators of hydro	ohytic vegetation and wetland
	кк G, П) m Musky Doot or I	Deat (CO)			x / 3 01 L		nyarology must be	present, unless disturbed or
⁵⁰	m Mucky Peat of	Pear (53)					þ	oblematic.
Restrictive	Layer (if observe	ed):						
Type: ro	ock				\sim		Hydric Soil Prese	nt? <u>N</u>
Depth (inche	es):							
Remarks:						•		
				\sim				
)				
			. 7					
HYDROLO	DGY							
Wetland Hy	drology Indicato	ors:						
Primary Indi	cators (minimum	of one is	required; check a	all that ap	oply)		Secondary In	dicators (minimum of two required)
Surface	Water (A1)	~ <	と	Salt Cru	st (B11)		Surface	Soil Cracks (B6)
High Wa	ater Table (A2)	\cap		Aquatic	Invertebra	ates (B13) Sparsely	Vegetated Concave Surface (B8)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	I) Drainag	e Patterns (B10)
Water M	larks (B1)			Dry-Sea	son Wate	er Table (C2) Oxidized	Rhizospheres on Living
Sedimer	nt Deposits (B2)			Oxidized	l Rhizosp	heres on	Living Roots	(C3) (where tilled)
Drift Dep	oosits (B3)			Roots ((C3) (whe	ere not ti	lled) Crayfish	Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturation	on Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)		(D-7)	Thin Mu	ck Surfac	e (C7)	Geomor	phic Position (D2)
Inundation	on Visible on Aeria	al Imager	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	utral Test (D5)
vvater-S	tained Leaves (B9)						
Field Obser	vations:							
Surface Wat	ter Present?	Yes	No	Х	Depth (i	nches):		
Water Table	Present?	Yes	No	Х	Depth (i	nches):	Inc	dicators of Wetland
Saturation P	resent?	Yes	No	X	Depth (i	nches):	Н	ydrology Present? N
(includes ca	pillary fringe)				-			
Describe Re	corded Data (stre	eam gau	ge, monitoring we	l, aerial p	photos, p	revious i	nspections), if available:	
			-					
Remarks:								

WETLAND DETERMINA	TION DATA F	ORM - Great I	Plains Region	
Project/Site: US85	City/County:	Henderson/Ada	ams Sampling Date:	7/17/18
Applicant/Owner: CDOT	State	Colorad	Sampling Point:	SP6
Investigator(s): Haley Stratton, Neal Goffinet	S	ection, Township,	Range: 10,	2S, 67W
Landform (hillslope, terrace, etc.): drainage swale	Local re	elief (concave, con	vex, none): concave	Slope (%): 1-3
Subregion (LRR): G-Western Great Plains Range & Irriga	ited Lat: 3	9.88731868	Long: -104.8801888	Datum: NAD 83
Soil Map Unit Name: Satanta loam		NWI cl	assification:	PSS
Are climatic/hydrologic conditions on the site typical for this time	of the year?	<u> </u>	no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology	significar	ntly disturbed?	Are "normal circumstances"	present? Yes
Are Vegetation, Soil, or Hydrology	naturally	problematic?	(If needed, explain any ans	wers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing s	ampling point lo	cations, transect	s, important features, etc.	
Hydrophytic Vegetation Present? Y				
Hydric Soil Present? Y	Is the	e Sampled Area	Within a Wetland?	Y
Indicators of Wetland Hydrology Present? Y	If yes	s, optional wetland	site ID: Wetland 2	
Remarks:				
Portion of wetland outside boundaries			~	
			\mathcal{A}	
VEGETATION Use scientific names of plants.			Deminones Test Werksh	
Ab Tree Stratum (Plot size:) %	solute Dominan	t Indicator	Dominance Test worksho	eet
1 Populus deltoides	10 V	EAC. It	at are OBL_EACW_or EAC	s ··
2		- <u> </u>	atal Number of Dominant	(/)
3			pecies Across all Strata:	4 (B)
4			ercent of Dominant Species	s (/
5	-	I. tł	nat are OBL, FACW, or FAC	C: 100.00% (A/B)
	10 = Total Co	ver		、 /
Sapling/Shrub Stratum (Plot size:)	$\overline{\mathbf{A}}$		Prevalence Index Works	sheet
1 Salix exigua	70 Y	FACW	Total % Cover of: N	/lultiply by:
2	<u> </u>		OBL species 10 x	1 = 10
3	<u> </u>		FACW species 70 x	2 = 140
4			FAC species 10 x	3 = 30
⁵	70 Total Ca		FACU species 0 x	4 = 0
Horb Stratum (Plot size:		ver	Column totals 00 (b = 0 (A) 180 (B)
				A) <u>100</u> (B)
1 typha latifolia	5 Y		Prevalence Index = B/A =	2.00
	<u> </u>		Hydrophytic Vagatation	Indicators:
<u> </u>			1 - Rapid Test for Hydr	conductions.
		•	X 2 - Dominance Test is	>50%
6		·	X 3 - Prevalence Index is	s ≤3.0 ¹
7		·	 1 - Morphological Ada	antations ¹ (provide
8	·		supporting data in Re	marks or on a
9			separate sheet)	
10			Problematic Hydrophy	vtic Vegetation ¹
	10 = Total Co	ver	(Explain)	
Woody Vine Stratum (Plot size:) 1			¹ Indicators of hydric soil and w present, unless disturb	vetland hydrology must be bed or problematic
2			Hydrophytic	
	u = i otal Co	ver	Vegetation Present? V	
% Bare Ground in Herb Stratum				_
Remarks:				

Depth			e depiñ needed		nent the	mulcal	or or confirm the absei	ice of mulcators.)				
<i></i>	Depth Matrix				ures							
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks				
0-18	10YR 4/1	90	10YR 5/8	10	С	М	clay loam					
				+								
¹ Type: $C = C$	Concentration D =	Depletion	RM – Reduced	Matrix CS	- Cover	ed or Coa	ted Sand Grains ² Loca	ation: PL = Pore Lining M = Matrix				
Hydric Soil	Indicators: (Ann	licable t		ss other	wise not	ed)	Indicators for Pro	blematic Hydric Soils ³				
His	tosol (A1)		Sa	ndv Gleve	d Matrix ((S4)	1 cm Muck (AS					
His	tic Epipedon (A2)			ndy Redo	x (S5)	(04)	Coast Prairie F	Redox (A16) (LRR F. G. H)				
Bla	ck Histic (A3)		Str	inned Mat	rix (S6)		Dark Surface (S7) (LRR G)				
	drogen Sulfide (A4)		Lo	amv Muck	v Mineral	(F1)	High Plains De	pressions (F16)				
Stra	atified Lavers (A5)	(LRR F)	Lo	amv Gleve	ed Matrix	(F2)	(LRR H outsi	ide of MLRA 72 & 73)				
1 ci	m Muck (A9) (LRR	F, G, H)	X De	pleted Ma	trix (F3)	. /	Reduced Verti	c (F18)				
Der	oleted Below Dark	Surface (A11) Re	dox Dark	Surface (F6)	Red Parent Ma	aterial (TF2)				
	ck Dark Surface (A	.12)	, De	pleted Da	rk Surfac	, e (F7)	Very Shallow [Dark Surface (TF12)				
Sar	ndy Mucky Mineral	(S1)	Re	dox Depre	essions (F	-8)	Other (Explain	in Remarks)				
2.5	cm Mucky Peat or	Peat (S2	:) Hig	gh Plains I	Depressio	ons (F16)	³ Indicators of hyd	rophytic vegetation and wetland				
(L	RR G, H)		(I	MLRA 72	& 73 of L	RR H	hydrology must l	pe present, unless disturbed or				
5 0	cm Mucky Peat or F	Peat (S3)	(LRR F)			< X .		problematic.				
Restrictive	Laver (if observe	ed):			Ó							
Type:		,			\sim		Hydric Soil Pres	sent? Y				
Depth (inch	es):			-			•					
Remarks:												
Remarks:												
				へ `								
				δ		-						
			2	Ś,		-						
HYDROL	OGY		× ¢									
HYDROL Wetland Hy	OGY /drology Indicato	ors:	- C P									
HYDROL Wetland Hy Primary Ind	OGY /drology Indicato	ors: of one is	returned; check	all that ap	(ylgo		Secondary	Indicators (minimum of two required				
HYDROL Wetland Hy Primary Ind X Surface	OGY /drology Indicato icators (minimum Water (A1)	ors: of one is	required; check	all that ap	<u>oply)</u> st (B11)		<u>Secondary</u> Surfa	Indicators (minimum of two required ce Soil Cracks (B6)				
HYDROL Wetland Hy Primary Ind X Surface High Wa	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2)	ors: of one is	returned; check	all that ap Salt Cru Aquatic	oply) st (B11) Invertebra	ates (B13	<u>Secondary</u> Surfa) Spars	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3)	ors: of one is	retuired; check	all that ar Salt Cru Aquatic Hydroge	pply) st (B11) Invertebra	ates (B13 Odor (C1) X Drain	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10)				
HYDROL Wetland Hy Primary Ind X Surface High Wa X Saturati Water M	DGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) farks (B1)	ors: of one is	required; check	all that ar Salt Cru Aquatic Hydroge Dry-Sea	oply) st (B11) Invertebra en Sulfide son Wate	ates (B13 Odor (C1 er Table (Secondary Surfa) Spars) X Drain C2) Qxidiz	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)	ors:	required; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized	oply) st (B11) Invertebra en Sulfide son Wate d Rhizosp	ates (B13 Odor (C1 er Table (heres on	Secondary Surfa) Spars) X Drain. C2) Oxidiz Living Roo	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)	ors: of one is	retuined; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots	oply) st (B11) Invertebra en Sulfide son Wate d Rhizosp (C3) (whe	ates (B13 Odor (C1 er Table (heres on ere not til) <u>Secondary</u> Surfa) <u>Spars</u>) <u>X</u> Drain C2) <u>Oxidi</u> Living Roo Iled) <u>Crayf</u>	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) market (B5)	ors: of one is	retuined; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc	pply) st (B11) Invertebra son Sulfide son Wate d Rhizosp (C3) (whe ce of Redu	ates (B13 Odor (C1 er Table (heres on ere not til uced Iron) <u>Secondary</u> Surfa) <u>Spars</u>) <u>X</u> Drain C2) Oxidiz Living <u>Roo</u> Iled) <u>Crayf</u> (C4) <u>Satur</u>	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	of one is	retuined; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presend Thin Mu	pply) st (B11) Invertebra son Wate d Rhizosp (C3) (whe ck Surfac ck Surfac	ates (B13 Odor (C1 er Table (heres on ere not til uced Iron e (C7) Bomarka) <u>Secondary</u>) Surfa) <u>X</u> Spars () <u>X</u> Drain (2) Oxidiz Living Roo (1ed) Crayf (C4) <u>X</u> Geom	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) horphic Position (D2)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati Y Water-S	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria itained Leaves (B9)	of one is	required; check	all that ar Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	22 22 25 25 25 25 25 25 25 25	ates (B13 Odor (C1 er Table (heres on ere not til uced Iron e (C7) Remarks) <u>Secondary</u> Surfa Spars) <u>X</u> Drain C2) Oxidiz Living Roo Iled) Crayf (C4) Satur X Geom) <u>X</u> Geom	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) -Heave Hummocks (D7) (LRR F)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9)	ors: of one is of one is	required; check	all that ar Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presend Thin Mu Other (E	oply) st (B11) Invertebra en Sulfide son Wate d Rhizosp (C3) (whe ce of Redu ck Surfac cxplain in	ates (B13 Odor (C ¹ er Table (heres on ere not ti uced Iron e (C7) Remarks) <u>Secondary</u> Surfa Spars) <u>X</u> Drain C2) Oxidiz Living <u>Roo</u> Iled) Crayf (C4) <u>Satur</u> X Geom) FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obse	OGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations:	ors: of one is of one is	required; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presend Thin Mu Other (E	pply) st (B11) Invertebra en Sulfide son Wate d Rhizosp (C3) (whe se of Redu ck Surfac ck Surfac	ates (B13 Odor (C1 er Table (heres on ere not ti uced Iron æ (C7) Remarks	Secondary Surfa Spars Spars X Drain. C2) Oxidiz Living Roo Iled) Crayf (C4) Satur X Geor FAC-I Frost	Indicators (minimum of two required ce Soil Cracks (B6) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) ·Heave Hummocks (D7) (LRR F)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obsee Surface Wa	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present?	ors: of one is of linagery	retuined; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	pply) st (B11) Invertebra son Wate d Rhizosp (C3) (whe ce of Redu ck Surfac cxplain in	ates (B13 Odor (C1 er Table (heres on ere not til uced Iron e (C7) Remarks nches):	Secondary Surfa Spars Surfa Spars X Drain C2) Oxidiz Living Roo Iled) Crayf (C4) Satur X Georr FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water N Iron Dep Inundati X Water-S Field Obse Surface Water Table	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present?	or s: of one is of linagery) Yes Yes	retuined; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	pply) st (B11) Invertebra son Sulfide son Wate d Rhizosp (C3) (whe ck Surfac ck Surfac ck Surfac cxplain in Depth (i	ates (B13 Odor (C1 er Table (heres on ere not ti l uced Iron ee (C7) Remarks nches): nches):	Secondary Surfa Spars X X Drain C2) Oxidiz Living Roo Iled) C4) FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water N Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obse Surface Wa Water Table Saturation F	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) /darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present?	of one is of one is I Imagery) Yes Yes Yes	retuined; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	pply) st (B11) Invertebra son Wate d Rhizosp (C3) (whe ck Surfac ck Surfac ixplain in Depth (i Depth (i	ates (B13 Odor (C1 Pr Table (heres on Pre not til uced Iron re (C7) Remarks nches): nches): nches):	Secondary Surfa Spars X X Drain C2) Living Roo Iled) C4) FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F) Indicators of Wetland Hydrology Present? Y				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obse Surface Wa Water Table Saturation F (includes ca	OGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? apillary fringe)	of one is of one is of one is of one is of of of of one is of of of of of of of of of of of of of	required; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	Depty) st (B11) Invertebra en Sulfide son Wate d Rhizosp (C3) (whe ck Surfac ixplain in Depth (i Depth (i	ates (B13 Odor (C ¹ er Table (heres on ere not ti uced Iron e (C7) Remarks nches): nches): nches):	Secondary Surfa Spars) X) X (C2) Oxidiz Living Roo Iled) Crayf (C4) Satur X Geom FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F) Indicators of Wetland Hydrology Present? Y				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	OGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9) rvations: ter Present? Present? Present? apillary fringe) ecorded Data (streent)	or s: of one is of one is ves Yes Yes Yes Yes	required; check	all that ag Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presend Thin Mu Other (E	pply) st (B11) Invertebra en Sulfide son Wate d Rhizosp (C3) (whe se of Redu ck Surface ixplain in Depth (i Depth (i Depth (i	ates (B13 Odor (C1 er Table (heres on ere not ti uced Iron æ (C7) Remarks nches): nches): nches):	Secondary Surfa Spars Spars Drain C2) Living Roo Ied) Crayf (C4) Satur X Geom FAC-I Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F) Indicators of Wetland Hydrology Present? Y				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? poillary fringe) ecorded Data (streent)	or s: of one is of one is ves Yes Yes Yes Yes Yes	returned; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presend Thin Mu Other (E	pply) st (B11) Invertebra en Sulfide son Wate d Rhizosp (C3) (whe ee of Redu ck Surface :xplain in Depth (i Depth (i Depth (i photos, p	ates (B13 Odor (C1 er Table (heres on ere not ti uced Iron æ (C7) Remarks nches): nches): nches): nches):	Secondary Surfa Spars N X Drain C2) Oxidiz Living Roo Ned) Crayf (C4) Satur X Geom FAC-I Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) -Heave Hummocks (D7) (LRR F) Indicators of Wetland Hydrology Present? Y				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water M Sedime Drift De Algal Ma Iron Dep Inundati X Water-S Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	DGY vdrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? posital arrows (A) posital arrows (A) posita	or s: of one is of one is of one is res Yes Yes Yes Yes Yes	returned; check	all that ar Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	pply) st (B11) Invertebra son Sulfide son Wate d Rhizosp (C3) (whe ck Surfac ck Surfac cxplain in Depth (i Depth (i Depth (i	ates (B13 Odor (C1 Per Table (heres on ere not ti uced Iron ee (C7) Remarks nches): nches): nches): nches):	Secondary Surfa Spars N X Drain C2) Oxidiz Living Roo Iled) Crayf (C4) Satur X Georr FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)				
HYDROLO Wetland Hy Primary Ind X Surface High Wa X Saturati Water N Sedime Drift Deg Algal Ma Iron Deg Inundati X Water-S Field Obsec Surface Wa Water Table Saturation F (includes ca Describe Re Remarks:	OGY /drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9) rvations: ter Present? Present? Present? pillary fringe) ecorded Data (streen)	of one is of one is I Imagery Yes Yes Yes Seam gaug	returned; check	all that an Salt Cru Aquatic Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	pply) st (B11) Invertebra son Wate d Rhizosp (C3) (whe ck Surfac ck Surfac cxplain in Depth (i Depth (i Depth (i	ates (B13 Odor (C1 er Table (heres on ere not til uced Iron te (C7) Remarks nches): nches): nches): nches):	Secondary Surfa Spars) X Drain C2) Oxidiz Living Roo Iled) Crayf (C4) Satur X Geom FAC- Frost	Indicators (minimum of two required ce Soil Cracks (B6) sely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living ts (C3) (where tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F) Indicators of Wetland Hydrology Present? Y				

WETLAND DETERMINATIO	N DATA FOR	M - Great Plains I	Region	
Project/Site: US85 C	ity/County: H	enderson/Adams	Sampling Date:	7/17/18
Applicant/Owner: CDOT	State:	Colorado	Sampling Point:	SP7
Investigator(s): Haley Stratton, Neal Goffinet	Section	on, Township, Range:	10, 2	S, 67W
Landform (hillslope, terrace, etc.): hillslope	Local relief	(concave, convex, none	e): concave	Slope (%): 1-3
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat:39.88	8752926 Long:	-104.880241	Datum: NAD 83
Soil Map Unit Name: Satanta Ioam		NWI classificati	on:	
Are climatic/hydrologic conditions on the site typical for this time of the	ie year?	Y (If no, explai	n in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly o	disturbed? Are norn	nal circumstances" pi	resent? Yes
	naturally proc			ers in Remarks.)
Solviniar for Findings - Attach site map showing samp	ling point locatio	ons, transects, impor	tant features, etc.	
Hydrophytic Vegetation Present?				
Hydric Soil Present? N	Is the Sa	ampled Area within a	wetland?	N
Indicators of Wetland Hydrology Present?N	lf yes, op	otional wetland site ID:	Outpoint for Wetla	nd 2
Remarks:				
VEGETATION Use scientific names of plants.				
Absolu	te Dominant	Indicator Domina	nce Test Workshee	et
Tree Stratum (Plot size:) % Cove	er Species	Status Number of	Dominant Species	
1		that are O	BL, FACW, or FAC:	0 (A)
2		Total Num	ber of Dominant	
3		Species A	cross all Strata:	(B)
4		Percent of	Dominant Species	
5		that are O	BL, FACW, or FAC:	0.00% (A/B)
Conling/Chrub Stratum (Dist size)		Broyolo	naa Indax Warkah	aat
Sapling/Shrub Stratum (Plot size:)	\mathbf{N}			leet
2	<u> </u>			лпріу by. I — О
3		FACW s	$\frac{1}{10000000000000000000000000000000000$	$P = \frac{0}{0}$
4		FAC spe	ecies 0 x 3	3 = 0
5		FACU s	pecies 0 x 4	t = 0
0	= Total Cover	UPL spe	cies 31 x t	5 = 155
Herb Stratum (Plot size:)		Column	totals 31 (A) <u>155</u> (B)
1 convolvulus arvensis 20	Y	UPL Prevaler	nce Index = B/A =	5.00
2 Bromus tectorum 10	Y	UPL		
3 Heterotheca sp. 1	N	UPL Hydrop	hytic Vegetation I	ndicators:
4]	1 - R	Rapid Test for Hydro	phytic Vegetation
5		2 - [Oominance Test is >	50%
6		3 - F	Prevalence Index is a	≤3.0'
7		4 - N	/lorphological Adap	otations ¹ (provide
8		supp	porting data in Rem	harks or on a
9			arate sheet)	
10 <u>31</u>	= Total Cover	Prot	plematic Hydrophyt plain)	ic Vegetation
Woody Vine Stratum (Plot size:)			rs of hydric soil and we	tland bydrology must be
1		p	resent, unless disturbe	d or problematic
2		Hyd	rophytic	
0	= Total Cover	Veg	etation	
% Bare Ground in Herb Stratum 70		Pres	sent? N	_
Remarks:				

Profile Des	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Red	dox Featu	ures			-		
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-6	10YR 7/3	100					silt loam			
¹ Type: $C = C$	oncentration. D =	Depletior	. RM = Reduced M	atrix. CS	= Covere	ed or Coa	ted Sand Grains. ² Locati	on: PL = Pore Lining, M = Matrix		
Hydric Soil	Indicators: (App	licable t	o all LRRs, unle	ss other	wise not	ed.)	Indicators for Prob	lematic Hydric Soils ³ :		
Hist	osol (A1)		Sar	dy Gleve	d Matrix	(S4)	1 cm Muck (A9)	(LRR I, J)		
Hist	ic Epipedon (A2)		Sar	dy Redo	k (S5)	()	Coast Prairie Re	dox (A16) (LRR F, G, H)		
Blac	ck Histic (A3)		Stri	pped Mat	rix (S6)		Dark Surface (S	7) (LRR G)		
Hyd	Irogen Sulfide (A4)		Loa	my Muck	y Mineral	(F1)	High Plains Dep	ressions (F16)		
Stra	atified Layers (A5)	(LRR F)	Loa	my Gleye	ed Matrix	(F2)	(LRRH outsid	e of MLRA 72 & 73)		
1 cr	m Muck (A9) (LRR	F, G, H)	Dep	leted Ma	trix (F3)		Reduced Vertic	(F18)		
Dep	leted Below Dark	Surface (A11) Rec	lox Dark	Surface (F6)	Red Parent Mate	erial (TF2)		
Thio	ck Dark Surface (A	12)	Dep	leted Da	rk Surfac	e (F7)	Very Shallow Da	rk Surface (TF12)		
Sar	idy Mucky Mineral	(S1)	Rec	lox Depre	essions (F	-8)	Other (Explain ir	Remarks)		
2.5	cm Mucky Peat or	Peat (S2	!)Hig	h Plains [Depressio	ons (F16)	³ Indicators of hydro	phytic vegetation and wetland		
(L	RR G, H)		(M	LRA 72 8	& 73 of L		hydrology must be	present, unless disturbed or		
<u> </u>	m Mucky Peat or I	Peat (S3)	(LRR F)		/	<	ł	problematic.		
Restrictive	Layer (if observe	ed):								
Type: co	ompaction				\sim		Hydric Soil Prese	nt? <u>N</u>		
Depth (inche	es): <u>6</u>									
Remarks:				~						
				\sim						
)						
			<u> </u>	•						
HYDROLO	DGY									
Wetland Hy	drology Indicato	ors:	X							
Primary Indi	cators (minimum	<u>of one is</u>	required; check a	all that ap	<u>oply)</u>		Secondary Ir	dicators (minimum of two required)		
Surface	Water (A1)		<u>~</u> _	Salt Cru	st (B11) Lavianta har		Surface	Soil Cracks (B6)		
	(A2)	\sim	·	- Aqualic	nvertebra n Sulfida	Odor (C1	5) Sparse	y vegetated Concave Surface (Bo)		
Water M	larks (B1)	•		Dry-Sea	son Wate	ouol (C ar Table (i	C2) Drainaç	d Rhizospheres on Living		
Sedimer	nt Deposits (B2)			Oxidized	l Rhizosp	heres on	Living Roots	(C3) (where tilled)		
Drift Dep	posits (B3)			Roots ((C3) (whe	ere not ti	lled) Crayfisl	n Burrows (C8)		
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturat	ion Visible on Aerial Imagery (C9)		
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	e (C7)	Geomo	rphic Position (D2)		
Inundati	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	eutral Test (D5)		
Water-S	tained Leaves (B9)					Frost-H	eave Hummocks (D7) (LRR F)		
Field Obser	vations:									
Surface Wa	ter Present?	Yes	No	х	Depth (i	nches):				
Water Table	Present?	Yes	No	X	Depth (i	nches):	In	dicators of Wetland		
Saturation F	Present?	Yes	No	Х	Depth (i	nches):	H	lydrology Present? N		
(includes ca	pillary fringe)									
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial p	ohotos, p	revious i	nspections), if available:			
Remarks:										

WETLAND DETERMI		DATA FO	RM - Grea	t Plains F	Region	
Project/Site: US85	City/C	County:	Henderson/A	Adams	Sampling Date:	7/17/18
Applicant/Owner: CDOT		State:	Colora	ado	Sampling Point:	SP8
Investigator(s): Haley Stratton, Neal Goffinet		Se	ction, Townsh	ip, Range:	10, 2	S, 67W
Landform (hillslope, terrace, etc.): drainage swa	le	Local relie	ef (concave, c	onvex, none	e): concave	Slope (%): 1-3
Subregion (LRR): G-Western Great Plains Range & Irr	rigated L	_at: 39	9.8887746	Long:	-104.8784631	Datum: NAD 83
Soil Map Unit Name: Nunn Ioam			NWI	classificatio	on:	PSS
Are climatic/hydrologic conditions on the site typical for this ti	me of the ye	ear?	<u>Y</u> (If no, explain	n in Remarks.)	
Are Vegetation , Soil , or Hydroid	ogy	significantl	y disturbed?	Are "norm	al circumstances" p	resent? Yes
Are Vegetation, Soil, or Hydroid	ogy	naturally pi	oblematic?	(If neede	d, explain any answ	vers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showin	g sampling	g point loca	tions, transe	ects, import	ant features, etc.	
Hydrophytic Vegetation Present? Y						
Hydric Soil Present? Y		Is the	Sampled Are	ea Within a	Wetland?	Y
Indicators of Wetland Hydrology Present? Y		If yes,	optional wetla	and site ID:	Wetland 3	
Remarks:						
VEGETATION Use scientific names of plants.						
	Absolute	Dominant	Indicator	Dominar	nce Test Workshee	et
Tree Stratum (Plot size:)	% Cover	Species	Status	Number of	Dominant Species	
1 populus deltoides	10	Y		that are OF	BL, FACW, or FAC	(A)
2 salix amygdaloides 3	10	¥		Total Num Species Ac	ber of Dominant cross all Strata:	5 (B)
4				Percent of	Dominant Species	()
5				that are OF	BL, FACW, or FAC:	80.00% (A/B)
	20 =	Total Cove	er			
Sapling/Shrub Stratum (Plot size:)		\sim		Prevaler	nce Index Works	neet
1 Salix exigua	50	Y	FACW	Total %	Cover of: M	ultiply by:
2				OBL spe	cies <u>0</u> x	1 =
3				FACW s	pecies <u>60</u> x 2	2 = <u>120</u>
4				FAC spe	$\frac{30}{5}$ x	3 = 90
°	50	Total Cave			$\frac{5}{5}$	4 = 20
Herb Stratum (Plot size:	50 =		1		totals 100 (A	b = 25
	20	V		Drevelar		200 (D)
1 Turnex crispus	20		FAC	Prevalen	ice index = $B/A =$	2.00
2 agropyion cristatum	5			Hydroph	wtic Vegetation I	ndicators:
4 cirsium arvense	5	 	FACU	1 - R	anid Test for Hydro	nucators.
5	<u> </u>			X 2 - D	ominance Test is >	50%
6				X 3 - P	revalence Index is	≤3.0 ¹
7				4 - N	Iorphological Adar	otations ¹ (provide
8				supp	orting data in Ren	narks or on a
9				sepa	arate sheet)	
10				Prob	lematic Hydrophy	tic Vegetation ¹
	40 =	Total Cove	er	(Exp	lain)	
1				¹ Indicator pi	rs of hydric soil and we resent, unless disturbe	etland hydrology must be ed or problematic
2				Hydi	rophytic	
	0 =	Total Cove	er	Vege	etation	
% Bare Ground in Herb Stratum				Pres	sent? Y	
Remarks:						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docur	nent the	indicate	or or confirm the	absence of in	ndicators.)
Depth Matrix Redox Features								•	
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0-18	10YR 2/2	97	10YR 4/6	3	C	М	sandy loam	sa	ndy gravel at 18in and lower
0.10	1011(2)2	0.	10111 #0						nay graver at rein and letter
				ļ	ļ	ļ			
						1			
1 Type: C = C	oncentration D =	Depletion	RM = Reduced M	latrix CS	= Cover	ed or Coa	ated Sand Grains	² Location: PL	= Pore Lining M = Matrix
Hydric Soil	Indicators: (Ann	licable t		ss other	wise not		Indicators f	or Problemat	ic Hydric Soils ³ :
				dy Glovo	d Motrix	(S4)			
	io Eninadan (A2)					(34)		rairia Baday (A	16) (IBBECH)
					x (35)				$\mathbf{L}(\mathbf{C}) = \mathbf{C}$
	CK HISTIC (A3)			pped Mat	rix (56)				
Hyc	Irogen Sulfide (A4)		Loa	my Muck	y Mineral	(F1)	High Pla	ins Depression	ns (F16)
Stra	atified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)		outside of M	LRA 72 & 73)
1 ci	n Muck (A9) (LRR	F , G , H)	Dep	pleted Ma	trix (F3)		Reduced	d Vertic (F18)	
Dep	leted Below Dark	Surface (A11)Rec	lox Dark	Surface (F6)	Red Par	ent Material (T	F2)
Thio	ck Dark Surface (A	12)	Dep	oleted Da	rk Surface	e (F7)	Very Sh	allow Dark Sur	face (TF12)
Sar	idy Mucky Mineral	(S1)	Rec	lox Depre	essions (F	-8)	Other (E	xplain in Rema	arks)
2.5	cm Mucky Peat or	Peat (S2) Hig	h Plains [Depressic	ons (F16)	³ Indicators	of hydrophytic	vegetation and wetland
(L	RR G, H)		(N	LRA 72 8	& 73 of L	RR H	hydrology	must be prese	ent, unless disturbed or
5 0	m Mucky Peat or I	Peat (S3)	(LRR F)			ζ Ν.		probler	natic.
Restrictive	l aver (if observe	əd).			$\dot{}$				
Type		<i></i>)	Hydric So	il Procont?	v
Dopth (inch	20).				\mathbf{X}		Tryune 60	-	<u> </u>
Deptil (Inchi	=5).								
Remarks:				× `					
			(
)					
				•					
HYDROL	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required: check	all that an	volv)		Seco	ndary Indicato	rs (minimum of two required)
V Surface	Wotor (A1)		Teduired, check a	Solt Cru	ot (P11)		<u>3600</u>	Surface Soil (
	vvaler (AT)		~ —		SL (DII)	otoo (P13	<u> </u>	Surface Soli C	placks (BO)
	(A2)		·			Odor (C	1) <u>v</u>	Drainage Bett	
	JII (A3) Jorka (B1)	•				r Toblo (C	(C2) X		enns (BTU)
Valer IV	Idiks (DI)			Dry-Sea	SON Wale	el Table (uspheres on Living
Sedimer	It Deposits (B2)								where tilled)
	DOSITS (B3)			Roots ((C3) (wne	ere not ti		Crayfish Burro	ows (C8)
	at or Crust (B4)			Presenc	e of Redu	uced Iron	n (C4)	Saturation Vis	ble on Aerial Imagery (C9)
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	ce (C7)	<u>X</u>	Geomorphic F	Position (D2)
Inundati	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks	s)	FAC-Neutral	Test (D5)
<u>χ</u> Water-S	tained Leaves (B9)						Frost-Heave H	lummocks (D7) (LRR F)
Field Obser	vations								
Surface W/a	tor Procent?	Vaa	Y No		Donth /:	inchoo);	2		
Water Tehle	Drosont?	Vee				inches):	3	Indiact	ore of Wetland
Saturation	rosont?	Vee		^	Dopth (I	inches).	18		ogy Present? V
(includes es	nillary fringe)	165				nules).	10	i iyurol	
			., .				. ,	I	
Describe Re	ecorded Data (stre	eam gaug	ge, monitoring we	ll, aerial p	ohotos, p	previous	inspections), if ava	ailable:	
Remarks:									
Hydrology fi	om surface run-o	ff							

ProjectSize: USBS City/County: Henderson/Adams Sampling Pair: 7/17/16 Applicant/Osmic: CDOT Colorado Sampling Pair: Size Colorado Si	WETLAND DETERMINATION	ON DATA FO	RM - Great Plains	Region	
Applicand/Ovine: CDOT State: Colorado Sampling Point: SP9 Landform (hillidepo, fornaco, etc.): Local rolif (concave, correx, norm): Sigo (Not Asr85255) Datum: NAD 83 Soli Map Unit Name: Numl classification: NAD 83 Net Viel assification: NAD 83 Are Vegetation	Project/Site: US85	City/County:	Henderson/Adams	Sampling Date:	7/17/18
Investigant(s): Haley Stratum, Neal Caffinet Section, Township, Range: 10, 25, 87/V Landrom (hildback persone, etrace, etrac, etrac): Local relief (concew, convex, none; 10, 25, 87/V Landrom (hildback persone, landback persone): As a substantiation of the section of the sec	Applicant/Owner: CDOT	State:	Colorado	Sampling Point:	SP9
Landform (hillslope, terrane, etc.): Local relief (concave, convex, none): sigle (%): 6.1.3 Solivagion (LR): G-Western Great Plains Range & tingated Lat: 39.8884687 Longform (NAD 83) Solivagion (LR): G-Western Great Plains Range & tingated Lat: 39.8884687 Longform (NAD 83) Are Vagetation Solit or Hydrology significantly disturbed? Mer homal accommance in Remarks.) Are Vagetation Solit or Hydrology ingnificantly disturbed? Mer homal accommance in Remarks.) SUMMARY OF FINDINGS - Attach atter may showing sampling point locations, transects, important features, etc. Hydrology Present? N Hydrology Present? N It sets Sampled Area Within a Wetland? N Indicators of Wetland Hydrology Present? N Kourber of Dominant Species Hard OBL, FACW, or FAC: 0 1 Absolute Dominant Indicator Humber of Dominant Species Hard OBL, FACW, or FAC: 0 (A) 2 Absolute Dominant Indicator Humber of Dominant Species Hard COL, FACW, or FAC: 0 (A) 3 Absolute Dominant Indicator E 0 <t< td=""><td>Investigator(s): Haley Stratton, Neal Goffinet</td><td>See</td><td>ction, Township, Range:</td><td>10, 2</td><td>S, 67W</td></t<>	Investigator(s): Haley Stratton, Neal Goffinet	See	ction, Township, Range:	10, 2	S, 67W
Subregion (LRR): G-Western Great Plains Range & Irrigated Lat: 30.8884867 Long: 104.878255 Datum: NAD B3 Subregion (LRR): G-Western Stans Termination Wit classification: Nature Lines (Lines Construction) Nature Lines (Lines Construct	Landform (hillslope, terrace, etc.):	Local relie	ef (concave, convex, nor	ne): slope	Slope (%): 1-3
Soil May Durk Name: Num loam NWD classification: MVD destriction: NWD classification: Are Unader/Modelsic conditions on the site typical for this time of the ysar? Y Are Unader/Multication: Soil . or Hydrology Soil May Destriction: Soil May Destriction: Are "normal circumstance" present? Yes. Are Vegetation . Soil . or Hydrology significantly disturbed? Are "normal circumstance" present? Yes. SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrology Present? N Is the Sampled Area Within a Wetland? N Indicators of Wetland Hydrology Present? N Is the Sampled Area Within a Wetland? N (A) Tree Stratum (Plot size:) Absolute Dominant Indicator N (A) 3 4 .	Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat:39	.88884867 Long:	-104.8785255	Datum: NAD 83
Are clanatorydrologic conductors on the site typical for this time of the year? Y <td< td=""><td>Soil Map Unit Name: Nunn Ioam</td><td></td><td>NWI classificat</td><td>tion:</td><td></td></td<>	Soil Map Unit Name: Nunn Ioam		NWI classificat	tion:	
Are Vegetation	Are climatic/hydrologic conditions on the site typical for this time of t	he year?	Y (If no, expla	in in Remarks.)	
All Vigetation	Are Vegetation , Soil , or Hydrology	significantly	/ disturbed? Are nor	mai circumstances" p	resent? Yes
SUMMARY OF Present? N Hydrophylic Vegetation Present? N Indicators of Wetland Hydrology Present? N Indicators of Wetland Hydrology Present? N It yes, optional wetland site D: Outpoint for Wetland 3 Remarks: It yes, optional wetland site D: Outpoint for Wetland 3 VEGETATION Use scientific names of plants. Species Dominance Test Worksheet 1 Species Species Statum 1 Cover Species Statum Cover 2 0 Tree Stratum (Plot size: 0 (A) 2 0 Total Cover Provalence Index Worksheet (A) 2 0 Total Cover Provalence Index Worksheet (A) 2 0 Total Cover Provalence Index Worksheet (A) 4 0 Total Cover Provalence Index Worksheet (A) 5 0 x1 = 0 (B) (A) (B) 4 0 Total Cover Provalence Index Worksheet (A) (B) 1 Do Total Cover (Cover Vork					eis in Remarks.)
Prydrophytic Vegetation Present? N Is the Sampled Area Within a Wetland? N Indicators of Wetland Hydrology Present? N If yes, optional wetland site ID: Outpoint for Wetland 3 Remarks: If yes, optional wetland site ID: Outpoint for Wetland 3 If yes, optional wetland site ID: Outpoint for Wetland 3 Remarks: Present? N If yes, optional wetland site ID: Outpoint for Wetland 3 VECETATION Use scientific names of plants. Percent of Dominant Species Mumber of Dominant Species 1 Marco BL, FACW, or FAC: 0 (A) 2 0 Total Number of Dominant Species Indicators 3 0 Total Vegetation Species Intare OBL, FACW, or FAC: 0.00% (AB) 2 0 Total Vegetation Species Intare OBL, FACW, or FAC: 0.00% (AB) 3 0 Total Vegetation Species Intare OBL, FACW, or FAC: 0.00% (AB) 2 0 Total Vegetation Species Intare OBL, FACW, or FAC: 0.00% (AB) 3 0 Total Vegetation Species Intare OBL, FACW, or FAC: 0.00% (AB) 4 0 Total Vegetation Species Intare OBL, FACW, or FAC: 0.00% (AB) 5 0 Total Vegetation Species Intare OBL, FACW, or F	SUMMART OF FINDINGS - Attach site map showing sam	pling point loca	tions, transects, impo	rtant features, etc.	
Hydro Soll Present? N Is the Sampled Area Within a Wetland? N Indicators of Wetland Hydrology Present? N If yes, optional wetland site ID: Outpoint for Wetland3 Remarks: If yes, optional wetland site ID: Outpoint for Wetland3 If yes, optional wetland site ID: Outpoint for Wetland3 WEGETATION Use scientific names of plants. Absolute Dominance Test Worksheet Tree Stratum (Plot size:) % Cover Species Statu 1	Hydrophytic Vegetation Present? N				
Indicators of Wetland Hydrology Present? N If yes, optional wetland site ID: Outpoint for Wetland 3 Remarks:	Hydric Soil Present? N	Is the s	Sampled Area Within	a Wetland?	N
Remarks: VECETATION Use scientific names of plants. Deminant Indicator % Cover Deminant Indicator % Cover Deminant Species Intal are OBL FACW, or FAC:	Indicators of Wetland Hydrology Present? N	If yes,	optional wetland site ID:	Outpoint for Wetla	and 3
VEGETATION Use scientific names of plants. Tree Stratum (Plot size:) Absolute Dominant Indicator Porninance Test Worksheet 1	Remarks:	·			
VECETATION Use scientific names of plants. Image: Indicator Statum (Plot size:) 1					
VEGETATION Use scientific names of plants. Image: Indicator of Dominant Species Status Tree Stratum (Plot size:) 2					
VEGETATION Use scientific names of plants. Tree Stratum (Plot size:) 4)	
Tree Stratum (Plot size:) Absolute % Cover Dominant Species Indicator Status Dominant Species that are OBL, FACW, or FAC: (A) 3	VEGETATION Use scientific names of plants.				
Tree Stratum (Plot size:) % Cover Species Statu Number of Dominant Species 1	Absolu	ute Dominant	Indicator Domina	ance Test Workshee	et
1	Tree Stratum (Plot size:) % Cov	ver Species	Status Number of	of Dominant Species	
2	1		that are C	DBL, FACW, or FAC:	0 (A)
3	2		Total Nur	nber of Dominant	
4	3		Species A	Across all Strata:	<u> </u>
5 0 Total Cover 1 0 Total Cover 1 0 Total % Cover of: Multiply by: 0 Saging/Shrub Stratum 0 Total % Cover of: Multiply by: 0 Saging/Shrub Stratum 0 Total % Cover of: Multiply by: 0 Saging/Shrub Stratum 0 Total % Cover of: Multiply by: 0 Total % Cover of: Multiply by: OBL species 0 x 4 = 0 1 browus tectorum 0 = Total Cover FACU species 0 x 4 = 0 2 convolvulus arvensis 50 Y UPL Prevalence Index motals 500 (B) 3	4		Percent o	of Dominant Species	
Sapling/Shrub Stratum (Plot size: Prevalence Index Worksheet 1 Total % Cover of: Multiply by: 2 0 = Total Cover 4 0 = Total Cover 5 0 = Total Cover 1 browus tectorum 0 2 0 = Total Cover 1 browus tectorum 50 2 0 = Total Cover 1 browus tectorum 50 2 0 = Total Cover 1 browus tectorum 50 2 0 = Total Cover 1 Prevalence Index = B/A = 500 2 0 = Total Cover 1 Rapid Test for Hydrophytic Vegetation 2 0 = Total Cover 1 - - 2 0 = Total Cover 1 - - 2 - - 3 - - 4 - - 5 - - 6 -	5	-	that are C	DBL, FACW, or FAC:	0.00% (A/B)
a			Provola	naa Indax Warkak	a a t
1 India % Coles of the model of the second of the sec		\sim	Total %		ultiply by:
3	2	┛		ecies 0 x	1 = 0
4	3		FACW	species $0 \times 10^{\circ}$	2 = 0
5	4		FAC sp	ecies 0 x 3	3 = 0
Herb Stratum (Plot size:) 0 = Total Cover UPL species 100 x 5 = 500 (B) 1 bromus tectorum 50 Y UPL Prevalence Index = B/A = 5.00 (B) 2 convolvulus arvensis 50 Y UPL Hydrophytic Vegetation Indicators: 4	5		FACU s	species 0 x	4 = 0
Herb Stratum (Plot size:) 1 bromus tectorum 50 Y UPL 2 convolvulus arvensis 50 Y UPL 3 50 Y UPL 4 50 Y UPL 5 50 Y UPL 4 5 50 Y 5 50 Y UPL 6 5 1 Rapid Test for Hydrophytic Vegetation 6 5 2 Dominance Test is >50% 7 5 4 - - 8 - - - 9 - - - 10 - - - 10 - - - 10 - - - 10 - - - 10 - - - 10 - - - 10 - - - 2 - 0 = Total Cover - <tr< td=""><td>0</td><td>= Total Cove</td><td>er UPL sp</td><td>ecies 100 x s</td><td>5 = 500</td></tr<>	0	= Total Cove	er UPL sp	ecies 100 x s	5 = 500
1 bromus tectorum 50 Y UPL Prevalence Index = B/A = 5.00 3	Herb Stratum (Plot size:)		Colum	totals 100 (A	a) <u>500</u> (B)
2 convolvulus arvensis 50 Y UPL 3	1 bromus tectorum 50	Y	UPL Prevale	ence Index = B/A =	5.00
3	2 convolvulus arvensis 50	Y	UPL		
4	3		Hydrop	hytic Vegetation I	ndicators:
5	4		1 -	Rapid Test for Hydro	phytic Vegetation
6	5		2 -	Dominance Test is >	·50%
7	6		3 -	Prevalence Index is :	≤3.0'
8	7		4 -	Morphological Adap	otations ¹ (provide
9	8		sup	porting data in Ren	narks or on a
10	9		sep	arate sheet)	1
Woody Vine Stratum (Plot size:) 1	10		Pro	blematic Hydrophyt	tic Vegetation'
1 1	100	= Total Cove	er (Ex	piain)	
2 0 = Total Cover Hydrophytic % Bare Ground in Herb Stratum 30 Present? N	1		¹ Indicat	ors of hydric soil and we present, unless disturbe	etland hydrology must be ed or problematic
0 = Total Cover Vegetation % Bare Ground in Herb Stratum 30 Present? N Remarks:	2		Нуо	drophytic	
% Bare Ground in Herb Stratum 30 Present? N Remarks:	0	= Total Cove	er Veç	getation	
Remarks:	% Bare Ground in Herb Stratum <u>30</u>		Pre	esent? N	_
	Remarks:				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth <u>Matrix</u> <u>Re</u>					ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-5	10YR 5/6	100					siltv loam		
¹ Type: $C = C$	oncentration, D =	Depletior	n, RM = Reduced N	latrix, CS	= Covere	ed or Coa	ited Sand Grains. ² Locati	on: PL = Pore Lining, M = Matrix	
Hydric Soil	Indicators: (App	licable t	o all LRRs, unle	ss other	wise not	ed.)	Indicators for Prob	elematic Hydric Soils ³ :	
Hist	osol (A1)		Sar	ndy Gleye	d Matrix ((S4)	1 cm Muck (A9)	(LRR I, J)	
Hist	ic Epipedon (A2)		Sar	ndy Redox	k (S5)		Coast Prairie Re	dox (A16) (LRR F, G, H)	
Blac	ck Histic (A3)		Stri	pped Mat	rix (S6)		Dark Surface (S	7) (LRR G)	
Hyd	Irogen Sulfide (A4)		Loa	my Muck	y Mineral	(F1)	High Plains Dep	ressions (F16)	
Stra	atified Layers (A5)	(LRR F)	Loa	my Gleye	ed Matrix	(F2)	(LRR H outsid	e of MLRA 72 & 73)	
1 cr	m Muck (A9) (LRR	F, G, H)	Dep	oleted Ma	trix (F3)		Reduced Vertic	(F18)	
Dep	leted Below Dark	Surface (A11) Red	dox Dark \$	Surface (F6)	Red Parent Mate	erial (TF2)	
Thio	ck Dark Surface (A	.12)	Dep	pleted Dai	rk Surfac	e (F7)	Very Shallow Da	rk Surface (TF12)	
Sar	dy Mucky Mineral	(S1)	Red	lox Depre	essions (F	-8)	Other (Explain in	Remarks)	
2.5	cm Mucky Peat or	Peat (S2	2) Hig	h Plains D	Depressio	ons (F16)	³ Indicators of hvdro	phytic vegetation and wetland	
(L	RR G, H)		(N	ILRA 72 8	& 73 of L		hydrology must be	present, unless disturbed or	
5 c	m Mucky Peat or I	Peat (S3)	(LRR F)			6 X (, , ,, ,, ,	problematic.	
Restrictive	l aver (if observe	əd).			-				
	mpaction	<i>su)</i> .)	Hydric Soil Prese	Int? N	
Depth (inche					\mathbf{X}				
Deptil (inclu					<u>`````````````````````````````````````</u>				
Remarks:				く、					
			(~ `					
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
HYDROLO	JGY								
Wetland Hy	drology Indicato	ors:	X						
Primary Indi	cators (minimum	<u>of one is</u>	required; check a	all that ap	oply)		Secondary In	idicators (minimum of two required)	
Surface	Water (A1)		~ _	Salt Cru	st (B11)		Surface	e Soil Cracks (B6)	
High Wa	ater Table (A2)	$\langle \rangle$	• <u> </u>	Aquatic	Invertebra	ates (B13	3) Sparse	ly Vegetated Concave Surface (B8)	
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	1) Drainag	ge Patterns (B10)	
Water M	larks (B1)			Dry-Sea	son Wate	er I able (	C2) Oxidize	d Rhizospheres on Living	
Sedimer	nt Deposits (B2)				Rhizosp	heres on	Living Roots	(C3) (where tilled)	
Drift Dep	DOSITS (B3)			Roots (	(C3) (Whe	ere not til	(C4) Crayfisi	n Burrows (C8)	
	at or Crust (B4)			This Mu	e of Real			rehis Desition (D2)	
	OSIIS (BD) on Visible on Aoria	Imagan	(P7)		ck Surrac	æ (C7) Romarka		utral Tast (DE)	
Water-S	tained Leaves (BQ	n nnager <u>y</u> V	y (D7)		xpiain in	Remarks	FAC-Ne	eave Hummocks (D7) (I RR F)	
		)							
Field Obser	vations:								
Surface Wa	ter Present?	Yes	No	Х	Depth (i	nches):			
Water Table	Present?	Yes	No	X	Depth (i	nches):	In	dicators of Wetland	
Saturation F	Present?	Yes	No	X	Depth (i	nches):	H	lydrology Present? N	
(includes ca	pillary fringe)				-				
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial p	photos, p	revious i	nspections), if available:		
			-						
Remarks:									
1									

WETLAND DETERMINATION	N DATA FC	ORM - Great Plains	Region	
Project/Site: US85 Cit	ty/County:	Henderson/Adams	Sampling Date:	7/17/18
Applicant/Owner: CDOT	State:	Colorado	Sampling Point:	SP10
Investigator(s): Haley Stratton, Neal Goffinet	Se	ection, Township, Range	2, 2	S, 67W
Landform (hillslope, terrace, etc.): terrace	Local reli	ef (concave, convex, no	ne): none	Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: 39	0.89998159 Long:	-104.8649814	Datum: NAD 83
Soil Map Unit Name: Vona sandy loam		NWI classifica	tion:	PSS
Are climatic/hydrologic conditions on the site typical for this time of the	e year?	Y (If no, expla	ain in Remarks.)	
Are Vegetation , Soil , or Hydrology	- significant	ly disturbed? Are "noi	rmal circumstances" p	resent? Yes
			ieu, explain any answ	vers in Remarks.)
SUMMART OF FINDINGS - Attach site map showing sampl	ing point loc	ations, transects, impo	rtant features, etc.	
Hydrophytic Vegetation Present? N				
Hydric Soil Present? N	Is the	Sampled Area Within	a Wetland?	N
Indicators of Wetland Hydrology Present? N	lf yes,	optional wetland site ID:	Outpoint for Wetla	and 8
Remarks:				
		C		
VEGETATION Use scientific names of plants.				
Absolute	e Dominant	Indicator Domin	ance lest workshee	et
	i Opecies	that are (	OF Dominant Species	0 (A)
2			mbor of Dominant	(//)
3		Species .	Across all Strata:	2 (B)
4		Percent	of Dominant Species	( )
5		that are 0	OBL, FACW, or FAC:	0.00% (A/B)
0	= Total Cov	er		
Sapling/Shrub Stratum (Plot size:)	$\sim$	Preval	ence Index Worksł	neet
1	ř	Total %	6 Cover of: M	ultiply by:
2		OBL sp	becies <u>0</u> x	1 = 0
		FACW	species 0 x 2	2 = 0
4			$\frac{1}{2}$	3 = 0
<u> </u>	- Total Cov	er LIPL sr	species $\frac{15}{15}$ x ²	4 = 0
Herb Stratum (Plot size:			15 $15$ $15$ $(A$	$\frac{75}{75}$ (B)
1. Mediagra pativa	V	LIDI Provola	$\frac{10}{10} (7)$	<u> </u>
2 convolvulus anvensis				
		Hvdroi	ohvtic Vegetation I	ndicators:
4		[1.j.m.]	Rapid Test for Hydro	phytic Vegetation
5	_	2-	Dominance Test is >	50%
6	_	3 -	Prevalence Index is :	≤3.0 ¹
7		4 -	Morphological Adap	otations ¹ (provide
8		su	oporting data in Ren	narks or on a
9		se	parate sheet)	
10		Pro	blematic Hydrophyt	tic Vegetation ¹
15	= I otal Cov	er (E)	kplain)	
1)		¹ Indica	tors of hydric soil and we present, unless disturbe	etland hydrology must be ed or problematic
2		Ну	drophytic	
0	= I OTAL COV	er Ve	getation	
% Bare Ground in Herb Stratum		Pro		_
Remarks:				

Profile Des	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth Matrix Redox Features						, 		
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 5/3	100	<u> </u>	Γ	Γ		silty loam	
		[]						
	1		l		1			
	1		i	+	1	<b> </b>		
	1	<b>!</b>	l	+		<b> </b>	 	
		┢───┦		╂────				
	<u> </u>	<b>├</b> ───┦	l	──		<b> </b>		
	ļ!	<b>└───</b> ′	l		<u> </u>	ļ		
4			L				. 2	
¹ Type: $C = C$	oncentration, D =	Depletion	, RM = Reduced M	Aatrix, CS	= Covere	ed or Coa	ted Sand Grains. ² Locatio	on: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators: (App	licable t	o all LRRs, unle	ss other	wise not	ed.)	Indicators for Prob	lematic Hydric Soils":
His	tosol (A1)		Sar	ndy Gleye	d Matrix (	(S4)	1 cm Muck (A9) (	
HIS	tic Epipedon (A2)		Sar	ndy Redo	x (S5)			dox (A16) (LRR F, G, H)
Bia	ck Histic (A3)		5m	pped Iviat	rix (S6)		Dark Surface (Sr	
	Irogen Sumue (A4)		Lo		.y Minerai - √ Motrix	(F1) (F2)	High Prains Depr	
			L0a	Imy Gieye		(FZ)		= OI MILKA (2 a (3))
	I Muck (AB) (ENT	Curface (	A11) Re	Jieleu ivia dov Dark	LIIX (FO) Surface (	E6)	Reduced Venic (	- 10) rial (TE2)
	ck Dark Surface (A	3011ace (7	ATT)	nleted Da	rk Surfac	-0) ≏ (F7)	Very Shallow Dar	IIdi (112) k Surface (TF12)
Sar	dv Mucky Mineral	(S1)		dox Depre	essions (F	= (i <i>i )</i> =R)	Other (Explain in	Romarke)
2.5	cm Mucky Peat or	Peat (S2	יי <u>Hic</u>	h Plains [	Denressic	ons (F16)	³ Indicators of hydror	obvic vegetation and wetland
(L	RR G. H)	1000.00	/ (N	/LRA 72	& 73 of L		hvdrology must be	present unless disturbed or
5 0	cm Mucky Peat or I	Peat (S3)	(LRR F)			/ Y	p	roblematic.
Bestrictivo	l aver (if obsorv	- 4).				1		
TUDO	Layer (II Observe	30):					Ludric Soil Prese	-42 NI
Depth (inch	$\frac{1}{2}$				······································			
Deput (mon	<del></del>			=	<u>· · · · · · · · · · · · · · · · · · · </u>			
Remarks.				へ゛	-			
			(	))				
			<u> </u>					
	061			<u> </u>				
Wetland Hy	/drology Indicate	ors:	- <u></u>					
Primary Indi	icators (minimum	of one is	required: check	all that ar	(vlac		Secondary In	dicators (minimum of two required)
Surface	Water (A1)		2	Salt Cru	ist (B11)		Surface	Soil Cracks (B6)
High Wa	ater Table (A2)	$\sim$	<ul> <li>—</li> </ul>	Aquatic	Invertebra	ates (B13	Sparsely	Vegetated Concave Surface (B8)
Saturati	on (A3)					~	opaisoi	
Saturation (A3) V Hydrogen Sulfide Odor (C1) Drainage Patterns (B10)							) Drainage	e Patterns (B10)
Water M	1arks (B1)	$\sim$		Hydroge Dry-Sea	n Sulfide son Wate	Odor (C1 r Table (	I) Drainage C2) Oxidized	Patterns (B10) Rhizospheres on Living
Water M	farks (B1) nt Deposits (B2)	$\mathbf{\vee}$		Hydrog∉ Dry-Sea Oxidizec	en Sulfide son Wate Rhizosp	Odor (C1 Fr Table ( heres on	I)     Drainag       C2)     Oxidized       Living     Roots (	Patterns (B10) d Rhizospheres on Living (C3) (where tilled)
Water M Sedimer Drift De	Marks (B1) nt Deposits (B2) posits (B3)	$\mathbf{\vee}$		Hydroge Dry-Sea Oxidizec Roots (	en Sulfide Ison Wate I Rhizosp (C3) ( <b>whe</b>	Odor (C1 er Table ( heres on ere not til	0     0       1)     Drainag       C2)     Oxidized       Living     Roots       'led)     Crayfish	e Patterns (B10) d Rhizospheres on Living (C3) ( <b>where tilled</b> ) Burrows (C8)
Water M Sedimen Drift Dep Algal Ma	Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	~		Hydroge Dry-Sea Oxidizec Roots ( Presenc	en Sulfide Ison Wate d Rhizosp (C3) ( <b>whe</b> e of Redu	Odor (C1 er Table ( heres on ere not til uced Iron	0     0       1)     Drainag.       C2)     Oxidized       Living     Roots       Iled)     Crayfish       (C4)     Saturation	e Patterns (B10) d Rhizospheres on Living (C3) ( <b>where tilled</b> ) Burrows (C8) on Visible on Aerial Imagery (C9)
Water M Sedimer Drift Dej Algal Ma Iron Dep	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	• •		Hydroge Dry-Sea Oxidizec Roots ( Presenc Thin Mu	en Sulfide Ison Wate d Rhizosp (C3) ( <b>whe</b> :e of Redu ck Surfac	Odor (C1 Table ( heres on <b>re not ti</b> l uced Iron (C7)	I)     Drainag       C2)     Oxidized       Living     Roots       Iled)     Crayfish       (C4)     Saturation       Geomor     Geomor	e Patterns (B10) d Rhizospheres on Living (C3) (where tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2)
Water M Sedimer Drift De Algal Ma Iron Dep Inundati	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	I Imagery	/ (B7)	Hydroge Dry-Sea Oxidizec Roots ( Presenc Thin Mu Other (E	en Sulfide Ison Wate d Rhizosp (C3) (whe e of Redu ck Surfac	Odor (C1 er Table ( heres on ere not til uced Iron e (C7) Remarks	I) Drainag C2) Oxidized Living Roots IIed) Crayfish (C4) Saturatio Geomor ) FAC-Ne	<ul> <li>vegetated contacte contacte (2c)</li> <li>e Patterns (B10)</li> <li>d Rhizospheres on Living</li> <li>(C3) (where tilled)</li> <li>Burrows (C8)</li> <li>on Visible on Aerial Imagery (C9)</li> <li>phic Position (D2)</li> <li>utral Test (D5)</li> <li>pare Hummerks (D7) (LPR E)</li> </ul>
Water M Sedimen Drift De Algal Ma Iron Dep Inundati Water-S	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9	I Imagery	′ (В7)	Hydroge Dry-Sea Oxidizec Roots Presenc Thin Mu Other (E	en Sulfide ason Wate d Rhizosp (C3) ( <b>whe</b> e of Redu ck Surfac ixplain in	odor (C1 er Table ( heres on ere not til uced Iron e (C7) Remarks	I) Drainag C2) Oxidized Living Roots Iled) Crayfish (C4) Saturatio Geomor ) FAC-Ne Frost-He	e Patterns (B10) d Rhizospheres on Living (C3) ( <b>where tilled</b> ) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5) eave Hummocks (D7) ( <b>LRR F</b> )
Water M Sedimen Drift Dej Algal Ma Iron Deg Inundati Water-S	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9	I Imagery	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	en Sulfide ason Wate d Rhizosp (C3) (whe ce of Redu ck Surfac Explain in	odor (C1 er Table ( heres on ere not til uced Iron e (C7) Remarks	I) Drainag C2) Oxidized Living Roots Iled) Crayfish (C4) Saturatio Geomor ) FAC-Ne Frost-He	e Patterns (B10) d Rhizospheres on Living (C3) ( <b>where tilled</b> ) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5) eave Hummocks (D7) ( <b>LRR F</b> )
Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Water-S Field Obsen Surface Wa	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria stained Leaves (B9 rvations: ter Present?	I Imagery	(B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	en Sulfide ason Wate d Rhizosp (C3) (whe ce of Redu ck Surfac :xplain in Depth (i	odor (C1 or Table ( heres on <b>er not til</b> uced Iron :e (C7) Remarks	I) Drainag C2) Oxidized Living Roots Iled) Crayfish (C4) Saturation FAC-Ne Frost-He	e Patterns (B10) d Rhizospheres on Living (C3) (where tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5) eave Hummocks (D7) (LRR F)
Water M Sedimer Drift De Algal Ma Iron Dep Inundati Water-S Field Obser Surface Wa Water Table	Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present?	Il Imagery ) Yes Yes	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	en Sulfide ason Wate d Rhizosp (C3) (whe ce of Redu ck Surfac ixplain in Depth (i Depth (i	odor (C1 er Table (i heres on ere not til uced Iron e (C7) Remarks nches): nches):	(C4) FAC-Ne	dicators of Wetland
Water M Sedimen Drift Dej Algal Ma Iron Dep Inundati Water-S <b>Field Obser</b> Surface Wa Water Table Saturation F	Aarks (B1) Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present?	Il Imagery ) Yes Yes Yes	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	en Sulfide ison Wate d Rhizosp (C3) ( <b>whe</b> :e of Redu ick Surfac :xplain in Depth (i Depth (i Depth (i	nches): nches): nches):	I) Drainag C2) Oxidized Living Roots Iled) Crayfish (C4) Saturatio Geomor ) FAC-Ne Frost-He Ind H	dicators of Wetland ydrology Present?
Water M Sedimen Drift De Algal Ma Iron Dep Inundati Water-S <b>Field Obse</b> Surface Wa Water Table Saturation F (includes ca	Arks (B1) Arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? upillary fringe)	Il Imagery ) Yes Yes Yes	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E	en Sulfide ason Wate d Rhizosp (C3) ( <b>whe</b> ee of Redu ck Surfac Explain in Depth (i Depth (i	nches): nches):	I) Drainag C2) Drainag C2) Oxidized Living Roots (C4) Saturation FAC-Ne Frost-He Ind H	dicators of Wetland ydrology Present?
Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Water-S Field Obsen Surface Wa Water Table Saturation F (includes ca Describe Re	Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? Present? pillary fringe) Scorded Data (strees)	Il Imagery ) Yes Yes Yes	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E X X X II, aerial p	en Sulfide ason Wate d Rhizosp (C3) ( <b>whe</b> e of Redu ck Surfac Explain in Depth (i Depth (i Depth (i	nches): nches): nches): nches):	nspections), if available:	dicators of Wetland ydrology Present?
Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Water-S <b>Field Obsen</b> Surface Wa Water Table Saturation F (includes ca Describe Re	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9) rvations: ter Present? Present? Present? Present? pillary fringe) pcorded Data (strees)	I Imagery ) Yes Yes Yes	/ (B7)	Hydroge Dry-Sea Oxidized Presenc Thin Mu Other (E X X X II, aerial p	en Sulfide ison Wate d Rhizosp (C3) ( <b>whe</b> ee of Redu ck Surfac Explain in Depth (i Depth (i Depth (i Depth (i	nches): nches): nches): nches):	nspections), if available:	dicators of Wetland ydrology Present?
Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Water-S <b>Field Obsen</b> Surface Wa Water Table Saturation F (includes ca Describe Re Remarks:	Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? pillary fringe) pcorded Data (streen)	I Imagery ) Yes Yes Yes Yes	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E X X X II, aerial p	en Sulfide ison Wate d Rhizosp (C3) ( <b>whe</b> ee of Redu ck Surfac Explain in Depth (i Depth (i Depth (i	nches): nches): nches): nches):	nspections), if available:	dicators of Wetland ydrology Present?
Water M Sedimen Drift De Algal Ma Iron Dep Inundati Water-S <b>Field Obsen</b> Surface Wa Water Table Saturation F (includes ca Describe Re Remarks:	Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Stained Leaves (B9 rvations: ter Present? Present? Present? pillary fringe) ∋corded Data (streen)	I Imagery ) Yes Yes Yes am gaug	/ (B7)	Hydroge Dry-Sea Oxidized Roots Presenc Thin Mu Other (E X X X II, aerial p	en Sulfide ason Wate d Rhizosp (C3) ( <b>whe</b> ce of Redu ck Surfac Explain in Depth (i Depth (i Depth (i photos, p	nches): nches): nches): nches):	nspections), if available:	dicators of Wetland ydrology Present?

Projectsi: US85       City/County: Hendorson/Adams       Sampling Date:       7/17/16         Investigator(s):       CD07       Sampling Date:       Colorado       Sampling Paint:       Colorado       Sa	WETLAND DETERMINAT	TION DATA FORM - Great Plains Region
ApplicantOvner:       CDOT       State:       Colorado       Sampling Point:       SP11         Unredistancist:       Tamata Kaefa and Alex Netico       Section. Township. Range 2, 225, 67W       Stope (%):       1.5.2         Solid Napulation (Nitile Department Plants Range & Tingated Latting and Stope (%):       1.3.2       Stope (%):       1.5.3         Solid Napulation (Nitile Department Plants Range & Tingated Latting and Stope (%):       1.5.3       Nitile Stope (%):       1.5.3         Solid Napulation (Stope (%):       Stope (%):       1.5.3       Nitile Stope (%):       1.5.3         Are Vegetation (Stope (%):       Stope (%):       1.5.3       Nitile Stope (%):       1.5.4         Solid Napulation (Present?)       Y       Is the Sampled Area Within a Wetland?       Y         Hydro Solid Present?       Y       Is the Sampled Area Within a Wetland?       Y         Indicators of Wetland Hydrology Present?       Y       Is the Sampled Area Within a Wetland?       (A)         2       Statum       Provisince Table Stratum       (Post Stoc)       (A)         3       Status       Species       Status       (A)         10       Y       FACW       FACW       FACW       (A)         2       Species       Status       (A)       (A) <t< td=""><td>Project/Site: US85</td><td>City/County: Henderson/Adams Sampling Date: 7/17/18</td></t<>	Project/Site: US85	City/County: Henderson/Adams Sampling Date: 7/17/18
Investigator(s):       Tamata Keefe and Alex Netion       Section, Township, Range:       2, 2, 5, 77V         Landform (INER):       C-Avestern Great Plans Range & Inrigate       Lat:       39,0023718       Concevo:       Solorboy (Nr. NAD BS         Subrogion (LRR):       C-Mestern Great Plans Range & Inrigate       Lat:       39,0023718       Concevo:       Solorboy (Nr. NAD BS         Are Vegetation	Applicant/Owner: CDOT	State: Colorado Sampling Point: SP11
Landform (hillslope, ferrace, etc.): drainage swale Load Irelief Conceve, convex, nonex; Conceve, Siope (%): 1-3 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 Sol Map, Unit Name: Vone sandy loam NAD 83 NW classification: PSS Map, Value Name: Vone sandy loam NAD 83 NW classification: PSS Map, Value Name: Vone sandy loam NAD 83 NW classification: Sol	Investigator(s): Tamara Keefe and Alex Nelson	Section, Township, Range: 2, 2S, 67W
Subregion (LRR):       C-Western Great Plains Range & Imigated Joins (Link Subregion)       Lat:       33.90023718       Long:       104.8695       Datum:: NAD 83         Are dimatichydrologic conditions on the site bylcal for this time of the year?       Y       (If no. acplain in Remarks.)       application       PSI       Asplication:       Y       Y       If the sampled Area Within a Wetland?       Y       If the sample Area Worksheet       Northerea Manual Manu	Landform (hillslope, terrace, etc.): drainage swale	Local relief (concave, convex, none): Concave Slope (%): 1-3
Soli Map Unit Name: Vora sandy Icam       NWI classification:       PSS         Are Vigetation       , or Hydrology       significantly disturbed?       Are "normal circumsteries" present?       Yes         Are Vegetation       , Soli       , or Hydrology       significantly disturbed?       Are "normal circumsteries" present?       Yes         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.       Hydrology       Yes         Hydrology       Yes       Y       Is the Sampled Area Within a Wetland?       Y         Hydrology       Yes       Y       Is the Sampled Area Within a Wetland?       Y         Indicators of Wetland Hydrology Present?       Y       Is the Sampled Area Within a Wetland?       Y         Remarks:       Drainage swale       Wetland B       Wetland B       (A)         Tere Stratum       (Plot size:       )       10       Y       FACW       For Arcs:       4       (A)         Saging/Shrub Stratum       (Plot size:       )       10       Y       FACW       For Arcs:       100       FACW         Moded visits deticides       0       Y       FACW       FACW       For Arcs:       100       FACW       For Arcs:       100       FACW       For ArcW or Arcs:       100	Subregion (LRR): G-Western Great Plains Range & Irrigate	ied Lat: <u>39.90023718</u> Long: <u>-104.864905</u> Datum: NAD 83
Are chanalizity didigit conductions on the site lypical for this time of the year?       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y       Y	Soil Map Unit Name: Vona sandy loam	NWI classification: PSS
Are vegetation	Are climatic/hydrologic conditions on the site typical for this time of	of the year? Y (If no, explain in Remarks.)
And organization       The Visit of Multiply in the dual problematics (in proceed, expanding problematics) (in the dual problematics) (in the dual problematics) (in the dual problematic)	Are Vegetation , Soil , or Hydrology	significantly disturbed? Are normal circumstances present? Yes
United to the statum       Statum       Y         Hydrophylic Vegetation Present?       Y         Hydrophylic Vegetation Present?       Y         Indicators of Wetland Hydrology Present?       Y         Is the Sampled Area Within a Wetland?       Y         If yes, optional wetland site ID:       Wetland B         Wetland Hydrology Present?       Y         If yes, optional wetland site ID:       Wetland B         Tree Stratum       (Plot size:         1       200/UKS dottoidos         1       10         Y       FAC         1       200/UKS dottoidos         1       10         2       200/UKS dottoidos         1       10         2       200/UKS dottoidos         1       10         1       10         1       10         1       10         1       10         2       200/UKS dottoidos         2       200/UKS dottoidos         3       50         4       50         50       Total Cover         Herb Stratum       (Plot size:         10       50         1       500 <td>SUMMARY OF FINDINGS - Attach site man showing as</td> <td> naturally problematic: (in needed, explain any answers in remarks.)</td>	SUMMARY OF FINDINGS - Attach site man showing as	naturally problematic: (in needed, explain any answers in remarks.)
Prydric Sol Research       I       Y       Is the Sampled Area Within a Wetland?       Y         Indicators of Wetland Hydrology Present?       Y       If yes, optional wetland site ID:       Y         Remarks:       Drainage swale       If yes, optional wetland site ID:       Wetland B         VECETATION Use scientific names of plants.       Absolute       Dominant       Indicators         1       populus detoides       10       Y       FAC         2       0       Y       Statum       Percent of Dominant Species         1       10       Y       FAC       FAC Worksheet         2       0       Total Number of Dominant Species       (B)         4       5       10       Y       FAC         2       0       Y       FAC       FAC Worksheet         2       10       Y       FAC       Multiply by:         2       0       Total % Cover of:       Multiply by:         3       0       0       Total % Cover of:       Multiply by:         10       Y       FAC       FAC       Provalence Index Worksheet         10       10       Y       FAC       FAC Worksheet       Total % Cover of:         4       50	Hudrophytic Vegetetion Dresent?	amping point locations, transects, important leatures, etc.
Provide Sub Present?       Image Subscription         Indicators of Wetland Hydrology Present?       Y         Indicators of Wetland Hydrology Present?       Y         Remarks:       If yes, optional wetland site ID:       Wetland B         Remarks:       Drainage swale         VECETATION - Use scientific names of plants.         Tree Stratum       (Plot size:	Hydrophytic Vegetation Present?	la the Compled Area Within a Watland?
In types, optional wetland site it.:       Wetland 3         Remarks:         Drainage swale         VEGETATION Use scientific names of plants.         Deminant minance Test Worksheet         1 populus deltoides         1       populus deltoides       10       Y       FAC         3       10       Y       FAC       Total Number of Dominant Species         4       10       Y       FAC       Total Number of Dominant Species         5       10       Y       FAC       Total Number of Dominant Species         1       salix exigua       10       Y       FAC         2       populus deltoides       50       Total Cover       Multiply by:         1       Plataris erundinacces       50       Y       FACW         4       50       Fotal Cover       Column totals       110         1       Phateris erundinaces       50       Y       FACW         2       0       50       Fotal Cover       Seecies       0 x 4 =       0         1       Phateris erundinaces       50       Y       FACW       FACW       Prevalence Index is 3.3.0 ¹ 3		
Remarks:         Drainage swale         VEGETATION Use scientific names of plants.         Tree Stratum (Plot size:	Indicators of Wetland Hydrology Present?	If yes, optional wetland site ID: VVetland 8
Drainage swale         VEGETATION Use scientific names of plants.         Image swale         Depulse delitoides         10       Y       Factor         2       0       Y         3       0       Y         4       10       Y         5       10       Y         4       10       Y         5       10       Y         10       Y       FACW         10       Y       FACW         2       Dominant (Plot size:       10         10       Y       FACW         10       Prevalence Index Worksheet         10       Received So       0 x 1 = 0         10       F	Remarks:	
Drainage swale         VEGETATION Use scientific names of plants.         Dominant Indicator I populus deltoides       Dominant Indicator Y Cover Species Status I populus deltoides         1       populus deltoides       10       Y       FACW Y FAC       4       (A)         3       10       Y       FACW Y FAC       Y       (B)         Saaling/Shrub Stratum Populus deltoides       10       Y       FACW Y FAC       Prevalence Index Worksheet Total % Cover of 1       Total Number of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)         3       10       Y       FACW Populus deltoides       0       Y       FACW FAC species       0       x 1 = 0 0       0         4       50       Total Cover Herb Stratum       (Plot size: )       50       Total Cover FACW       Prevalence Index Worksheet Total % Cover of: Multiply by: OBL species       0       x 2 = 0 0       y       FACW       Y       FACW       Y       FACW       Y       Y       Y       Y       Y       Y		
VECETATION Use scientific names of plants.         Image: Stratum (Plot size:)       Absolute Dominant Species Stratur (B)         1       populus deltoides)       10       Y       FAC       FAC       Total Number of Dominant Species that are OBL, FACW, or FAC:(B)       (B)         2	Drainage swale	$\mathbf{\wedge}$
VECETATION Ose scientuic hames of plans.         Image: stratum (Plot size:)         1		
Absolute       Dominant       Indicator       Within the test with steed         1       populus deitoides       10       Y       FAC       Total Number of Dominant Species         3       10       Y       FAC       Total Number of Dominant Species       (A)         4       5       10       Y       FAC       (B)         5       10       Y       FAC       (C)       (A)         1       salix exigue       10       Y       FAC       (B)         2       10       Y       FAC       Multiply by:       (D)       (A)         3       10       Y       FAC       FAC       Multiply by:       (D)       (A)         2       populus deitoides       10       Y       FAC       FAC       FAC       FAC       FAC       So       So       FAC       So       So       FAC       FAC       FAC       So       So <td< td=""><td>VEGETATION Use scientific names of plants.</td><td>The second s</td></td<>	VEGETATION Use scientific names of plants.	The second s
International of the deltaides       Image: constraint of the deltaides       Image: constraides       Image: constraint of the deltaides<	Abs Tree Stratum (Plot size: ) % (	Solute Dominant Indicator Dominance Test Worksheet
2	1 populus deltoides	10 Y FAC that are OBL, FACW, or FAC: 4 (A)
3	2	Total Number of Dominant
4	3	Species Across all Strata: 4 (B)
5	4	Percent of Dominant Species
10       =Total Cover         Sabing/Shub Stratum       (Plot size:)         1       salix exigua         2       populus deltoides         3       10         4       10         5       10         5       50         1       Phalaris arundinacea         50       Y         7       50         8       10         7       10         8       10         9       10         10       Y         5       50         5       0         1       Phalaris arundinacea         5       0         6       110         7       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10       10         10 <td>5</td> <td>that are OBL, FACW, or FAC: 100.00% (A/B)</td>	5	that are OBL, FACW, or FAC: 100.00% (A/B)
Saping/Shrub Stratum       (Plot size:)       0       Y       FACW         1       salix exigua       10       Y       FAC         2       populus deitoides       10       Y       FAC         3       10       Y       FAC         4       5       50       = Total Cover         1       Phataris arundinacea       50       Y       FACW         2       50       = Total Cover       UPL species       0       x4 =       0         1       Phataris arundinacea       50       Y       FACW       Prevalence Index B/A =       2.18         1       Phataris arundinacea       50       Y       FACW       Prevalence Index = B/A =       2.18         4       5       50       Y       FACW       Prevalence Index is 53.0 ¹ 1       Rapid Test for Hydrophytic Vegetation Indicators:         4       5       50       = Total Cover       1       Rapid Test for Hydrophytic Vegetation Indicators:       1       1       Rapid Test for H		10 = Total Cover
1       salix exigua       40       Y       FACW         2       populus delibides       10       Y       FAC         3       10       Y       FAC         4       5       50       = Total Cover         50       = Total Cover       0       x 4 =       0         1       Phalaris arundinacea       50       Y       FACW       Prevalence Index = B/A =       2.18         1       Phalaris arundinacea       50       Y       FACW       Prevalence Index is 53.0 ¹ 2       3       50       Y       FACW       Prevalence Index is 53.0 ¹ 4       5       50       Y       FACW       Prevalence Index is 53.0 ¹ 4       5       50       Y       FACW       Prevalence Index is 53.0 ¹ 4       5       50       Y       FACW       Prevalence Index is 53.0 ¹ 5       5       50       Y       FACW       Prevalence Index is 53.0 ¹ 4       50       =       50       Y       FACW       Prevalence Index is 53.0 ¹ 6       50       =       Total Cover       1       -       A Morphological Adaptations ¹ (provide suporting data in Remarks o	Sapling/Shrub Stratum (Plot size:)	Prevalence Index Worksheet
2       populus deitoides       10       Y       FAC       Obst. species       0       x1 =       0         3	1 salix exigua	Total % Cover of: Multiply by:
3	2 populus deltoides	$\frac{10^{-1}}{10^{-1}} + \frac{10^{-1}}{10^{-1}} $
*		FACW species $90 \times 2 = 180$
Herb Stratum       (Plot size:       )       50       = Total Cover         1       Phalaris arundinacea       50       Y       FACW         2       3	5	$\frac{1}{1} \frac{1}{1} \frac{1}$
Herb Stratum       (Plot size:       )         1       Phalaris arundinacea       50       Y       FACW       Prevalence Index = B/A =       2.18         3		$\frac{1}{50} = \text{Total Cover} \qquad \qquad \text{UPL species} \qquad 0 \qquad x = 0$
1       Phalaris arundinacea       50       Y       FACW       Prevalence Index = B/A =       2.18         3	Herb Stratum (Plot size: )	Column totals 110 (A) 240 (B)
2	1 Phalaris arundinacea	50 Y FACW Prevalence Index = B/A = 2.18
3	2	
4	3	Hydrophytic Vegetation Indicators:
5	4	1 - Rapid Test for Hydrophytic Vegetation
6	5	X 2 - Dominance Test is >50%
7	6	X_3 - Prevalence Index is ≤3.0°
8	7	4 - Morphological Adaptations ¹ (provide
9	8	supporting data in Remarks or on a
10	9	
Woody Vine Stratum       (Plot size:)         1          2          0       = Total Cover         Hydrophytic       Vegetation         Vegetation       Present?         Y       Remarks:	······································	50 = Total Cover (Explain)
1	Woody Vine Stratum (Plot size: )	
2 Hydrophytic 0 = Total Cover Vegetation % Bare Ground in Herb Stratum Y Remarks:	1	present, unless disturbed or problematic
0     = Total Cover     Vegetation       % Bare Ground in Herb Stratum     Present?     Y	2	Hydrophytic
% Bare Ground in Herb Stratum Y Remarks:		0 = Total Cover Vegetation
Remarks:	% Bare Ground in Herb Stratum	Present? Y
	Remarks:	



Profile Des	cription: (Descr	ibe to th	e depth needed t	o docun	nent the	indicato	or or confirm the absence	e of indicators.)	
Depth Matrix Redox Features									
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-3	10YR 2/1	100					organic	muck	
3-6	10YR 3/2	95	10YR 5/6	5	С	М	silty clay loam		
6-10	10YR 5/4	85	10YR 7/6	15	С	М	silty sand		
0.10	101110,1	00	1011(1/0	10			only band		
¹ Type: C = C	oncentration, D =	Depletior	, RM = Reduced M	latrix, CS	= Covere	ed or Coa	ted Sand Grains. ² Locatio	on: PL = Pore Lining, M = Matrix	
Hydric Soil	Indicators: (App	licable f	o all LRRs, unles	s other	wise not	ed.)	Indicators for Probl	ematic Hydric Soils ³ :	
Hist	osol (A1)		San	dy Gleye	d Matrix (	(S4)	1 cm Muck (A9) (	LRR I, J)	
Hist	ic Epipedon (A2)		San	dy Redox	(S5)		Coast Prairie Rec	lox (A16) ( <b>LRR F, G, H</b> )	
Blac	ck Histic (A3)		Strip	oped Mat	rix (S6)		Dark Surface (S7	) (LRR G)	
Hyd	lrogen Sulfide (A4)	)	Loa	my Muck	y Mineral	(F1)	High Plains Depre	essions (F16)	
Stra	tified Layers (A5)	(LRR F)	Loa	my Gleye	d Matrix	(F2)	(LRR H outside	e of MLRA 72 & 73)	
<u>X</u> 1 cr		F, G, H)	Dep	leted Ma	trix (F3)		Reduced Vertic (I	-18)	
	leted Below Dark	Surface (	A11)Red	lox Dark	Surface (I	F6)	Red Parent Mater	rial (TF2)	
	ck Dark Surrace (A	(61)	Dep	leted Dal	K Surrace	e(F7)	Other (Eveloin in	R Surface (TF12)	
	cm Mucky Milleral	(SI) Post (SC		Di Depre	Depressio	(E16)	$\frac{1}{3}$ Uner (Explain in	Remarks)	
	RRGH)	real (52	.) (M		2 73 of I	RR H	hydrology must be	present unless disturbed or	
5.0	m Mucky Peat or I	Peat (S3)	(IRR F)		x 10 01 E			roblematic	
	Leven (if a been		()			· ·	-۲·		
Type	Layer (if observe	ea):					Hydria Sail Brasar	x+2 ∨	
Dopth (inch)	oc):				$\sim$		Hydric Soli Freser		
Depth (mone									
Remarks:				へ					
			(						
			1						
Wetland Hy	drology Indicate	vrs.							
Drimory Indi	cotors (minimum	of one is	ropuind: chock a	ll that an			Secondary In	diastors (minimum of two required)	
<u>Finary nur</u> Surface	Water (A1)		Tedulieu, check a	Solt Cru	<u>pry)</u> et (B11)		Surface	Soil Cracks (B6)	
High Wa	ater Table (A2)	$\sim$	$\sim$ $-$	Aquatic	Invertebra	ates (B13	Sparsely	Vegetated Concave Surface (B8)	
X Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	I) X Drainage	e Patterns (B10)	
Water M	larks (B1)			Dry-Sea	son Wate	er Table (	C2) Oxidized	Rhizospheres on Living	
Sedimer	nt Deposits (B2)			Oxidized	l Rhizosp	heres on	Living Roots (	(C3) (where tilled)	
Drift Dep	oosits (B3)			Roots (	C3) ( <b>whe</b>	ere not ti	lled) Crayfish	Burrows (C8)	
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturatio	on Visible on Aerial Imagery (C9)	
Iron Dep	osits (B5)			Thin Mu	ck Surfac	e (C7)	X Geomor	phic Position (D2)	
	on Visible on Aeria	al Imager	/ (B7)	Other (E	xplain in	Remarks	) FAC-Ne	utral Test (D5)	
water-5	tained Leaves (D9	)					11051-116		
Field Obser	vations:								
Surface Wat	ter Present?	Yes	No	X	Depth (i	nches):			
Water Table	Present?	Yes	No	Х	Depth (i	nches):	Inc	dicators of Wetland	
Saturation P	Present?	Yes	X No		Depth (i	nches):	<u> </u>	ydrology Present? Y	
(includes ca	pillary tringe)					<u>.</u>			
Describe Re	corded Data (stre	eam gau	ge, monitoring wel	I, aerial p	photos, p	revious i	nspections), if available:		
Remarks:									

WETLAND DETERMINATION	I DATA FORM - Great Plains Region
Project/Site: US85 City	r/County: Henderson/Adams Sampling Date: 7/18/18
Applicant/Owner: CDOT	State: Colorado Sampling Point: SP12
Investigator(s): Tamara Keefe and Alex Nelson	Section, Township, Range: 2, 2S, 67W
Landform (hillslope, terrace, etc.): toe of slope	Local relief (concave, convex, none): concave Slope (%): 1-3
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: <u>39.90990257</u> Long: <u>-104.8602254</u> Datum: <u>NAD 83</u>
Soil Map Unit Name: Nunn Ioam	
Are climatic/hydrologic conditions on the site typical for this time of the	year? Y (If no, explain in Remarks.)
Are Vegetation, Soll, or Hydrology	significantily disturbed? Are normal circumstances present? Yes
SOWIMART OF FINDINGS - Attach site map showing sampli	ng point locations, transects, important features, etc.
Hydrophylic Vegetation Present?	
Hydric Soil Present? N	Is the Sampled Area Within a Wetland?
Indicators of Wetland Hydrology Present? N	If yes, optional wetland site ID:
Remarks:	
Not a wetland	$\sim$
VEGETATION Use scientific names of plants.	
Absolute	Dominant Indicator Dominance Test Worksheet
Tree Stratum         (Plot size:)         % Cover	Species Status Number of Dominant Species
1	that are OBL, FACW, or FAC: 1 (A)
2	Total Number of Dominant
3	Species Across all Strata: 1 (B)
4	Percent of Dominant Species
<u> </u>	
Sapling/Shrub Stratum (Plot size:	Prevalence Index Worksheet
	Total % Cover of: Multiply by:
2	OBL species 0 x 1 = 0
3	FACW species 100 x 2 = 200
4	FAC species 0 x 3 = 0
5	FACU species 0 x 4 = 0
	= Total Cover UPL species $0 \times 5 = 0$
Herb Stratum (Plot size:)	
1 Phalaris arundinacea 100	Y FACW Prevalence Index = B/A = 2.00
2/2/	
	1 - Rapid Test for Hydrophytic Vegetation
5	X 2 - Dominance Test is >50%
6	X 3 - Prevalence Index is ≤3.0 ¹
7	4 - Morphological Adaptations ¹ (provide
8	supporting data in Remarks or on a
9	separate sheet)
10	= Total Cover (Explain)
Woody Vine Stratum         (Plot size:)           1        )	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
20	= Total Cover Vegetation Present? Y
% Bare Ground in Herb Stratum	

Profile Des	cription: (Descri	ibe to th	e depth needed f	o docun	nent the	indicato	or or confirm the absence	e of indicators.)		
Depth	Rec	Redox Features				-				
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-6	10YR 3/2	100					loamv clav			
		-	l				······			
		<b> </b>	l	┨───┦	<b> </b>					
	ļ!		ļ	<b> </b>	<b> </b>					
1 <del>.</del>										
	oncentration, $D = 1$	Depletion		latrix, US	= Covere	ed or Coa	ted Sand Grains. Localic	on: PL = Pore Lining, IVI = Matrix		
Hyaric Son	Indicators: (App	licable i	0 all LKKS, unles	S Otner	Mise not	ea.)		lematic Hydric Solis :		
	OSOI (A1)			dy Gleyer	d Matrix (	(54)				
			Oan	dy Reuux	( (SS)			$M(\mathbf{A}) = \mathbf{C}$		
	K HISTIC (AS) Iragan Sulfide (AA)		 		rix (So) •• Mineral	(E1)		(LRR G)		
Stra	royen Sumue (A-)		Loa		y Motrix	(F1) (E0)				
1 cr	Muck (AQ) (I RR			My Gleye		(FZ)	Doduced Vertic (	- 40)		
	I WILLER (AB) (ENT	F, G, H,	A11) Bor	Jeleu Iviai	(IIX (FJ) Surface (1		Pod Parent Mate	-18) 		
	Neleu Delow Dank	3011200 () (12)	ATT) Der	lot Dark C	rk Surface	- (F7)	Very Shallow Dar	Hal (112) & Surface (TE12)		
San	why Mucky Mineral	/S1)	Ber	lov Depre	resions (F	E (17) EQ)	Other (Explain in	Demarke)		
2.5	cm Mucky Peat or	Peat (S2	n Hial	h Plains [	Depressio	0) ns (F16)	³ Indicators of hydroi	obutic vegetation and wetland		
	RR G. H)	1000,02	/ (M	I.RA 72 8	≈ 73 of L		hydrology must be	present unless disturbed or		
, 5 c	m Mucky Peat or I	Peat (S3)	(LRR F)			/ Y	p	roblematic.		
Destrictive			(							
Restrictive	Layer (IT observe	ea):					Undria Sail Proso	-10 NI		
Dooth (inche					$\mathbf{O}^{-}$		Hyunic Son Freser			
	. 0									
Remarks:				へ						
			(	~ ~						
			1	J						
	drology indicato	ors:	X				2			
Primary Indi	cators (minimum	of one is	required; check a	<u>Ill that ap</u>	<u>iply)</u>		Secondary Inc	dicators (minimum of two required)		
Surface	Water (A1)		~ _	Salt Crus	st (B11)	1 (D40	Surface	Soil Cracks (B6)		
	iter Table $(A2)$	$\sim$	• <u> </u>	Aquatic i		ates (Bio		/ Vegetated Concave Surface (bo)		
	)n (A3) Iarka (B1)	•		Hyaroger Dov Soor	n Sulliue	Udor (Ui Table ((		e Patterns (Bitu)		
	alks (D1) of Denosite (R2)			Ovidized	Rhizosn	hores on	Living Roots	(C3) (where tilled)		
Drift Der	nosite (R3)			Roots (	(C3) ( <b>wh</b>	re not til	Ied) Cravfish	Burrows (C8)		
Algal Ma	at or Crust (B4)			Presenc	e of Redu	iced Iron	(C4) Saturatio	on Visible on Aerial Imagery (C9)		
Iron Dep	osits (B5)			Thin Mu	ck Surfac	e (C7)	X Geomor	phic Position (D2)		
Inundatio	on Visible on Aeria	al Imager	/ (B7)	Other (E	xplain in	Remarks	) FAC-Ne	utral Test (D5)		
Water-S	tained Leaves (B9	)		•	•		Frost-He	eave Hummocks (D7) (LRR F)		
Field Obser	vations:	Vee	No	v	Darth (i	( ) ·				
Surface vva	er Present?	Yes		<u> </u>	Deptn (i	nches):	In	diastors of Wotland		
	Present?	165 Vas	No	<u></u>	Depth (i	nches):	""	ucators of Wetland vdrology Present? N		
(includes ca	nillary fringe)	165		~		nones _j .	I			
Doscribo Ro	pindry (hinge)				shotos n	rovious i	nenactions) if available:			
Describe ite		ani yau		l, aenai p	ποιοs, μ	levious i	nspections), il available.			
Demontro										
Remarks:										

WETLAND DETERMINATIO	N DATA FORM - Great F	Plains Region
Project/Site: US85 Ci	ty/County: Henderson/Ada	ims Sampling Date: 7/18/18
Applicant/Owner: CDOT	State: Colorado	Sampling Point: SP13
Investigator(s): Tamara Keefe and Alex Nelson	Section, Township,	Range: 2, 2S, 67W
Landform (hillslope, terrace, etc.): Drainage swale	Local relief (concave, conv	vex, none): <u>concave</u> Slope (%): <u>1-3</u>
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: 39.91407988	Long: -104.8577511 Datum: NAD 83
Soil Map Unit Name: Vona sandy loam	NWI cla	Assification: PEM
Are climatic/hydrologic conditions on the site typical for this time of the	e year? Y (If n	o, explain in Remarks.)
Are Vegetation, Soil, or Hydrology	- significantly disturbed?	Are "normal circumstances" present? Yes
Are vegetation, Soli, or Hydrology	naturally problematic?	In needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sample	ing point locations, transects	s, important features, etc.
Hydrophytic Vegetation Present? Y		
Hydric Soil Present? Y	Is the Sampled Area	Within a Wetland? Y
Indicators of Wetland Hydrology Present? Y	If yes, optional wetland	site ID: Wetland 6
Remarks:		
Drainage area next to Conoco		$\circ$
VEGETATION Lise scientific names of plants		$\langle \cdot \rangle$
	Dominant Indicator	ominance Test Worksheet
Tree Stratum (Plot size: ) % Cove	r Species Status	umber of Dominant Species
1	th	at are OBL, FACW, or FAC: 1 (A)
2		tal Number of Dominant
3	si	pecies Across all Strata: 1 (B)
4	P	ercent of Dominant Species
5	th	at are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
0	=Total Cover	
Sapling/Shrub Stratum (Plot size:)		Prevalence Index Worksheet
	[ ]	Total % Cover of: Multiply by:
2		$\begin{array}{cccc} \text{OBL species} & 85 & x & 1 = & 85 \\ \text{EACW expecies} & 0 & x & 2 & 0 \\ \end{array}$
		FAC w species 0 x 2 = 0
5		FACU species $0 \times 4 = 0$
0	= Total Cover	UPL species $0 \times 5 = 0$
Herb Stratum (Plot size: )	_	Column totals 88 (A) 94 (B)
1 Typha latifolia 80	Y OBL	Prevalence Index = $B/A = 1.07$
2 Schoenoplectus tabernaemontani 5	N OBL	
3 Echinochloa crus-galli 3	N 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 ¹
7		4 - Morphological Adaptations ¹ (provide
8		supporting data in Remarks or on a
9	.	separate sheet)
10	= Total Cover	Problematic Hydrophytic Vegetation ' (Explain)
Woody Vine Stratum (Plot size:)	-	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
20	= Total Cover	Hydrophytic Vegetation Present? Y
% Bare Ground in Herb Stratum		
Remarks:		

Profile Des	cription: (Descri	ibe to th	e depth needed	to docun	nent the	indicate	or or confirm the a	bsence of indi	cators.)
Depth	Matrix		Red	dox Featu	ires				-
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0-2	10YR 3/1	100				1	organic- silty loa	m	
2-6	10YR 4/2	90	10YR 4/6	10			sandy clay		
2-0	1011( 4/2	30	1011( 4/0	10			Sandy clay		
¹ Transi C _ C		Denletien	DM Deduced A	Latrice CC					Dava Lining M. Matrix
Type: C = C	oncentration, D =	Depletion		atrix, CS			ated Sand Grains.	Location: PL = F	Pore Lining, M = Matrix
	Indicators: (App					(C 4)			nyune sons :
	lusul (AT)					(34)		iria Badax (A16)	
	ak Histis (A2)				((35) riv (86)				
	CK FISUC (AS) Arogon Sulfido (A4)			pped Muck	IIX (30) V Minorol	(E1)	Ligh Daik		1) E16)
Hyt	atified Lavers (A5)		L0a		y Motrix	(F1) (F2)		utside of MI P	T TO) A 72 & 73)
1 cr	m Muck (AQ) (I PP			liny Gleye	triv (E2)	(12)	Poducod '	Vortic (E18)	A 12 & 15)
	leted Below Dark	Surface (		lov Dark	unx (F3) Surface (	F6)	Red Parer	ot Material (TE2)	
	ck Dark Surface (A	12)		oleted Dai	sunace ( k Surfaci	e (F7)	Very Shal	low Dark Surface	(TF12)
Sar	ndv Mucky Mineral	(S1)	Ber	lox Denre	essions (F		Other (Ex	plain in Remarks	() () () () () () () () () () () () () (
	cm Mucky Peat or	Peat (S2	) Hig	h Plains I	)epressic	ons (F16)	³ Indicators of	bydronbytic ve	v retation and wetland
(L	RR G. H)	1 041 (02	/ (N	ILRA 72 8	3 73 of L		hydrology m	ust be present	unless disturbed or
5 0	m Mucky Peat or I	Peat (S3)	(LRR F)				ing a rology in	problemat	ic.
Bootriotivo	, Lover (if choory	<u>, ,</u>	· · ·						
Type	cayer (II observe	eko				)	Hydria Sail	Brocont?	v
Dopth (inch		642			$\mathbf{S}$		Hyuric Soli		<u> </u>
Deptil (Inchi	es). <u>0</u>								
Remarks:				~ ~					
			(						
				)					
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•					
HYDROLO	DGY								
Wetland Hy	drology Indicato	ors:							
Primary Indi	cators (minimum	of one is	required; check a	all that ap	ply)		Second	dary Indicators	(minimum of two required)
X Surface	Water (A1)		2	Salt Cru	st (B11)		S	Surface Soil Crac	:ks (B6)
High Wa	ater Table (A2)	\odot		Aquatic	Invertebr	ates (B13	3)5	Sparsely Vegetat	ed Concave Surface (B8)
X Saturati	on (A3)			Hydroge	n Sulfide	Odor (C	1) <u>X</u> [Drainage Pattern	s (B10)
Water N	larks (B1)			Dry-Sea	son Wate	er Table (C2)C	Dxidized Rhizosp	heres on Living
Sedimer	nt Deposits (B2)			Oxidized	I Rhizosp	heres on	Living	Roots (C3) (who	ere tilled)
Drift Dep	posits (B3)			Roots (C3) (whe	ere not ti		Crayfish Burrows	(C8)
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) <u> </u>	Saturation Visible	e on Aerial Imagery (C9)
Iron Dep	oosits (B5) on Vicible on Acric	Imagan	(P7)		ck Surfac	Ce (C7)	<u>x</u>	Seomorphic Posi	tion (D2)
Water-S	tained Leaves (BQ	n innagery \	(B7)		xpiain in	Remarks)F	rost-Heave Hum	(DO)
Water-C	tamed Leaves (D3)					—'	lost neuve nun	
Field Obser	rvations:								
Surface Wa	ter Present?	Yes	X No		Depth (i	inches):	2		
Water Table	e Present?	Yes	No		Depth (i	inches):		Indicators	of Wetland
Saturation F	Present?	Yes	X No		Depth (i	inches):	0	Hydrolog	y Present? Y
(includes ca	pillary fringe)								
Describe Re	ecorded Data (stre	eam gaug	ge, monitoring we	ll, aerial p	photos, p	orevious i	nspections), if avail	able:	
Remarks:									
Surface	off								
Sunace run	-011								
1									

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WETLAND DETERMINA	TION DATA FORM -	Great Plains R	egion	
Project/Site: US85	City/County: Hend	erson/Adams S	Sampling Date:	7/18/18
Applicant/Owner: CDOT	State:	Colorado S	ampling Point:	SP14
Investigator(s): Tamara Keefe and Alex Nelson	Section,	Township, Range:	2, 25	s, 67W
Landform (hillslope, terrace, etc.): slope	Local relief (con	ncave, convex, non <mark>e)</mark>	concave	Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrigat	ed Lat: 39.91408	8111 Long:	-104.8577545	Datum: NAD 83
Soil Map Unit Name: Vona sandy loam		NWI classification	n:	
Are climatic/hydrologic conditions on the site typical for this time	of the year? Y	(If no, explain	in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly distu	rbed? Are "norma	I circumstances" pr	esent? Yes
Are Vegetation , Soil , or Hydrology	naturally problem	natic? (If needed	, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sa	ampling point locations,	, transects, importa	nt features, etc.	
Hydrophytic Vegetation Present? N				
Hydric Soil Present? N	Is the Samp	led Area Within a	Netland?	N
Indicators of Wetland Hydrology Present? N	If yes, option	al wetland site ID: C	Outpoint for Wetla	nd 6
Remarks:				
Area near Conoco		•		
VEGETATION Use scientific names of plants.				
Abs	solute Dominant Indi	cator Dominand	e Test Workshee	t
Tree Stratum (Plot size:) % 0	Cover Species Sta	atus Number of [Dominant Species	
1		that are OBI	_, FACW, or FAC:	0 (A)
2	<u>````````````````````````````````</u>	Total Numb	er of Dominant	
3	<u> </u>	Species Acr	oss all Strata:	<u> </u>
4	`	Percent of D	Dominant Species	
5		that are OB	_, FACW, or FAC:	0.00% (A/B)
		Drevelor		
<u>Saping/Shrub Stratum</u> (Plot size:)	\sim	Total % C		eet
	<u> </u>		ios 0 v1	- 0
2			$\frac{100}{100}$	= 0
		FAC spec	$\frac{1}{10000000000000000000000000000000000$	= 0
5		FACU spe	$\frac{1}{2}$	$=$ $\frac{0}{0}$
	0 = Total Cover	UPL spec	ies 0 x 5	$\dot{b} = 0$
Herb Stratum (Plot size:		Column to	otals 0 (A)	0 (B)
		Prevalence	= Index = B/A =	
2				
3		Hydrophy	tic Vegetation Ir	ndicators:
4		1 - Ra	pid Test for Hydro	ohytic Vegetation
5		2 - Do	minance Test is >	50%
6		3 - Pre	evalence Index is ≤	3.0 ¹
7		4 - Mo	orphological Adap	tations ¹ (provide
8		suppo	orting data in Rem	arks or on a
9		separ	ate sheet)	
10		Proble	ematic Hydrophyti	c Vegetation ¹
	0 = Total Cover	(Expla	ain)	
Woody Vine Stratum (Plot size:)		¹ Indicators	of hydric soil and wet	land hydrology must be
		pre	sent, unless disturbed	d or problematic
2		Hydro	ophytic	
100	0 = rotar Cover	Veget	ation	
% Bare Ground in Herb Stratum		Flese		_
Remarks:				
no vegetation				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix	Redox Features					<i>,</i>			
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-8	10YR 4/3	100					siltv sand			
÷ .							0,			
								<u> </u>		
		Depletion	DM Deduced M		Cover		ted Cent Croine ² Locatic	Dero Lining M – Motrix		
	Soncentration, $D = 1$	Depletion		latrix, 03	= Covere		ted Sand Grains. Locauc	on: PL = Pore Lining, IVI = Maurx		
	Indicators: (App		0 all LKKS, unles		- Motrix (ea.)				
	iOSUI (A I)			dy Gieye		(54)				
				dy Reuo	((35) -:			$\frac{100}{100} (\mathbf{LKK} \mathbf{\Gamma}, \mathbf{U}, \mathbf{\Pi})$		
	CK FIISUU (AS) Irogon Sulfide (AA)		 		rix (Su) v Mineral	(⊏1)	High Plains Denri	(LRR G)		
Stra	nogen Janne (7,7)			my Glove	y Matrix	(⊏⊥) /⊑ว\		$\mathbf{A} \rightarrow \mathbf{M} \mathbf{R} \mathbf{A} 72 \mathbf{R} 73$		
	Muck (AQ) (I RR			Iny Gieya		(FZ)	Polyped Vertic (= 10\		
	Noted Relow Dark	Curface (^11) Rec	lov Dark S	llix (i J) Curface (E6)	Red Parent Mate	-10) rial (TE2)		
	rk Dark Surface (A	12)	Der	leted Dar	rk Surface	⊆(F7)	Very Shallow Dar	k Surface (TF12)		
San	dv Muckv Mineral	(S1)		lox Depre	essions (F	-8)	Other (Explain in	Remarks)		
2.5	cm Muckv Peat or	Peat (S2) Higl	n Plains D	Depressio	ons (F16)	³ Indicators of hydror	obvic vegetation and wetland		
<u> </u>	RR G. H)		́́ (М	LRA 72 8	& 73 of L		hvdroloay must be	present. unless disturbed or		
5 c	m Mucky Peat or I	Peat (S3)	(LRR F)			2 X 3	p	roblematic.		
Postrictive	Lavor (if observe	-4).								
	mager (in observe	suj. oke					Hydric Soil Prese	17 N		
Depth (inche		UND			<u>()</u>					
Domarks:				(ر					
Nomaina.				く						
			. ())						
			~							
	JG i Idrology Indicato									
		ns. of one is	real sheat a		m h d		O a ser dans la			
Primary inui			required; check a		<u>piy)</u> (D44)		Secondary Ind	dicators (minimum of two required)		
High Wa	Water (A1)	\sim	—	Salt Uru:	St (BTT)	otos (B13		Soll Cracks (Bb)		
Saturatio	$\frac{1}{\Delta 2}$	\sim	·	Hydroge	n Sulfide	Odor (C1	Drainag	Pottorne (R10)		
Water M	larks (B1)	•		Drv-Sea	son Wate	r Table (C2) Oxidized	Rhizospheres on Living		
Sedimer	nt Deposits (B2)			Oxidized	Rhizosp	heres on	Livina Roots	(C3) (where tilled)		
Drift Dep	posits (B3)			Roots (C3) (whe	ere not til	lled) Crayfish	Burrows (C8)		
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturatio	on Visible on Aerial Imagery (C9)		
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	e (C7)	Geomor	phic Position (D2)		
Inundati	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	utral Test (D5)		
Water-S	tained Leaves (B9)		•			Frost-He	eave Hummocks (D7) (LRR F)		
Field Obser	watione									
Surface Wat	tor Procent?	Ves	No	x	Denth (i	nches).				
Water Table	Present?	Yes	No	- <u>x</u>	Depth (i	nches):	Inc	licators of Wetland		
Saturation P	Present?	Yes	No	X	Depth (i	nches):	— н	vdrology Present? N		
(includes ca	pillary fringe)					···· ,				
Describe Re	corded Data (stre	am gau	e. monitoring wel	I. aerial p	photos, p	revious i	nspections). if available:			
			jc,	.,			,, , , , , , , , , , , , , , , , , , ,			
Remarks:										
i toma										

WETLAND DETERMINATION	ON DATA FO	RM - Great Plain	s Region	
Project/Site: US85	City/County:	Henderson/Adams	Sampling Date:	7/18/18
Applicant/Owner: CDOT	State:	Colorado	Sampling Point:	SP15
Investigator(s): Haley Stratton, Neal Goffinet	See	ction, Township, Rang	e: 35, 1	S, 67W
Landform (hillslope, terrace, etc.): terrace	Local relie	ef (concave, convex, n	one): none	Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: 39	.91448017 Long	g: <u>-104.8609625</u>	Datum: NAD 83
Soil Map Unit Name: Ascalon sandy loam		NWI classific	ation:	
Are climatic/hydrologic conditions on the site typical for this time of	the year?	Y (If no, exp	olain in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly	/ disturbed? Are "n	ormal circumstances" p	resent? Yes
Are vegetation, Soli, or Hydrology	naturally pr	oblematic? (If nee	eded, explain any answ	vers in Remarks.)
SUMMART OF FINDINGS - Attach site map showing sam	ipling point loca	tions, transects, imp	ortant features, etc.	
Hydrophytic Vegetation Present? N				
Hydric Soil Present? N	Is the	Sampled Area Withi	n a Wetland?	N
Indicators of Wetland Hydrology Present? N	If yes,	optional wetland site II	D: Outpoint for Wetla	and 4
Remarks:				
		6	\diamond	
VEGETATION Use scientific names of plants.				
Absol	ute Dominant	Indicator Domi	nance Test Workshe	et
I ree Stratum (Plot size:) % Co	ver Species	Status Numbe	r of Dominant Species	0 (4)
2			OBL, FACVV, OF FAC	. <u> </u>
3		Species	umber of Dominant s Across all Strata:	1 (B)
4		Percent	t of Dominant Species	()
5	-	that are	OBL, FACW, or FAC	: 0.00% (A/B)
0	= Total Cove	er		
Sapling/Shrub Stratum (Plot size:)	\sim	Preva	alence Index Works	heet
1	<u> </u>	Total	% Cover of: M	ultiply by:
2		OBL :	species 0 x	1 = 0
3		FACV	V species 0 x	2 = 0
4		FAC S	species 5 x	3 = 15
³ ————————————————————————————————————	- Total Cove		0 species 0 x	4 = 0
Herb Stratum (Plot size:			$\frac{62}{2}$	$\frac{410}{425}$ (B)
	V		$\frac{1}{10000000000000000000000000000000000$	4 80
2 rumov crispus		EAC Pieva	alence muex = D/A =	4.09
3 Heterotheca sp	<u>N</u>		onhytic Vegetation	ndicators:
4 convolvulus arvensis	N		- Rapid Test for Hydro	pohytic Vegetation
5			- Dominance Test is >	•50%
6		3	- Prevalence Index is	≤3.0 ¹
7		4	- Morphological Ada	otations ¹ (provide
8		S	upporting data in Rer	narks or on a
9		s	eparate sheet)	
10		P	roblematic Hydrophy	tic Vegetation ¹
87	= Total Cove	er (E	Explain)	
Woody Vine Stratum (Plot size:) 1)		¹ Indic	ators of hydric soil and we present, unless disturbe	etland hydrology must be ed or problematic
2		н	lydrophytic	
0	= Total Cove	er V	egetation	
% Bare Ground in Herb Stratum		P	resent? N	
Remarks:				

Profile Des	cription: (Descri	ibe to th	e depth needed t	o docur	nent the	indicate	or or confirm the absenc	e of indicators.)			
Depth Matrix Redox Features							· ·				
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-5	10YR 4/6	100					silt loam				
1 Type: C = C	oncentration D -	Depletion	RM – Reduced M	latrix CS		ed or Cos	ated Sand Grains ² Locati	no: PL – Pore Lining, M – Matrix			
Hydric Soil	Indicators: (Ann	licable t		s other			Indicators for Proh	Jematic Hydric Soils ³ :			
Hist	indicators. (App		San	dy Glava	d Matrix	(S4)	1 cm Muck (A9)				
Hist	tic Eninedon ($\Delta 2$)			dy Redo	v (95)	(04)	Coast Prairie Re	dox (A16) (IBBEGH)			
Blac	rk Histic (Δ 3)			aned Mat	riv (S6)		Dark Surface (S7	(I BB G)			
	Irogen Sulfide (A4)		Loa	my Muck	v Mineral	(F1)	High Plains Depr	ressions (F16)			
Stra	atified Lavers (A5)		Loa	my Gleve	d Matrix	(F2)	(I RBH outside	e of MI BA 72 & 73)			
1 cr	m Muck (A9) (LRR	F. G. H)	Den	leted Ma	trix (F3)	(• _)	Reduced Vertic (F18)			
Der	leted Below Dark	Surface (A11) Red	lox Dark	Surface (F6)	Red Parent Mate	erial (TF2)			
	ck Dark Surface (A	.12)		leted Da	rk Surfac	e (F7)	Verv Shallow Da	rk Surface (TF12)			
Sar	dv Muckv Mineral	(S1)	Red	lox Depre	essions (F		Other (Explain in	Remarks)			
2.5	cm Mucky Peat or	Peat (S2) High	n Plains [Depressio	ons (F16)	³ Indicators of hydro	phytic vegetation and wetland			
(L	RR G, H)	,	́ (й	LRA 72 8	& 73 of L		hydrology must be	present, unless disturbed or			
5 c	m Mucky Peat or I	Peat (S3)	(LRR F)				р С	roblematic.			
	l avor (if obsorv	<u>ad).</u>	. ,				· · · · · · · · · · · · · · · · · · ·				
		<i>su)</i> .)	Hydric Soil Prese	nt? N			
Depth (inche					\mathbf{S}						
Doparko:				(_¥_						
Remarks:				へ							
			(~ ` `							
			1								
	JG I drology Indicato	ors.									
Drimony Indi	actors (minimum	of one is	ronuind: chock of	ll that an			Secondary In	diastora (minimum of two required)			
<u>Finaly inu</u>			Tequired, check a	Solt Cru	ot (P11)		Secondary In	Soil Crocks (R6)			
High Wa	A = (A = 1)		\sim $-$		Invertebr	ates (R13	Sparsel	v Vegetated Concave Surface (B8)			
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C	1) Drainao	e Patterns (B10)			
Water M	larks (B1)	•		Drv-Sea	son Wate	er Table (C2) Oxidize	d Rhizospheres on Living			
Sedimer	nt Deposits (B2)			Oxidized	d Rhizosp	heres on	Living Roots	(C3) (where tilled)			
Drift Dep	posits (B3)			Roots ((C3) (wh e	ere not ti	Iled) Crayfish	Burrows (C8)			
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturati	on Visible on Aerial Imagery (C9)			
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	e (C7)	Geomo	rphic Position (D2)			
Inundati	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	eutral Test (D5)			
Water-S	tained Leaves (B9)		-			Frost-H	eave Hummocks (D7) (LRR F)			
Field Obser	vations.						I				
Surface Wa	ter Present?	Yee	No	x	Denth (i	nches).					
Water Table	Present?	Yes	No	- <u>X</u>	Depth (i	nches):	In	dicators of Wetland			
Saturation F	Present?	Yes	No	X	Depth (i	nches):	——————————————————————————————————————	lydrology Present? N			
(includes ca	pillary fringe)					,					
Describe Re	ecorded Data (stre	eam gau	ge, monitoring wel	l, aerial r	photos, p	revious i	inspections), if available:				
		0 .			· · · ·		. ,.				
Remarks:											
-											

WETLAND DETERMINATIO	ON DATA FORM - Great Plains Region
Project/Site: US85 C	City/County: Henderson/Adams Sampling Date: 7/18/18
Applicant/Owner: CDOT	State: Colorado Sampling Point: SP16
Investigator(s): Haley Stratton, Neal Goffinet	Section, Township, Range: 35, 1S, 67W
Landform (hillslope, terrace, etc.): channel bank	Local relief (concave, convex, none): Concave Slope (%):1-3
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: <u>39.91451506</u> Long: <u>-104.8610046</u> Datum: <u>NAD 83</u>
Soil Map Unit Name: Ascalon sandy loam	NWI classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of the	he year? Y (If no, explain in Remarks.)
Are Vegetation, Soli, or Hydrology	significantly disturbed? Are normal circumstances present? Yes
SUMMARY OF FINDINGS - Attach site man showing some	naturally problematic? (in needed, explain any answers in Remarks.)
Solitivian I of Findings - Attach site map showing samp	pling point locations, transects, important leatures, etc.
Hydrophytic Vegetation Present?	la tha Camalad Assa Within a WatlandO
	is the Sampled Area within a wetland?
Indicators of Wetland Hydrology Present? Y	If yes, optional wetland site ID: Wetland 4
Remarks:	
Fulton ditch	$\mathbf{\wedge}$
VEGETATION Use scientific names of plants.	The second
Absolu Tree Stratum (Plot size:) % Cov	Jee Dominant Indicator Dominiance Test Worksheet
1 ulmus americana 3	N FAC that are OBL FACW or FAC: 1 (A)
2	Total Number of Dominant
3	Species Across all Strata: 1 (B)
4	Percent of Dominant Species
5	that are OBL, FACW, or FAC: 100.00% (A/B)
3	= Total Cover
Sapling/Shrub Stratum (Plot size:)	Prevalence Index Worksheet
	Total % Cover of: Multiply by:
2	$\begin{array}{c} \bullet \\ \bullet $
5	
	= Total Cover UPL species $10 \times 5 = 50$
Herb Stratum (Plot size:	Column totals 93 (A) 219 (B)
1 Phalaris arundinacea 80	Y FACW Prevalence Index = $B/A = 2.35$
2 bromus tectorum 10	<u> </u>
3	Hydrophytic Vegetation Indicators:
4	X 1 - Rapid Test for Hydrophytic Vegetation
5	X 2 - Dominance Test is >50%
6	X 3 - Prevalence Index is ≤3.0 ¹
7	4 - Morphological Adaptations ¹ (provide
	supporting data in Remarks or on a
9	
10	- Total Cover (Explain)
Woody Vine Stratum (Plot size:	
1	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2	Hydronhytic
0	= Total Cover Vegetation
% Bare Ground in Herb Stratum	Present? Y
Remarks:	

Profile Des	cription: (Descri	ibe to th	e depth needed t	o docur	nent the	indicate	or or confirm the absenc	e of indicators.)		
Depth	Matrix		Rec	lox Featu	ures_					
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-12	10YR 3/1	97	10YR 5/8	3	С	М	sandy loam			
					ļ					
¹ Type: C = C	oncentration, D =	Depletion	, RM = Reduced N	latrix, CS	s = Covere	ed or Coa	ated Sand Grains. ² Locati	on: PL = Pore Lining, M = Matrix		
Hydric Soil	Indicators: (App	licable t	o all LRRs, unles	ss other	wise not	ed.)	Indicators for Prob	lematic Hydric Soils ³ :		
Hist	iosol (A1)		San	dy Gleye	d Matrix ((S4)	1 cm Muck (A9)	(LRR I, J)		
Hist	ic Epipedon (A2)		X San	dy Redo	x (S5)		Coast Prairie Re	dox (A16) (LRR F, G, H)		
Blac	ck Histic (A3)		Strij	oped Mat	rix (S6)	(= .)	Dark Surface (S7	7) (LRR G)		
Hyd	Irogen Sulfide (A4)		Loa	my Muck	y Mineral	(F1)	High Plains Depressions (F16)			
Stra	atified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)		e of MLRA /2 & /3)		
	In Muck (A9) (LKK	г, G, п) Surfaca (Dep	leted Ivia	itrix (F3) Surface (I			F18) vrial (TE2)		
	ck Dark Surface (Δ	3011ace (. 12)			sunace (i rk Surface	го) с (F7)	Very Shallow Da	rk Surface (TE12)		
San	dv Mucky Mineral	(S1)	Bec	lox Depre	essions (F	-8)	Other (Explain in	Remarks)		
2.5	cm Mucky Peat or	Peat (S2) Hial	n Plains [Depressio	ons (F16)	³ Indicators of hydro	notic vegetation and wetland		
(LI	RR G, H)		, <u> </u>	LRA 72 8	& 73 of L		hvdrology must be	present. unless disturbed or		
5 c	m Mucky Peat or I	Peat (S3)	(LRR F)				p , , , , , , , , , , , , , , , , , , ,	problematic.		
Restrictive	l aver (if observe	ed).			- 6					
Type:		su).			\sim)	Hydric Soil Prese	nt? Y		
Depth (inche	es):			-	\sim					
Remarks:					<u> </u>					
				$\boldsymbol{\wedge}$						
			. (
			~ ~ ~							
HYDROLO	DGY									
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one is	required: check a	ll that ar	(vlac		Secondary In	dicators (minimum of two required)		
Surface	Water (A1)			Salt Cru	st (B11)		Surface	Soil Cracks (B6)		
X High Wa	ater Table (A2)	\sim		Aquatic	Invertebra	ates (B13	B) Sparsel	y Vegetated Concave Surface (B8)		
X Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1) X Drainag	e Patterns (B10)		
Water M	larks (B1)			Dry-Sea	son Wate	er Table (C2) Oxidize	d Rhizospheres on Living		
Sedimer	nt Deposits (B2)			Oxidized	d Rhizosp	heres on	Living Roots	(C3) (where tilled)		
Drift Dep	posits (B3)			Roots	(C3) (whe	ere not ti	lled) Crayfish	n Burrows (C8)		
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Saturati	on Visible on Aerial Imagery (C9)		
Iron Dep	OSIIS (B5) on Visible on Acris	Imagan	(P7)	Othor (E	CK Surrac	e (C7) Romarka		rphic Position (D2)		
Water-S	tained Leaves (R9	a inagery	· (B7)		xpiain in	Remarks	Frost-H	eave Hummocks (D7) (LRR F)		
		/								
Field Obser	vations:									
Surface Wat	ter Present?	Yes	No	Х	Depth (i	nches):				
Water Table	Present?	Yes	X No		Depth (i	nches):	<u>3</u> In	dicators of Wetland		
Saturation P	resent?	Yes	X NO		Depth (I	nches):	H	lydrology Present? Y		
	piliary minge)			1	.1					
Describe Re	corded Data (stre	eam gau	ge, monitoring wel	I, aerial	photos, p	revious i	inspections), if available:			
Remarks:										
Water source	e from Fulton Dit	ch								

L

WETLAND DETERMINATIO	N DATA FORM - Great Plains Region
Project/Site: US85 C	ity/County: Henderson/Adams Sampling Date: 7/18/18
Applicant/Owner: CDOT	State: Colorado Sampling Point: SP17
Investigator(s): Haley Stratton, Neal Goffinet	Section, Township, Range: 35, 1S, 67W
Landform (hillslope, terrace, etc.): channel bank	Local relief (concave, convex, none): concave Slope (%): 1-3
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat: 39.9145064 Long: -104.861194 Datum: NAD 83
Soil Map Unit Name: Ascalon sandy loam	NWI classification: PEM
Are Vegetation Soil or Hydrology	cignificantly disturbed? Are "normal circumstances" present? Ves
Are Vegetation, Soil, or Hydrology	
SUMMARY OF FINDINGS - Attach site man showing same	ling point locations transects important features etc
Hydronbytic Vegetation Present?	
Hydric Soil Present?	Is the Sampled Area Within a Wetland? \vee
Indicators of Wetland Hydrology Present?	If yes, optional wetland site ID: Wetland 7
Remarks:	
other side of fulton ditch	
VECETATION Lies asigntific names of plants	
VEGETATION Ose scientific fiames of plants.	be Deminance Test Worksheet
Tree Stratum (Plot size:) % Cove	er Species Status Rumber of Dominant Species
1 (* 101 0.201) / * * * * *	that are OBL, FACW, or FAC: 1 (A)
2	Total Number of Dominant
3	Species Across all Strata: 1 (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 Worksheet
	I total % Cover of: Multiply by:
2	$- \qquad - \qquad$
	=
5	$= \frac{1}{1000} = \frac$
	= Total Cover UPL species 10 x 5 = 50
Herb Stratum (Plot size:)	Column totals 90 (A) 210 (B)
1 Phalaris arundinacea 80	Y FACW Prevalence Index = B/A = 2.33
2 bromus tectorum 10	N
3	Hydrophytic Vegetation Indicators:
4	X 1 - Rapid Test for Hydrophytic Vegetation
5	X 2 - Dominance Test is >50%
6	X_3 - Prevalence Index is ≤3.0 '
7	4 - Morphological Adaptations ¹ (provide
8	supporting data in Remarks or on a
9 10	Separate Sheet)
90	= Total Cover (Explain)
Woody Vine Stratum (Plot size:)	
1	rindicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2	Hydrophytic
0	= Total Cover Vegetation
% Bare Ground in Herb Stratum	Present? Y
Remarks:	

Profile Des	cription: (Descr	ibe to th	e depth needed	to docun	nent the	indicate	or or confirm the absen	ce of indicators.)
Depth	Matrix		Rec	dox Featu	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 3/1	95	10YR 5/8	5	С	М	sandv loam	
¹ Type: C = C	Concentration, D =	Depletior	, RM = Reduced M	latrix, CS	= Covere	ed or Coa	ated Sand Grains. ² Loca	ion: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators: (App	licable t	o all LRRs, unle	ss otherv	wise not	ed.)	Indicators for Pro	blematic Hydric Soils ³ :
His	tosol (A1)		Sar	ndy Gleye	d Matrix ((S4)	1 cm Muck (A9)	(LRR I, J)
His	tic Epipedon (A2)		X Sar	dy Redo	k (S5)		Coast Prairie R	edox (A16) (LRR F, G, H)
Bla	ck Histic (A3)		Stri	pped Mat	rix (S6)		Dark Surface (S	57) (LRR G)
Hyd	drogen Sulfide (A4))	Loa	my Muck	y Mineral	(F1)	High Plains Dep	pressions (F16)
Stra	atified Layers (A5)	(LRR F)	Loa	my Gleye	ed Matrix	(F2)	(LRRH outsid	le of MLRA 72 & 73)
1 ci	m Muck (A9) (LRR	F, G, H)	Dep	leted Ma	trix (F3)		Reduced Vertic	(F18)
Dep	pleted Below Dark	Surface (A11) Rec	lox Dark S	Surface (F6)	Red Parent Mat	erial (TF2)
Thi	ck Dark Surface (A	.12)	Dep	leted Dar	rk Surfac	e (F7)	Very Shallow D	ark Surface (TF12)
Sar	ndy Mucky Mineral	(S1)	Rec	lox Depre	essions (F	-8)	Other (Explain i	n Remarks)
2.5	cm Mucky Peat or	Peat (S2	!) Higi	h Plains D	Depressic	ons (F16)	³ Indicators of hydr	ophytic vegetation and wetland
(L	RR G, H)		(M	LRA 72 8	& 73 of L	RR H	hydrology must b	e present, unless disturbed or
5 0	m Mucky Peat or	Peat (S3)	(LRR F)			6 X (. , .,	problematic.
Restrictive	Laver (if observe	ed).			-			
Type:	Layer (II Observ	eu).					Hydric Soil Pres	ant? V
Depth (inch	oc).				\mathbf{S}			
Deptil (Inchi	<u> </u>							
Remarks:				× ~				
			(
)				
			7	•				
HYDROL	DGY							
Wetland Hy	drology Indicate	ors:	X					
Primary Indi	icators (minimum	of one is	required; check a	all that ap	oply)		Secondary I	ndicators (minimum of two required)
Surface	Water (A1)		~ _	Salt Crus	st (B11)		Surfac	e Soil Cracks (B6)
X High Wa	ater Table (A2)			Aquatic	Invertebra	ates (B13	3) Sparse	ely Vegetated Concave Surface (B8)
X Saturati	on (A3)			Hydroge	n Sulfide	Odor (C	1) <u>X</u> Draina	ge Patterns (B10)
Water M	larks (B1)			Dry-Sea	son Wate	er Table (C2) Oxidiz	ed Rhizospheres on Living
Sedime	nt Deposits (B2)			Oxidized	Rhizosp	heres on	Living Roots	s (C3) (where tilled)
Drift De	posits (B3)			Roots ((C3) (whe	ere not ti	lled) Crayfis	sh Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Satura	tion Visible on Aerial Imagery (C9)
Iron Dep	posits (B5)		(D-7)	Thin Mu	ck Surfac	e (C7)	X Geom	orphic Position (D2)
Inundati	on Visible on Aeria	al Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-N	leutral Test (D5)
Water-S	stained Leaves (B9)					Frost-r	Heave Hummocks (D7) (LRR F)
Field Obser	rvations:						Ι	
Surface Wa	ter Present?	Yes	No	х	Denth (i	nches).		
Water Table	Present?	Yes			Depth (i	nches):	3	ndicators of Wetland
Saturation F	Present?	Yes	X No		Depth (i	nches):	0	Hydrology Present? Y
(includes ca	pillary fringe)				-		——— I	
Describe Re	ecorded Data (stre	am dau	ne, monitoring we	II. aerial r	photos n	revious i	nspections), if available:	
	Julia Dala (oli	san gaa	, montoning wo	, aonar p				
Pomarka								
INCHINGINS.								
1								

WETLAND DETERMINATIO	ON DATA FORM - Great Plains Region
Project/Site: US85 C	City/County: Henderson/Adams Sampling Date: 7/18/18
Applicant/Owner: CDOT	State: Colorado Sampling Point: SP18
Investigator(s): Haley Stratton, Neal Goffinet	Section, Township, Range: 35, 1S, 67W
Landform (hillslope, terrace, etc.): terrace	Local relief (concave, convex, none): none Slope (%): 1-5
Subregion (LRR): G-Western Great Plains Range & Irrigated	Lat:39.91449845 Long:104.8612311 Datum: NAD 83
Soil Map Unit Name: Ascalon sandy loam	NWI classification:
Are climatic/nydrologic conditions on the site typical for this time of the	ne year? Y (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology	
SUMMARY OF FINDINGS - Attach site man showing same	ling point locations transacts important features ate
Hydrophytic Vogotation Procent?	bing point locations, transects, important leatures, etc.
Hydrig Soil Procept?	is the Sampled Area Within a Watland?
	Is the Sampleu Area within a wetland ?
Indicators of Wetland Hydrology Present? N	If yes, optional wetland site ID: Outpoint for Wetland 5
Remarks:	
other eide of fulter ditch	
	\sim
VEGETATION Use scientific names of plants	
Absolut	te Dominant Indicator Dominance Test Worksheet
Tree Stratum (Plot size:) % Cove	er Species Status Number of Dominant Species
1	that are OBL, FACW, or FAC: 0 (A)
2	Total Number of Dominant
3	Species Across all Strata: 1 (B)
4	Percent of Dominant Species
5	that are OBL, FACW, or FAC:(A/B)
0	= I otal Cover
Sapling/Snrub Stratum (Plot size:)	Total % Cover of: Multiply by:
2	
3	=
4	$\frac{1}{1} \frac{1}{1} \frac{1}$
5	FACU species 0 x 4 = 0
0	= Total Cover UPL species 90 x 5 = 450
Herb Stratum (Plot size:)	Column totals 90 (A) 450 (B)
1 bromus tectorum 80	Y UPL Prevalence Index = B/A = 5.00
2 convolvulus arvensis 10	N UPL
3	Hydrophytic Vegetation Indicators:
4	1 - Rapid Test for Hydrophytic Vegetation
5	2 - Dominance Test is >50%
6	
8	4 - Morphological Adaptations' (provide
9	
10	Problematic Hydrophytic Vegetation ¹
90	= Total Cover (Explain)
Woody Vine Stratum (Plot size:)	¹ Indicators of bydric soil and wetland bydrology must be
1	present, unless disturbed or problematic
2	Hydrophytic
0	= Total Cover Vegetation
% Bare Ground in Herb Stratum	Present? N
Remarks:	

Profile Des	cription: (Descr	ibe to th	e depth needed	to docur	nent the	indicato	or or confirm the absenc	e of indicators.)
Depth	Matrix		Rec	Jox Featu	ures			Ī
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 3/1	100		1	1	1	sandy loam	1
					<u> </u>			1
			l	'				+
	1	 		 '	──	───		↓
				 '				
								T
								+
1 Type: C = C	concentration D -	Dopletion		Antrix CS		ind or Cos	ted Sand Grains ² Locati	
Hydric Soil	Indicators: (Ann	Depletion		se other			Indicators for Proh	JII. PL = POIe LIIIIII, W = Walls
Hist	mulcators. (App		Sar	35 Other	Mise not Matrix	(QA)	1 cm Muck (A9)	
Hiet	$\log \left(A \right)$			dy Gieyo	0 IVIALIIA (~ (Q5)	(34)		(LKKI, J) doy (A16) (I PR F G H)
Blac				interned Mat	(30) triv (96)		Dark Surface (S	100x (ATO) (LKK F, G, H)
	ragen Sulfide (A4)			ppeu mau my Muck	Minera'	!(⊑ 1)	High Plains Depr	rossions (E16)
Stra	ntified Lavers (A5)		Los	my Gleve	od Matrix	(E2)	/I RR H outside	$\mathbf{e} \sim \mathbf{f} \mathbf{M} \mathbf{I} \mathbf{R} \mathbf{\Delta} 72 \mathbf{\&} 73$
	n Muck (AQ) (I RR			liny Gicyc	+riv (F3)	(12)	Roduced Vertic ((E10)
	leted Relow Dark	Surface (Δ11) Rec	hered mark	Surface ((F6)	Red Parent Mate	(FTO) arial (TF2)
	k Dark Surface (A	.12)	Der	pleted Da	rk Surfac	(F7)	Very Shallow Da	rk Surface (TF12)
Sar	dv Muckv Mineral	(S1)	Rec	how Depre	-ssions (F	F8)	Other (Explain in	Remarks)
2.5	cm Mucky Peat or	Peat (S2) Hia	h Plains [Depressic	ons (F16)	³ Indicators of hydro	unbutic vegetation and wetland
(L	RR G. H)	1 00. (-	/ (N	ILRA 72 {	& 73 of L		hvdroloav must be	present unless disturbed or
5 0	m Mucky Peat or I	Peat (S3)	(LRR F)	_		2 X	p	problematic.
Bostrictivo	·	~ 4).	· · ·				·	
		3u).					Hydric Soil Prese	nt? N
Depth (inche	<i>oc)</i> .				\cdot		Hyune Son i rese	
Domarke:					<u> </u>			
Remains.				く				
			())				
			~					
	JGY							
Wetland Hy	drology Indicate	ors:						
Primary Indi	cators (minimum	of one is	required check a	all that ar	nlv)		Secondary In	dicators (minimum of two required)
Surface	$M_{ator}(\Delta 1)$			Salt Cru	<u>iot (</u> R11)		Surface	Clicators (minimum or two required)
High Wa	ter Table (A2)	\sim	~ 一	Aquatic	Invertebr	rates (B13	N Sparsel	Vegetated Concave Surface (B8)
Saturatio	nn (A3)	\sim		Hvdroge	n Sulfide	Alco (C'	1) Drainac	e Patterns (B10)
Water N	larks (B1)			Dry Sea	ison Wate	er Table (C2) Oxidize	d Rhizospheres on Living
Sedimer	nt Deposits (B2)			Oxidized	d Rhizosp	pheres on	Living Roots	(C3) (where tilled)
Drift Dep	oosits (B3)			Roots ((C3) (wh e	ere not ti	lled) Crayfish	n Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Red	uced Iron	(C4) Saturati	on Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	ce (C7)	Geomo	rphic Position (D2)
Inundati	on Visible on Aeria	I Imagery	/ (B7)	Other (E	xplain in	Remarks) FAC-Ne	eutral Test (D5)
Water-S	tained Leaves (B9)					Frost-H	eave Hummocks (D7) (LRR F)
	votione							
Surface Wa	tor Procent?	Ves	No	х	Denth (inches).		
Water Table	Present?	Yes	No	- <u>x</u>	Depth (i	inches):	In	dicators of Wetland
Saturation F	Present?	Yes	No	<u> </u>	Depth (i	inches):	<u> </u>	Ivdrology Present? N
(includes ca	pillary fringe)				-	,		
Describe Re	corded Data (stre	am gau	ne. monitoring we	II. aerial r	photos, r	previous i	nspections). if available:	
		, a	JG1	·, ·			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Remarks:								
Romania.								

WETLAND DETERMINAT		FORM - Great Pla	ins Region	
Project/Site: US 85	City/County:	Henderson/Adam	s Sampling Date:	8/2/18
Applicant/Owner: CDOT	Sta	te: Colorado	Sampling Point:	SP19
Investigator(s): Brian Fauver, Haley Stratton		Section, Township, Ra	ange: 2, 2	2S, 67W
Landform (hillslope, terrace, etc.): hillslope	Local	relief (concave, conve>	k, none): concave	Slope (%): 10
Subregion (LRR): H-Central Great Plains Winter Wheat & Ra	ange Lat:	39.91199159 Lo	ong: -104.8594238	Datum: NAD 83
Soil Map Unit Name: Truckton loamy sand		NWI class	ification: Palustr	ine Scrub-Shrub
Are climatic/hydrologic conditions on the site typical for this time of	of the year?	Y (If no,	explain in Remarks.)	
Are Vegetation , Soil , or Hydrology	significa	antly disturbed? Are	e "normal circumstances"	present? Yes
Are Vegetation, Soil, or Hydrology	naturall	y problematic? (If	needed, explain any ans	wers in Remarks.)
SUMMART OF FINDINGS - Attach site map showing sa	ampling point I	ocations, transects, i	mportant features, etc.	
		0	11 to a Western 10	
	IST	he Sampled Area Wi	thin a wetland?	<u>Y</u>
Indicators of Wetland Hydrology Present? Y	lf ye	es, optional wetland sit	e ID: Wetland 9	
Remarks:				
Same upland point as Wetland 11 (SP-22)			\mathbf{O}	
VEGETATION Use scientific names of plants.			winanaa Taat Warkah	at
ADS Tree Stratum (Plot size:) % (colute Domina			
1 (1 lot 3/20) / // 0		that	are OBL_FACW_or FAC	s :- 1 (A)
2			I Number of Dominant	
3		Spec	cies Across all Strata:	2 (B)
4		Perc	ent of Dominant Species	s (/
5	-	that	are OBL, FACW, or FAC)): 50.00% (A/B)
	0 = Total C	over		、
Sapling/Shrub Stratum (Plot size:)	\sim	Pr	evalence Index Works	heet
1 Salix exigua	0 Y	FACW To	tal % Cover of: N	/lultiply by:
2		OE	BL species 0 x	1 = 0
3		FA	CW species 90 x	2 = 180
4		FA	C species 0 x	3 = 0
5		FA	CU species <u>5</u> x	4 = 20
	90 = Total C	over UF	² L species <u>0</u> x	5 = 0
Herb Stratum (Plot size:)		Co	$\frac{95}{1000}$	A) <u>200</u> (B)
1 Cirsium arvense	5 Y	FACU Pre	evalence Index = B/A =	2.11
2				
3		Hy	drophytic Vegetation	Indicators:
4			1 - Rapid Test for Hydr	ophytic Vegetation
5		<u> </u>	2 - Dominance Test is	>50%
0		^		1
/			4 - Morphological Ada	aptations' (provide
<u> </u>			separate sheet)	marks of on a
10			 Problematic Hydrophy	utic Vegetation ¹
···	5 = Total C	over	(Explain)	file vegetation
Woody Vine Stratum (Plot size:)	<u> </u>	1,	-	
1			present, unless disturb	bed or problematic
2			Hydrophytic	
	0 = Total C	over	Vegetation	
% Bare Ground in Herb Stratum			Present? Y	
Remarks:				
Sandbar willow dominated PSS wetland with a few weeds in h	erb stratum.			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docun	nent the	indicate	or or confirm the abse	ence of indicators.)
Depth	Matrix		Re	dox Featu	ires			
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 4/2	95	10YR 5/8	5	С	М	Sand	
				-	-			
¹ Type: C = C	oncentration, D =	Depletior	n, RM = Reduced M	Aatrix, CS	= Covere	ed or Coa	ated Sand Grains. ² Loo	cation: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators: (App	licable	to all LRRs, unle	ss other	wise not	ed.)	Indicators for P	oblematic Hydric Soils ³ :
Hist	osol (A1)		Sai	ndy Gleye	d Matrix ((S4)	1 cm Muck (A	(LRR I, J)
Hist	ic Epipedon (A2)		X Sai	ndy Redox	(S5)		Coast Prairie	Redox (A16) (LRR F, G, H)
Blac	ck Histic (A3)		Stri	pped Mat	rix (S6)		Dark Surface	(S7) (LRR G)
— Hvd	rogen Sulfide (A4)		Loa	mv Muck	v Mineral	(F1)	High Plains D	epressions (F16)
Stra	tified Lavers (A5)	(LRR F)	l oa	mv Gleve	d Matrix	(F2)	(LRR H out	side of MLRA 72 & 73)
1 cr	n Muck (A9) (LRR	F. G. H)	Der	oleted Ma	trix (F3)	(• =)	Reduced Ver	tic (F18)
	leted Below Dark	Surface ((A11) Reg	dox Dark !	Surface (F6)	Red Parent M	laterial (TF2)
	rk Dark Surface (A	12)		oleted Dai	rk Surfaci	≏ (F7)	Very Shallow	Dark Surface (TE12)
San	dy Mucky Mineral	(S1)	Be	dox Denre	essions (F	5 (1 7) 58)	Other (Explain	n in Remarks)
	cm Mucky Peat or	Post (SC		h Plaine F	Jonrossic	0) ns (E15)	³ Indicators of hy	dranbutia vagatation and watland
		1 cat (02			2.73 of I		hydrology must	be present upless disturbed or
(L	m Mucky Post or I	Doot (S2)			x 75 01 L		nyurology must	problematic
	in Mucky Feat Of I	-eat (33)				$\langle \cdot \rangle$		problematic.
Restrictive	Layer (if observe	ed):						
Туре:					\sim		Hydric Soil Pre	esent? Y
Depth (inche	es):			<u> </u>				
Soil was s	aturated sand wit	h small a	amounts of redox	concentra	ations.			
HIDROLU	JGT							
Wetland Hy	drology Indicato	ors:	X					
Primary Indi	<u>cators (minimum</u>	of one is	required; check a	all that ap	ply)		Secondary	/ Indicators (minimum of two required)
Surface	Water (A1)		~ _	Salt Cru	st (B11)		Surf	ace Soil Cracks (B6)
High Wa	ater Table (A2)	$\langle \rangle$	· · · · ·	Aquatic	Invertebra	ates (B13	3) Spai	sely Vegetated Concave Surface (B8)
X Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C	1) Drai	nage Patterns (B10)
Water M	larks (B1)			Dry-Sea	son Wate	er Table(C2) Oxid	ized Rhizospheres on Living
Sedimer	nt Deposits (B2)				Rhizosp	heres on	Living Ro	ots (C3) (where tilled)
Drift Dep	oosits (B3)			Roots (C3) (whe	ere not ti	(C4) Cray	fish Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Satu	ration Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)				ck Surfac	e (C7)		Morphic Position (D2)
	on visible on Aeria	a imager	у (В7)	Other (E	xplain in	Remarks) FAC	-Neutral Test (D5)
vvater-S	tained Leaves (B9)					FI05	I-Heave Hummocks (D7) (LKK F)
Field Obser	vations:							
Surface Wat	ter Present?	Yes	No	Х	Depth (i	nches):		
Water Table	Present?	Yes	No	X	Depth (i	nches):		Indicators of Wetland
Saturation P	resent?	Yes	X No		Depth (i	nches):	0	Hydrology Present? Y
(includes ca	pillary fringe)				• • •			
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial p	ohotos, p	revious i	nspections), if available	9:
Remarks:								
Wet side slo	pe with no surfac	e water	or water table pre	sent.				

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WETLAND DETERMIN	ATION	DATA FO	ORM - Grea	t Plains F	Region		
Project/Site: US85	City/0	County:	Henderson/A	Adams	Sampling Date:	8/2/18	
Applicant/Owner: CDOT	_	State:	Colora	ado	Sampling Point:	SP20	
Investigator(s): Brian Fauver, Haley Stratton		Se	ection, Townsh	ip, Range:	2, 2	S, 67W	
Landform (hillslope, terrace, etc.): hillslope		Local rel	ief (concave, c	onvex, none	e): concave	Slope (%):	20
Subregion (LRR): use drop-down list		Lat: 39	9.91300031	Long:	-104.8586002	Datum: N	AD 83
Soil Map Unit Name: Vona sandy loam			NWI	classification	on: Palustrii	ne Scrub-Shru	b
Are climatic/hydrologic conditions on the site typical for this time	e of the y	ear?	Y (lf no, explaii	n in Remarks.)		
Are Vegetation, Soil, or Hydrolog	у	significant	ly disturbed?	Are "norm	al circumstances" p	oresent? Ye	es
Are Vegetation , Soil , or Hydrolog	у	naturally p	problematic?	(If neede	d, explain any ansv	wers in Remark	is.)
SUMMARY OF FINDINGS - Attach site map showing	sampling	g point loc	ations, transe	cts, import	ant features, etc.		
Hydrophytic Vegetation Present? Y							
Hydric Soil Present?		Is the	Sampled Are	ea Within a	Wetland?	Ν	
Indicators of Wetland Hydrology Present? Y		If yes,	, optional wetla	nd site ID:	Wetland 10		
Remarks:							
Same upland point as wetland 11 (SP-22).							
				$-\langle \rangle$			
VEGETATION Use scientific names of plants.					aa Taat Warkaha	ot	
A	bsolute	Dominant	Indicator	Dominar	ice lest worksne	et	
		Species	Status	Number of	Dominant Species	· 2	(A)
2				Total Num	ber of Dominant		(~)
3			\sim	Species A	cross all Strata:	3	(B)
4				Porcont of	Dominant Spacios		(2)
5		\prec	•	that are OF	BI FACW or FAC	66 67%	(A/B)
°	0 =	Total Cov	/er			. 00.0770	(,,,,,,)
Sapling/Shrub Stratum (Plot size:)				Prevaler	nce Index Works	heet	
1 Salix exigua	90	Y	FACW	Total %	Cover of: M	lultiply by:	
2				OBL spe	cies 0 x	1 = 0	
3				FACW s	pecies 90 x	2 = 180	-
4				FAC spe	cies 16 x	3 = 48	
5				FACU sp	becies 6 x	4 = 24	
	90 =	- Total Cov	ver	UPL spe	cies 1 x	5 = 5	
Herb Stratum (Plot size:)				Column	totals 113 (A	A) 257	(B)
1 Apocynum cannabinum	15	Y	FAC	Prevalen	ice Index = B/A =	2.27	
2 Cirsium arvense	5	Y	FACU				-
3 Lactuca serriola	1	N	FAC	Hydroph	nytic Vegetation	Indicators:	
4 Nepeta cataria	1	N	FACU	1 - R	apid Test for Hydro	ophytic Vegetat	tion
5 Convolvulus arvensis	1	Ν	UPL	X 2 - D	ominance Test is >	>50%	
6				X 3 - P	revalence Index is	≤3.0 ¹	
7				4 - N	Iorphological Ada	ptations ¹ (prov	vide
8				supp	orting data in Rer	narks or on a	
9				sepa	arate sheet)		
10				Prob	lematic Hydrophy	tic Vegetation	1
	23 =	Total Cov	ver	(Exp	lain)		
Woody Vine Stratum (Plot size:)				¹ Indicator	rs of hydric soil and we	etland hydrology r	nust be
1				р	resent, unless disturbe	ed or problematic	
2				Hyd	rophytic		
	0 =	Total Cov	/er	Veg	etation		
% Bare Ground in Herb Stratum				Pres	ent? Y	_	
Remarks:							
Salix exigua with sparce herbs in the understory.							

Profile Des	cription: (Descri	ibe to th	e depth needed	to docur	nent the	indicato	or or confirm the abs	ence of indicators.)
Depth	Matrix		Re	dox Featu	ures			,
(Inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12	10VR 3/3	95	10VR 5/8	5		М	sandy loam	
0-12	1011(3/3	35	10111 3/0	- ⁻	<u> </u>		Sandy Ioann	
¹ Type: $C = C$	oncentration. D =	Depletion	. RM = Reduced M	Aatrix, CS	= Cover	ed or Coa	ated Sand Grains. ² L c	cation: PL = Pore Lining, M = Matrix
Hydric Soil	Indicators: (App	licable f	o all I RRs unle	ss other	wise not	ed)	Indicators for P	Problematic Hydric Soils ³ :
High				ndy Glava	d Matrix	(SA)	1 cm Muck (
	ia Eninadan (A2)				(SE)	(34)		Podox (A16) (I PP E C H)
	ic Epipedon (A2)				(35) iiu (86)			(\mathbf{R}^{T}) (LRK F, G, H)
	CK HISTIC (A3)		Str	ipped iviat	rix (56)			(S7) (LRR G)
— Hyc	irogen Suitide (A4)		LOa		y Mineral	(F1)		epressions (F16)
	atified Layers (A5)		Loa	amy Gleye	d Matrix	(F2)		(SIGE OF MLRA 72 & 73)
1 cr	n Muck (A9) (LRR	F, G, H)	De	pleted Ma	trix (F3)		Reduced Ve	
Dep	leted Below Dark	Surface (A11)Re	dox Dark	Surface (F6)	Red Parent I	Material (TF2)
Thio	k Dark Surface (A	12)	De	pleted Da	rk Surfac	e (F7)	Very Shallow	/ Dark Surface (TF12)
Sar	dy Mucky Mineral	(S1)	Re	dox Depre	essions (F	-8)	Other (Expla	in in Remarks)
2.5	cm Mucky Peat or	Peat (S2	2)Hig	h Plains I	Depressio	ons (F16)	³ Indicators of hy	/drophytic vegetation and wetland
(L	RR G, H)		(N	ILRA 72 8	& 73 of L	RR H	hydrology mus	t be present, unless disturbed or
5 0	m Mucky Peat or I	Peat (S3)	(LRR F)			< V.		problematic.
Restrictive	Laver (if observe	ed):						
Type:		,				1	Hvdric Soil Pr	esent?
Depth (inche	es):			-	\sim			
Pomarks:	,			(·)*—			
itternarks.				\				
Soil may b	e problematic du	e to the e	erosion of the bar	JK.				
L			<u> </u>					
HYDROL	DGY							
Wetland Hy	drology Indicato	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that ap	oply)		Secondar	v Indicators (minimum of two required)
Surface	Water (A1)	<	25	Salt Cru	st (B11)		Sur	face Soil Cracks (B6)
High Wa	ater Table (A2)	\sim	· -	Aquatic	Invertebr	ates (B13	3) Spa	arsely Vegetated Concave Surface (B8)
Saturati	on (A3)			Hydroge	n Sulfide	Odor (C	í) <u>X</u> Dra	inage Patterns (B10)
Water M	larks (B1)			Dry-Sea	son Wate	er Table (C2) Oxi	dized Rhizospheres on Living
Sedimer	nt Deposits (B2)			Oxidized	l Rhizosp	heres on	Living Ro	oots (C3) (where tilled)
Drift Der	oosits (B3)			Roots ((C3) (wh e	ere not ti	lled) Cra	yfish Burrows (C8)
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Sat	uration Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)			Thin Mu	ck Surfac	ce (C7)	X Geo	omorphic Position (D2)
Inundati	on Visible on Aeria	I Imager	/ (B7)	Other (E	xplain in	Remarks) FAG	C-Neutral Test (D5)
Water-S	tained Leaves (B9)	· · ·	_ `			Fro	st-Heave Hummocks (D7) (LRR F)
	-	-						
Field Obser	vations:							
Surface Wa	ter Present?	Yes	No	X	Depth (i	inches):		
Water Table	Present?	Yes	No	X	Depth (i	inches):		Indicators of Wetland
Saturation F	resent?	Yes	No	Χ	Depth (i	inches):		Hydrology Present? Y
(includes ca	pillary fringe)							
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial p	ohotos, p	orevious i	nspections), if availab	le:
Remarks:								
On the edge	of a perennial la	ke.						
1								

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WETLAND DETERMINA	ATION E	DATA FO	RM - Grea	t Plains F	Region					
Project/Site: US85	City/C	ounty:	Henderson/A	Adams	Sampling Date:	8/2/18				
Applicant/Owner: CDOT		State:	Colora	ado	Sampling Point:	SP21				
Investigator(s): Brian Fauver, Haley Stratton		Se	ction, Townsh	nip, Range:	2, 25	S, 67W				
Landform (hillslope, terrace, etc.): hillslope		Local relie	ef (concave, c	convex, none	e): concave	Slope (%): 35				
Subregion (LRR): G-Western Great Plains Range & Irriga	ated L	at: 39	.91330672	Long:	-104.8594617	Datum: NAD 83				
Soil Map Unit Name: Ascalon sandy loam			NWI	classificati	on: Palustrin	e Scrub-Shrub				
Are climatic/hydrologic conditions on the site typical for this time	e of the ye	ar?	<u>Y</u> (If no, explai	n in Remarks.)					
Are Vegetation, Soil, or Hydrology	/	significantl	y disturbed?	Are "norm	nal circumstances" pr	esent? Yes				
Are Vegetation , or Hydrology	/	naturally pi	roblematic?	(If neede	d, explain any answ	ers in Remarks.)				
SUMMARY OF FINDINGS - Attach site map showing s	sampling	point loca	ations, transe	ects, import	ant features, etc.					
Hydrophytic Vegetation Present? Y										
Hydric Soil Present?		Is the	Sampled Are	ea Within a	Wetland?	N				
Indicators of Wetland Hydrology Present? Y		lf yes,	optional wetla	and site ID:	Wetland 11					
Remarks:										
VEGETATION Use scientific names of plants.										
At At	osolute	Dominant	Indicator	Dominar	nce Test Workshee	et				
Plot size:) %	Cover	Species	Status	Number of	Dominant Species					
1 Uimus americana	10	Y		that are Of	BL, FACVV, of FAC:	(A)				
2 Elaeagnus angustifolia	5	Y	ACU .	Total Num	ber of Dominant	F (D)				
		- 6		Species A		<u> </u>				
		\prec		Percent of	Dominant Species	90.00% (A/P)				
	15	Total Cove		that are Of	BL, FACW, OF FAC.	80.00% (A/B)				
Sapling/Shrub Stratum (Plot size:	13 -		51	Prevale	nce Index Worksh	eet				
1 Salix exigua	70	Y	FACW	Total %	Cover of Mi	ultiply by:				
2	<u> </u>			OBL spe	cies 0 x 1	= 0				
3	· · ·			FACW s	pecies 80 x 2	r = 160				
4	·			FAC spe	cies 15 x 3	3 = 45				
5				FACU sp	pecies 5 x 4	= 20				
	70 =	Total Cove	er	UPL spe	cies 0 x 5	5 = 0				
Herb Stratum (Plot size:)				Column	totals 100 (A) 225 (B)				
1 Phalaris arundinacea	10	Y	FACW	Prevaler	nce Index = B/A =	2.25				
2 Apocynum cannabinum	5	Y	FAC							
3 Helianthus sp.	1	Ν		Hydropł	nytic Vegetation I	ndicators:				
4				1 - R	apid Test for Hydro	phytic Vegetation				
5				X 2 - D	ominance Test is >	50%				
6				<u>Χ</u> 3 - Ρ	revalence Index is s	≤3.0 ¹				
7				4 - N	/lorphological Adap	tations ¹ (provide				
8				supp	porting data in Rem	arks or on a				
9				sepa	arate sheet)					
10		TILO		Prob	lematic Hydrophyt	ic Vegetation ¹				
Woody Vino Stratum (Plot sizo:	16 =	Total Cove	er	(Exp	nain)					
				¹ Indicato	rs of hydric soil and we	tland hydrology must be				
				P						
	0=	Total Cove		Hya	ropnytic					
0/ Dava Crasural in Llank Stratura	0 –			Pres	sent? Y					
				1	. <u> </u>	-				
Coliversity of a minimum deviation of which have a film and the second	live too	ono	of your last		nd indian barra l'	nored old the				
bank.	nive tree,	one patch	i oi reed cana	ary grass, a	ina inalah nemp dis	spersed along the				
Profile Des	cription: (Descr	ibe to th	e depth needed	to docur	nent the	indicato	or or confirm the abs	ence of indicators.)		
---------------------	--	-----------	-----------------------	--------------------------------------	-------------------	-------------------------	-------------------------------------	---	--	--
Depth <u>Matrix</u>		Re	Redox Features							
(Inches)	Color (moist)	%	Color (moist)	% Type ¹ Loc ²		Texture	Remarks			
0-4	10YR 6/2	90	10YR 6/6	10 C M		М	sand			
4-12	10YR 3/1	100					sandv loam			
	101110/1	100					bandy loann			
17 0 0										
Type: $C = C$	oncentration, $D =$	Depletion	n, RM = Reduced M	latrix, CS		ed or Coa	ited Sand Grains. Lo	Deation: PL = Pore Lining, M = Matrix		
Hydric Soil	Indicators: (App	licable	to all LRRs, unle	ss other	wise not	ed.)	Indicators for F	roblematic Hydric Soils":		
Hist	iosol (A1)		Sa	ndy Gleye	d Matrix ((S4)	1 cm Muck (A9) (LRR I, J)		
Hist	ic Epipedon (A2)		X Sa	Sandy Redox (S5)			Dork Surface (SZ) (LRC C)			
	ck Histic (A3)		Str	pped Mat	rix (S6)		Dark Surface (S7) (LRR G)			
Hyd	Irogen Sulfide (A4)		Loa	amy Muck	y Mineral	(F1)	High Plains Depressions (F16)			
Stra	atified Layers (A5)		Loa	imy Gleye	ed Matrix	(F2)	(LRRH ou	tside of MLRA 72 & 73)		
1 cr	n wuck (A9) (LRR	г, G, H)		Dieted Ma	trix (⊢3)		Reduced Ve			
	leted Below Dark	Surface (A11)Re	dox Dark	Surface (F6)	Red Parent I	Vaterial (TF2)		
	ck Dark Surface (A	(24)		bleted Da	rk Surfac	e (⊢7)	Very Shallov	V Dark Surface (TF12)		
Sar	idy Mucky Mineral	(S1)		dox Depre	essions (F	-8)	Other (Expla	in in Remarks)		
2.5	cm Mucky Peat or	Peat (S2		n Plains L	Depressio	ons (F16)	Indicators of h	drophytic vegetation and wetland		
(L	RR G, H)			ILRA 72 d	& 73 OF L		hydrology mus	t be present, unless disturbed or		
50	m Mucky Peat or I	Peat (53)	(LRR F)			$\langle \cdot \rangle$		problematic.		
Restrictive	Layer (if observe	ed):								
Туре:					\sim	1	Hydric Soil Pr	esent?		
Depth (inche	es):									
Remarks:						•				
				\sim						
Sandy red	lox concentrated t	through s	soil sample from	he steep	eroding I	bank.				
		-			-					
HYDROLO	DGY									
Wetland Hy	drology Indicato	ors:								
Primary Indi	cators (minimum	of one is	required: check	all that an	(vlac		Seconda	ry Indicators (minimum of two required)		
Surface	Water (A1)	7	25	Salt Cru	st (B11)		Sur	face Soil Cracks (B6)		
X High Wa	ater Table (A2)	\sim	 — 	Aquatic	Invertebra	ates (B13) Spa	arsely Vegetated Concave Surface (B8)		
X Saturatio	on (A3)			- Hydroge	en Sulfide	Odor (C	1) X Drainage Patterns (B10)			
Water M	larks (B1)			Dry-Sea	son Wate	er Table (C2) Oxidized Rhizospheres on Living			
Sedimer	Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where tilled)						bots (C3) (where tilled)			
Drift Dep	Drift Deposits (B3)				(C3) (whe	ere not ti	ed) Crayfish Burrows (C8)			
Algal Ma	at or Crust (B4)			Presenc	e of Redu	uced Iron	(C4) Sat	uration Visible on Aerial Imagery (C9)		
Iron Dep	oosits (B5)			Thin Mu	ck Surfac	e (C7)	X Geo	omorphic Position (D2)		
Inundati	on Visible on Aeria	al Imager	y (B7)	Other (E	xplain in	Remarks) FA0	C-Neutral Test (D5)		
Water-S	tained Leaves (B9)		-			Fro	st-Heave Hummocks (D7) (LRR F)		
Field Obser	vations:									
Surface Wa	ter Present?	Yes	No	x	Depth (i	nches).				
Water Table	Present?	Yes			Depth (i	nches):	1	Indicators of Wetland		
Saturation F	Present?	Yes	X No		Depth (i	nches):	0	Hydrology Present? Y		
(includes ca	pillary fringe)					, .	——— I			
Describe Re	corded Data (stre	eam dau	ae. monitorina we	ll. aerial i	ohotos, p	revious i	nspections), if availab	le:		
			ge,	.,	, p		,			
Remarks:										
On the edge	of a perennial la	ke.								

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WETLAND DETERMINAT	FION DATA I	ORM - Great	Plains Reg	gion		
Project/Site: US85	City/County:	Henderson/Ada	ams Sa	mpling Date:	8/2/18	
Applicant/Owner: CDOT	Stat	e: Colorade	o Sar	mpling Point:	SP22	
Investigator(s): Brian Fauver, Haley Stratton		Section, Township,	Range:	2, 28	5, 67W	
Landform (hillslope, terrace, etc.): Terrace	Local ı	elief (concave, con	ivex, none):	none	Slope (%):	0
Subregion (LRR): G-Western Great Plains Range & Irrigate	ed Lat:	39.91331997	Long: -	104.8594494	Datum: NA	AD 83
Soil Map Unit Name: Ascalon sandy loam		NWI cl	assification:	Palustrin	e Scrub-Shrul	b
Are climatic/hydrologic conditions on the site typical for this time of	of the year?	Y (If r	no, explain in	Remarks.)		
Are Vegetation, Soil, or Hydrology	significa	ntly disturbed?	Are "normal o	circumstances" pr	esent? Ye	s
Are Vegetation, Soil, or Hydrology	naturally	v problematic?	(If needed, e	explain any answ	ers in Remarks	s.)
SUMMARY OF FINDINGS - Attach site map showing sa	ampling point lo	ocations, transect	s, important	features, etc.		
Hydrophytic Vegetation Present? N						
Hydric Soil Present? N	ls th	e Sampled Area	Within a W	etland?	Ν	
Indicators of Wetland Hydrology Present? N	lf ye	es, optional wetland	site ID: Out	point for Wetlar	nds 9, 10 and	11
Remarks:						
Upland point for each wetland, in close proximity to the dirt roa	ad that wraps a	round the perennia	al lake			
VEGETATION Use scientific names of plants.						
Abs	olute Domina	nt Indicator	Dominance	Test Workshee	t	
<u>I ree Stratum</u> (Plot size:) % C	Sover Specie	s Status	lumber of Do	minant Species	0	()
1		— — ^u	hat are OBL,	FACVV, or FAC:	0	(A)
2		 [otal Number	of Dominant	1	(D)
3						(D)
4	<u> </u>	 ^P	ercent of Do	FACW or FAC:	0.00%	(
5			ial ale OBL,	FACW, OFFAC.	0.00%	(A/D)
Sanling/Shruh Stratum (Plot size:			Prevalence	Index Worksh	oot	
	$c \Sigma$		Total % Cov	ver of Mu	iltinly by:	
2	\mathbf{v} —		OBL specie	s 0 x1	= 0	
3			FACW spec	$\frac{0}{10} \times 2$	$=$ $\frac{0}{0}$	
4			FAC specie	$s = \frac{0}{2} \times \frac{2}{3}$	$=$ $\frac{0}{0}$	
5			FACU speci	$\frac{10}{10} \times 4$	$= \frac{0}{40}$	
	0 = Total C	over	UPL specie	s <u>40</u> x 5	= 200	
Herb Stratum (Plot size:			Column tota	als 50 (A)	240	(B)
1 Convolvulus arvensis	30 Y	LIPI	Prevalence	Index = $B/A =$	4 80	()
2 Bromus tectorum	10 N		1100010100		4.00	
3 Bassia scoparia	10 N	FACU	Hydrophyti	c Vegetation Ir	dicators:	
4 Unknown grass	5 N		1 - Rani	d Test for Hydror	ohytic Vegetati	ion
5	<u> </u>	·	2 - Dom	inance Test is >	50%	ion
6		— —	3 - Preva	alence Index is ≤	3.0 ¹	
7		·			tations ¹ (provi	ido
8			support	ing data in Rem	arks or on a	lue
9			separat	e sheet)		
10			Problem	natic Hvdrophvti	c Vegetation ¹	
	55 = Total C	over	(Explain	1)	e egeneer	
Woody Vine Stratum (Plot size:)				'	land hydrology m	aust he
1			prese	nt, unless disturbed	d or problematic	iusi be
2			Hydron	hytic		
	0 = Total C	over	Vegeta	tion		
% Bare Ground in Herb Stratum 45			Presen	t? N		
Remarks:					-	
Sparcely vegetated weedy upland point, dominated by bind we	eed.					

Profile Desc	cription: (Descr	ibe to th	e depth needed	to docun	nent the	indicato	or or confirm the absence	e of indicators.)		
Depth	Depth <u>Matrix</u>		Red	Redox Features						
(Inches)	Color (moist)	%	Color (moist)	% Type ¹ L		Loc ²	Texture	Remarks		
0-12	10YR 5/3	100					sandy loam			
1 Type: C = C	oncentration D –	Depletion	RM – Reduced N	l Aatrix CS		ad or Coa	L ated Sand Grains ² Locatio	I pp: PL – Pore Lining M – Matrix		
Hydric Soil	Indicators: (Ann	licable f		se other			Indicators for Prob	lematic Hydric Soils ³ :		
	and (A1)			dy Glovo	d Motrix ((SA)	1 cm Muck (AQ)			
	ic Eninodon (A2)			idy Gieye	u iviatitix (((95)	(34)	Coast Prairie Redox (A16) (LRR F. G. H)			
	k Histis (A2)			nod Mot	((30) riv (86)		Dark Surface (S7) (LRR G)			
	rogon Sulfido (AJ)			ppeu Muck	nx (30) v Minoral	(E1)	High Plans Depressions (F16)			
Stra	tified Lavers (A5)		Loa		y Mineral d Matrix	(F2)	(I BBH outside of MI RA 72 & 73)			
	n Muck (AQ) (I PP		L0a	liny Gleye	triv (E2)	(ГZ)		$= 10^{10}$		
	lotod Bolow Dark	1, 3 , 11) Surfaco (Nov Dark	uix (F3) Surfaca (I		Pod Parant Mata	Reduced Vertic (F18)		
	k Dark Surface (A	3011ace (12)			sunace (i k Surface	- (F7)	Very Shallow Da	Very Shallow Dark Surface (TE12)		
	dv Mucky Mineral	(\$1)	Ber	lov Denre	esions (F		Other (Explain in	Remarks)		
25	cm Mucky Peat or	Peat (S2		h Plains F) enressio	0) ns (F16)	³ Indicators of hydro	abytic vogetation and wetland		
	RR G. H)	1 cat (02	.) (N							
5.0	m Mucky Peat or I	Peat (S3)	(LRR F)				n nyarology mast be	roblematic.		
		- 001 (00)	(=)			<u> </u>	4			
Restrictive	Layer (if observe	ed):				Č.				
Type:					\sim		Hydric Soil Prese	nt? <u>N</u>		
Depth (inche	es):									
Remarks:				$\boldsymbol{\lambda}$						
				~						
Dry soil, m	nostly bare ground	d.	()						
			~ ~ ~ ~	•						
HYDROLO	DGY									
Wetland Hy	drology Indicate	ors:								
Primary Indi	cators (minimum	of one is	required; check a	all that ap	oply)		Secondary In	dicators (minimum of two required)		
Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6)							Soil Cracks (B6)			
High Water Table (A2)			· -	Aquatic	Invertebra	ates (B13	Sparsely Vegetated Concave Surface (B8)			
Saturatio	Saturation (A3)				n Sulfide	Odor (C1	1) Drainag	e Patterns (B10)		
Water M		Dry-Sea	son Wate	er Table (C2) Oxidized	d Rhizospheres on Living				
Sediment Deposits (B2) Oxidized Rł						heres on	Living Roots	(C3) (where tilled)		
Drift Deposits (B3) Roots (C3) (where not tilled) Crayfish Burrows (C8)							Burrows (C8)			
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9							on Visible on Aerial Imagery (C9)			
Iron Dep	OSIIS (B5)	Imagan	(P7)		CK Surfac	e (C7) Demorke		phic Position (D2)		
Water St	Inundation Visible on Aerial Imagery (B7) Uther (Explain in Remarks) FAC-Neutral Test (D5)						utrai Test (D5) ave Hummocks (D7) (I RR F)			
	laineu Leaves (D9)								
Field Obser	vations:									
Surface Wat	ter Present?	Yes	No	X	Depth (i	nches):				
Water Table	Present?	Yes	No	Х	Depth (i	nches):	Inc	dicators of Wetland		
Saturation P	resent?	Yes	No	Х	Depth (i	nches):	Н	ydrology Present? N		
(includes ca	pillary fringe)									
Describe Re	corded Data (stre	eam gau	ge, monitoring we	ll, aerial p	photos, p	revious i	nspections), if available:			
Remarks										
INCHIMIKS.										
In between v	wetland and dirt a	ccess ro	ad on eroding slo	pe.						



Appendix C - US Army Corps of Engineers

Correspondence

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March 23, 2017



Mr. Aaron Eilers United States Army Corps of Engineers Omaha District 9307 South Wadsworth Boulevard Littleton, CO 80128

Re: Interstate 25 (I-25) North, US 36 to Thornton Parkway Project Environmental Assessment (EA)

Dear Mr. Eilers

Felsburg Holt & Ullevig (FHU), acting on behalf of the Colorado Department of Transportation (CDOT) and in cooperation with the Federal Highway Authority (FHWA), is preparing a template Environmental Assessment (EA) for the Interstate 25 (I-25) North, US 36 to Thornton Parkway project. The template EA is being developed to satisfy the National Environmental Policy Act (NEPA) process for the I-25 North, US 36 to Thornton Parkway project, which will include improvements to relieve congestion, improve safety, enhance multimodal travel, and replace aging infrastructure on I-25 from US 36 to Thornton Parkway in Adams County and the City of Thornton, Colorado.

The project area, shown on the attached map, contains primarily residential, commercial, and undeveloped open space land use. The project area extends approximately 3 miles along I-25 from the US 36 to Thornton Parkway. The project is part of the corridor improvements identified in the North I-25, US 36 to SH 7 Planning and Environmental Linkages (PEL) Study. There have been several other studies conducted in the project area. These studies include: 2011 North I-25 Environmental Impact Statement (EIS) and Record of Decision (ROD1), 2010 I-25/84th Avenue Bridge Reconstruction Project Non-Programmatic Categorical Exclusion (CatEx), and 2014 I-25 Managed Lanes Project ROD Re-evaluation.

As part of the N I-25, US 36 to SH 7 PEL, an initial scoping meeting on March 26, 2012 to comment on any particular concerns in the project area and the PEL's Purpose and Need. In addition, a copy of the PEL report was provided upon completion of the study. The template EA is the next phase of project development. Since a scoping meeting was held as part of the PEL, a scoping meeting will not be held for the Template EA; however, if your agency would like a one-on-one scoping meeting, please contact Jordan Rudel or Kevin Maddoux to schedule a meeting.

CDOT and FHU look forward to working with you in preparing the template EA and associated Technical Reports. The resource authors are currently preparing the relevant reports. If you have preliminary concerns or items you would like us to consider during the NEPA process, please provide comments at your earliest convenience. If you have any general questions about this letter, please contact me at (303) 721-1440 or at kevin.maddoux@fhueng.com, or contact Jordan Rudel, CDOT Region 1 Environmental Program Manager, at (303) 757-9881 or jordan.rudel@state.co.us.

Sincerely,

Jordan Rudel CDOT Region 1 Environmental Program Manager

cc: Jean Cordova, Colorado Department of Public Health and Environment Allison Deans Michael, US Fish and Wildlife Service Jordan Likes, Colorado Parks and Wildlife

Kevin Maddoux FHU Environmental Project Manager

Carol Anderson, US Environmental Protection Agency Jordan Rudel, CDOT Region 1

Attachment A: Study Area Map



Kevin.Maddoux

From:	Eilers, Aaron R CIV USARMY CENWO (US) <aaron.r.eilers@usace.army.mil></aaron.r.eilers@usace.army.mil>
Sent:	Friday, March 24, 2017 12:29 PM
То:	Neal.Goffinet
Cc:	Kevin.Maddoux; Jeanne.Sharps; Rudel - CDOT, Jordan; stephanie.alanis@state.co.us
Subject:	RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter
Attachments:	Final_2015ColoradoNEPA404Merger.pdf

I think a meeting would be appropriate. Let me know which of these dates work so I can reserve our conference room here at Chatfield. (April 17, 18, 19, 24-28).

There are a couple of issues of immediate concern. I want to put these out there so that our meeting will be as productive as possible.

1) This project is within an area which has already received an Individual Permit prepared as part of the I-25 North EIS. That project involved a NEPA/404 merger between the Corps/FHWA/CDOT and is currently under construction. The Corps can't just nullify that. Perhaps there is an argument to be made that there is independent utility. If so, I need a letter signed by FHWA and CDOT that clearly demonstrates that. Please also refer to the "Exiting the Merger Process" (attached). The point of contact for CDOT on that Individual Permit is Carol Parr.

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3) If an IP is required, then we go back to the NEPA/404 Merger agreement which lays out a specific formal framework for the NEPA/404 merger process. Please carefully review this document because I will refer to it often in our meeting. FHWA is the NEPA lead federal agency for federally funded transportation projects proposed by CDOT and the process for initiating the merger process is specified in the merger agreement. Environmental Assessment's requiring an IP will enter the merger process only if the FHWA, USACE, and CDOT determine it is in the overall best interest of the public. This decision is made after considering potential impacts to waters of the US, the range of potential alternatives, and the potential for controversy on environmental grounds. If, after consideration of these factors, we conclude that a merger is not appropriate, then the Corps is required to ensure compliance with the 404(b)(1) guidelines as we identify a LEDPA. I understand not all EA's have multiple alternatives, but the standards for IPs are a little different and the Corps would want to evaluate a range of practicable alternatives.

That's about all I have for now. It's a bit thorny, frankly, and I don't want to mislead you into believing that it is a simple or fast process. Other states in the Omaha District are involved in rather complicated alternatives analysis stemming from the NEPA/404 merger process. The best advice I can give for now is to avoid and minimize to the point where the impacts qualify for a Nationwide Permit and start preparing a letter with FHWA and CDOT which clearly demonstrates independent utility. I'm happy to continue this discussion in April. Let me know what works for you.

AE

Aaron R. Eilers U.S. Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, CO 80128 (303) 979-4120 Aaron.R.Eilers@usace.army.mil

-----Original Message-----From: Neal.Goffinet [mailto:Neal.Goffinet@fhueng.com] Sent: Friday, March 24, 2017 10:53 AM To: Eilers, Aaron R CIV USARMY CENWO (US) <Aaron.R.Eilers@usace.army.mil> Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM>; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM>; Rudel - CDOT, Jordan <jordan.rudel@state.co.us>; stephanie.alanis@state.co.us Subject: [EXTERNAL] RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter

Aaron,

Although this a largely urban corridor, there are several aquatic resources present in and adjacent to the project area. Surface water resources within the project area include Badding Creek, Badding Reservoir, Croke Lake, Niver Creek, Niver Creek Tributary L, associated tributaries to these drainages, and several water quality/detention basins. Additionally, there are approximately 22 acres of wetlands in and adjacent to the project area. The delineated wetlands have been recorded in the Biological Resources Report and Wetland Delineation Report which are undergoing internal review and will eventually be going through CDOT review. The attached map should help give you a sense of where the surface waters are located near the project. SFT NOT

Thanks! Neal

Neal Goffinet **Environmental Scientist** 6300 S Syracuse Way, Ste. 600 Centennial, CO 80111 P: 303-721-1440 x 8892 Blockedwww.fhueng.com

-----Original Message-----

From: Eilers, Aaron R CIV USARMY CENWO (US) [mailto:Aaron.R.Eilers@usace.army.mil]

Sent: Friday, March 24, 2017 9:54 AM

To: Neal.Goffinet <Neal.Goffinet@fhueng.com>

Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM>; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM>; Rudel - CDOT, Jordan <jordan.rudel@state.co.us>; stephanie.alanis@state.co.us Subject: RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter

Are there any aquatic resources in this pristine corridor?

Aaron R. Eilers U.S. Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, CO 80128 (303) 979-4120 Aaron.R.Eilers@usace.army.mil

-----Original Message-----From: Downing, Kiel G CIV USARMY CENWO (US) Sent: Thursday, March 23, 2017 11:28 AM To: Neal.Goffinet <Neal.Goffinet@fhueng.com> Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM>; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM>; Rudel - CDOT, Jordan <jordan.rudel@state.co.us>; stephanie.alanis@state.co.us; Eilers, Aaron R CIV DSARMY CENWO (US) <Aaron.R.Eilers@usace.army.mil> Subject: RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter Neal, Aaron Eilers will be the project manager for the Corps. He will coordinate with you. Kiel -----Original Message-----From: Neal.Goffinet [mailto:Neal.Goffinet@fhueng.com] Sent: Wednesday, March 22, 2017 2:03 PM To: Downing, Kiel G CIV USARMY CENWO (US) <Kiel.G.Downing@usace.army.mil> Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM>; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM>; Rudel - CDOT, Jordan <jordan.rudel@state.co.us Subject: [EXTERNAL] I-25 North US 36 to Thornton Parkway Agency Scoping Letter Mr. Downing

Please find attached an agency scoping letter for the I-25 North, US 36 to Thornton Parkway project that we are working on here at FHU.

Thank you!

Neal Goffinet

Neal Goffinet

Environmental Scientist

6300 S Syracuse Way, Ste. 600

Centennial, CO 80111

P: 303-721-1440 x 8892

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Mr. Aaron Eilers United States Army Corps of Engineers Omaha District 9307 South Wadsworth Boulevard Littleton, CO 80128

RE: Interstate 25 (I-25) (U.S. 36 to 104th Ave) Project Environmental Assessment - Purpose and Need, Independent Utility, and Impacts to Wetlands and Waters of the U.S.

Dear Mr. Eilers:

This letter is in response to your email dated March 17, 2017 requesting additional information in regard to Purpose and Need, Independent Utility, and Impacts to Wetlands and Waters of the U.S. for the I-25 (U.S. 36 to 104th Avenue) project. Your email was in response to the Colorado Department of Transportation's (CDOT) scoping letter to the U.S. Army Corps of Engineers dated March 23, 2017. Please note that the title of the project has changed from the I-25 North, U.S. 36 to Thornton Parkway, Project to the I-25 (U.S. 36 to 104th Avenue) project based on revisions to the project extents.

Project Description

CDOT in cooperation with the Federal Highway Authority (FHWA) is preparing a template Environmental Assessment (EA) for the I-25 (U.S. 36 to 104th Avenue) project. The Proposed Action would provide improvements to an approximately 4-mile segment of I-25 between U.S. 36 and 104th Avenue (**Figure1**). The current cross section of I-25 between U.S. 36 and 104th Avenue includes three general-purpose lanes and one Express Lane along the inside shoulder, with an auxiliary lane between 84th Avenue and Thornton Parkway. The inside shoulder varies in width between 2 and 12 feet, and the outside shoulder varies between 10 and 12 feet. There is a 2-foot inside shoulder and a 2-foot buffer between the Express Lane and the nearest general-purpose lane.

The proposed improvements associated with the Proposed Action (Figures 2 and 3) are as follows:

- Adding a fourth general-purpose lane in each direction from 84th Avenue to Thornton Parkway with the northbound general-purpose lane extending to 104th Avenue;
- Constructing continuous acceleration and deceleration lanes between the I-25/84th Avenue interchange and the I-25/Thornton Parkway interchange;
- Widening the inside and outside shoulders to a consistent 12-foot width;
- Accommodating a proposed median transit station and pedestrian bridge for the Thornton Park-n-Ride just south of 88th Avenue;
- Replacing the 88th Avenue bridge over I-25.

The proposed typical section on I-25 will consist of four 12-ft general-purpose lanes, a 12-ft Express Lane along the inside traveled way, and a 12-ft outside auxiliary lane between each interchange. Additionally, the inside and outside shoulders will be widened to 12 feet and the Express Lane buffer will be widened to 4 feet, and a 2-foot barrier will separate the northbound and southbound lanes of I-25. Surrounding the median station will be a 2-foot concrete barrier separating the Express Lanes from the bus station and bus lanes.



Figure I I-25 (U.S. 36 to 104th Avenue) Project Area



Mr. Aaron Eilers, U.S. Army Corps of Engineers November 14, 2018 Page 3

Purpose and Need

The purpose of this project is to relieve congestion and improve safety on I-25 between U.S. 36 and 104th Avenue in Adams County, Colorado. These transportation improvements are needed to address traffic operation and safety.

- Traffic Operations Existing traffic volumes along I-25 between the Interstate 76 (I-76)/U.S. 36/Interstate I-270 (I-270) interchange complex and 104th Avenue are nearing or exceeding capacity. Population and employment growth are projected to increase travel demand further reducing travel speeds and increasing congestion.
- Safety The total annual crash rate for I-25 between the I-76/U.S. 36/ I-270 interchange complex and I12th Avenue has been increasing since 2012. Rear-end crashes, typically associated with congestion, are the predominant crash type.

Figure 4 illustrates the existing and project operational deficiencies for the project area.

Independent Utility

The I-25 (US 36 to 104th Avenue) project satisfies the independent utility requirements set forth in 23CFR 771.111(f). The I-25 (US 36 to 104th Avenue) project demonstrates independent utility because it provides transportation benefits by improving safety and decreasing and travel times along I-25; it does not rely on any other transportation projects being completed in order to be usable and is a reasonable expenditure. Additionally, it does not restrict the consideration of alternatives for other reasonably foreseeable transportation projects.

I-25 (US 36 to 104th) project was initiated to address the projected 2040 operational deficiencies of I-25 identified on **Figure 4**. The **Proposed** Action for the project is consistent with the PEL's recommendations **Figure 5** and includes:

- Extension of the (fourth) northbound general-purpose lane to 104th Avenue;
- Extension of the (fourth) southbound general-purpose lane to Thornton Parkway;
- Construction of continuous acceleration and deceleration lanes between the I-76/US 36/I-270 interchange complex, the I 25/84th Avenue interchange, and I-25/Thornton Parkway interchange;
- Construction of a center-median bus station and pedestrian bridge for the Thornton Parkn-Ride;
- 12-ft inside and outside shoulders in each direction; and
- Replacement of the 88th Avenue bridge over I-25.

The Proposed Action incorporates transportation improvements that were previously evaluated and recommended as part of the North I-25, US 36 to SH 7 Planning and Environmental Linkages (PEL) Study (CDOT, 2014), as well as improvements developed specially in response to the transportation needs identified for this project. The improvements of this project build upon the improvements the were previously constructed as part of the North I-25 Final Environmental Impact Statement, Final Section 4(f) Evaluation (FEIS) (FHWA and CDOT, 2011a), North I-25 Record of Decision 1 (RODI) (FHWA CDOT, 2011b. **Figure 5** depicts the portions of the Proposed Action that were previously evaluated and recommended as part of the FEIS, RODI, and PEL.

The North I-25, US 36 to SH 7 PEL was conducted to evaluate transportation improvements to reduce congestion and improve safety on I-25 between US 36 and SH 7 by implementing near term, multimodal, and cost-effective transportation improvements that were compatible with long-term options and the recently constructed interchange structures at I-25/84th Avenue, I-25/120th Avenue, I-25/128th Avenue, I-25/136th Avenue, and I-25/144th Avenue. The termini for the North I-25, US 36 to SH 7 PEL was set based on the observed and modeled areas of existing and future congestion, as well as the boundaries of other major corridors where improvements were being made at the time of the study. Demand and congestion on I-25 drops off substantially north of SH 7; therefore, SH 7 was identified as the northern logical terminus. On the southern end of the corridor, congestion drops off southbound south of 84th Avenue as a result of increased capacity. However, US 36 was identified as the southern terminus to address congestion caused by the I-270, US 36 merge onto northbound I-25. In addition to the FEIS Preferred Alternative, the North I-25, US 36 to SH 7 PEL recommended the:

- Addition of a fourth general-purpose lane in each direction on I-25 between Thornton Parkway and the I-76/US 36/ I-270 interchange complex,
- Construction of continuous acceleration and deceleration lanes between the I-76/US 36/I-270 interchange complex, the I-25/84th Avenue interchange, and I-25/Thornton Parkway interchange; and
- Construction of a center-median bus station and pedestrian bridge for the Thornton Parkn-Ride.

The North I-25 Final Environmental Impact Statement, Final Section 4(f) Evaluation (FEIS) was conducted to identify and evaluate multi-modal transportation improvements along the 61-mile I-25 transportation corridor extending from the Fort Collins/Wellington area to Denver. The improvements being considered in the FEIS addressed regional and inter-regional movement of people, goods, and services in the I-25 corridor. The improvements were needed to address mobility, accessibility, safety, and aging infrastructure problems along I-25, as well as to provide for a greater variety of transportation choices. The FEIS Preferred Alternative and ROD1 Selected Alternative planned reconstruction of I-25 from US 36 to 120th Avenue with the addition of Express Lanes. Between US 36 and 104th Avenue, the FEIS Preferred Alternative and ROD1 Selected Alternative included:

- > Three 12-foot (ft) general-purpose lanes in each direction,
- > One 12-ft Express Lane with a 4-ft buffer along the inside traveled way in each direction,
- I2-ft inside and outside shoulders in each direction,
- A 2-foot barrier between the northbound and southbound directions of the roadway, and
- ▶ Replacement of the 88th Avenue bridge over I-25.

In May 2013, FHWA and CDOT completed a Reevaluation of ROD1 for construction of an interim version of only one aspect of Phase 1 of the FEIS Preferred Alternative between US 36 and 120th Avenue (FHWA and CDOT, 2013). The interim project consisted of a new inside Express Lane striped on the existing pavement surface, without the widening of I-25.



Figure 4 Existing and Projected 2040 Operational Deficiencies

Southbound on-ramp vehicles at Thornton Parkway merge onto southbound I-25 creating congestion that currently extends north of Thornton Parkway. By 2040 this southbound morning (AM) peak hour congestion is projected to extend north of the 104th Avenue.

Southbound AM peak hour merge and diverge interactions at the Interstate 76 (I-76)/US 36/Interstate | 270 (I-270) interchange complex currently operate at level of service (LOS) D/E. In 2040, operations are projected to be reduced to LOS F.

The northbound evening (PM) peak hour merge and weaving interactions from I-76/US 36 and I-270 ramps onto I-25 currently operate at LOS C. By 2040 increased travel demand is expected to reduce operations to LOS F.

- Buses exiting the Thornton Park-n-Ride at 88th Avenue create slow traffic when merging and weaving across northbound and southbound traffic into the Express Lanes from the bus-only on-ramps causing congestion and reducing vehicle throughput along 1-25.
- The existing average AM peak hour southbound speeds range from 30 to 50 miles per hour (MPH) (on an incident-free day). By 2040 these speeds are projected to decrease to between 20 and 45 MPH.
- The existing average PM peak hour northbound speeds range from 25 to 45 MPH (on an incident-free day). By 2040, these speeds are projected to decrease to between 10 and 40 MPH.
- Morning AM peak hour southbound travel times between the 104th Avenue and 84th Avenue interchanges are projected nearly double from 2 to 4 minutes in 2017 to 4 to 6 minutes in 2040.
- Evening PM peak hour northbound corridor long travel times from I-76 to 104th Avenue, are projected to nearly double from 6 to 8 minutes in 2017 to 10 to 12 minutes in 2040.

Figure 5 Proposed Action – Transportation Improvements Previously Evaluated and Recommended



The interim also included implementation of the tolling and ITS infrastructure to operate the Express Lane, the resurfacing/reconstructing and restriping of I-25 in this section, the construction of four new noise walls, and the rehabilitation of existing noise walls. Construction of this project was completed in 2017 and thus is the condition that is currently the existing condition along I-25 between US 36 and 120th Avenue.

Impacts to Wetlands and Other Waters of the U.S.

Wetlands and other waters of the U.S. within the project area are typical of roadside ditches, water quality ponds, and wetlands associated with Niver Creek. A total of 6.64 acres of wetlands are in the vicinity of the project. The Proposed Action would result in a total estimate of 0.365 acres of impacts to wetlands and other waters of the U.S. adjacent to the roadway abutting Niver Creek. This is based on a preliminary (NEPA) level of design and will be verified during final design. Construction of impervious surfaces would increase runoff exposing the surrounding vegetation to higher levels of pollutants. Increased runoff may lead to increased soil erosion. The impacts would not trigger a Section 404 Individual Permit but would qualify for a Nationwide Permit verification.

Conclusion

CDOT and FHU look forward to working with you in preparing the template EA and associated Technical Reports. The resource authors are currently preparing the relevant reports. If you have preliminary concerns or items you would like us to consider during the NEPA process, please provide comments at your earliest convenience. If you have any general questions about this letter, please contact me contact Jordan Rudel, CDOT Region I Environmental Program Manager, at (303) 757-9881 or jordan.rudel@state.co.us.

Sincerely,

Jordan Rudel CDOT Region I Environmental Program Manager

cc: Stephanie Alanis, CDOT Region I Francesca Tordonato, CDOT Region I Chris Horn, FHWA

Kevin.Maddoux

From:	Eilers, Aaron R CIV USARMY CENWO (US) <aaron.r.eilers@usace.army.mil></aaron.r.eilers@usace.army.mil>
Sent:	Friday, November 16, 2018 10:50 AM
То:	Rudel - CDOT, Jordan
Cc:	Neal.Goffinet; Kevin.Maddoux; Jeanne.Schley; Stephanie Alanis - CDOT
Subject:	RE: [Non-DoD Source] Re: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter (UNCLASSIFIED)
Attachments:	2017 PCN Requirements (002).pdf; Compensatory Mitigation Plan Requirements.pdf

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

OK. That all sounds great. Your November 14, 2018 letter resolves our questions of independent utility. Please provide the Corps with a hard copy of the signed FHWA/CDOT EA/FONSI document once final.

CDOT is welcome to submit a pre-construction notification (PCN) for the impacts to waters of the U.S. once you have clearances for NHPA Section 106 and ESA Section 7. I've attached a document describing the minimum requirements for a complete PCN.

A couple of things to consider in the PCN:

The Denver Regulatory Office can't authorize more than 300 linear feet of stream loss under a Nationwide Permit. Greater than 300 linear feet of stream loss would require an Individual Permit.

Also, 0.365 acres of impacts to jurisdictional wetlands would require compensatory mitigation. Please keep in mind that there are currently no wetland mitigation credits available for sale in this service area. That could require CDOT to construct a permittee-responsible wetland mitigation area and would require a compensatory mitigation plan. I've attached a document describing the minimum requirements for a wetland mitigation plan. The Corps does not require mitigation for impacts to non-jurisdictional wetlands such as off-line storm water detention ponds and roadside ditches constructed in uplands.

Please let me know if you have any additional questions or concerns.

AE

Aaron R. Eilers U.S. Army Corps of Engineers Denver Regulatory Office 9307 South Wadworth Blvd Littleton, CO 80128 (303) 979-4120 aaron.r.eilers@usace.army.mil

-----Original Message-----

From: Rudel - CDOT, Jordan [mailto:jordan.rudel@state.co.us] Sent: Wednesday, November 14, 2018 3:40 PM To: Eilers, Aaron R CIV USARMY CENWO (US) <Aaron.R.Eilers@usace.army.mil> Cc: Neal.Goffinet <Neal.Goffinet@fhueng.com>; Kevin.Maddoux <Kevin.Maddoux@fhueng.com>; Jeanne.Sharps <Jeanne.Sharps@fhueng.com>; Stephanie Alanis - CDOT <stephanie.alanis@state.co.us> Subject: [Non-DoD Source] Re: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter

Hello Mr. Eilers,

I am writing to follow up on some of the early informal coordination we initiated last year in March 2017 around project scoping. After further consideration and additional conversations both internal as well as external with FHWA, CDOT has concluded that our Proposed Action for this Environmental Assessment is positioned to fall into what you had previously helped to categorize below in item #2 of your previous email thread.

Please find the attached memo thoroughly explaining CDOT's basis of conclusions and acknowledgment of impacts to wetlands and waters of the U.S. associated with this NEPA study and preliminary design. Also explained, for background and history purposes, is a summary of the previous corridor studies within this project's area distinguished from this **Environmental Assessment.**

If you have any further questions or comments that the USACE would like to have considered in the Environmental Assessment please let me know. I would be happy to open up for additional dialogue if needed. Thank you in advance NOT CDOT APT for your time and consideration.

Respectfully, Jordan Rudel

Jordan Rudel

Region 1 Environmental Program Manager

<Blockedhttps://drive.google.com/uc?export=download&id=0B8gdupL6hOgVblg5dUNLOHRsN2c>

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<Blockedhttps://maps.google.com/?g=2829+W.+Howard+Pl.,+Denver+CO,+80204&entry=gmail&source=g> jordan.rudel@state.co.us <mailto:jordan.rudel@state.co.us> | Blockedwww.codot.info <Blockedhttp://www.coloradodot.info/> | Blockedwww.colorado.gov/jobs <Blockedhttp://www.colorado.gov/jobs>

On Fri, Mar 24, 2017 at 12:30 PM Eilers, Aaron R CIV USARMY CENWO (US) <Aaron.R.Eilers@usace.army.mil <mailto:Aaron.R.Eilers@usace.army.mil> > wrote:

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AE

Aaron R. Eilers U.S. Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, CO 80128 (303) 979-4120 Aaron.R.Eilers@usace.army.mil <mailto:Aaron.R.Eilers@usace.army.mil> -----Original Message-----

From: Neal.Goffinet [mailto:Neal.Goffinet@fhueng.com <mailto:Neal.Goffinet@fhueng.com>] Sent: Friday, March 24, 2017 10:53 AM

To: Eilers, Aaron R CIV USARMY CENWO (US) <Aaron.R.Eilers@usace.army.mil <mailto:Aaron.R.Eilers@usace.army.mil> >

Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM <mailto:Kevin.Maddoux@FHUENG.COM> >; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM <mailto:Jeanne.Sharps@FHUENG.COM> >; Rudel - CDOT, Jordan <jordan.rudel@state.co.us <mailto:jordan.rudel@state.co.us> >; stephanie.alanis@state.co.us <mailto:stephanie.alanis@state.co.us>

Subject: [EXTERNAL] RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter

Aaron,

Although this a largely urban corridor, there are several aquatic resources present in and adjacent to the project area. Surface water resources within the project area include Badding Creek, Badding Reservoir, Croke Lake, Niver Creek, Niver Creek Tributary L, associated tributaries to these drainages, and several water quality/detention basins. Additionally, there are approximately 22 acres of wetlands in and adjacent to the project area. The delineated wetlands have been recorded in the Biological Resources Report and Wetland Delineation, Report which are undergoing internal review and will eventually be going through CDOT review. The attached map should help give you a sense of where the surface waters are located near the project.

Thanks! Neal

CDOT APPR Neal Goffinet **Environmental Scientist** 6300 S Syracuse Way, Ste. 600 Centennial, CO 80111 P: 303-721-1440 x 8892 BlockedBlockedwww.fhueng.com <Blockedhttp://Blockedwww.fhueng.com>

-----Original Message----

From: Eilers, Aaron R CIV USARMY CENWO (US) [mailto:Aaron.R.Eilers@usace.army.mil <mailto:Aaron.R.Eilers@usace.army.mil>]

Sent: Friday, March 24, 2017 9:54 AM

To: Neal.Goffinet <Neal.Goffinet@fhueng.com <mailto:Neal.Goffinet@fhueng.com> >

Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM <mailto:Kevin.Maddoux@FHUENG.COM> >; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM <mailto:Jeanne.Sharps@FHUENG.COM> >; Rudel - CDOT, Jordan <jordan.rudel@state.co.us <mailto:jordan.rudel@state.co.us> >; stephanie.alanis@state.co.us <mailto:stephanie.alanis@state.co.us>

Subject: RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter

Are there any aquatic resources in this pristine corridor?

AE

Aaron R. Eilers U.S. Army Corps of Engineers **Denver Regulatory Office** 9307 South Wadsworth Blvd.

Littleton, CO 80128 (303) 979-4120 Aaron.R.Eilers@usace.army.mil <mailto:Aaron.R.Eilers@usace.army.mil>

-----Original Message-----From: Downing, Kiel G CIV USARMY CENWO (US) Sent: Thursday, March 23, 2017 11:28 AM To: Neal.Goffinet <Neal.Goffinet@fhueng.com <mailto:Neal.Goffinet@fhueng.com> > Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM <mailto:Kevin.Maddoux@FHUENG.COM> >; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM <mailto:Jeanne.Sharps@FHUENG.COM> >; Rudel - CDOT, Jordan <jordan.rudel@state.co.us <mailto:jordan.rudel@state.co.us> >; stephanie.alanis@state.co.us <mailto:stephanie.alanis@state.co.us> ; Eilers, Aaron R CIV USARMY CENWO (US) <Aaron.R.Eilers@usace.army.mil

<mailto:Aaron.R.Eilers@usace.army.mil> >

Subject: RE: I-25 North, US 36 to Thornton Parkway Agency Scoping Letter 🧹

Neal,

Aaron Eilers will be the project manager for the Corps. He will coordinate with you.

Kiel

-----Original Message-----

From: Neal.Goffinet [mailto:Neal.Goffinet@fuueng.com <mailto:Neal.Goffinet@fhueng.com>] Sent: Wednesday, March 22, 2017 2:03 PM

To: Downing, Kiel G CIV USARMY CENVO(US) <Kiel.G.Downing@usace.army.mil <mailto:Kiel.G.Downing@usace.army.mil

Cc: Kevin.Maddoux <Kevin.Maddoux@FHUENG.COM <mailto:Kevin.Maddoux@FHUENG.COM> >; Jeanne.Sharps <Jeanne.Sharps@FHUENG.COM <mailto:Jeanne.Sharps@FHUENG.COM> >; Rudel - CDOT, Jordan <jordan.rudel@state.co.us <mailto.jordan.rudel@state.co.us> >; stephanie.alanis@state.co.us <mailto:stephanie.alanis@state.co.us>

TAP

Subject: [EXTERNAL] -25 North, US 36 to Thornton Parkway Agency Scoping Letter

Mr. Downing

Please find attached an agency scoping letter for the I-25 North, US 36 to Thornton Parkway project that we are working on here at FHU.

Thank you!

Neal Goffinet

Neal Goffinet

Environmental Scientist

6300 S Syracuse Way, Ste. 600

Centennial, CO 80111

P: 303-721-1440 x 8892

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CLASSIFICATION: UNCLASSIFIED CLASSIFICATION: UNCLASSIFIED

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Pre-Construction Notification (PCN) Requirements

(Nationwide Permit General Condition No. 32 from the January 6, 2017 Federal Register)

US Army Corps of Engineers, Omaha District, Denver Regulatory Office 9307 South Wadsworth Blvd, Littleton, CO 80128 Phone: (303) 979-4120

Contents of Pre-Construction Notification:

The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) Identify the specific NWP or NWP(s) the prospective permittee want to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an invistrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are

no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include avicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

Mitigation Plans for Nationwide Permits

(1) Preparation and Approval.

<u>On-site Mitigation</u>: The Corps may approve a conceptual or detailed compensatory mitigation plan to meet required time frames for general permit verifications, but a final mitigation plan incorporating the elements in paragraphs (2) through (14), at a level of detail commensurate with the scale and scope of the impacts, must be approved by the Corps before the permittee commences work in waters of the United States.

Mitigation Bank: For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks, their mitigation plans need include only the items described in paragraphs (5) and (6), and either the name of the specific mitigation bank to be used or a statement indicating that a mitigation bank will be used (contingent upon approval by the Corps).

(2) *Objectives*. A description of the resource type(s) and amount(s) that will be provided, the method of compensation (i.e., restoration, establishment, enhancement, and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.

(3) *Site selection*. A description of the factors considered during the site selection process. This should include consideration of watershed needs, on-site alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site.

(4) *Site protection instrument*. A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site.

(5) *Baseline information*. A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation. The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about the impact site, not the mitigation bank or in-lieu fee project site.

(6) *Determination of credits*. A description of the number of credits to be provided, including a brief explanation of the rationale for this determination.

(i) For permittee-responsible mitigation, this should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.

(ii) For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

(7) *Mitigation work plan*. Detailed written specifications and work descriptions for the compensatory mitigation project, including, but not limited to, the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan, including elevations and slopes of the substrate; soil management; and erosion control measures. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

(8) *Maintenance plan*. A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

(9) *Performance standards*. Ecologically-based standards that with be used to determine whether the compensatory mitigation project is achieving its objectives.

(10) *Monitoring requirements*. A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included.

(11) *Long-term management plan*. A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.

(12) Adaptive management plan. A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success.

(13) *Financial assurances*. A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.

(14) *Other information*. The Corps may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the compensatory mitigation project.

For further descriptions of the above referenced elements, please see the Final Mitigation Rule. Copies of the Final Mitigation Rule may be obtained from the Denver Regulatory Office (DRO), or by accessing the DRO website at:

https://www.nwo.usace.army.mil/html/od-tl/mitigation-final-rule.33CFR332.10-apr-08.pdf