

WETLAND DELINEATION REPORT



April 2014



**EB I-70 Peak Period  
Shoulder Lane**  
CATEGORICAL EXCLUSION



WETLAND DELINEATION REPORT

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## Acronyms and Abbreviations

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CDOT	Colorado Department of Transportation
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	Global Positioning System
I-70	Interstate 70
MP	Milepost
NAD	North American Datum
OBL	Obligate
PEM	Palustrine Emergent
PPSL	Peak Period Shoulder Lane
PSS	Palustrine Scrub Shrub
SH 103	State Highway 103
UPL	Upland
US 40	U.S. Highway 40
USACE	U.S. Army Corps of Engineers

## Section 1. Introduction

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The Federal Highway Administration (FHWA), in cooperation with the Colorado Department of Transportation (CDOT), is preparing a Categorical Exclusion for proposed changes to the eastbound lanes of I-70 between approximately milepost (MP) 230 and MP 243, in Clear Creek County, Colorado. The proposed changes will improve operations and travel time reliability in the eastbound direction of I-70 in the project area. Additionally, the improvements will be consistent with the *I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) Record of Decision (ROD)*, I-70 Mountain Corridor Context Sensitive Solutions process, and other commitments of the PEIS. The Proposed Action fits within the definition of “expanded use of existing transportation infrastructure in and adjacent to the corridor” as an element of the Preferred Alternative Minimum Program.

The purpose of this report is to document the wetlands and other waters of the U.S. present in the eastbound I-70 Peak Period Shoulder Lane (PPSL) Categorical Exclusion study area. The wetland delineation was completed for the proposed CDOT roadway improvements for the eastbound lanes of I-70 between MP 232 and MP 243 located in Clear Creek County, Colorado. This report can also be used as support for U.S. Army Corps of Engineers (USACE) Section 404 permitting.

## Section 2. Proposed Action

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The purpose of the I-70 PPSL project is to provide short-term eastbound operational improvements to relieve traffic congestion during periods when traffic volumes are highest. This segment is the most congested stretch of the entire I-70 Mountain Corridor. During both the summer and winter peak season, traffic volumes are highest on weekends when recreational travelers comprise more than 90 percent of traffic. In 2010 drivers experienced speeds of less than 20 miles per hour for 35 percent of the time on Sundays, which have the highest volume. Some motorists divert to the frontage road along I-70, which affects its ability to function as a local access county road.

The Proposed Action would add a peak period shoulder lane between the US 40/I-70 interchange and east Idaho Springs. This managed lane would be used during peak periods, defined as Saturdays, Sundays, and holidays, improving travel times and operations. The project extends from MP 230 to MP 243, with improvements proposed as follows:

- MP 230 to MP 232: signage improvements only. Signage would notify motorists of the status of the managed lane, entrance and exit points, and cost.
- MP 232 to MP 242: roadway improvements, including up to 3.5 feet of widening in select areas to accommodate the managed lane, up to 14 feet of widening at the SH 103 on ramp and 4 feet to 8 feet of widening at all other on-ramps in the corridor; replacement of the existing SH 103 bridge; bridge replacement and interchange improvements at Exit 241; improvements to Water Wheel Park; signage; rock cuts in two locations; and construction of 11 retaining walls.
- MP 242 to MP 243: signage improvements only.



The managed lane, which would be tolled, would operate up to, but not exceed, 20 percent of the annual days or 7.5 percent of the time, and connect to the three-lane section provided by the Twin Tunnels project, east of Idaho Springs, thereby capitalizing on that investment.

The improvements will be consistent with the *I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) Record of Decision (ROD)*, I-70 Mountain Corridor Context Sensitive Solutions process, and other commitments of the PEIS. The Proposed Action fits within the definition of “expanded use of existing transportation infrastructure in and adjacent to the corridor” as an element of the Preferred Alternative Minimum Program.

See Figure 1 for an overview of the proposed improvements.

### Section 3. Study Area Description

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The study area for wetlands extends along eastbound I-70 between MP 232 and MP 242. This study area represents the extent of roadway improvements and, therefore, the limits of potential impacts to waters of the U.S. The study area is found on the U.S. Geological Survey 7.5-minute quadrangles: Squaw Pass, Idaho Springs, Central City, Empire, and Georgetown, and has the following coordinates (datum is NAD 83):

- Public Land Survey System
  - ▶ Township 3S, Range 74W, Sections 25, 26, 27 33 and 34
  - ▶ Township 3S, Range 73W, Sections 27, 28, 29, 30, 34, 35, and 36
  - ▶ Township 3S, Range 72W, Sections 31, 32 and 33
- Latitude and longitude
  - ▶ Western terminus: Lat 39.7588 Long -105.6517 (39°45'31.87" N Long 105°39'06.14" W)
  - ▶ Eastern terminus: Lat 39.7438 Long -105.4826 (Lat 39°44'37.83" N Long 105°28'57.40" W)

The study area is adjacent to I-70, which follows Clear Creek, a tributary of the South Platte River. The elevation of the study area ranges from approximately 7,400 to 8,250 feet above mean sea level. The majority of wetlands found in the study area are located in the Clear Creek floodplain riparian vegetation community.

### Section 4. Wetland Delineation Methods

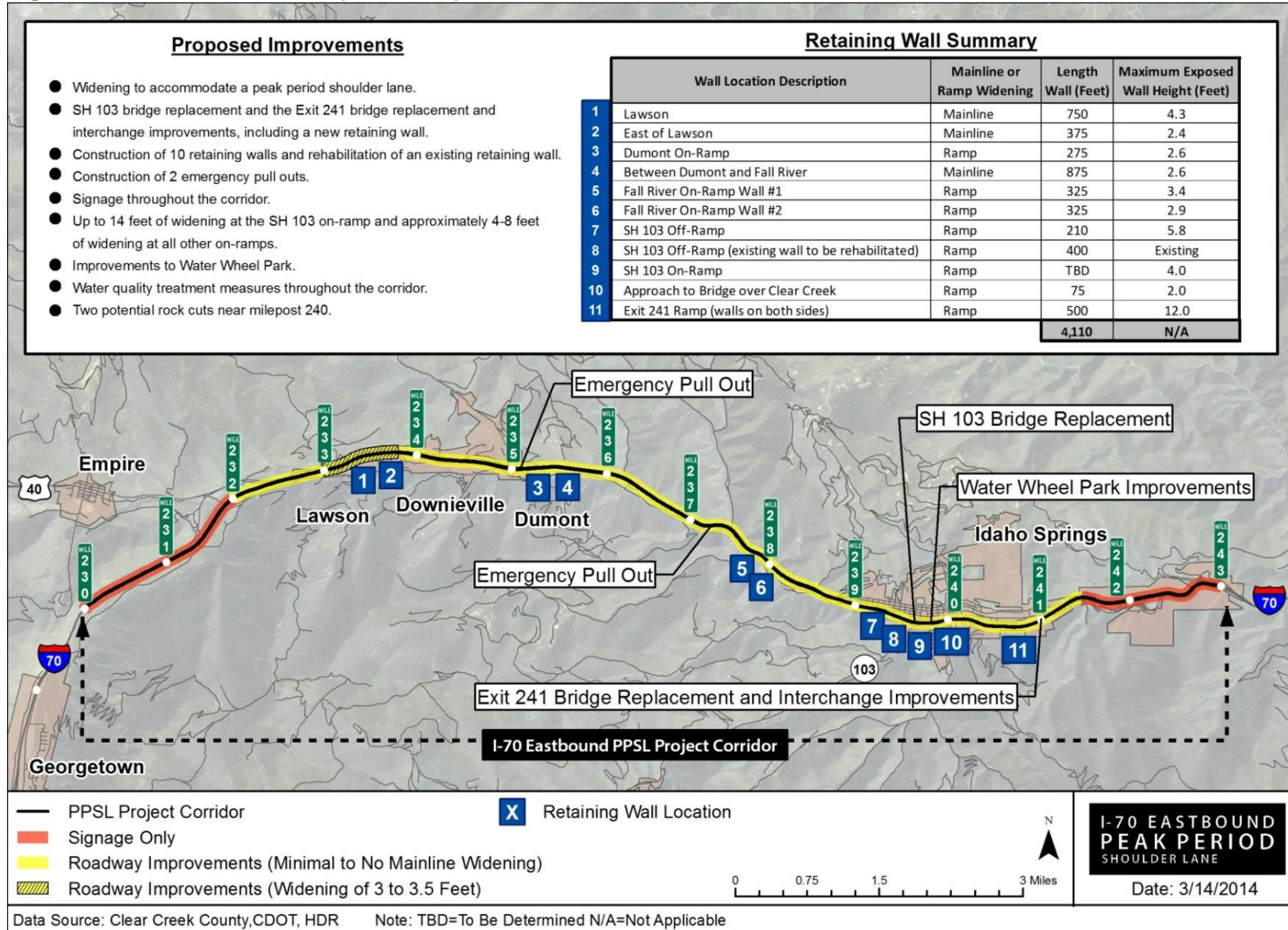
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The field reconnaissance was completed on the following dates by the following individuals:

- September 13, 2013: Francesca Tordonato, Sirena Brownlee, and Sandy Beazley
- October 2, 2013: Sandy Beazley, Andrew Phillips, and Jonathan Chandler

Wetlands were delineated using the procedures outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). The detailed wetland delineation included collection of vegetation, soil, and hydrology data. All the data was recorded on USACE Western Mountain, Valleys, and Coast Region Data Forms.

Figure 1. Overview of Proposed Improvements



The *Western Mountains, Valleys, and Coast 2012 Final Regional Wetlands Plant List* (Lichvar 2012) was used to determine the wetland indicator status for each plant species identified.

Soils were examined at each sampling point to identify the presence of hydric soil indicators. At each soil data point, a soil probe was inserted to a depth of 12-14 inches, except where a restrictive layer was present, to sample and record the soil profile.

In addition to recording plant species and identifying soil characteristics, wetland sites were assessed for sources of hydrology. Hydrologic sources include: overland flow, inundation during peak runoff, and adjacency to surface water.

All wetland boundaries were mapped using a Trimble GeoXH hand-held Global Position System that records positions to sub-meter accuracy.

In portions of the study area, the western bank of Clear Creek is only accessible from the shoulder of I-70 or by wading across Clear Creek. To ensure the safety of field staff, work was not conducted along the highway shoulder and it was deemed unsafe to wade through Clear Creek given the above-average precipitation that fell in early September. Those areas that were inaccessible included many potential wetlands. These areas have all been assumed to be jurisdictional wetlands for purposes of this report and subsequent project planning. These assumed wetlands (Wetlands 6-20) are fringe wetlands located immediately adjacent to Clear Creek and include a mix of grasses, forbs, shrubs and trees. It is assumed that these wetland areas have similar plant, soil, and hydrologic characteristics as those found in Wetland 5; therefore, Wetland 5 was used as a reference. These assumed wetlands will be subject to the same avoidance, minimization, and mitigation measures as those wetlands fully delineated.

## Section 5. Wetlands

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The study area contains 20 wetland areas, which consist of 5 fully delineated wetlands (Wetlands 1-5) and 15 assumed wetlands (Wetlands 6-20). These wetlands encompass a total of approximately 3.17 acres. Almost all of these wetlands are immediately adjacent to Clear Creek. The exceptions are Wetland 1 and Wetland 2, both of which are located within roadside drainage features removed from Clear Creek, but ultimately flow into the creek.

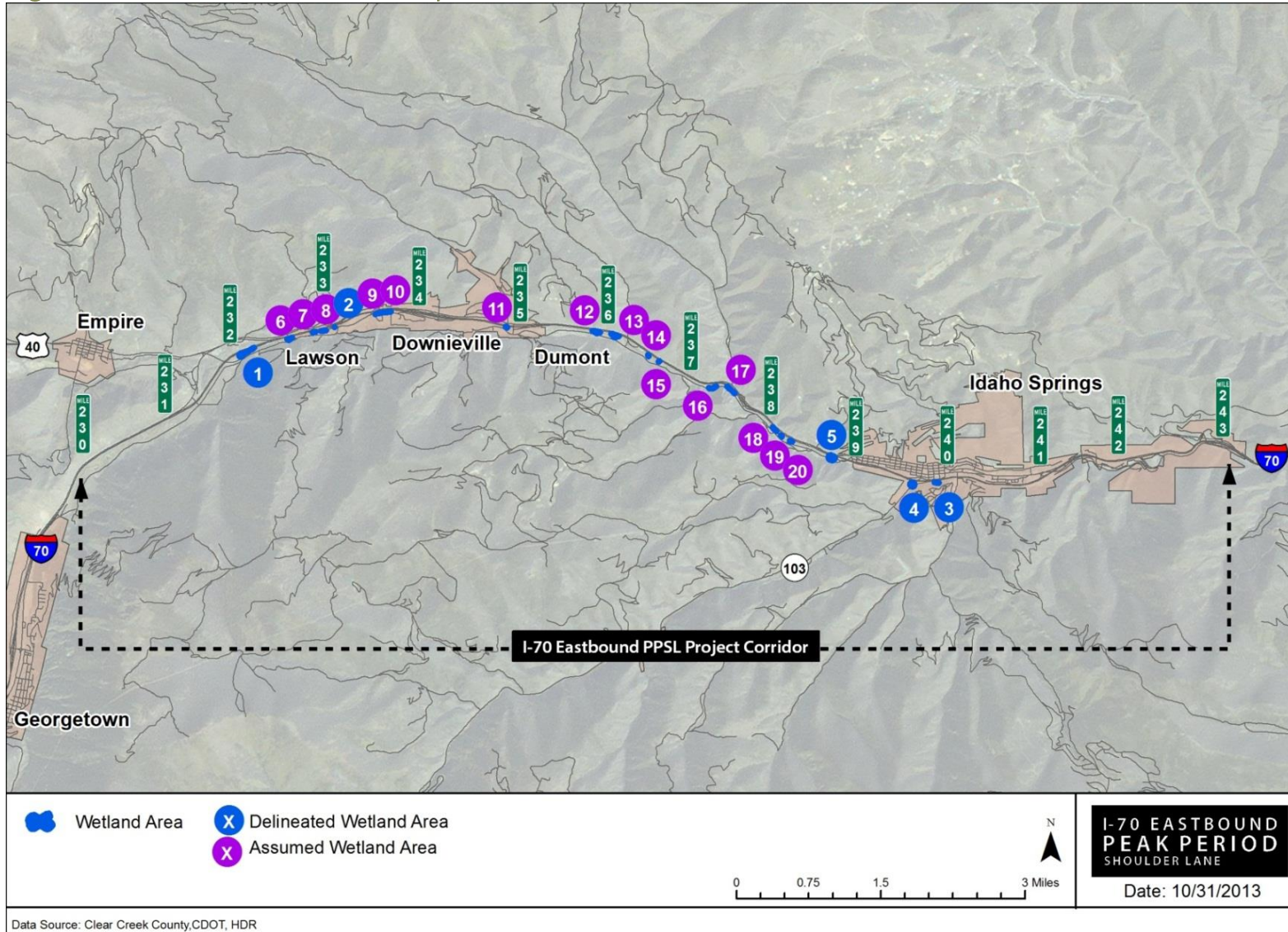
Using the standard wetland classification system (Cowardin, et al. 1979) all 20 wetland areas are classified as palustrine emergent and palustrine scrub/shrub combination (PEM/PSS). Figure 2 shows the location of the 20 wetland areas. Appendix A, Appendix B, and Appendix C of this technical memorandum contain wetland data sheets, representative wetland photographs, and detailed location maps, respectively.

### 5.1 Wetland 1

Wetland 1 is located in the southeast gore of the US 40/I-70 interchange, adjacent to the eastbound acceleration ramps. The wetland is centered on a detention pond located in the gore and ultimately outflows to Clear Creek. The date of construction of the detention pond is unknown, but its boulder lined banks indicate it is a manmade facility. Wetland 1 is 0.87 acre. Major vegetation, soil, and hydrology characteristics are described below.



Figure 2. Wetland Overview Map



## Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Primary dominant species include *Betula occidentalis*, *Populus angustifolia*, and *Glyceria grandis*.

## Soils

The soil was a homogenous sandy loam soil with saturation beginning at a depth of one inch. Redox concentrations are present. The soil type determined to be a "Redox Dark Surface".

## Hydrology

Standing water was present in the pond, potentially resulting from recent precipitation. Hydrology is primarily provided by roadway runoff. Given the vigor and variety of hydrophytic vegetation present, the site receives and retains hydrology throughout the growing season.

## 5.2 Wetland 2

Wetland 2 is located adjacent to I-70, at the base of a fill slope in the southeast quadrant where the highway crosses over County Road 306. This is a depressional wetland located on the upstream side of a culvert that drains to Clear Creek. Wetland 2 is 121 square feet. Major vegetation, soil, and hydrology characteristics are described below.

## Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Primary dominant species included *Populus angustifolia*, *Carex aquatilis* and *Agrostis gigantea*.

## Soils

Soils were problematic as the entire soil profile (0 to 12 inches deep) is composed of roadway sand. The soil was moist, but not saturated, likely the result of high drainage capabilities of sand.

## Hydrology

Hydrology is provided by an upstream culvert carrying roadway runoff from the westbound lanes, as well as sheetflow from the upslope roadway.

## 5.3 Wetland 3

Wetland 3 is located immediately adjacent to Clear Creek, at the base of a fill slope at Water Wheel Park, in the Town of Idaho Springs. The wetland is perched on a terrace ranging from 0 to 2 feet above the surface of Clear Creek. There is a distinct boundary between the upland and wetland where a 45° slope climbs abruptly to Water Wheel Park; therefore no upland data sheet was completed. Wetland 3 is 0.04 acre. Major vegetation, soil, and hydrology characteristics are described below.

## Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Primary dominant species included *Calamagrostis canadensis* and *Salix irrorata*.



## Soils

The top layer of the soil profile (0 to 3 inches deep) was a homogenous sandy loam. From 3 to 14 inches, the soil was a sandy clay loam with redox concentrations present. The soil profile type determined to be a "Redox Dark Surface".

## Hydrology

Saturation was present at the base of the soil profile, but hydrology is predominately provided by overland flow with water draining from Water Wheel Park, as well as overbank flow during peak runoff conditions along Clear Creek.

### 5.4 Wetland 4

Wetland 4 is located immediately adjacent to Clear Creek at the base of a fill slope from the eastbound deceleration lane at the SH 103/I-70 interchange. The wetland is perched on a terrace ranging from 0 to 3 feet above the surface of Clear Creek. The bank has been armored with rip rap boulders. This wetland is 126 square feet. Major vegetation, soil, and hydrology characteristics are described below.

## Dominant Vegetation

Wetland 4 has a mix of wetland and upland vegetation, including *Betula occidentalis*, *Pascopyrum smithii*, and *Eleocharis acicularis*. Hydrophytic vegetation was considered problematic. A majority of the upland species present are commonly present in seed mixes when revegetating areas disturbed by previous construction.

## Soils

The soil profile contained four distinct layers and included sandy loam and silt loam soils. Redox concentrations were present from 1 to 12 inches, after which bedrock/rip rap was reached. The soil profile type determined to be a "Redox Dark Surface".

## Hydrology

Hydrology is predominately provided by overland flow with water draining from a soft surface pull-out immediately upslope of the wetland, as well as overbank flow during peak runoff conditions along Clear Creek.

### 5.5 Assumed Wetland Features

Wetland 5 is located immediately adjacent to Clear Creek at the base of a fill slope from the eastbound deceleration lane at the West Idaho Springs interchange. The wetland is perched on a terrace ranging from 0 to 3 feet above the surface of Clear Creek. This wetland is 0.03 acre. Major vegetation, soil, and hydrology characteristics are described below.

Wetland 5 contains features similar to other wetlands located within the corridor and was therefore used as a reference for all assumed wetlands within the corridor (Wetlands 6-20).

## Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Dominant species included *Populus angustifolia*, *Betula occidentalis*, *Salix monticola*, *Poa pratensis*, and *Juncus compressus*.

## Soils

The soil profile contained three distinct layers and included sandy loam, sand, and sandy clay soils. Redox concentrations were present throughout. Soil profile type determined to be a "Redox Dark Surface."

## Hydrology

Hydrology predominately provided by overland flow with water draining from the roadway, as well as overbank flow during peak runoff conditions.

## 5.6 Assumed Wetland Features

Wetlands 6-20 could not be safely accessed, but are assumed to have the vegetation, soil, and hydrologic characteristics necessary to be classified a wetland. These wetlands could not be reached because of a combination of above average flows of Clear Creek and the inability to safely operate from the highway shoulder. These wetlands will be subject to the same avoidance, minimization, and mitigation measures as all fully delineated wetlands. The size and major vegetation characteristics are detailed in Table 1.

Table 1. Assumed Wetland Characteristics

Wetland #	Size	Characteristics
6	0.13	Fringe wetland consisting of grasses, shrubs, and trees.
7	0.01	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
8	0.03	Fringe wetland consisting of grasses, shrubs, and trees.
9	0.03	Fringe wetland consisting of grasses and shrubs.
10	0.03	Fringe wetland consisting of grasses and shrubs.
11	0.02	Fringe wetland consisting of grasses.
12	0.52	Fringe wetland consisting of grasses and shrubs.
13	0.70	Fringe wetland consisting of grasses and shrubs.
14	0.03	Fringe wetland consisting of grasses and shrubs.
15	0.01	Fringe wetland consisting of grasses and shrubs. Upland tree species intermixed.
16	0.11	Fringe wetland consisting of grasses and shrubs.
17	0.13	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
18	0.07	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
19	0.02	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
20	0.08	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.

## Section 6. Other Waters of the U.S.

Others waters of the U.S. present in the study area include Clear Creek, West Fork Clear Creek, Chicago Creek, Silver Creek, Mill Creek, Fall River, and Soda Creek. In addition, there are numerous unnamed intermittent drainages located throughout the corridor, associated with the mountain topography.

The Clear Creek ordinary high water mark was mapped using the current edge-of-water survey and adding the two-year flood event. This methodology was approved by the USACE. Clear Creek is the only water body to receive a mapped ordinary high water mark because it is the only such feature that may be impacted by the Proposed Action.

## Section 7. References

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- Cowardin, Lewis M. , Virginia Carter, Frances C. Golet, and Edward T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, FWS/OBS- 79/31.
- Lichvar, R.W. 2012 *The National Wetland Plant List*. ERDC.CRREL TR-12-12. Hanover, NH: US Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.
- Reed, P.B. Jr. 1988. *National List of Plant Species that Occur in Wetlands: Intermountain Region (Region 8)*. Prepared for National Wetland Inventory, U.S. Fish and Wildlife Service.
- US Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region*. May 2010.



**Appendix A.  
Wetland Data Sheets**

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 09/18/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: WL 1  
 Investigator(s): Beazley/Brownlee/Tordonato Section, Township, Range: T3S R74W Section 27  
 Landform (hillslope, terrace, etc.): pond and related drainage Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): E Lat: 39°45'35.10" N Long: 105°39'07.65 W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>		
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: Wetland is located in US 40/I-70 interchange gore. Water ponds and then drains to Clear Creek. Due to the placement of boulders along the perimeter of the wetland, this wetland was likely created during roadway construction.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>Populus angustifolia</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. <u>Betula occidentalis</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>25</u> , 20% = <u>10</u>	<u>50</u>	= Total Cover		<b>Prevalence Index worksheet:</b> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;">Total % Cover of:</td> <td style="text-align: center; border-bottom: 1px solid black;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Herb Stratum (Plot size: _____)																				
1. <u>Glyceria grandis</u>	<u>85</u>	<u>yes</u>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carex utriculata</u>	<u>5</u>	<u>no</u>	<u>OBL</u>																	
3. <u>Hippuris vulgaris</u>	<u>5</u>	<u>no</u>	<u>OBL</u>																	
4. <u>Juncus effusus</u>	<u>1</u>	<u>no</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>48</u> , 20% = <u>19.2</u>	<u>96</u>	= Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>10</u>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 15%; text-align: center;">Yes</td> <td style="width: 15%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 15%; text-align: center;">No</td> <td style="width: 25%; text-align: center;"><input type="checkbox"/></td> </tr> </table>				<b>Hydrophytic Vegetation Present?</b>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>												
<b>Hydrophytic Vegetation Present?</b>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>																

Remarks:



**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	<u>10YR 2/1</u>	<u>97</u>	<u>10YR 4/6</u>	<u>3</u>	<u>CS</u>	<u>M</u>	<u>sandy loam</u>	<u>homogenous throughout</u>
<sup>1</sup> Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.			<sup>2</sup> Location: PL=Pore Lining, M=Matrix					
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<b>Restrictive Layer (if present):</b>								
Type: _____								
Depth (inches): _____					<b>Hydric Soils Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks:    Dark homogenous soil. Sand content may attributable to roadway runoff.								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input checked="" type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	<u>3</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	_____
		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:    Surface water present immediately adjacent to wetland and throughout the pond.			

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 09/18/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_UL\_1  
 Investigator(s): Beazley/Brownlee/Tordonato Section, Township, Range: T3S R74W Section 27  
 Landform (hillslope, terrace, etc.): pond and related drainage Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): E Lat: 39°45'34.86" N Long: 105°39'07.44 W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks:					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x5 = <u>255</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>415</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>5.2</u>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species <u>40</u>	x4 = <u>160</u>	UPL species <u>40</u>	x5 = <u>255</u>	Column Totals: <u>80</u> (A)	<u>415</u> (B)
<u>Total % Cover of:</u>	<u>Multiply by:</u>																	
OBL species _____	x1 = _____																	
FACW species _____	x2 = _____																	
FAC species _____	x3 = _____																	
FACU species <u>40</u>	x4 = <u>160</u>																	
UPL species <u>40</u>	x5 = <u>255</u>																	
Column Totals: <u>80</u> (A)	<u>415</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: _____)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% = _____, 20% = _____	_____	= Total Cover																
<b>Herb Stratum (Plot size: _____)</b>																		
1. <u>Medicago sativa</u>	<u>40</u>	<u>yes</u>	<u>UPL</u>															
2. <u>Pascopyrum smithii</u>	<u>40</u>	<u>yes</u>	<u>FACU</u>															
3. <u>Thermopsis montana</u>	<u>1</u>	<u>no</u>	<u>FAC</u>															
4. <u>Artemisia filifolia</u>	<u>1</u>	<u>no</u>	<u>NI</u>															
5. <u>Bromus inermis</u>	<u>1</u>	<u>no</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% = <u>41.5</u> , 20% = <u>16.6</u>	<u>83</u>	= Total Cover																
<b>Woody Vine Stratum (Plot size: _____)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
50% = _____, 20% = _____	_____	= Total Cover																
% Bare Ground in Herb Stratum <u>25</u>																		
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes <input type="checkbox"/></td> <td style="width: 10%;">No <input checked="" type="checkbox"/></td> </tr> </table>				<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>												
<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>																
Remarks:																		

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	<u>10YR 4/2</u>	<u>100</u>	<u>n/a</u>	-	-	-	<u>sandy loam</u>	
10-14	<u>10YR 5/3</u>	<u>100</u>	<u>n/a</u>	-	-	-	<u>sand</u>	<u>Unconsolidate gravel present</u>
<sup>1</sup> Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.			<sup>2</sup> Location: PL=Pore Lining, M=Matrix					
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<b>Restrictive Layer (if present):</b>								
Type: _____						Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Depth (inches): _____								
Remarks: Soils possible distrubed by routine mainetrnance activity.								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Depth (inches): _____			
Depth (inches): _____			
Depth (inches): _____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: .			

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County:       /Clear Creek Sampling Date: 09/18/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_WL\_2  
 Investigator(s): Beazley/Brownlee/Tordonato Section, Township, Range: T3S R74W Section 26  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): E Lat: 39°45'50.12" N Long: 105°38'02.64 W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks: Wetland was problematic due to roadway proximity and associated runoff, which includes traction sands from snow removal operations. Entire soil profile was composed of traction sand, so it holds little moisture. The presence of hydrophytic vegetation indicate adequate wetland hydrology.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>Populus angustifolia</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>20</u> , 20% = <u>8</u>	<u>40</u>	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: _____)</u>				<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; border: none;">Total % Cover of:</td> <td style="text-align: center; border: none;">Multiply by:</td> </tr> <tr> <td style="border: none;">OBL species _____</td> <td style="border: none;">x1 = _____</td> </tr> <tr> <td style="border: none;">FACW species _____</td> <td style="border: none;">x2 = _____</td> </tr> <tr> <td style="border: none;">FAC species _____</td> <td style="border: none;">x3 = _____</td> </tr> <tr> <td style="border: none;">FACU species _____</td> <td style="border: none;">x4 = _____</td> </tr> <tr> <td style="border: none;">UPL species _____</td> <td style="border: none;">x5 = _____</td> </tr> <tr> <td style="border: none;">Column Totals: _____ (A)</td> <td style="border: none;">_____ (B)</td> </tr> <tr> <td colspan="2" style="border: none; text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
1. <u>Salix monticola</u>	<u>10</u>	<u>yes</u>	<u>OBL</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>5</u> , 20% = <u>2</u>	<u>10</u>	= Total Cover																		
<u>Herb Stratum (Plot size: _____)</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Carex aquatilis</u>	<u>40</u>	<u>yes</u>	<u>OBL</u>																	
2. <u>Agrostis gigantea</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>																	
3. <u>Juncus articus</u>	<u>10</u>	<u>no</u>	<u>NI</u>																	
4. <u>Dactylis glomerata</u>	<u>1</u>	<u>no</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>45</u> , 20% = <u>18</u>	<u>91</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: _____)</u>				<b>Hydrophytic Vegetation Present?</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="text-align: center;">Yes <input checked="" type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> </tr> </table>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>													
	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>																		
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>0</u>																				

Remarks:





# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 09/17/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_UL\_2  
 Investigator(s): Beazley/Brownlee/Tordonato Section, Township, Range: T3S R74W Section 27  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): E Lat: 39°45'50.17" N Long: 105°38'02.88 W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: <b>Soil is problematic due to roadway proximity and associated runoff, which includes traction sands from snow removal operations.</b>					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. <u>4</u>	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<b>Sapling/Shrub Stratum (Plot size: _____)</b>																				
1. <u>Artemisia filifolia</u>	<u>30</u>	<u>yes</u>	<u>UPL</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<b>Herb Stratum (Plot size: _____)</b>																				
1. <u>Elymus repens</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>																	
2. <u>Bromus inermis</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>																	
3. <u>Medicago sativa</u>	<u>20</u>	<u>yes</u>	<u>UPL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover																		
<b>Woody Vine Stratum (Plot size: _____)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>10</u>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes <input type="checkbox"/></td> <td style="width: 10%;">No <input checked="" type="checkbox"/></td> </tr> </table>				<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>														
<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>																		

Remarks:

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	<u>10YR 5/4</u>	<u>100</u>	<u>n/a</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>sandy loam</u>	<u>roadway sediment present</u>
<sup>1</sup> Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.			<sup>2</sup> Location: PL=Pore Lining, M=Matrix					
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<b>Restrictive Layer (if present):</b>					<b>Hydric Soils Present?</b>			
Type: _____					Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Depth (inches): _____								
Remarks:								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Depth (inches): _____			
Depth (inches): _____			
Depth (inches): _____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 09/18/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_WL\_3  
 Investigator(s): Beazley/Brownlee/Tordonato Section, Township, Range: T3S R73W Section 36  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 3  
 Subregion (LRR): E Lat: 39°44'24.98" N Long: 105°30.24" W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: <b>Distinct boundary between wetland and upland (no upland data sheet)</b>					

**VEGETATION – Use scientific names of plants**

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:				
<u>Tree Stratum</u> (Plot size: 15)				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)				
1. _____	_____	_____	_____					
2. _____	_____	_____	_____					
3. _____	_____	_____	_____					
4. _____	_____	_____	_____					
50% = _____, 20% = _____	_____	= Total Cover						
<u>Sapling/Shrub Stratum</u> (Plot size: 9)				<b>Prevalence Index worksheet:</b> Total % Cover of: <span style="margin-left: 20px;">Multiply by:</span> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____				
1. <u>Salix irrorata</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>					
2. _____	_____	_____	_____					
3. _____	_____	_____	_____					
4. _____	_____	_____	_____					
5. _____	_____	_____	_____					
50% = <u>5</u> , 20% = <u>2</u>	<u>10</u>	= Total Cover						
<u>Herb Stratum</u> (Plot size: 9)								
1. <u>Calamagrostis canadensis</u>	<u>70</u>	<u>yes</u>	<u>FACW</u>					
2. <u>Agrostis gigantea</u>	<u>1</u>	<u>no</u>	<u>FAC</u>					
3. <u>Carex utriculata</u>	<u>1</u>	<u>no</u>	<u>OBL</u>					
4. _____	_____	_____	_____					
5. _____	_____	_____	_____					
6. _____	_____	_____	_____					
7. _____	_____	_____	_____					
8. _____	_____	_____	_____					
9. _____	_____	_____	_____					
10. _____	_____	_____	_____					
11. _____	_____	_____	_____					
50% = <u>36</u> , 20% = <u>14</u>	<u>72</u>	= Total Cover						
<u>Woody Vine Stratum</u> (Plot size: _____)				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
1. _____	_____	_____	_____					
2. _____	_____	_____	_____					
50% = _____, 20% = _____	_____	= Total Cover						
% Bare Ground in Herb Stratum <u>0</u>								
<table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 10%; text-align: center;"><input type="checkbox"/></td> </tr> </table>				<b>Hydrophytic Vegetation Present?</b>	Yes	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Hydrophytic Vegetation Present?</b>	Yes	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Remarks:								



# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 10/02/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_WL\_4  
 Investigator(s): Beazley/Phillips/Chandler Section, Township, Range: T3S R73W Section 35  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 3  
 Subregion (LRR): E Lat: 39°44'25.24" N Long: 105°31.16.41" W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x2 = <u>50</u></td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x4 = <u>200</u></td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>250</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.33</u>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species <u>0</u>	x1 = <u>0</u>	FACW species <u>25</u>	x2 = <u>50</u>	FAC species _____	x3 = _____	FACU species <u>50</u>	x4 = <u>200</u>	UPL species _____	x5 = _____	Column Totals: <u>75</u> (A)	<u>250</u> (B)
<u>Total % Cover of:</u>	<u>Multiply by:</u>																	
OBL species <u>0</u>	x1 = <u>0</u>																	
FACW species <u>25</u>	x2 = <u>50</u>																	
FAC species _____	x3 = _____																	
FACU species <u>50</u>	x4 = <u>200</u>																	
UPL species _____	x5 = _____																	
Column Totals: <u>75</u> (A)	<u>250</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: 9)</b>																		
1. <u>Betula occidentalis</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover																
<b>Herb Stratum (Plot size: 9)</b>																		
1. <u>Eleocharis acicularis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>															
2. <u>Pascopyrum smithii</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>															
3. <u>Poa pratensis</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>															
4. <u>Bromus ciliatus</u>	<u>5</u>	<u>no</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% = <u>35</u> , 20% = <u>14</u>	<u>70</u>	= Total Cover																
<b>Woody Vine Stratum (Plot size: _____)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
50% = _____, 20% = _____	_____	= Total Cover																
% Bare Ground in Herb Stratum <u>30</u>																		

**Hydrophytic Vegetation Indicators:**

1 – Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is  $\leq 3.0^1$

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

**Hydrophytic Vegetation Present?** Yes  No

Remarks: Wetland is located adjacent to Clear Creek on a boulder lined fill slope that was constructed to accommodate past roadway improvements. Many of the species present are commonly used in revegetation efforts; therefore affecting the plant diversity in this location.



**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	<u>2.5YR 3/2</u>	<u>100</u>	<u>n/a</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>sandy loam</u>	<u>sand and gravel present</u>
1-4	<u>2.5YR 3/3</u>	<u>50</u>	<u>10YR 5/8</u>	<u>50</u>	<u>CS</u>	<u>M</u>	<u>sandy loam</u>	_____
4-6	<u>10YR 2/2</u>	<u>50</u>	<u>10YR 5/6</u>	<u>50</u>	<u>CS</u>	<u>M</u>	<u>Silt loam</u>	_____
6-12	<u>10YR 3/2</u>	<u>70</u>	<u>10YR 4/4</u>	<u>30</u>	<u>CS</u>	<u>M</u>	<u>Silt loam</u>	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: bedrock  
 Depth (inches): 12"

**Hydric Soils Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 11

**Wetland Hydrology Present?** Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Adjacent to Clear Creek. Some saturation was present but hydrology generally provided by overbank flow from roadway runoff. Debris was found throughout the boulders lining the stream bank.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 10/02/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_UL\_4  
 Investigator(s): Beazley/Phillips/Chandler Section, Township, Range: T3S R73W Section 35  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 25  
 Subregion (LRR): E Lat: 39°45'50.17" N Long: 105°38'02.88 W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks:					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. <u>4</u>	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><u>Total % Cover of:</u></td> <td style="width: 50%; text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x5 = <u>200</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>440</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.0</u></td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species <u>40</u>	x3 = <u>120</u>	FACU species <u>30</u>	x4 = <u>120</u>	UPL species <u>40</u>	x5 = <u>200</u>	Column Totals: <u>110</u> (A)	<u>440</u> (B)	Prevalence Index = B/A = <u>4.0</u>	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species <u>40</u>	x3 = <u>120</u>																			
FACU species <u>30</u>	x4 = <u>120</u>																			
UPL species <u>40</u>	x5 = <u>200</u>																			
Column Totals: <u>110</u> (A)	<u>440</u> (B)																			
Prevalence Index = B/A = <u>4.0</u>																				
<u>Sapling/Shrub Stratum (Plot size: 9)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Herb Stratum (Plot size: 9)</u>																				
1. <u>Pascopyrum smithii</u>	<u>20</u>	<u>no</u>	<u>UPL</u>																	
2. <u>Verbascum thapsus</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>																	
3. <u>Bromus inermis</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>																	
4. <u>Centaurea virgata</u>	<u>20</u>	<u>no</u>	<u>UPL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>55</u> , 20% = <u>22</u>	<u>110</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: _____)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>65</u>																				
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes <input type="checkbox"/></td> <td style="width: 10%;">No <input checked="" type="checkbox"/></td> </tr> </table>				<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>														
<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>																		
Remarks:																				



# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County:       /Clear Creek Sampling Date: 10/02/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_WL\_5  
 Investigator(s): Beazley/Phillips/Chandler Section, Township, Range: T3S R73W Section 35  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 3  
 Subregion (LRR): E Lat: 39°44'41.79" N Long: 105°32'08.97" W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>		
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: <b>This wetland, located along a terrace adjacent to Clear Creek, serves as a reference for the assumed wetlands that could not be accessed due to safety concerns.</b>					

**VEGETATION – Use scientific names of plants**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum (Plot size: 15)</b>																				
1. <u>Populus angustifolia</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	<b>Dominance Test Worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: 9)</b>																				
1. <u>Betula occidentalis</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. <u>Salix monticola</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>22.5</u> , 20% = <u>9</u>	<u>45</u>	= Total Cover																		
<b>Herb Stratum (Plot size: 9)</b>																				
1. <u>Poa pratensis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>																	
2. <u>Bromus ciliatus</u>	<u>5</u>	<u>no</u>	<u>FAC</u>																	
3. <u>Juncus compressus</u>	<u>65</u>	<u>yes</u>	<u>OBL</u>																	
4. <u>Oryzopsis hymenoides</u>	<u>2</u>	<u>no</u>	<u>UPL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>46</u> , 20% = <u>18</u>	<u>92</u>	= Total Cover																		
<b>Woody Vine Stratum (Plot size: _____)</b>																				
1. <u>Clematis orientalis</u>	<u>2</u>	<u>no</u>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<b>% Bare Ground in Herb Stratum <u>30</u></b>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="width: 15%;">Yes <input checked="" type="checkbox"/></td> <td style="width: 15%;">No <input type="checkbox"/></td> </tr> </table>						Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>													
	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>																		

Remarks: Wetland is located adjacent to Clear Creek on a boulder lined fill slope that was constructed to accommodate past roadway improvements. Many of the species present are commonly used in revegetation efforts; therefore affecting the plant sdiversity in this location.

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	7.5YR 3/2	70	5 YR 4/6	30	CS	M	sandy loam	
5-8	7.5YR 3/1	50	5 YR 4/6	50	CS	M	sand	
8-14	7.5 YR 2.5/2	60	10YR 3/6	40	RM	PL	sandy clay	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

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

<b>Restrictive Layer (if present):</b> Type: <u>bedrock</u> Depth (inches): <u>12"</u>	<b>Hydric Soils Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>13</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:    Adjacent to Clear Creek. Some saturation was present, but hydrology generally provided by overbank flow and roadway runoff. Debris was found throughout the boulders lining the stream bank..

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: PPSL City/County: Clear Creek Sampling Date: 10/02/13  
 Applicant/Owner: CDOT Region 1 State: CO Sampling Point: PPSL\_UL\_5  
 Investigator(s): Beazley/Phillips/Chandler Section, Township, Range: T3S R73W Section 35  
 Landform (hillslope, terrace, etc.): fill slope Local relief (concave, convex, none): concave Slope (%): 25  
 Subregion (LRR): E Lat: 39°45'50.17" N Long: 105°38'02.88 W Datum: NAD 1983  
 Soil Map Unit Name: n/a NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks:					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Pseudotsuga menziesii</i></u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. <u>4</u>	_____	_____	_____																	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover		<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>48</u></td> <td>x3 = <u>144</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>23</u></td> <td>x5 = <u>115</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>429</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.69</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species <u>5</u>	x2 = <u>10</u>	FAC species <u>48</u>	x3 = <u>144</u>	FACU species <u>40</u>	x4 = <u>160</u>	UPL species <u>23</u>	x5 = <u>115</u>	Column Totals: <u>135</u> (A)	<u>429</u> (B)	Prevalence Index = B/A = <u>3.69</u>	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species <u>5</u>	x2 = <u>10</u>																			
FAC species <u>48</u>	x3 = <u>144</u>																			
FACU species <u>40</u>	x4 = <u>160</u>																			
UPL species <u>23</u>	x5 = <u>115</u>																			
Column Totals: <u>135</u> (A)	<u>429</u> (B)																			
Prevalence Index = B/A = <u>3.69</u>																				
<b>Sapling/Shrub Stratum (Plot size: 9)</b>																				
1. <u><i>Juniperus communis</i></u>	<u>15</u>	<u>yes</u>	<u>UPL</u>																	
2. <u><i>Betula occidentalis</i></u>	<u>5</u>	<u>yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover																		
<b>Herb Stratum (Plot size: 9)</b>																				
1. <u><i>Agrostic gigantea</i></u>	<u>15</u>	<u>no</u>	<u>FAC</u>																	
2. <u><i>Hesperostipa comata</i></u>	<u>8</u>	<u>no</u>	<u>UPL</u>																	
3. <u><i>Elymus canadensis</i></u>	<u>8</u>	<u>no</u>	<u>FAC</u>																	
4. <u><i>Artemisia frigida</i></u>	<u>1</u>	<u>no</u>	<u>UPL</u>																	
5. <u><i>Bromus inermis</i></u>	<u>20</u>	<u>yes</u>	<u>FAC</u>																	
6. <u><i>Pascopyrum smithii</i></u>	<u>35</u>	<u>yes</u>	<u>FACU</u>																	
7. <u><i>Phleum pratense</i></u>	<u>5</u>	<u>no</u>	<u>FAC</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>40</u> , 20% = <u>16</u>	<u>79</u>	= Total Cover																		
<b>Woody Vine Stratum (Plot size: _____)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>45</u>																				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				
Remarks:																				

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	<u>10YR 2/2</u>	<u>100</u>	<u>n/a</u>	-	-	-	<u>silt loam</u>	
1-18	<u>10YR 3/3</u>	<u>100</u>	<u>n/a</u>	-	-	-	<u>fine sand</u>	



## **Appendix B. Representative Photographs**



WETLAND DELINEATION REPORT

Wetland 1—Overview



Wetland 1—Overview





Wetland 1—Overview



Wetland 1—Soils





Wetland 2—Overview



Wetland 2—Soils





Wetland 3—Overview



Wetland 3—Soils





Wetland 4—Overview



Wetland 4—Soils





Wetland 5—Overview



Wetland 5—Soils





Assumed Wetland 6—Overview



Assumed Wetland 7—Overview





Assumed Wetland 8—Overview



Assumed Wetland 9—Overview





Assumed Wetland 10—Overview



Assumed Wetland 11—Overview





Assumed Wetland 12—Overview



Assumed Wetland 13—Overview





Assumed Wetland 14—Overview



Assumed Wetland 15—Overview





Assumed Wetland 16—Overview



Assumed Wetland 17—Overview





Assumed Wetland 18—Overview



Assumed Wetland 19—Overview



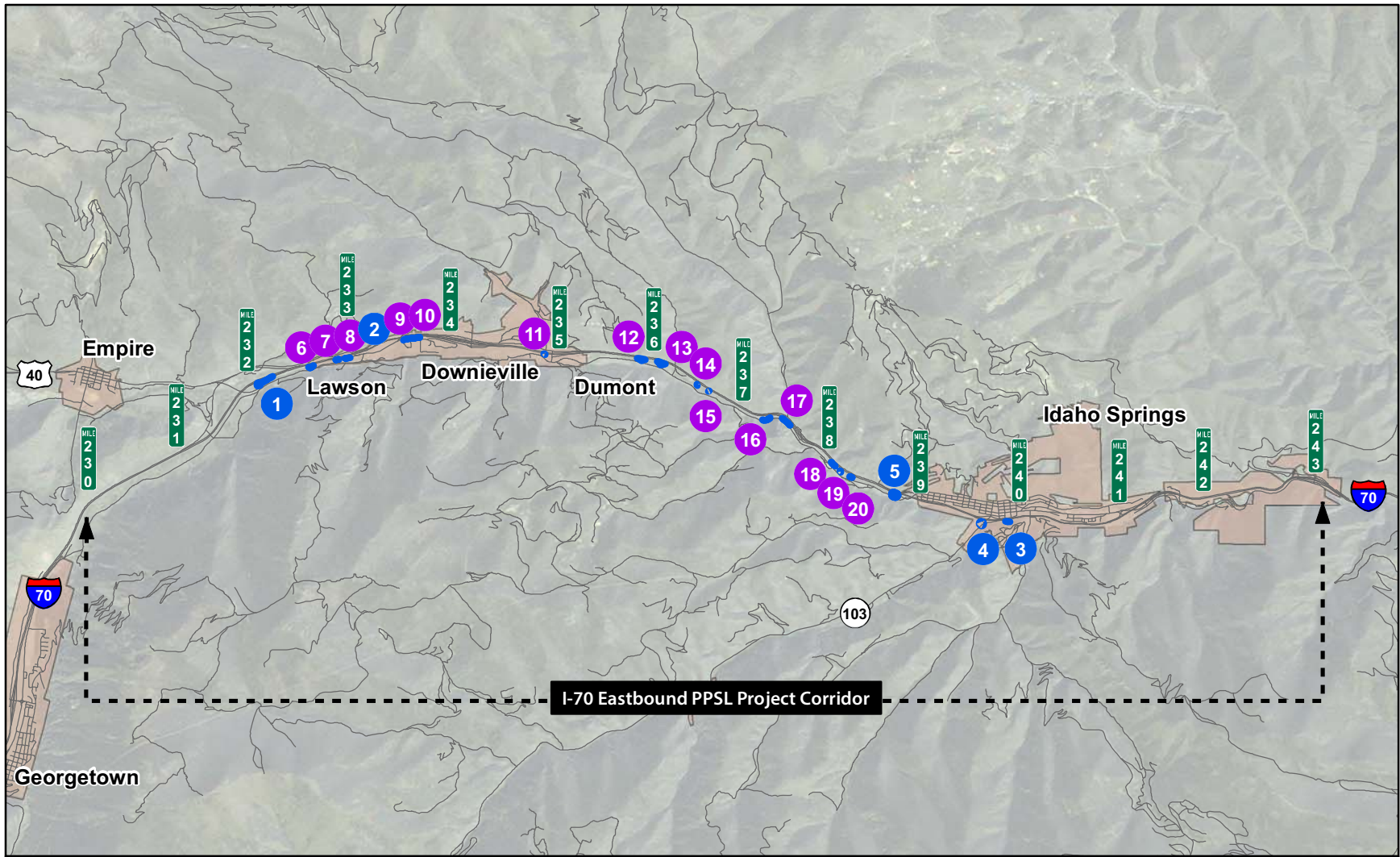





Assumed Wetland 20—Overview

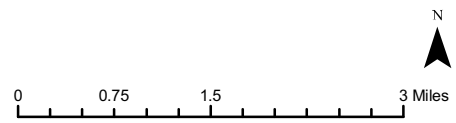




## Appendix C. Wetland Location Map



-  Wetland Area
-  Delineated Wetland Area
-  Assumed Wetland Area



**I-70 EASTBOUND  
 PEAK PERIOD  
 SHOULDER LANE**  
 Date: 10/31/2013

Data Source: Clear Creek County, CDOT, HDR