

Thorncreek Road to Moscow – Wetland Functions Evaluation

Project No. DHP-NH-4110(156)
Key No. 9294
Route US 95
Agreement No. 6450

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INTRODUCTION

The Thorncreek Road to Moscow project area is nearly all farmland. The majority of the dryland farms are annually cropped. This wheat country has been farmed for over 130 years. The region, known as the Palouse, is unique because of its loess blown soils, rolling hills, and enough annual precipitation to allow for dryland farming—that is to say crops are grown without irrigation.

The intensive roadbed-to-roadbed farming practiced today across the Palouse leaves few fences and fewer fencerows. Many once intermittent streams are now farmed, and many with historic large wet meadows adjacent to them are now deeply incised. Most of the original hillside seeps and wet lowlands are drained by agricultural drain tile. Very few remaining wetlands and intermittent streams have woody vegetation. Instead, the majority of the wetlands in the project area consist mainly of grasses and grass-like plants. Most of the remaining wetlands are used for water conveyance and hay production. The majority of the existing wetlands is best described as small, grassy drainage ways with saturated soils into the early portion of the growing season, and may be seasonally flooded.



Figure 1. A typical landscape of the project area. Looking northeast toward Paradise Ridge from Thorncreek Road. (Photo taken 06/26/06 by S. Gilmore).

PROJECT BACKGROUND

A wetland delineation and determination of jurisdictional waters of the United States was performed within the boundaries of the highway realignment project¹ between August 2004 and April 2005 by Resource Planning Unlimited, Inc. The delineation project was authorized by Zachary Funkhouser, Idaho Transportation Department District II Environmental Planner. Nicholle Rowell with the US Army Corps of Engineers reviewed the jurisdictional determination (Rowell 2006). A previous wetland determination was prepared by Entranco (2000). The wetlands were reviewed and reported in the Resource Planning Unlimited, Inc. report, and included in this evaluation.

The proposed highway realignment project is named Thorncreek Road to Moscow and includes areas along US Highway 95. Project maps in Appendix A show the highway alignments and wetland and tributary locations. The project area is in Latah County with the legal description defined as:

- Township 38N, Range 5W, Sections 5, 6, 7, 8, 17, 18
- Township 38N, Range 6W, Sections 1, 12, 13
- Township 39N, Range 5W, Sections 19, 20, 29, 30, 31, 32
- Township 39N, Range 6W, Sections 24, 25, 36

WATERSHED CHARACTERISTICS

Elevation of the project site ranges from approximately 2,600 feet above sea level along the South Fork Palouse River and Thorn Creek, to near 3,000 feet along the west facing slopes of Paradise Ridge. Average annual precipitation, as recorded near Moscow, Idaho, is 27 inches; average total snow fall is 50 inches; and the growing season length is approximately 162 days.²

The topography of the surrounding area is characterized by gentle rolling hills, primarily in annually cropped farmland. The watershed's natural topography is dissected by US Highway 95. The northern approximate two-thirds of the project area is in the South Fork Palouse River watershed. The watershed originates at Paradise Ridge and surface runoff is conveyed by a series of small intermittent tributaries and road culverts in a west, northwesterly direction toward the South Fork Palouse River. The southern one-third of the project area is within the Thorn Creek watershed. This watershed also originates at Paradise Ridge, and surface water is conveyed by a series of small intermittent tributaries and road culverts in a southerly direction toward Thorn Creek. Both the South Fork Palouse River and Thorn Creek are intermittent tributaries of the Palouse River (according to the USGS topographic map). The Palouse River conveys the runoff in a westerly direction to its confluence with the Snake River, to the Columbia River, then on to the Pacific Ocean.

WETLAND FUNCTION

Wetland areas potentially impacted by the US Highway 95 realignment project—alignments C3, E2, and W4—were assessed in accordance with the Washington State Wetland Rating System for Eastern Washington (Hruby 2004). The assessment rating system is designed to differentiate between wetlands based on specific attributes such as rarity, sensitivity to disturbance, functions

they provide, and whether they can be replaced or not. The wetland function rating system for eastern Washington was selected as the technical guidance document because of the project's close proximity to the Idaho-Washington state line. No specific wetland function rating system currently exists for Idaho.

The rating system includes a check list for wetlands that need special protection. If the wetland being rated meets any special protection criteria, the wetlands would need to be protected according to the regulations regarding the special characteristics found in the wetland. The check list asks if the wetland has been documented as a habitat for any federally or state listed threatened or endangered plant or animal species; if the wetland contains individuals of priority species listed by the Washington Department of Fish and Wildlife (referring to Idaho Department of Fish and Game in the case of this project); or if the wetland has local significance in addition to its functions (e.g. if the wetland has been identified in a critical area ordinance, shoreline master program, or in a local management plan as having special significance). The answer to all of the questions in the check list is *no*.³

Three functions are evaluated in the wetland characterization process:

- Water Quality Functions: Indicators that the wetland functions to improve water quality.
- Hydrologic Functions: Indicators that the wetland functions to reduce flooding and stream degradation.
- Habitat Functions: Indicators that the wetland functions to provide important habitat.

The functions that a wetland performs are characterized by answering a series of questions in the rating process that evaluates the presence or absence of certain indicators. Most indicators are fixed characteristics that describe the structure of the ecosystem or its physical, chemical, or geological properties. The indicators reflect the capacity and opportunity a wetland has to perform necessary functions.

The rating system is based on the hydrogeomorphic class (HGM) of the wetland being rated, e.g. depressional, riverine, slope, or lake-fringe. The wetlands in this project are classified as slope wetlands, or a combination of slope, riverine, and depressional wetlands. According to Hruby (2004), slope wetlands occur on hill or valley slopes where groundwater daylights and begins running along the surface, or immediately below the soil surface. Water in slope wetlands flows only in one direction (down the slope) and the gradient is steep enough that the water is not impounded. Slope wetlands are often referred to as swales; such swales are not considered to be riverine wetlands because there are not indications of a channel with defined banks nor indications of overbank flooding. Slope wetlands are distinguished from riverine wetlands by the lack of a defined stream bed with banks that can overflow during floods or high water. Slope wetlands often develop small rivulets along the surface, but they serve only to convey water away from the sloped wetland. Depressional wetlands occur in depressions where elevations within the wetland are lower than in the surrounding landscape. The depression wetland may have an outlet, but the lowest point in the wetland is somewhere within the boundary, not at the outlet. Characteristics of several different HGM classes within one wetland boundary were found

within this evaluation. The wetland rating system (Hruby 2004) recommends combining HGM classifications into the dominant class for rating purposes and all but one wetland was classified as a slope wetland. Wetland 13 possesses a dominant HGM classification and therefore was rated using the riverine evaluation.

Once the wetland is classified into its HGM descriptor, three major groups of functions performed by the wetland are rated. Those ratings include an evaluation of the wetland's function in addressing the following questions:

- 1) Does the wetland have the potential and opportunity to improve water quality?
 - a. Evaluating the average slope of the wetland.
 - b. Evaluating whether the soil 2 inches below the surface is clay, organic, or smells anoxic for depressional wetlands.
 - c. Evaluating the characteristics of the vegetation in the wetland that may trap sediments and pollutants.
 - d. Determining if there are known or believed pollutants in surface or ground water coming into the wetland that would otherwise reduce water quality in down-gradient waters.

- 2) Does the wetland have the potential and opportunity to reduce flooding and stream erosion?
 - a. Evaluating the characteristics of vegetation that reduce the velocity of surface flows during storms.
 - b. Evaluating the characteristics of the wetland that hold back small amounts of flood flows.
 - c. Reviewing if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows.

- 3A) Does the wetland have the potential to provide habitat for many species?
 - a. Evaluating the vegetation structure, i.e. the types of vegetation present.
 - b. Evaluating whether the wetland has open water during the spring; an intermittent or permanent stream within its boundaries or along one side; or if the wetland has an unvegetated bottom.
 - c. Characterizing the number of plant species that cover the majority of the wetland, not including reed canary grass, Russian olive, Canada thistle, etc.
 - d. Evaluating the interspersions of habitats within the wetland.
 - e. Evaluating special habitat features present in the wetland.

- 3B) Does the wetland have the opportunity to provide habitat for many species?
 - a. Evaluating the condition of the wetland buffer.
 - b. Evaluating if the wetland is part of a relatively undisturbed and unbroken vegetated corridor; whether the corridor has surface water or flowing water throughout the year; or if the wetland is within ½ mile of any permanent stream, seasonal stream, or lake (not including man-made ditches).
 - c. Characterizing whether the wetland is near or adjacent to priority habitats.
 - d. Evaluating the surrounding landscape, e.g. proximity and connectivity to other wetlands.

The evaluation categorizes each wetland. Category I is the highest rating; *highest* is defined as the need for most protection and most difficult to replace (Hruby 2004). Category II wetlands are difficult, though not impossible, to replace; provide high levels of some functions, and occur more commonly than Category I wetlands. Category II wetlands include forested wetlands in the floodplains of rivers, mature and old-growth forested wetlands with fast growing trees, vernal pools, and wetlands that perform functions well. Category III wetlands perform a moderate level of functions. Wetlands rated within Category III generally have been disturbed in some way and are often smaller, less diverse and/or more isolated from other natural resources in the landscape than Category II wetlands. Category IV wetlands have the lowest level of functions, are often heavily disturbed, should be able to be replaced, and in some cases it is possible to improve on the functions provided. The majority of evaluated wetlands rated Category III.

A wetland can score a maximum number of points based on the questions related to how well the wetland performs functions (water quality improvements, hydrologic functions, and providing habitat). The rating form also evaluates whether the wetland has special characteristics in addition to the performed functions, including whether the wetland has been documented as a habitat for any threatened or endangered plant or animal species listed federally or by the state; whether the wetland contains individuals of priority species listed by the state; and whether the wetland has local significance. A summary of wetland ratings are displayed in Table 1.

Thirty-seven jurisdictional wetlands were identified in the original wetland delineation study (Gilmore 2005). Many of those wetlands will fall within the proposed highway alignment boundaries and area of impact. The area of jurisdictional wetland impact resulting from proposed alignment routes C3, E2, and W4 were evaluated. The wetlands were classified using the Cowardin et al. (1979) hierarchy system, with information displayed in Table 1. The existing vegetation of the jurisdictional wetlands is also described in Table 1. Jurisdictional waters of the United States were identified as tributaries and included 27 total tributaries, with potential project impacts many of those tributaries. Information about the tributaries is outlined in the original delineation report (Gilmore 2005) and not included in this assessment.

Table 1. Wetland Classification (Cowardin et al. 1979), Wetland Plant Community, and Category of Wetlands (Hruby 2004)

Wetland (acres of wetland impacted) [Station+/- midpoint]	Wetland Classification (Cowardin et al. 1979)	Wetland Plant Community Stations assigned by Entranco 2000 reported in metric units Wetland Classification Assigned by Entranco 2000 ⁴	Wetland Category Based on Functions (Hruby 2004)	Function Rating (scores reflect percent of achievable points)			
				Improve Water Quality	Hydrologic Functions	Habitat Functions	
Alignment C3	Wetland 23 (0.31 acres) [St 78+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (meadow foxtail, brome grass)	Category III	44%	19%	47%
	Wetland 24 (0.27 acres) [St 139+50]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (reed canary grass, jungle-rice grass, grazed pasture grasses)	Category III	50%	13%	31%
	Wetland 25 (0.04 acres) [St 297+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (meadow foxtail, mowed/hayed grasses) Entranco wetland St 2210+00 reported juncus	Category III	44%	19%	33%
	Wetland 26 (0.37 acres) [St 317+00] [St 329+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (quackgrass, jungle-rice grass, spring grain), forbs (prickly lettuce, mayweed, Canada thistle, field horsetail) Entranco wetland St 2224+20 reported reed canary grass; wetland St 2219+60 reported reed canary grass	Category III	56%	13%	33%
	Wetland 28 (0.06 acres) [St 60+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses Entranco wetland St 1130+60 reported ornamental ponds with landscaping, PEMC	Category III	75%	19%	50%
	Wetland 39 (0.38 acres) [St 312+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Persistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (reed canary grass) and forbs (mayweed) Entranco with Braspenickx (2001) correspondence (Tributary Y); wetland St 2214+80 [St 312+00], PFO	Category III	56%	19%	39%
Total Acres of Wetland Impacted = 1.43							

Table 1. Wetland Classification (Cowardin et al. 1979), Wetland Plant Community, and Category of Wetlands (Hruby 2004) *continued*

Wetland (acres of wetland impacted) [Station+/- midpoint]	Wetland Classification (Cowardin et al. 1979)	Wetland Plant Community Stations assigned by Entranco reported in metric units Wetland Classification Assigned by Entranco 2000 ⁴	Wetland Category Based on Functions (Hruby 2004)	Function Rating (scores reflect percent of achievable points)			
				Improve Water Quality	Hydrologic Functions	Habitat Functions	
Alignment E2	Wetland 13 (0.25 acres) [St 211+00]	<i>System</i> – Palustrine <i>Class</i> – Scrub-Shrub <i>Subclass</i> – Broad-leaved deciduous <i>Water Regime</i> – Non-tidal, seasonally flooded	Shrubs (hawthorn, redosier dogwood), forbs (cow parsnip), grasses (reed canary grass); some trees (cottonwood) in upper reaches	Category III (Riverine)	12%	31%	69%
	Wetland 23 (0.25 acres) [St 78+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (meadow foxtail, brome grass)	Category III	44%	19%	47%
	Wetland 28 (0.03 acres) [St 60+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses Entranco wetland St 1130+60 [St 60+00] reported ornamental ponds with landscaping, PEMC	Category III	75%	19%	50%
	Wetland 29 (1.55 acres) [St 143+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, seasonally flooded	Grasses (reed canary grass) PEMA Entranco wetland St 1154+00 [St 140+00], reed canary grass; St 1155+25 [St 143+00] reported reed canary grass, PEMA; St 1160+50 [St 160+00] reed canary grass and hawthorn, PFOA	Category III	44%	19%	61%
	Wetland 32 (0.80 acres) [St 180+50] [St 198+00] [St 200+50]	<i>System</i> – Palustrine <i>Class</i> – Emergent (upper portion), scrub/shrub/emergent (lower portion) <i>Subclass</i> – Nonpersistent (upper portion), broad-leaved deciduous and persistent (lower portion) <i>Water Regime</i> – Non-tidal, seasonally flooded	Grasses (reed canary grass) and shrubs (hawthorn and aspen) Entranco wetland St 1166+60 [St 180+50] reported reed canary grass- forested upslope, PFOA; St 1172+00 [St 198+00] reed canary grass and fescue, PSSA; St 1172+75 [St 200+50] reed canary grass, PSSA	Category III	44%	31%	75%
Alignment E2	Wetland 35 (2.03 acres) [St 236+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated/seasonally flooded	Grasses (reed canary grass) Entranco wetland St 1182+80 to 1183+50 [St 236+00] reported reed canary grass, PSSA, PFOA; St 1185+20 to 1186+50 [St 243+00] reed canary grass and fescue, PEMC; St 1195+00 to 1197+00 [St 278+00] reed canary grass	Category III	44%	13%	58%
Total Acres of Wetland Impacted = 4.91							

Table 1. Wetland Classification (Cowardin et al. 1979), Wetland Plant Community, and Category of Wetlands (Hruby 2004) *continued*

Wetland (acres of wetland impacted) [Station+/- midpoint]		Wetland Classification (Cowardin et al. 1979)	Wetland Plant Community Stations assigned by Entranco reported in metric units Wetland Classification Assigned by Entranco 2000 ⁴	Wetland Category Based on Functions (Hruby 2004)	Function Rating (scores reflect percent of achievable points)		
					Improve Water Quality	Hydrologic Functions	Habitat Functions
Alignment W4	Wetland 9 (0.77 acres) [St 207+50]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (jungle-rice grass, reed canary grass)	Category III	50%	19%	42%
	Wetland 10 (1.98 acres) [St 212+50] [St 218+50]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (jungle-rice grass) and forbs (field horsetail)	Category III	50%	19%	36%
	Wetland 20 (0.31 acres) [St 278+50] [St 282+50]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (reed canary grass, spring grain)	Category III	56%	13%	33%
	Wetland 23 (0.36 acres) [St 78+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (meadow foxtail, brome grass)	Category III	44%	19%	47%
	Wetland 24 (0.23 acres) [St 139+50]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (reed canary grass, jungle-rice grass, grazed pasture grasses)	Category III	50%	13%	31%
	Wetland 27 (0.92 acres) [St 353+00] [St 363+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses (wild oats, jungle-rice grass)	Category III	56%	13%	33%
	Wetland 28 (0.06 acres) [St 60+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses Entranco wetland St 1130+60 reported ornamental ponds with landscaping, PEMC	Category III	75%	19%	50%
	Wetland 31 (0.08 acres) [St 212+00]	<i>System</i> – Palustrine <i>Class</i> – Emergent <i>Subclass</i> – Nonpersistent <i>Water Regime</i> – Non-tidal, saturated	Grasses and grass-like plants (reed canary grass, daggerleaf rush)	Category IV	31%	6%	28%
Total Acres of Wetland Impacted = 4.71							

SUMMARY

Wetlands in the Thorncreek Road to Moscow project area were evaluated based on the function each wetland provides, and the value of the wetland’s potential and opportunity to improve water quality, reduce flooding and stream erosion, and provide habitat. The number of acres impacted per alignment was calculated by ITD District 2 personnel. The acreage (displayed in Table 1) includes:

- Alignment C3: 1.43 acres of Category III wetlands impacted
- Alignment E2: 4.91 acres of Category III wetlands impacted
- Alignment W4: 4.63 acres of Category III wetlands impacted, and
0.08 acres of Category IV wetlands impacted

The evaluation was made by categorizing the wetlands based on their important attributes or characteristics using the methods outlined in Hruby (2004). The following table summarizes the wetland’s function and value. The highest value offered through the function provided by each wetland is displayed in Table 2.

Table 2. Resource Value Offered Through the Functions Provided by Each Wetland

Wetland		Potential and opportunity to improve water quality	Potential and opportunity to reduce flooding and stream erosion	Potential and opportunity to provide habitat for many species
Alignment C3	Wetland 23			X
	Wetland 24	X		
	Wetland 25	X		
	Wetland 26	X		
	Wetland 28	X		
	Wetland 39	X		
Alignment E2	Wetland 13			X
	Wetland 23			X
	Wetland 28	X		
	Wetland 29			X
	Wetland 32			X
	Wetland 35			X
Alignment W4	Wetland 9	X		
	Wetland 10	X		
	Wetland 20	X		
	Wetland 23	X		
	Wetland 24	X		
	Wetland 27	X		
	Wetland 28	X		
	Wetland 31	X		

X signifies the highest value offered through the functions provided by each wetland

The wetlands within each alignment scored a maximum number of points based on the questions related to how well the wetland performs functions (water quality improvements, hydrologic functions, and providing habitat). The rating form also was used to determine that none of the wetlands had special characteristics in addition to their performed functions, including whether the wetland is documented as habitat for threatened or endangered plant or animal species listed federally or by the state; whether the wetland contained individuals of priority species listed by the state; and whether the wetland is recognized as local significance.

The mean of the sums of the original scores for each function performed by wetlands within respective alignments include:

	Water Quality Improvements	Hydrologic Functions	Habitat Functions
- Alignment C3:	17	5	14
- Alignment E2:	14	7	22
- Alignment W4:	17	5	14

The mean of the total function rating for wetlands in alignment E2 is the highest of the three alignments at 43 points, followed by C3 and W4 at a total of 36 points each.

The predominant wetland Cowardin (1997) classification across all alignments was palustrine emergent (PEM). Fewer acres of wetlands were classified as palustrine scrub/shrub (PSS) and palustrine forested (PFO). The greatest amount of PEM wetlands impacted occurred in alignment W4. PSS and PFO wetlands impacted occur in alignments E2, with a small area of PFO in alignment C3. Total acres of wetlands impacted within each include 1.27 acres of PEM and 0.01 acres of PFO in alignment C3; 3.63 acres of PEM, 0.59 acres of PSS, and 0.40 acres of PFO in alignment E2; and 7.06 acres of PEM in alignment W4.

Table 3. Acres of Wetlands Impacted Per Classification

		PEM Wetland	PSS Wetland	PFO Wetland
Alignment C3	Wetland 23	0.31 acres	0.00 acres	0.00 acres
	Wetland 24	0.27 acres	0.00 acres	0.00 acres
	Wetland 25	0.04 acres	0.00 acres	0.00 acres
	Wetland 26	0.37 acres	0.00 acres	0.00 acres
	Wetland 28	0.06 acres	0.00 acres	0.00 acres
	Wetland 39	0.37 acres	0.00 acres	0.01 acres
<i>Totals</i>		<i>1.42 acres</i>	<i>0.00 acres</i>	<i>0.01 acres</i>
Alignment E2	Wetland 13	0.00 acres	0.25 acres	0.00 acres
	Wetland 23	0.25 acres	0.00 acres	0.00 acres
	Wetland 28	0.03 acres	0.00 acres	0.00 acres
	Wetland 29	1.35 acres	0.00 acres	0.20 acres
	Wetland 32	0.30 acres	0.40 acres	0.10 acres
	Wetland 35	1.93 acres	0.00 acres	0.10 acres
<i>Totals</i>		<i>3.86 acres</i>	<i>0.65 acres</i>	<i>0.40 acres</i>
Alignment W4	Wetland 9	0.77 acres	0.00 acres	0.00 acres
	Wetland 10	1.98 acres	0.00 acres	0.00 acres
	Wetland 20	0.31 acres	0.00 acres	0.00 acres
	Wetland 23	0.36 acres	0.00 acres	0.00 acres
	Wetland 24	0.23 acres	0.00 acres	0.00 acres
	Wetland 27	0.92 acres	0.00 acres	0.00 acres
	Wetland 28	0.06 acres	0.00 acres	0.00 acres
Wetland 31	0.08 acres	0.00 acres	0.00 acres	
<i>Totals</i>		<i>4.71 acres</i>	<i>0.00 acres</i>	<i>0.00 acres</i>

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Historical extent and plant composition. Final Report, EPA CD-980545-01-0. Servheen, Greg, and Penelope Morgan, Bertie Weddell, Paul Gessler, and Paul McDaniel. June 2002.

Endnotes:

¹ ITD Project No. DHP-NH-4110(156), Key No. 9294.

² 50% chance of the growing season occurring between 4/27 and 10/5 at 28EF as recorded at Moscow, Idaho, referenced at internet site <http://www.wcc.nrcs.usda.gov/support/climate/wetlands/id/16057.txt>.

³ The Hruby (2004) guideline suggests determining if the wetland is near or adjacent to priority habitats listed by the Washington Department of Fish and Wildlife. For the purpose of this functional assessment, other sources were reviewed, including: US Fish and Wildlife Service Idaho Partners for Fish and Wildlife Program—Idaho Priority Areas—Clearwater River (USFWS 2003); Idaho Comprehensive Wildlife Conservation Strategy (IDFG 2005); Idaho Partners in Flight—Idaho Bird Conservation Plan (IPF 2000); and Idaho Wetland Conservation Prioritization Plan (Hahn et al. 2005). The evaluation area along US Highway 95 is identified in the Idaho Comprehensive Wildlife Conservation Strategy as an ecological section referred to as the Palouse Prairie (IDFG 2005).

⁴ Wetland classifications using the Cowardin method (1979) were not performed by the Entranco survey (2000). Instead, the Entranco report (2000) cited the National Wetlands Inventory (NWI) maps and legends. NWI classification reported in Table 1 of this report includes:

PEMC (palustrine emergent with the water regime modifier of seasonally flooded);
PEMA (palustrine emergent with the water regime modifier of temporarily flooded);
PSSA (palustrine scrub/shrub with the water regime modifier of temporarily flooded); and
PFOA (palustrine forested with the water regime modifier of temporarily flooded).

The Idaho Transportation Department provided the total amount of wetland acres impacted by each alignment. The acreage combines wetland acres identified in the Gilmore report (2005) and the Entranco report (2000). The acres of reported Entranco (2000) wetlands per NWI classification, which are impacted by each alignment, are estimated and displayed in Table 3.