Conceptual Wetland Mitigation Plan

The River District Subdivision
Valley County, Idaho

Prepared for:
Cascade River, LLC

January 2020

T-O ENGINEERS
T-O Engineers
2471 S. Titanium Place
Meridian ID 83642

Table of Contents

Acronyms and Abbreviations 4
Introduction 5
Purpose and Scope 5
Project Location and Description 5
Environmental Commitments 5
Baseline Environmental Conditions 8
Existing and Surrounding Land uses 8
Climate 8
Vegetation 8
Hydrology 8
Soils 10
Wetland Functional Assessment 11
Wetland Delineation Results 11
Functional Assessment Methods 11
Assessment Area A – Riverine, Drainage Channel 13
Assessment Area B – Slope Wetlands 14
Functional Assessment Results 14
Project Impacts to Wetlands 15
Avoidance and Minimizations Measures 15
Temporary and Permanent Wetland Impacts 15
Proposed Compensatory Mitigation Plan 16
Mitigation Approach and Objectives 16
Proposed Mitigation Site 16
Reference Wetlands 16
Mitigation Site Functional Assessment 16
Determination of Credits 18
Mitigation Work Plan 18
Excavation and Grading 18
Soils 18
Planting Plan 19

Seeding 20
Weed Control 20
Maintenance Plan 21
Performance Standards 21
Site Protection 22
Financial Assurances 22
Adaptive Management 22
Conclusion 23
Literature Cited 24
Appendix A: Proposed Final Plat and Wetland Overlay 25
Appendix B: NRCS Web Soil Survey 31
Appendix C. Montana Wetland Assessment Forms – Existing Wetlands 33
Appendix D. Montana Wetland Assessment Form – Mitigation Sites 45

Acronyms and Abbreviations

BMPs	Best Management Practices
BOR	United States Bureau of Reclamation
cfs	cubic feet per second
EPA	United States Environmental Protection Agency
NRCS	U.S. Department of Agriculture, Natural Resource Conservation Service
PEM	Palustrine Emergent
PSS	Palustrine Scrub-Shrub
SH-55	State Highway 55
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corp of Engineers
USGS	United States Geological Survey

Introduction

Purpose and Scope

The purpose of this Conceptual Wetland Mitigation Plan is to mitigate impacts to 1.59 acres of wetlands that result from the construction of a 120-acre mixed-use development project near Cascade, Idaho, through on-site, permittee-responsible mitigation.

Project Location and Description

The project area (Parcel Number RP14N04E310605) is located adjacent to the city limits of the City of Cascade, directly east of the North Fork Payette River and northeast of State Highway 55 (SH-55), and approximately two miles southeast of Lake Cascade (**Figure 1** and **Appendix A**).

Cascade River LLC intends to annex, rezone, and obtain a conditional use permit to develop the approximately 120-acre parcel. The proposed development, referred to as "The River District" subdivision, will provide mixed-use development that includes single family and multi-family housing, open space, and commercial development. The proposal is to annex the project area into the City limits; however, the site is currently in Valley County.

Environmental Commitments

The following environmental commitments will be required for this project:

- The mitigation ratio for impacts to palustrine emergent (PEM) will be a minimum of 1:2.8.
- An Individual 404 Permit will be obtained from the U.S. Army Corp of Engineers (USACE) prior to construction activities that includes a Least Environmentally Damaging Practicable Alternative (LEDPA) analysis to avoid and minimize environmental impacts.
- A Floodplain Development Permit will be obtained prior to construction activities.
- A Stormwater Pollution Prevention Plan (SWPPP) will be implemented prior to and during construction activities that includes a narrative, checklists and plan sheets.
- Best Management Practices (BMPs) will be implemented prior to and during construction activities that may include establishment of staging areas, a stabilized construction entrance, and a concrete wash area, and the use of silt fences, fiber rolls, and matting to protect vegetation and soils from vehicle impacts.
- All construction staging areas will be established in previously cleared areas.
- Fuel and chemicals will be stored at least 150 feet away from wetlands and Waters of the United States.
- All existing vegetation at the mitigation site will be preserved to the greatest extent possible and seeded with a native seed mix, if necessary, immediately following ground disturbing activities.
- All excavated soil will be salvaged and stockpiled at an onsite location away from existing sensitive areas to be used within the wetland mitigation sites as needed and wherever possible.
- Any stockpiled soils not used will be disposed of in an approved offsite location.

- Plants species identified in **Table 5** and **Table 6** will be used for mitigation planting/seeding unless unavailable by suppliers, at which point a similar native plant species may be used.
- A minimum of three (3) different native plant species should be selected for planting in each mitigation zone at the appropriate density (spacing).
- Noxious weeds within the mitigation site will be identified and removed by hand weeding, mechanical removal, and/or through treatment with an herbicide that is appropriate for use near aquatic resources by a certified specialist.
- Site stabilization will begin immediately following completion of ground-disturbing activities.
- Any disturbed areas or areas needing assistance will be re-vegetated via seeding or plantings utilizing species identified in **Table 5** and **Table 6** and based on supplier availability.
- Maintenance of the mitigation site will begin following construction and continue through five (5) full growing seasons.
- Monitoring of the mitigation site will begin in the first full growing season following planting and seeding and extend through a minimum of five (5) full growing seasons.
- The mitigation site is expected to take two (2) years to establish wetland areas, during which the mitigation site should be trending towards performance standards.
- All performance standards must be met for three (3) consecutive years (years 3 through 5), at which point monitoring may be extended if performance standards have not been met.
- A mitigation monitoring report will be submitted to the USACE on an annual basis.
- Adaptive management of the mitigation site will be utilized if the site is not trending towards performance standards.
- The mitigation site will be protected by plat restriction.
- Cascade River LLC will have a bond with the City of Cascade to provide financial assurance that mitigation actions will be undertaken.

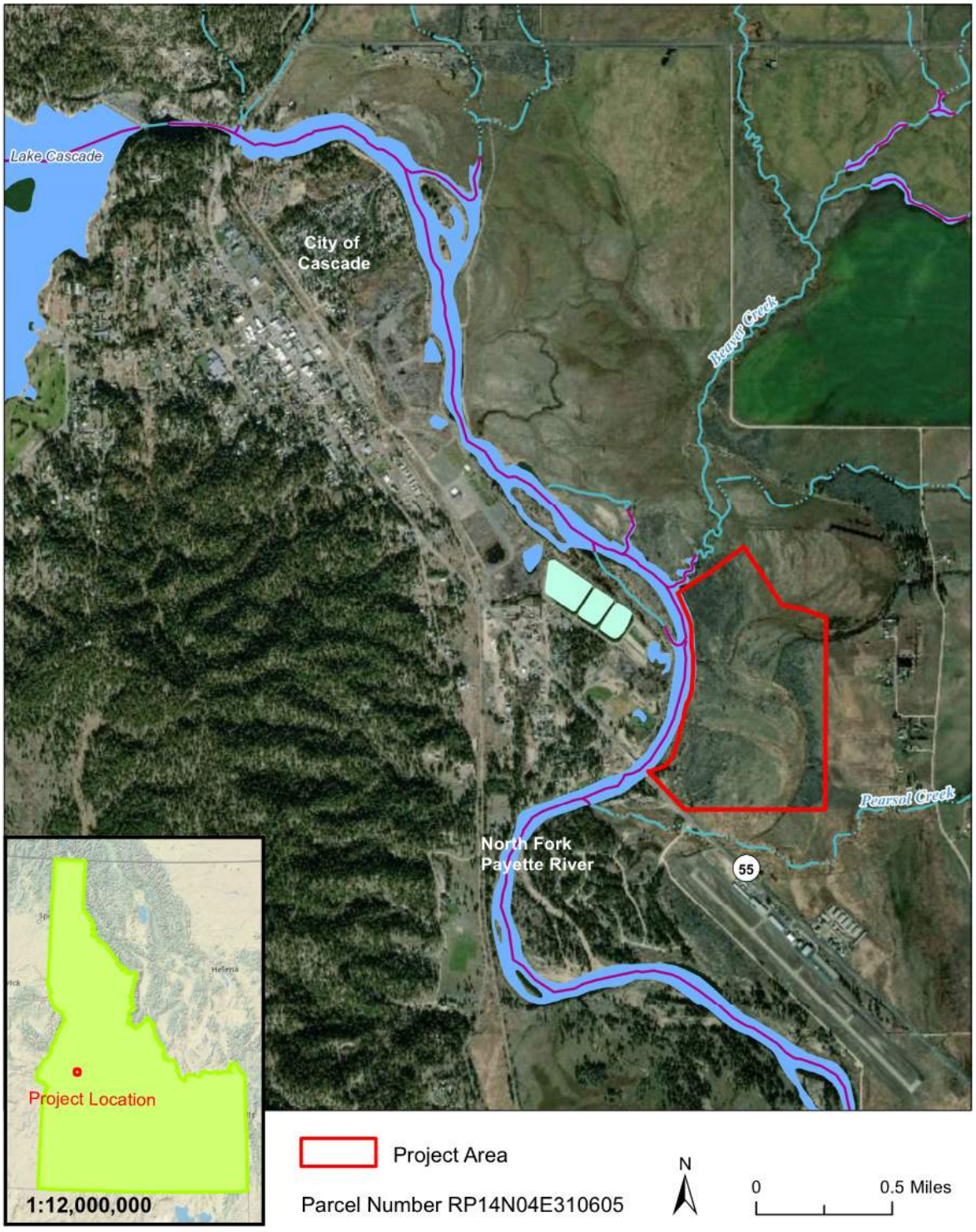


Figure 1. Project Vicinity Map

Baseline Environmental Conditions

Existing and Surrounding Land uses

As shown in **Figure 1**, the project area is adjacent to the city limits of Cascade, Idaho. SH-55 is the primary access point to the property from the southwest. The existing use is pasture with cattle grazing. The site is relatively flat with a moderate slope from the North Fork Payette River (west) to an existing 25-foot ridgeline (east) that forms a bench-like feature along the eastern border of the project area. The majority of the project area is located within the 100-year floodplain of the North Fork Payette River; there are several low-lying drainage areas that receive water from seasonal runoff originating from the Sawtooth Mountains and proximity to groundwater (**Figure 2**).

Climate

The City of Cascade has a mildly arid climate with summers that are short, warm, and dry, and winters that are long, cold to freezing, and wet. Over the course of the year, the temperatures vary from 13˚F to 82˚F and are rarely below -3˚F or above 89˚F (NOAA 2018). Cascade has an average annual rainfall of 23 inches per year and average annual snowfall of 87 inches per year (City of Cascade 2018).

Vegetation

Upland vegetation is mostly shrub habitat consisting of Wyoming big sagebrush (*Artemesia tridentata ssp. wyomingensis*), Sandburg bluegrass (*Poa secunda*), and cheatgrass (*Bromus tectorum*), with occasional Ponderosa pine (*Pinus ponderosa*) or lodgepole pine (*Pinus contorta*). Wetland vegetation varies depending on location with Nebraska sedge (*Carex nebrascensis*), Baltic rush (*Juncus balticus*), beaked sedge (*Carex rostrata*), and reed canarygrass (*Phalaris arundinacea*) among the most abundant species. Reed canarygrass is a non-native species which has been determined to be invasive in wetland areas. None of the wetlands contain a shrub or tree overstory.

Hydrology

The project area is less than 2 miles downstream of Cascade Dam that creates the reservoir referred to as “Lake Cascade”. Flow releases from the reservoir into the North Fork Payette River are regulated by Bureau of Reclamation primarily for hydropower and irrigation uses (BOR 2002). Generally, 200 cubic feet per second (cfs) is the minimum reservoir release rate (BOR 2002). The 30-year average peak flow is around 2,500 cfs, while record high flows in 2017 peaked around 6,100 cfs (USGS Gage 113246000).

The project area is bordered by Beaver Creek and Little Pearsol Creek to the north and south, respectively (**Figure 2**). Numerous low-lying drainage areas that contain wetlands exist in the project area and receive water seasonally from the following sources: groundwater seeps originating at toe of the slope of the ridgeline; seasonal proximity to the water table; and irrigation runoff. During high water years, these drainage areas will combine and overflow into the North Fork Payette River (**Figure 2**).

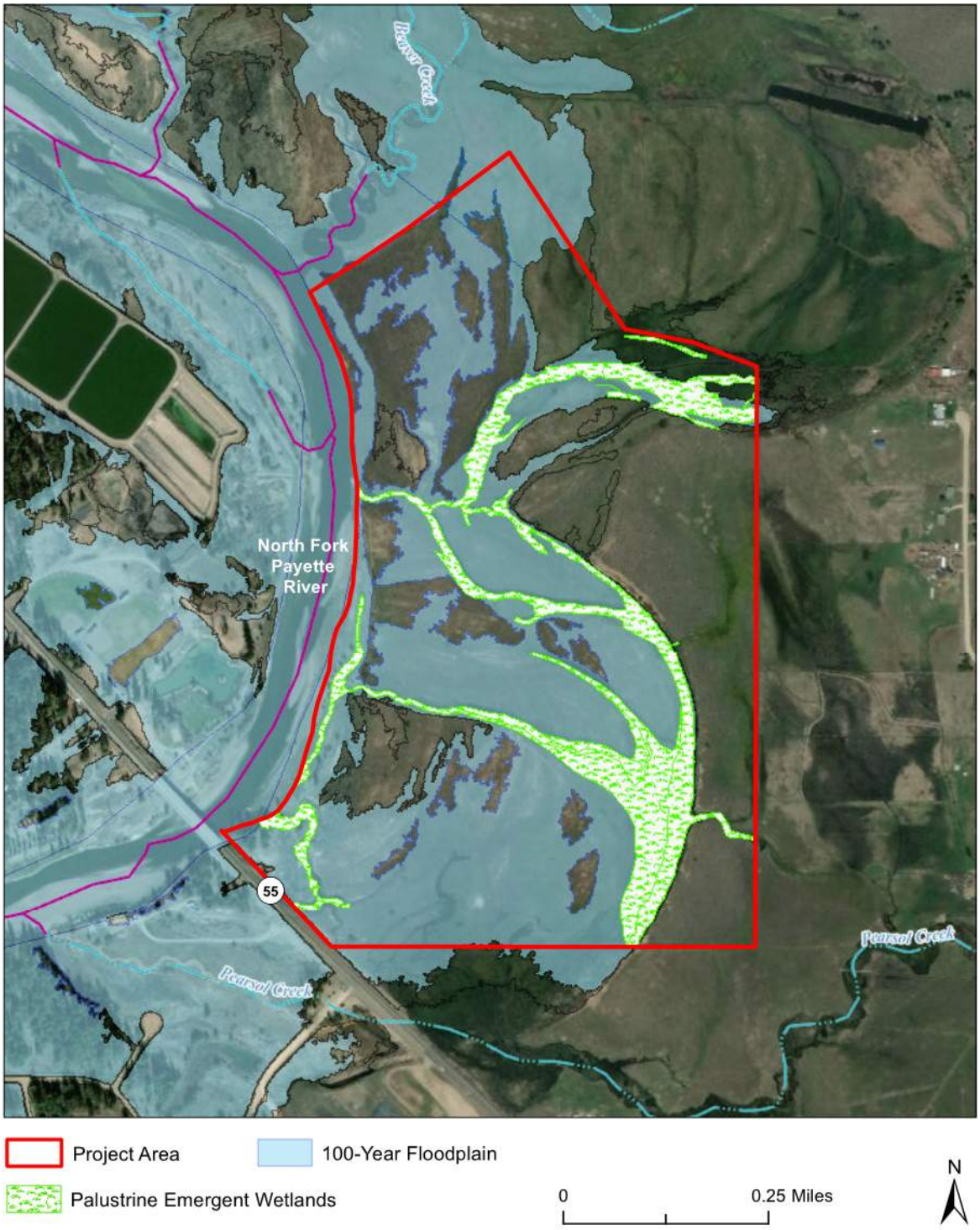


Figure 2. Aquatic Resources and Delineated Wetlands

Historically, a drainage channel within the southeast portion of the project area received spring runoff overflow from Little Pearsol Creek. However, recent improvements by the Idaho Transportation Department in 2018 increased the size and capacity of the culvert for Little Pearsol Creek underlying SH-55. As such, it is unlikely that Little Pearsol Creek will continue overflow into the drainage channel. However, the lower portions of the drainage channel receive backwater form North Fork Payette River and remain inundated year-round. As observed during the 2019 field survey, the drainage channel also appears to receive water from a seasonal flow channel located immediately south of the project area, but north of Pearsol Creek.

Soils

The Natural Resource Conservation Service (NRCS) Web Soil Survey identified two major soil types within the project area: Blackwell variant silt loam, 0 to 3 percent slopes and Jurvannah sandy loam, 0 to 2 percent slopes (**Appendix B**). Roseberry coarse sandy loam is located on the upper terrace, outside of the proposed area for development.

Both Blackwell variant silt loam and Jurvannah sandy loam are found along stream terraces and floodplains. These soils are deep, up to 80 inches to restrictive layer, and poorly drained. Both are rated as hydric and are frequently flooded with a depth to water table around 12 to 24 inches.

Soil test pits from the 2007 and 2018 wetland delineations found most of the soils in both upland and wetland areas to be sandy loam in texture meeting the “redox dark surface” hydric indicator. These soils align closely with the Jurvannah sandy loam series. Hydric soils with silty clay texture meeting the “depleted below dark surface” hydric indicator were also identified in some of the drainage areas.

Wetland Functional Assessment

Wetland Delineation Results

A wetland delineation was initially performed within the project area by Toothman-Orton Engineering Company (2007) following technical methods outlined in the *Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987). A second wetland delineation was performed by T-O Engineers (2019) on July 31, 2018 following the same technical methods, including the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). On June 12, 2019, T-O Engineers and USACE personnel revisited the project area to verify delineated wetlands. In total, 15.72 acres of Palustrine Emergent (PEM) wetlands were identified within the project area; these wetlands received an approved jurisdictional determination (NWW-2019-0577-B03) by the USACE on November 1, 2019.

Functional Assessment Methods

A functional assessment of delineated wetlands was carried out using the Montana Department of Transportation (MDT) *Montana Wetland Assessment Method* (MDT 2008). Idaho has not adopted assessment methodology for wetlands; the Montana method has been applied to many Idaho projects and can be easily adapted for use in Idaho due to similarities in wetland occurrence and types (ELI 2008).

Using the MDT Montana Wetland Assessment Form, up to 12 functions and values (i.e. general wildlife habitat, flood attenuation, groundwater recharge/discharge, production export, etc.) are evaluated for each assessment area. Each function/value is assigned a “low”, “moderate”, or “high” rating and assigned a score on a scale of 0.1 (lowest) to 1.0 (highest). Functional points are summed on the data form and expressed as a percentage of the possible total. This percentage is then used in conjunction with other criteria to classify each wetland into the following categories:

- **Category I** wetlands are of exceptionally high quality and are generally rare to uncommon. These wetlands can provide primary habitat for federally listed species or provide irreplaceable ecological functions.
- **Category II** wetlands are more common than Category I wetlands and provide habitat for sensitive plants or animals or function at very high levels.
- **Category III** wetlands are more common and generally less diverse than Category I or Category II wetlands but provide many functions and values.
- **Category IV** wetlands are generally small, isolated, and lack vegetative diversity. These sites provide little wildlife habitat and are often directly or indirectly disturbed.

The field investigation to assess wetland functions and values was performed on July 31, 2018 and MDT Montana Wetland Assessment Forms (**Appendix C**) were completed for two assessment areas (A and B) based on their hydrogeomorphic (HGM) classification (**Figure 3**).

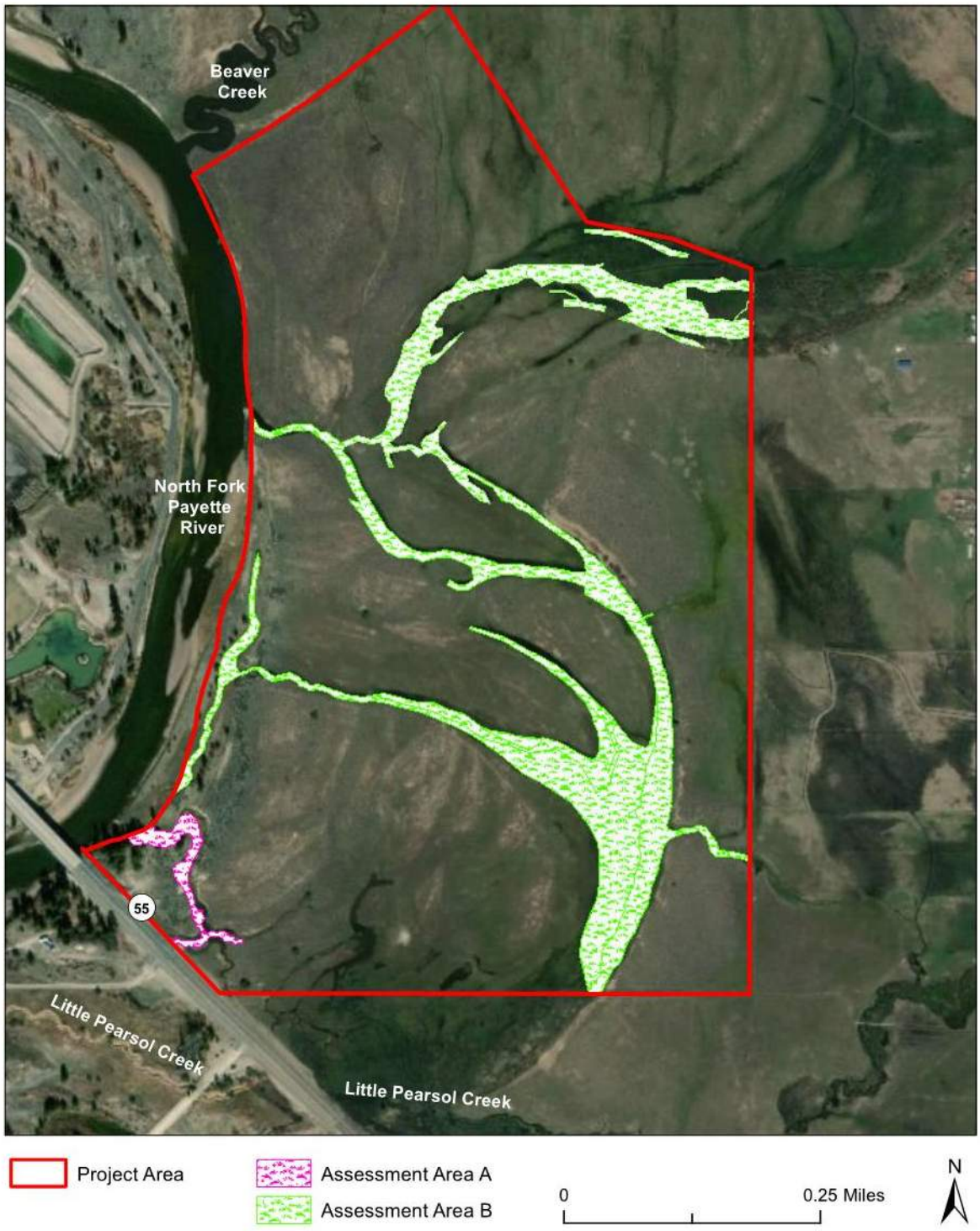


Figure 3. Delineated Wetlands by Assessment Area

Assessment Area A – Riverine, Drainage Channel

Assessment Area A represents wetlands within and along a drainage channel that, up until 2018, received water from three different sources: 1) spring runoff overflow water from Little Pearsol Creek; 2) backwater from the Payette River; and 3) seasonal flow from an unnamed channel north of Little Pearsol Creek (**Figures 3** and **Photo 1**). Following upgrades to SH-55 in 2018, the drainage channel is unlikely to receive overflow water from Little Pearsol Creek in the future. However, the wetland will continue to receive seasonal flow from the unnamed channel as well as backflow from the North Fork Payette.

Photo 1. Assessment Area A, facing east towards North Fork Payette River. In addition to seasonal runoff, the lower reaches are inundated year-round from backflow from the River.

Wetland vegetation is primarily reed canarygrass, Nebraska sedge, and Baltic rush. Reed canarygrass is a non-native species which has been determined to be invasive in wetland areas. Along some sections of the channel, the eastern bank is steep, sandy, and mostly void of vegetation, resulting in a narrow strip of wetland vegetation. Upland vegetation consists of Wyoming sagebrush and Sandburg bluegrass.

Photo 2. Cattle hummocking, sedimentation, and algae growth impair wetland functions in Assessment Area A.

Assessment Area A received a total functional score of 3.7 out of a possible score of 8.1 (46%) and is classified as a Category III wetland. The wetlands are in close proximity to SH-55 (potential source of pollution) and are disturbed by cattle hummocking, resulting in erosion and algae growth (**Photo 2**). The wetlands also scored low on uniqueness and they do not provide primary habitat for any federal- or state-listed species. However, with the variety of plant species and connection to the North Fork Payette River, these wetlands received a moderate score for their ability to provide shoreline stabilization, fish and wildlife habitat, and food chain support.

Assessment Area B – Slope Wetlands

In normal water years, wetlands within Assessment Area B receive water seasonally from groundwater, storm events, spring runoff, and irrigation runoff (**Figure 3** and **Photo 2**). Groundwater originates from the toe of the ridgeline and the entire project area is in close proximity to the water table. The well-established drainage patterns and presence of sediment and drift deposits indicate that Area B conveys a significant amount of spring runoff during high water years. At the time of the survey, some areas were still inundated with water, while indicators of recent inundation were apparent in other areas.

Wetland vegetation in Assessment Area B consists of Nebraska sedge, Baltic rush, silver-sheath knotweed (*Polygonum argyrocoleon*), and other wetlands species. Upland areas consist of mostly Wyoming sagebrush, Sandburg bluegrass, and occasional ponderosa pine and lodgepole pine. Invasive cheatgrass is more prevalent in the upland areas within the northern portion of the project area.

Photo 2. Assessment Area B, facing north. Slope wetlands follow a well-established drainage pattern. Open water is still present in some areas.

Assessment Area B received a total functional score of 3.5 out of a possible score of 7.3 (48%) and is classified as a Category III wetland. The wetlands in Assessment Area B scored high on their ability to provide food chain support given the size of the wetland area (>15 acres), dense cover of wetland vegetation, and evidence of flooding. As these wetlands are inundated seasonally, they received a moderate score for sediment/nutrient/toxicant removal, surface water storage, groundwater discharge and recharge, and general wildlife habitat. The wetlands in Assessment Area B scored low on uniqueness and do not provide primary habitat for any federal- or state-listed species.

Functional Assessment Results

Overall, wetlands within the project area are common to abundant in the region; scored low on uniqueness and structural diversity; do not provide primary habitat for any federal- or state-listed species; and received a moderate functional rating (below 65%). Based on these factors, both assessment areas classify as Category III wetlands (**Table 1** and **Appendix C**).

Category III wetlands provide many important functions and values. In particular, the wetlands within the project area scored moderate to high on sediment, nutrient, and toxicant retention; surface water storage; groundwater recharge and discharge; food chain support; and general wildlife habitat. Category III wetlands can often be adequately replaced with well-planned mitigation.

Table 1. Wetland Functional Assessment Summary

Assessment Area	Wetland Cover Type	HGM Classification	Wetland Classification	Functional Points	Area (acres)
A	Palustrine Emergent	Riverine	Category III	3.9	0.76
B	Palustrine Emergent	Slope	Category III	4.1	14.96
				Total acres	**15.72**

Project Impacts to Wetlands

Avoidance and Minimizations Measures

An 404(b)(1) alternatives analysis was performed to identify the least environmentally damaging practicable alternative (LEDPA) for the proposed project (T-O Engineers 2020). Through an analysis of off-site alternatives, no other site is available that is capable of practicably supporting the proposed project. An analysis of on-site alternatives found the proposed project, as shown in **Appendix A**, to be the LEDPA which satisfies project's purpose and need.

The proposed development has been designed to avoid and minimize impacts to delineated wetland areas to the greatest extent possible. T-O Engineer's environmental personnel worked with the design team to situate roads and lots in upland areas and retain the wetland areas in common areas (**Appendix A**). As a result, approximately 90% (14.13 acres) of wetlands will be avoided. Due to the extent and dendritic pattern of wetlands throughout the project area, required road connections, and desired lot density, there are no practical measures to entirely avoid wetland impacts.

Wetland impacts will be minimized through implementation of BMPs and an SWPPP prior to and during construction activities. Examples of BMPs that may be used include establishment of staging areas, a stabilized construction entrance, and a concrete wash area, and the use of silt fences, fiber rolls, and matting to protect vegetation and soils from vehicle impacts. Approximately 0.19 acres will also be minimized through a protection easement (please refer to page 4 in **Appendix A**).

Temporary and Permanent Wetland Impacts

To construct the proposed project, approximately 0.32 acres of wetlands will be temporarily impacted and 1.59 acres will be permanently impacted (**Appendix A** and **Table 2**). Within Assessment Area A, approximately 0.54 acres of wetlands will be permanently impacted to construct commercial lots, which require proximity to the SH-55. Within Assessment Area B, 0.59 acres of permanent impacts and 0.32 acres of temporary impacts are associated with road and trail connections, including the main arterial road, while 0.44 acres of permanent impacts are associated with multi-family housing construction.

Table 2. Total Acres of Wetlands Impacted by the proposed project

Assessment Area	Temporary Impacts	Permanent Impacts	Total Impacts
A	0.00	0.54	0.54
B	0.32	1.05	1.37
Total acres	**0.32**	**1.59**	**1.91**

Proposed Compensatory Mitigation Plan

Mitigation Approach and Objectives

This project will utilize on-site permittee-responsible mitigation through the establishment of 5.02 acres of new wetlands to mitigated for the permanent impact of 1.59 acres of wetlands.

The primary objective of this mitigation approach is to provide greater vegetative diversity, stratification, and habitat value than the wetlands impacted by the proposed project. A secondary objective is to improve habitat in the area for pollinators, as loss of pollinator habitat is one of the many factors associated with the decline of pollinator species in Idaho (ISDA 2016).

Proposed Mitigation Site

A mitigation site has been identified along the northern edge of the property adjacent to an existing low-lying drainage area that contains PEM wetlands (**Figure 4**). The mitigation site currently consists of approximately 5.02 acres of undeveloped grassland and shrubland habitat that are immediately adjacent to natural wetland areas, and thus in proximity to high groundwater and seasonal and storm runoff. The proposed mitigation site already contains hydric soils, as determined through soil test pit data from the wetland delineation and as mapped by the NRCS.

The proposed mitigation sites will be excavated to the proper elevation to provide closer access to the water table and hydrologic sources mentioned above. This will provide self-sustaining hydrology for wetland plantings, seeding, and existing seed base.

Reference Wetlands

The proposed mitigation site is adjacent to Category IIII PEM wetlands in Assessment Area B that are comprised of mostly native herbaceous species, such as Baltic rush and Nebraska sedge. The North Fork Payette River corridor also has several quality palustrine scrub-shrub (PSS) wetland areas that demonstrate established PSS wetlands characteristics common to the area.

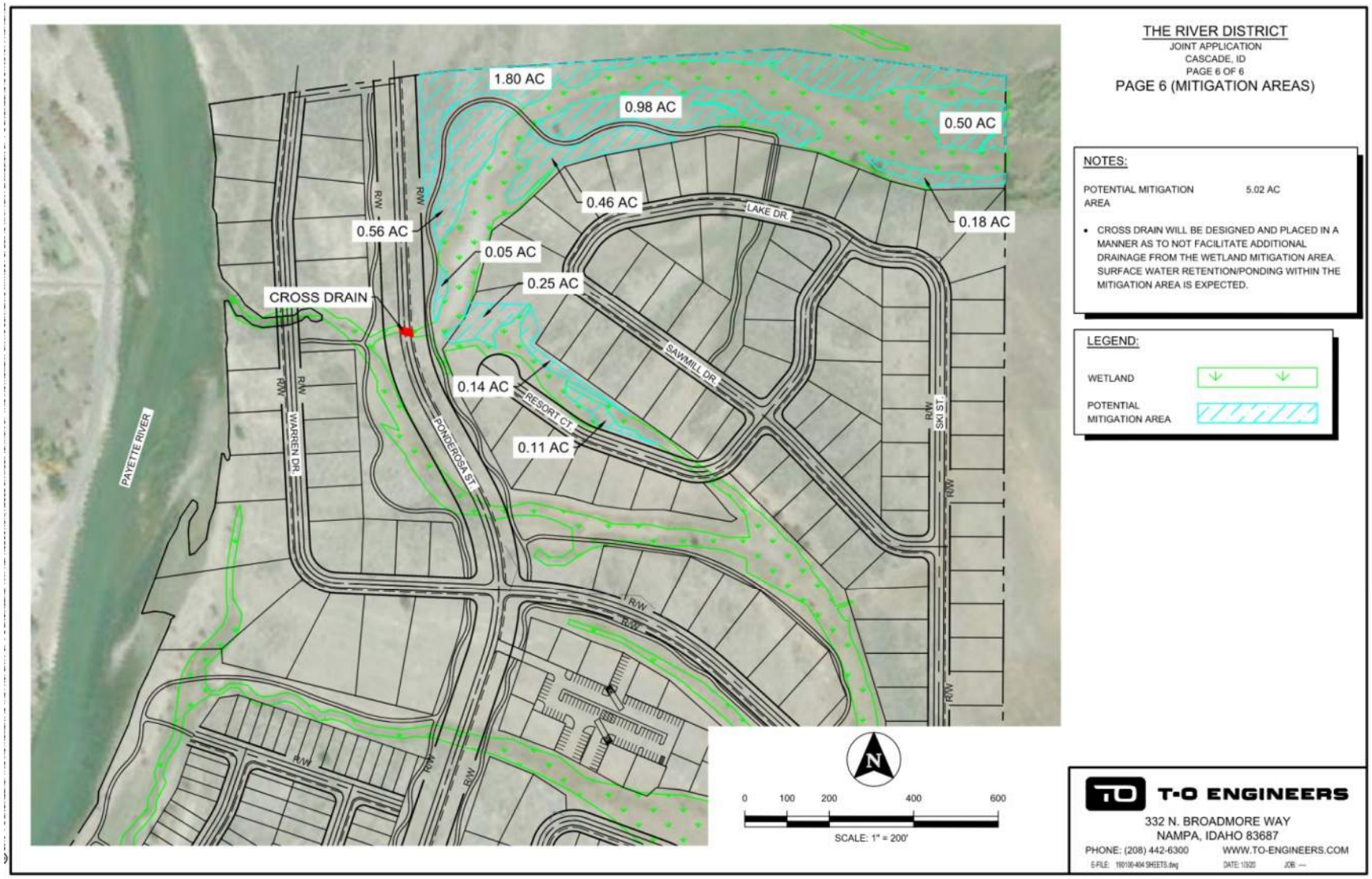
Mitigation Site Functional Assessment

A functional assessment was performed for the proposed mitigation site (**Appendix D**). The mitigation site, once established, will score similarly to Assessment Area B in several functional areas as it is essentially an extension of those wetlands. However, with the establishment of PSS wetland habitat (increased structural diversity) and the proximity of the mitigation site to undeveloped upland areas and the North Fork Payette River, the mitigation site received a higher functional score of 4.3 functional points than the existing PEM wetlands in Assessment Area B (**Table 3**).

Table 3. Wetland Functional Assessment Summary

Assessment Area	Wetland Cover Type	HGM Classification	Wetland Classification	Functional Points	Area (acres)
Mitigation Site	Palustrine Scrub-Shrub	Slope	Category III	4.3	5.02

Figure 4. Proposed Mitigation Site



Determination of Credits

The USACE Walla Walla District determines wetland mitigation ratios in coordination with other interested agencies. Based on a preliminary discussion with USACE (personal communication, Eric Gerke), **Table 4** outlines a preferred method to determine the mitigation ratio(s) for impacted wetlands. Based on the functional uplift of the mitigation area, the mitigation ratio is expected to be 1:2.8, necessitating a minimum of 4.51 acres of mitigated wetlands. With a total proposed mitigation area of 5.02 acres, there is a high probability that the 4.51 minimum mitigation requirements will be realized.

Table 4. Wetland Mitigation Ratio and Total Acres Required

Assessment Area (AA)	Total Acres (AA)	Functional Points (AA)	Functional Points (Mitigation Site)	Functional Uplift	Adjusted Mitigation Ratio	Total Acres Impacted	Total Acres Required Mitigation
A	0.76	3.7	4.3	0.6	3.1	0.54	1.67
B	14.96	3.5	4.3	0.8	2.7	1.05	2.84
	15.72				**2.8**	**1.59**	**4.51**

Mitigation Work Plan

Prior to construction, all necessary permits will be obtained by Cascade River LLC, including but not limited to an Individual Section 404 Permit, Floodplain Development Permit, and SWPPP. Mitigation site construction will occur after excavation and grading associated with The River District subdivision is completed within the vicinity of the mitigation site.

All erosion and sediment controls will be installed prior to construction and staging will be established in previously cleared areas. All existing vegetation adjacent to the mitigation areas will be preserved to the greatest extent possible and seeded with a native seed mix, if necessary, immediately following ground disturbing activities. The contractor is required to strictly adhere to the SWPPP during construction.

Excavation and Grading

The mitigation site will be constructed by first clearing and grubbing existing vegetation followed by excavating the soil surface to elevations down gradient towards existing, adjacent wetland areas. This will ensure the mitigation areas are in contact with the water table and/or receiving surface water inputs during the growing season. Application of topsoil or salvaged soil to provide the appropriate substrate for wetland plantings may also be required (please refer to the “soils” section).

Soils

Based on the wetland delineation data and the NRCS Web Soil Survey, soils at the mitigation sites are likely hydric and sandy loam in texture. Any excavated soil from existing wetland areas will be salvaged and stockpiled at an onsite location away from existing wetland areas for potential use as replacement planting medium at the mitigation site. Any soil excavated from existing wetland areas is especially valuable as it contains the seed base of native wetland plants; these soils will be retained and used

within the wetland mitigation sites as needed and wherever possible. Following mitigation construction activities, any stockpiled soils not in use will be disposed of in an approved offsite location.

Planting Plan

The native plant species shown in **Table 5** are recommended for planting as they are native to the area and generally perform well in wetland restoration (BOR 2002, Murphy 2012, and Murphey et al. 2012). Indian paintbrush (*Castilleja* spp.), Nuttall's sunflower (*Helianthus nuttallii*), chokecherry (*Prunus virginiana*), and shrubby cinquefoil (*Dasiphora fruticosa*) provide valuable pollinator habitat for hummingbirds, bees and other pollinating insects (Mader et al. 2011).

Depending on site grading, the species identified in **Table 5**, should be planted generally in the following three planting zones:

1. Bank – located immediately adjacent existing wetlands that receive frequent, high flows. This zone is frequently inundated and experiences wet-dry periods and freeze-thaw cycles. If this zone is not present, Nebraska sedge and Baltic rush should be selected for planting.
2. Overbank – located upslope of the bank zone. Most of the existing wetland areas are at this elevation. This zone is typically flooded seasonally during spring runoff and is near the water table.
3. Transitional – located at a slightly higher elevation than overbank zone, likely along the outer edges of the mitigation site. This zone is generally not inundated except during high water events and consists of mostly facultative and facultative upland species.

Table 5 shows the species, wetland indicator, size class, planting zone, and spacing recommendations for planting.

Table 5: Shrub and Herbaceous Species Recommended for Planting within the Mitigation Site.

Common Name	Scientific Name	Wetland Indicator*	Sizes Available	Planting Zone	Spacing
Geyer's willow	*Salix geyeriana*	FACW	10 cubic-inch	Bank	5 ft
Geyer's willow	*Salix geyeriana*	FACW	5-gallon	Bank	10 ft
Lemmon's willow	*Salix lemmonii*	FACW	10 cubic-inch	Bank	5 ft
Beaked sedge	Carex rostrata	OBL	10 cubic-inch	Bank	5 ft
Nebraska sedge	Carex nebrascensis	OBL	10 cubic-inch	Bank/Overbank	5 ft
Baltic rush	*Juncus balticus*	FACW	10 cubic-inch	Bank/Overbank	5 ft
Grey alder	*Alnus incana*	FACW	10 cubic-inch	Overbank	5 ft
Grey alder	*Alnus incana*	FACW	60 cubic-inch	Overbank	5 ft
Grey alder	*Alnus incana*	FACW	5-gallon	Overbank	10 ft
Red-osier dogwood	*Cornus sericea*	FACW	10 cubic-inch	Overbank	5 ft
Red-osier dogwood	*Cornus sericea*	FACW	60 cubic-inch	Overbank	5 ft
Red-osier dogwood	*Cornus sericea*	FACW	5-gallon	Overbank	10 ft
Indian paintbrush	*Castilleja* spp.	FACW	7 cubic-inch	Overbank/Transitional	5 ft
Nuttall's sunflower	Helianthus nuttallii	FACW	10 cubic-inch	Overbank/Transitional	5 ft
Shrubby cinquefoil	*Dasiphora fruticosa*	FAC	7 cubic-inch	Transitional	5 ft
Red fescue	*Festuca rubra*	FAC	10 cubic-inch	Transitional	5 ft
Chokecherry	*Prunus virginiana*	FACU	10 cubic-inch	Transitional	5 ft
Chokecherry	*Prunus virginiana*	FACU	60 cubic-inch	Transitional	5 ft
Chokecherry	*Prunus virginiana*	FACU	5-gallon	Transitional	10 ft

* OBL = obligate; FACW = facultative wetland; FAC = facultative; FACU = facultative upland

The species listed in **Table 5** are options for mitigation planting; the final species list and quantities will be determined after the mitigation site design is finalized and dependent upon supplier availability. To ensure diversity, a minimum of three different native species should be selected for planting in each zone at the appropriate density (spacing). Similar native species (i.e. coyote willow in place of Geyer's willow) may be utilized if the species listed in **Table 5** are not available. All of the plants listed are generally available from plant suppliers in the region, including Twin Peaks Nursery in McCall, Idaho, Draggin' Wing High Desert Nursery in Boise, Idaho, and North Fork Native Plants in Rexburg, Idaho.

Seeding

Broadcast seeding will be performed to increase the opportunity for native species diversity and propagation, aid in soil stabilization, and reduce establishment of non-native or invasive species. Seeds should be broadcast at a rate of 45 pounds per acre or 1 pound per 1,000 square feet. **Table 6** lists species recommended for inclusion in the seed mix as they are native to the area and generally perform well in wetland restoration (Murphy 2012). Showy milkweed (*Asclepias speciosa*) is the essential host plant for the monarch butterfly (*Danaus plexippus*), and small camas (*Camassia quamash*), fireweed (*Chamerion angustifolium*), monkeyflower (*Mimulus guttatus*), and Pacific aster (*Symphyotrichum chilensis*) collectively provide early spring to late fall blooms for many pollinators, such as butterflies, honeybees, native bees, pollinating insects, and hummingbirds (USFS 2017, Mader et al. 2011).

Table 6: Species Recommended for Broadcast Seeding

Common Name	Scientific Name	Wetland Indicator*
Smallwing sedge	*Carex microptera*	FACU
Baltic rush	*Juncus balticus*	FACW
Nebraska sedge	*Carex nebrascensis*	OBL
Tufted hairgrass	*Deschampsia cespitosa*	FACW
Slender wheatgrass	*Elymus trachycaulus*	FAC
Small camas	*Camassia quamash*	FACW
Fireweed	*Chamerion angustifolium*	FACU
Showy milkweed	*Asclepias speciosa*	FAC
Monkeyfower	*Mimulus guttatus*	OBL
Pacific aster	*Symphyotrichum chilensis*	FAC

* FAC = facultative; FACW = facultative wetland; OBL = obligate

The species listed in **Table 6** are options for the mitigation seed mix; the final species included in the seed mix will be determined after the mitigation site design is finalized and dependent upon supplier availability. All of the species listed in **Table 6** are generally available from Granite Seed, a regional restoration and grass seed company.

Weed Control

Noxious weeds will be identified and removed by hand weeding, mechanical removal and/or through treatment with an herbicide that is appropriate for use near aquatic resources by a certified specialist. An herbicide such as AquamasterTM is recommended since it is a non-selective, glyphosate [N-(phosphonomethyl)glycine], aquatic herbicide that controls emerged vegetation in environments where water is present. AquamasterTM is highly effective on more than 190 species of emerged weeds. For woody species, such as Russian Olive (*Elaeagnus angustifolia*), the trees and shrubs should be

mechanically removed and the stumps spot-treated with herbicide, such as GarlonTM 4 Ultra, to prevent regrowth.

Maintenance Plan

Maintenance of the site will begin following construction and continue through five full growing seasons. Maintenance activities may include but are not limited to:

- Installment of a wildlife exclusionary fences
- Weed control
- Pruning
- Fertilization as required based on soil testing
- Corrective grading
- Replanting or reseeding of vegetation
- Temporary irrigation

Performance Standards

The criteria presented below will be used to evaluate the performance of the mitigation site, and achievement will be determined through monitoring and adaptive management. Any changes to the criteria that are determined necessary based on site conditions must be approved by the USACE prior to adoption of new performance standards.

1. Wetland Delineation. The wetland areas will be delineated utilizing methods outline in the *Army Corps of Engineers Wetlands Delineation Manua*l (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010) methods. If the site meets vegetation and hydrology indicators, soil test pits may not be required. This will help prevent disturbance to the mitigation site.
2. Self-Sustaining Hydrology. The wetland will exhibit self-sustaining wetland hydrology that meets the minimum requirement of saturation within 12 inches of the surface for at least 14 days of the growing season in an average water year. This will be determined based on observed wetland hydrology indicators entered on the wetland delineation data forms at wetland sampling locations.
3. Native Vegetation. Wetland vegetation will comprise of a minimum of 70% native species canopy cover (planted or established) and no more than 10% invasive or noxious species canopy cover across all stratum. This will be determined based on observed species and percent absolute cover entered on the wetland delineation data forms at wetland sampling locations.

Per USACE Regulatory Guidance Letter (No. 08-03) for minimum monitoring requirements, mitigation monitoring reports will be submitted to the USACE on an annual basis. Monitoring will begin in the first full growing season following planting and seeding and extend through a minimum of five (5) full growing seasons. The mitigation sites are expected to take two (2) years to establish into wetland areas, during which the mitigation sites should be trending towards performance standards. All performance

standards must be met for three (3) consecutive years (Years 3 through 5) to meet mitigation requirements.

Monitoring may be extended beyond five years if performance standards have not been met.

The following items will be reported within the monitoring report:

1. A minimum of two photo documentation points at the mitigation site will be preselected that will provide before and after photos of site conditions. All photos are to be taken from the established photo-reference points and archived by area, date, and time of photograph.
2. Wetland delineation sheets for each sampling point (soil pits may not be required) to ensure mitigation performance standards are met. The number of sampling points required will be determined during the first monitoring year.
3. Documentation of vegetation species observed and percent absolute cover of native species and invasive or noxious species at each wetland sampling point.
4. Map locating photo documentation points and wetland delineation sampling points
5. Documentation of maintenance and/or adaptive management activities conducted.
6. A narrative of the site trend and performance relative the goals and standards, including any measures recommended to bring the site into compliance with performance standards.

Site Protection

The Cascade River LLC will set aside two (2) lots within and along the norther border of The River District subdivision, which will be platted through the City of Cascade. These lots, totaling 11.14 acres in size, will carry a plat restriction for exclusive use as wetland mitigation. This will guarantee long-term protection for the site in perpetuity.

Financial Assurances

Cascade River LLC will have a bond with the City of Cascade to provide financial assurance that the mitigation actions will be undertaken.

Adaptive Management

Based on monitoring results, adaptive management of the site will be utilized if the site is not trending towards performance standards. Adaptive management actions may include but are not limited to:

1. Additional plantings or re-seeding;
2. Change in plant species used;
3. Use of different plant or seed sources;
4. Change in seeding/planting timing and techniques;
5. Re-grading;
6. Change in invasive species treatment and removal;
7. Extension of the monitoring period; and,
8. Adding additional monitoring points.

Conclusion

This report offers a practical, permittee-responsible mitigation for the anticipated impacts of up to 1.59 acres of wetlands to construct The River District subdivision near the City of Cascade, Idaho. The mitigation site described herein encompasses a total of 5.02 acres and will contain a mix of palustrine scrub-shrub and palustrine emergent wetland species. The plantings will substantially increase the stratification and habitat value of the wetland areas. The plantings also include up to nine (9) wetland species that provide pollinator habitat. Performance goals will be achieved through maintenance, monitoring and adaptive management over five full growing seasons. The required annual reporting provides the avenue of active agencies coordination over the required 5-year monitoring period.

Literature Cited

BOR. 2002. Lake Cascade Resource Management Plan. U.S. Department of the Interior Bureau of Land reclamation, Snake River Area Office, Idaho. Accessed August 8, 2018 at https://www.usbr.gov/pn/programs/rmp/lakecascade/rmp-lakecascade2002.pdf

City of Cascade. 2018. Comprehensive Plan Update, 2018. Adopted by City Council, Resolution 18-04, March 12, 2018. City of Cascade, Idaho

ISDA. 2016. Idaho Pollinator Protection Plan. Idaho State Department of Agriculture Division of Agricultural Resources and Division of Plant Industries, Boise. Accessed August 8, 2018 at https://agri.idaho.gov/main/wp-content/uploads/2018/06/Idaho-Pollinator-Protection-Plan-1-17.pdf

NOAA. 2018. Detailed forecast: Cascade, Idaho. National Weather Service, National Oceanic and Atmospheric Administration. Accessed August 2, 2018 at https://forecast.weather.gov/MapClick.php?textField1=44.51806&textField2=-116.05417#.W2MtjrgnaHs

Mader, E., Shepherd, M., Vaughan, M., Black, S.H. and LeBuhn, G. 2011. Attracting Native Pollinators. The Xerces Society. Storey Publishing, North Adams, Massachusetts

Murphy, C. 2012. Riparian and Wetland Restoration Planting Guide for the Boise and Payette River Basins, Idaho. Prepared for Idaho Department of Lands and U. S. Forest Service. Idaho Department of Fish and Game, Boise, ID. 61 pp.

Murphy, C., J. Miller, and A. Schmidt. 2012. Idaho wetland conservation prioritization plan – 2012. Prepared for Idaho Department of Parks and Recreation. Idaho Department of Fish and Game, Boise, ID. 29 pp. plus appendix.

T-O Engineers. 2019. Cascade River Ranch Wetland Delineation. T-O Engineers, Meridian, Idaho

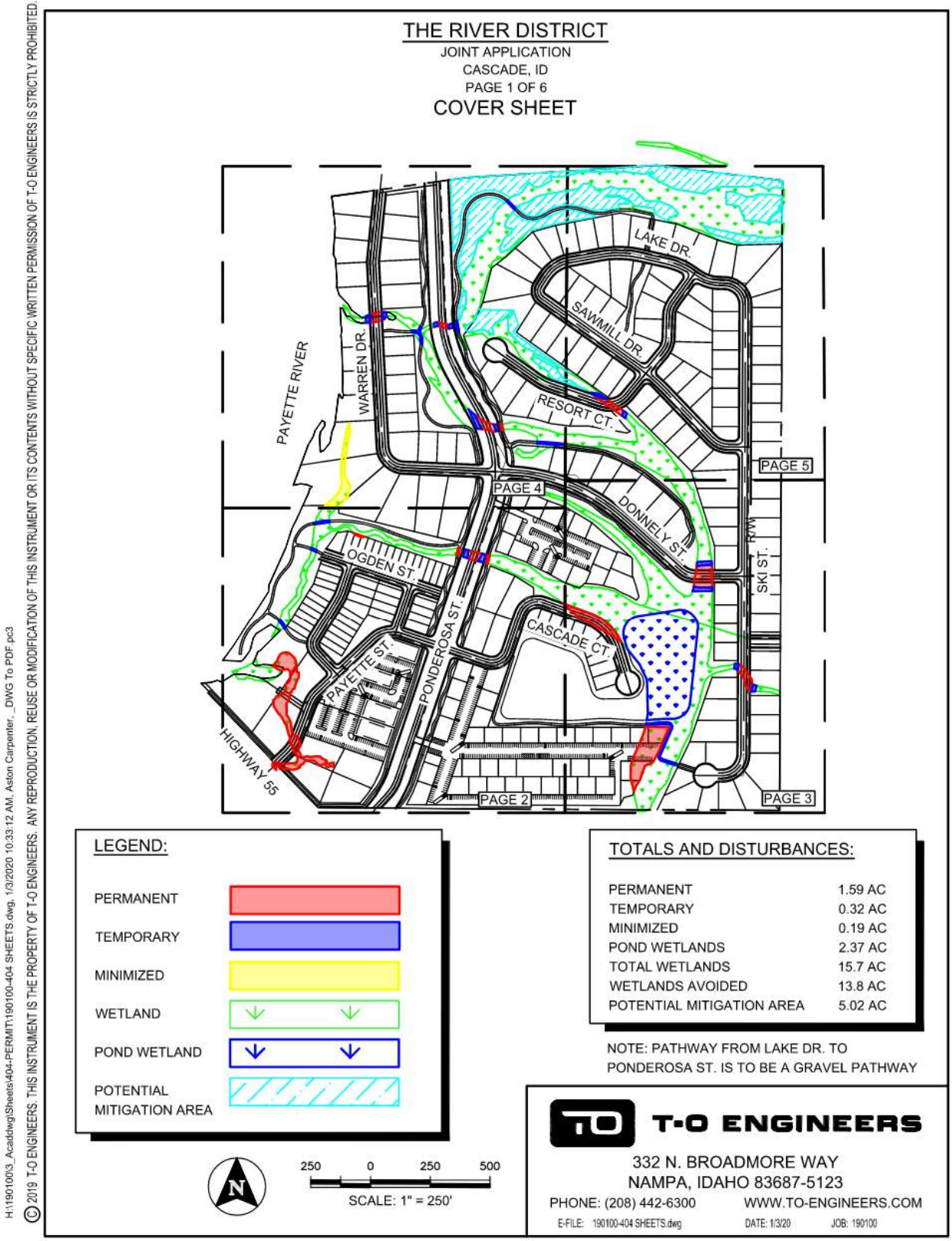
Toothman-Orton Engineering Company. 2007. Wetland Delineation Report, Southerly 140 acres of Davis Property, Valley County, Idaho. Boise, Idaho

USACE. 1987. Corps of Engineers Wetlands Delineation Manual, final report. U.S. Army Corps of Engineers, Research and Development Center, Vicksburg, Mississippi

USACE. 2010. Regional Supplement to the Corp of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U.S. Army Corps of Engineers, Research and Development Center, Vicksburg, Mississippi

USFS. 2017. Monarch Butterfly habitat needs. U.S. Forest Service website. Accessed August 8, 2018 at https://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/habitat/

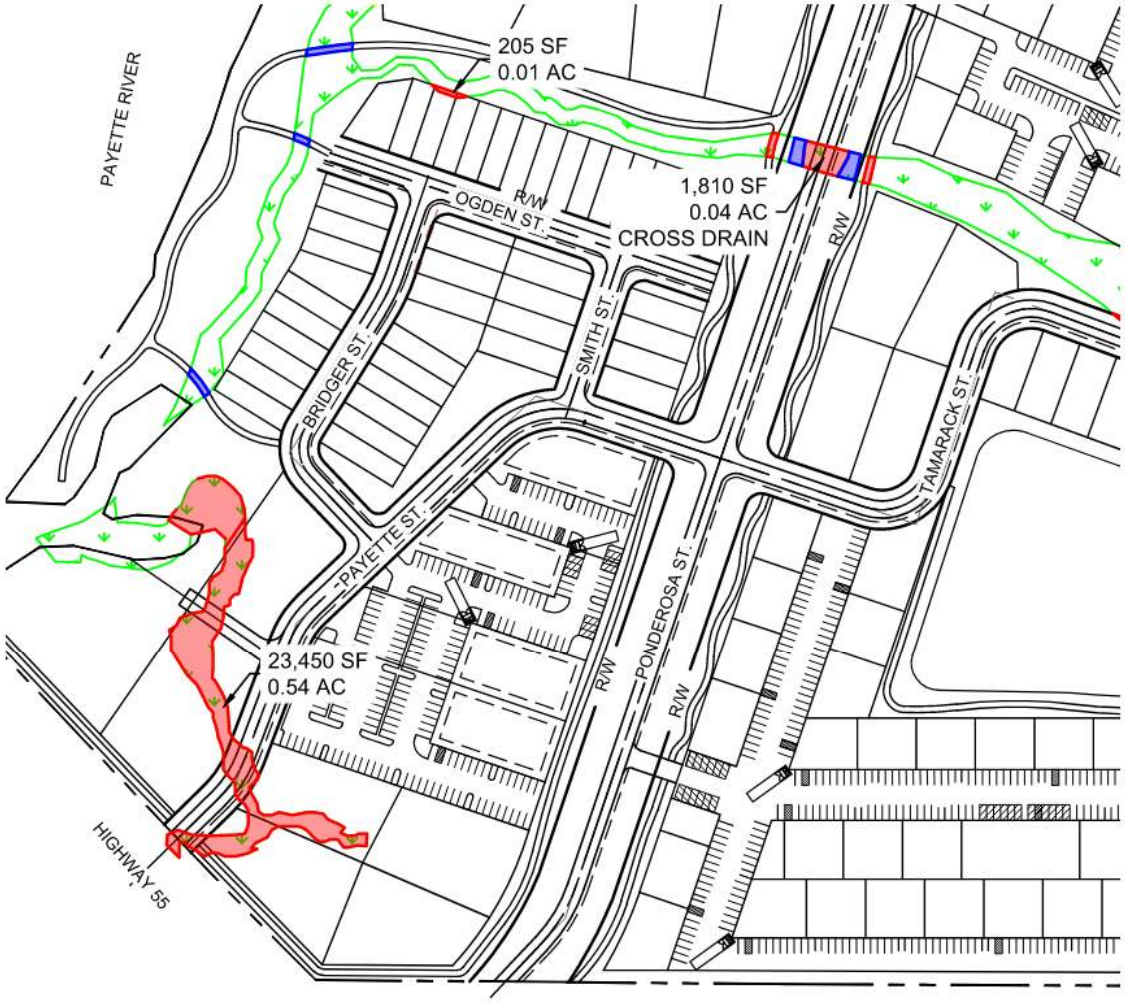
Appendix A: Proposed Final Plat and Wetland Overlay



THE RIVER DISTRICT

JOINT APPLICATION
CASCADE, ID
PAGE 2 OF 6

PAGE 2 (SW CORNER)



TOTALS AND DISTURBANCES:	
PERMANENT	0.60 AC
TEMPORARY	0.05 AC

N

100 0 100 200

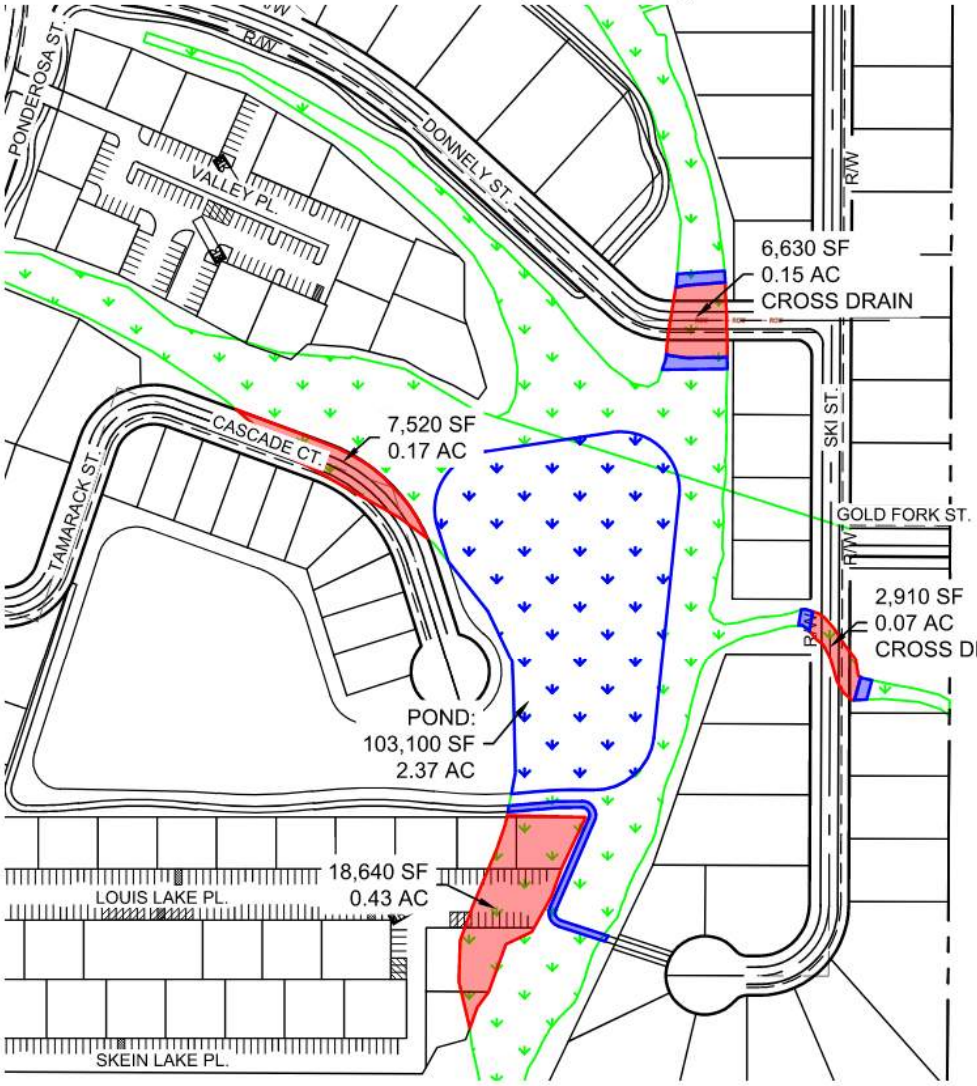
SCALE: 1" = 200'

T-O ENGINEERS
332 N. BROADMORE WAY
NAMPA, IDAHO 83687-5123
PHONE: (208) 442-6300 WWW.TO-ENGINEERS.COM
E-FILE: 190100-404 SHEETS.dwg DATE: 1/3/20 JOB: 190100

THE RIVER DISTRICT

JOINT APPLICATION
CASCADE, ID
PAGE 3 OF 6

PAGE 3 (SE CORNER)



TOTALS AND DISTURBANCES:	
PERMANENT	0.82 AC
TEMPORARY	0.13 AC
POND	2.37 AC

N

100 0 100 200

SCALE: 1" = 200'

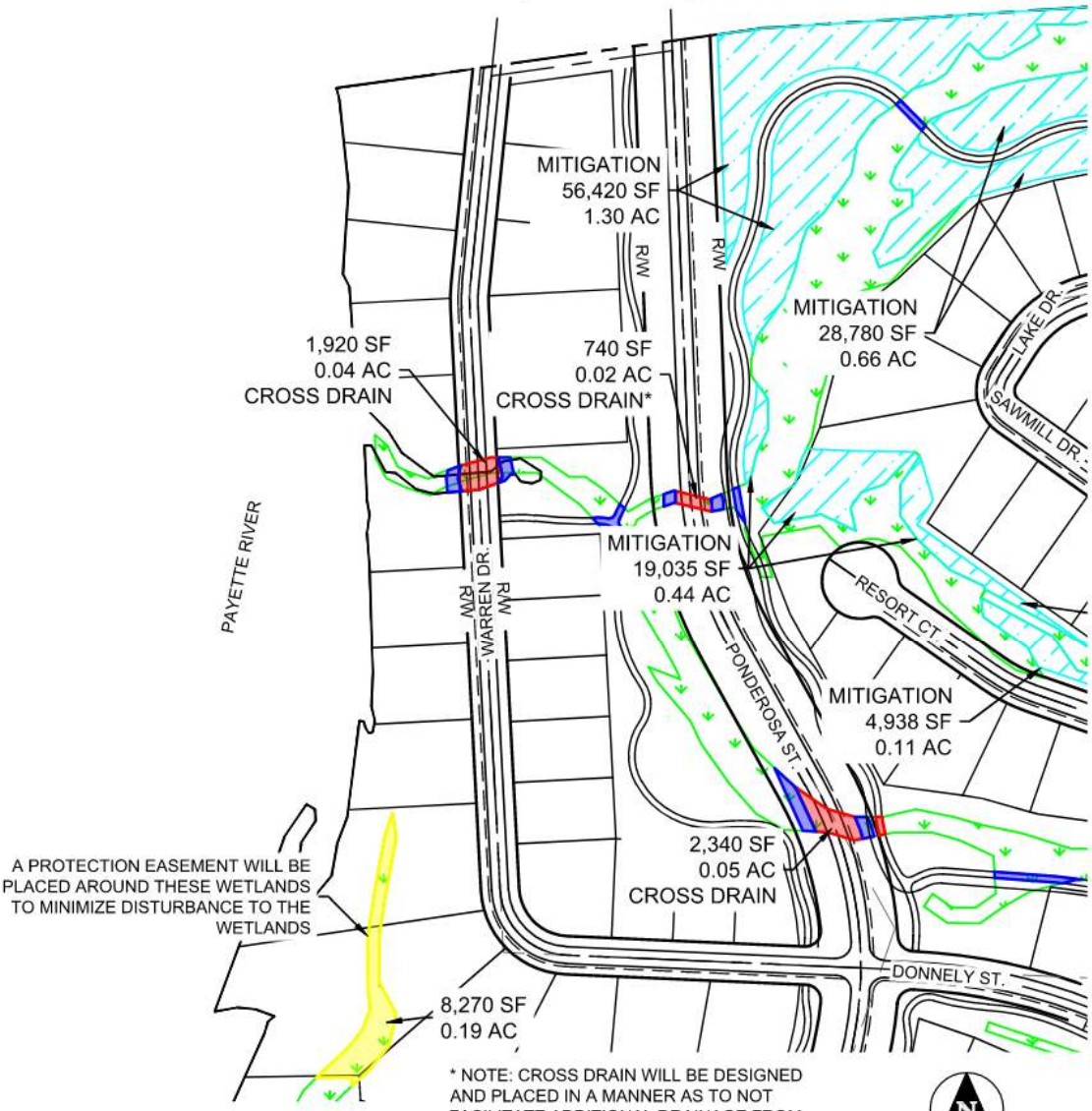
T-O ENGINEERS
332 N. BROADMORE WAY
NAMPA, IDAHO 83687-5123
PHONE: (208) 442-6300 WWW.TO-ENGINEERS.COM

E-FILE: 190100-404 SHEETS.dwg DATE: 1/3/20 JOB: 190100

THE RIVER DISTRICT

JOINT APPLICATION
CASCADE, ID
PAGE 4 OF 6

PAGE 4 (NW CORNER)



* NOTE: CROSS DRAIN WILL BE DESIGNED AND PLACED IN A MANNER AS TO NOT FACILITATE ADDITIONAL DRAINAGE FROM THE WETLAND MITIGATION AREA. SURFACE WATER RETENTION/PONDING WITHIN THE MITIGATION AREA IS EXPECTED.

N

100 0 100 200

SCALE: 1" = 200'

TOTALS AND DISTURBANCES:

PERMANENT	0.12 AC
TEMPORARY	0.12 AC
MINIMIZED	0.19 AC
POTENTIAL MITIGATION AREA	2.51 AC

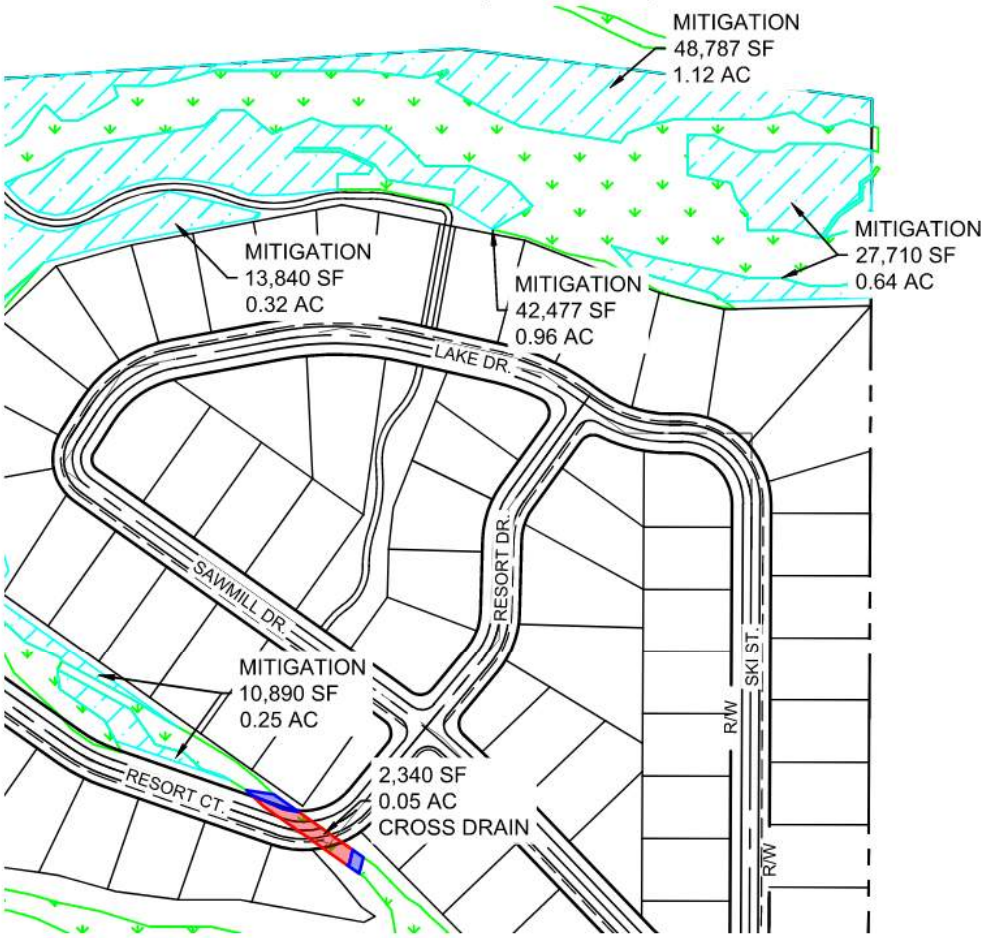
T-O ENGINEERS
2471 S. TITANIUM PLACE
MERIDIAN, IDAHO 83642-6703
PHONE: (208) 323-2288 WWW.TO-ENGINEERS.COM

E-FILE: 190100-404 SHEETS.dwg DATE: 1/6/20 JOB: 190100

THE RIVER DISTRICT

JOINT APPLICATION
CASCADE, ID
PAGE 5 OF 6

PAGE 5 (NE CORNER)



TOTALS AND DISTURBANCES:	
PERMANENT	0.05 AC
TEMPORARY	0.02 AC
POTENTIAL MITIGATION AREA	3.29 AC

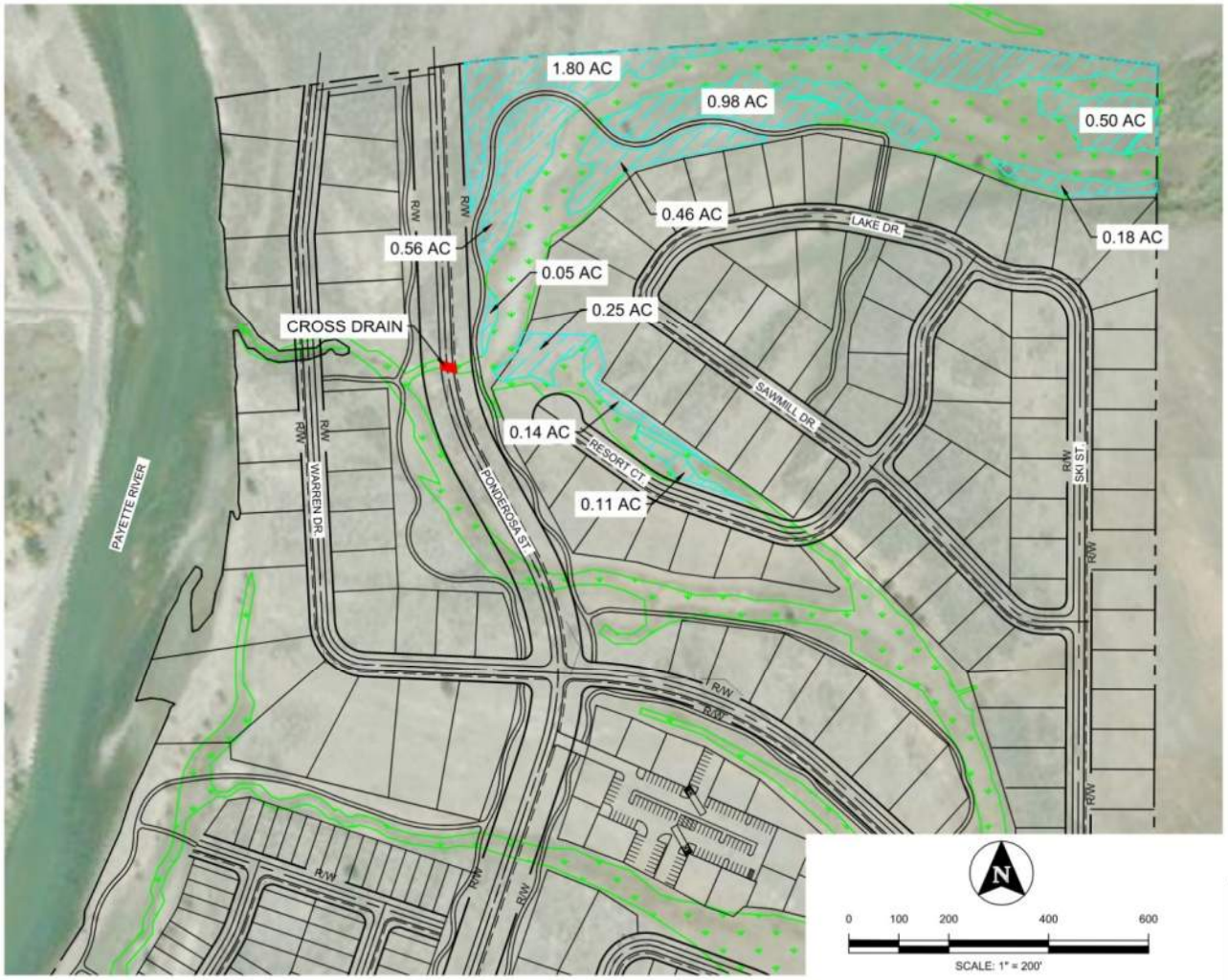
N

100 0 100 200

SCALE: 1" = 200'

T-O ENGINEERS
332 N. BROADMORE WAY
NAMPA, IDAHO 83687-5123
PHONE: (208) 442-6300 WWW.TO-ENGINEERS.COM

E-FILE: 190100-404 SHEETS.dwg DATE: 1/3/20 JOB: 190100



THE RIVER DISTRICT

JOINT APPLICATION

CASCADE, ID

PAGE 6 OF 6

PAGE 6 (MITIGATION AREAS)

NOTES:

POTENTIAL MITIGATION AREA 5.02 AC

- CROSS DRAIN WILL BE DESIGNED AND PLACED IN A MANNER AS TO NOT FACILITATE ADDITIONAL DRAINAGE FROM THE WETLAND MITIGATION AREA. SURFACE WATER RETENTION/PONDING WITHIN THE MITIGATION AREA IS EXPECTED.

LEGEND:

WETLAND

POTENTIAL MITIGATION AREA

T-O ENGINEERS
332 N. BROADMORE WAY
NAMPA, IDAHO 83687
PHONE: (208) 442-6300 WWW.TO-ENGINEERS.COM

E-FILE: 19010-404 SHEETS.dwg DATE: 1/3/20 JOB: —

T-O ENGINEERS

Appendix B: NRCS Web Soil Survey

T-O ENGINEERS

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Blackwell variant silt loam	23.8	16.5%
27	Jurvannah sandy loam	94.1	65.4%
47	Roseberry coarse sandy loam	24.4	17.0%
59	Water	1.4	1.0%
Totals for Area of Interest		**143.7**	**100.0%**

Appendix C. Montana Wetland Assessment Forms – Existing Wetlands

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Cascade River Ranch **2. MDT Project #:** N/A **Control #:** N/A

3. Evaluation Date: Mo. 06 Day 12 Yr. 2019 **4. Evaluator(s):** Tamsen Binggeli **5. Wetlands/Site #(s):** Assessment Area A

6. Wetland Location(s): i. Legal: T 14 (N) or S; R 4 (E) or W; S 31 ; T ____ N or S; R ____ E or W; S ____ ;
ii. Approx. Stationing or Mileposts: State Highway 55, Milepost 113

iii. Watershed: 17050123 **Watershed Name, County:** North Fork Payette Watershed, Valley County, Idaho

7. a. Evaluating Agency: USACE ;
b. Purpose of Evaluation:
1. ____ Wetlands potentially affected by MDT project
2. ____ Mitigation wetlands; pre-construction
3. ____ Mitigation wetlands; post-construction
4. X Other Wetlands potentially affected by project

8. Wetland size: (total acres) ____ (visually estimated)
0.76 (measured, e.g. by GPS [if applies])

9. Assessment area (AA): (acres, see instructions on determining AA) ____ (visually estimated)
0.76 (measured, e.g. by GPS [if applies])

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Riverine	EM		PP	70%
Riverine	UB		PP	30%

Abbreviations: (*see manual for definitions*)

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)
(Circle one) Unknown Rare (Common) Abundant

12. General condition of AA:
i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is ≤15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is ≤30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤15%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is ≤30%.	moderate disturbance	moderate disturbance	(high disturbance)
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): The AA is grazed and has been subject to minor fill placement and hydrological alteration over the years. The AA is in close proximity to State Highway 55.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species:
The wetland has a high percentage of reed canarygrass that is a nonnative, invasive species.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The surrounding land use is shrub habitat subject to grazing; hummocking is apparent throughout the project area.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management preventing (passive) existence of additional vegetated classes?		Modified Rating
≥3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	(M)	←NO	YES→	L
1 class, monoculture (1 species comprises ≥90% of total cover)	L	NA	NA	NA

Comments: Wetland vegetation contains a mix of reed canarygrass, Nebraska sedge, Baltic rush, and other wetland species.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D S	
Secondary habitat (**list species**)	D S	
Incidental habitat (**list species**)	D S	
No usable habitat	(S)	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8M	.7M	.3L	.1L	(0L)

Sources for documented use (e.g. observations, records, etc):

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D S	
Secondary habitat (**list species**)	D S	
Incidental habitat (**list species**)	D (S)	Western toad (Bufo boreas) and Northern goshawk (Accipiter gentillis)
No usable habitat	S	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	(.1L)	0L

Sources for documented use (e.g. observations, records, etc.): Incidental use suspected based on documented species occurrence (Idaho Department of Fish and Game database) within the general vicinity.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- __ observations of abundant wildlife #s or high species diversity (during any period)
- __ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- __ presence of extremely limiting habitat features not available in the surrounding area
- __ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- __ few or no wildlife observations during peak use periods
- __ little to no wildlife sign
- __ sparse adjacent upland food sources
- __ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- __ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- X common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- X adequate adjacent upland food sources
- __ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								(Moderate)								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				(Uneven)				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	(P/P)	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	(M)	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	(Moderate)	Low
Substantial	1E	.9H	.8H	.7M
(Moderate)	.9H	.7M	(.5M)	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: Game trails are present along the drainage channel, scat and tracks were identified.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then circle **NA** here and proceed to 14E.)

Type of Fishery: Cold Water (**CW**) X Warm Water (**WW**) ____ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	(S)	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	(.5M)	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA: Idaho Department of Fish and Game, observed species list, North Fork Payette River

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)

*a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity **or** is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, **or** do aquatic nuisance plant or animal species (see **Appendix E**) occur in fish habitat?* Y (N) *If yes, reduce score in **i** above by 0.1:* ____

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? Y (N) *If yes, add 0.1 to the adjusted score in **i** or **iia** above:* ____

iii. Final Score and Rating: 0.5M **Comments:** Aerial imagery shows this channel to be inundated year-round, likely providing refuge for fish, especially during high flow events.

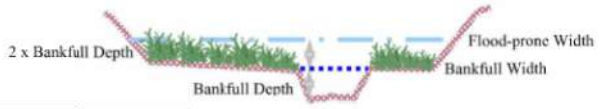
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle **NA** here and proceed to 14F.)

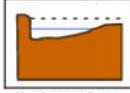
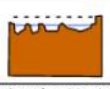
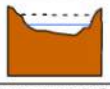
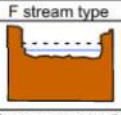
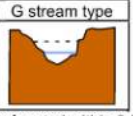
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	(<25%)	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	(.4M)	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width)
Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

10 feet / 5 feet = 2.0
Flood-prone width / *Bankfull width* = *Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? Y (N) **Comments:** ER varies considerably along the channel's length; some areas are more entrenched than others.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, circle **NA** here and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	(P/P)	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	(.4M)	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: The wetland vegetation component for this assessment area is less than 1 acre in size.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, circle **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	≥ 70%		< 70%		≥ 70%		(< 70%)	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	(Yes)	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	(.2L)	.1L

Comments: High traffic area for cattle - lots of hummocking, sedimentation and algae growth. Some areas of the bank are un-vegetated.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, circle **NA** here and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	(Permanent / Perennial)	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	(.7M)	.6M	.5M
< 35%	.3L	.2L	.1L

Comments: Reed canarygrass, Nebraska sedge, and Baltic rush all have a high stability ratings of 9. However, a large portion of the bank is void of vegetation, particularly along the western bank. Soils are also sandy loam, which is erosive. Thus, a moderate score is assigned.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	(M)	L
E/H	H	H	M
(M)	H	(M)	M
L	M	M	L
N/A	H	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						(Vegetated component <1 acre)					
B	High		Moderate		Low		High		Moderate		Low		High		(Moderate)		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	(Yes)	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	(.6M)	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/ A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).
a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? (Y) **N** *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* 0.7M

iv. Final Score and Rating: 0.7M **Comments:** While the Assessment Area is in close proximity to Highway 55, over 75% is surrounded by native shrub habitat within a 50 foot-wide buffer area.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators
____ The AA is a slope wetland
____ Springs or seeps are known or observed
____ Vegetation growing during dormant season/drought
____ Wetland occurs at the toe of a natural slope
____ Seeps are present at the wetland edge
X AA permanently flooded during drought periods
____ Wetland contains an outlet, but no inlet
____ Shallow water table and the site is saturated to the surface
____ Other:_____

ii. Recharge Indicators
____ Permeable substrate present without underlying impeding layer
____ Wetland contains inlet but no outlet
____ Stream is a known 'losing' stream; discharge volume decreases
____ Other:_____

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

Criteria	Duration of saturation at AA Wetlands ***FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM***			
	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: The level of groundwater interaction is unclear within this wetland area.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: Wetlands along side channels or back channels along the North Fork Payette River are common but not abundant.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **Y** (**N**) (if 'Yes' continue with the evaluation; if 'No' then circle **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ___ Educational/scientific study; ___ Consumptive rec.; ___ Non-consumptive rec.; ___Other

iii. Rating (use the matrix below to arrive at [circle] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

General Site Notes

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Assessment Area A

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0	
B. MT Natural Heritage Program Species Habitat	L	0.1	1	0.08	
C. General Wildlife Habitat	M	0.5	1	0.38	*
D. General Fish Habitat	M	0.5	0.7	0.38	*
E. Flood Attenuation	M	0.4	0.5	0.3	
F. Short and Long Term Surface Water Storage	M	0.4	0.4	0.3	
G. Sediment/Nutrient/Toxicant Removal	L	0.2	0.5	0.15	
H. Sediment/Shoreline Stabilization	M	0.7	1	0.53	*
I. Production Export/Food Chain Support	M	0.7	1	0.53	*
J. Groundwater Discharge/Recharge	N/A				
K. Uniqueness	L	0.2	1	0.15	
L. Recreation/Education Potential (bonus points)	N/A		NA		
Totals:		3.7	8.1	2.8	
Percent of Possible Score			46 %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
___ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
___ Score of 1 functional point for Uniqueness; **or**
___ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
___ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
___ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
___ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
___ Score of .9 or 1 functional point for General Fish Habitat; **or**
___ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
___ Score of .9 functional point for Uniqueness; **or**
___ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
___ "Low" rating for Uniqueness; **and**
___ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
___ Percent of possible score < 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: (circle appropriate category based on the criteria outlined above) I II (III) IV

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Cascade River Ranch **2. MDT Project #:** N/A **Control #:** N/A

3. Evaluation Date: Mo. 06 Day 12 Yr. 2019 **4. Evaluator(s):** Tamsen Binggeli **5 . Wetlands/Site #(s):** Assessment Area B

6. Wetland Location(s): i. Legal: T 14 (N) or S; R 4 (E) or W; S 31 ; T ____ N or S; R ____ E or W; S ____ ;
ii. Approx. Stationing or Mileposts: State Highway 55, Milepost 113

iii. Watershed: 17050123 __ __ __ __ **Watershed Name, County:** North Fork Payette Watershed, Valley County, Idaho

7. a. Evaluating Agency: USACE ;
b. Purpose of Evaluation:
1. ____ Wetlands potentially affected by MDT project
2. ____ Mitigation wetlands; pre-construction
3. ____ Mitigation wetlands; post-construction
4. X Other Wetlands potentially affected by project

8. Wetland size: (total acres) ____ (visually estimated)
14.96 (measured, e.g. by GPS [if applies])

9. Assessment area (AA): (acres, see instructions on determining AA) ____ (visually estimated)
14.96 (measured, e.g. by GPS [if applies])

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Slope	EM		SI	100%

Abbreviations: (*see manual for definitions*)

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)
(Circle one) Unknown Rare Common (Abundant)

12. General condition of AA:
i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is ≤15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is ≤30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤15%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is ≤30%.	moderate disturbance	(moderate disturbance)	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): The AA and surrounding area have been subject to grazing for a number of years.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species:
Some non-native plants are present (i.e. Phalaris arundinacea) but most are native.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The surrounding land use is shrub habitat subject to grazing.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management preventing (passive) existence of additional vegetated classes?		Modified Rating
≥3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	(M)	←NO	YES→	L
1 class, monoculture (1 species comprises ≥90% of total cover)	L	NA	NA	NA

Comments: Large portions of the AA contain a monoculture of either Nebraska sedge or Baltic rush. Other, smaller areas contain a mix of wetland herbaceous species. A moderate rating is applied to account for these more diverse areas.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D S	
Secondary habitat (**list species**)	D S	
Incidental habitat (**list species**)	D S	
No usable habitat	(S)	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8M	.7M	.3L	.1L	(0L)

Sources for documented use (e.g. observations, records, etc):

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D S	
Secondary habitat (**list species**)	D S	
Incidental habitat (**list species**)	D (S)	Western toad (Bufo boreas) and Northern goshawk (Accipiter gentillis)
No usable habitat	S	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	(.1L)	0L

Sources for documented use (e.g. observations, records, etc.): Incidental use suspected based on documented species occurrence (Idaho Department of Fish and Game database) within the general vicinity.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- __ observations of abundant wildlife #s or high species diversity (during any period)
- __ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- __ presence of extremely limiting habitat features not available in the surrounding area
- __ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- __ few or no wildlife observations during peak use periods
- __ little to no wildlife sign
- __ sparse adjacent upland food sources
- __ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- __ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- X common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- X adequate adjacent upland food sources
- __ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								(Moderate)								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	(S/I)	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	(M)	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	(Moderate)	Low
Substantial	1E	.9H	.8H	.7M
(Moderate)	.9H	.7M	(.5M)	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: Wetland vegetation often grows as a monoculture. However, the size of the wetland area (>5 acres) and ample evidence of wildlife use result in a moderate rating for wildlife habitat.

2

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then circle NA here and proceed to 14E.)

Type of Fishery: Cold Water (**CW**)____ Warm Water (**WW**)____ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA:

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity ***or*** *is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support,* ***or*** *do aquatic nuisance plant or animal species (see* ***Appendix E****) occur in fish habitat?* **Y N** *If yes, reduce score in* ***i*** *above by 0.1:*_____

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? **Y N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*_____

iii. Final Score and Rating: _____ **Comments:**

14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle NA here and proceed to 14F.)

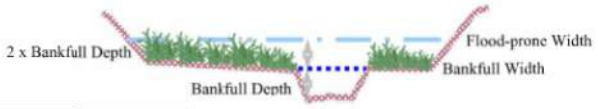
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

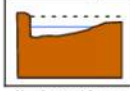
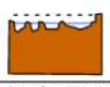
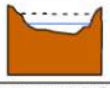
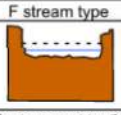
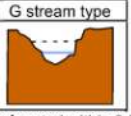
Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width)
Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

_____ / _____ = _____

Flood-prone width *Bankfull width* *Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? **Y N Comments:**

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, circle **NA** here and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Aerial imagery indicate the AA is flooded or ponded at least 5 years out of every 10 years.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, circle **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	≥ 70%		< 70%		≥ 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: Some areas contain dense vegetation cover with signs of recent inundation, including surface soil cracks, sediment and debris deposits. However,some high flow areas connected to the North Fork Payette River are highly eroded and have minimal vegetation cover.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, circle (NA) here and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments:

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	(M)	L
E/H	H	H	M
M	H	M	M
L	M	M	L
(N/A)	H	(M)	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component <1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	(Yes)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	(.7M)	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/ A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).
a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? (Y) **N** *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* 0.8H

iv. Final Score and Rating: 0.8H **Comments:** This wetland is surrounded by sagebrush habitat.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators
- X The AA is a slope wetland
- X Springs or seeps are known or observed
- ____ Vegetation growing during dormant season/drought
- X Wetland occurs at the toe of a natural slope
- ____ Seeps are present at the wetland edge
- ____ AA permanently flooded during drought periods
- ____ Wetland contains an outlet, but no inlet
- ____ Shallow water table and the site is saturated to the surface
- ____ Other:_____

ii. Recharge Indicators
- ____ Permeable substrate present without underlying impeding layer
- ____ Wetland contains inlet but no outlet
- ____ Stream is a known 'losing' stream; discharge volume decreases
- ____ Other:_____

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

Criteria	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: Assessment Area B does contain an outlet to the North Fork Payette River, though restricted to periods of high flows; groundwater discharge and recharge is likely.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: Other slope wetlands similar to Assessment Area B are abundant within the watershed.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **Y** (**N**) (if 'Yes' continue with the evaluation; if 'No' then circle **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ___ Educational/scientific study; ___ Consumptive rec.; ___ Non-consumptive rec.; ___Other

iii. Rating (use the matrix below to arrive at [circle] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

General Site Notes

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Assessment Area B

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0	
B. MT Natural Heritage Program Species Habitat	L	0.1	1	1.50	
C. General Wildlife Habitat	M	0.5	1	7.48	
D. General Fish Habitat	N/A				
E. Flood Attenuation	N/A				
F. Short and Long Term Surface Water Storage	M	0.6	0.6	8.98	*
G. Sediment/Nutrient/Toxicant Removal	M	0.6	1	8.98	*
H. Sediment/Shoreline Stabilization	N/A				
I. Production Export/Food Chain Support	H	0.8	1	11.97	*
J. Groundwater Discharge/Recharge	M	0.7	0.7	10.47	*
K. Uniqueness	L	0.2	1	2.99	
L. Recreation/Education Potential (bonus points)	N/A		NA		
Totals:		3.5	7.3	52.37	
Percent of Possible Score			48 %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
___ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
___ Score of 1 functional point for Uniqueness; **or**
___ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
___ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
___ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
___ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
___ Score of .9 or 1 functional point for General Fish Habitat; **or**
___ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
___ Score of .9 functional point for Uniqueness; **or**
___ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
___ "Low" rating for Uniqueness; **and**
___ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
___ Percent of possible score < 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: (circle appropriate category based on the criteria outlined above) I II (III) IV

6

Appendix D. Montana Wetland Assessment Form – Mitigation Sites

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Cascade River Ranch **2. MDT Project #:** N/A **Control #:** N/A

3. Evaluation Date: Mo. 07 Day 30 Yr. 2019 **4. Evaluator(s):** Tamsen Binggeli **5. Wetlands/Site #(s):** Mitigation Sites

6. Wetland Location(s): i. Legal: T 14 (N) or S; R 4 (E) or W; S 31 ; T ____ N or S; R ____ E or W; S ____ ;
ii. Approx. Stationing or Mileposts: State Highway 55, Milepost 113

iii. Watershed: 17050123 **Watershed Name, County:** North Fork Payette Watershed, Valley County, Idaho

7. a. Evaluating Agency: USACE ;
b. Purpose of Evaluation:
1. ____ Wetlands potentially affected by MDT project
2. ____ Mitigation wetlands; pre-construction
3. X Mitigation wetlands; post-construction
4. ____ Other Wetlands potentially affected by project

8. Wetland size: (total acres) _____ (visually estimated)
_____ (measured, e.g. by GPS [if applies])

9. Assessment area (AA): (acres, see instructions on determining AA) _____ (visually estimated)
_____ (measured, e.g. by GPS [if applies])

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Slope	PSS		SI	100%

Abbreviations: (*see manual for definitions*)

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

(Circle one) Unknown Rare (Common) Abundant

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) lists)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is ≤15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is ≤30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤15%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is ≤30%.	moderate disturbance	(moderate disturbance)	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is >30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): Approximately 50% of the mitigation site is adjacent to residential development (to the south and east) and the other 50% is natural sagebrush habitat subject to grazing (to the north and west) .

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species:
Some existing non-native plants are present (i.e. Phalaris arundinacea) but most are native.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: See comments above.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management preventing (passive) existence of additional vegetated classes?		Modified Rating
≥3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	(M)	NA	NA	NA
1 class, but not a monoculture	M	←NO	YES→	L
1 class, monoculture (1 species comprises ≥90% of total cover)	L	NA	NA	NA

Comments: The compensatory mitigation will establish PSS with PEM inclusions by excavating the soil surface down-gradient towards existing, adjacent wetlands.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D S	
Secondary habitat (**list species**)	D S	
Incidental habitat (**list species**)	D S	
No usable habitat	(S)	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8M	.7M	.3L	.1L	(0L)

Sources for documented use (e.g. observations, records, etc):

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D S	
Secondary habitat (**list species**)	D S	
Incidental habitat (**list species**)	D (S)	Western toad (Bufo boreas) and Northern goshawk (Accipiter gentillis)
No usable habitat	S	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: *Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
S2 and S3 Species: *Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	(.1L)	0L

Sources for documented use (e.g. observations, records, etc.): Incidental use suspected based on documented species occurrence (Idaho Department of Fish and Game database) within the general vicinity.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- __ observations of abundant wildlife #s or high species diversity (during any period)
- __ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- X presence of extremely limiting habitat features not available in the surrounding area
- __ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- __ few or no wildlife observations during peak use periods
- __ little to no wildlife sign
- __ sparse adjacent upland food sources
- __ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- __ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- __ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- __ adequate adjacent upland food sources
- __ interviews with local biologists with knowledge of the AA

Note: The mitigation site will likely serve as a new wildlife corridor between adjacent upland habitat and the North Fork Payette River. The majority of existing wetland and drainage areas within the overall development will also be retained, providing additional habitat connectivity.

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								(Moderate)								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	(S/I)	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	(H)	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	(High)	Moderate	Low
(**Substantial**)	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: The site is located at the northern edge of the residential development. It is directly adjacent to upland areas and will likely serve as a wildlife corridor to the North Fork Payette River.

2

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then circle NA here and proceed to 14E.)

Type of Fishery: Cold Water (**CW**)____ Warm Water (**WW**)____ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA:

ii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity ***or*** *is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support,* ***or*** *do aquatic nuisance plant or animal species (see* ***Appendix E****) occur in fish habitat?* **Y N** *If yes, reduce score in* ***i*** *above by 0.1:*_____

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? **Y N** *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia*** *above:*_____

iii. Final Score and Rating: _____ **Comments:**

14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle NA here and proceed to 14F.)

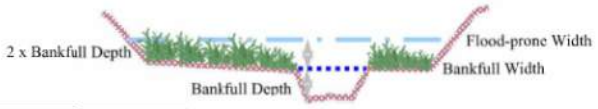
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

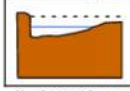
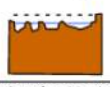
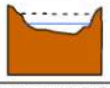
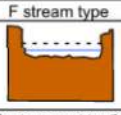
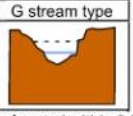
Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width)
Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

_____ / _____ = _____

Flood-prone width *Bankfull width* *Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? **Y N Comments:**

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, circle **NA** here and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Aerial imagery indicate the wetland mitigation site will be flooded or ponded at least 5 years out of every 10 years.

3

T-O ENGINEERS

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, circle **NA** here and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	≥ 70%		< 70%		≥ 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: The wetlands will contain dense cover of shrub vegetation. A buffer is provided between the mitigation sites and the surrounding residential neighborhood. Surface water inputs into the mitigation sites will flow to the North Fork Payette River during high flow periods.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks of a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, circle (NA) here and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of ≥6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments:

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	(E/H)	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
(N/A)	(H)	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						(Vegetated component 1-5 acres)						Vegetated component <1 acre					
B	High		Moderate		Low		(High)		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	(Yes)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	(.8H)	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/ A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (**NOTE:** Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB)**: Area with ≥ 30% plant cover, ≤ 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).
a) Is there an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference? **Y** (**N**) *If yes, add 0.1 to the score in **ii** above and adjust rating accordingly:* _____

iv. Final Score and Rating: 0.8M **Comments:** The site is adjacent to residential development along 50% of its circumference, in which the buffer is less than 50 feet wide.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators
- X The AA is a slope wetland
- X Springs or seeps are known or observed
- ____ Vegetation growing during dormant season/drought
- X Wetland occurs at the toe of a natural slope
- ____ Seeps are present at the wetland edge
- ____ AA permanently flooded during drought periods
- ____ Wetland contains an outlet, but no inlet
- ____ Shallow water table and the site is saturated to the surface
- ____ Other: _____

ii. Recharge Indicators
- ____ Permeable substrate present without underlying impeding layer
- ____ Wetland contains inlet but no outlet
- ____ Stream is a known 'losing' stream; discharge volume decreases
- ____ Other: _____

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

Criteria	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: The wetland mitigation sites contain an outlet to the North Fork Payette River.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: Slope wetlands are abundant within the watershed but contain primarily PEM wetlands, rather than PSS or PFO wetlands.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **Y** (**N**) (if 'Yes' continue with the evaluation; if 'No' then circle **NA** here and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ___ Educational/scientific study; ___ Consumptive rec.; ___ Non-consumptive rec.; ___Other

iii. Rating (use the matrix below to arrive at [circle] the functional points and rating)

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments:

General Site Notes

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): The River District Wetland Mitigation Site

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1		
B. MT Natural Heritage Program Species Habitat	L	0.1	1		
C. General Wildlife Habitat	H	0.9	1		
D. General Fish Habitat	N/A				
E. Flood Attenuation	N/A				
F. Short and Long Term Surface Water Storage	M	0.6	0.6		*
G. Sediment/Nutrient/Toxicant Removal	H	0.9	1		*
H. Sediment/Shoreline Stabilization	N/A				
I. Production Export/Food Chain Support	H	0.8	1		*
J. Groundwater Discharge/Recharge	M	0.7	0.7		*
K. Uniqueness	L	0.3	1		
L. Recreation/Education Potential (bonus points)	N/A		NA		
Totals:		4.3	7.3		
Percent of Possible Score			55 %		

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
___ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
___ Score of 1 functional point for Uniqueness; **or**
___ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
___ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
___ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
___ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
___ Score of .9 or 1 functional point for General Fish Habitat; **or**
___ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
___ Score of .9 functional point for Uniqueness; **or**
___ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
___ "Low" rating for Uniqueness; **and**
___ Vegetated wetland component < 1 acre (do not include upland vegetated buffer); **and**
___ Percent of possible score < 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: (circle appropriate category based on the criteria outlined above) I II (III) IV

6