

MITIGATION PLAN

Hyatt Wetlands Mitigation Bank

Boise, Idaho

Prepared for
United States Army Corps of Engineers

Prepared by
The Wetlands Group, LLC
July 24, 2012



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Eagle, ID 83616

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1 EXECUTIVE SUMMARY

This mitigation plan for the Hyatt Wetland Mitigation Bank (Bank) site will create 7.09 acres of wetlands. The Bank site will provide wetland mitigation credits for impacts to aquatic resources authorized by Nationwide, General, and Individual permits, including after the fact permits granted under Section 404 of the Clean Water Act. These wetland mitigation credits will be provided at a ratio of 1 acre of mitigation credit for 1 acre of impact. Ultimately, compensatory mitigation purchasing from the Bank will contribute positively toward achieving the Federal Wetland Program's "no net loss" goal. The approval of this mitigation plan will fall under the terms agreed to in The Wetlands Bank of Idaho Umbrella Banking Instrument dated January 30, 2009 and approved by the U.S. Army Corps of Engineers (Corps).

The Bank site is located in a Hydraulic Unit Code (HUC) that contains a high degree of historical wetland impacts. The Bank site will be able to successfully replace wetland acres to compensate for future permitted impacts to wetlands in the primary service area which includes HUC 17050114 (Lower Boise).

High-quality ecological characteristics of the created wetlands will provide excellent functions and services as compensatory mitigation. In addition, the location of the Bank and its proximity to other high-quality habitat and natural resources in the adjacent 24.8 acre wetland complex in the Hyatt Hidden Lakes Reserve will provide broadened ecological value. Created aquatic resources will be designed as self-sustaining, functional systems typical of the local and regional aquatic resource ecotypes.

During the site selection process, a high priority is placed on selecting the Bank site based on how it contributes to the existing Hyatt Hidden Lakes Reserve wetlands, wildlife habitat and surface water storage. This approach considers how the type and location of the compensatory mitigation project will provide desired aquatic resources in the watershed and will continue to function over time in a changing urban landscape.

The Wetlands Group, LLC the Bank sponsor has signed a Memorandum of Agreement (MOA) with the City of Boise that allows The Wetlands Group, LLC to establish a mitigation bank on this site.

2 INTRODUCTION

The Hyatt Wetlands Mitigation Bank will provide wetland credits to compensate for the loss of aquatic resources and wetland habitat. The bank will be located within 10 acres of land owned by the City of Boise in the Hyatt Hidden Lakes Reserve as shown in Figures 1 and 2. The project area includes 7.09 acres of uplands and includes 0.63 acre of PEM and PSS wetlands.

This mitigation plan will create a total of 7.09 acres of wetlands, including 1.39 acres of palustrine emergent (PEM) communities, 2.97 acres of palustrine scrub shrub (PSS) communities and 2.73 acres of palustrine forest overstory communities (PFO). The wetland will incorporate the existing 0.63 acre of wetlands on site into its design and connect to the existing 24.8 acre wetland complex in the Hyatt Hidden Lakes Reserve via two culverts. Existing wetlands in the Hyatt Hidden Lakes Reserve will not be impacted.

2.1 Site Location

The project area is within the Hyatt Hidden Lakes Reserve located northwest of the intersection of McMillian and Maple Grove Roads and is located adjacent to existing wetlands in the reserve (Figures 1 and 2). Project location information is as follows:

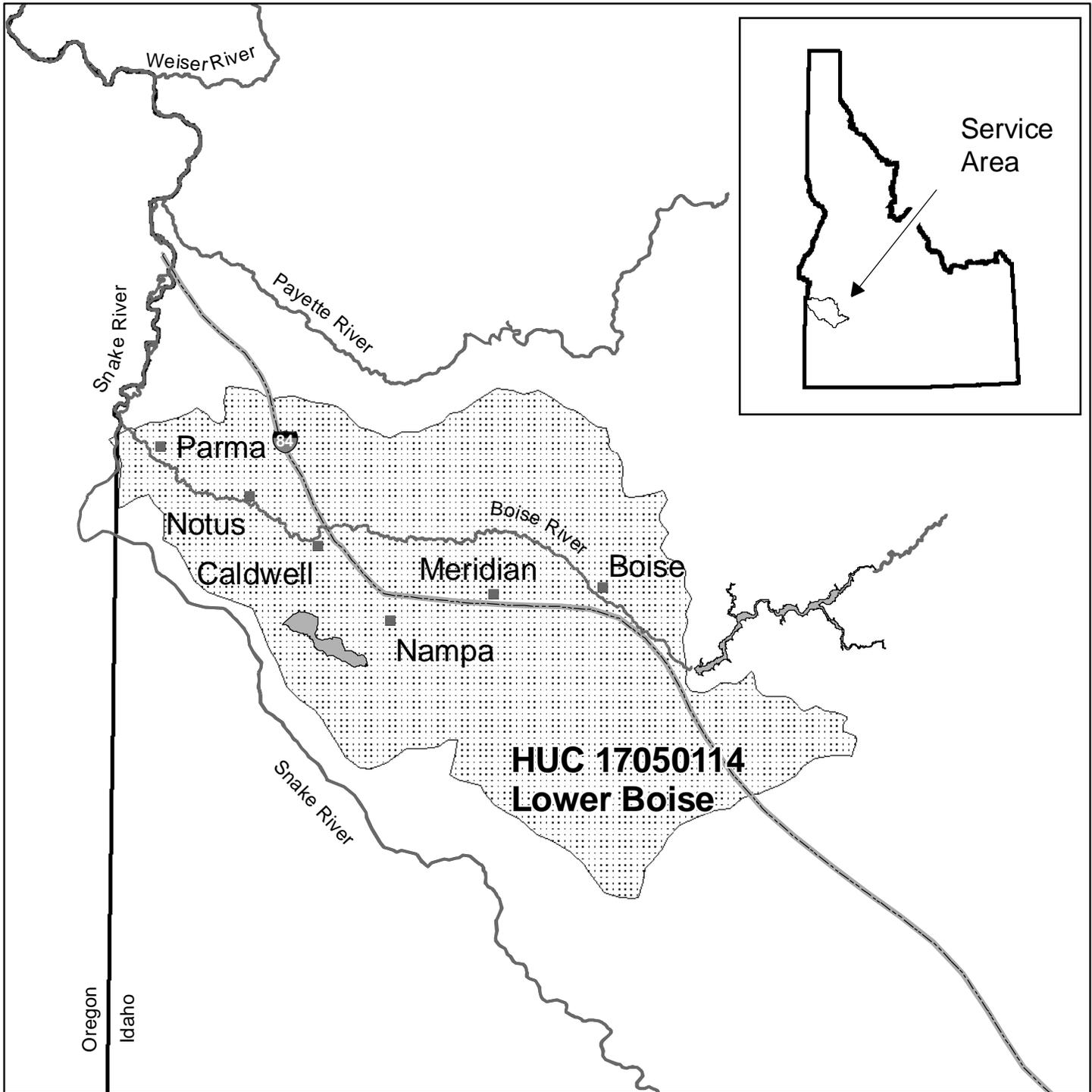
City of Boise, Ada, Idaho
T 4 N, R 1 E, Sections 26
Hydrologic unit: 17050114
Latitude/Longitude: 43.651520 N and 116.296960 W
UTM: 556695 E 4833409 N, Zone 11
Elevation: Approximately 2632 feet above sea level

3 MITIGATION GOALS AND OBJECTIVES

3.1 Total Wetland Acreage

The overall mitigation bank plan goal is to create a 7.09 acre wetland bank by converting upland areas into wetlands as shown in Figure 3. This will be accomplished by constructing (creating) PEM, PSS and PFO wetlands. The newly constructed wetland site will ultimately have a greater diversity of habitat and plant species than the existing upland communities which are dominated by weedy grasses and forbs. The new wetland areas will blend with the existing wetlands on and adjacent to the site to produce a biologically diverse site within the reserve.

Construction of the mitigation site will result in a gain of 1.39 acres of PEM, 2.97 acres of PSS and 2.73 acres of PFO wetlands. Based on the mitigation site size, its connection to the existing Hidden Lake Reserve, and the potential for vegetation communities, the created wetlands will have excellent functions and services to incorporate a sustainable and productive wetland system.



Legend

- City / Town
- ▬ Interstate Highway
- ▭ Primary Service Area
- ▭ State Boundary

0 3.5 7 Miles



The Wetlands Group, LLC.

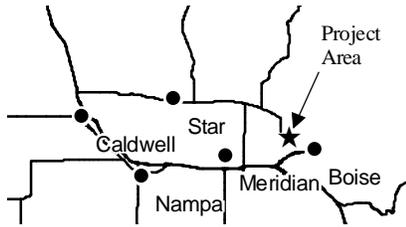
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Figure 1: Service Area Map

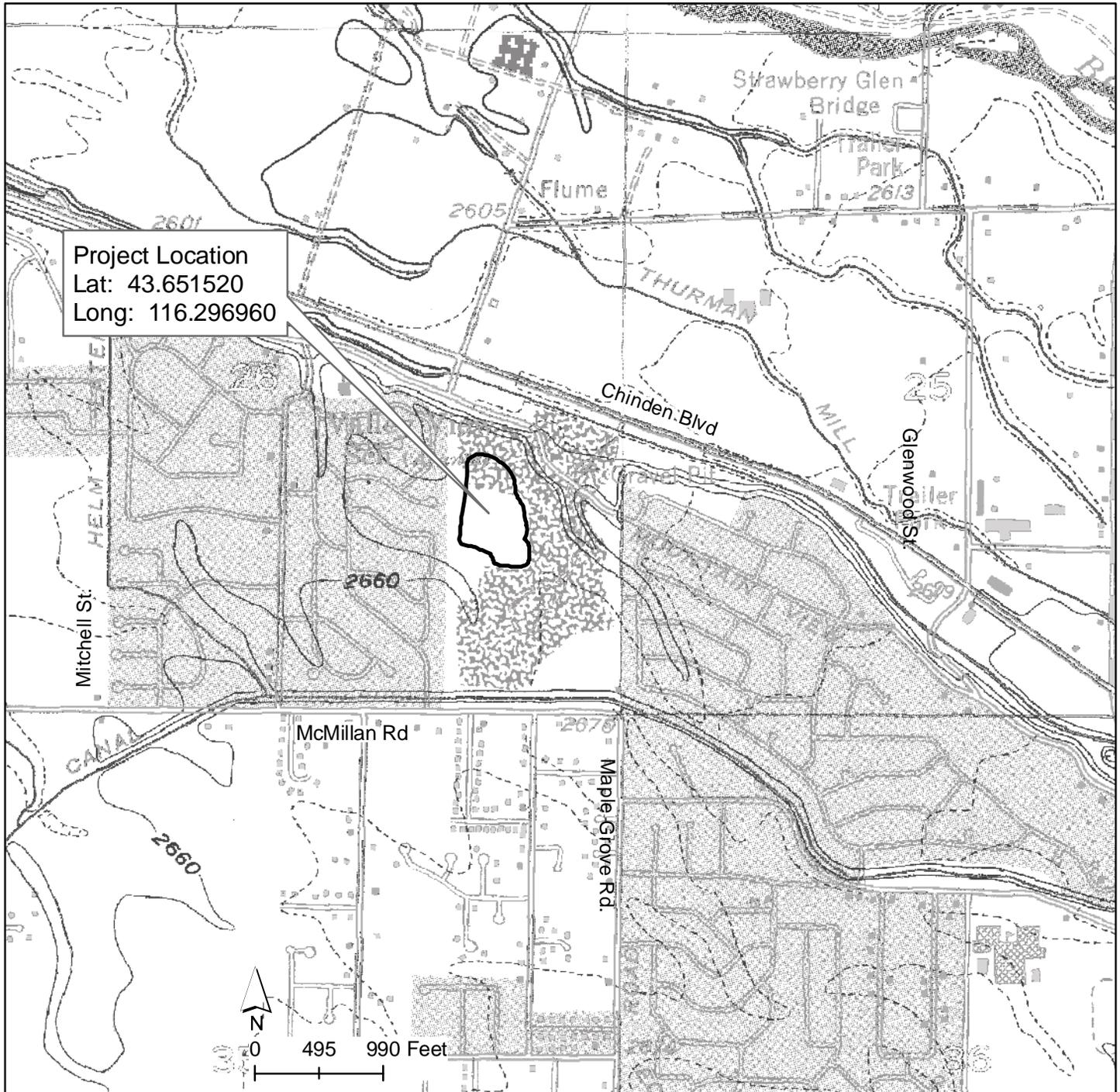
Hyatt Wetlands Banking

NNW No:
 Waterbody: Thurman Mill Drain
 River Mile:
 Location: Ada County, Idaho
 Applicant: The Wetlands Group, LLC
 Sheet 1 of 6
 Date: July 9, 2012

BOISE, ADA COUNTY, IDAHO,
LOCATED IN SECTION 26, T4N, R1E



U.S. Geological Survey
Eagle Quadrangle

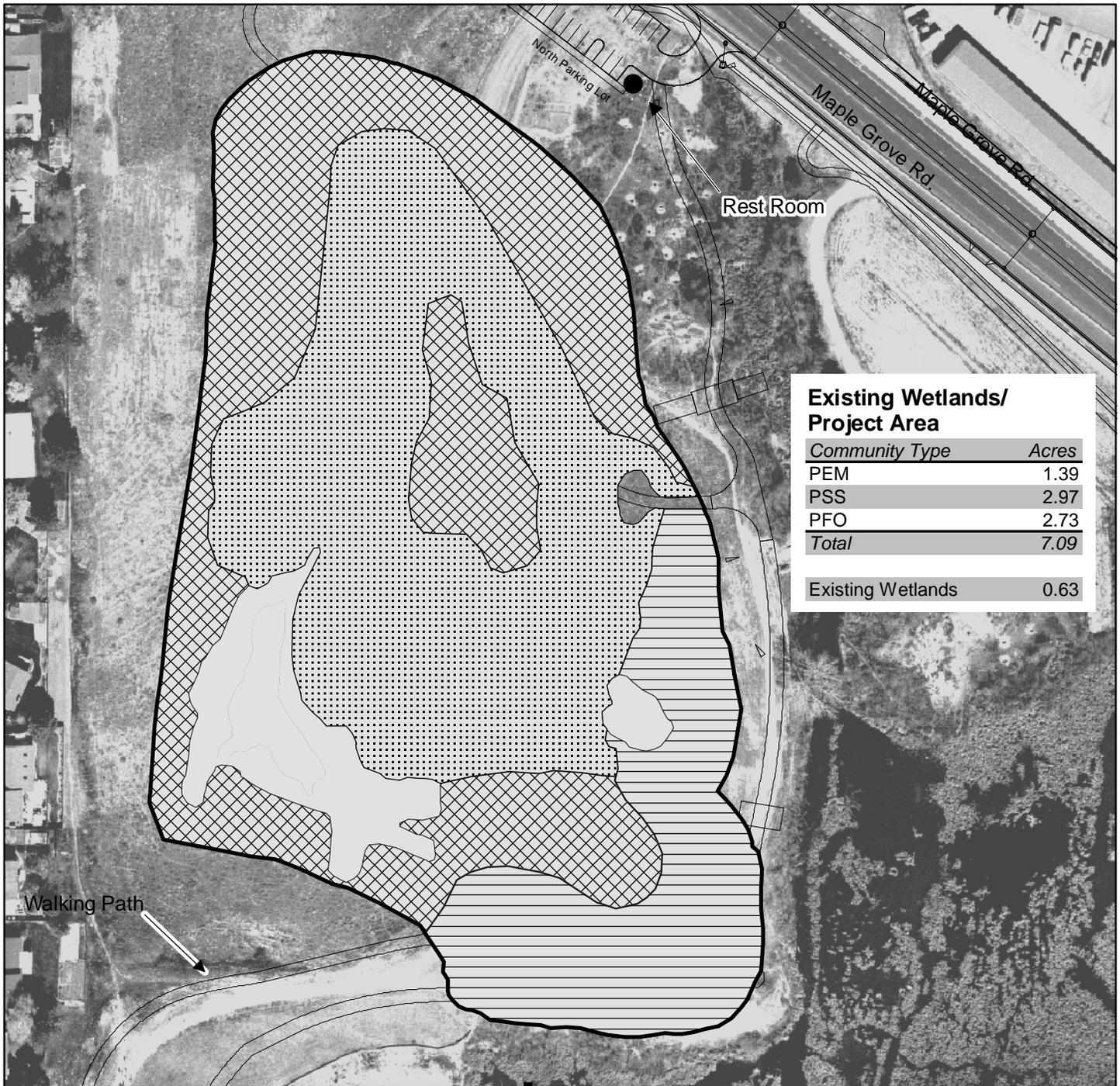


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Figure 2: Vicinity Map

Hyatt Wetlands Banking

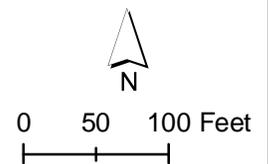
NNW No:
Waterbody: Thurman Mill Drain
River Mile:
Location: Ada County, Idaho
Applicant: The Wetlands Group, LLC
Sheet 2 of 6
Date: July 9, 2012



Existing Wetlands/ Project Area	
<i>Community Type</i>	<i>Acres</i>
PEM	1.39
PSS	2.97
PFO	2.73
Total	7.09
Existing Wetlands	0.63

Legend

- Project Boundary
- Existing Wetlands
- PSS
- PFO
- PEM



The Wetlands Group, LLC.
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Figure 3: Mitigation Site Plan Map

Hyatt Wetlands Banking

NNW No:
 Waterbody: Thurman Mill Drain
 River Mile:
 Location: Ada County, Idaho
 Applicant: The Wetlands Group, LLC
 Sheet 3 of 6
 Date: July 9, 2012

3.2 Goals for Hydrologic Conditions

The goal is to create wetland areas that connect to the existing main body of wetlands adjacent to the project area via two 24-inch culverts. The site hydrology was established using elevations from water levels measured at the weir and the elevations of existing Hyatt Hidden Lakes Reserve wetlands. The Bank grading plan consists of excavating and filling of ground surface elevations in order to allow groundwater and diffuse surface water from the existing wetlands to enter the Bank site. This increase in hydrology will allow for the establishment of self-sustaining wetlands within the Bank site.

4 SERVICE AREA

The service area of a bank is the designated area wherein a bank can be reasonably expected to provide appropriate compensation for impacts to wetlands or other aquatic resources. The service area takes into account the sustainability or improvement of aquatic resources in a watershed when determining compensatory mitigation requirements. Accordingly, the primary service area for the Hyatt Wetland Mitigation Bank is the Lower Boise River watershed, 8-digit hydrologic unit code (HUC) 17050114.

The Lower Boise River watershed, HUC 17050114, is located in southwest Idaho (Figure 1). This watershed drains 1,290 square miles of rangeland, forests, agricultural lands, and urban areas within Ada and Canyon counties as well as portions of Elmore, Gem, Payette, and Boise counties. The lower Boise River flows for a 64-mile stretch through the watershed in Ada and Canyon counties including the cities of Boise and Caldwell, Idaho. The river flows in a northwesterly direction from Lucky Peak Dam to its confluence with the Snake River near Parma, Idaho. Major tributaries include (but are not limited to) Fifteenmile Creek, Mill Slough, Mason Creek, Indian Creek, Conway Gulch, and Dixie Drain. Beneficial uses that the lower Boise River watershed provides include: agricultural water supply, cold water aquatic life, salmonid spawning, primary contact recreation, secondary contact recreation, and domestic water supply (IDEQ 2011).

Creating wetlands at the mitigation site as described in this mitigation plan will provide a variety of the functions and services necessary to meet compensatory mitigation needs in the Lower Boise River watershed.

5 BANK SITE SELECTION

The factors, which are considered in the site selection process, include the Boise River watershed needs and the practicality of establishing ecologically self-sustaining aquatic resources.

5.1 Watershed

The needs for protection and restoration of the Lower Boise River Watershed are identified in the development of Total Maximum Daily Loads (TMDL), in local jurisdiction regulations to further protect the resources, and by watershed advisory groups taking active roles in addressing watershed concerns. Only two pollutants, sediment and bacteria, require TMDLs on the lower Boise River. Pollutant targets are based on existing water quality criteria for bacteria and on a numeric interpretation of the state narrative standard for sediment. Since the lower Boise River is a major tributary to the lower Snake River, phosphorus (total and dissolved) was examined for load and waste load allocations after completion and approval of the Snake River-Hells Canyon TMDL. In 2008, a final Total Phosphorus Implementation Plan identified a TMDL allocation of total phosphorus for the lower Boise River at its confluence with the Snake River (IDEQ 2011).

Load allocations for temperature are not recommended for lower Boise River segments since it has been found that atmospheric conditions preclude compliance with cold water aquatic life temperature criteria particularly during the warmer summer months (IDEQ 2011).

The U.S. Environmental Protection Agency does not consider flow (or lack of flow) to be a pollutant as defined by the Clean Water Act. Since TMDLs are not required for water bodies impaired by pollution but not pollutants, a TMDL was not developed for flow alteration (IDEQ 2011).

The river corridor also hosts a diversity of wildlife species. Dominant species in the lower Boise River watershed include large ungulates such as mule deer and white-tail deer; small mammals such as beaver, muskrat, river otter, mink, and weasel; birds such as bald eagles, herons, ducks, geese, and numerous songbirds, shorebird, migratory, and residential bird species; as well as reptiles and amphibians typically found in the region. The canopy along the river provides winter roosts for bald eagles and hosts great blue heron rookeries. The lower Boise River from Lucky Peak dam to the confluence with the Snake River is designated as supportive to cold water aquatic life and supports a natural and stocked fishery. The two reaches that make up the lower Boise River, Lucky Peak to Star and Star to the mouth, support distinctly different fish. The river upstream of Star is a cold water fishery composed primarily of salmonids, including rainbow trout, brown trout, and mountain whitefish. The stretch downstream of Star is inhabited primarily by small mouth bass, suckers, brown trout, and numerous introduced semi-warm water fishes which indicate that warm water biota also exist in the stretch.

Although these resources are present, the lower Boise River watershed is also the focus of regional environmental concerns, that center are centered around the loss and degradation of riparian wetlands and associated aquatic resources caused by development. The watershed is experiencing rapid population growth, which has changed the functions and services remaining in the watershed. Ada County and Canyon County have nearly doubled in population over the past 30 years and growth is expected to continue. Development pressure on wetlands will continue to increase rapidly in urbanizing areas due to less buildable land.

Other landscape pressures, such as flood control and irrigation, have reduced the peak flow events in the watershed, which has modified the riparian corridor. The river has been modified by three existing storage projects: Anderson Ranch Reservoir, Arrowrock Reservoir, and Lucky Peak Reservoir. These reservoirs operate as a system for flood control, and irrigation control, as well as providing opportunities for recreational activities, all of which have dramatically altered aquatic resources. This system has also contributed to the development of black cottonwood forests and riparian wetland habitats along the Boise River. The riparian corridor of the Boise River has undergone riparian habitat changes as a result of development in the floodplain and channelization of the riparian corridor. Presently, limited amounts of the floodplain are inundated when river flows are being discharged between 4,500 and 7,000 cubic feet per second (cfs), limiting the hydrology and natural seed distribution necessary to support and regenerate native wetland vegetation in the historical riparian corridor.

The Boise River has been targeted by stakeholders, resource agencies, and wetland experts as a key resource to protect, maintain, and restore aquatic resource functions and services. As available land around the Boise River and the surrounding population centers continue to expand, the riparian and aquatic resources will likely be encroached upon. A watershed approach has been used to identify this Bank site and the restoration of a portion of the site will benefit the watershed. The construction of the Hyatt Wetland Mitigation Bank will help offset the losses of aquatic resource functions and services caused by activities authorized by U.S. Army Corps of Engineers (Corps) permits. The Bank site is located in the HUC that experiences much of this development and provides a nearby location to replace functions and services that may be lost due to future aquatic resource impacts.

5.2 Site Selection

The Hyatt Wetlands Mitigation Bank site was selected for its potential to create wetlands and increase wildlife habitat acreage in the Hyatt Hidden Lakes Reserve, the large urban wildlife improvement project located adjacent to the Bank site. The additional wetlands will increase flood and stormwater retention within the watershed, and the potential for community wetland education projects. A master plan intended to guide the development of the Hyatt Hidden Lakes Reserve was completed in 2000 and includes the recommendations to address wetland habitat enhancement and recreation/education facilities.

6 BASELINE CONDITIONS

The wetland mitigation bank site is an upland area that is one of the few available blocks of land in west Boise that has not been developed for housing or commercial uses. The bank site is within the Hyatt Hidden Lakes Reserve. The resource values associated with the Hyatt Hidden Lakes Reserve will be maintained or improved. Baseline conditions for the bank site are discussed below.

6.1 Topography

The topography of the mitigation site slopes gently to the north. Topography adjacent to the proposed wetlands rises abruptly from the bank site on the south, and west. Existing

elevations of the mitigation site ranges from approximately 2,625 to 2,630 feet above mean sea level.

6.2 Hydrology

The bank site includes two wetlands within project area that are supported by groundwater seepage and there are 24.8 acres of existing wetlands adjacent to the site that has surface water present year round. The hydrology for these wetlands is also associated with a high groundwater table. In addition, the wetlands receive seasonal runoff from the surrounding area and will be receiving additional stormwater starting in 2012. The bank site wetlands will be constructed to receive surface water flows from the existing 24.8 acres of wetlands.

6.3 Wetlands

Wetlands were delineated for the project area and a delineation report is included in Appendix A. There are 0.63 acre of existing wetlands present in the project area, including 0.2 acre of PEM wetlands and 0.43 acre of PSS wetlands. The PEM wetland communities are dominated by cattails (*Typha latifolia*). The PSS communities are dominated by coyote willow (*Salix exigua*) in the overstory and bentgrass in the understory. The wetland locations are shown in Figure 3. These areas will be avoided during construction of the bank.

6.4 Soils

The soil map unit for the bank site is Pits, gravel due to the historic use of the property as a gravel pit (SCS 1980). Due to the disturbed nature of the site, most of the soils on site were placed after the site was closed as a gravel pit.

6.5 Vegetation

The current vegetation cover in the project area is predominantly uplands. Upland areas in the project area have been severely altered by human activity and fill and are often sparsely vegetated. The shrub layer is generally dominated by sagebrush (*Artemisia tridentata*), the herb strata is dominated frequently by wheatgrass species (*Agropyron sp.*) or cheatgrass (*Bromus tectorum*). Bare ground with weedy forbs such as prickly lettuce (*Lactuca serriola*) and curly-cup gumweed (*Grindella squarrosa*) is common.

6.6 Wildlife and Fish

During the field surveys and site visits minimal wildlife has been observed in the Bank site. Observations have included geese, ducks, song birds and fox occasionally using the site. The existing uplands on the Bank site generally lack quality wildlife habitat. Some wildlife habitat is provided by the small wetlands onsite but the site generally lacks the cover and forage found in high quality upland, wetland or riparian buffer habitat. There is no fish habitat on site.

Comparatively, wildlife has frequently been observed adjacent to the site in the 24.8 acre Hyatt Hidden Lakes Reserve wetland area that includes PEM, PSS, PFO and open water habitat. The forest, shrub, emergent and open water habitats provides habitat for a

variety of wildlife species. Wildlife observations in the existing wetland complex include migratory waterfowl, herons, osprey, a variety of hawks, numerous songbirds and shorebirds, fox, and beaver as well as reptiles and amphibians typically found in the region. Bald eagles are known to winter along the Boise River corridor and have been seen near the project area. If construction takes place in the winter, bald eagles will be monitored to ensure no adverse effects occur as defined by the Bald and Golden Eagle Protection Act (1962).

6.7 Wetland Buffer and Wildlife Corridors

The project area is located on a 10-acre parcel of vacant land and is located adjacent to 24.8 acres of wetlands. The area is surrounded by neighborhoods and busy roadways and is therefore considered of low value as a wildlife corridor. The existing 24.8 acre wetlands adjacent to the project area is an island of habitat within an urban area providing nesting and foraging opportunities for resident song birds, waterfowl and wildlife and a resting spot for migratory birds less than 0.75 mile from the Boise River.

6.8 Proximity to Roads/Human Activity

The mitigation site is bounded to the north by Maple Grove Road, residential properties to the west. There is an upland buffer on the hillsides surrounding the mitigation site on the south and west. Wetlands bound the east side of the mitigation site.

6.9 Threatened and Endangered Species

The mitigation site has no documented species presence or existing habitat that would be used by any of the proposed Threatened, Endangered, or Candidate Species as listed by the USFWS for Ada County (USFWS 2011). Therefore the project is anticipated to have no effect on any of the Threatened, Endangered, or Candidate Species listed by USFWS for Ada County.

The USFWS has listed the following species for Ada County: one Endangered species, Snake River physa snail (*Haitia (Physa) natricinia*), two Threatened species, bull trout (*Salvelinus confluentus*) and slickspot peppergrass (*Lepidium papilliferum*), three Candidate species, yellow-billed cuckoo (*Coccyzus americanus*), North American Wolverine (*Gulo gulo*) and the greater sage grouse (*Centrocercus urophasianus*), and the gray wolf (*Canis Lupus*), which is an experimental population and recovery species in Ada County.

6.10 Cultural Resources

There are no manmade structures present on the mitigation site. There has been no cultural survey completed for this site. If any cultural or historic items are encountered during the development of the bank a cultural professional will be consulted prior to resuming the process.

7 SITE PROTECTION

A Compensatory Mitigation Easement will be obtained for site protection in perpetuity. Additional details on long-term site protection are provided in Section 14. The City has legal interest over the site.

7.1 Mayor and Council

- 1) The City has entered into a Memorandum of Agreement with The Wetlands Group, LLC providing select parklands, including Hyatt Hidden Lakes Preserve, to be used for wetland mitigation banking purposes.
- 2) The City may establish and hold its own Compensatory Mitigation Easement as well as enter into agreements with other governmental agencies for the protection and advancement of wetlands.

7.2 Licensure

The City's Board of Park & Recreation Commissioners has authorized the Bank Sponsor to develop wetlands at the Hyatt Hidden Lakes Reserve within the park's designated open space reserve area.

7.3 Local Land Use Regulations

- 1) Boise River System Permit requirements protect existing and restored wetlands within the floodway.
- 2) Floodplain Permits required for this project restrict filling within the floodway. All proposed development within or adjacent to the Boise River floodway triggers state and federal reviews through FEMA, Corps, and Idaho Department of Water Resources.

8 DETERMINATION OF CREDITS

The Bank will create approximately 7.09 acres including 1.39 acres of PEM, 2.97 acres of PSS wetlands and 2.73 acres of PFO wetlands. One credit will be equal to one acre of created wetland that is fully functioning and meets the performance standards defined by the Umbrella Mitigation Banking Instrument (Instrument). Credits anticipated for the Hyatt Wetland Mitigation Bank are shown in Table 1.

Table 1. Anticipated Credits for the Strut Ranch Mitigation Bank.

Wetland Type	Acreage	Credits
PEM	1.39	1.39
PSS	2.97	2.97
PFO	2.73	2.73
Subtotal	7.09	7.09

The actual credits generated will be determined by calculating the created wetland acreage that meets the parameters identified in the 1987 Corps of Engineers Wetlands Delineation Manual and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0) and that meets the terms performance standards identified for the project. Credits will be released for sale as specified under credit release schedule (Section 5.2) in the umbrella mitigation banking instrument. A bank-specific crediting ledger has been included as Appendix B.Mitigation Work Plan

The mitigation work plan, described below, includes the construction of wetlands from areas that are currently uplands. No existing wetlands will be filled.

9 MITIGATION WORK PLAN

The mitigation work plan, described below, includes the construction of wetlands from areas that are currently uplands. The MDT wetland assessment method estimates that the restoration effort will create Category II wetlands providing greater structural diversity and areas for cottonwood forests along the Boise River.

9.1 Proposed Mitigation Design

The proposed plan will create 7.09 acres of wetlands within the boundaries of the grading limits at the mitigation site (Figure 4). This will include 1.39 acres of PEM, 2.97 acres of PSS and 2.73 acres of PFO (Figure 3). These wetland types represent the majority of those that occur locally and within the ecoregion. The Bank site will be developed to include existing wetlands and to provide greater vegetation diversity, and ultimately, greater overall wildlife species diversity throughout the site.

The Montana Department of Transportation’s (MDT) Wetland Assessment Method (Berglund 2008) was used to assess the created wetland functions and values for wetlands in the Bank. The assessment method considers 12 function and value variables, it rates each variable as low, moderate, or high and gives an overall rating from Category I to Category IV. Category I wetlands have the highest function and value and Category IV

the lowest. The MDT wetland assessment method estimates that construction of wetlands in the Bank site will create Category II wetlands by providing PEM, PSS and PFO wildlife habitat adjacent to an existing 24.8 acre wetland. These Category II wetlands will also provide short and long-term water storage, sediment and toxicant removal, food chain support, groundwater recharge and educational opportunities. See Appendix C for a summary of the functions and services analyses for the proposed wetlands.

Existing wetlands on site will be avoided and their functions and values will not be affected. The main portion of the site is an upland area limited by disturbed upland habitat, lack of structural diversity, and low recreational/educational potential.

9.2 Targeted Hydrology

The Grading Plan elevations were determined based on surface water elevation data at the weir, elevations of existing wetlands onsite and estimated stormwater discharge rates from the Hyatt Stormwater Demonstration Project. Culvert elevations will be designed to take advantage of the existing water levels in the wetland area (see Appendix D), along with the addition of the treated stormwater runoff the site will receive. The proposed surface elevations are shown in the Grading Plan (Figure 4).

No water right for the establishment of wetlands at this site is required as diffused surface water will be utilized to sustain the restored wetlands (IDWR 2001 and 2003).

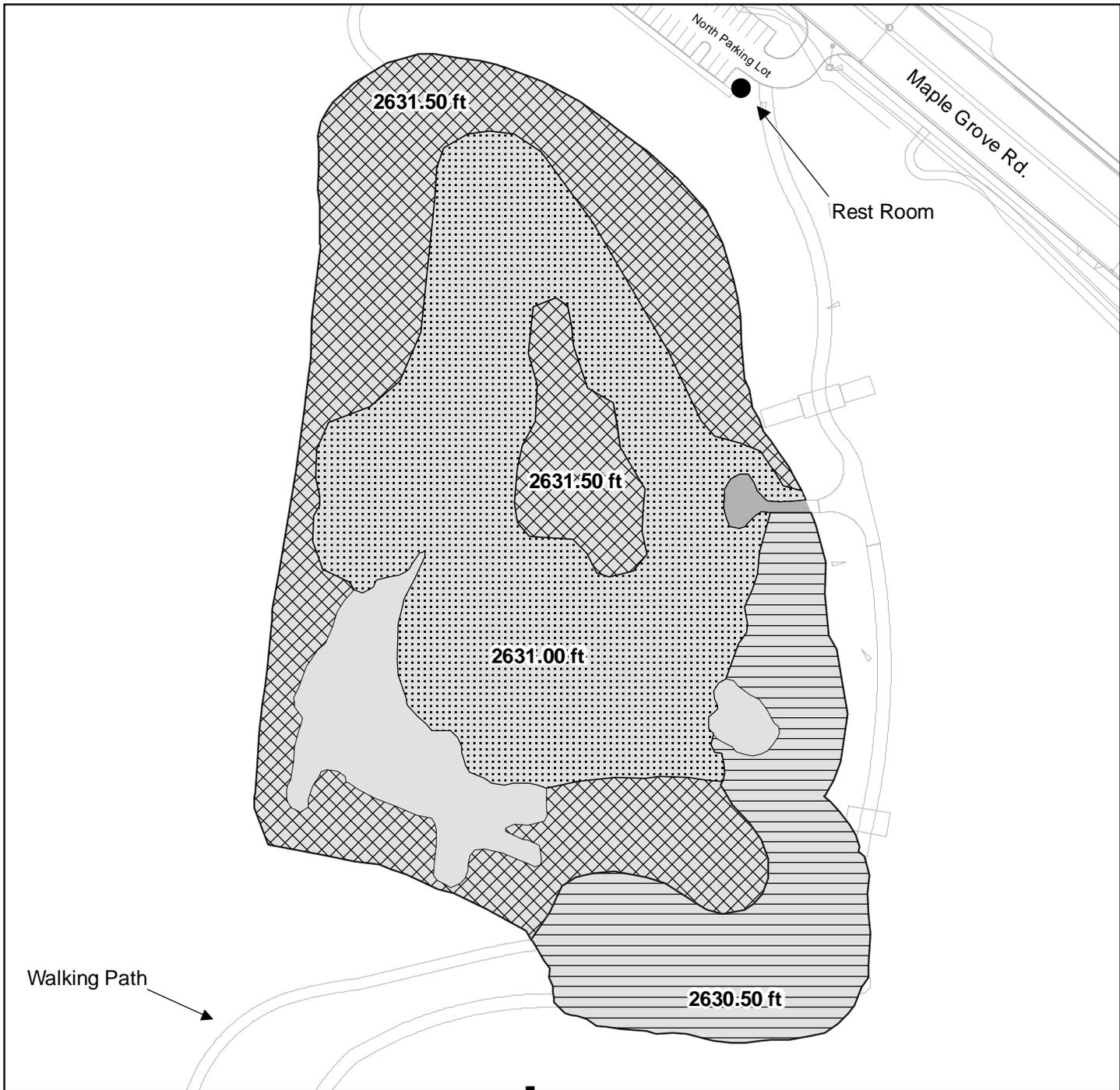
9.3 Targeted Soils

Top soil and soils with high organic matter content that are encountered during site excavation will be stockpiled and used in the re-establishment of the site. Wetlands soils from resulting from the enhancement work in the adjacent wetlands will also be salvaged, stockpiled and used on site. Soil will not be stockpiled in or adjacent to wetlands or environmentally sensitive areas.

A Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the mitigation construction activities. Appropriate erosion and sediment control best management practices (BMPs) will be installed according to the approved SWPPP. The Bank site will be covered under the National Pollution Discharge Elimination System (NPDES) General Construction Permit approved for construction.

9.4 Planting Plans

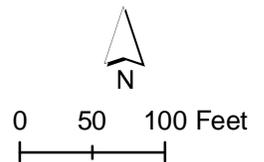
The Bank will feature PEM, PSS and PFO wetlands. PEM wetlands with herbaceous plant species in areas that will be seasonally flooded from 0-6" of water depth or seasonally saturated, PSS wetlands will be dominated by native shrub species in areas that receive seasonal flooding or remain saturated most if not all of the year. The PFO wetlands will be dominated by tree species and will demonstrate seasonal flooding and saturation. The Bank's wetlands communities are shown in Figure 3. A typical cross section of the mitigation bank site is shown in Figure 5.



Legend

- Existing Wetlands
- PFO
- PSS
- PEM

Note: No grade change for existing wetland areas

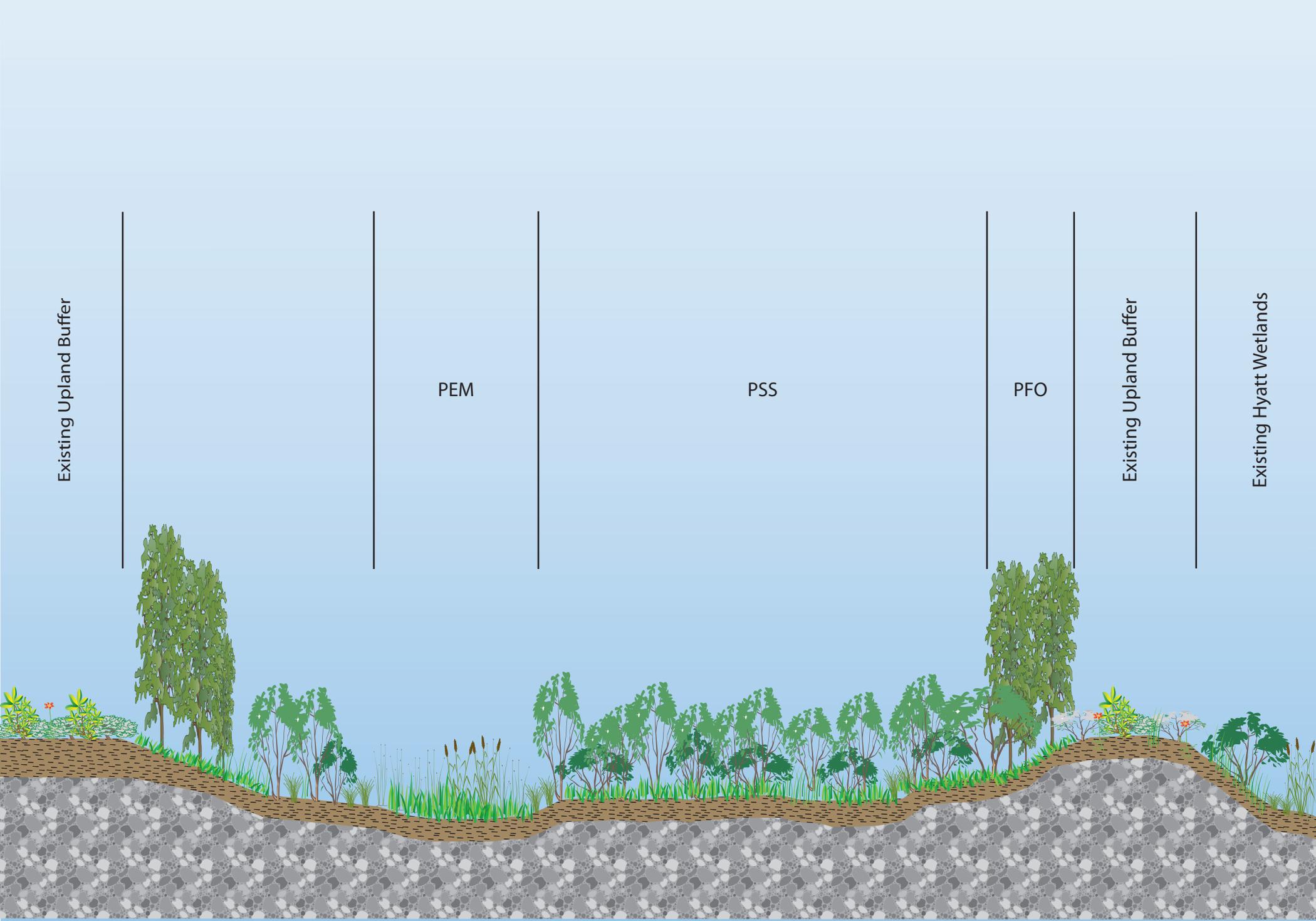


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Figure 4: Mitigation Grading Plan Map

Hyatt Wetlands Banking

NNW No:
 Waterbody: Thurman Mill Drain
 River Mile:
 Location: Ada County, Idaho
 Applicant: The Wetlands Group, LLC
 Sheet 4 of 6
 Date: July 9, 2012



Existing Upland Buffer

PEM

PSS

PFO

Existing Upland Buffer

Existing Hyatt Wetlands

Native wetland species typically found in the 24.8 acre wetlands adjacent to the site will be planted in the mitigation bank. Trees will be supplied as balled and burlapped, in containers, bare root or stakes. Shrubs will be supplied in containers or as bare-root plants. Willows and dogwood may be planted as stakes. Emergent wetland plants will be planted from containers, plugs, or seeded. Trees will typically be planted on 15-foot centers. Shrubs will be planted at a distance ranging from 3 to 5 feet apart. Herbaceous ground cover will be planted from 1 to 3 feet apart or broadcast seeded. Plants will be grouped in copses (thicket/groups) of odd numbers. Wetland plants for this Bank site will be selected from those listed in Table 2.

Table 2: Plant Species and Planting Zones in the Mitigation Site

Common Name	Scientific Name	Comments
<i>Herbaceous Groundcover</i>		
Redtop	<i>Agrostis alba</i>	Seasonally saturated, FAC
Meadow foxtail	<i>Alopecurus pratensis</i>	Seasonal flooding, FACW
Basin wildrye	<i>Leymus cinerus</i>	Seasonally saturated, FAC
Nebraska sedge	<i>Carex nebrascensis</i>	Seasonally saturated, OBL
Beaked sedge	<i>Carex utriculata</i>	Seasonally saturated, OBL
Baltic rush	<i>Juncus balticus</i>	Seasonally saturated, FACW
<i>PSS Community</i>		
Red-osier dogwood	<i>Cornus stolonifera</i>	Seasonal flooding, FACW
Black cottonwood	<i>Populus trichocarpa</i>	Seasonal flooding, FAC
Coyote willow	<i>Salix exigua</i>	Seasonal flooding , OBL
Yellow willow	<i>Salix lutea</i>	Seasonal flooding ,OBL
<i>PFO Community</i>		
Douglas hawthorne	<i>Crataegus douglasii</i>	Seasonally saturated to upland, FAC
Black cottonwood	<i>Populus trichocarpa</i>	Seasonal flooding, FAC
Golden Currant	<i>Ribes aureum</i>	Seasonally saturated to upland, FAC
Woods Rose	<i>Rosa woodsii</i>	Seasonally saturated to upland, FACU
Coyote willow	<i>Salix exigua</i>	Seasonal flooding , OBL
Yellow willow	<i>Salix lutea</i>	Seasonal flooding ,OBL
Pacific willow	<i>Salix lasiandra</i>	Seasonal flooding ,FACW

9.5 Construction Activity Description

- ***Pre-construction***
 - The Bank Sponsor will install and maintain the following: orange construction fencing as needed to provide safety during the construction process, BMPs for erosion control, and construction entrance. The Bank Sponsor will also locate utilities, file the Notice of Intent for coverage under the NPDES General Construction Permit, and identify, retain, and protect areas (i.e., existing wetlands).
- ***Construction***
 - During construction, the Bank Sponsor will clear the site, stockpile usable top soil and fill and/or excavate according to the grading plan using tracked excavators, scrapers, and dump trucks to create new wetlands. The Bank Sponsor will plant the newly constructed wetland areas as described in the planting plan. No fill material would be discharged into Waters of the U.S.; therefore a Corps permit will not be required to construct the mitigation bank.
 - Access for construction to the bank site will be via a construction entrance off of Maple Grove Road. The heavy equipment staging area will be between the mitigation site and Maple Grove Road.
- ***Post-construction***
 - The Bank Sponsor will remove all construction fencing and temporary erosion control materials, clean the job site, and re-grade and seed impacted areas outside of the construction site.
 - The Bank Sponsor will install permanent erosion and sedimentation control measures and standard BMPs to ensure no sediment from stormwater runoff leaves the site.
 - The Bank Sponsor will install post-construction signage and appropriate post-construction fencing to protect the Bank site.

9.6 Reference Wetland

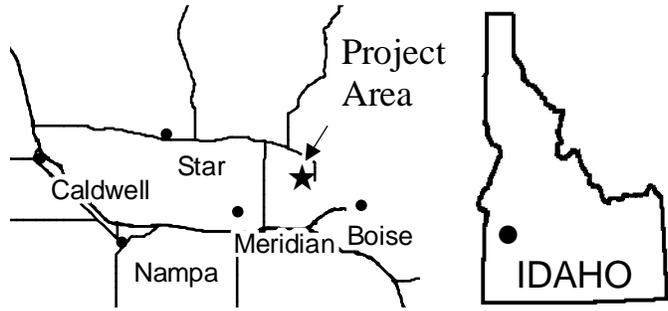
Reference wetlands are used to establish performance standards that are reasonably achievable when monitoring the success of the restored wetlands. An area on the eastern boundary of the mitigation site with high quality PEM, PSS and PFO wetlands has been identified for use as a reference wetland. The reference wetland is shown in Figure 6.

10 MAINTENANCE PLAN

The Bank Sponsor will determine and implement maintenance activities annually. The maintenance period for each phase of improvements will extend from the completion of

BOISE, ADA COUNTY, IDAHO,
 LOCATED IN SECTION 26, T4N, R1E

U.S. Geological Survey
 Eagle Quadrangle



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Figure 6: Reference Wetland Map

Hyatt Wetlands Banking

NNW No:
 Waterbody: Thurman Mill Drain
 River Mile:
 Location: Ada County, Idaho
 Applicant: The Wetlands Group, LLC
 Sheet 6 of 6
 Date: July 9, 2012

construction through four full growing seasons. Typical maintenance activities may include, but not be limited to, the following:

- Weeding
- Pruning
- Fertilization
- Corrective grading
- Fence repair
- Installation of wildlife exclusion structures
- Replanting or reseeding of vegetation

The annual monitoring report will notify the Interagency Review Team (IRT) of annual maintenance activities at the Bank site.

11 PERFORMANCE STANDARDS

The following performance standards will be used to assess whether the mitigation bank is achieving its objectives.

- *Wetland Delineation:* The mitigation site shall meet the wetland parameters described in the 1987 Corps of Engineers Wetlands Delineation Manual and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0). Actual credits available will be determined by the acreage of wetland that meets the wetland parameters. One acre equals one credit.
- *Hydrology:* The wetland community type will exhibit a self-sustaining wetland hydrology, which meets the minimum requirements for saturation, within 12 inches of the ground surface for at least 14 consecutive days during the growing season. PSS and PFO wetland hydrology will likely be seasonally flooded. Evidence of wetland hydrology must be demonstrated through direct observation of inundation and/or saturated soils during the growing season or through observation of indicators of soil saturation and/or inundation during the growing season.
- *Vegetation:*
 - Non-native, volunteer wetland species will not comprise more than 20 percent of the total cover. Noxious weeds shall cover less than 10 percent of the created Bank site in the third year following completion of construction and planting activities. As part of project implementation, the Bank Sponsor shall develop a noxious weed control plan and seek approval from the IRT.
 - Created PEM wetlands shall achieve at least 80 percent total aerial cover (of which no more than 20 percent shall be from shrubs and trees combined), shall contain at least three native emergent wetland species, and shall not have any application of supplemental water for at least 1 year. Emergent wetlands shall

meet the criteria for emergent wetlands described in the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979).

- Created PSS wetlands shall achieve at least 80 percent total areal cover, shall achieve at least 30 percent areal cover from shrubs (with any trees providing less than 20 percent areal cover), shall contain at least two native emergent wetland species and two native shrub wetland species, and shall not have any application of supplemental water for at least 3 years. PSS wetlands shall meet the criteria described in the *Classification of Wetlands and Deepwater Habitats of the United States* by Mr. Lewis M. Cowardin, 1979, Washington, D.C. 20240, 131 pages (Cowardin).
- Created PFO wetlands shall achieve at least 80 percent total areal cover; shall achieve at least 30 percent areal cover of trees; shall contain at least two native emergent wetland species, two native shrub wetland species, and one native tree wetland species; and shall not have any application of supplemental water for at least 5 years. PFO wetlands shall meet the criteria described in Cowardin 1979.
- *Soils*: Evidence of an aquatic moisture regime, inferred through the presence of surface or near-surface groundwater.

Any modifications to these performance standards shall be approved by the IRT.

12 MONITORING REQUIREMENTS

Annual wetland mitigation monitoring will be conducted by the Bank Sponsor beginning in the first full growing season following planting. Monitoring will continue through the fifth full growing season for scrub-shrub wetlands and the tenth full growing season for forested wetlands or until performance standards are met whichever is later. Once performance standards are met, monitoring will continue until all credits for the Hyatt Wetland Mitigation Bank site are sold. Monitoring reports will be submitted to the IRT by December 1 following the growing season evaluated. Monitoring reports will:

- Document actual construction activities conducted (first season report only).
- Document mitigation measures completed during the monitoring period.
- Document the hydrology and vegetative plantings and conditions.
- Document compliance with the mitigation performance standards.
- Document the pre-established, baseline reference points with a photographic record.
- Map permanent photograph and sampling points.
- Identify any failures of mitigation performance standards and describe measure(s) necessary to bring the site into compliance with the mitigation plan.
- Document the maintenance activities conducted.
- Include photographs taken at fixed reference points. (These will be submitted to the IRT in both digital and hard copy formats.)

Monitoring reports conducted after performance standards are met will consist of a brief summary to document site conditions, continued compliance with performance standards, and any problems and proposed adaptive management solutions.

13 ADAPTIVE MANAGEMENT PLAN

During the maintenance/monitoring period, the Bank Sponsor will implement adaptive management strategies to ensure that the Bank site meets all of the milestone achievements. If the Bank Sponsor is not adequately addressing corrective actions through the annual maintenance work, the IRT can request in writing that the Bank Sponsor prepare a remedial plan. The Bank Sponsor shall prepare the remedial plan, submit it to the IRT for their review, and implement the plan according to a schedule agreed to with the IRT.

It is appropriate for adaptive management plans to consider potential natural disasters that may occur, to the extent they can be reasonably foreseen. The Bank Sponsor will provide alternative compensatory mitigation if the mitigation project fails as a result of a natural disaster that occurs before the performance standards have been met. The extent of the replacement will be determined by the IRT in the event alternative compensatory mitigation is required.

After performance standards are met, the Bank Sponsor will not be responsible for remediating damages that occur at the individual bank sites that are attributable to natural catastrophes such as flood, drought, disease, regional pest infestation, etc. that are beyond the design parameters and or control of the Bank Sponsor.

14 LONG-TERM MANAGEMENT PLAN

Boise City will act as the long-term steward of the Bank site after it has reached performance standards. The City can ensure long-term protection for Hyatt Hidden Lakes Preserve Site by executing a Compensatory Mitigation Easement. Boise City will assume responsibility for the Bank sites located on City property and will protect, monitor, and maintain the improved sites once performance standards are met and certified by the Corps. Long-term financial assurance will be provided by Boise City on city property to ensure long-term sustainability of the resource.

The City has committed to ensuring that the site will not be subject to incompatible uses and will maintain ownership of the site in perpetuity.

15 FINANCIAL ASSURANCES

15.1 Construction

The Bank Sponsor will obtain a performance bond or irrevocable letter of credit (ILOC) to ensure completion of the mitigation bank. The amount of the bond or ILOC shall be based on a written construction estimate, provided by the Bank Sponsor and approved by the IRT. The following requirements shall apply to the bond/ILOC as stated in section 230.93 (n) of the final mitigation rule:

- The bond or ILOC must state that the Corps stands as the sole third-party beneficiary, with full and final authority to determine if the principal has defaulted (in whole or in part) during construction of the mitigation areas;
- The Surety must be a company or financial institution that is in the business of issuing construction bonds or ILOCs and approved by the Corps;
- The bond or ILOC shall not be revoked or terminated without approval of the Corps;
- The Corps shall have authority to allow the Surety to complete construction (as directed by the Corps) or require payment of construction funds by the Surety to a third party designated by the Corps to complete construction.

In the event of default by the Bank Sponsor during construction, the Corps, in coordination with the IRT, shall work with the Surety to determine the best way to complete construction.

15.2 Performance

The Bank Sponsor will set up an account, at a federally insured financial institution, dedicated solely to fund routine maintenance and adaptive management. The account shall be funded from credits sold from the Initial Credit milestone. Upon execution of the sale of those pre-construction credits, 25 percent of the value received will be deposited into the account. The 25 percent is based on the recent cost of implementing adaptive management on existing wetland mitigation projects. This percentage has been demonstrated to allow for sufficient resources to implement a successful project in the event adaptive management is required. The Bank Sponsor shall not close the account until the Corps determines performance standards have been met.

In the event of default by the Bank Sponsor during performance monitoring and maintenance, the Corps shall identify a third party to assume the remaining performance monitoring and maintenance responsibilities. Upon designation of a third party by the Corps, the Bank Sponsor shall transfer the remaining balance in the account created under this section to the third party. The Bank Sponsor, however, shall remain liable for their responsibilities under this mitigation plan until released of liability. Any funds remaining with a third party after performance objectives are met shall be returned to the Bank Sponsor.

15.3 Long Term Maintenance

The Bank Sponsor will, after approval by the IRT, transfer the long term maintenance to Boise City once all performance standards are met and certified by the Corps. Boise City Parks and Recreation will provide, through their Heritage Fund, long term maintenance for the mitigation Bank. An agreement between Boise City Parks and Recreation and the Bank Sponsor regarding transfer of long term maintenance responsibilities will be provided to the IRT.

The Bank Sponsor remains responsible for all long-term management of Bank site, unless and until the Bank site has been transferred as authorized in this section. Where all performance standards have been met, credit sales are complete, and transfer of long-term management has been effected, the District Engineer, or his/her designee, shall issue

written certification to the Bank Sponsor releasing it from further obligation/liability under this mitigation plan.

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Appendix A

Wetland Delineation

Hyatt Wetlands Mitigation Bank Site Wetland Delineation

Boise, Idaho

Prepared By

**The Wetlands Group, LLC
462 E. Shore Drive, Suite 140
Eagle, Idaho 83616**



March 26, 2012

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- Appendix A: Wetland Delineation Data Sheets
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1. INTRODUCTION

The Wetlands Group, LLC (Wetlands Group) delineated wetlands that may be impacted in the Hyatt Wetlands Mitigation Bank project. The Hyatt Wetlands Mitigation Bank site (project area) will be located in the includes 6.63 acres in the Hidden Lakes Reserve and is located on 10 acres of land owned by Ada County Highway District (ACHD) shown in Figures 1 and 2.

The project area includes the two small wetland areas located south of Maple Grove Roads (Figures 1 and 2). The mitigation site is located as follows:

City of Boise, Ada, Idaho
T 4 N, R 1 E, Sections 26
Hydrologic unit: 17050114
Latitude/Longitude: 43.651520 N and 116.296960 W
UTM: 556695 E 4833409 N, Zone 11
Elevation: Approximately 2630 feet above sea level

Wetlands Group biologist collected wetland delineation data in the project area on November 28, 2011, to identify and delineate wetlands within the project area. This wetland delineation report identifies and describes wetlands found onsite.

1.1 Source Materials

Primary guidance documents for the investigation were the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (Environmental Laboratory 2006). The U.S. Army Corps of Engineers (Corps) and the State of Idaho recognize the use of the 1987 manual and the 2008 arid west supplement for wetland delineations in Idaho.

These manuals provide technical guidance and recommended procedures to be used in determining whether an area is classified as a wetland and delineating the wetland's boundaries. As stated in these manuals, three conditions must be met before areas can be documented as a wetland. These conditions are the presence of hydric soils, hydrophytic vegetation, and wetland hydrology under normal circumstances.

1.2 Background Information

Existing data were reviewed to determine potential wetland locations and site conditions prior to initiating the fieldwork. Data sources used in this study include the following:

- Aerial photography (Google Earth 2011)
- U.S. Geological Survey (USGS) 1:24,000 topographic map for the Eagle Quadrangle (USGS 1971)
- Soil Survey of Ada County Area Idaho (NRCS 2011);
- Hydric Soils List, Ada County, Idaho (Natural Resource Conservation Service [NRCS] 2004); and

- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Maps (U.S. Fish and Wildlife Service 2011).

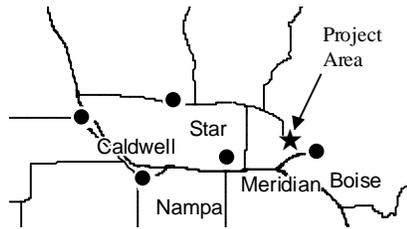
This information was used to identify preliminary wetland locations and aid onsite data collection.

1.3 Data Collection Methods

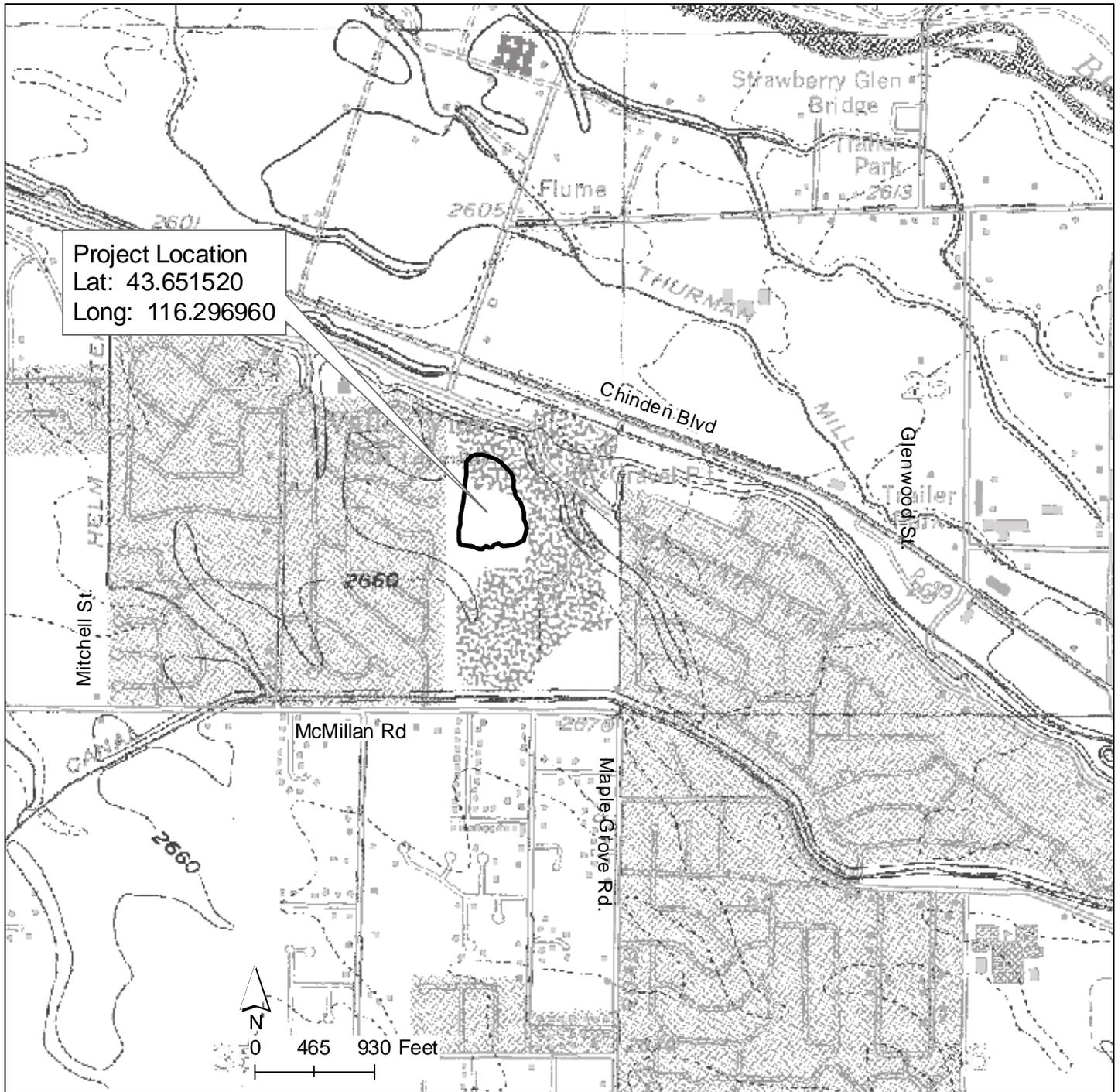
All potential wetlands in the project area were investigated, including irrigation canals, laterals, ditches, and ponds. Irrigation-related waters were included in the wetland investigation because in April 2004, the Walla Walla District of the Corps adopted the findings contained in the *Headwaters Inc. vs. Talent Irrigation* court decision; this adoption extended the Corps' regulatory jurisdiction under Section 404 of the Clean Water Act to include irrigation waters and associated wetlands hydraulically connected to waters of the United States. More recently, the *Rapanos* decision requires that in certain circumstances a "significant nexus" evaluation be conducted to support jurisdictional and non-jurisdictional determinations. Where possible, data to support a significant nexus was collected for this project.

Soils, vegetation, and hydrology data sites were selected to provide a valid representation of project area conditions for identifying the location of the wetland boundaries. Each wetland site was given a unique number and field data were recorded and subsequently transferred to standard wetland delineation data sheets (Appendix A). Wetland locations were collected by using a Garmin Vista HCx GPS unit and mapping on aerial photographs. Survey data were uploaded into ARC GIS and integrated with digital orthophotography (Compass 2007) to show wetland locations (Figure 2). Project area photographs can be found in Appendix B.

BOISE, ADA COUNTY, IDAHO,
LOCATED IN SECTION 26, T4N, R1E



U.S. Geological Survey
Eagle Quadrangle

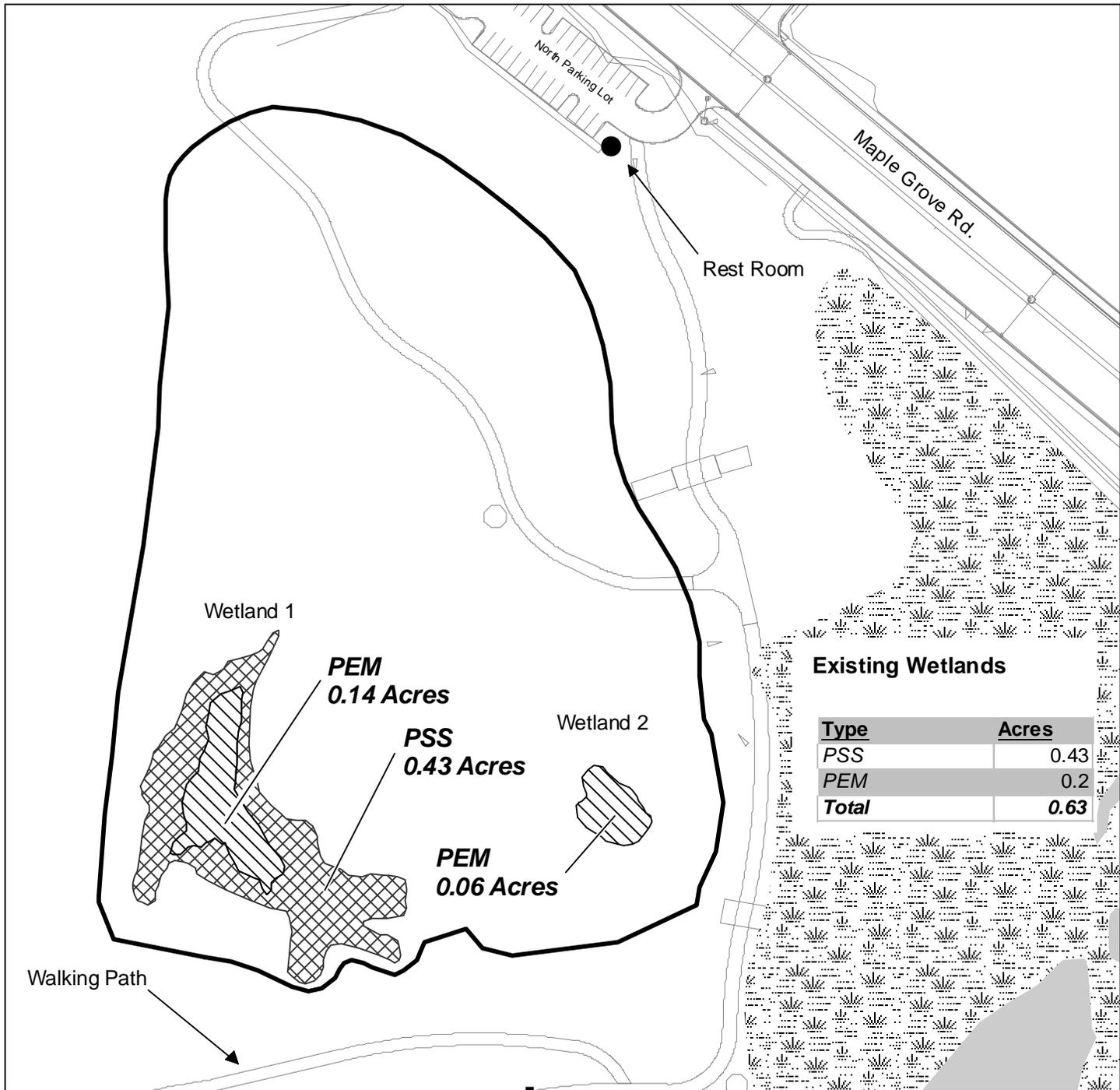


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Figure 1: Vicinity Map

Hyatt Wetlands Mitigation Bank Site
Wetland Delineation

NNW No:
Waterbody: Warm Springs Creek
River Mile:
Location: Ada County, Idaho
Applicant: The Wetlands Group, LLC
Sheet 2 of 5
Date: February 1, 2012

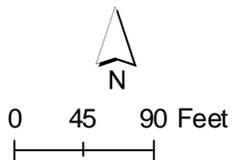


Existing Wetlands

Type	Acres
PSS	0.43
PEM	0.2
Total	0.63

Legend

-  PEM
-  PSS
-  Project Area



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Figure 2: Wetlands Location Map

Hyatt Wetlands Mitigation Bank Site
Wetland Delineation

NNW No:
Waterbody: Warm Springs Creek
River Mile:
Location: Ada County, Idaho
Applicant: The Wetlands Group, LLC
Sheet 3 of 5
Date: April 3, 2012

2. EXISTING SITE CHARACTERISTICS

2.1 Topography

The topography of the mitigation site wetlands slopes gently to the north. Topography adjacent to the proposed wetlands rises abruptly from the bank site on the east, south, and west. Existing elevations of the mitigation site ranges from approximately 2,625 to 2,630 feet above mean sea level.

2.3 Hydrology

The bank site includes two wetlands within its boundaries that are supported by groundwater seepage. In addition, there are 24.8 acres of existing wetlands adjacent to the site that has surface water hydrology year round. The hydrology for these wetlands is also associated with a high groundwater table. In addition, the wetlands receive seasonal runoff and will start receiving additional stormwater in 2012. Surface water was present in both wetlands during the site visit.

2.4 Soils

The soil map unit for the mitigation site is Pits, gravel due to the historic use of the property as a gravel pit. Surrounding upland soils are primarily Purdam silt loam (SCS 1980). Due to the disturbed nature of the site, most of the soils on site were placed after the site was closed as a gravel pit. Field observations of test pits in existing wetlands showed soils are predominately sand and gravel, overlaid with a thin layer of muck. Wetland soil indicators were difficult due to past disturbances by the gravel operation and the lack of time for soil development. The presence of saturated soils, high water table and standing water were considered when determining wetland soils.

2.5 Vegetation

The current cover in the project area includes wetland and upland vegetation. The palustrine emergent (PEM) wetland communities are generally dominated by cattails (*Typha latifolia*) and the palustrine shrub (PSS) wetland communities by willow species (*Salix sp.*). Palustrine forest overstory (PFO) wetland communities were not identified in the project area. Upland areas located around the edges of the project area have been severely altered by human activity and fill and are often sparsely vegetated and generally dominated by sagebrush (*Artemisia tridentata*) and wheatgrass species (*Agropyron sp.*) or cheatgrass (*Bromus tectorum*) and bare ground with weedy forbs such as prickly lettuce (*Lactuca serriola*) and curly-cup gumweed (*Grindella squarrosa*) are often present. Species observed onsite are listed in Table 1 and 2 below.

Table 1: Plant Species Observed in Upland Areas

Common Name	Scientific Name	Wetland Indicator Status
Trees/Shrubs		
Sagebrush	<i>Artemisia tridentate</i>	UPL
Rabbitbrush	<i>Chrysothamnus nauseosus</i>	UPL
Russian olive	<i>Elaeagnus angustifolia</i>	FAC
Black Cottonwood	<i>Populus trichocarpa</i>	FAC
Cherry species	<i>Prunus sp.</i>	UPL
Siberian elm	<i>Ulmus pumila</i>	UPL
Sandbar willow	<i>Salix exigya</i>	FAC
Herbaceous		
Yarrow	<i>Achillia millefolium</i>	FACU
Wheatgrass	<i>Agropyron sp.</i>	FACU
Cheatgrass	<i>Bromus tectorum</i>	UPL
Flixweed	<i>Descurainia sophia</i>	NI
Storks bill	<i>Erodium cicutarium</i>	FAC
Curly-cup gumweed	<i>Grindelia squarrosa</i>	FACU
Kochia	<i>Kochia scoparia</i>	FAC
Prickly lettuce	<i>Lactuca serriola</i>	FAC
Sweet clover	<i>Melilotus officinalis</i>	FACU
Bluegrass	<i>Poa bulbosa</i>	UPL
Peppergrass	<i>Lepidium latifolium</i>	FAC
Tumble Mustard	<i>Sisymbrium altissimum</i>	UPL
White Clover	<i>Trifolium repens</i>	FAC
Dandelion	<i>Taraxacum officinale</i>	FACU
Mullein	<i>Verbascum Thapsus</i>	UPL

Table 2: Plant Species Observed in Wetland Areas

Common Name	Scientific Name	Wetland Indicator Status
Trees/Shrubs		
Russian olive	<i>Elaeagnus angustifolia</i>	FAC
Black cottonwood	<i>Populus trichocarpa</i>	FAC
Sandbar willow	<i>Salix exigua</i>	OBL
Yellow willow	<i>Salix lutea</i>	OBL
Pacific willow	<i>Salix lasiandra</i>	FACW
Sandbar willow	<i>Salix exigua</i>	OBL
Herbaceous		
Bentgrass	<i>Agrostis stolonifera</i>	FAC
Creeping foxtail	<i>Alopecurus arundinaceus</i>	FAC
Sedges	<i>Carex sp</i>	FACW
Canada thistle	<i>Cirsium arvense</i>	FACU
Barnyard grass	<i>Echinochloa crusgalli</i>	FACW
Creeping Spikerush	<i>Eleocharis palustris</i>	OBL
Willow-herb	<i>Epilobium sp.</i>	FACW
Baltic rush	<i>Juncus balticus</i>	FACW
Rush	<i>Juncus sp.</i>	FACW
Purple loosestrife	<i>Lythrum salicaria</i>	FACW
Curly dock	<i>Rumex crispus</i>	FAC
Hard-stem bulrush	<i>Scirpus acutus</i>	OBL
Broad-leaf cattail	<i>Typha latifolia</i>	OBL

3. WETLAND FINDINGS

Two wetland areas were identified in the project area totaling 0.63 acre. Wetland 1 is 0.57 acres and consists of PSS and PEM wetlands and Wetland 2 is 0.06 acres consisting entirely of PEM wetlands. The locations and acreages of these communities are shown in Figure 2. Wetland Delineation Data Sheets for each community are included in Appendix A and photographs of the wetlands are shown in Appendix B.

3.1 Wetlands

Wetland-1

Wetland 1 is 0.57 acres and consists of 0.430 acre of PSS and 0.14 acre of PEM. The PEM community is found in the central portion of the wetland area and is dominated by cattails (Figure 2). The PSS community surrounds the PEM community and is dominated by sandbar willows, with willows, Russian olive and black cottonwood present and an understory dominated by bentgrass. Hydrology for Wetland-1 is associated with the surface water from groundwater seepage. Hydric soil characteristics in this wetland includes dark mucky soils that are perennially saturated. Key hydrologic, soil, and vegetation characteristics for the PEM and PSS communities are summarized and presented in Table 3. Individual data sheets are included in Appendix A.

Wetland-2

Wetland-2 is 0.06 acre of PEM and is dominated by cattails with a sparse understory of bentgrass, rushes, sedges and willow-herb. Hydrology for Wetland-2 is associated with the surface water from groundwater seepage. Hydric soil characteristics in this wetland includes dark mucky soils that are perennially saturated. Key hydrologic, soil, and vegetation characteristics for the PEM and PSS communities are summarized and presented in Table 3. Individual data sheets are included in Appendix A

Table 3: Key Characteristics of Wetlands

Wetland Number	Hydrologic Indicators	Soil Indicators	Dominant Plants	Notes
Wetland-1, PSS 0.43 acre	Surface water or saturated soil present year round.	Muck soils and at or under the water line.	Sandbar willow and bentgrass.	These wetlands are considered adjacent to Warm Springs Creek by the U.S. Army Corps of Engineers (Corps) and flow to the Thurman Mill Drain.
Wetland-1, PEM 0.14	Surface water or saturated soil present year round.	Muck soils and at or under the water line.	Cattails	These wetlands are considered adjacent to Warm Springs Creek by the U.S. Army Corps of Engineers (Corps) and flow to the Thurman Mill Drain.

Wetland-2, PEM 0.06 acre	Surface water or saturated soil present year round.	Muck soils and at or under the water line.	Cattails	These wetlands are considered adjacent to Warm Springs Creek by the U.S. Army Corps of Engineers (Corps) and flow to the Thurman Mill Drain.
0.63 acres				

4. SUMMARY

A total of two wetland community types were identified in the Hyatt Wetland Mitigation Bank project area totaling 0.63 acres. Wetland 1 is 0.57 acre and includes 0.14 acre of PEM dominated by cattails and 0.43 acre of PSS dominated by PSS. Wetland 2 is a 0.06 acre PEM dominated by cattails. Hydric soils were identified by the presence of saturation or water. Surface water was present in each wetland..

A summary of wetland acreages is found in Table 4 below. The location of each wetland and its boundaries are shown in Figure 2.

Table 4: Summary of Wetland Acreage by Community Type

Wetland Community	Acreage
Wetland-1	
PEM	0.14
PSS	0.43
Wetland-2	
PEM	0.06
Total Wetlands	0.63

Although the wetlands found in the project area have been delineated, the Corps will make the final determination as to which wetlands are under their jurisdiction.

5. REFERENCES

- Community Planning Association of Southwest Idaho (COMPASS). 2007. *Digital Orthophotography*.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineer Waterways Experimental Station, Vicksburg, Miss.
- Environmental Laboratory. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. Technical Report ERDC/EL TR-06-16. U.S. Army Engineer Research and Development Center.
- Google Earth. 2011. Aerial photograph of project site. URL <http://www.http://earth.google.com> (visited December, 2011).
- Natural Resource Conservation Service (NRCS). 2004. *Hydric Soils List, Ada County Area, Idaho*. ftp://ftp-fc.sc.egov.usda.gov/MO1/hydric_pdf/idaho/id665hydric.pdf (visited June 24, 2011).
- NRCS. 2011. *Soil Survey of Ada Area Idaho*. United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/> accessed [June 9, 2011].
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- USFWS (U.S. Fish and Wildlife Service). 2011. *National wetland inventory maps for the Ada County*. URL <http://www.nwi.fws.gov> (visited Feb 1, 2011).
- USGS (U.S. Geological Survey). 1971. 1:24,000 topographic map for the Eagle Quadrangle (1971).
- U.S. Army Corp of Engineers. (USACE). 1996. Aerial photograph of project area taken during highwater, on February 26, 1996.

Appendix A
Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hyatt Mitigation Bank City/County: Boise, Ada County Sampling Date: 11/28/11
 Applicant/Owner: The Wetlands Group, LLC State: Idaho Sampling Point: PEM 1 and 2
 Investigator(s): Dave Kordiyak, Shane Hopkins Section, Township, Range: 26, T4N, R1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LLR B- Columbia/Snake River Plateau Lat: 43.651520 N Long: 116.296960 W Datum: NAD 83
 Soil Map Unit Name: pit gravel NWI classification: freshwater emergent

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <u>Historic gravel pit area with disturbed soils. Wetlands establish on groundwater seeps.</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute Dominant Indicator % Cover	Species?	Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
Total Cover				_____
Sapling/Shrub Stratum (Plot size: _____)	1. _____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
Total Cover				_____
Herb Stratum (Plot size: _____)	1. <u>Typha latifolia</u>	<u>90</u>	<u>Y</u>	<u>OBL</u>
2. <u>Scirpus acutus</u>	<u>1</u>	_____	_____	<u>OBL</u>
3. <u>Lythrum salicaria</u>	<u>P</u>	_____	_____	<u>OBL</u>
4. <u>Carex sp.</u>	<u>P</u>	_____	_____	<u>FAC W</u>
5. <u>Juncus sp.</u>	<u>P</u>	_____	_____	<u>FAC W</u>
6. <u>Epilobium sp.</u>	<u>P</u>	_____	_____	<u>FAC</u>
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
Total Cover				_____
Woody Vine Stratum (Plot size: _____)	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
Total Cover				_____
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

Remarks: Cattail dominates wetland areas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hyatt Stormwater Project City/County: Boise, Ada County Sampling Date: 11/28/11
 Applicant/Owner: The Wetlands Group, LLC State: Idaho Sampling Point: PSS - 1
 Investigator(s): Dave Kordiyak, Shane Hopkins Section, Township, Range: 26, T4N, R1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LLR B- Columbia/Snake River Plateau Lat: 43.651520 N Long: 116.296960 W Datum: NAD 83
 Soil Map Unit Name: gravel pit NWI classification: freshwater emergent

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Historic gravel pit. Shrubs growing around the edge of PEM wetland dominated by cattails.	

VEGETATION – Use scientific names of plants.

<p>Tree Stratum (Plot size: _____)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;">Absolute %</th> <th style="width:10%;">Dominant</th> <th style="width:10%;">Indicator</th> <th style="width:10%;">Species?</th> <th style="width:10%;">Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td align="right" colspan="6">Total Cover _____</td></tr> </tbody> </table> <p>Sapling/Shrub Stratum (Plot size: _____)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Salix exigua</u></td><td>80</td><td>Y</td><td>OBL</td></tr> <tr><td>2. <u>Salix sp.</u></td><td>P</td><td></td><td>FACW</td></tr> <tr><td>3. <u>Elaeagnus angustifolia</u></td><td>P</td><td></td><td>FAC</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td align="right" colspan="4">Total Cover _____</td></tr> </tbody> </table> <p>Herb Stratum (Plot size: _____)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Agrostis stolonifera</u></td><td>20</td><td>Y</td><td>FAC</td></tr> <tr><td>2. <u>Scirpus acutus</u></td><td>P</td><td></td><td>OBL</td></tr> <tr><td>3. <u>Lythrum salicaria</u></td><td>P</td><td></td><td>OBL</td></tr> <tr><td>4. <u>Carex sp.</u></td><td>P</td><td></td><td>FACW</td></tr> <tr><td>5. <u>Juncus sp.</u></td><td>P</td><td></td><td>FACW</td></tr> <tr><td>6. <u>Plantago lanceolata</u></td><td>P</td><td></td><td>FAC</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td align="right" colspan="4">Total Cover _____</td></tr> </tbody> </table> <p>Woody Vine Stratum (Plot size: _____)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td align="right" colspan="4">Total Cover _____</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____</p>		Absolute %	Dominant	Indicator	Species?	Status	1. _____	_____	_____	_____	_____	_____	2. _____	_____	_____	_____	_____	_____	3. _____	_____	_____	_____	_____	_____	4. _____	_____	_____	_____	_____	_____	Total Cover _____						1. <u>Salix exigua</u>	80	Y	OBL	2. <u>Salix sp.</u>	P		FACW	3. <u>Elaeagnus angustifolia</u>	P		FAC	4. _____	_____	_____	_____	5. _____	_____	_____	_____	Total Cover _____				1. <u>Agrostis stolonifera</u>	20	Y	FAC	2. <u>Scirpus acutus</u>	P		OBL	3. <u>Lythrum salicaria</u>	P		OBL	4. <u>Carex sp.</u>	P		FACW	5. <u>Juncus sp.</u>	P		FACW	6. <u>Plantago lanceolata</u>	P		FAC	7. _____	_____	_____	_____	8. _____	_____	_____	_____	Total Cover _____				2. _____	_____	_____	_____	Total Cover _____				<p>Dominance Test worksheet:</p> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
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<p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p>																																																																																																									
Remarks: Willows dominate the overstory around cattail wetland area.																																																																																																									

SOIL

Sampling Point: PSS - 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 4/1	100					silt	large cobbles, gravel and sand

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A1 2)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Areas where soils are saturated perennially, water table 0-12 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B1 0)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 0-12"
 Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks: Surface water present year round.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hyatt Stormwater Project City/County: Boise, Ada County Sampling Date: 11/28/11
 Applicant/Owner: The Wetlands Group, LLC State: Idaho Sampling Point: UPL - 1
 Investigator(s): Dave Kordiyak, Shane Hopkins Section, Township, Range: 26, T4N, R1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LLR B- Columbia/Snake River Plateau Lat: 43.651520 N Long: 116.296960 W Datum: NAD 83
 Soil Map Unit Name: gravel pit NWI classification: freshwater emergent

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Historic gravel pit. Shrubs growing on the banks of historic gravel pit. In many areas the sides are steep and the hydrology is lost within 2 feet of the water. Soils are primarily large cobbles, sand and gravels that remain saturated or are within 12" of surface.	

VEGETATION – Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <th style="width:40%;"></th> <th style="width:10%; text-align: center;">Absolute %</th> <th style="width:10%; text-align: center;">Dominant</th> <th style="width:10%; text-align: center;">Indicator</th> <th style="width:20%; text-align: center;">Species? Status</th> </tr> <tr> <td>1. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td align="right" colspan="5">Total Cover _____</td> </tr> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td>1. <u>Populus deltoides</u></td> <td style="text-align: center;">P</td> <td></td> <td style="text-align: center;">FAC</td> <td></td> </tr> <tr> <td>2. <u>Artemisia tridentata</u></td> <td style="text-align: center;">P</td> <td></td> <td style="text-align: center;">UPL</td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td align="right" colspan="5">Total Cover _____</td> </tr> </table> <p><u>Herb Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td>1. <u>Bromus tectorum</u></td> <td style="text-align: center;">15</td> <td></td> <td style="text-align: center;">FAC</td> <td></td> </tr> <tr> <td>2. <u>Agropyrum sp.</u></td> <td style="text-align: center;">35</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">FAC</td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td align="right" colspan="5">Total Cover _____</td> </tr> </table> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td>1. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td align="right" colspan="5">Total Cover _____</td> </tr> </table> <p>% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____</p>		Absolute %	Dominant	Indicator	Species? Status	1. _____					2. _____					3. _____					4. _____					Total Cover _____					1. <u>Populus deltoides</u>	P		FAC		2. <u>Artemisia tridentata</u>	P		UPL		3. _____					4. _____					5. _____					Total Cover _____					1. <u>Bromus tectorum</u>	15		FAC		2. <u>Agropyrum sp.</u>	35	Y	FAC		3. _____					4. _____					5. _____					6. _____					7. _____					8. _____					Total Cover _____					1. _____					2. _____					Total Cover _____					<p>Dominance Test worksheet:</p> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
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<p>Hydrophytic Vegetation Indicators:</p> Dominance Test is >50% Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)																																																																																																																									
<p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>																																																																																																																									
<p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p>																																																																																																																									
Remarks: Upland areas with FAC species. No hydrology																																																																																																																									

SOIL

Sampling Point: IRR W-2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/6	100					sand	with silt

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A1 2)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ^X _____

Remarks: Reduced root channels
No hydrology or hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B1 0)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No ^X _____

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

Remarks: No hydrology is present within 12" of surface.

Appendix B

Photographs



Photograph of Wetland-1 PEM surrounded by PSS community.



Photograph of Wetland-2 PEM community.

Hyatt Wetlands Mitigation Bank Ledger

Hyatt Wetland Mitigation Bank Credit Ledger

Date	Item	Total Credit/Debit	Credits issued			Permitee	Permit number	Type of Permit	Location	Impacts			Notes
			PEM (1.39 acre)	PSS (2.97 acre)	PFO (2.73 acre)					PEM	PSS	PFO	
	Credit Balance	0.00	0.00	0.00	0.00				0.00	0.00	0.00		

Table 1. Functions and Values Analyses for Wetlands Created for the Hyatt Wetlands Mitigation Bank.

	Rating (L,M,H)	Functional Points	Possible Functional Points
Listed / Proposed T&E Species	L	0	1
ID National Heritage Program Species Habitat	L	0	1
General Wildlife Habitat	H	0.9	1
General Fish Aquatic Habitat	NA	0	0
Flood Attenuation	NA	0	0
Short- and Long-Term Surface Water Storage	H	0.9	1
Sediment / Nutrient / Toxicant Removal	H	1.0	1
Sediment / Shoreline Stabilization	NA	0	0
Production Export / Food Chain Support	M	0.7	1
Groundwater Discharge / Recharge	M	0.7	1
Uniqueness	M	0.5	1
Recreation / Education Potential	H	0.2	0
Total		4.9	8
Percentage		61.3	
Wetland Category		II	

Table 2. Summary of Wetlands Created for the Hyatt Wetlands Mitigation Bank.

Variable	Rating	Comment
Listed/proposed threatened and endangered species habitat	NA	No threatened, endangered or candidate species have been observed on site.
Species of concern	NA	No species of concern have been documented in the vicinity of the site.
General wildlife habitat	High	Wetlands will provide structurally diverse wildlife habitat in an area with abundant wildlife.
General fish/aquatic habitat	NA	No fish habitat will be present on site.
Flood attenuation	NA	These wetlands are not subject to overbank flooding.
Short- and long-term water storage	High	These wetlands will store seasonal runoff and intermittent stormwater flows.
Sediment/nutrient/ Toxicant removal	High	The wetlands receive some sediments and nutrients via runoffs and stormwater flows..
Sediment/shoreline stabilization	N/A	Wetlands will not have a shoreline.
Production export/food chain support	Moderate	The wetlands (7.09 acres vegetated) provide biomass production for food/nutrient sources to the food chain.
Groundwater discharge/recharge	Moderate	Groundwater recharge will occur during runoff and stormwater events.
Uniqueness	Moderate	The area is not unique in the region but will provide have habitat with structural diversity.
Recreational and educational potential	High	The mitigation site will be owned by the public and will have general access providing educational opportunities.
Overall Rating	Category II	

Date	Water Level (in)	Water Level (ft.)	Elevation
6/12/2007	25.56	2.13	2629.94
6/22/2007	24	2	2630.07
6/26/2007	24	2	2630.07
7/11/2007	24	2	2630.07
10/15/2007	25.2	2.1	2629.97
11/5/2007	25.8	2.15	2629.92
12/12/2007	25.56	2.13	2629.94
3/10/2008	33.48	2.79	2629.28
5/14/2008	27	2.25	2629.82
6/9/2008	22.56	1.88	2630.19
6/16/2008	20.76	1.73	2630.34
6/18/2008	20.28	1.69	2630.38
6/19/2008	20.28	1.69	2630.38
6/20/2008	20.04	1.67	2630.4
6/23/2008	19.56	1.63	2630.44
6/25/2008	18.72	1.56	2630.51
6/30/2008	17.76	1.48	2630.59
7/2/2008	17.76	1.48	2630.59
7/7/2008	17	1.416	2630.654
7/9/2008	16.56	1.38	2630.69
7/10/2008	15.72	1.31	2630.76
7/16/2008	18.24	1.52	2630.55
7/21/2008	20.4	1.70	2630.37
7/28/2008	20.88	1.74	2630.33
8/1/2008	20.76	1.73	2630.34
8/4/2008	20.04	1.67	2630.4
8/12/2008	18.48	1.54	2630.53
8/20/2008	17.28	1.44	2630.63
8/21/2008	18.48	1.54	2630.53
8/29/2008	16.8	1.40	2630.67
9/12/2008	21	1.75	2630.32
9/15/2008	20.16	1.68	2630.39
9/24/2008	22.2	1.85	2630.22
10/1/2008	20.4	1.70	2630.37
10/13/2008	20.4	1.70	2630.37
10/27/2008	21	1.75	2630.32
11/7/2008	29.4	2.45	2629.62
11/15/2008	37.2	3.10	2628.97
12/5/2008	38.4	3.20	2628.87
1/19/2009	40.2	3.35	2628.72
2/25/2009	41.7	3.48	2628.595
3/1/2009	44.4	3.70	2628.37
3/30/2009	44.4	3.70	2628.37
4/3/2009	44.4	3.70	2628.37
4/15/2009	44.4	3.70	2628.37
4/21/2009	38.4	3.20	2628.87

Date	Water Level (in)	Water Level (ft.)	Elevation
5/4/2009	33	2.75	2629.32
5/7/2009	31.2	2.60	2629.47
5/12/2009	34.56	2.88	2629.19
5/13/2009	34.08	2.84	2629.23
5/14/2009	33.24	2.77	2629.30
5/18/2009	31.08	2.59	2629.48
5/20/2009	29.76	2.48	2629.59
5/26/2009	27.6	2.30	2629.77
5/27/2009	27	2.25	2629.82
6/1/2009	25.44	2.12	2629.95
6/3/2009	24.12	2.01	2630.06
6/9/2009	28.68	2.39	2629.68
6/15/2009	24.84	2.07	2630.00
6/16/2009	23.88	1.99	2630.08
6/17/2009	23.4	1.95	2630.12
6/19/2009	22.68	1.89	2630.18
6/23/2009	21.48	1.79	2630.28
6/25/2009	20.76	1.73	2630.34
6/29/2009	20.04	1.67	2630.40
7/8/2009	18.96	1.58	2630.49
7/14/2009	18	1.50	2630.57
7/17/2009	18.24	1.52	2630.55
7/22/2009	20.04	1.67	2630.40
7/30/2009	19.74	1.65	2630.43
8/4/2009	19.25	1.60	2630.47
8/13/2009	19.32	1.61	2630.46
8/20/2009	19.63	1.64	2630.43
8/27/2009	19.75	1.65	2630.42
9/2/2009	19.75	1.70	2630.37
9/10/2009	19.75	1.66	2630.41
9/14/2009	19.75	1.66	2630.41
9/25/2009	19.75	1.64	2630.43
10/2/2009	19.75	1.64	2630.43
10/13/2009	19.5	1.62	2630.45
10/20/2009	19.75	1.64	2630.43
10/29/2009	20	1.67	2630.40
11/12/2009	19.75	1.65	2630.42
11/19/2009	20.125	1.68	2630.39
11/24/2009	20.5	1.71	2630.36
12/3/2009	20.75	1.73	2630.34
12/16/2009	19.38	1.61	2630.46
3/22/2010	26.75	2.23	2629.84
8/24/2010	24.2	2.02	2630.05
8/27/2010	23.5	1.96	2630.11
9/14/2010	17	1.42	2630.65
9/15/2010	17.5	1.46	2630.61
9/16/2010	18	1.50	2630.57
9/20/2010	17.5	1.46	2630.61

Date	Water Level (in)	Water Level (ft.)	Elevation
11/8/2010	16	1.33	2630.74
11/9/2010	17.5	1.46	2630.61
5/4/2011	17.75	1.48	2630.59