MONTANA DEPARTMENT OF TRANSPORTATION
WETLAND MITIGATION MONITORING REPORT: YEAR 2006

Lame Deer - East Mitigation Sites
Lame Deer, Montana

Prepared for:

MONTANA DEPARTMENT OF TRANSPORTATION
2701 Prospect Ave
Helena, MT 59620-1001

Prepared by:

POST, BUCKLEY, SCHUH, AND JERNIGAN
P.O. Box 239
Helena, MT 59624

December 2006

Project No: B43054.00 - 0410

PBS&J

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1.0 INTRODUCTION

This annual report summarizes methods and results of the 2006 (fifth year) monitoring for the Montana Department of Transportation's (MDT) Lame Deer - East mitigation site. The Lame Deer - East wetlands, located in Watershed #4 of the MDT Glendive District, were constructed to mitigate in part for the 2.5 acres of wetland impact to the Alderson Creek corridor during the Highway 212 reconstruction project. The monitoring site is located in Rosebud County within the town of Lame Deer, Section 34, Township 2 South, Range 41 East **(Figure 1)**. There are three mitigation sites within this area: the Lame Deer – East site is adjacent to a school in the center of town and is often referred to as the "school mitigation or reserve site"; and two recreated wetlands are located along Highway 212, Wetland 369 and Wetland 380 (the numbers correlate with MDT project survey stations). Elevations of all three mitigation sites range from 3,250 to 4,337 feet above sea level.

The Lame Deer - East monitoring site wetland (in this report referred to as the School Mitigation Site) was constructed in July/August 2001 within the historic floodplain of Lame Deer Creek; fill was historically placed within the current mitigation site to create a ball field for the school **(Figure 2** in **Appendix A)**. The fill was removed to create and restore wetlands in the area; the intent was to create 1.23 acres and restore 0.56 acre for a total of 1.79 acres. The wetland is bisected by a sewer line that was in place prior to the wetland construction. Fill removed from the constructed wetland areas was placed on top of the sewer line to create a thermal barrier (Martin 2001), which in effect has created a north and south wetland cell and an access trail to the creek. The area represented by the sewer line/trail system represents approximately 0.11 acre, which adjusts the intended size of the mitigation wetland to 1.68 acres.

The two recreated wetlands along Hwy. 212 are adjacent to Alderson Creek: Wetland 369 is approximately 4.75 miles from the intersection of Hwy. 39 and 212 in Lame Deer (station numbers increase in an easterly direction from Lame Deer), and Wetland 380 is 5.5 miles from the intersection. The intent of these mitigation efforts was to recreate approximately 1.5 acres of wetland (Harris 1999, on file at MDT). Site plans are included in **Appendix D**. The recreated wetlands were photographed to monitor wetland development and the wetland acreage was estimated by recording the wetland boundary on an aerial photograph **(Figure 3** in **Appendix F)**.

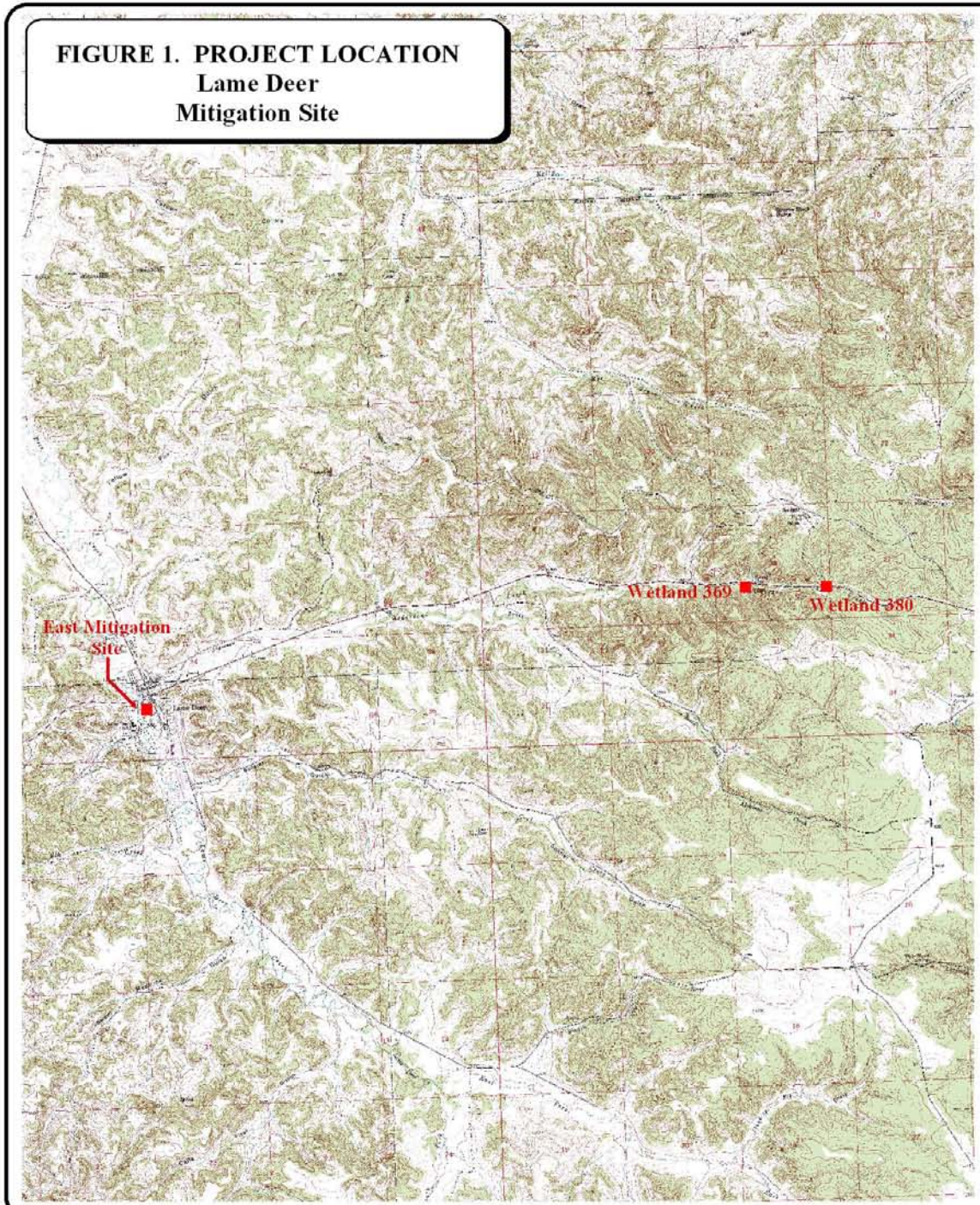
Total mitigation acreage goal is 3.18 acres, of which 1.68 was intended to be created at the school site and a total of 1.5 acres at the Highway 212 wetlands.

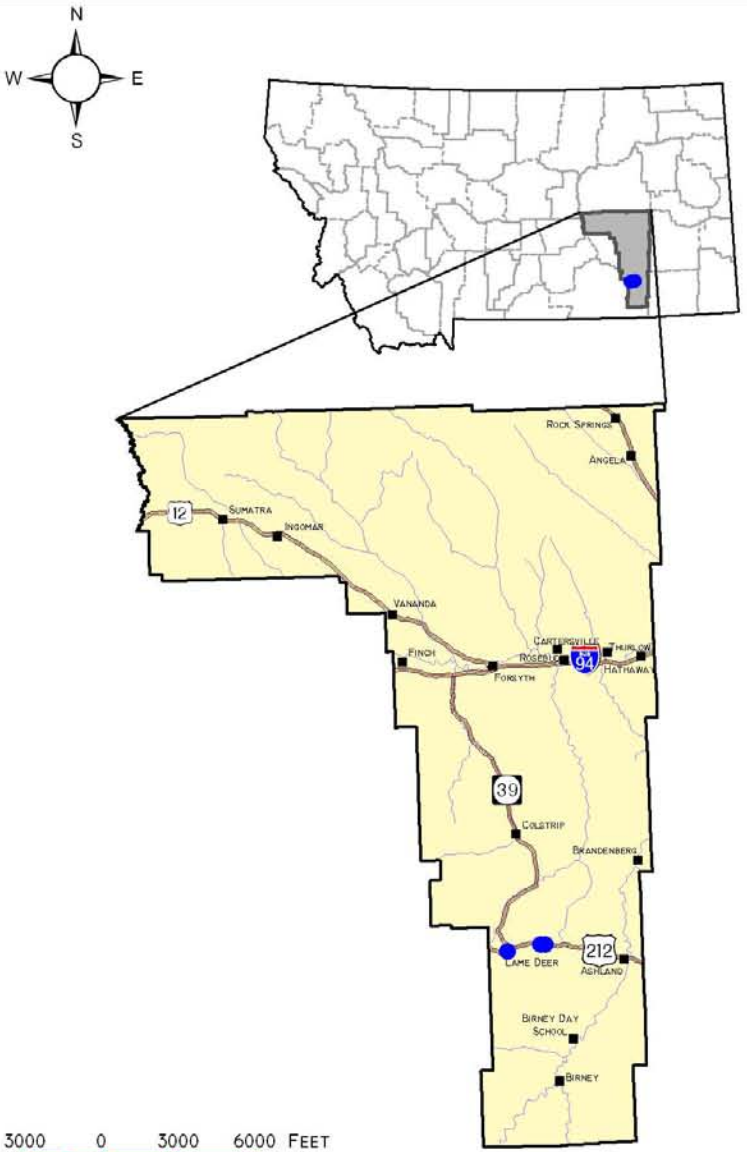
2.0 METHODS

2.1 Monitoring Dates and Activities

All three Lame Deer-East wetland mitigation sites were monitored on July 17, 2006. A full site investigation involving the collection of data for the Wetland Mitigation Site Monitoring Form was conducted on the school mitigation site, including COE sample point data and MDT Functional Assessment Forms **(Appendix B)**. Activities and information conducted/collected for the full monitoring assessment at the school mitigation site included: wetland delineation; wetland/open water data; vegetation community mapping; vegetation transects; soils data;

FIGURE 1. PROJECT LOCATION
Lame Deer
Mitigation Site





3000 0 3000 6000 FEET

1: 100,000

PROJECT #: 130091.040
DATE: Dec 2002
LOCATION:
PROJECT MANAGER: J. Berglund
DRAWN BY: B. Noecker

LAND & WATER CONSULTING, INC.
1120 CEDAR PO BOX 8254 MISSOULA, MT 59807

hydrology data; bird and general wildlife use; photograph points; GPS data points; functional assessment; and, maintenance assessment of any inflow/outflow structures (non-engineering).

At the recreated wetlands along Hwy. 212, COE sample point, wetland boundary, and MDT functional assessment data were collected **(Appendix F)**. Photographs were taken from photo reference points during the same monitoring event.

2.2 Hydrology

Wetland hydrology indicators were recorded using procedures outlined in the US Army Corps of Engineers (COE) 1987 Wetland Delineation Manual (Environmental Laboratory 1987). Hydrology data were recorded on the COE Routine Wetland Delineation Data Form **(Appendix B)** at each wetland determination point. Precipitation data for the year 2005 and January – July, 2006 were compared to the 1944-current average (WRCC 2006).

All additional hydrologic data were recorded on the school Wetland Mitigation site Site Monitoring Form **(Appendix B)**. The boundary between emergent vegetation and open water was mapped on the aerial photograph **(Figure 3** in **Appendix A)**. There are no groundwater monitoring wells at the site.

The open water boundary at the Hwy. 212 recreated wetlands was mapped on aerial photographs and quantified (**Figure 3** in **Appendix F**).

2.3 Vegetation

General vegetation types within the school mitigation site were delineated on an aerial photograph during the site visit (**Figure 3** in **Appendix A)**. Coverage of the dominant species in each community type is listed on the Wetland Mitigation Site Monitoring Form **(Appendix B)**. A comprehensive plant species list for the entire site was compiled and will be updated as new species are encountered. Observations from past years will be compared with new data to document vegetation changes over time. Woody species were planted at the school mitigation site and are listed on the monitoring form.

A transect was established in each cell of the school mitigation site; the locations of the transects are shown on **Figure 2** in **Appendix A**. Percent cover for each species was recorded on the vegetation transect form **(Appendix B)**. Transect ends were marked with metal fence posts and their locations recorded on the vegetation map. Photos of each transect were taken from both ends during the site visit.

The emergent vegetation boundary at the Highway 212 recreated wetlands was mapped on aerial photographs and quantified (**Figure 3** in **Appendix F**).

2.4 Soils

Soils were evaluated during the site visit according to the procedure outlined in the COE 1987 Wetland Delineation Manual. Soil data were recorded for each wetland determination point on

the COE Routine Wetland Delineation Data Forms **(Appendix B-School Site; Appendix F-HWY 212 Wetland Sites)**.

2.5 Wetland Delineation

A wetland delineation was conducted within the assessment area according to the 1987 COE Wetland Delineation Manual. Wetland and upland areas within the monitoring area were investigated for the presence of wetland hydrology, hydrophytic vegetation and hydric soils. The indicator status of vegetation was derived from the National List of Plant Species that Occur in Wetlands: North Plains Region 4 (Reed 1988). The information was recorded on the COE Routine Wetland Delineation Forms **(Appendix B-School Site; Appendix F-Hwy. 212 Wetland Sites)**. The wetland boundaries at the school mitigation site (**Figure 3** in **Appendix A**) and the recreated wetlands along Hwy. 212 (**Figure 3** in **Appendix F**) were mapped on aerial photographs.

2.6 Mammals, Reptiles, and Amphibians

Mammal, reptile, and amphibian species observations were recorded on the wetland monitoring form during the site visit **(Appendix B)**. Indirect use indicators were also recorded including tracks, scat and burrows. A comprehensive wildlife species list for the entire site was compiled and will be updated as new species are encountered. Observations from past years will be compared with new data to determine if wildlife use is changing over time.

2.7 Birds

Bird observations were recorded during the site visit according to the established Bird Survey Protocol **(Appendix E)**. A general, qualitative bird list has been compiled using these observations. Observations will be compared between years in future studies.

2.8 Macroinvertebrates

No macroinvertebrate samples were collected on the site.

2.9 Functional Assessment

A functional assessment form was completed in 2006 for all mitigation monitoring sites using the 1999 MDT Montana Wetland Assessment Method (Berglund 1999). Field data necessary for this assessment were collected on a condensed data sheet. The remainder of the assessment was completed in the office. Completed Functional Assessment Forms for the school site are included in **Appendix B**. Functional assessments of the Hwy. 212 recreated wetlands were also conducted; completed forms are included in **Appendix F**.

2.10 Photographs

Photographs were taken showing the current land use surrounding the mitigation monitoring site, the wetland buffer, the monitored area, and the vegetation transect **(Appendix C)**. A description

and compass direction for each photograph were recorded on the wetland monitoring form. During the 2002 monitoring season, each photo-point was marked on the ground with a wooden stake and the location recorded with a resource grade GPS. The approximate photograph locations are shown on **Figure 2** in **Appendix A.**

Photographs were also taken of the recreated wetlands east of Lame Deer along Hwy. 212 **(Appendix F)**; photo logs of the recreated wetlands are also included in **Appendix F**. All on-site photographs were taken with a digital camera.

2.11 GPS Data

During the 2002 monitoring season, survey points were collected at the monitoring site using a resource grade Trimble, Geoexplorer III hand-held GPS unit **(Appendix E)**. Points collected at the school site included: the vegetation transect beginning and ending locations; photograph locations; and the jurisdictional wetland boundary. In addition, survey points were collected at several landmarks recognizable on the air photo for purposes of line fitting to the topography. At wetlands 369 and 380, photo reference points and photo location data were also collected using GPS. No additional GPS data were collected in 2006.

2.12 Maintenance Needs

No bird boxes are located within this site. The inflow (and outflow for wetlands 380 and 369) structures was checked for obstructions.

3.0 RESULTS

3.1 Hydrology

The Lame Deer - East mitigation monitoring site was constructed in July/August 2001 to be a 1.68-acre wetland within the floodplain of Lame Deer Creek. The hydrologic source of the mitigation wetland is primarily ground and stormwater and secondarily overbank flows from Lame Deer Creek. Stormwater enters the southwest corner of the south cell through an up-gradient culvert under the access road. The north and south cells were created when fill from the wetland construction was placed over the sanitary sewer line to protect it from damage; the sewer line and fill effectively create the two cells.

During the July 17, 2006 visit, no surface water was observed within the School Mitigation site; both of the cells were saturated to the surface within the wetland zone. Wetlands 369 and 380 were inundated. The outlet culvert in wetland 369 remains plugged and water continues to flow beside the culvert underground and exits near the downstream of the culvert, effectively eroding the soil from around the outflow end.

Precipitation data for the Busby station indicate that the yearly average (1944-current 2006) is 13.67 inches (WRCC 2006); through the month of July the average precipitation was 9.38 inches. During 2006, precipitation through the month of July was 7.19 inches or 77% of the

average. For comparison, precipitation in 2005 was 113% (15.42 inches) of the yearly mean, which increased the level of saturation in both wetland cells.

3.2 Vegetation

Vegetation species identified within both cells of the school monitoring site are presented in **Table 1** and in the Monitoring Form **(Appendix B)**. There are nine vegetation communities defined within the monitoring form, however, as a result of community transitions and expansions, only five were mapped in 2006 (**Figure 3** in **Appendix A; Charts 1-4**). The communities include: Type 1, *Scirpus* spp.; Type 2, *Hordeum jubatum/Eleocharis palustris;* Type 3, *Salix exigua/Puccinellia nuttalliana*; Type 4, Upland (Undeveloped Wetland); Type 5 *Agropyron sp./Melilotus officinale;* Type *6, Melilotus officinale/Lactuca serriola/Circium arvensis;* Type 7, *Scirpus pungens/Hordeum jubatum;* Type 8, *Populus tremula/Salix exigua/Scirpus pungens,*and Type 9, *Hordeum jubatum*. Dominant species within each community are listed on the Monitoring Form **(Appendix B)**. The vegetation transect results are detailed in the Monitoring Form **(Appendix B)** and are summarized below in **Tables 2a** and **2b** and **Charts 1-4**.

Total vegetation cover and percent cover of wetland species has increased in the south cell along transect 1 since 2002 **(Table 2a)**. Most of the sprigged willows continue to survive and the basin of the cell has homogenized into one large community type (Type 1).

The transect within the north cell was established in 2002 **(Table 2b)**. Three distinct community types have established within the north cell. The substrate saturation zone has expanded into the surrounding upland area and it is anticipated that wetland vegetation will continue to colonize these areas in future growing seasons.

Wetland vegetation at W-369 has expanded into the area adjacent to the stream inlet. The remainder of the perimeter continues to be inundated to the base of the adjacent slope where the saturation zone is inhibited by the steepness of the slope. Hydrophytic vegetation has begun to colonize the open water perimeter around all of the wetland site. The vegetation within the W-380 boundary has increased in complexity and to a small extent expanded into the upland zone around the periphery of the entire wetland, including upslope along the stream inlet (see COE forms for partial species list).

3.3 Soils

The school site was mapped as part of the Rosebud County Soil Survey. The soil series on the mitigation site is Straw-Canburn complex (Map Unit 172). The Straw component is a non-hydric well drained loam and the Canburn is a hydric very poorly drained loam. The dominant parent material in both components is alluvium with infrequent flooding of the Straw component and frequent flooding of the Canburn component. Soils on the site generally matched these descriptions.

Table 1: ***2002-2006 School Mitigation Site vegetation species list.***

Scientific Name	Region 4 (North Plains) Wetland Indicator Status
Agropyron spp.	FAC-FACU
Chenopodium hybridum	-(FAC)
Carex lanuginosa.	OBL
Carex praegracilis	FACW
Cicuta douglasii (likely)	-
Eleocharis palustris	OBL
Equisetum hyemale	FACW
Galium circaezans	-
Glyceria grandis	OBL
Glycyrrhiza lepidota	FACU
Hordeum jubatum	FACW
Juncus bufonius	OBL
Lactuca serriola	FACU
Melilotus officinalis	FACU-
Mentha arvensis	FACW
Pastinaca sativa	-
Populus tremula	FAC
Puccinellia distans	FACW
Puccinellia nuttalliana	OBL
Rumex crispus	FACW
Salix exigua (planted)	FACW+
Salix spp.	(FACW-OBL)
Scirpus acutus	OBL
Scirpus pallidus	OBL
Scirpus pungens	OBL
Trifolium spp.	(unknown-assumed UPL)
Typha latifolia	OBL

[1] **Bolded** species indicate those documented within the analysis area for the first time in 2006.
(-) Species either not included or classified as "non-indicator" for the North Plains Region in the National List of Plant Species that Occur in Wetlands (Reed 1988); status in parentheses are probable based on national indicators and classifications for adjacent regions.

Soils were sampled at two wetland locations: SP-1, South Cell and SP-3, North Cell. Soils at SP-1 were a dark gray/grayish brown (2.5Y 4/1, 4/2) silt clay with streaks of black (2.5Y 2/1) at a depth of 10 inches. In the north cell, SP-3 included the same color clay loam with dark brown (7.5YR 3/4) mottles at a depth of 10 inches. Saturation was observed at the surface in the south cell soil pit and no saturation was noted in the north cell pit (other areas in the north cell were saturated). COE Forms for the school site are included in **Appendix B.**

Along route 212 in the vicinity of the recreated wetland sites, the soils are Bitton-Shambo complex (Map Unit 26); a well drained channery (an accumulation of thin, flat, coarse rock fragments) loam and loam (respectively) soil complex. At site 369, black (10 YR 2/1) soils were saturated to the surface and were a coarse mix of sand, silt and clay at a depth of 10 inches. At site 380, black (10 YR 2/1) silty, gravelly loam was observed at a depth of 10 inches and was saturated to the surface. COE Forms for wetlands 369 and 380 are included in **Appendix F**.

Table 2a: ***2002-2006 Transect 1 (South Cell) data summary.***

Monitoring Year	2002	2003	2004	2005	2006
Transect Length (feet)	207	207	207	207	207
# Vegetation Community Transitions along Transect	3	3	0	0	0
# Vegetation Communities along Transect	3	3	1	1	1
# Hydrophytic Vegetation Communities along Transect	2	2	1	1	1
Total Vegetative Species	9	8	7	4*	6
Total Hydrophytic Species	6	5	6	4*	6
Total Upland Species	3	3	1	0	0
Estimated % Total Vegetative Cover	53	80	99	99	100
% Transect Length Comprised of Hydrophytic Vegetation Communities	29	90	100	100	100
% Transect Length Comprised of Upland Vegetation Communities	71	10	0	0	0
% Transect Length Comprised of Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprised of Bare Substrate	0	0	0	0	0

***** Inundated up to 15 inches, unable to walk through center, and species were counted by what was most visible from the more shallow areas.

Chart 1: ***Length of vegetation communities within Transect 1 (South Cell).***

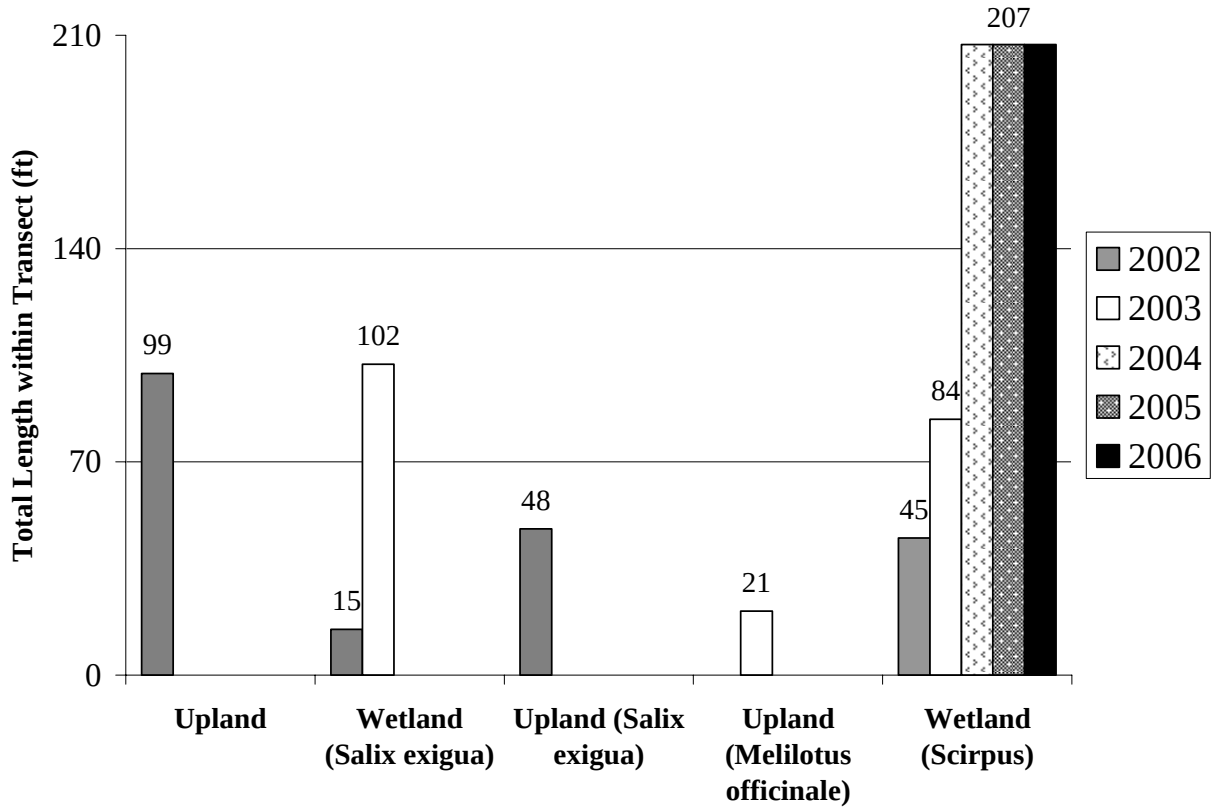


Chart 2: ***Transect maps showing vegetation types of Transect 1 (South Cell).***

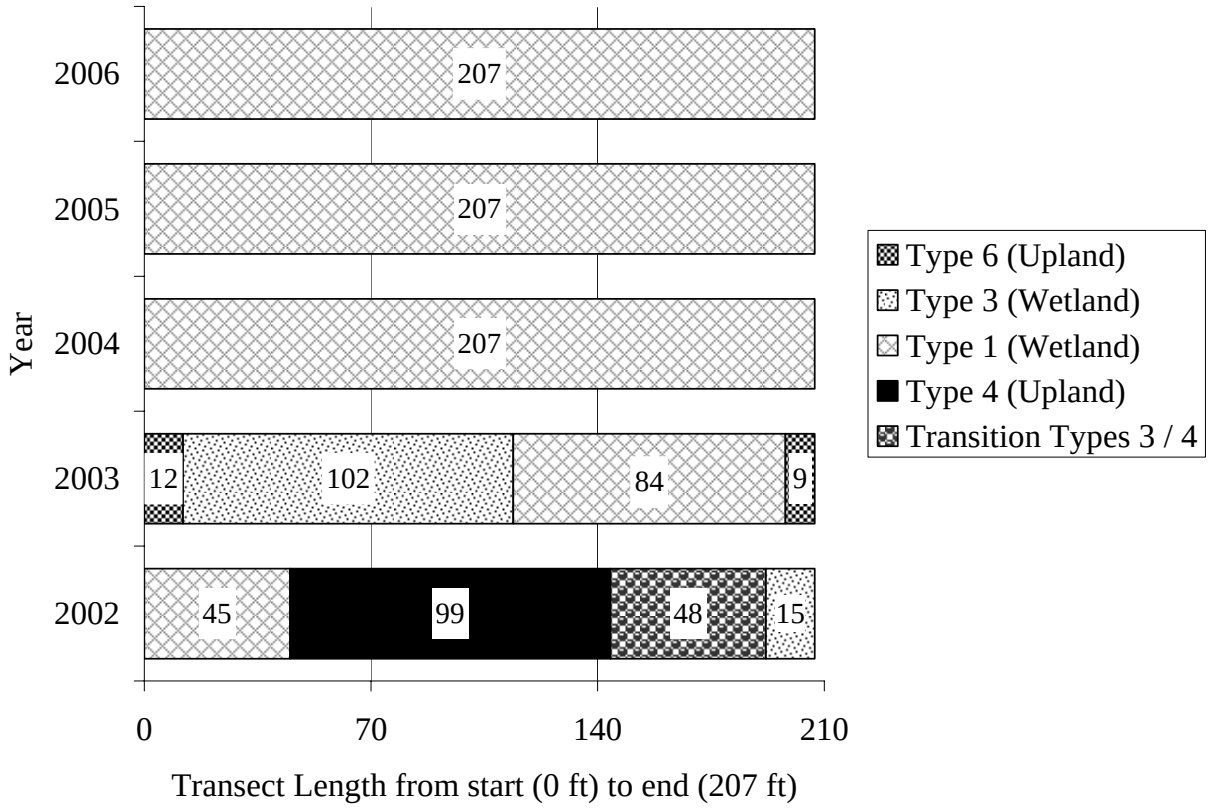


Table 2b: ***2002-2006 Transect 2 (North Cell) data summary.***

Monitoring Year	2003	2004	2005	2006
Transect Length (feet)	162	162	162	162
# Vegetation Community Transitions along Transect	4	3	3	3
# Vegetation Communities along Transect	2	3	3	3
# Hydrophytic Vegetation Communities along Transect	1	2	2	2
Total Vegetative Species	12	13	16	15
Total Hydrophytic Species	9	9	12	10
Total Upland Species	3	4	4	5
Estimated % Total Vegetative Cover	100	100	100	100
% Transect Length Comprised of Hydrophytic Vegetation Communities	28	67	75	85
% Transect Length Comprised of Upland Vegetation Communities	72	33	25	15
% Transect Length Comprised of Unvegetated Open Water	0	0	0	0
% Transect Length Comprised of Bare Substrate	0	0	0	0

Chart 3: ***Length of vegetation communities within Transect 2 (North Cell).***

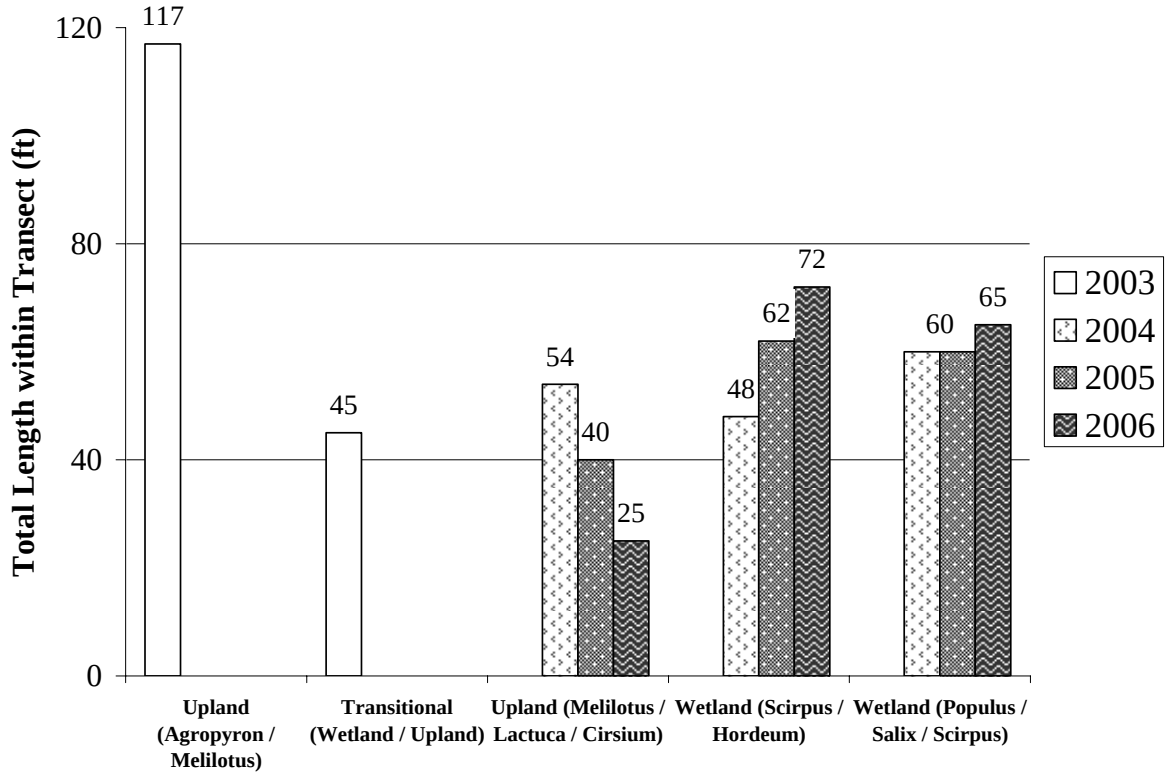
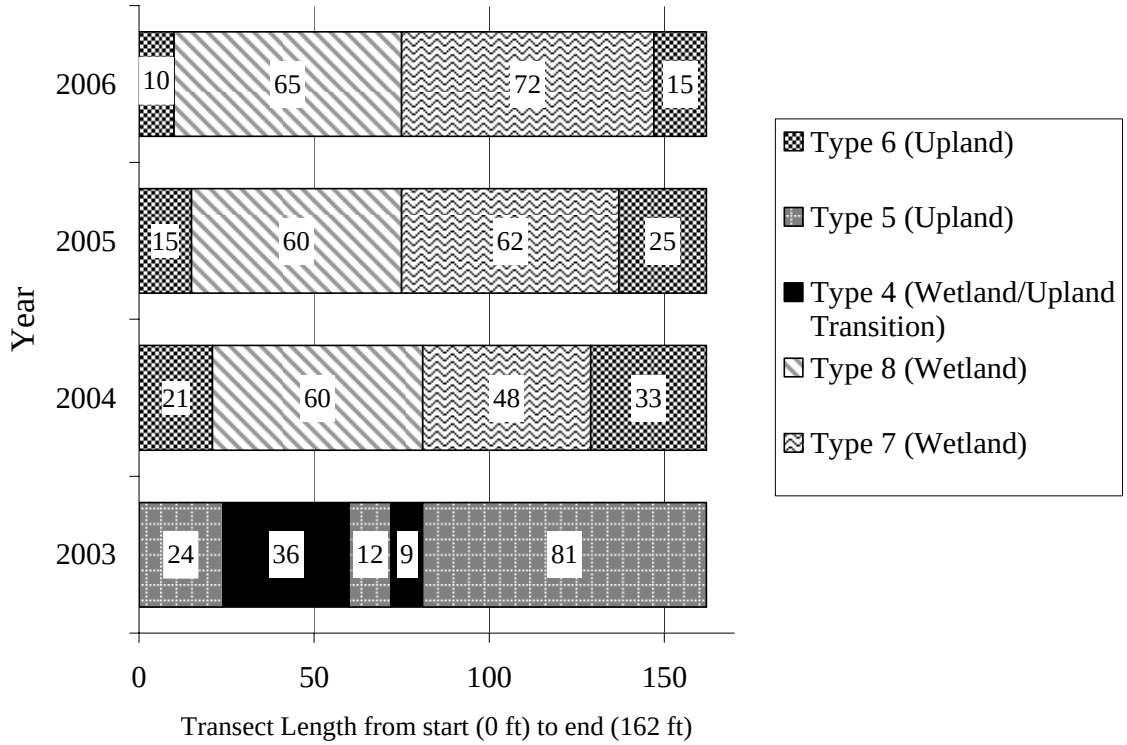


Chart 4: ***Transect maps showing vegetation types of Transect 2 (North Cell) from start (0 feet) to end (162 feet) for each year monitored.***



3.4 Wetland Delineation

The delineated wetland boundary at the school mitigation site is depicted on **Figure 3** in **Appendix A**. The delineation resulted in a total of 0.83 acre of wetland development within the north and south cells; an increase of 0.01 acre since 2005 **(Table 3)**. The percent cover of the south cell continues to increase as a result of stormwater collection. The south cell has likely reached its limit of wetland development; although the base of the upland berm continues to be saturated and suggests the wetland may expand another 1 to 2 feet up the slope. The north cell has developed three wetland communities and continues to expand toward the base of the berm on the south and north side. The trees and shrubs within both cells are maturing and some may achieve tree height within the next two years. The COE Forms are included in **Appendix B.**

The estimated gross wetland acreages for the recreated wetlands along Highway 212 were 0.7 acre at Wetland 369 and 0.39 acre at Wetland 380 **(Figure 3, Appendix F)**. Wetland 369 was 19% (0.18 acre) vegetated and Wetland 380 was 62% vegetated **(Table 3)**.

The total gross wetland acreage within the three Lame Deer-East mitigation sites is 1.92 acres, very similar to 2005 totals **(Table 3)** and represents 60% of the 3.18 acre total mitigation acreage goal for the Lame Deer-East mitigation site.

Table 3: ***2002-2006 summary of wetland features for all Lame Deer-East mitigation sites.***

YEAR[1]	WETLAND FEATURE (ACRES)									TOTAL GROSS WETLAND Area (acres)
	School Site			Wetland 369			Wetland 380			
	Open Water	Net Wetland	Gross Wetland Area	Open Water	Net Wetland	Gross Wetland Area	Open Water	Net Wetland	Gross Wetland Area	
2003	0	0.47	**0.47**	0.52	0.05	**0.57**	0.14	0.09	**0.23**	**1.27**
2004	0	0.62	**0.62**	0.52	0.05	**0.57**	0.14	0.16	**0.30**	**1.27**
2005	0	0.85	**0.85**	0.62	0.08	**0.70**	0.17	0.20	**0.36**	**1.91**
2006	0	0.83	**0.83**	0.57	0.18	**0.70**	0.15	0.24	**0.39**	**1.92**

[1] 2002 not included; the north cell, wetlands 369 and 380 were not assessed in 2002.

3.5 Wildlife

Wildlife species observed at the school mitigation site are listed in **Table 4.** No bird boxes have been installed at this site. In general, wildlife usage of the School, and Wetlands 369 and 380 is moderate.

Table 4. ***2002-2006 fish and wildlife species observed at the School Mitigation Site.***

AMPHIBIANS AND REPTILES	
Northern Leopard Frog (*Rana pipiens*)	
BIRDS	
American Goldfinch (*Carduelis tristis*)	Eastern Kingbird (*Tyrannus tyrannus*)
American Robin (*Turdus migratorius*)	Song Sparrow* *(Melospiza melodia*)
Cedar Waxwing (*Bombycilla cedorum*)	Yellow Warbler* (*Dendroica petechia*)
Common Grackle* (*Quiscalus quiscula*)	**Western Wood Pewee* (*Contopus sordidulus*)**
Common Yellowthroat *(Geothlypis trichas)*	**Unidentified waterfowl**
MAMMALS	
Cattle (tracks)	

*Individuals not in wetland but in adjoining upland.
Bolded species indicate those documented within the analysis area in 2006.

3.6 Macroinvertebrates

No macroinvertebrate samples were collected on the site.

3.7 Functional Assessment

Completed Functional Assessment Forms for the school monitoring site are included in **Appendix B;** summary **Tables 5** and **5a** for all previous monitoring years are also included in **Appendix B**. The 1999 "baseline" functional assessment is not directly comparable because the assessment area included 20-30 acres of floodplain on the north and south sides of Hwy. 212. The assessment does provide valuable information regarding the baseline characteristics of floodplain wetlands in that area; the general wetland floodplain rated as a Category III wetland in 1999 (Harris 1999).

The school mitigation monitoring site continued to score as a Category II wetland in 2006 (**Table 5b**). Functional units have increased from 2.02 in 2003 to 5.89 in 2006. Wetland 369 is classified as a Category III as a result of a low number of wildlife observations over 5 years. Wetland 380 is a Category II site due to the breeding population of the northern leopard frog. Functional assessment forms are included in **Appendix B** (school site) and **Appendix F** (Highway 212 sites). Total functional unit gain for all Lame Deer-East Mitigation sites as of 2006 is 14.24, an increase of 11% since 2005.

Table 5b: ***Summary of 2006 wetland function/value ratings and functional points at the Lame Deer-East Wetland Mitigation Sites.***

Function and Value Parameters From the 1999 MDT Montana Wetland Assessment Method	2006 School Site	2006 W-369	2006 W-380
Listed/Proposed T&E Species Habitat	Low (0)	Low (0)	Low (0)
MTNHP Species Habitat	Moderate (.7)	Low (0)	High (1.0)
General Wildlife Habitat	Moderate (.7)	Moderate (.6)	High (.9)
General Fish/Aquatic Habitat	NA	Moderate (.6)	High (.8)
Flood Attenuation	Low (.2)	Low (.2)	Low (.1)
Short and Long Term Surface Water Storage	Moderate (.6)	High (.8)	High (.8)
Sediment, Nutrient, Toxicant Removal	High (1)	High (1)	High (.9)
Sediment/Shoreline Stabilization	High (.9)	High (1)	High (1.0)
Production Export/Food Chain Support	Mod (.6)	Moderate (.6)	Moderate (.6)
Groundwater Discharge/Recharge	High (1)	High (1)	High (1)
Uniqueness	Mod (.4)	Mod (.4)	Mod (.4)
Recreation/Education Potential	High (1)	High (1)	High (1)
Actual Points/Possible Points	7.1/11	7.2/12	8.5/12
% of Possible Score Achieved	65%	60%	71%
Overall Category	II	III	II
Total Acreage of Assessed Wetlands within Monitoring Area	**0.83**	**0.7**	**0.39**
Total Functional Units (acreage x actual points)	**5.89**	**5.04**	**3.31**
Net Acreage Gain ("new" wetlands)	**0.83**	**0.7**	**0.39**
Net Functional Unit Gain (new acreage x actual points)	**5.89**	**5.04**	**3.31**
Total Functional Unit Gain Lame Deer-East Mitigation Sites	**14.24**		

3.8 Photographs

Representative photos taken from photo points and transect ends are included in **Appendix C.** Photos of the recreated wetlands along Highway 212 are included in **Appendix F.**

3.9 Maintenance Needs/Recommendations

The stormwater inlet culvert in the southwest corner of the south cell was in working order and required no maintenance. The outflow culvert in Wetland-369 is blocked by sediment and debris; the beaver dam is still present. Although not technically part of the MDT project (Urban, pers. comm.), water continues to undermine the culvert and has consequently washed soil away from the culvert outflow end. This structure is at a serious risk of being washed out by a major precipitation event, which would result in a large sediment plume entering the downstream reach. The silt fence around the perimeter of wetland 369 is partially submerged or buried by sediment and should be removed.

3.10 Current Credit Summary

The delineation resulted in a total of 0.83 acre of wetland development within the north and south cells of the School Mitigation Site. The estimated gross wetland acreages for the recreated wetlands along Hwy. 212 were 0.7 acre at Wetland 369 and 0.39 acre at Wetland 380. The total gross wetland acreage within the three Lame Deer-East mitigation sites is 1.92 acres, virtually

identical to 2005. This represents 60% of the 3.18 total mitigation acreage goal for the Lame Deer-East mitigation site. Given the topographical constraints at all three Lame deer mitigation sites, it appears that additional gross aquatic habitat acreage is unlikely to form. Current open water areas at 369 and 380 may eventually establish wetland vegetation, but the overall footprint of these and the school site seems to have been maximized and appears unlikely to change substantively in subsequent years.

The school mitigation monitoring site continued to score as a Category II wetland in 2006. Functional units have increased from 2.02 in 2003 to 5.89 in 2006. Wetland 369 is classified as a Category III as a result of a low number of wildlife observations over 5 years. Wetland 380 is a Category II site due to the breeding population of the Northern Leopard frog. Total functional unit gain for all Lame Deer-East Mitigation sites as of 2006 is 14.24, an increase of 11% since 2005.

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Appendix A

2006 SCHOOL MITIGATION SITE: FIGURES 2 & 3

MDT Wetland Mitigation Monitoring
Lame Deer - East Mitigation Site
Lame Deer - East, Montana

Figure 2 - Monitoring Activity Locations 2006

Monitoring Area Limits
Vegetation Transect
Aerial Reference Point
Photo Point
Soil Sample
Base photograph July 5, 2006

N
W
E
S
Scale 1"=60ft

SCHOOL
PP-0,P
Transect 2
Monitoring Area Limits
SS-3
PP-Q
PP-M,N
SS-4
PP-I,J
North Cell
PP-K,L
Sanitary Sewer Line Approximate Location
SP-2
End
PP-H
PP-A,B,C,D,E
Transect 1
SP-1
Monitoring Area Limits
Begin
PP-F,G
South Cell
Trail

Lame Deer - East Mitigation Site

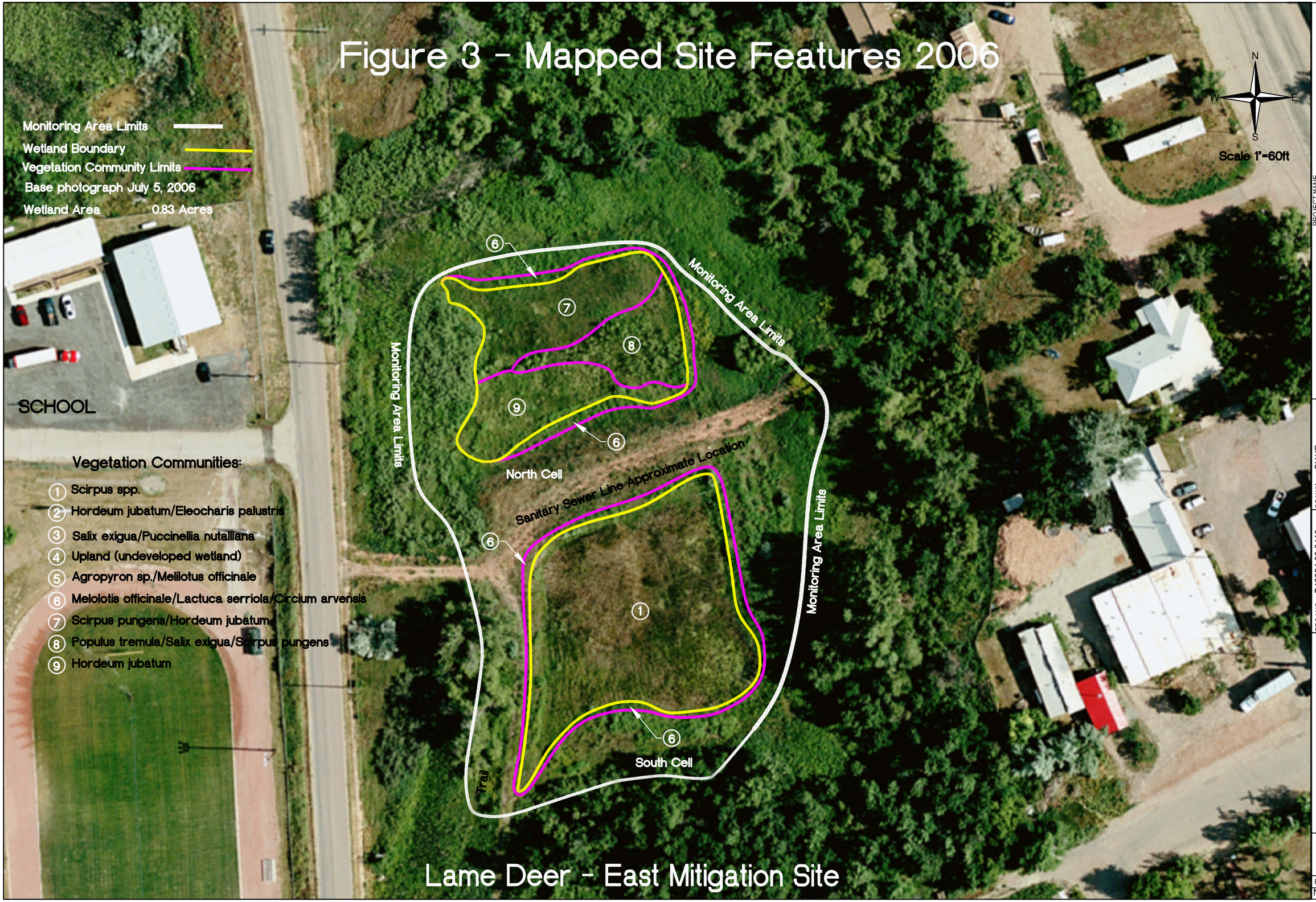
PROJECT NAME
MDT LAME DEER - EAST MITIGATION SITE
DRAWING TITLE
MONITORING ACTIVITY LOCATIONS 2006

PROJ NO: B43054.00 0410	DRAWN: SH/JR		
LOCATION: LAME DEER, MT	PROJ MGR: J. BERGLUND		
SCALE: 1" = 60'	CHECKED: LB	APPVD: JB	
FILE NAME: 2006 BASE.dwg			

PBSJ
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718

FIGURE
2 OF -
REV -
Oct/26/2006

Figure 3 - Mapped Site Features 2006



Lame Deer - East Mitigation Site

PROJECT NAME
MDT LAME DEER - EAST MITIGATION SITE
DRAWING TITLE
MAPPED SITE FEATURES 2006

PROJ NO: B43054.00 0410	DRAWN: SH/JR		
LOCATION: LAME DEER, MT	PROJ MGR: J. BERGLUND		
SCALE: 1" = 60'	CHECKED: LB	APPVD: JB	
FILE NAME: 2006 BASE.dwg			

PBSJ
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718

FIGURE
3
OF
REV -
Nov/27/2006

Appendix B

2006 SCHOOL MITIGATION SITE:

- WETLAND MITIGATION SITE MONITORING FORM
- BIRD SURVEY FORMS
- COE ROUTINE WETLAND DELINEATION DATA FORMS
- FUNCTIONAL ASSESSMENT TABLES 5 & 5A
- FUNCTIONAL ASSESSMENT FORMS

MDT Wetland Mitigation Monitoring
Lame Deer - East Mitigation Site
Lame Deer, Montana

LWC / MDT WETLAND MITIGATION SITE MONITORING FORM

Project Name:__Lame Deer__ Project Number:____B43054.040___ Assessment Date:_7_/_17__/_06
Location:__Lame Deer_____ MDT District:__#4 Glendive_____ Milepost:_____
Legal description: T__2 S_ R_41 E___ Section_34___ Time of Day: 8AM-12PM
Weather Conditions:__clear_____ Person(s) conducting the assessment LB/PBSJ
Initial Evaluation Date:__7__/_23___/_02_ Visit #:_____4___ Monitoring Year:____2006_____
Size of evaluation area ~2_acres Land use surrounding wetland: transportation corridors; school

HYDROLOGY

Surface Water Source:___stormwater and groundwater_____
Inundation**:** Present_X__ Absent _ Average depths:_10" Range of depths:_south cell: max depth: 15" ; north cell: 0"
Assessment area under inundation:_South cell – 100% (storms last night); north Cell – 0 %
Depth at emergent vegetation-open water boundary:__*_ft
If assessment area is not inundated are the soils saturated w/in 12" of surface**:** Yes_X___No____
Other evidence of hydrology on site (drift lines, erosion, stained vegetation etc.): _____

Groundwater
Monitoring wells: Present_____ Absent X_____
Record depth of water below ground surface

Well #	Depth	Well #	Depth	Well #	Depth

Additional Activities Checklist:
__X___Map emergent vegetation-open water boundary on air photo
__X__Observe extent of surface water during each site visit and look for evidence of past surface water elevations (drift lines, erosion, vegetation staining etc.)
__-___GPS survey groundwater monitoring wells locations if present

COMMENTS/PROBLEMS: _____

VEGETATION COMMUNITIES

Community No.:__1__ Community Title (main species):__*Scirpus* spp.__

Dominant Species	% Cover	Dominant Species	% Cover
SCIACU	45	CARLAN	<1
ELEPAL	20	SALEXI	5
HORJUB	<5	JUNTOR	20
EQUHYM	<1	TYPLAT	20
(PUCNUT	<5)*	SCIPUN	15
(JUNBUF	<1)*	mud	<5

COMMENTS/PROBLEMS: ___* species not observed, but still may be present.; aspen seedlings, SCIPAL,CARsp. Also present_____

Community No.:_2___ Community Title (main species): *Hordeum jubatum/Eleocharis palustris*

Dominant Species	% Cover	Dominant Species	% Cover
RUNCRI	<5	LACSER	<5
HORJUB	40	MELOFF	40
SALEXI	<5	SCIPUN	<5
PUCNUT	<5	ELEPAL	<5
TYPLAT	<5	AGRsp.	<5

COMMENTS/PROBLEMS: _____

Community No.:_3___ Community Title (main species):__*Salix exigua/Puccinellia nutalliana* _____

Dominant Species	% Cover	Dominant Species	% Cover
SALEXI	10	ELEPAL	10
PUCNUT	20	Openwater	50
HORJUB	<1	TYPLAT	<1
JUNBUF	<1	AGRsp.	<1
SCIACU/SCIPUN	10		

COMMENTS/PROBLEMS:

VEGETATION COMMUNITIES (continued)

Community No.:_4___ Community Title (main species): Transitional Upland/Wetland_____

Dominant Species	% Cover	Dominant Species	% Cover
(MUD)	(65%)	GLYELA	<5
SALEXI	10	TRIFOLIUM spp.	10
LACSER	<5		
CHEHYB	<5		
JUNBUF	<5		

COMMENTS/PROBLEMS: This CT may have patches of upland interspersed w/ WL patches: transitional.

Community No.:__5____ Community Title (main species):_*Agopyron sp./Melolotis officinale*_____

Dominant Species	% Cover	Dominant Species	% Cover
AGRsp.	45	HORJUB	<5
POPTRE	<1	SALEXI (25 sprigged)	
SCIPUN	<5		
SALsp.	<1		
MELOFF	45		

COMMENTS/PROBLEMS:

Community No.:__6____ Community Title (main species):_*Melolotis officinale/Lactuca serriola/Circium arvensis* _____

Dominant Species	% Cover	Dominant Species	% Cover
MELOFF (biennial pattern or has been sprayed)	5	CHEsp.	5
LACSER	40	PASSAT	1
CIRARV	40	GLYLEP	1
AGRsp.	15	ELEPAL	1
CARPRA	1		

COMMENTS/PROBLEMS:

VEGETATION COMMUNITIES (continued)

Community No.:_7___ Community Title (main species): *Scirpus pungens/Hordeum jubatum*_____

Dominant Species	% Cover	Dominant Species	% Cover
RUNCRI	<1	LACSER	<1
HORJUB	5	SCIPUN	85
PUCNUT	<1*	ELEPAL	5
PUCDIS	<1*	AGRSP.	5
TYPLAT	<1*	CARsp. (no inflor.)	<1
GALCIR	<1		

COMMENTS/PROBLEMS: *****not seen but may be present

Community No.:_8___ Community Title (main species):*_Populus tremula/Salix exigua/Scirpus pungens*_____

Dominant Species	% Cover	Dominant Species	% Cover
POPTRE	30	SCIPUN	20
SALEXI	30	LACSER	<1
Salix sp. (no catkin)	<1	TYPLAT	<1
Kochia sp.	5	PUCDIS	1
MELOFF	<1	PUNUT	1

COMMENTS/PROBLEMS: ___other spp.: TYPLAT, SCIACU, JUNTOR <1; MELALB

Community No.:_9___ Community Title (main species):__*Hordeum jubatum*_____

Dominant Species	% Cover	Dominant Species	% Cover
HORJUB	25	(PHAARU	<1)*
POAPAL	10	SCIPUN	5
LACSER	5	SALEXI	5
RUMCRI	5	ELEPAL	40
AGRsp.	5		

COMMENTS/PROBLEMS: _____*Not observed but may be present.

Additional Activities Checklist:

_X___Record and map vegetative communities on air photo

COMPREHENSIVE VEGETATION LIST

Species	Vegetation Community Number(s)	Species	Vegetation Community Number(s)
Agropyron spp.	2, 3, 5, 6,7		
Chenopodium hybridium/album	6		
Carex hystericina	1		
Carex lanuginosa	1		
Carex praegracilis	7,8		
Cicuta douglasii (likely)	8		
Eleocharis palustris	1,2,3,6,7		
Equisetum hyemale	1		
Galium circaezans	**7**		
Glyceria grandis	2		
Glycyrrhiza lepidota	6		
Hordeum jubatum	1,2,3,5,7		
Juncus bufnoius	1,2		
Juncus torreyi	1		
Kosha scoparia	6,8		
Lactuca serriola	2,4,6,7,8		
Mentha arvensis	1		
Pastinaca sativa	7,8		
Populus tremula	8		
Puccinellia distans	7,8		
Puccinellia nuttalliana	1,2,3,7,8		
Rumex crispus	1,2,7		
Melilotis officinale	2,3,5,6		
Salix exigua (planted)	1,2,3,4,5,7,8		
Salix sp. (young sprig)	8		
Scirpus acutus	1		
Scirpus pallidus	**1**		
Scirpus pungens	1,2,5,7,8		
Trifolium spp.	4		
Typha latifolia	1,2,3,7,8		

Bolded species were observed for the first time in 2006.

COMMENTS/PROBLEMS:
Community types have changed over time as a result of developing wetland; boundaries crossing and becoming one large, diverse wetland community.

PLANTED WOODY VEGETATION SURVIVAL

Species	Number Originally Planted	Number Observed 2002	Mortality Causes
Salix exigua (inside wetland)	?	250	Not counted in 2003,2004, 2005, 2006
Ribes spp. (outside wetland)	?	13	"
Prunus virginiana (outside wetland)	?	7	"
indeterminate shrub (outside wetland)	-	8	"
Rosa sp. (outside wetland)	?	-	"

COMMENTS/PROBLEMS: ___Salix species within wetland area thriving; new species coming in within North Cell.

WILDLIFE

BIRDS

(Attach Bird Survey Field Forms)

Were man made nesting structures installed? Yes____ No__X__Type:_____ How many?_____ Are the nesting structures being utilized? Yes____ No____ Do the nesting structures need repairs? Yes____ No____

MAMMALS AND HERPTILES

Species	Number Observed	Indirect indication of use			
		Tracks	Scat	Burrows	Other

Additional Activities Checklist:
__NA___Macroinvertebrate sampling (if required)

COMMENTS/PROBLEMS: _____

PHOTOGRAPHS

Using a camera with a 50 mm lenses and color film take photographs of the following permanent reference points listed in the checklist below. Record the direction of the photograph using a compass. (The first time at each site establish a permanent reference point by setting a ½ inch rebar or fencepost extending 2-3' above ground, survey the location with a resource grade GPS and mark the location on the air photo.)
Checklist:

__X__ One photo for each of the 4 cardinal directions surrounding wetland
__X__ At least one photo showing upland use surrounding wetland – if more than one upland use exists, take additional photos
__X__ At least one photo showing buffer surrounding wetland
__X__ One photo from each end of vegetation transect showing transect

South Cell:

Location	Photograph Description	Compass Reading
A	south cell wetland view, border	170
B	south cell wetland view, center	130
C	south cell wetland view, border	76
D	across dike from south cell toward school	290
E	across dike from south cell toward north cell	17
F	from storm culvert across south cell	~130
G	south cell, beginning of transect	130
H	south cell, end of transect	210
I	north cell view from central dike toward 212 stop sign	16
J	north cell view toward creek	314
K	north cell, vegetation along north side of dike	44
L	north cell, vegetation east of road and north of dike	18
M	north cell, south transect end	358
N	north cell, interior view south	290
O	north cell, north transect end	174
P	north cell, interior view north	100
Q	interior of north cell wetland	West (extra)

COMMENTS/PROBLEMS:

GPS SURVEYING

Using a resource grade GPS survey the items on the checklist below. Collect at least 3 location points with the GPS unit set at 5 second recording rate. Record file numbers fore site in designated GPS field notebook

Checklist:

__X___ Jurisdictional wetland boundary
__X___ 4-6 landmarks recognizable on the air photo
_ X___ Start and end points of vegetation transect(s)
__X___ Photo reference points
__NA__Groundwater monitoring well locations

COMMENTS/PROBLEMS:

WETLAND DELINEATION

(Attach Corps of Engineers delineation forms)

At each site conduct the items on the checklist below:
__X___Delineate wetlands according to the 1987 Army Corps manual.
__X___ Delineate wetland-upland boundary on the air photo
__*__ Survey wetland-upland boundary with a resource grade GPS survey

COMMENTS/PROBLEMS: Wetland areas hand drawn on 2006 aerial.

FUNCTIONAL ASSESSMENT

(Complete and attach full MDT Montana Wetland Assessment Method field forms; also attach abbreviated field forms, if used)

COMMENTS/PROBLEMS: One FA done for north and south cells combined.

MAINTENANCE

Were man-made nesting structures installed at this site? YES____ NO __X __
If yes, do they need to be repaired? YES____ NO____
If yes, describe problems below and indicate if any actions were taken to remedy the problems.

Were man-made structures build or installed to impound water or control water flow into or out of the wetland? YES__(X) *__ NO____
If yes, are the structures working properly and in good working order? YES _____ NO_____
If no, describe the problems below.

COMMENTS/PROBLEMS: __utility line berm separates south from north cell _____

MDT WETLAND MONITORING – VEGETATION TRANSECT (SOUTH CELL)

Site: Lame Deer-SOUTH CELL Date: 7/17/06 Examiner: LB/LWC Transect # 1

Approx. transect length: 45 deg (SW to NE) Compass Direction from Start (G): 207 ft

Vegetation type A:	CT 1
Length of transect in this type:	207’
Species:	Cover:
SCIACU	40
SALEXI	5
ELEPAL	10
TYPLAT	20
HORJUB	<1
CARLAN	20
Total Vegetative Cover:	100%

Vegetation type B:		
Length of transect in this type:		feet
Species:		Cover:
	Total Vegetative Cover:	

Vegetation type C:		
Length of transect in this type:		feet
Species:		Cover:
	Total Vegetative Cover:	

Vegetation type D:		
Length of transect in this type:		feet
Species:		Cover:
	Total Vegetative Cover:	

MDT WETLAND MONITORING – VEGETATION TRANSECT (NORTH CELL)

Site: Lame Deer-NORTH CELL Date: 7/17/06 Examiner: LB/LWC Transect # 2

Approx. transect length: 306 deg Compass Direction from Start (M,N): 162 ft

Vegetation type A:	CT 6	
Length of transect in this type:	10’	Feet
Species:		Cover:
CIRARV		40
LACSER		45
PANDIS		10
HORJUB		5
CHEHYB/ALB		<1
Total Vegetative Cover:		100%

Vegetation type B:	CT 8	
Length of transect in this type:	65’	feet
SALEXI		30
POPTRE		30
SCIPUN		20
SALsp.		15
MELALB		<5
Total Vegetative Cover:		100%

Vegetation type C:	CT 7	
Length of transect in this type:	72’	feet
Species:		Cover:
SCIPUN		80
LACSER		<1
HORJUB		5
AGRsp.		10
GALCIR		<1
Total Vegetative Cover:		100%

Vegetation type D:	CT 6	
Length of transect in this type:	15’	feet
Species:		Cover:
CIRARV		10
LACSER		90
SCIPUN		<1
AGRsp.		<1
CARsp		<1
Kochia		<1
RUMCRI		<1
Total Vegetative Cover:		100%

MDT WETLAND MONITORING – VEGETATION TRANSECT (back of form)

Cover Estimate

+ = <1%
1 = 1-5%
2 = 6-10%
3 = 11-20%
4 = 21-50%
5 = >50%

Indicator Class:

+ = Obligate
- = Facultative/Wet
0 = Facultative

Source:

P = Planted
V = Volunteer

Percent of perimeter 5 (>50%) % developing wetland vegetation – excluding dam/berm structures.

Establish transects perpendicular to the shoreline (or saturated perimeter). The transect should begin in the upland area. Permanently mark this location with a standard metal fencepost. Extend the imaginary transect line towards the center of the wetland, ending at the 3 food depth (in open water), or at a point where water depths or saturation are maximized. Mark this location with another metal fencepost.

Estimate cover within a 10 ft wide "belt" along the transect length. At a minimum, establish a transect at the windward and leeward sides of the wetland. Remember that the purpose of this sampling is to monitor, not inventory, representative portions of the wetland site.

100% of south cell and likely nearly 100% of intended north cell wetland developing wetland veg., original constructed wetland boundary not clear on the ground. Wetland of north cell has developed nearly up to original shrub line on west side, and up to berm line on east, south and north sides.

3

BIRD SURVEY – FIELD DATA SHEET

Date: 7/17/06

SITE: Lame Deer

Survey Time:

Bird Species	#	Behavior	Habitat	Bird Species	#	Behavior	Habitat
No species observed within wetlands.							
Perimeter of Wetlands:							
Western Wood Pewee	1	F	UPL				
Cedar Waxwing	>5	F	UPL				
American Goldfinch	>5	F	UPL				

Behavior: BP – one of a breeding pair; BD – breeding display; F – foraging; FO – flyover; L – loafing; N – nesting

Habitat: AB – aquatic bed; FO – forested; I – island; MA – marsh; MF – mud flat; OW – open water; SS – scrub/shrub; UP – upland buffer; WM – wet meadow, US – unconsolidated shoreline

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Lame Deer	Date: 7/17/06 (South Cell)
Applicant/Owner: MDT	County: Rosebud
Investigator: LB/LWC	State: MT

Do Normal Circumstances exist on the site:	X	Yes		No	Community ID: emergent
Is the site significantly disturbed (Atypical Situation)?		Yes	X	No	Transect ID: 1
Is the area a potential Problem Area?:		Yes	X	No	Plot ID: SP-1
(If needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1	SCIACU	H	OBL	9			
2	CAR sp	H	OBL	10			
3	Mentha sp (no inflor.)	H	FACW?	11			
4				12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). 3/3

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observations:
- Depth of Surface Water: - (in.)
- Depth to Free Water in Pit: 1” (in.)
- Depth to Saturated Soil: @ surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
No surface water on day of investigation, but evidence of inundation observed.

SOILS

Map Unit Name (Series and Phase):	Straw-Canburn	Drainage Class:	well; very poor (resp.)
Taxonomy (Subgroup):	mixed Cumulic Haploborolls; frigid Cumulic Haploborolls	Field Observations Confirm Mapped Type?	X Yes ____ No

Profile Description:

Depth inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	B	2Y 4/1, 4/2			silty sand

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Hyrdric soils are developing.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	____	No	
Wetland Hydrology Present?	X	Yes	____	No	
Hydric Soils Present?	X	Yes	____	No	Is this Sampling Point Within a Wetland? X Yes ____ No

Remarks:

Wetland completely developed in Cell 1, maximum acreage attained.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Lame Deer	Date: 7/17/06 (South Cell)
Applicant/Owner: MDT	County: Rosebud
Investigator: LB/LWC	State: MT

Do Normal Circumstances exist on the site:	X	Yes		No	Community ID: UPL
Is the site significantly disturbed (Atypical Situation)?		Yes	X	No	Transect ID: 1
Is the area a potential Problem Area?:		Yes	X	No	Plot ID: SP-2
(If needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1	Poa sp.	H	(FACU)	9			
2	LACSER	H	FACU	10			
3	AGR spp.	H	(FACU)	11			
4				12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). 0/3

Sample point on transition zone between upland and wetland.

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observations:
- Depth of Surface Water: - (in.)
- Depth to Free Water in Pit: - (in.)
- Depth to Saturated Soil: - (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

Sp 10 ft from wetland edge.

SOILS

Map Unit Name (Series and Phase): Straw-Canburn

Drainage Class: well; very poor (resp.)

Field Observations

Taxonomy (Subgroup): mixed Cumulic Haploborolls; frigid Cumulic Haploborolls (resp.)

Confirm Mapped Type? X Yes ____ No

Profile Description:

Depth inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	B	2.5Y 4/1,4/2			Silt sand w/ clay streaks

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	____	Yes	X	No	Is this Sampling Point Within a Wetland? ____ Yes X No
Wetland Hydrology Present?	X	Yes	____	No	
Hydric Soils Present?	X	Yes	____	No	

Remarks:

Though wetland appears to have developed to maximum limits, the fact that soils and hydrology are evident 10 ft from the true wetland edge may indicate that wetland vegetation will spread to this SP location over time.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Lame Deer	Date:	7/17/06 (North Cell)
Applicant/Owner:	MDT	County:	Rosebud
Investigator:	LB/LWC	State:	MT

Do Normal Circumstances exist on the site:	X	Yes		No	Community ID: emergent
Is the site significantly disturbed (Atypical Situation)?		Yes	X	No	Transect ID: 2
Is the area a potential Problem Area?:		Yes	X	No	Plot ID: SP-3
(If needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1	HORJUB	H	FACW	9			
2	RUNCRI	H	FACW	10			
3	POAPAL	H	FACW	11			
4	SCIPUN	H	OBL	12			
5	ELEPAL	H	OBL	13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). 5/5

Hydrophytic community continues to become more complex, particularly around the expanding edges every year.

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gauge
- _____ Aerial Photographs
- _____ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: - (in.)

Depth to Free Water in Pit: - (in.)

Depth to Saturated Soil: - (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- \- Inundated
- \- Saturated in Upper 12 Inches
- \- Water Marks
- \- Drift Lines
- \- Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- _____ Oxidized Root Channels in Upper 12 Inches
- _____ Water-Stained Leaves
- _____ Local Soil Survey Data
- _____ FAC-Neutral Test
- _____ Other (Explain in Remarks)

Remarks:
Soil is moist but not saturated.

SOILS

Map Unit Name (Series and Phase):	Straw-Canburn	Drainage Class:	well; very poor (resp.)
Taxonomy (Subgroup):	mixed Cumulic Haploborolls; frigid Cumulic Haploborolls	Field Observations Confirm Mapped Type?	X Yes ____ No

Profile Description:

Depth inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10”	A	2.5Y 4/1,4/2	7.5 YR 3/4	Prom, lg	Silt clay loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	____	No	
Wetland Hydrology Present?	X	Yes	____	No	
Hydric Soils Present?	X	Yes	____	No	Is this Sampling Point Within a Wetland? X Yes ____ No

Remarks:

Wetland continues to expand toward base of berm on all sides and willow edge to west.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Lame Deer	Date:	7/17/06 (North Cell)
Applicant/Owner:	MDT	County:	Rosebud
Investigator:	LB/LWC	State:	MT

Do Normal Circumstances exist on the site:	X	Yes		No	Community ID:	emergent
Is the site significantly disturbed (Atypical Situation)?		Yes	X	No	Transect ID:	2
Is the area a potential Problem Area?:		Yes	X	No	Plot ID:	SP-4
(If needed, explain on reverse.)						

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1	MELOFF	H	FACU	9			
2	CIRARV	H	FACU	10			
3	LACSER	H	FACU	11			
4				12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). 0/3

HYDROLOGY

Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- X No Recorded Data Available

Field Observations:
- Depth of Surface Water: - (in.)
- Depth to Free Water in Pit: - (in.)
- Depth to Saturated Soil: - (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- - Inundated
- - Saturated in Upper 12 Inches
- - Water Marks
- - Drift Lines
- - Sediment Deposits
- - Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase):	Straw-Canburn	Drainage Class:	well; very poor (resp.)
Taxonomy (Subgroup):	mixed Cumulic Haploborolls; frigid Cumulic Haploborolls	Field Observations Confirm Mapped Type?	X Yes ____ No

Profile Description:

Depth inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10”	A	2.5Y4/4			Silt sand

Hydric Soil Indicators:

____ Histosol	____ Concretions
____ Histic Epipedon	____ High Organic Content in surface Layer in Sandy Soils
____ Sulfidic Odor	____ Organic Streaking in Sandy Soils
____ Aquic Moisture Regime	____ Listed on Local Hydric Soils List
____ Reducing Conditions	____ Listed on National Hydric Soils List
____ Gleyed or Low-Chroma Colors	____ Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	____	Yes	X	No	
Wetland Hydrology Present?	____	Yes	X	No	
Hydric Soils Present?	____	Yes	X	No	Is this Sampling Point Within a Wetland? ____ Yes X No

Remarks:

Wetland may not spread into this area, growth is slower in north cell than south cell.

MDT MONTANA WETLAND ASSESSMENT FORM (revised May 25, 1999)

1. Project Name: Lame Deer-East **2. Project #:** -43054410 **Control #:** _____

3. Evaluation Date: 7/17/2006 **4. Evaluator(s):** LB/LWC **5. Wetland / Site #(s):** School

6. Wetland Location(s) i. T: 2 S **R:** 41 E **S:** 34 **T:** __ N **R:** __ E **S:** _____

ii. Approx. Stationing / Mileposts: _____

iii. Watershed: 10100003 **GPS Reference No. (if applies):** _____

Other Location Information: _____

7. A. Evaluating Agency MDT

B. Purpose of Evaluation:

- ☐ Wetlands potentially affected by MDT project
- ☐ Mitigation wetlands; pre-construction
- ☒ Mitigation wetlands; post-construction
- ☐ Other

8. Wetland Size (total acres): _____ (visually estimated)
0.83 (measured, e.g. GPS)

9. Assessment Area (total acres): 0.83 (visually estimated)
_____ (measured, e.g. GPS)

10. CLASSIFICATION OF WETLAND AND AQUATIC HABITATS IN AA

HGM CLASS [1]	SYSTEM [2]	SUBSYSTEM [2]	CLASS [2]	WATER REGIME [2]	MODIFIER [2]	% OF AA
Depression	Palustrine	None	Emergent Wetland	Saturated	Excavated	85
Depression	Palustrine	None	Scrub-Shrub Wetland	Saturated	Excavated	15
---	---	---	---	---	---	
---	---	---	---	---	---	

[1] = Smith et al. 1995. [2] = Cowardin et al. 1979.

11. ESTIMATED RELATIVE ABUNDANCE (of similarly classified sites within the same Major Montana Watershed Basin)
Common **Comments:** _____

12. GENERAL CONDITION OF AA

i. Regarding Disturbance: (Use matrix below to select appropriate response.)

Conditions Within AA	Predominant Conditions Adjacent (within 500 Feet) To AA		
	Land managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings.	Land not cultivated, but moderately grazed or hayed or selectively logged or has been subject to minor clearing; contains few roads or buildings.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density.
AA occurs and is managed in predominantly a natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings.	---	low disturbance	---
AA not cultivated, but moderately grazed or hayed or selectively logged or has been subject to relatively minor clearing, or fill placement, or hydrological alteration; contains few roads or buildings.	---	---	---
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density.	---	---	---

Comments: (types of disturbance, intensity, season, etc.) area has a road along the side of south cell, has signs of use.

ii. Prominent weedy, alien, & introduced species: yellow sweet clover and pig weed are at concentrated levels around periphery of cells

iii. Briefly describe AA and surrounding land use / habitat: school across street and center of town within sight of wetlands.

13. STRUCTURAL DIVERSITY (Based on 'Class' column of #10 above.)

Number of 'Cowardin' Vegetated Classes Present in AA	≥3 Vegetated Classes or ≥ 2 if one class is forested	2 Vegetated Classes or 1 if forested	≤ 1 Vegetated Class
Select Rating	---	Moderate	---

Comments: Populus sp. almost at heights of "tree" class.

14A. HABITAT FOR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED PLANTS AND ANIMALS

i. AA is Documented (D) or Suspected (S) to contain (check box):

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

ii. **Rating** (Based on the strongest habitat chosen in 14A(i) above, find the corresponding rating of High (H), Moderate (M), or Low (L) for this function.

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	none
Functional Point and Rating	---	---	---	---	---	---	0 (L)

If documented, list the source (e.g., observations, records, etc.)**:** _____

14B. HABITAT FOR PLANTS AND ANIMALS RATED AS S1, S2, OR S3 BY THE MONTANA NATURAL HERITAGE PROGRAM.
Do not include species listed in 14A(i).

i. AA is Documented (D) or Suspected (S) to contain (check box):

Primary or Critical habitat **(list species)**	☐ D	☐ S	_____
Secondary habitat **(list species)**	☒ D	☐ S	Rana pipiens
Incidental habitat **(list species)**	☐ D	☐ S	_____
No usable habitat	☐ D	☐ S	_____

iii. **Rating** (Based on the strongest habitat chosen in 14B(i) above, find the corresponding rating of High (H), Moderate (M), or Low (L) for this function.

Highest Habitat Level:	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	none
Functional Point and Rating	---	---	.7 (M)	---	---	---	---

If documented, list the source (e.g., observations, records, etc.)**:** Observed 1 frog in 2004.

14C. General Wildlife Habitat Rating

i. **Evidence of overall wildlife use in the AA:** (Check either substantial, moderate, or low)

☐ **Substantial** (based on any of the following)
- ☐ 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

☐ **Low** (based on any of the following)
- ☐ 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 AA

☒ **Moderate** (based on any of the following)
- ☒ 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

ii. **Wildlife Habitat Features** (Working from top to bottom, select appropriate AA attributes to determine the exceptional (E), high (H), moderate (M), or low (L) rating. Structural diversity is from #13. For class cover to be considered evenly distributed, vegetated classes must be within 20% of each other in terms of their percent composition in the AA (see #10). Duration of Surface Water: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; A= absent.

Structural Diversity (from #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 #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	H	--	--	--	--	--	--
Moderate disturbance at AA (see #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
High disturbance at AA (see #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

iii. **Rating** (Using 14C(i) and 14C(ii) above and the matrix below to arrive at the functional point and rating of exceptional (E), high (H), moderate (M), or low (L) for this function.)

Evidence of Wildlife Use from 14C(i)	**Wildlife Habitat Features Rating** from 14C(ii)			
	☐ Exceptional	☒ High	☐ Moderate	☐ Low
Substantial	--	--	--	--
Moderate	--	.7 (M)	--	--
Low	--	--	--	--

Comments: The surrounding upland and stream corridor is prime habitat for deer and migratory birds.

14D. GENERAL FISH/AQUATIC HABITAT RATING ☒ **NA** (proceed to 14E)

If the AA is not or was not historically used by fish due to lack of habitat, excessive gradient, then check the NA box above.

Assess if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [*e.g.* fish use is precluded by perched culvert or other barrier, etc.]. If fish use occurs in the AA but is not desired from a resource management perspective (*e.g.* fish use within an irrigation canal], then Habitat Quality [14D(i)] below should be marked as "Low", applied accordingly in 14D(ii) below, and noted in the comments.

i. **Habitat Quality** (Pick the appropriate AA attributes in matrix to pick the exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of Surface Water in AA	☐ Permanent/Perennial			☐ Seasonal / Intermittent			☐ Temporary / Ephemeral		
Cover - % of waterbody in AA containing cover objects (*e.g.* submerged logs, large rocks & boulders, overhanging banks, floating-leaved vegetation)	>25%	10-25%	<10%	>25%	10-25%	<10%	>25%	10-25%	<10%
Shading - >75% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities	--	--	--	--	--	--	--	--	--
Shading – 50 to 75% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities.	--	--	--	--	--	--	--	--	--
Shading - < 50% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities.	--	--	--	--	--	--	--	--	--

ii. **Modified Habitat Quality:** Is fish use of the AA precluded or significantly reduced by a culvert, dike, other man-made structure or activity **or** is the waterbody included on the 'MDEQ list of waterbodies in need of TMDL development' with 'Probable Impaired Uses' listed as cold or warm water fishery or aquatic life support**?**
☐ **Y** ☐ **N** If yes, reduce the rating from 14D(i) by one level and check the modified habitat quality rating: ☐ E ☐ H ☐ M ☐ L

iii. **Rating** (Use the conclusions from 14D(i) and 14D(ii) above and the matrix below to pick the functional point and rating of exceptional (E), high (H), moderate (M), or low (L).)

Types of Fish Known or Suspected Within AA	**Modified Habitat Quality** from 14D(ii)			
	☐ Exceptional	☐ High	☐ Moderate	☐ Low
Native game fish	--	--	--	--
Introduced game fish	--	--	--	--
Non-game fish	--	--	--	--
No fish	--	--	--	--

Comments: _____

14E. FLOOD ATTENUATION ☐ **NA** (proceed to 14G)

Applies only to wetlands subject to flooding via in-channel or overbank flow.
If wetlands in AA do not flooded from in-channel or overbank flow, check NA above.

i. **Rating** (Working from top to bottom, mark the appropriate attributes to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)

Estimated wetland area in AA subject to periodic flooding	☐ ≥ 10 acres			☐ <10, >2 acres			☒ ≤2 acres		
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	--	--	--	--	--	--	--	--	.2 (L)
AA contains **unrestricted outlet**	--	--	--	--	--	--	--	--	--

ii. **Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA?** (check)
☐**Y** ☐**N** **Comments:** _____

14F. SHORT AND LONG TERM SURFACE WATER STORAGE ☐ **NA** (proceed to 14G)

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, check NA above.

i. Rating (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)
Abbreviations: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral.

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding.	☐ >5 acre feet			☒ <5, >1 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**	--	--	--	--	.6 (M)	--	--	--	--
Wetlands in AA flood or pond **< 5 out of 10 years**	--	--	--	--	--	--	--	--	--

Comments: _____

14G. SEDIMENT/NUTRIENT/TOXICANT RETENTION AND REMOVAL ☐ **NA** (proceed to 14H)

Applies to wetlands with potential to receive excess 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, check NA above.

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)

Sediment, Nutrient, and Toxicant Input Levels Within AA	AA receives or surrounding land use has potential to deliver low to moderate levels of sediments, nutrients, or compounds 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 has 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 or ponding in AA	☒ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
AA contains **no or restricted outlet**	1 (H)	--	--	--	--	--	--	--
AA contains **unrestricted outlet**	--	--	--	--	--	--	--	--

Comments: _____

14H. SEDIMENT/SHORELINE STABILIZATION ☒ **NA** (proceed to 14I)

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 that is subject to wave action. If this does not apply, check NA above.

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating exceptional (E), high (H), moderate (M), or low (L) for this function.

% Cover of wetland streambank or shoreline by species with deep, binding rootmasses.	Duration of Surface Water Adjacent to Rooted Vegetation		
	☐Permanent / Perennial	☒Seasonal / Intermittent	☐Temporary / Ephemeral
≥ 65 %	--	.9 (H)	--
35-64 %	--	--	--
< 35 %	--	--	--

Comments:

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.
A = acreage of vegetated component in the AA. **B** = structural diversity rating from #13. **C** = Yes (Y) or No (N) as to whether or not the AA contains a surface or subsurface outlet; **P/P** = permanent/perennial; **S/I** = seasonal/intermittent; **T/E/A**= temporary/ephemeral/absent.

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	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☒N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N
P/P	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S/I	--	--	--	--	--	--	--	--	--	.6M	--	--	--	--	--	--	--	--
T/E/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Comments:

14J. GROUNDWATER DISCHARGE/RECHARGE (D/R) (Check the indicators in i & ii below that apply to the AA)

i. ☐ **Discharge Indicators**
- ☐ Springs are known or observed.
- ☒ Vegetation growing during dormant season/drought.
- ☐ Wetland occurs at the toe of a natural slopes.
- ☐ Seeps are present at the wetland edge.
- ☐ AA permanently flooded during drought periods.
- ☒ Wetland contains an outlet, but no inlet.
- ☐ Other

ii. ☐ **Recharge Indicators**
- ☐ Permeable substrate presents without underlying impeding layer.
- ☒ Wetland contains inlet but not outlet.
- ☐ Other

iii. **Rating:** Use the information from 14J(i) and 14j(ii) above and the table below to arrive at the functional point and rating of high (H) or low (L) for this function.

Criteria	Functional Point and Rating
AA has known Discharge/Recharge area or one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	--
Available Discharge/Recharge information inadequate to rate AA D/R potential	--

Comments:

14K. UNIQUENESS

i. Rating (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.

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 from #11	☐rare	☐common	☐abundant	☐rare	☐common	☐abundant	☐rare	☒common	☐abundant
Low disturbance at AA (#12i)	--	--	--	--	--	--	--	.4M	--
Moderate disturbance at AA (#12i)	--	--	--	--	--	--	--	--	--
High disturbance at AA (#12i)	--	--	--	--	--	--	--	--	--

Comments:

14L. RECREATION / EDUCATION POTENTIAL

i. Is the AA a known recreational or educational site? ☐ **Yes (Rate** ☐ **High (1.0)**, then proceed to 14L(ii) only] ☒ **No** [Proceed to 14L(iii)]

ii. Check categories that apply to the AA: ☒ Educational / scientific study ☐ Consumptive rec. ☐ Non-consumptive rec. ☐ Other

iii. Based on the location, diversity, size, and other site attributes, is there a strong potential for recreational or educational use?
☒ **Yes** [Proceed to 14L (ii) and then 14L(iv).] ☐ **No** [Rate as low in 14L(iv)]

iv. Rating (Use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.

Ownership	Disturbance at AA from #12(i)		
	☒ Low	☐ Moderate	☐ High
Public ownership	1(H)	--	--
Private ownership	--	--	--

Comments: wetland plant study; diversity increasing

FUNCTION, VALUE SUMMARY, AND OVERALL RATING

Function and Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	
B. MT Natural Heritage Program Species Habitat	M	0.70	1	
C. General Wildlife Habitat	M	0.7	1	
D. General Fish/Aquatic Habitat	NA		--	
E. Flood Attenuation	L	0.20	1	
F. Short and Long Term Surface Water Storage	M	0.60	1	
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	
H. Sediment/Shoreline Stabilization	H	0.90	1	
I. Production Export/Food Chain Support	M	0.6	1	
J. Groundwater Discharge/Recharge	H	1.00	1	
K. Uniqueness	M	0.40	1	
L. Recreation/Education Potential	H	1.00	1	
	Totals:	7.10	11.00	
	Percent of Total Possible Points:		**65%** (Actual / Possible) x 100 [rd to nearest whole #]	

Category I Wetland: (Must satisfy **one** of the following criteria. If not proceed 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 total Possible Points is > 80%.

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following Category II criteria. If not satisfied, proceed to Category IV.)
- ☐ Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; **or**
- ☐ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish/Aquatic 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 total possible points is > 65%.

☐ **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; If not satisfied, proceed to Category III.)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ "Low" rating for Production Export / Food Chain Support; **and**
- ☐ Percent of total possible points is < 30%.

OVERALL ANALYSIS AREA (AA) RATING: (Check appropriate category based on the criteria outlined above.)

☐ **I** ☒ **II** ☐ **III** ☐ **IV**

Appendix C

SCHOOL MITIGATION SITE: REPRESENTATIVE PHOTOGRAPHS

MDT Wetland Mitigation Monitoring
Lame Deer - East Mitigation Site
Lame Deer, Montana

2006 LAME DEER SCHOOL WETLAND MITIGATION SITE

Location: A **Description:** South Cell wetland view, border **Compass Reading:** 170°

Location: B **Description:** South Cell wetland view, center **Compass Reading:** 130°

Location: C **Description:** South Cell wetland view, border **Compass Reading:** 76°

Location: D **Description:** Across dike from South Cell toward school **Compass Reading:** 290°

Location: E **Description:** Across dike from South Cell toward north cell **Compass Reading:** 17°

Location: F **Description:** From storm culvert across south cell **Compass Reading:** 130

2006 LAME DEER SCHOOL WETLAND MITIGATION SITE

Location: G **Description:** South cell, beginning of transect **Compass Reading:** 130°

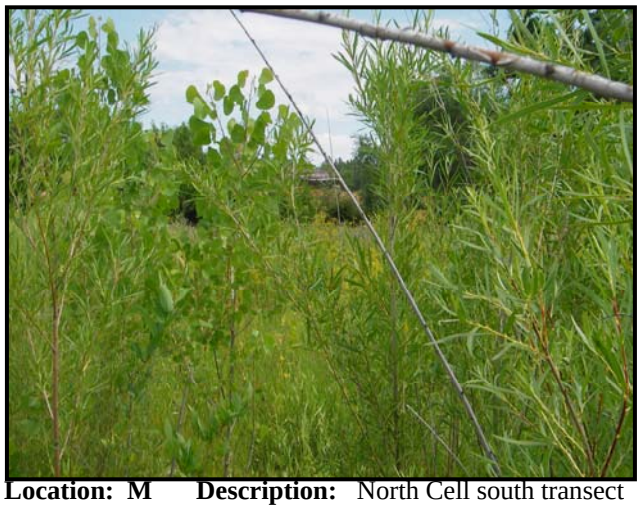
Location: H **Description:** South cell, end of transect **Compass Reading:** 210°

Location: I **Description:** North Cell view from central dike toward 212 stop sign **Compass Reading:** 16°

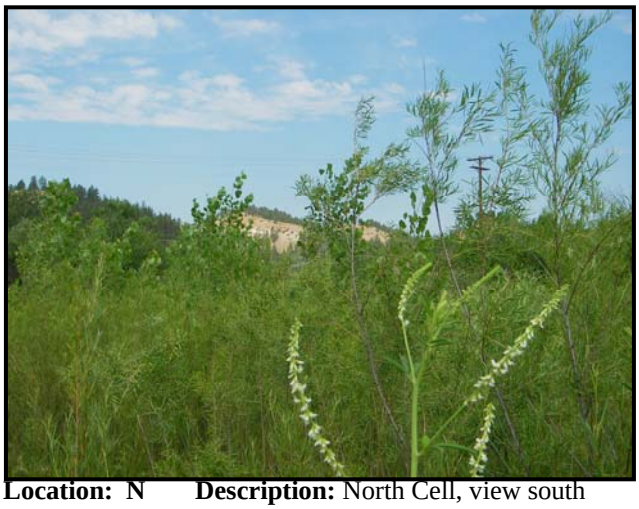
Location: J **Description:** North Cell view toward creek **Compass Reading:** 314°

Location: K **Description:** North Cell, vegetation along north side of dike **Compass Reading:** 44°

Location: L **Description:** North Cell, vegetation east of road and north of dike **Compass Reading:** 18°



Location: M **Description:** North Cell south transect end **Compass Reading:** 358°



Location: N **Description:** North Cell, view south from south transect end **Compass Reading:** 290°

Location: O **Description:** North Cell, north transect end **Compass Reading:** 174°

Location: P **Description:** North Cell, view south **Compass Reading:** 100°

Location: Q **Description:** View inside North Cell

Appendix D

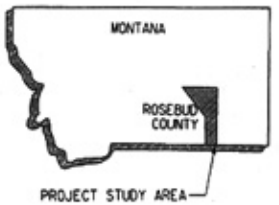
1999 GRADING AND PLANTING PLANS, SCHOOL RESERVE MITIGATION SITE
MARTIN LETTER: SANITARY SEWER LINE
CARTER-BURGESS LETTER PERTAINING TO WETLAND MITIGATION ACREAGE
RECREATED HWY. 212 WETLANDS WETLAND SITE PLANS

MDT Wetland Mitigation Monitoring
Lame Deer - East Mitigation Site
Lame Deer, Montana

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	NH37-2(16)42, NH37-2(17)49	1

LAND & WATER D-1

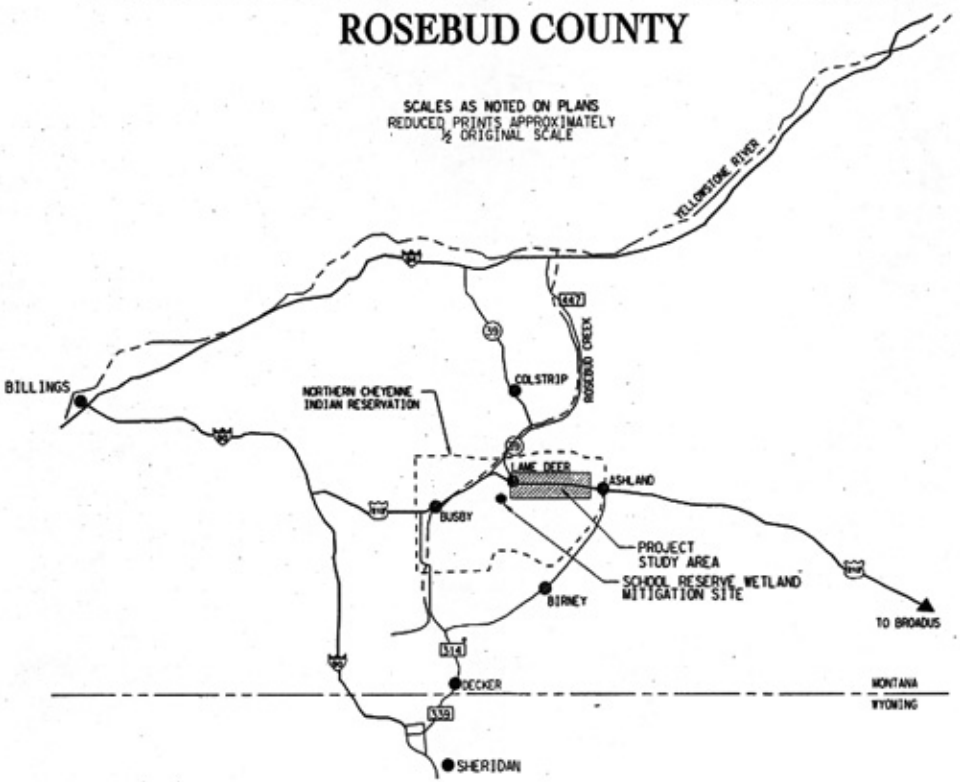
MONTANA DEPARTMENT OF TRANSPORTATION



FEDERAL AID PROJECT NO.NH37-2(16)42, NH37-2(17)49.
LAME DEER-EAST AND EAST OF LAME-DEER-EAST.
SCHOOL RESERVE WETLAND MITIGATION SITE
ROSEBUD COUNTY

SCALES AS NOTED ON PLANS
REDUCED PRINTS APPROXIMATELY
½ ORIGINAL SCALE

PRELIMINARY- FOR REVIEW
FINAL PLANS



PLANS PREPARED BY

Carter-Burgess
216 SIXTEENTH STREET MALL, SUITE 1700
DENVER, COLORADO 80202
(303) 820-5240

RELATED PROJECTS

LAME DEER-EAST AND EAST OF LAME DEER-EAST ROAD IMPROVEMENTS.
RP(MP) 42.1 TO 54.3

MONTANA
DEPARTMENT OF TRANSPORTATION

APPROVED:
_____ 19 ____
MARVIN DYE
DIRECTOR OF TRANSPORTATION
BY_____
PRECONSTRUCTION ENGINEER

CARL S. PEIL 2614PE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

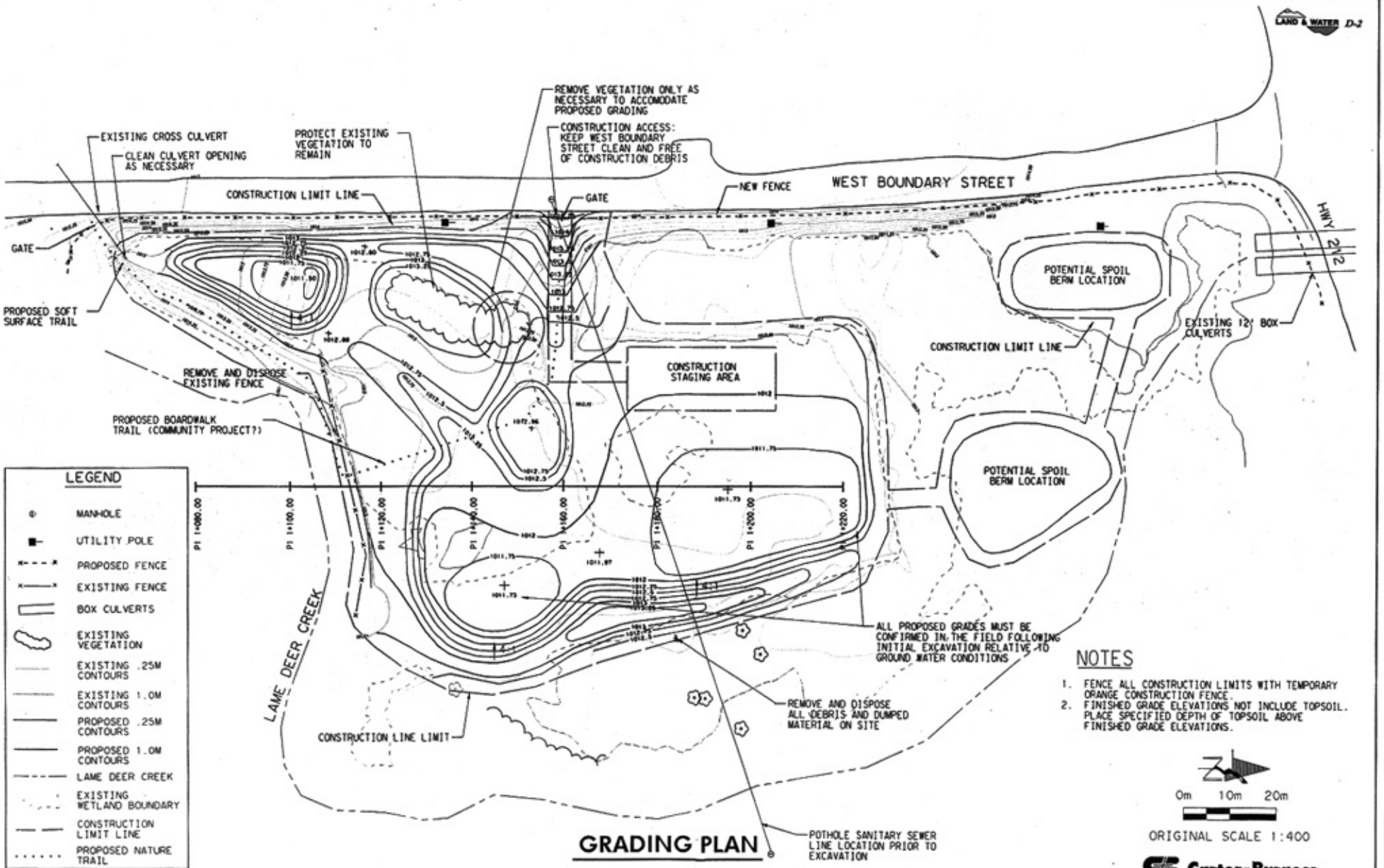
APPROVED:
DIVISION ADMINISTRATOR DATE

ITEM	UNITS	QUANTITY
AREA OF WETLAND MITIGATION	ACRES (HECTARES)	1.79 (.06)

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	NHS7-2(116)42, NHS7-2(117)49	7

MONTANA DEPARTMENT OF TRANSPORTATION

LAND & WATER D-2



GRADING PLAN

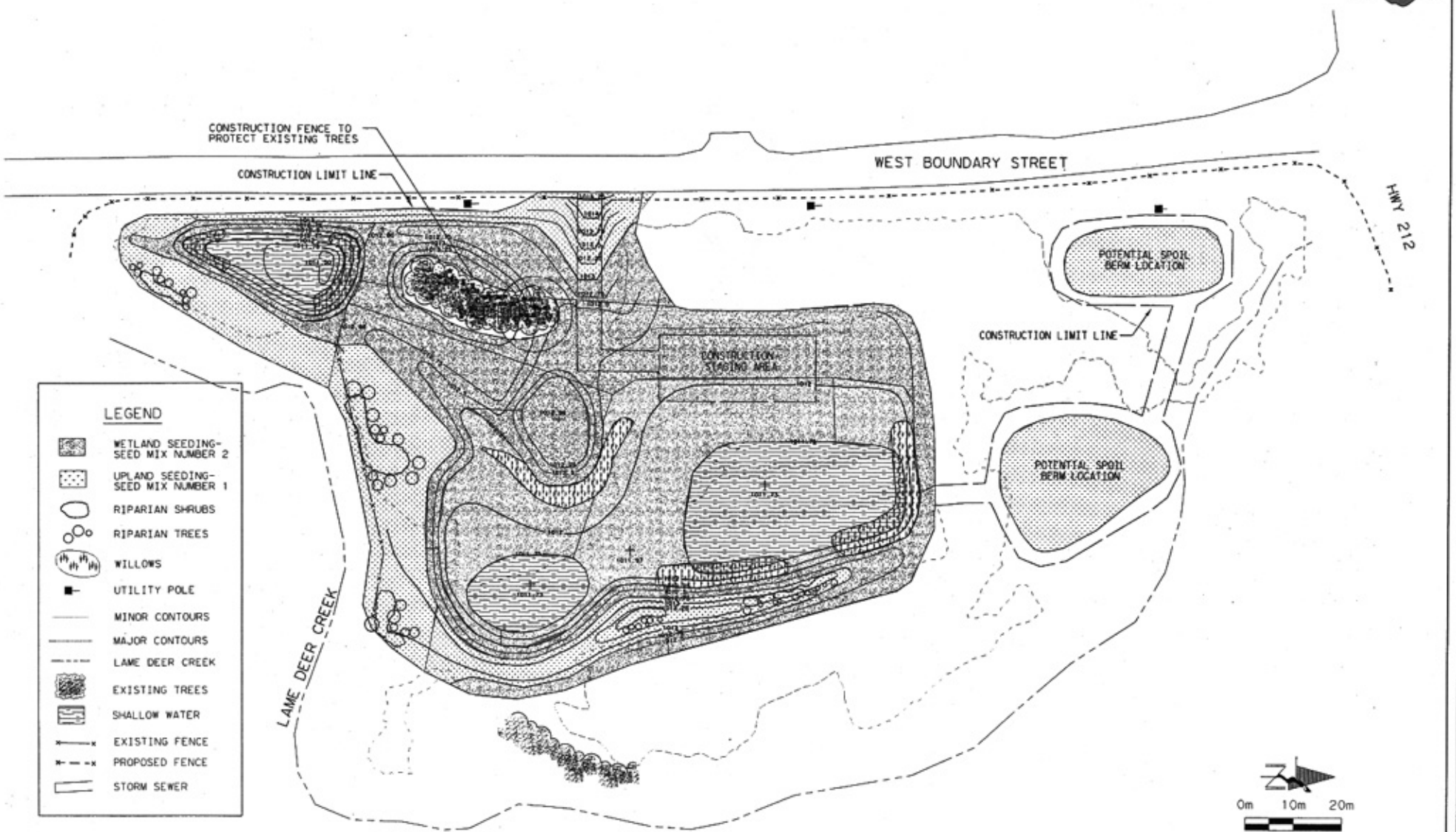
Carter Burgess

ITEM	UNITS	QUANTITY
AREA OF WETLAND MITIGATION	ACRES (HECTARES)	1.79 (.06)

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	NHS7-2(16)42, NHS7-2(17)49	9

MONTANA DEPARTMENT OF TRANSPORTATION

LAND & WATER D.J



PLANTING PLAN

ORIGINAL SCALE 1:400

Carter-Burgess

LAND & WATER D-4

Montana Department of Transportation
P.O. Box 460
Miles City MT 59301

March 16, 2001

David Milligan
Environmental Protection Department
Northern Cheyenne Tribe

RECEIVED
MAR 19 2001
ENVIRONMENTAL

Subject: NH 37-2(16)42F
Lame Deer-East
Lame Deer Wetland Site

Due to concerns from the Northern Cheyenne's Utility Department, further survey work was done at the subject site to determine cover for the sanitary sewer line running through the wetland. This survey led to the discovery that no cut could be made over the existing sewer line due to freeze and thaw causing future breaks. Department project personnel redesigned this area to leave a 6m ster wide area at existing elevation over the existing sewer. In addition a 6:1 slope is to be built from this area down to plan elevations of the wetland on both sides of the existing sewer line.

At this time, no other changes will be made to the designed wetland site. With no fill being placed over the sewer line, a good chance exists that no substantial acreage will be lost, as the soil over the line will be wet and seeded as per contract plans.

If you have any questions, please contact me.

Respectfully,

Douglas J. Martin
Engineering Project Manager

Cc: Project File
Dist. Construction File
Terry Yarger
Larry Sickerson
Riverside Contracting Inc.

DJM: jj

Carter :: Burgess

Consultants in Planning, Engineering, Architecture, Construction Management, and Related Services

cc: G. Stock
J. Mar
B. Bre
T. Hik
L. Lirb
S. Althe
L. Sickerson
File(or)

January 19, 2000

Mr. Paul Ferry
Montana Department of Transportation
2701 Prospect Avenue
Helena, MT 59620-1001

RE: Lame Deer East
NH 37-2 (16) 42
Control No. 0874

Dear Paul:

Please find attached our final plans submittal for the Lame Deer-East project. We have incorporated the comments and direction received from recent e-mails from Larry Sickerson, Ray Mengel, Todd Tillinger and you, in addition to comments received from the P-I-H meeting.

1). I contacted the NCT regarding the seed mix content and ratios and Desi Roleffson had already gone back to Washington, D.C. Phil Johnson had given me direction to raise the Great Basin Wild Rye to (9.5) kgs. per hectare.

2). I was able to locate some information on the water (tap?) from the NCT utilities. (see attached. It doesn't appear to be affected by the project's excavation. However, please review the attached to see if you agree with this assumption.

3) We have included a soft surface trail with crusher fines through the site. As directed by the Corps (Todd Tillinger), this quantity of surface area has been deleted from the total mitigation acreage. Direction is needed regarding a culvert crossing beneath the path at the drainage swale.

4) The mitigation acreage previously estimated will be reduced to 0.68 hectares (1.68 acres) due to the trail. This is information the Corps will be interested in. This roughly equates to 0.5 hectare (1.23 acres) of wetland creation and 0.18 hectare (0.45 acre) of restoration.

5) An outstanding issue was a staking plan. We have provided elevations on the cross-sections at every 20 meters from the centerline and at key elevation changes. Please advice if this is sufficient or another method is preferred.

6) While Todd Tillinger's response to the erosion control plan allowed that further coordination with the EPA may be required, we kept the erosion control item quantities in the plans as directed at the P-I-H meeting.

At this time, I think it is appropriate to re-iterate that Carter-Burgess staff and consultants have prepared these plans based on the information we had available. It is Carter-Burgess'

standard practice to design a wetland mitigation site, particularly creation sites, with multi-year studies on groundwater levels. In addition no information was available on the adjacent creek or culvert water levels or flow data for the Lame Deer-East project. We would like to recommend again that MDT or the contractor monitor the ground, culvert and creek water elevations and flow quantities on a bi-monthly basis throughout the next year and preferably two years. We have written on the plans that the contractor verify site conditions for ground and surface water levels. MDT could make this a requirement.

We recommend MDT have a wetland specialist on-site through construction to judge site conditions, make judgements on how to excavate, whether to dewater the site or not, modify the grading plans as needed, and determine where to plant the shrubs and sow seeds based on final site conditions.

We recommend the construction documents include a contractor's warrantee for the survival and establishment of all wetland plants (seeded or planted) for at least one year after construction is complete and accepted by MDT. In regards to the performance standards required by the Corps, we recommend to incorporate maximum flexibility. These should not specify the size of each wetland type (ie. Area of surface water, wet meadow or marsh). This allows MDT to change the planting plan in response to site conditions without having to change the grading or re-grade the site. I requested a copy of the performance standards from Larry Urban, but haven't received them yet.

It is our intent to provide MDT with the most successful product (plans) possible and hence, these recommendations. Please let me know if you have any comments on the plans or these recommendations.

Sincerely,

Diana Bell

Diana Bell
Carter-Burgess

Attachments

cc. Larry Sickerson
Gordon Stockstad
Ray Mengel
Bill McChesney
Tom Atkins
Diane Yates
Chris Ricciardiello
Jeanette Lostracco
file
J:\97705901\Deer\manage\Corr\finalplans.doc

Appendix E

BIRD SURVEY PROTOCOL
GPS PROTOCOL

MDT Wetland Mitigation Monitoring
Lame Deer - East Mitigation Site
Lame Deer, Montana

BIRD SURVEY PROTOCOL

The following is an outline of the MDT Wetland Mitigation Site Monitoring Bird Survey Protocol. Though each site is vastly different, the bird survey data collection methods must be standardized to a certain degree to increase repeatability. An Area Search within a restricted time frame will be used to collect the following data: a bird species list, density, behavior, and habitat-type use. There will be some decisions that team members must make to fit the protocol to their particular site. Each of the following sections and the desired result describes the protocol established to reflect bird species use over time.

Species Use within the Mitigation Wetland: Survey Method

Result: To conduct a bird survey of the wetland mitigation site within a restricted period of time and the budget allotment.

Sites that can be circumambulated or walked throughout.

These types of sites will include ponds, enhanced historic river channels, wet meadows, and any area that can be surveyed from the entirety of its perimeter or walked throughout. If the wetland is not uncomfortably inundated, conduct several "meandering" transects through the site in an orderly fashion (record the number and approximate location/direction of the transects in the field notebook; they do not have to be formalized or staked). If a very small portion of the site cannot be crossed due to inundation, this method will also apply. Though the sizes of the site vary, each site will require surveying to the fullest extent possible within a set time limit. The optimum times to conduct the survey are in the morning hours. Conduct the survey from sunrise to no later than 11:00 AM. (Note: some sites may have to be surveyed in the late afternoon or evening due to time constraints or weather; if this is the case, record the time of day and include this information in your report discussion.) If the survey is completed before 11:00 AM and no additions are being made to the list, then the task is complete. The overall limiting factor regarding the number of hours that are spent conducting this survey is the number of budgeted hours; this determination must be made by site by each individual.

In many cases, binoculars will be the only instrument that is needed to identify and count the birds using the wetland. If the wetland includes deep water habitat that can not be assessed with binoculars, then a scope and tripod are necessary. If this is the case, establish as many lookout posts as necessary from key vantage points to collect the data. Depending on the size of the open water, more time may be spent viewing the mitigation area from these vantage points than is spent walking the peripheries of more shallow-water wetlands.

Sites that cannot be circumambulated.

These types of sites will include large-bodied waters, such as reservoirs, particularly those with deep water habitat (>6 ft) close to the shore and no wetland development in that area of the shoreline. If one area of the reservoir was graded in such a way to create or enhance the development of a wetland, then that will be the area in which the ambulatory bird survey is conducted. The team member must then determine the length of the shoreline that will be surveyed during each visit.

As stated above in the ambulatory site section, these large sites most likely will have to be surveyed from established vantage points.

Species Use within the Mitigation Wetland: Data Recording

Result: A complete list of bird species using the site, an estimate of bird densities and associated behaviors, and identification of habitat use.

1. Bird Species List

Record the bird species on the Bird Survey - Field Data Sheet using the appropriate 4-letter code of the common name. The coding uses the first two letters of the first two words of the birds' common name or if one name, the first four (4) letters. For example, mourning dove is coded MODO and mallard is MALL. If an unknown individual is observed, use the following protocol and define your abbreviation at the bottom of the field data sheet: unknown shorebird: UNSB; unknown brown bird (UNBR); unknown warbler (UNWA); unknown waterfowl (UNWF). For a flyover of a flock of unknown species, use a term that describes the birds' general characteristics and include the approximate flock size in parentheses; do not fill in the habitat column. For example, a flock of black, medium-sized birds could be coded: UNBB / FO (25). You may also note on the data sheet if that particular individual is using a constructed nest box.

2. Bird Density

In the office, sum the Bird Survey – Field Data Sheet data by species and by behavior. Record this data in the Bird Summary Table.

3. Bird Behavior

Bird behavior must be identified by what is known. When a species is simply observed, the behavior that it is immediately exhibiting is what is recorded. Only behaviors that have discreet descriptive terms should be used. The following terms are recommended: breeding pair individual (BP); foraging (F); flyover (FO); loafing (L; e.g. sleeping, roosting, floating with head tucked under wing are loafing behaviors); and, nesting (N). If more behaviors are observed that do have a specific descriptive word, use them and we will add it to the protocol; descriptive words or phrases such as "migrating" or "living on site" are unknown behaviors.

4. Bird Species Habitat Use

We are interested in what bird species are using which particular habitat within the mitigation wetlands. This data is easily collected by simply recording what habitat the species was initially observed. Use the following broad category habitat classifications: aquatic bed (AB - rooted floating, floating-leaved, or submergent vegetation); forested (FO); marsh (MA – cattail, bulrush, emergent vegetation, etc. with surface water); open water (OW – primarily unvegetated); scrub-shrub (SS); and upland buffer (UP); wet meadow (WM – sedges, rushes, grasses with little to no surface water). If other categories are observed onsite that are not suggested here, we will make a new category next year.

GPS Mapping and Aerial Photo Referencing Procedure

The wetland boundaries, photograph location points and sampling locations were field located with mapping grade Trimble Geo III GPS units. The data was collected with a minimum of three positions per feature using Course/Acquisition code. The collected data was then transferred to a PC and differentially corrected to the nearest operating Community Base Station. The corrected data was then exported to ACAD drawings in Montana State Plain Coordinates NAD 83 international feet.

The GPS positions collected and processed had a 68% accuracy of 7 feet except in isolated areas of Tasks .008 and .011, where it went to 12 feet. This is within the 1 to 5 meter range listed as the expected accuracy of the mapping grade Trimble GPS.

Aerial reference points were used to position the aerial photographs. This positioning did not remove the distortion inherent in all photos; this imagery is to be used as a visual aide only. The located wetland boundaries were given a final review by the wetland biologist and adjustments were made if necessary.

Any relationship of features located to easement or property lines are not to be construed from these figures. These relationships can only be determined with a survey by a licensed surveyor.

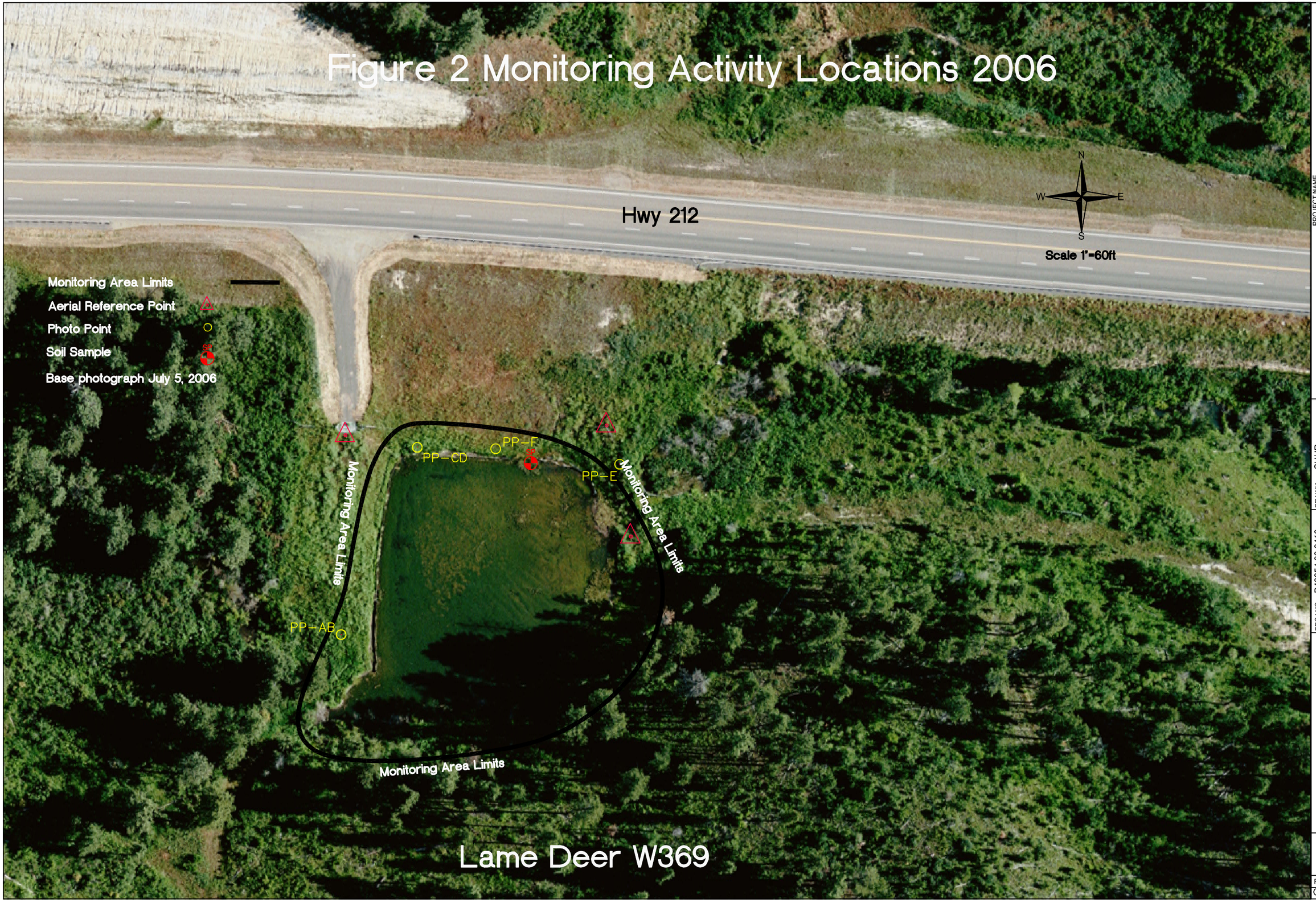
Appendix F

2006 Recreated Hwy 212 Wetlands (WL 369 & 380):

Figures 2 & 3
COE Routine Wetland Delineation Data Forms
Functional Assessment Forms
Photograph Log Recreated Hwy 212 Wetlands
Representative Photographs

MDT Wetland Mitigation Monitoring
Lame Deer - East Mitigation Site
Lame Deer, Montana

Figure 2 Monitoring Activity Locations 2006



PROJECT NAME
MDT LAME DEER WETLAND W369 MITIGATION

DRAWING TITLE
MONITORING ACTIVITY LOCATIONS 2006

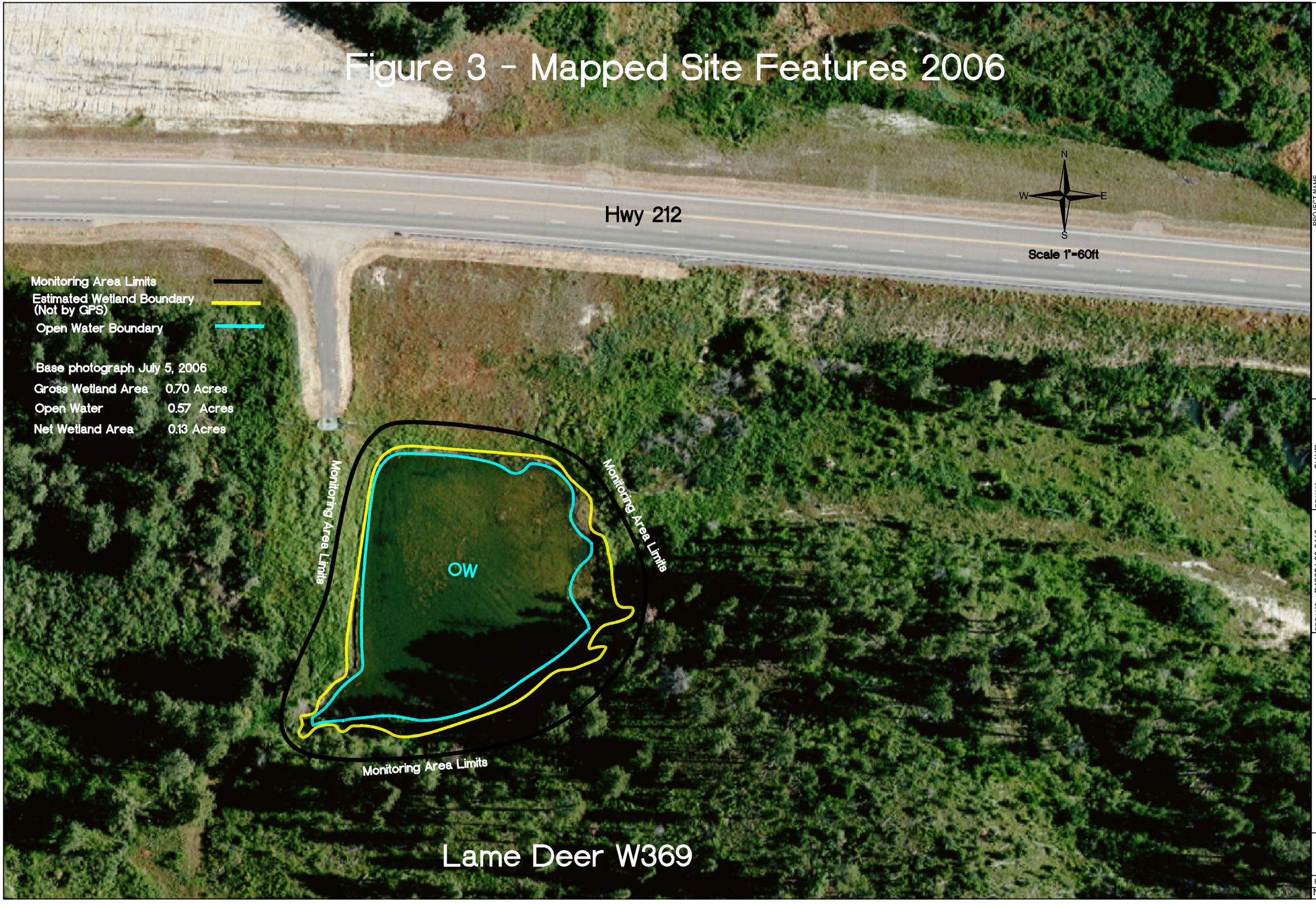
PROJ NO: B43054.00 0410	DRAWN: SH/JR
LOCATION: LAME DEER, MT	PROJ MGR: J. BERGLUND
SCALE: 1" = 60'	CHECKED: LB APPVD: JB
FILE NAME: 2006 BASE.dwg	

PBSJ
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718

FIGURE
2 OF

REV -
Oct/26/2006

Figure 3 - Mapped Site Features 2006



Lame Deer W369

PROJECT NAME
MDT LAME DEER WETLAND W369 MITIGATION

DRAWING TITLE
MAPPED SITE FEATURES 2006

PROJ NO:	B43054.00 0410
LOCATION:	LAME DEER, MT
SCALE:	1" = 60'
FILE NAME:	2006 BASE.dwg
DRAWN:	SH/JR
PROJ MGR:	J. BERGLUND
CHECKED:	LB
APPVD:	JB

PBSJ
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718

FIGURE 3 OF -

REV -

Nov/08/2006

Figure 2 – Monitoring Activity Locations 2006

Monitoring Area Limits

Aerial Reference Point

Photo Point

Soil Sample

Base photograph July 5, 2006

N

W

E

S

Scale 1"=60ft

PP–E

PP–AB

PP–CD

Monitoring Area Limits

Monitoring Area Limits

Monitoring Area Limits

Hwy 212

Lame Deer W-380

PROJECT NAME
MDT LAME DEER WETLAND W380 MITIGATION

DRAWING TITLE
MONITORING ACTIVITY LOCATIONS 2006

DRAWN: SH/JR
PROJ MGR: J. BERGLUND
CHECKED: LB | APPVD: JB

PROJ NO: B43054.00.0410
LOCATION: LAME DEER, MT
SCALE: 1" = 60'
FILE NAME:2006 BASE.dwg

PBSJ
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718

FIGURE
2 OF -

REV -
Oct/26/2006

Figure 3 - Mapped Site Features 2006

Monitoring Area Limits

Wetland Boundary (Not by GPS)

Open Water Boundary

Base photograph July 5, 2006

Gross Wetland Area	0.39 Acres
Open Water Area	0.15 Acres
Net Wetland Area	0.24 Acres

N

W E

S

Scale 1"=60ft

Monitoring Area Limits

Monitoring Area Limits

Monitoring Area Limits

Open Water

Hwy 212

Lame Deer W-380

PROJECT NAME
MDT LAME DEER WETLAND W380 MITIGATION

DRAWING TITLE
MAPPED SITE FEATURES 2006

DRAWN: SH/JR
PROJ MGR: J. BERGLUND
CHECKED: LB | APPVD: JB

PROJ NO: B43054.00 0410
LOCATION: LAME DEER, MT
SCALE: 1" = 60'
FILE NAME:2006 BASE.dwg

PBSJ
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718

FIGURE
3 OF

REV -
Nov/10/2006

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Lame Deer			Date:	7/17/06
Applicant/Owner:	MDT			County:	Rosebud
Investigator:	LB/LWC			State:	MT
Do Normal Circumstances exist on the site:	X	Yes	No	Community ID:	emergent
Is the site significantly disturbed (Atypical Situation)?		Yes	X No	Transect ID:	
Is the area a potential Problem Area?:		Yes	X No	Plot ID:	WL-369
(If needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1	GLYGRA	H	OBL	9			
2	MENARV	H	FACW	10			
3	JUNTEN	H	FACW	11			
4	CICDOU	H	-	12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). 3/4

WL veg community is ~ 1 ft wide around west and north sides of pond, 3-6 feet on east end where silt slump is located, and stream inlet has begun to expand vegetated area on the "silt fan". A few small pods of emerged WL vegetation are also expanding (`6'X6'). (CICDOU-poison hemlock)

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observations:
- Depth of Surface Water: - (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: @ surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- ____ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
At SP soil is saturated. Silt fence is now mostly in water, fully vegetated behind fence, should be removed.

SOILS

Map Unit Name (Series and Phase): Bitton-Shambo

Drainage Class: well

Taxonomy (Subgroup):

Field Observations

Confirm Mapped Type? X Yes ____ No

Profile Description:

Depth inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10”	A	10YR 2/1			Coarse red frags, silt sand clay

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	____	No	
Wetland Hydrology Present?	X	Yes	____	No	
Hydric Soils Present?	X	Yes	____	No	Is this Sampling Point Within a Wetland? X Yes ____ No

Remarks:

Area mostly comprised of open water, slightly more wetland vegetation since 2005, however water too deep for vegetation to spread into open water. If culvert were cleaned and beaver dam removed, the basin would very likely completely fill with wetland vegetation.

Silt fence should be removed.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Lame Deer				Date: 7/17/06	
Applicant/Owner: MDT				County: Rosebud	
Investigator: LB/LWC				State: MT	
Do Normal Circumstances exist on the site:	X	Yes		No	Community ID: emergent
Is the site significantly disturbed (Atypical Situation)?		Yes	X	No	Transect ID:
Is the area a potential Problem Area?:		Yes	X	No	Plot ID: WL-380
(If needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1	JUNTEN	H	FAC	9	CARLAN	H	OBL
2	JUNNOD	H	OBL	10	MEDLUP	H	FAC
3	SALBEB	S	FACW	11	CICDOU	H	--
4	SCIPAL	H	OBL	12	SALEXI	H	OBL
5	CARHYS	H	OBL	13			
6	TYPLAT	H	OBL	14			
7	GLYGRA		OBL	15			
8	SCIACU	H	OBL	16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). 10/11

Diversity increasing up drainage along creek edge slowly every year (~1 ft/year).

HYDROLOGY

Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other
- X No Recorded Data Available

Field Observations:
- Depth of Surface Water: - (in.)
- Depth to Free Water in Pit: (filling) (in.)
- Depth to Saturated Soil: @ surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- \- Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- \- Drift Lines
- \- Sediment Deposits
- \- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Saturation zone has not progressed upstream in adjacent upland much if at all in 2006.

SOILS

Map Unit Name: Bitton-Shambo
Drainage Class: well
(Series and Phase):
Taxonomy (Subgroup):
Field Observations
Confirm Mapped Type? X Yes ____ No

Profile Description:

Depth inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10”	B	10YR 2/1			Silt gravelly loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	____	No	
Wetland Hydrology Present?	X	Yes	____	No	
Hydric Soils Present?	X	Yes	____	No	Is this Sampling Point Within a Wetland? X Yes ____ No

Remarks:

Wetland fringe appears fully developed, but may expand slightly on east end where stream enters wetland fringe, especially if high water/snow years occur and subsequently increases saturation of this upland area.

MDT MONTANA WETLAND ASSESSMENT FORM (revised May 25, 1999)

1. Project Name: Lame Deer-East **2. Project #:** -43054410 **Control #:** _____

3. Evaluation Date: 7/17/2006 **4. Evaluator(s):** LB/LWC **5. Wetland / Site #(s):** W-369

6. Wetland Location(s) i. T: 2 S **R:** 42 E **S:** 28 **T:** __ N **R:** __ E **S:** _____

ii. Approx. Stationing / Mileposts: _____

iii. Watershed: 10100003 **GPS Reference No. (if applies):** _____

Other Location Information: _____

7. A. Evaluating Agency MDT

8. Wetland Size (total acres): _____ (visually estimated)
.7 (measured, e.g. GPS)

B. Purpose of Evaluation:

- ☐ Wetlands potentially affected by MDT project
- ☐ Mitigation wetlands; pre-construction
- ☒ Mitigation wetlands; post-construction
- ☐ Other

9. Assessment Area (total acres): _____ (visually estimated)
0.7 (measured, e.g. GPS)

10. CLASSIFICATION OF WETLAND AND AQUATIC HABITATS IN AA

HGM CLASS [1]	SYSTEM [2]	SUBSYSTEM [2]	CLASS [2]	WATER REGIME [2]	MODIFIER [2]	% OF AA
Depression	Palustrine	None	Unconsolidated Bottom	Permanently Flooded	Excavated	81
Riverine	Riverine	Upper Perennial	Unconsolidated Bottom	Permanently Flooded	---	1
Depression	Palustrine	None	Emergent Wetland	Intermittently Exposed	---	16
Depression	Palustrine	None	Scrub-Shrub Wetland	Seasonally Flooded	---	2

[1] = Smith et al. 1995. [2] = Cowardin et al. 1979.

11. ESTIMATED RELATIVE ABUNDANCE (of similarly classified sites within the same Major Montana Watershed Basin)
Common **Comments:** _____

12. GENERAL CONDITION OF AA

i. Regarding Disturbance: (Use matrix below to select appropriate response.)

Conditions Within AA	Predominant Conditions Adjacent (within 500 Feet) To AA		
	Land managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings.	Land not cultivated, but moderately grazed or hayed or selectively logged or has been subject to minor clearing; contains few roads or buildings.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density.
AA occurs and is managed in predominantly a natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings.	---	low disturbance	---
AA not cultivated, but moderately grazed or hayed or selectively logged or has been subject to relatively minor clearing, or fill placement, or hydrological alteration; contains few roads or buildings.	---	---	---
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density.	---	---	---

Comments: (types of disturbance, intensity, season, etc.) _____

ii. Prominent weedy, alien, & introduced species: Canada thistle

iii. Briefly describe AA and surrounding land use / habitat: HWY 212 is upslope from area.

13. STRUCTURAL DIVERSITY (Based on 'Class' column of #10 above.)

Number of 'Cowardin' Vegetated Classes Present in AA	≥3 Vegetated Classes or ≥ 2 if one class is forested	2 Vegetated Classes or 1 if forested	≤ 1 Vegetated Class
Select Rating	---	Moderate	---

Comments: There are some shrubs on opposite bank; steep bank and inundation on that side of pond.

14A. HABITAT FOR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED PLANTS AND ANIMALS

i. AA is Documented (D) or Suspected (S) to contain (check box):

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

ii. **Rating** (Based on the strongest habitat chosen in 14A(i) above, find the corresponding rating of High (H), Moderate (M), or Low (L) for this function.

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	none
Functional Point and Rating	---	---	---	---	---	---	0 (L)

If documented, list the source (e.g., observations, records, etc.)**:** _____

14B. HABITAT FOR PLANTS AND ANIMALS RATED AS S1, S2, OR S3 BY THE MONTANA NATURAL HERITAGE PROGRAM.
Do not include species listed in 14A(i).

i. AA is Documented (D) or Suspected (S) to contain (check box):

Primary or Critical habitat **(list species)**	☐ D	☐ S	_____
Secondary habitat **(list species)**	☐ D	☐ S	_____
Incidental habitat **(list species)**	☐ D	☐ S	_____
No usable habitat	☐ D	☐ S	_____

iii. **Rating** (Based on the strongest habitat chosen in 14B(i) above, find the corresponding rating of High (H), Moderate (M), or Low (L) for this function.

Highest Habitat Level:	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	none
Functional Point and Rating	---	---	---	---	---	---	0 (L)

If documented, list the source (e.g., observations, records, etc.)**:** LIKELY THERE ARE NLEOPARD FROGS, BUT NOT OBSERVED TO DATE

14C. General Wildlife Habitat Rating

i. **Evidence of overall wildlife use in the AA:** (Check either substantial, moderate, or low)

☐ **Substantial** (based on any of the following)
- ☐ 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

☐ **Moderate** (based on any of the following)
- ☐ 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

☒ **Low** (based on any of the following)
- ☒ 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 AA

ii. **Wildlife Habitat Features** (Working from top to bottom, select appropriate AA attributes to determine the exceptional (E), high (H), moderate (M), or low (L) rating. Structural diversity is from #13. For class cover to be considered evenly distributed, vegetated classes must be within 20% of each other in terms of their percent composition in the AA (see #10). Duration of Surface Water: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; A= absent.

Structural Diversity (from #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 #12)	--	--	--	--	--	--	--	--	--	--	--	--	E	--	--	--	E	--	--	--
Moderate disturbance at AA (see #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
High disturbance at AA (see #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

iii. **Rating** (Using 14C(i) and 14C(ii) above and the matrix below to arrive at the functional point and rating of exceptional (E), high (H), moderate (M), or low (L) for this function.)

Evidence of Wildlife Use from 14C(i)	**Wildlife Habitat Features Rating** from 14C(ii)			
	☒ Exceptional	☐ High	☐ Moderate	☐ Low
Substantial	--	--	--	--
Moderate	--	--	--	--
Low	.6 (M)	--	--	--

Comments: The surrounding upland and stream corridor is prime habitat for ungulates and migratory birds, though few have been heard/seen in 5 years; therefore, Evidence of Wildlife Use was decreased to Low.

14D. GENERAL FISH/AQUATIC HABITAT RATING ☐ **NA** (proceed to 14E)

If the AA is not or was not historically used by fish due to lack of habitat, excessive gradient, then check the NA box above.

Assess if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [*e.g.* fish use is precluded by perched culvert or other barrier, etc.]. If fish use occurs in the AA but is not desired from a resource management perspective (*e.g.* fish use within an irrigation canal], then Habitat Quality [14D(i)] below should be marked as "Low", applied accordingly in 14D(ii) below, and noted in the comments.

i. **Habitat Quality** (Pick the appropriate AA attributes in matrix to pick the exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of Surface Water in AA	☒Permanent/Perennial			☐Seasonal / Intermittent			☐Temporary / Ephemeral		
Cover - % of waterbody in AA containing cover objects (*e.g.* submerged logs, large rocks & boulders, overhanging banks, floating-leaved vegetation)	>25%	10-25%	<10%	>25%	10-25%	<10%	>25%	10-25%	<10%
Shading - >75% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities	--	--	--	--	--	--	--	--	--
Shading – 50 to 75% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities.	--	--	--	--	--	--	--	--	--
Shading - < 50% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities.	--	M	--	--	--	--	--	--	--

ii. **Modified Habitat Quality:** Is fish use of the AA precluded or significantly reduced by a culvert, dike, other man-made structure or activity **or** is the waterbody included on the 'MDEQ list of waterbodies in need of TMDL development' with 'Probable Impaired Uses' listed as cold or warm water fishery or aquatic life support**?**
☐ **Y** ☒ **N** If yes, reduce the rating from 14D(i) by one level and check the modified habitat quality rating: ☐ E ☐ H ☐ M ☐ L

iii. **Rating** (Use the conclusions from 14D(i) and 14D(ii) above and the matrix below to pick the functional point and rating of exceptional (E), high (H), moderate (M), or low (L).)

Types of Fish Known or Suspected Within AA	**Modified Habitat Quality** from 14D(ii)			
	☐ Exceptional	☐ High	☒ Moderate	☐ Low
Native game fish	--	--	--	--
Introduced game fish	--	--	.6 (M)	--
Non-game fish	--	--	--	--
No fish	--	--	--	--

Comments: BASS HAVE BEEN STOCKED IN THIS POND

14E. FLOOD ATTENUATION ☐ **NA** (proceed to 14G)

Applies only to wetlands subject to flooding via in-channel or overbank flow.
If wetlands in AA do not flooded from in-channel or overbank flow, check NA above.

i. **Rating** (Working from top to bottom, mark the appropriate attributes to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)

Estimated wetland area in AA subject to periodic flooding	☐ ≥ 10 acres			☐ <10, >2 acres			☒ ≤2 acres		
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	--	--	--	--	--	--	--	--	.2 (L)
AA contains **unrestricted outlet**	--	--	--	--	--	--	--	--	--

ii. **Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA?** (check)
☐**Y** ☒**N** **Comments:** SHOULD have unrestricted outlet but culvert plugged.

14F. SHORT AND LONG TERM SURFACE WATER STORAGE ☐ **NA** (proceed to 14G)

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, check NA above.

i. Rating (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)
Abbreviations: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral.

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding.	☐ >5 acre feet			☒ <5, >1 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**	--	--	--	.8 (H)	--	--	--	--	--
Wetlands in AA flood or pond **< 5 out of 10 years**	--	--	--	--	--	--	--	--	--

Comments: _____

14G. SEDIMENT/NUTRIENT/TOXICANT RETENTION AND REMOVAL ☐ **NA** (proceed to 14H)

Applies to wetlands with potential to receive excess 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, check NA above.

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)

Sediment, Nutrient, and Toxicant Input Levels Within AA	AA receives or surrounding land use has potential to deliver low to moderate levels of sediments, nutrients, or compounds 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 has 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 or ponding in AA	☒ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
AA contains **no or restricted outlet**	1 (H)	--	--	--	--	--	--	--
AA contains **unrestricted outlet**	--	--	--	--	--	--	--	--

Comments: outlet plugged by debris and beaver dam; aquatic veg likely 100% cover in pond bottom.

14H. SEDIMENT/SHORELINE STABILIZATION ☐ **NA** (proceed to 14I)

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 that is subject to wave action. If this does not apply, check NA above.

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating exceptional (E), high (H), moderate (M), or low (L) for this function.

% Cover of wetland streambank or shoreline by species with deep, binding rootmasses.	Duration of Surface Water Adjacent to Rooted Vegetation		
	☒Permanent / Perennial	☐Seasonal / Intermittent	☐Temporary / Ephemeral
≥ 65 %	1 (H)	--	--
35-64 %	--	--	--
< 35 %	--	--	--

Comments:

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.
A = acreage of vegetated component in the AA. **B** = structural diversity rating from #13. **C** = Yes (Y) or No (N) as to whether or not the AA contains a surface or subsurface outlet; **P/P** = permanent/perennial; **S/I** = seasonal/intermittent; **T/E/A**= temporary/ephemeral/absent.

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	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☒Y	☐N	☐Y	☐N
P/P	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.6M	--	--	--
S/I	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T/E/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Comments:

14J. GROUNDWATER DISCHARGE/RECHARGE (D/R) (Check the indicators in i & ii below that apply to the AA)

i. ☒ **Discharge Indicators**
- ☐ Springs are known or observed.
- ☐ Vegetation growing during dormant season/drought.
- ☒ Wetland occurs at the toe of a natural slopes.
- ☐ Seeps are present at the wetland edge.
- ☐ AA permanently flooded during drought periods.
- ☐ Wetland contains an outlet, but no inlet.
- ☐ Other

ii. ☒ **Recharge Indicators**
- ☒ Permeable substrate presents without underlying impeding layer.
- ☐ Wetland contains inlet but not outlet.
- ☐ Other

iii. **Rating:** Use the information from 14J(i) and 14j(ii) above and the table below to arrive at the functional point and rating of high (H) or low (L) for this function.

Criteria	Functional Point and Rating
AA has known Discharge/Recharge area or one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	--
Available Discharge/Recharge information inadequate to rate AA D/R potential	--

Comments:

14K. UNIQUENESS

i. Rating (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.

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 from #11	☐rare	☐common	☐abundant	☐rare	☐common	☐abundant	☐rare	☒common	☐abundant
Low disturbance at AA (#12i)	--	--	--	--	--	--	--	.4M	--
Moderate disturbance at AA (#12i)	--	--	--	--	--	--	--	--	--
High disturbance at AA (#12i)	--	--	--	--	--	--	--	--	--

Comments:

14L. RECREATION / EDUCATION POTENTIAL

i. Is the AA a known recreational or educational site? ☒ **Yes (Rate ☒ High (1.0)**, then proceed to 14L(ii) only] ☐ **No** [Proceed to 14L(iii)]

ii. Check categories that apply to the AA: ☒ Educational / scientific study ☐ Consumptive rec. ☐ Non-consumptive rec. ☐ Other

iii. Based on the location, diversity, size, and other site attributes, is there a strong potential for recreational or educational use?
☒ **Yes** [Proceed to 14L (ii) and then 14L(iv).] ☐ **No** [Rate as low in 14L(iv)]

iv. Rating (Use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.

Ownership	Disturbance at AA from #12(i)		
	☐ Low	☐ Moderate	☐ High
Public ownership	--	--	--
Private ownership	--	--	--

Comments: Tribal member informed me that this area is fished.

FUNCTION, VALUE SUMMARY, AND OVERALL RATING

Function and Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	
B. MT Natural Heritage Program Species Habitat	L	0.00	1	
C. General Wildlife Habitat	M	0.60	1	
D. General Fish/Aquatic Habitat	M	0.60	1	
E. Flood Attenuation	L	0.20	1	
F. Short and Long Term Surface Water Storage	H	0.80	1	
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	
H. Sediment/Shoreline Stabilization	H	1.00	1	
I. Production Export/Food Chain Support	M	0.60	1	
J. Groundwater Discharge/Recharge	H	1.00	1	
K. Uniqueness	M	0.4	1	
L. Recreation/Education Potential	H	1.00	1	
	Totals:	7.20	12.00	5
		Percent of Total Possible Points:	**60%** (Actual / Possible) x 100 [rd to nearest whole #]	

Category I Wetland: (Must satisfy **one** of the following criteria. If not proceed 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 total Possible Points is > 80%.

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following Category II criteria. If not satisfied, proceed to Category IV.)
- ☐ Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; **or**
- ☐ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish/Aquatic 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 total possible points is > 65%.

☒ **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; If not satisfied, proceed to Category III.)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ "Low" rating for Production Export / Food Chain Support; **and**
- ☐ Percent of total possible points is < 30%.

OVERALL ANALYSIS AREA (AA) RATING: (Check appropriate category based on the criteria outlined above.)

☐ **I** ☐ **II** ☒ **III** ☐ **IV**

MDT MONTANA WETLAND ASSESSMENT FORM (revised May 25, 1999)

1. Project Name: Lame Deer-East **2. Project #:** 43054 **Control #:** _____

3. Evaluation Date: 7/17/2006 **4. Evaluator(s):** LB/LWC **5. Wetland / Site #(s):** W-380

6. Wetland Location(s) i. T: 2 S **R:** 42 E **S:** 28 **T:** __ N **R:** __ E **S:** _____

ii. Approx. Stationing / Mileposts: _____

iii. Watershed: 10100003 **GPS Reference No. (if applies):** _____

Other Location Information: _____

7. A. Evaluating Agency MDT

8. Wetland Size (total acres): _____ (visually estimated)
0.39 (measured, e.g. GPS)

B. Purpose of Evaluation:

- ☐ Wetlands potentially affected by MDT project
- ☐ Mitigation wetlands; pre-construction
- ☒ Mitigation wetlands; post-construction
- ☐ Other

9. Assessment Area (total acres): _____ (visually estimated)
0.39 (measured, e.g. GPS)

10. CLASSIFICATION OF WETLAND AND AQUATIC HABITATS IN AA

HGM CLASS [1]	SYSTEM [2]	SUBSYSTEM [2]	CLASS [2]	WATER REGIME [2]	MODIFIER [2]	% OF AA
Depression	Palustrine	None	Unconsolidated Bottom	Permanently Flooded	Excavated	38
---	---	---	Emergent Wetland	Saturated	---	60
Riverine	Riverine	Upper Perennial	Aquatic Bed	Permanently Flooded	---	2
---	---	---	---	---	---	

[1] = Smith et al. 1995. [2] = Cowardin et al. 1979.

11. ESTIMATED RELATIVE ABUNDANCE (of similarly classified sites within the same Major Montana Watershed Basin)
Common **Comments:** _____

12. GENERAL CONDITION OF AA

i. Regarding Disturbance: (Use matrix below to select appropriate response.)

Conditions Within AA	Predominant Conditions Adjacent (within 500 Feet) To AA		
	Land managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings.	Land not cultivated, but moderately grazed or hayed or selectively logged or has been subject to minor clearing; contains few roads or buildings.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density.
AA occurs and is managed in predominantly a natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings.	---	low disturbance	---
AA not cultivated, but moderately grazed or hayed or selectively logged or has been subject to relatively minor clearing, or fill placement, or hydrological alteration; contains few roads or buildings.	---	---	---
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density.	---	---	---

Comments: (types of disturbance, intensity, season, etc.) Traffic on Hwy. 212

ii. Prominent weedy, alien, & introduced species: _____

iii. Briefly describe AA and surrounding land use / habitat: HWY 212 is upslope from area; Reservation land, logged and forested mosaic.

13. STRUCTURAL DIVERSITY (Based on 'Class' column of #10 above.)

Number of 'Cowardin' Vegetated Classes Present in AA	≥3 Vegetated Classes or ≥ 2 if one class is forested	2 Vegetated Classes or 1 if forested	≤ 1 Vegetated Class
Select Rating	---	Moderate	---

Comments: aquatic and emergent veg

14A. HABITAT FOR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED PLANTS AND ANIMALS

i. AA is Documented (D) or Suspected (S) to contain (check box):

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

ii. **Rating** (Based on the strongest habitat chosen in 14A(i) above, find the corresponding rating of High (H), Moderate (M), or Low (L) for this function.

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	none
Functional Point and Rating	---	---	---	---	---	---	0 (L)

If documented, list the source (e.g., observations, records, etc.)**:** _____

14B. HABITAT FOR PLANTS AND ANIMALS RATED AS S1, S2, OR S3 BY THE MONTANA NATURAL HERITAGE PROGRAM.
Do not include species listed in 14A(i).

i. AA is Documented (D) or Suspected (S) to contain (check box):

Primary or Critical habitat **(list species)**	☒ D	☐ S	Rana pipiens
Secondary habitat **(list species)**	☐ D	☐ S	_____
Incidental habitat **(list species)**	☐ D	☐ S	_____
No usable habitat	☐ D	☐ S	_____

iii. **Rating** (Based on the strongest habitat chosen in 14B(i) above, find the corresponding rating of High (H), Moderate (M), or Low (L) for this function.

Highest Habitat Level:	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	none
Functional Point and Rating	1 (H)	---	---	---	---	---	---

If documented, list the source (e.g., observations, records, etc.)**:** Pond very active with different age-classes of Rana pipiens.

14C. General Wildlife Habitat Rating

i. **Evidence of overall wildlife use in the AA:** (Check either substantial, moderate, or low)

☐ **Substantial** (based on any of the following)
- ☐ 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

☐ **Low** (based on any of the following)
- ☐ 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 AA

☒ **Moderate** (based on any of the following)
- ☒ 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

ii. **Wildlife Habitat Features** (Working from top to bottom, select appropriate AA attributes to determine the exceptional (E), high (H), moderate (M), or low (L) rating. Structural diversity is from #13. For class cover to be considered evenly distributed, vegetated classes must be within 20% of each other in terms of their percent composition in the AA (see #10). Duration of Surface Water: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; A= absent.

Structural Diversity (from #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 #12)	--	--	--	--	--	--	--	--	--	--	--	--	E	--	--	--	--	--	--	--
Moderate disturbance at AA (see #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
High disturbance at AA (see #12)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

iii. **Rating** (Using 14C(i) and 14C(ii) above and the matrix below to arrive at the functional point and rating of exceptional (E), high (H), moderate (M), or low (L) for this function.)

Evidence of Wildlife Use from 14C(i)	**Wildlife Habitat Features Rating** from 14C(ii)			
	☒ Exceptional	☐ High	☐ Moderate	☐ Low
Substantial	--	--	--	--
Moderate	.9 (H)	--	--	--
Low	--	--	--	--

Comments: The surrounding upland and stream corridor is prime habitat for ungulates and migratory birds; waterfowl likely use pond but none have been observed..

14D. GENERAL FISH/AQUATIC HABITAT RATING ☐ **NA** (proceed to 14E)

If the AA is not or was not historically used by fish due to lack of habitat, excessive gradient, then check the NA box above.

Assess if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [*e.g.* fish use is precluded by perched culvert or other barrier, etc.]. If fish use occurs in the AA but is not desired from a resource management perspective (*e.g.* fish use within an irrigation canal], then Habitat Quality [14D(i)] below should be marked as "Low", applied accordingly in 14D(ii) below, and noted in the comments.

i. **Habitat Quality** (Pick the appropriate AA attributes in matrix to pick the exceptional (E), high (H), moderate (M), or low (L) quality rating.

Duration of Surface Water in AA	☒Permanent/Perennial			☐Seasonal / Intermittent			☐Temporary / Ephemeral		
Cover - % of waterbody in AA containing cover objects (*e.g.* submerged logs, large rocks & boulders, overhanging banks, floating-leaved vegetation)	>25%	10-25%	<10%	>25%	10-25%	<10%	>25%	10-25%	<10%
Shading - >75% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities	--	--	--	--	--	--	--	--	--
Shading – 50 to 75% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities.	--	--	--	--	--	--	--	--	--
Shading - < 50% of streambank or shoreline of AA contains riparian or wetland scrub-shrub or forested communities.	H	--	--	--	--	--	--	--	--

ii. **Modified Habitat Quality:** Is fish use of the AA precluded or significantly reduced by a culvert, dike, other man-made structure or activity **or** is the waterbody included on the 'MDEQ list of waterbodies in need of TMDL development' with 'Probable Impaired Uses' listed as cold or warm water fishery or aquatic life support**?**
☐ **Y** ☒ **N** If yes, reduce the rating from 14D(i) by one level and check the modified habitat quality rating: ☐ E ☐ H ☐ M ☐ L

iii. **Rating** (Use the conclusions from 14D(i) and 14D(ii) above and the matrix below to pick the functional point and rating of exceptional (E), high (H), moderate (M), or low (L).)

Types of Fish Known or Suspected Within AA	**Modified Habitat Quality** from 14D(ii)			
	☐ Exceptional	☒ High	☐ Moderate	☐ Low
Native game fish	--	--	--	--
Introduced game fish	--	.8 (H)	--	--
Non-game fish	--	--	--	--
No fish	--	--	--	--

Comments: _____

14E. FLOOD ATTENUATION ☐ **NA** (proceed to 14G)

Applies only to wetlands subject to flooding via in-channel or overbank flow.
If wetlands in AA do not flooded from in-channel or overbank flow, check NA above.

i. **Rating** (Working from top to bottom, mark the appropriate attributes to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)

Estimated wetland area in AA subject to periodic flooding	☐ ≥ 10 acres			☐ <10, >2 acres			☒ ≤2 acres		
% of flooded wetland classified as forested, scrub/shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	--	--	--	--	--	--	--	--	--
AA contains **unrestricted outlet**	--	--	--	--	--	--	--	--	.1 (L)

ii. **Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA?** (check)
☐**Y** ☒**N** **Comments:** _____

14F. SHORT AND LONG TERM SURFACE WATER STORAGE ☐ **NA** (proceed to 14G)

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, check NA above.

i. Rating (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)
Abbreviations: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral.

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding.	☐ >5 acre feet			☒ <5, >1 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**	--	--	--	.8 (H)	--	--	--	--	--
Wetlands in AA flood or pond **< 5 out of 10 years**	--	--	--	--	--	--	--	--	--

Comments: _____

14G. SEDIMENT/NUTRIENT/TOXICANT RETENTION AND REMOVAL ☐ **NA** (proceed to 14H)

Applies to wetlands with potential to receive excess 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, check NA above.

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.)

Sediment, Nutrient, and Toxicant Input Levels Within AA	AA receives or surrounding land use has potential to deliver low to moderate levels of sediments, nutrients, or compounds 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 has 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 or ponding in AA	☒ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
AA contains **no or restricted outlet**	--	--	--	--	--	--	--	--
AA contains **unrestricted outlet**	.9 (H)	--	--	--	--	--	--	--

Comments: _____

14H. SEDIMENT/SHORELINE STABILIZATION ☐ **NA** (proceed to 14I)

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 that is subject to wave action. If this does not apply, check NA above.

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating exceptional (E), high (H), moderate (M), or low (L) for this function.

% Cover of wetland streambank or shoreline by species with deep, binding rootmasses.	Duration of Surface Water Adjacent to Rooted Vegetation		
	☒Permanent / Perennial	☐Seasonal / Intermittent	☐Temporary / Ephemeral
≥ 65 %	1 (H)	--	--
35-64 %	--	--	--
< 35 %	--	--	--

Comments:

14I. PRODUCTION EXPORT / FOOD CHAIN SUPPORT

i. **Rating** (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.
A = acreage of vegetated component in the AA. **B** = structural diversity rating from #13. **C** = Yes (Y) or No (N) as to whether or not the AA contains a surface or subsurface outlet; **P/P** = permanent/perennial; **S/I** = seasonal/intermittent; **T/E/A**= temporary/ephemeral/absent.

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	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☐Y	☐N	☒Y	☐N	☐Y	☐N
P/P	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.6M	--	--	--
S/I	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T/E/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Comments:

14J. GROUNDWATER DISCHARGE/RECHARGE (D/R) (Check the indicators in i & ii below that apply to the AA)

i. ☐ **Discharge Indicators**
- ☒ Springs are known or observed.
- ☐ Vegetation growing during dormant season/drought.
- ☐ Wetland occurs at the toe of a natural slopes.
- ☐ Seeps are present at the wetland edge.
- ☐ AA permanently flooded during drought periods.
- ☐ Wetland contains an outlet, but no inlet.
- ☐ Other

ii. ☒ **Recharge Indicators**
- ☒ Permeable substrate presents without underlying impeding layer.
- ☐ Wetland contains inlet but not outlet.
- ☐ Other

iii. **Rating:** Use the information from 14J(i) and 14j(ii) above and the table below to arrive at the functional point and rating of high (H) or low (L) for this function.

Criteria	Functional Point and Rating
AA has known Discharge/Recharge area or one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	--
Available Discharge/Recharge information inadequate to rate AA D/R potential	--

Comments: Seep noted upslope of WL and drains into pond..

14K. UNIQUENESS

i. Rating (Working from top to bottom, use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.

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 from #11	☐rare	☐common	☐abundant	☐rare	☐common	☐abundant	☐rare	☒common	☐abundant
Low disturbance at AA (#12i)	--	--	--	--	--	--	--	.4M	--
Moderate disturbance at AA (#12i)	--	--	--	--	--	--	--	--	--
High disturbance at AA (#12i)	--	--	--	--	--	--	--	--	--

Comments:

14L. RECREATION / EDUCATION POTENTIAL

i. Is the AA a known recreational or educational site? ☒ **Yes (Rate ☒ High (1.0)**, then proceed to 14L(ii) only] ☐ **No** [Proceed to 14L(iii)]

ii. Check categories that apply to the AA: ☒ Educational / scientific study ☐ Consumptive rec. ☐ Non-consumptive rec. ☐ Other

iii. Based on the location, diversity, size, and other site attributes, is there a strong potential for recreational or educational use?
☒ **Yes** [Proceed to 14L (ii) and then 14L(iv).] ☐ **No** [Rate as low in 14L(iv)]

iv. Rating (Use the matrix below to arrive at the functional point and rating of high (H), moderate (M), or low (L) for this function.

Ownership	Disturbance at AA from #12(i)		
	☐ Low	☐ Moderate	☐ High
Public ownership	--	--	--
Private ownership	--	--	--

Comments: Tribal member informed me that this area is fished.

FUNCTION, VALUE SUMMARY, AND OVERALL RATING

Function and Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	
B. MT Natural Heritage Program Species Habitat	H	1.00	1	
C. General Wildlife Habitat	H	0.90	1	
D. General Fish/Aquatic Habitat	H	0.80	1	
E. Flood Attenuation	L	0.10	1	
F. Short and Long Term Surface Water Storage	H	0.80	1	
G. Sediment/Nutrient/Toxicant Removal	H	0.90	1	
H. Sediment/Shoreline Stabilization	H	1.00	1	
I. Production Export/Food Chain Support	M	0.60	1	
J. Groundwater Discharge/Recharge	H	1.00	--	
K. Uniqueness	M	0.40	1	
L. Recreation/Education Potential	H	1.00	1	
	Totals:	8.50	12.00	3
		Percent of Total Possible Points:	**71%** (Actual / Possible) x 100 [rd to nearest whole #]	

Category I Wetland: (Must satisfy **one** of the following criteria. If not proceed 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 total Possible Points is > 80%.

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following Category II criteria. If not satisfied, proceed to Category IV.)
- ☒ Score of 1 functional point for Species Rated S1, S2, or S3 by the MT Natural Heritage Program; **or**
- ☒ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
- ☐ Score of .9 or 1 functional point for General Fish/Aquatic 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 total possible points is > 65%.

☐ **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; If not satisfied, proceed to Category III.)
- ☐ "Low" rating for Uniqueness; **and**
- ☐ "Low" rating for Production Export / Food Chain Support; **and**
- ☐ Percent of total possible points is < 30%.

OVERALL ANALYSIS AREA (AA) RATING: (Check appropriate category based on the criteria outlined above.)

☐ **I** ☒ **II** ☐ **III** ☐ **IV**

2006 LAME DEER 369 WETLAND MITIGATION SITE

Location: A **Description:** Wetland view toward inflow area **Compass Reading:** 78°

Location: B **Description:** Wetland view toward road **Compass Reading:** 16°

Location: C **Description:** Wetland view toward outflow fro below road edge **Compass Reading:** 124°

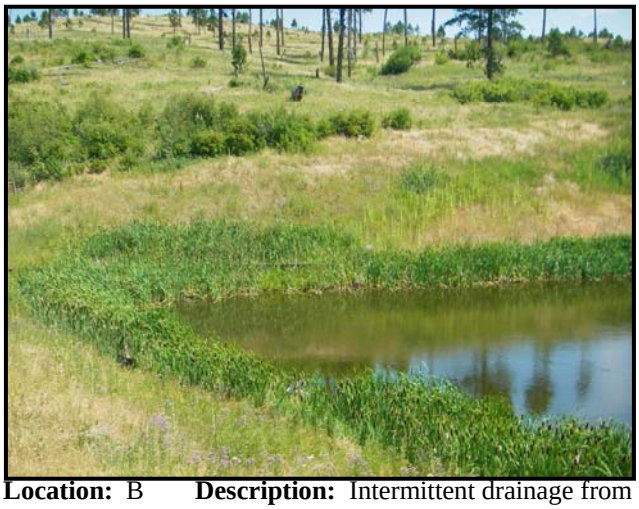
Location: D **Description:** Wetland view toward upstream drainage **Compass Reading:** 110°

Location: E **Photo Frame:** 9A **Description:** West side of wetland **Compass Reading:** 268°

Location: F **Photo Frame:** 8A **Description:** Erosion issues below road edge **Compass Reading:** ~110

2006 LAME DEER 380 WETLAND MITIGATION SITE

Location: A **Description:** Inlet **Compass Reading:** 86°



Location: B **Description:** Intermittent drainage from east **Compass Reading:** 48°

Location: C **Description:** Inlet **Compass Reading:** 10°

Location: D **Description:** Outflow (left side in photo) **Compass Reading:** 314°

Location: E **Description:** From east drainage to road and outlet-side of wetland **Compass Reading:** 152°