

S  
388.1  
T6eaLd  
1999

**DEER**  
ENVIRONMENTAL  
ASSESSMENT

# ENVIRONMENTAL ASSESSMENT

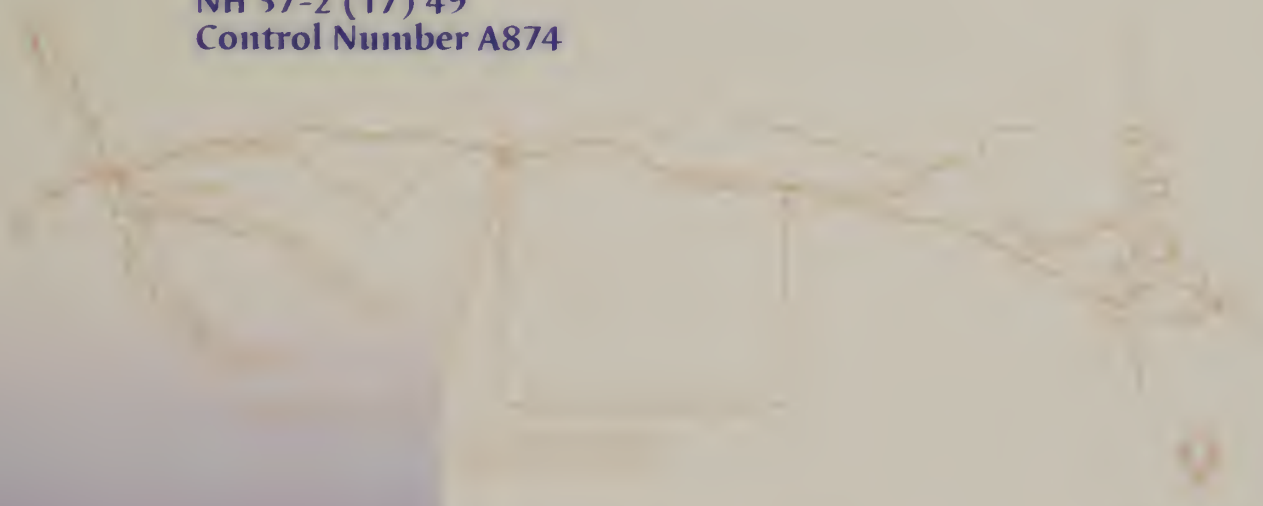
FOR  
LAME DEER-EAST  
AND  
EAST OF LAME DEER-EAST

STATE DOCUMENTS COLLECTION

NOV 03 1999

MONTANA STATE LIBRARY  
2013  
HELENA, MONTANA

NH 37-2 (16) 42  
Control Number O874  
NH 37-2 (17) 49  
Control Number A874



prepared for:  
**Federal Highway Administration**  
**Montana Department of Transportation**

PLEASE RETURN

Prepared by:  
**Carter & Burgess, Inc.**



# **Environmental Assessment**

**for**

**Lame Deer – East**

**NH 37-2 (16) 42 Control Number 0874  
and**

**East of Lame Deer – East**

**NH 37-2 (17) 49 Control Number A874  
in**

**Rosebud County, Montana**

Prepared for:

**Federal Highway Administration  
and  
Montana Department of Transportation**

Prepared by:

**Carter & Burgess, Inc.**



# Environmental Assessment

for

Lame Deer – East  
NH 37-2 (16) 42 Control Number 0874  
and  
East of Lame Deer – East  
NH 37-2 (17) 49 Control Number A874  
in  
Rosebud County, Montana

This document is prepared in conformance with the Montana Environmental Policy Act (MEPA) requirements and contains the information required for an Environmental Assessment under the provisions of ARM 18.2.237(2) and 18.2.239. It is also prepared in conformance with the National Environmental Policy Act (NEPA) requirements for an Environmental Assessment under 23CFR 771.119.

Submitted Pursuant to 42 USC 4332(2)(c) 49 U.S.C. 303  
and Sections 2-3-104, 75-1-201 M.C.A.  
by the  
U.S. Department of Transportation  
Federal Highway Administration  
and the  
Montana Department of Transportation

Submitted By:

Karl M Helvik

DATE: September 17, 1999

Montana Department of Transportation  
Environmental Services

Reviewed and Approved for Distribution:

Darin Junfell

DATE: 10/12/99

Federal Highway Administration

The following persons may be contacted for additional information concerning this document:

Joel M. Marshik, P.E.  
Manager - Environmental Services  
Montana Department of Transportation  
2701 Prospect Avenue  
PO Box 201001  
Helena, MT 59620-1001

Dale Paulson  
Program Development Engineer  
Montana Division  
Federal Highway Administration  
2880 Skyway Drive  
Helena, Montana 59602



## ACRONYMS

ADT	Average Daily Traffic
AASHTO	American Association of State Highway Transportation Officials
AIRFA	American Indian Religious Freedom Act
BIA	Bureau of Indian Affairs
BMP	Best Management Practices
CO	Carbon Monoxide
COE	United States Army Corps of Engineers
DEQ	Department of Environmental Quality
DHV	Design Hourly Volume
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
Km/h	Kilometer per Hour
LOS	Level of Service
MDT	Montana Department of Transportation
MNHP	Montana National Heritage Program
MOU	Memorandum of Understanding
MP	Milepost
MPH	Miles per Hour
MRIS	Montana Rivers Information System
MSE	Mechanically Stabilized Embankment
NAC	Noise Abatement Criteria
NCT	Northern Cheyenne Tribe
NEPA	National Environmental Policy Act
NHS	National Highway System
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM <sub>10</sub>	Particulate Matter Less Than Ten Microns
PSA	Project Specific Agreement
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-Way
RP	Reference Post
RTP	Regional Transportation Plan
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
TERO	Tribal Employment Rights Office
TIP	Transportation Improvement Plan
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
UST	Underground Storage Tank
vph	Vehicles Per Hour





Digitized by the Internet Archive  
in 2012 with funding from  
Montana State Library

<http://archive.org/details/environmental11454cart>



# TABLE OF CONTENTS

Page No.

ACRONYMS.....	I
TABLE OF CONTENTS .....	II
LIST OF FIGURES.....	V
LIST OF TABLES.....	V
DISTRIBUTION LIST.....	VI
<b>EXECUTIVE SUMMARY .....</b>	<b>ES-1</b>
ES.1 SUMMARY OF IMPACTS .....	ES-2
ES.2 SUMMARY OF MITIGATION MEASURES.....	ES-3
<b>1.0 PURPOSE AND NEED FOR ACTION.....</b>	<b>1-1</b>
1.1 STUDY AREA DESCRIPTION/LOCATION.....	1-1
1.2 EXISTING ROAD DESCRIPTION.....	1-1
1.3 PREFERRED ALTERNATIVE DESCRIPTION.....	1-3
1.4 OVERVIEW OF PURPOSE AND NEED .....	1-6
1.5 TRAFFIC VOLUMES AND CHARACTERISTICS.....	1-7
1.6 ROADWAY DEFICIENCIES.....	1-7
1.6.1 Pavement Deficiencies .....	1-9
1.6.2 Horizontal Alignment.....	1-9
1.6.3 Vertical Alignment.....	1-9
1.6.4 Roadway Width/Typical Section .....	1-9
1.6.5 Design Speed.....	1-10
1.7 SAFETY/CRASH DATA.....	1-10
1.8 SYSTEM CONTINUITY .....	1-11
1.9 LOCAL ACCESS/CIRCULATION.....	1-11
1.10 RELATIONSHIP TO TRANSPORTATION PLANNING.....	1-11
1.11 ECONOMIC DEVELOPMENT .....	1-11
<b>2.0 ALTERNATIVES CONSIDERED .....</b>	<b>2-1</b>
2.1 ALTERNATIVES ADVANCED.....	2-1
2.1.1 No Action Alternative.....	2-1
2.1.2 Preferred Alternative.....	2-1
2.2 ALTERNATIVES CONSIDERED, BUT NOT ADVANCED.....	2-1
2.2.1 Alignment Modifications .....	2-2
<b>3.0 AFFECTED ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES.....</b>	<b>3-1</b>
3.1 LAND USE, ZONING, AND LAND USE PLANNING .....	3-1
3.1.1 Affected Environment.....	3-1
3.1.2 Land Use Impacts.....	3-2
3.1.3 Mitigation.....	3-2
3.2 PRIME AND UNIQUE FARMLAND.....	3-3
3.2.1 Affected Environment.....	3-3
3.2.2 Prime and Unique Farmland Impacts.....	3-3
3.2.3 Mitigation.....	3-3
3.3 SOCIAL .....	3-3
3.3.1 Affected Environment.....	3-3
3.3.2 Social Impacts .....	3-4
3.3.3 Mitigation.....	3-4

3.3.4 Environmental Justice and Title VI.....	3-4
3.4 ECONOMIC.....	3-5
3.4.1 Affected Environment.....	3-5
3.4.2 Economic Impacts.....	3-5
3.4.3 Mitigation.....	3-6
3.5 PEDESTRIANS AND BICYCLISTS.....	3-6
3.5.1 Affected Environment.....	3-6
3.5.2 Pedestrian and Bicyclist Impacts.....	3-7
3.5.3 Mitigation.....	3-7
3.6 RIGHT-OF-WAY AND RELOCATION.....	3-7
3.6.1 Affected Environment.....	3-7
3.6.2 Right-of-Way Impacts.....	3-7
3.6.3 Mitigation.....	3-8
3.7 PARKS AND RECREATION.....	3-9
3.7.1 Affected Environment.....	3-9
3.7.2 Parks and Recreation Impacts.....	3-9
3.7.3 Mitigation.....	3-11
3.8 AIR QUALITY.....	3-11
3.8.1 Affected Environment.....	3-11
3.8.2 Air Quality Impacts.....	3-12
3.8.3 Mitigation.....	3-12
3.9 NOISE.....	3-13
3.9.1 Affected Environment.....	3-13
3.9.2 Noise Impacts.....	3-16
3.9.3 Mitigation.....	3-17
3.10 WATER RESOURCES/QUALITY.....	3-17
3.10.1 Affected Environment.....	3-17
3.10.2 Water Resource Impacts.....	3-18
3.10.3 Mitigation.....	3-19
3.11 PERMITS REQUIRED.....	3-20
3.12 WETLANDS/VEGETATION.....	3-21
3.12.1 Affected Environment.....	3-21
3.12.2 Wetland and Vegetation Impacts.....	3-24
3.12.3 Practicable Alternatives.....	3-25
3.12.4 Mitigation.....	3-26
3.13 WILDLIFE AND FISHERIES.....	3-28
3.13.1 Affected Environment.....	3-28
3.13.2 Wildlife and Fisheries Impacts.....	3-30
3.13.3 Mitigation.....	3-31
3.14 THREATENED AND ENDANGERED SPECIES.....	3-32
3.14.1 Affected Environment.....	3-32
3.14.2 Threatened and Endangered Species Impacts.....	3-34
3.14.3 Mitigation.....	3-34
3.15 FLOODPLAINS.....	3-34
3.15.1 Affected Environment.....	3-34
3.15.2 Floodplain Impacts.....	3-35
3.15.3 Mitigation.....	3-36
3.16 CULTURAL RESOURCES.....	3-36
3.16.1 Affected Environment.....	3-36
3.16.2 Cultural Resource Impacts.....	3-37
3.16.3 Mitigation.....	3-38
3.17 HAZARDOUS MATERIALS.....	3-38
3.17.1 Affected Environment.....	3-38

3.17.2 Hazardous Materials Impacts .....	3-39
3.17.3 Mitigation.....	3-39
3.18 VISUAL RESOURCES .....	3-39
3.18.1 Affected Environment.....	3-39
3.18.2 Visual Resource Impacts.....	3-41
3.18.3 Mitigation.....	3-42
3.19 CONSTRUCTION AND EROSION CONTROL .....	3-42
3.19.1 Construction Impacts .....	3-42
3.19.2 Construction Mitigation and Erosion Control.....	3-43
3.20 SECONDARY AND CUMULATIVE IMPACTS.....	3-45
3.21 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES.....	3-45
<b>4.0 COMMENTS AND COORDINATION.....</b>	<b>4-1</b>
4.1 PUBLIC INVOLVEMENT ACTIVITIES.....	4-1
4.2 LIST OF COOPERATING AGENCIES AND AGENCIES WITH JURISDICTION .....	4-1
4.3 LIST OF OTHER AGENCIES, PERSONS, OR GROUPS CONTACTED OR CONTRIBUTED INFORMATION.....	4-2
4.4 REMAINING PUBLIC INVOLVEMENT .....	4-3
<b>5.0 LIST OF PREPARERS.....</b>	<b>5-1</b>

## Appendix A: Agency Coordination Letters

## LIST OF FIGURES

Figure No.	Title	Page No.
1-1	Project Location .....	1-2
1-2	Typical Sections – Preferred Alternatives.....	1-4
1-3	Preferred Alternative .....	1-5
1-4	Level of Service Definitions.....	1-8
2-1	Alignment Alternative .....	2-3
3-1	Park and Recreation Resources .....	3-10
3-2	Noise Monitoring Locations.....	3-15
3-3	Water Resources and Wetlands .....	3-23

## LIST OF TABLES

Table No.	Title	Page No.
ES-1	Summary of Impacts .....	ES-2
ES-2	Summary of Mitigation Measures.....	ES-3
3-1	FHWA Noise Abatement Criteria .....	3-14
3-2	Existing Noise Levels.....	3-14
3-3	Forecast 2019 Noise Levels.....	3-16

## DISTRIBUTION LIST

The following agencies, groups and individuals are receiving a copy of the Environmental Assessment:

Rosebud County Commissioners  
Rosebud County Courthouse  
P.O. Box 47  
Forsyth, MT 59327

Montana Department of Environmental Quality  
Permitting and Compliance Division  
1520 East Sixth Avenue  
Helena, MT 59620

Montana Department of Transportation  
ATTN: Joel Marshik, P.E.  
2701 Prospect Avenue  
Helena, MT 59620-1001

Montana Department of Transportation  
Glendive District Office  
ATTN: Ray Mengel, P.E.  
P.O. Box 890  
Glendive, MT 59330-0890

Montana Environmental Quality Council  
Office of the Director  
P.O. Box 215, State Capitol  
Helena, MT 59620

Northern Cheyenne Tribe  
PO Box 128  
Lame Deer, MT 59043

State Library  
Collection Management Librarian  
151 East Sixth Avenue  
Helena, MT 59620-1800

U.S. Department of Transportation  
Federal Highway Administration  
Montana Division  
ATTN: Janice Brown  
2880 Skyway Drive  
Helena, MT 59602

U.S. Environmental Protection Agency  
Montana Office  
301 South Park, Drawer 10096  
Helena, MT 59626

U.S. Fish and Wildlife Service  
Ecological Services  
Billings Suboffice  
2900 4<sup>th</sup> Avenue North, Room 301  
Billings, MT 59101





## EXECUTIVE SUMMARY

Montana Department of Transportation (MDT) together with the Federal Highway Administration (FHWA) proposes to reconstruct a 19.6 kilometer (12.2 mile) section of U.S. Highway 212 in Rosebud County, Montana [Reference Post (RP) Milepost (MP) 42.1 to RP (MP) 54.3]. This project is on the MDT Statewide Transportation Improvement Program (STIP) for Fiscal Years 1998 through 2000, as approved by the Montana Transportation Commission August 20, 1997, and approved by the Federal Highway Administration (FHWA) and Federal Transit Authority (FTA) on September 17, 1997.

The existing roadway (U.S. Highway 212) on the Lame Deer-East project was constructed in two separate periods. The first 7.8 kilometers (4.9 miles) were constructed in 1941 to a 7.9 - meter (26 - foot) top width. The remaining 11.8 kilometers (7.4 miles) were constructed in 1950 to a 7.3 - meter (24 - foot) top width. Both projects were constructed with a gravel surface. In 1954, the entire 19.6 kilometers (12.2 miles) was paved, with more recent maintenance surfacing treatment. The above described projects referred to as Lame Deer-East and East of Lame Deer-East, are being designed as separate projects, although right-of-way acquisition and utilities relocation are intended to occur under one project. One Environmental Assessment (EA) is being prepared to assess impacts for the extent of improvements for both projects [RP (MP) 42.1 - RP (MP) 54.3].

Two alternatives are evaluated in this EA including the No Action Alternative and the Preferred Alternative. The proposed improvements (Preferred Alternative) will meet current design standards for the National Highway System (NHS) roads. The road will be reconstructed from its present 7.3 - 7.9 meter (24 - 26 foot) top width to a 12.0 meter (39.37 feet) finished top width, (which includes wider shoulders), primarily on an offset alignment generally located to the north of the existing centerline. No additional travel lanes will be added. However, between RP (MP) 50.4 to RP (MP) 53.5 a truck climbing lane will be striped into the typical cross-section. The road has been designed to a 100-kilometer per hour (km/h) (63 mile per hour (mph)) federal standard appropriate for mountainous terrain. The geometric features limited to the 80 km/h (50 mph) design speed are: the roadway grade greater than 4 percent and two horizontal curves. All other features meet at least the design speed for 100 km/h (63 mph). Work will include clearing and grubbing, grading, gravel surfacing, plant mix surfacing, installation of guardrail, signing, fencing and right-of-way (ROW) acquisition. The entire length of the project falls within the boundaries of the Northern Cheyenne Indian Reservation.

An assessment of environmental impacts of these proposed actions is included in Chapter Three of this document. Major findings of the environmental assessment (EA) include:

- The Preferred Alternative will provide a safer roadway to accommodate existing and future traffic needs along U.S. Highway 212.
- Design and construction specifications will seek to minimize any impacts associated with air quality, water quality, wetland or other environmental resources.



## ES.1 Summary of Impacts

A summary of impacts is shown in the following table.

Category	No Action Alternative	Preferred Alternative
Land Use	No impacts	Improvements to local access. Impacts to commercial timber.
Farmland	No impacts	No impacts
Social	No accessibility or safety improvements. Emergency response time along US Hwy 212 could worsen over time.	Short-term construction related impacts (detours, delays, etc.) Improved accessibility, safety improvements (climbing lanes, pullouts, wider shoulders) and improved emergency response times along US Hwy 212.
Economic	Poor driving conditions along US Hwy 212 could cause re-routing of traffic (tourist and business) to other routes.	Economic benefit due to influx of construction \$. Improved access to future development along US Hwy 212. Improvements would maintain tourist traffic.
Pedestrians & Bicyclists	No impacts	Sidewalk between MT 39 and Dull Knife Community College or the Casino.
Right-of-Way & Relocation	No impacts	19 ha (45 ac) new ROW, 44.5 ha (110 ac) easements with NCT, and 0.32 ha (7.9 ac) construction permits. Utility relocations for power, telephone and waterline.
Parks & Recreation	No impacts. No access road improvements to the picnic area/rest stop.	Access to Ice Wells Recreation Area relocated 160 meters (525 feet) east of current location.
Air Quality	Emissions of PM <sub>10</sub> will increase over time as vehicles miles travelled increases.	Short-term construction-related impacts. No long-term impacts since no capacity improvements.
Noise	Noise level increases as traffic levels increase.	Minor (less than 1 decibel) noise level increase to residents along US Hwy 212.
Water Resources	No impacts	Impacts to creek channels and non-significant springs. Relocation of 860 m. (2820 ft.) of Alderson and Stebbins Creeks. Short-term water quality impacts (sedimentation) from construction activities.
Permits Required	No permits required.	Permits required.
Wetlands & Vegetation	No impacts	1.0 ha (2.5 ac) impacts to wetlands. Riparian and vegetation impacts at creek relocations and areas impacted by cut and fill slopes.
Wildlife & Fisheries	No impacts	Impacts to habitat through creek impacts and ROW clearing of vegetation.

**Summary of Impacts (continued)**

Category	No Action Alternative	Preferred Alternative
Threatened or Endangered Species	No effect	No effect
Floodplains	No impacts	3 hectares (7.6 acres) of fill to be placed within floodplains of Stebbins and Alderson Creek.
Cultural Resources	No impacts	No effect.
Hazardous Materials	No impacts	No impacts
Visual Resources	No impacts	Impacts by increase pavement width, cut and fill slopes; loss of vegetation; new roadway elements of guardrail and additional signing.
Construction	No impacts	Traffic delays and detours, noise and airborne dust particles. Access to be maintained during construction. Potential water quality impacts due to sedimentation and erosion.
Secondary or Cumulative Impacts	No impacts	Increases in traffic could occur, particularly heavy truck traffic. Tourist traffic increase could equate to economic benefit.

**ES.2 Summary of Mitigation Measures**

Mitigation for the impacts described above is also described in Chapter Three of this document and summarized below.

Category	Mitigation Measures
Land Use	NCT will be compensated for impacts to timber within construction limits.
Prime Farmland	None required.
Social	Public service announcements of construction activity schedules/traffic delays. Flaggers & construction signage.
Economic	Access to business will be maintained during construction.
Pedestrians & Bicyclists	None required.
Right-of-Way & Relocation	Acquisition of private property consistent with Uniform Relocation Assistance and Real Property Acquisition Policies Act, Title VI of Civil Rights Act of 1964 and EO 12898.  Utility relocations and adjustments will be coordinated with respective utility companies.
Parks & Recreation	Access to recreation areas maintained during construction.
Air Quality	Dust suppression techniques. Immediate revegetation of disturbed slopes. Conditions outlined in Air Quality Agreement and PSA amendment between MDT and NCT.
Noise	None required.

**Summary of Mitigation Measures (continued)**

<b>Category</b>	<b>Mitigation Measures</b>
<b>Water Resources &amp; Quality</b>	Best Management Practices (BMPs) to reduce erosion and water quality impacts. Relocate channels in a way to maintain creek hydrology. Prepare Erosion Control Plan.
<b>Wetlands &amp; Vegetation</b>	Restore, enhance or create 1 hectare (2.5 acres) of wetlands and riparian vegetation. (Coordination on going with COE and NCT for Section 404 permit). Re-seed and revegetate disturbed slopes. Construction-limit fencing of wetlands, riparian and culturally-significant vegetation. Revegetate relocated channels with riparian trees and shrubs.
<b>Wildlife &amp; Fisheries</b>	Coordination with Tribal Biologist. Locate staging areas away from waterways. BMPs to maintain water quality and reduce impacts to culturally-significant beavers. Relocate beavers if necessary with BIA biologist. Minimize impacts to vegetation by construction-limit fencing.
<b>Threatened or Endangered Species</b>	Raptor-proofing power utility relocations.
<b>Floodplains</b>	Construct roadway to withstand scour impacts.
<b>Cultural Resources</b>	Construction-limit fencing at culturally-significant springs and archaeological site. Notify the NCT 24 hours prior to ground-disturbing work so that a representative may be present. Construction activity will stop if cultural resources are encountered.
<b>Hazardous Materials</b>	Follow MDT standard spec. (Article 107.24) if contaminated soil is encountered. Reduce ditch sections to minimize extent of cut slopes.
<b>Visual Resources</b>	Vary edge of vegetation during clearing and grubbing to create a more natural vegetation edge. Reduce ditch sections to minimize extent of cut slopes.
<b>Construction</b>	Appoint a Tribal Resource representative for monitoring of construction activities. Flaggers and signage. Limit noise-generating construction activities to occur between the hours of 7 am-6 pm. Water quality, air quality and visual measures detailed in text of chapter 3. Notify residents of blasting activities.
<b>Secondary or Cumulative Impacts</b>	None required.



## 1.0 PURPOSE AND NEED FOR ACTION

### 1.1 Study Area Description/Location

The project study area is located on U.S. Highway 212 on the Northern Cheyenne Reservation in Rosebud County, Montana (See Figure 1-1). The project study area begins in the town of Lame Deer at the intersection of U.S. Highway 212 and Montana Highway 39 (MT 39) and extends easterly 19.6 kilometers (12.2 miles) to RP (MP) 54.3. The project is located within the following Township, Range, and Sections of the Montana Principal Meridian (MPM):

- Township 2 South, Range 41 East, Sections 25, 26, 34, 35
- Township 2 South, Range 42 East, Sections 25, 26, 27, 28, 29, 30, 35, 36
- Township 2 South, Range 43 East, Sections 30, 31, 32, 33, 34

The project is located 162.7 kilometers (101 miles) east of Billings, Montana and 123.6 kilometers (76.8 miles) northeast of Sheridan, Wyoming. The project is 35.1 kilometers (21.8 miles) south of Colstrip, Montana and 33.8 kilometers (21 miles) west of Ashland, Montana.

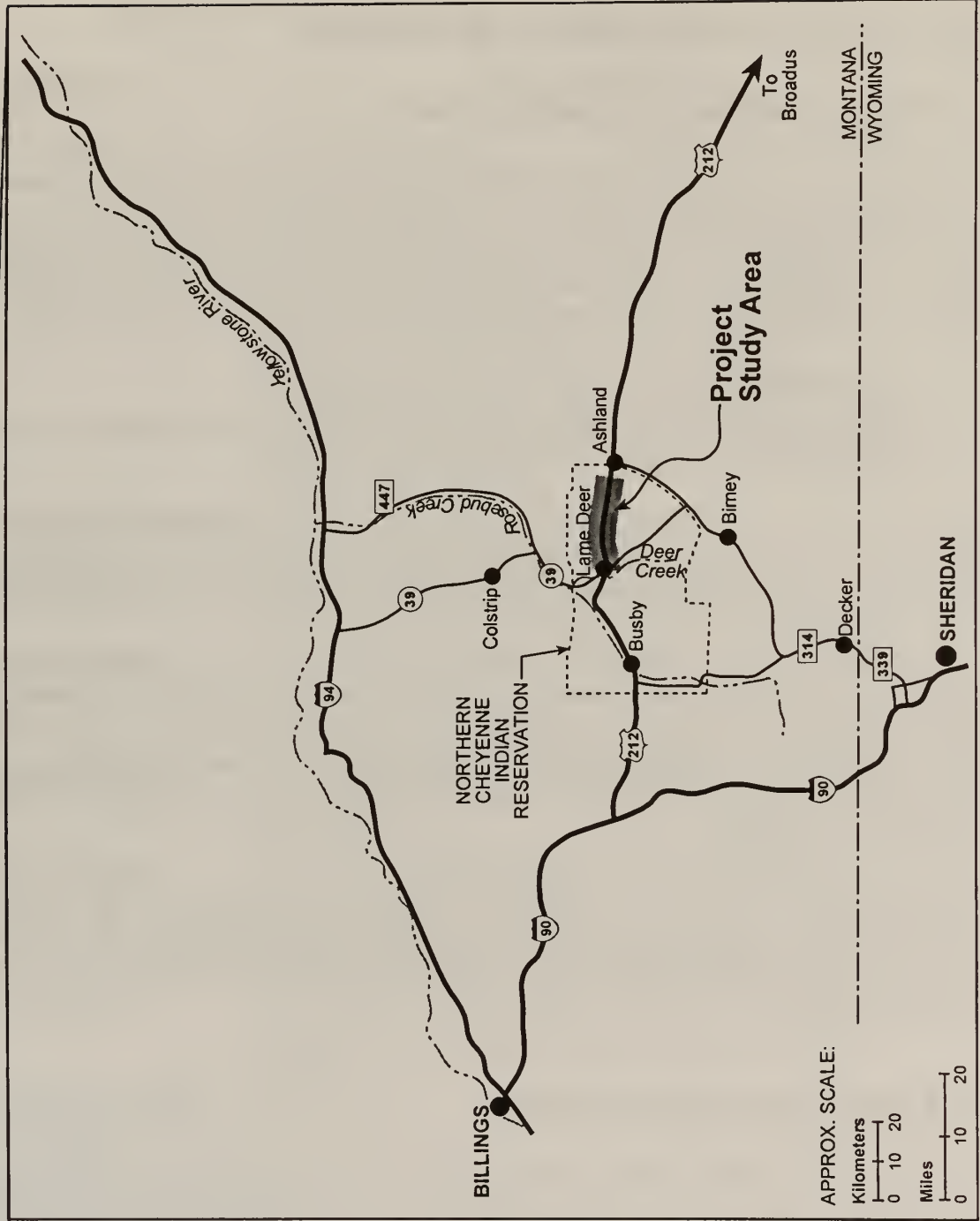
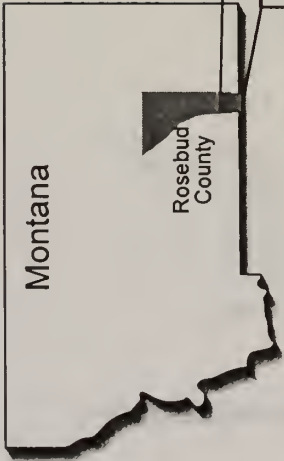
U.S. Highway 212 east of Lame Deer traverses a variety of landscapes: gently rolling to mountainous terrain; low-density rural residential; steep mountains; heavily vegetated forests and grasslands; riparian corridors; and an extensive area damaged by a 1988 fire with little plant growth but grasses and young pine trees. The land uses along the project corridor are primarily livestock and horse grazing/agriculture, open space; natural waterways; forest, and sparsely developed rural residential.

At approximately RP (MP) 50, U.S. Highway 212 reaches an elevation of 1322 meters (4337 feet) and is referred to as the divide throughout the document. Drainages on the west side of the divide flow to the Rosebud Creek and on the east to the Tongue River before entering the Yellowstone River.

### 1.2 Existing Road Description

U.S. Highway 212 is the primary east-west route on the Northern Cheyenne Indian Reservation, serving traffic of both local and regional significance. U.S. Highway 212 is classified as a principal arterial and is part of the National Highway System (NHS) traversing between Interstate 90 and the town of Broadus, Montana.

Within the study area, the existing facility is a rural two-lane highway with a 7.3 to 7.9 meter (24 to 26 foot) wide paved travel surface. The road was first constructed in 1941 with a gravel surface and another 11.8 kilometers (7.4 miles) added in 1950. The entire 19.6 kilometers (12.2 miles) was paved in 1954 with asphalt pavement. The roadway has since been sealed and covered and received maintenance surfacing treatments. An overlay-surfacing project was



performed in 1995 between RP (MP) 42.1 and 50.0 to preserve the paved driving surface until the Lame Deer-East project could be constructed.

### 1.3 Preferred Alternative Description

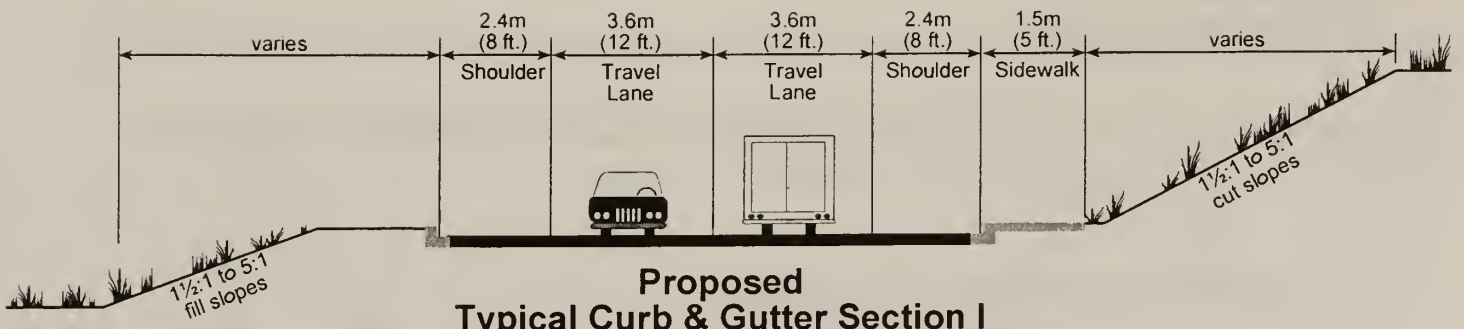
The Preferred Alternative consists of an improved two-lane facility with 3.6-meter (12-foot) travel lanes and 2.4-meter (8-foot) shoulders as shown in Figure 1-2. Side slopes within the clear zone are proposed to vary from 1 ½:1 to 6:1 grades. Clear zones are open areas adjacent to the road to serve as a recovery area for errant vehicles. The clear zone is based on a 100 km/h (63 mph) design speed, since that is closer to the estimated driving speeds on the project.

Improvements to the roadway will include substantial modification of the horizontal and vertical alignments and will meet the minimum design criteria for an 80 km/h (50 mph) design speed. Design features will meet the design criteria for a 100 km/h (63 mph) design speed. The roadway improvements were designed for a project design speed of 100 km/h (63 mph), except roadway grades in excess of 4 percent and two horizontal curves. Statewide average design speeds for similar terrain are 80 to 100 km/h (50 to 63 mph). Approximately 7.6 kilometers (4.7 miles) of the existing roadway will be realigned to improve curves, grades, and stopping sight-distance, and to avoid impacts to creeks, wetlands, riparian areas, and culturally significant sites.

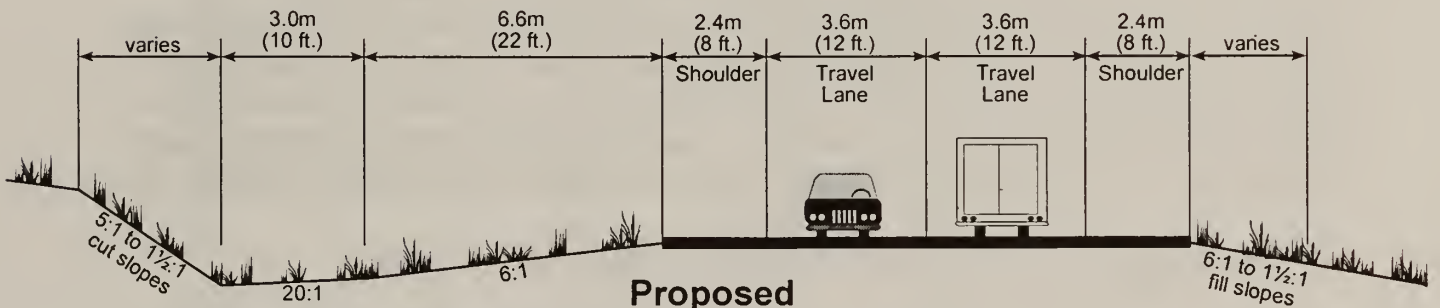
The following alignment modifications are shown on Figure 1-3 and include:

- **RP (MP) 42.1 to RP (MP) 45.6** – Reconstruction of U.S. Highway 212 as shown in Typical Section I on Figure 1-2. Includes sidewalk and curb and gutter section, on the south side of the highway between MT 39 intersection and Northern Cheyenne Tribe Charging Horse Casino.
- **RP (MP) 45.6 to RP (MP) 48.0** – Realignment of roadway, 5 to 30 meters (16 to 98 feet) to the north and grade reduction. (Typical Section II.)
- **RP (MP) 48.0 to RP (MP) 49.3** – Horizontal curve straightening and grade reduction. (Typical Section II on Figure 1-2.)
- **RP (MP) 50.8 to RP (MP) 51.5** – Horizontal curve straightening. (Typical Section II.) Portions of this section include the proposed climbing lane as shown in Typical Section III on Figure 1-2.
- **RP (MP) 51.5 to RP (MP) 53.0** – Realignment of U.S. Highway 212, 10 to 20 meters (33 to 66 feet) to the north and grade reduction. (Typical Section II.) Portions of this section include the proposed climbing lane as shown in Typical Section III on Figure 1-2.
- **RP (MP) 53 to RP (MP) 54.3** – Improvements transition to existing roadway east of project area, which was improved under the Ashland-West project. See Typical Section II on Figure 1-2.

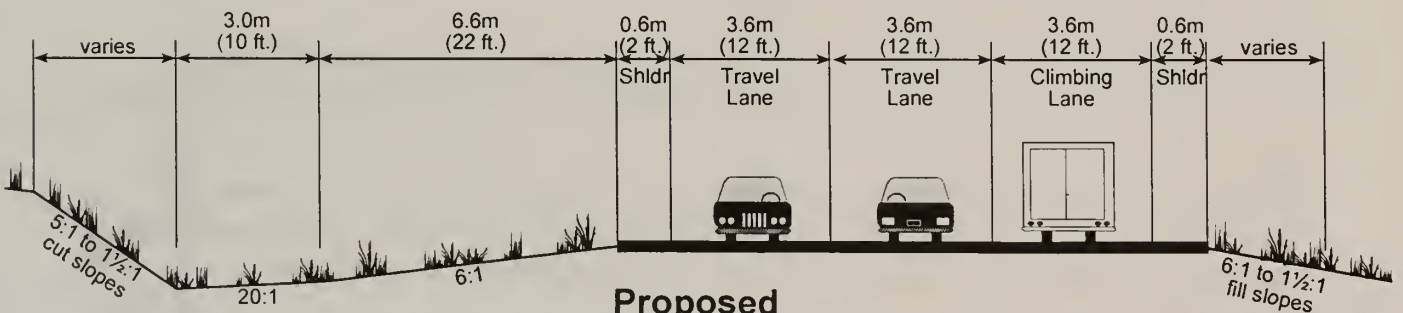




**Proposed  
Typical Curb & Gutter Section I**  
(between MT 39 and NCT Charging Horse Casino  
and Dull Knife Community College)

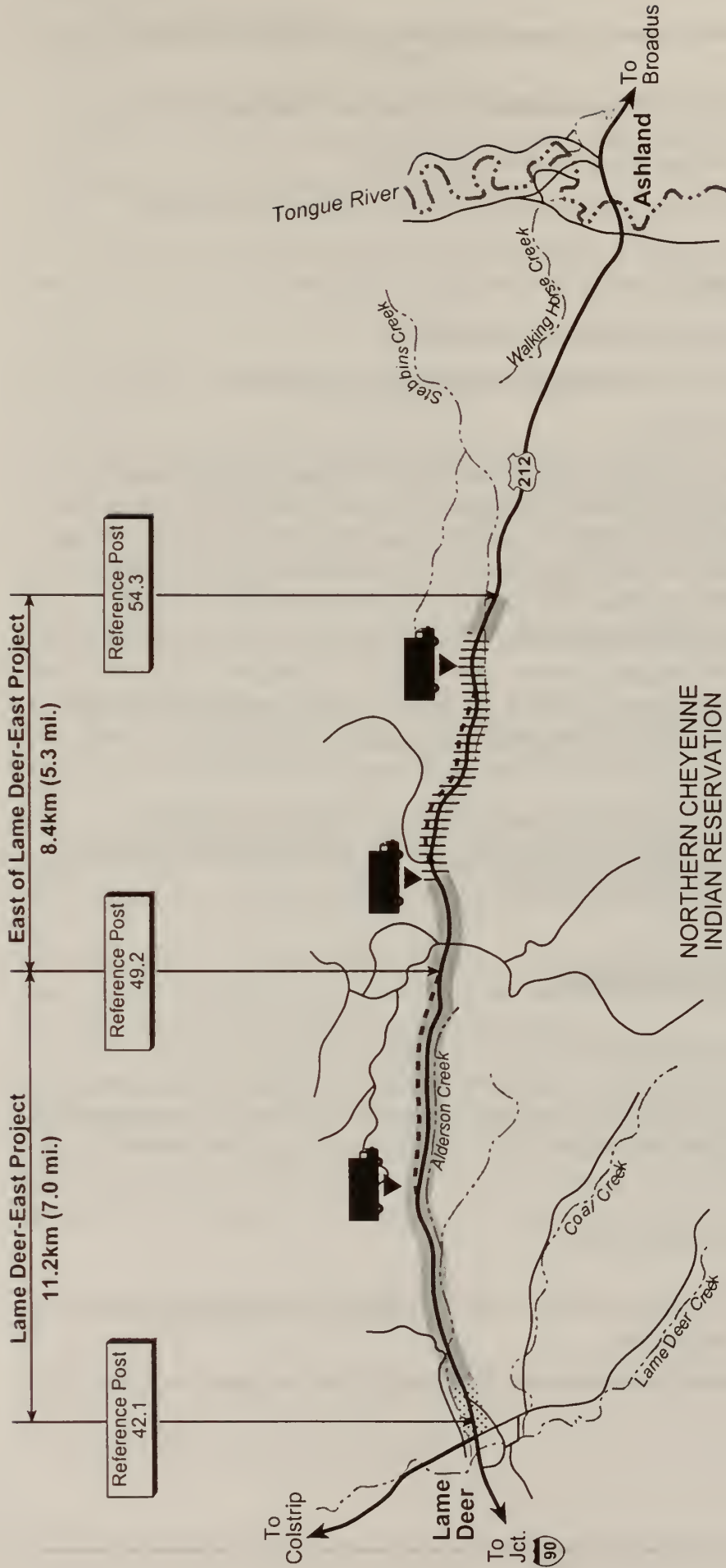


**Proposed  
Typical Rural Roadway Section II**



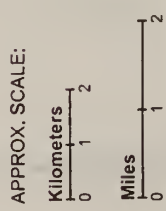
**Proposed  
Typical Section III  
With Climbing Lane**  
Approx. RP (MP) 50.4 to RP (MP) 53.5





**Legend:**

- Existing US Highway 212
- Local Road
- - - Creek/River
- - - Offset Alignment
- Improvements: Typical Section I (sidewalk)
- Improvements: Typical Section II
- Improvements: Typical Section III (climbing lane)
- Chain-Up Area / Truck Parking



**LAME DEER**  
 ENVIRONMENTAL  
 ASSESSMENT

**Preferred Alternative**  
 Figure 1-3

Additional design features to improve the overall function and safety of the roadway are:

- Widened shoulders with rumble strips and improved clear zones.
- 3.6 meter (12 foot) climbing lane on both sides of the divide to reduce traffic delays associated with slow trucks.
- Guardrail in areas of steep slopes.
- Enlargement of culverts for creek crossings and drainageways.
- Chain up/chain removal areas for trucks located on either side of the divide.
- Truck parking at the top of the divide.
- Steep slopes may be adjusted to reduce snow drifting onto the highway. Slopes will be flattened for the first 140 meters (459 feet) of the project just east of the MT 39 intersection, on the south, to allow the road to be exposed to sunlight for a longer period each day during the winter months. The segment of the roadway nearest the intersection with Montana Highway 39 is highly susceptible to icing, and therefore flat - bottomed ditches will be considered in locations where snow storage and/or a buffer is needed to capture erosion from the back slope.
- The paved shoulder surface typical section will include rumble strips, which create a tactile sensation, alerting an inattentive driver that they have crossed over the travel lane into the shoulder.
- A 1.5 meter (5 foot) wide sidewalk along the south side of the road to accommodate pedestrians between the U.S. Highway 212/MT 39 intersection and the Northern Cheyenne Tribe Charging Horse Casino and Bingo (RP (MP) 42.4.

## 1.4 Overview of Purpose and Need

The primary purpose and need for the proposed action is to improve the operational characteristics, safety and physical conditions of the existing highway facility. The proposed action will reconstruct the present traveled way, primarily on an offset alignment. Reconstructing the roadway was determined necessary to improve the roadway conditions to the National Highway System (NHS) standards.

The proposed action will include the following:

- Enhance the public safety of traveling public and commercial trucking by providing wider shoulders and improved driving surface,
- Correction of substandard vertical and horizontal alignments (which improves stopping sight distance),

- Traffic safety improvements (such as installing shoulder rumble strips and standard driveway/approach access realignment for better geometry, where appropriate.)
- New signing and traffic pavement markings.

The project does not provide capacity improvements (i.e. additional lanes). The truck climbing lane is not considered to add capacity, but alleviate congestion due to slower vehicles.

## 1.5 Traffic Volumes and Characteristics

U.S. Highway 212 is a National Highway System (NHS) route with heavy truck traffic and local vehicular traffic. According to the most recent traffic studies, the 1998 Average Daily Traffic (ADT) on U.S. Highway 212 was 1810 vehicles. In the design year 2019 the ADT is estimated to be 2230, representing a 10.5 percent increase. Trucks account for 41.6 percent of the traffic. The design hourly volume (DHV) is 300 vehicles per hour.

Level of Service (LOS) is a rating of traffic operating conditions that is calculated by comparing traffic volumes to available capacity along a roadway segment or intersection. Level of Service A being the best (free flow), while LOS F is the worst (forced flow). LOS, in mountain conditions, is described in Figure 1-4. Because U.S. Highway 212 is a rural road, daily congestion is not a critical issue and the existing LOS along the project corridor is LOS B.

Future LOS is estimated to be C for year 2019. While this does not warrant capacity improvements (ie. additional lanes), congestion may occur at the divide if a truck is having a difficult time travelling uphill and a back up of following vehicles occurs.

The American Association of State Highway Transportation Officials (AASHTO) guidelines have been reviewed for climbing lanes. It has been determined that climbing lanes would provide a benefit at the divide segment of the project.

As discussed earlier, traffic volumes are projected to increase and a climbing lane (approximately 1.4 kilometer (0.9 mile) long) is warranted and being considered at the divide section of the project. The road base has been designed to accommodate the climbing lane and is proposed to be striped to include a 3.6 meter (12 foot) climbing lane. The shoulders in this section will be reduced to 0.60 meter (2 feet) to stay within the proposed right-of-way.

## 1.6 Roadway Deficiencies

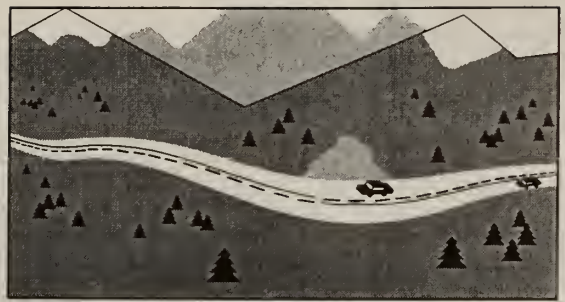
The existing roadway has many deficiencies when compared to NHS standards, such as:

- Minimal to no shoulders existing.

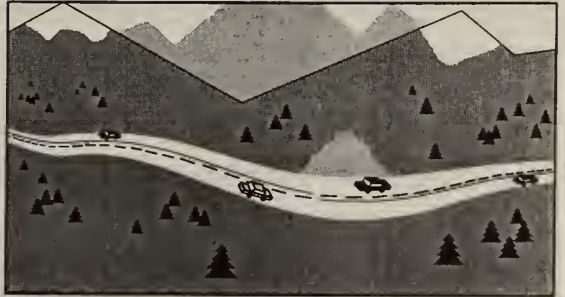


**LOS Roadway Segment Operating Characteristics**

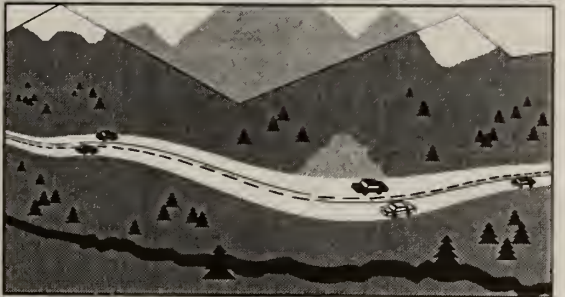
**A** Free flow, low traffic density, passing demand well below passing capacity, no platoons of three or more vehicles, drivers delayed less than 30% of time by slow moving vehicles.



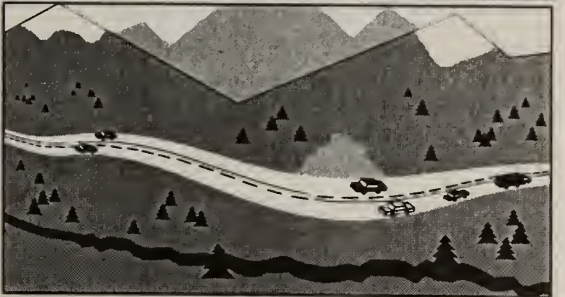
**B** Minimum delay, stable traffic flow, passing demand equals passing capacity, drivers delayed up to 45% of time by slow moving vehicles.



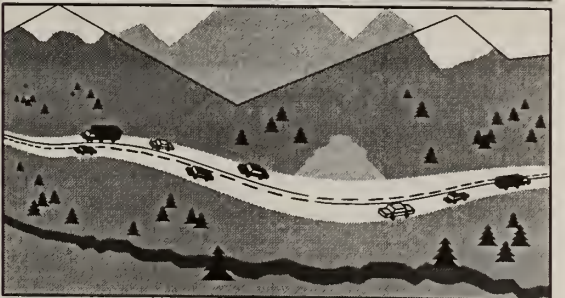
**C** Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists, noticeable increases in platoon formation, size, and frequency, percent time delays up to 60%. **Goal for 2020 traffic operations in rural areas.**



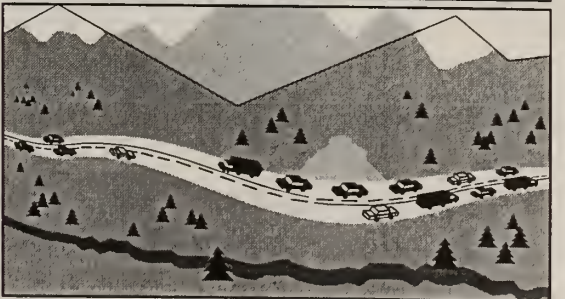
**D** Movements more restricted, passing demand is very high while passing capacity approaches zero, platoon sizes of 5 to 10 vehicles are common, turning vehicles cause "shock-waves" in traffic stream, percent time delays approach 75%.



**E** Actual capacity of the roadway, involves delay to over 75% of motorists, passing is virtually impossible, platooning becomes intense.



**F** Forced flow with demand volumes greater than capacity resulting in severe congestion, no passing opportunities and long platoons.



- Limited passing opportunities.
- Poor sight distances.
- Limited pullouts for vehicle breakdowns or recovery zones during emergency maneuvers.
- Unsafe driving surface. In winter, steep grades combine with cold temperatures to produce icy conditions, especially in areas shaded by steep hillsides or trees.

The following sections discuss roadway deficiencies in detail.

### **1.6.1 Pavement Deficiencies**

The paved surface, throughout the project exhibits severe deterioration and has been evaluated to have a very short remaining life-span. The pavement from RP (MP) 50.0 to RP (MP) 54.3 has a substantial amount of distortion and is subject to severe frost heaves during spring thaw. Reconstructing the roadway and new pavement was determined to be more cost - effective than maintaining it.

### **1.6.2 Horizontal Alignment**

The existing horizontal alignment meets the criteria for a 80 km/h (50 mph) design speed. The existing horizontal alignment has a minimum radius curve of 250 meters (820 feet) which meets the criteria for a design speed of 80 km/h (50 mph). Some curves create hazardous driving conditions, such as poor sight distance and few passing opportunities, which could cause motorists to lose control and drive off the roadway. Much of the project is in mountainous terrain with steep side slopes, creating a dangerous situation.

### **1.6.3 Vertical Alignment**

A substandard vertical alignment can create a situation with poor sight distances, resulting in dangerous situations for passing vehicles and vehicles entering or exiting the highway.

The existing vertical alignment provides less than the minimum stopping sight distance for a 100 km/h (63 mph) design speed at twenty-six locations on the project corridor. These vertical curves provide the minimum safety stopping distance for design speeds ranging from 50 to 100 km/h (31 to 63 mph). The maximum existing roadway grades are between 6.77 – 7.00 percent. These steep grades also occur in conjunction with substandard horizontal curves.

### **1.6.4 Roadway Width/Typical Section**

The existing roadway typical section is 7.3 to 7.9 meter (24 to 26 feet) wide consisting of two 3.6 meter (12 foot) wide travel lanes and 0-0.3 meter (0-1 foot ) gravel shoulders. In many locations the shoulders have been paved over as part of the travel lane, resulting in minimal to no



shoulder area for vehicles to safely pull off the highway. Side slopes range from moderate (4:1 and flatter) to steep (2:1 and steeper). Most steep embankments are not protected by guardrail.

Pullouts are limited to a small number of unpaved areas including two designated chain-up/chain-removal areas and a truck parking area. Narrow shoulders, steep side slopes, and the infrequency of available pullouts or driveways make it difficult for vehicles to pull off the roadway and contributes to the overall safety deficiency of the roadway.

### **1.6.5 Design Speed**

Design speed is the maximum safe speed that can be maintained over a specific section of highway when conditions are so favorable that the design features of the highway govern. This highway was constructed prior to the development of modern design standards and does not meet the design criteria for a NHS highway in mountainous terrain.

## **1.7 Safety/Crash Data**

Thirty-five crashes were reported for the eastern portion of the project, between January 1987 through December 1996, including 16 crashes that resulted in injuries. There were no fatalities. To evaluate crash data, a crash rate and severity index are used. A crash rate is defined as crashes per million vehicle miles of travel. The severity index accounts for the different degree of severity among accidents involving fatalities, injuries and property damage.

For the western portion of the project (RP (MP) 42.1 to RP (MP) 49.2) the crash and severity ratings of 0.75 and 1.46 were lower than the statewide primary averages of 1.27 and 1.52 respectively. The eastern portion of the project (RP (MP) 49.2 to RP (MP) 54.3) recorded 23 crashes for the same time period, including three fatal crashes that resulted in a total of four fatalities and ten crashes involving injuries. The eastern section has a crash rate of 0.72, which is lower than the statewide average; and severity rating of 2.06 which is higher than the statewide average. The crash data ratings assess only crashes reported, since unreported crashes are not documented.

Both sections of road had a substantially greater percentage of off-road crashes, over-turning vehicles and crashes involving large trucks than the statewide average for routes on the National Highway System (NHS). These type of crashes occurred more often on eastern portion of the project. The likely reason for this has been documented as the more extensive steep grades and shorter radii on the horizontal alignment, which results in poor sight distance.

## **1.8 System Continuity**

U.S. Highway 212 is classified as a principal arterial and is part of the National Highway System (NHS). U.S. Highway 212 is an integral part of the regional transportation network, connecting interstate population and commerce centers. It is the major east-west route south of Interstate 94 in eastern Montana, as well as the major east-west artery for the Northern Cheyenne and Crow Indian Reservations. It also serves local commercial users and the travelling public. This is a short route to Belle Fourche, South Dakota from Interstate 90 and also a common, as well as historical route, between Black Hills and Yellowstone National Park.

U.S. Highway 212 east of the project study area, to Ashland, has been recently reconstructed to 9.75m (32 foot) typical cross-section. This project name is Ashland-West. U.S. Highway 212 west of Lame Deer is planned for reconstruction beginning the summer of 1999. Highway 39 between Colstrip and Lame Deer is planned to be improved, as well as the MT 39/U.S. Highway 212 intersection at Lame Deer.

The proposed improvements for the Lame Deer-East project would enhance driver expectancy and system continuity by providing a uniform cross-section. Driver expectancy is when a driver encounters an improved section of roadway, there is usually an expectation that the reconstructed surface will be continuous.

## **1.9 Local Access/Circulation**

Most local access turnouts along the corridor are gravel or dirt roads. Many access turnouts have substandard or inadequate turning and/or stopping distances, causing unexpected or sometimes dangerous turning movements.

## **1.10 Relationship to Transportation Planning**

The proposed project is on the State Transportation Improvement Plan (STIP) for the years 1998-2000, as approved by the Montana Transportation Commission August 20, 1997, and approved by the Federal Highway Administration (FHWA) and Federal Transit Authority (FTA) on September 17, 1997.

## **1.11 Economic Development**

Located in Lame Deer, the Northern Cheyenne Community Health Center and Dull Knife Community College employ residents of Lame Deer and surrounding towns. U.S. Highway 212 is the primary east-west access road through the Northern Cheyenne Indian Reservation and access to Lame Deer. It is an important route to the local economy. U.S. Highway 212 is used as truck route and for regional tourism, and as such requires a consistent, safe driving surface.





## 2.0 ALTERNATIVES CONSIDERED

Alternatives for improvements to U.S. Highway 212 were developed and considered in the course of more than ten years of project development by the Montana Department of Transportation (MDT) and the Northern Cheyenne Tribe (NCT). Two primary alignments were developed in addition to the No Action Alternative. This chapter describes the alternatives advanced for further analysis, alternatives considered but not advanced, and the evaluation criteria used to select these alternatives.

### 2.1 Alternatives Advanced

#### 2.1.1 No Action Alternative

The No Action Alternative will retain the existing two-lane roadway in its present state. No improvements will be made to safety features or maintenance requirements with this alternative.

#### 2.1.2 Preferred Alternative

The Preferred Alternative is an improved two-lane roadway with wider shoulders, truck climbing lane and improved safety features, as described in Section 1.3. The Preferred Alternative generally follows the existing alignment, with some curve straightening and grade flattening. The proposed alignment will eliminate numerous “no passing zones” and inadequate stopping sight distances. In addition, the new surface material will improve skid resistance of this section of highway. Numerous design modifications were considered and incorporated into the Preferred Alternative in the course of project development.

The project will utilize standard cut and fill slopes for routes on the NHS. Some steeper, non-standard fill slopes (1 ½: 1) will be used in conjunction with guardrail to avoid impacts to the Alderson or Stebbins Creek, wetlands, or culturally significant sites on the project.

### 2.2 Alternatives Considered, But Not Advanced

The following alignment modifications were considered but not advanced for further analysis. Criteria used to evaluate the alternatives were:

- Does it meet the purpose and need for the project?
- Does it result in adverse social, economic or environmental impacts (such as: wetland and creek impacts, cultural resources and visual impacts, etc.)?
- Is it economically feasible? (Considers the volume of earthwork required, right-of-way costs, environmental mitigation costs, engineering costs, etc.)
- Does it have community acceptance?

## 2.2.1 Alignment Modifications

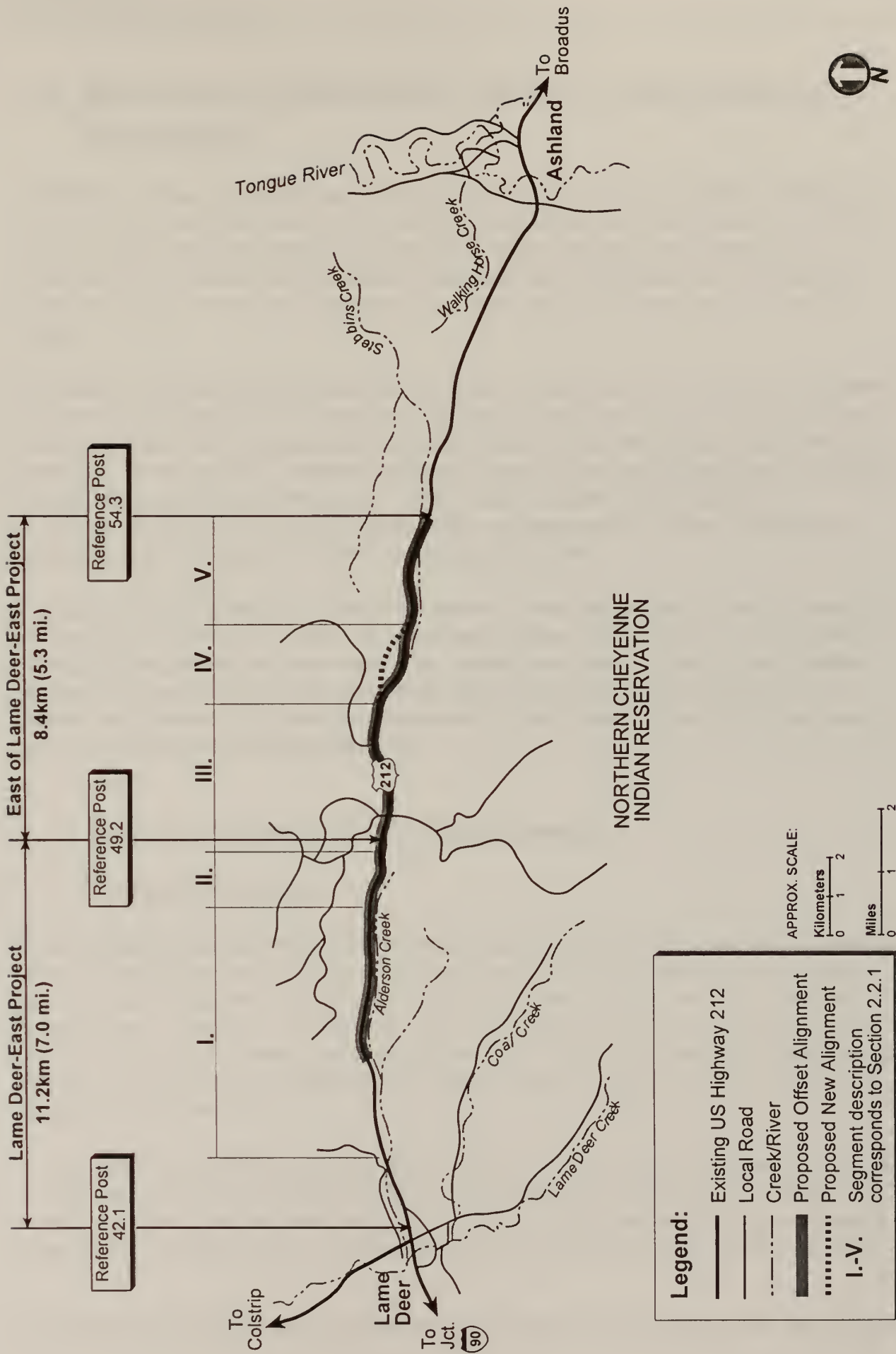
The following modifications to the existing alignment were considered to improve the two-lane roadway with wider shoulders and safety features similar to the Preferred Alternative. The design features of the alignment alternatives evolved over project coordination dating back ten years. Originally, the highway was to be designed to a 9.7 meter (32 foot) width. After consideration was given to incorporating truck climbing lanes and numerous truck-related crashes near the divide, the roadway width was proposed to be the 12.0 meter (39.37 feet) width as currently proposed and allowed for climbing lanes at the divide.

The alignment modifications described below involved substantial realignment of approximately 16 kilometers (10 miles) of the existing roadway to avoid two unstable slide areas; to improve the horizontal and vertical geometry of the roadway; to maintain a higher design speed, to avoid cultural resources and to avoid Alderson and Stebbins Creeks and wetland impacts. The following major alignment modifications were considered and are generally depicted in Figure 2-1:

- I. **RP (MP) 43.5 to RP (MP) 48.0** – Realignment 10 to 30 meters (33 to 98 feet) to the north and grade reduction.
- II. **RP (MP) 48.0 to RP (MP) 49.3** – Curve straightening.
- III. **RP (MP) 49.3 to RP (MP) 51.5** – Realignment 10 to 70 meters (33 to 230 feet) to the north and curve straightening.
- IV. **RP (MP) 51.5 to RP (MP) 53.0** – Major realignment 250 meters (820 feet) to the north to avoid impacts to Stebbins Creek and grade reduction.
- V. **RP (MP) 53.0 to RP (MP) 54.3** – Realignment 10 to 30 meters (33 to 98 feet) to the north.

These modification were not advanced as part of the Preferred Alternative for the following reasons:

- Resulted in a higher number of right-of-way impacts to private property and tribal lands.
- Not economically feasible because of substantial earthwork quantities (excessive construction costs) associated with realignment of the existing roadway.
- Results in substantial visual impacts to previously undisturbed areas from vegetation removal and road construction on new alignment.
- These alternatives were not acceptable to the Northern Cheyenne Tribe.
- Did not maintain local access.
- Resulted in greater wetland impacts.
- Proposed curve straightening would impact numerous springs, which are depended upon by beaver, waterfowl, bison and other wildlife.



**Alignment Alternatives**  
**Figure 2-1**





## **3.0 AFFECTED ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES**

This chapter documents existing conditions for the affected environment related to social, economic and environmental issues as defined by National Environmental Policy Act (NEPA). This information has been obtained by field surveys and visits; discussions with local representatives; contacting regional and local agencies; and coordinating with specialists for certain disciplines, such as: biological resources, wetlands, cultural resources, noise and air quality.

The benefits or impacts resulting from the No Action Alternative and the “Preferred Alternative” are assessed and quantified by comparing the preliminary engineering plans and the collected existing condition data. Design modifications are made to avoid and minimize impacts to the practicable extent possible. Federal actions which result in impacts that significantly affect the human environment must be evaluated. “Significantly” as used in NEPA requires considerations of both context and intensity. This environmental assessment is a disclosure document intended to determine if there are significant impacts.

Mitigation is a term defined as “to make less severe.” Standard and project specific measures are identified or created and committed to by Montana Department of Transportation (MDT) to reduce the estimated impacts and re-establish a condition as close to original where possible. Mitigation is considered for all impacts. While the No Action Alternative proposes to “do nothing” and includes no impacts, this alternative will not offer safety and other improvements proposed to enhance the driving experience.

### **3.1 Land Use, Zoning, and Land Use Planning**

#### **3.1.1 Affected Environment**

The proposed project is located on the Northern Cheyenne Indian Reservation, within Rosebud County. Predominant land use types are livestock and horse grazing/ranching, forest, open space, and natural riparian corridors associated with Alderson Creek, Lame Deer Creek and Stebbins Creek. There are a number of low-density/rural residential homes located along the corridor. Located at the western end of the project is the Dull Knife Community College and the Northern Cheyenne Tribe Charging Horse Casino and Bingo, the only business establishment along the project corridor.

At the western end of the project along MT 39, is the town of Lame Deer with land uses typical of rural towns. The Northern Cheyenne Tribe, whose jurisdiction the project falls within, was contacted to obtain land use plans and/or zoning. While formally adopted land use and zoning plans were not available, a NCT representative described some future land use and economic

plans for the project area. Interest has been expressed in developing the land east of the MT 39/U.S. Highway 212 intersection to allow for future economic growth.

The town of Lame Deer is 33.8 kilometers (21 miles) west of Ashland and 162.7 kilometers (101 miles) east of Billings. Given these distances from other cities, urban sprawl is not approaching the project area, nor is the project likely to contribute to its occurrence, since the project purpose is reconstruction for safety improvements rather than capacity improvements.

### **3.1.2 Land Use Impacts**

**No Action Alternative.** The No Action Alternative will not change any land use in the study area or have impacts to future land use planning.

**Preferred Alternative.** As part of this project, right-of-way fencing will be located adjacent to the project corridor. All cattle guards and gates will be replaced in-kind if disturbed by construction activities. Cattle guards will be included at all approaches as agreed to in the Memorandum of Understanding (MOU) with Northern Cheyenne Tribe (NCT).

This project will not induce land use changes or promote unplanned growth. However, consideration is being given to incorporating a center left-turn lane for east of the MT 39/U.S. Highway 212 intersection to access future developments aimed at boosting the local economy. This could be accommodated by re-striping the typical section through this area. If this design feature were incorporated into the design plans, additional right-of-way would be required for the sidewalks currently proposed. There will be no long-term affects on access to adjacent properties or present traffic patterns. Many local access turnouts will be realigned and improved to provide better sight distance and safer access to U.S. Highway 212.

Short-term construction-related impacts include traffic delays and detours as described in Section 3.19 Construction.

The locations where the roadway is proposed to be on an offset alignment are currently undeveloped, hilly terrain or forested lands. Clearing and grubbing associated with construction may result in the removal of some commercial timber. These areas will be identified prior to construction.

### **3.1.3 Mitigation**

MDT will compensate the Northern Cheyenne Tribe (NCT) for the timber impacted within the project's construction limits. The contractor will clear all trees as a part of clearing and grubbing operations on the project. The Memorandum of Understanding (MOU) between the NCT and MDT will address the ownership of the timber and how it will be removed.



## 3.2 Prime and Unique Farmland

### 3.2.1 Affected Environment

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), was contacted to obtain the *Soil Surveys of Rosebud County Area and Part of Big Horn County, Montana*. These were utilized in determining existing Prime Farmland conditions.

There are no Prime Farmlands of Statewide or Local Importance located adjacent to the study area as determined by the NRCS.

### 3.2.2 Prime and Unique Farmland Impacts

No Action Alternative. No impacts to prime farmland will occur with the No Action Alternative.

The Preferred Alternative. No impacts to prime farmland will occur with the Preferred Alternative. Therefore, the Preferred Alternative is in accordance with the Farmland Protection Policy Act (7 U.S.C., et seq.) and no additional coordination with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) is necessary.

### 3.2.3 Mitigation

No mitigation is required by Natural Resources Conservation Service (NRCS).

## 3.3 Social

### 3.3.1 Affected Environment

The Northern Cheyenne Indian Reservation is considered an entity unto itself and, therefore, federal statistics for the region are limited. According to the U.S. Census, the population of the Reservation within Rosebud County in 1990 was 100 percent rural. The total population was 3,906 in 1990, 44 percent were under the age of 18. Ninety percent of the population was Native American.

The Lame Deer School complex is located within Lame Deer and is home to Kindergarten through 12th grade. The Dull Knife Community College is also located in Lame Deer.

Most emergency providers for the study area are located within Lame Deer. The Northern Cheyenne Law Enforcement Center, the Northern Cheyenne Volunteer Fire Department, and the Northern Cheyenne Board of Health are the primary emergency services for the study area. The Northern Cheyenne Community Health Center is located along MT 39, just north of U.S. Highway 212.

### 3.3.2 Social Impacts

No Action Alternative. The No Action Alternative would not alter the area population growth or other demographic characteristics or trends. There would be no impacts to neighborhoods, communities, schools, churches, ethnic or minority groups. Road conditions would continue to deteriorate and emergency response time could worsen. The No Action Alternative will not result in any short-term construction related impacts. The No Action Alternative will not improve accessibility and safety concerns along the highway.

Preferred Alternative. During construction of the Preferred Alternative, there will be short-term impacts to residents within the project area. Residents could experience increases in noise levels, traffic congestion and air pollution (dust) from construction.

The Preferred Alternative will provide benefits to Lame Deer and surrounding communities through safer travelling conditions by reduced road grades and improvements to shoulders and turnouts. A 1.5 meter (5 foot) sidewalk is proposed along the south side of U.S. Highway 212, between MT 39 and the Northern Cheyenne Tribe Charging Horse Casino. This would enhance local access from the town of Lame Deer to these destinations. Emergency vehicle access will be enhanced by a consistent roadway section along U.S. Highway 212. The Preferred Alternative will also provide for a climbing lane near the divide to reduce traffic delays from slower truck traffic. (See Section 1.5)

Implementation of the Preferred Alternative would not substantially alter the area population growth or other demographic characteristics or trends. There would be no impacts to neighborhoods, communities, schools, churches, ethnic or minority groups, or police and fire protection.

### 3.3.3 Mitigation

Mitigation measures which could minimize construction-related impacts are:

- Public service announcements to local papers and radio stations identifying construction activity schedules and estimated delays.
- Other measures include flaggers and construction signage.

Mitigation for short-term increases in noise levels, traffic congestion, and air pollution (dust) due to construction activities are addressed in Section 3.19 Construction.

### 3.3.4 Environmental Justice and Title VI

On February 11<sup>th</sup>, 1994, President Clinton issued Executive Order 12898 requiring federal agencies to incorporate Environmental Justice considerations into the National Environmental Policy Act (NEPA) planning process. The Executive Order requires that minority and low

income populations, and minority – owned businesses do not receive a disproportionately high number of adverse or human health impacts as a result of federal actions.

In accordance with the Title VI of the Civil Rights Act of 1964 Indian reservations, tribal land outside a reservation, and minority/low income neighborhoods were identified and evaluated for impacts. The entire project is located on the Northern Cheyenne Indian Reservation.

No Action Alternative. The No Action Alternative would not affect, separate, or isolate any distinct neighborhoods, low-income groups, or minority households or businesses.

Preferred Alternative. The Preferred Alternative would not affect, separate, or isolate any distinct neighborhoods, low-income groups, or minority households or businesses. This project will not create disproportionately high and adverse human health or environmental effects on minority and low-income populations (E.O. 12898) and complies with Title VI of the Civil Right Act of 1964 (42 U.S.C. 2000 d). Therefore this project is in compliance with EO 12898.

## **3.4 Economic**

### **3.4.1 Affected Environment**

Lame Deer is an employment center for surrounding communities with major employers including the Northern Cheyenne Tribal Administration; Northern Cheyenne Community Health Center; Dull Knife Community College; Bureau of Indian Affairs (BIA) and the Tribal Employment Rights Office (TERO). The Northern Cheyenne Tribe Charging Horse Casino and Bingo could also be considered to be a contributor to the economic base in the Lame Deer area.

According to the 1990 U.S. Census, the most common employment type within Rosebud County and the Northern Cheyenne Indian Reservation were administrative support occupations, including clerical positions; and executive and managerial occupations being second most frequent. Other regional employment includes ranching, timber, mining and other resource jobs. Over one-third of all working individuals within the region were identified as being employed in a government position.

### **3.4.2 Economic Impacts**

No Action Alternative. The No Action Alternative would have little immediate effect on existing economic conditions within the study area. However, accessibility would continue to be hampered due to the constraints of the existing roadway. Over time this could have a negative effect on economic conditions in the study area as other highways are improved in the vicinity and tourists and other traffic choose to take the safer, improved highway.



Preferred Alternative. The Preferred Alternative would have short-term construction-related impacts within the study area. Local travel for residents, tourists, and service vehicles would be interrupted during construction along with other general traffic throughout the project construction period.

Changes in local employment, sales, and revenues could be enhanced in the short-term during project construction due to income increases related to construction jobs and construction workers using local businesses and services. Regional employment and sales could also increase in the short-term due to the presence of the construction work force, but the overall historical growth trend would not change in the long-term.

A long-term economic effect of the Preferred Alternative that would be expected is a positive economic effect due to enhanced accessibility and improved safety. The project will improve regional mobility, provide better access for tourism and possibly for new business development and improve access to Dull Knife Community College and the Northern Cheyenne Ambulance Service.

For the Northern Cheyenne Tribe Charging Horse Casino and Bingo, the one business establishment along the project corridor, the Preferred Alternative includes side slopes that have been steepened near the parking area to avoid impacts.

### **3.4.3 Mitigation**

Access to the business will be maintained during construction. Mitigation measures to reduce short-term construction-related impacts are discussed in Section 3.3.3 Social mitigation.

## **3.5 Pedestrians and Bicyclists**

### **3.5.1 Affected Environment**

Due to the lack of roadway shoulders, high number of trucks, and limited sight-distance, U.S. Highway 212 does not provide a safe or otherwise viable route for pedestrians or bicyclists. These elements presently discourage regular walking and bicycling along the roadway. Equestrian use is also limited to off-highway areas.

The area most heavily used by pedestrians and bicyclists is at the west end of the project, near the town of Lame Deer. Pedestrians and bicyclists travel from the intersection of MT 39 to the Dull Knife Community College located at RP (MP) 42.2, and to the Northern Cheyenne Tribe Charging Horse Casino and Bingo located at RP (MP) 42.5.

### **3.5.2 Pedestrian and Bicyclist Impacts**

No Action Alternative. The No Action Alternative will have no impact on present conditions.

Preferred Alternative. The Preferred Alternative includes improved horizontal and vertical alignments to increase sight-distance, guardrail in areas of steep slopes, and 2.4 meter (8 foot) shoulders, which would improve conditions for people wishing to bicycle or walk along the road. New curb, gutter, and sidewalk will be installed on the south side of U.S. Highway 212 from the intersection with MT 39 to the Northern Cheyenne Tribe Charging Horse Casino and Bingo. These improvements could result in increased pedestrian and bicycle use throughout the highway corridor.

### **3.5.3 Mitigation**

No mitigation is required.

## **3.6 Right-of-Way and Relocation**

### **3.6.1 Affected Environment**

The existing MDT-owned right-of-way or easement along U.S. Highway 212 is 22.8 to 36.6 meters (75-120 feet) wide. Land on the Northern Cheyenne Indian Reservation is owned either by the Northern Cheyenne Tribe (NCT), allotted land to NCT members or privately owned. Property which is owned by the NCT cannot be acquired or purchased by MDT for right-of-way, but can be secured through an easement. Privately-owned land and allotted land may be acquired for right-of-way.

### **3.6.2 Right-of-Way Impacts**

No Action Alternative. No new right-of-way (ROW) or easements will be required with the No Action Alternative.

Preferred Alternative. MDT owns part of the ROW required for construction of the Preferred Alternative, however, as shown in Table 3-1, 19 hectares (45 acres) of new right-of-way will be acquired and 44 hectares (110 acres) of easements will be secured with the Northern Cheyenne Tribe for construction of the Preferred Alternative and wetland mitigation sites.

Approximately 0.32 hectares (7.9 acres) in construction permits will be required by construction of the Preferred Alternative. These permits are primarily for slope easements outside of the right-of-way.

In some locations, v-ditches (ditches graded into a “v” cross-section) may be used as a design exception to reduce the amount of right-of-way or easement required and therefore minimize impacts to property and trees on NCT-owned land. Standard MDT right-of-way fencing will be located at the ROW line and be consistent throughout the corridor unless an exception is noted.

The Preferred Alternative would not require the relocation of any residences or businesses, nor would any persons be displaced as a result of the Preferred Alternative. Access to all properties will be improved or maintained. Public and private approaches will be constructed with a gravel base and paved to the right-of-way. Farm field approaches will receive a 3.6 meter (12 foot) paved strip that extends the width of the approach and is 3.6m (1 foot) wide measured from the edge of the paved shoulder of the highway.

Property associated with the car wash may be acquired to relocate a MDT sand shed, which will be relocated as part of the project. The sand shed will be relocated and a new concrete foundation provided. Right-of-way (ROW) will need to be acquired for the relocation site.

### Utilities

There will be impacts to utility lines adjacent to the project corridor. The Tongue River Electrical Company has power poles located on both sides of the alignment. These will be relocated as part of construction of the Preferred Alternative, due to changes in the vertical alignment and/or cut and fill slopes. A buried telephone cable owned by Range Telephone, parallels the highway. The telephone line will be impacted and require adjustments or relocation.

There are two existing waterlines which cross the centerline and are in cut slopes. These lines are from wells. It is likely that these lines will require adjustments or relocation.

### 3.6.3 Mitigation

All lands needed for right-of-way from private ownerships on this proposed project will be acquired by MDT in accordance with both the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (1989) (P.L. 91-646), the Uniform Relocation Act Amendments of 1987 (P.L. 100-17), EO 12898, and Title VI of the Civil Rights Act of 1964. Compensation for right-of-way acquisitions is made at “fair market value” for the “highest and best use” of the land.

All utility relocations and adjustments will be coordinated with the respective utilities companies during final design and prior to construction.



## 3.7 Parks and Recreation

### 3.7.1 Affected Environment

There are two tribally-owned recreation areas accessed off U. S. Highway 212 in the project corridor. They are the Crazy Head Springs Recreation Area and the Ice Wells Recreation Area. The Crazy Head Springs Recreation Area is located approximately 1.2 km (0.75 mile) south of U.S. Highway 212 at RP (MP) 49.4. The Ice Wells Recreation Area is located approximately 3.2 km (2 miles) north of U.S. Highway 212 at RP (MP) 49.7. These recreation areas include uses such as: picnicking, camping, and fishing in the stocked ponds. Green Leaf Pond is located near Ice Wells Recreation Area and is stocked by U.S. Fish and Wildlife Service. Based on conversations with local residents, these are popular recreation areas and used daily.

Located at the western end of the project at RP (MP) 42.2, on the north side of U.S. Highway 212, is a NCT-owned picnic area/rest stop with a building identified as “*Arts and Crafts Building*,” parking spaces, sheltered picnic tables and interpretive signs for visitors describing the historic events which occurred near this site and the history of Lame Deer.

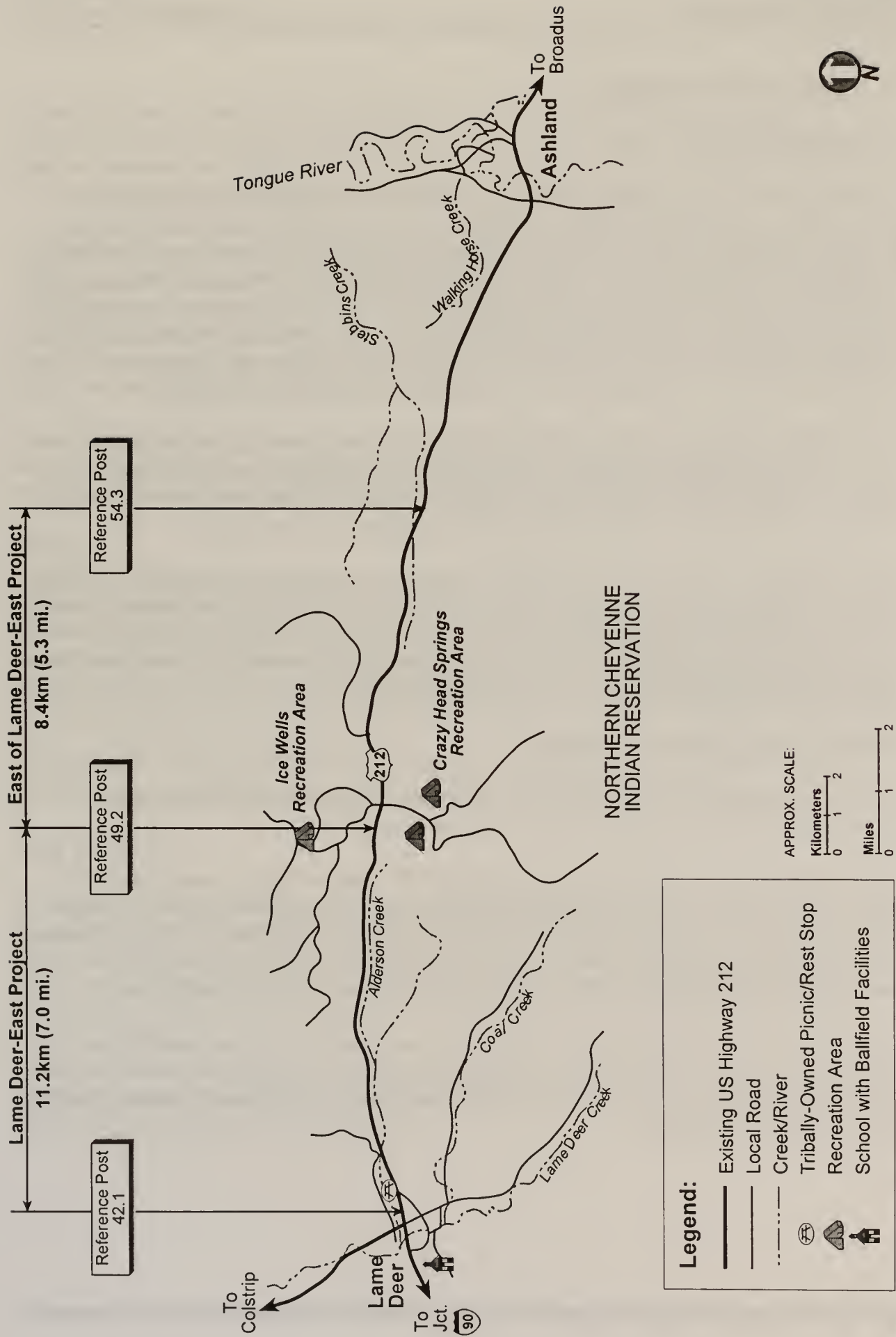
Other recreation opportunities along the project corridor are equestrian uses identified by signing along the corridor. No specific trails or corridors were identified. Access over Alderson Creek is provided at the western end of the project over a footbridge by the rest stop. The Northern Cheyenne Tribe Charging Horse Casino and Bingo provides popular pastime for residents and tourists. These recreation resources are identified on Figure 3-1.

### 3.7.2 Parks and Recreation Impacts

No Action Alternative. No impacts to park and recreation entities will occur. No access improvements to the picnic area/rest stop will be constructed.

Preferred Alternative. A 1.5 meter (5 foot) sidewalk will be provided on the south side of U.S. Highway 212 from MT 39 to the Northern Cheyenne Tribe Charging Horse Casino and Bingo. Access into and out of the Northern Cheyenne Tribe Charging Horse Casino and Bingo parking lot will be enhanced and maintained in its current location, thus enhancing the access and potentially increasing the usage. The parking spaces will remain as they currently exist.

Access into the Crazy Head Springs Recreation Area will remain in the same location, but be improved as described in Section 3.6.2. The access road into the Ice Wells Recreation Area will be relocated approximately 160 meters (525 feet) east of the current location to accommodate the proposed grade on the highway.



**Legend:**

- Existing US Highway 212
- Local Road
- Creek/River
- Tribally-Owned Picnic/Rest Stop
- Recreation Area
- School with Ballfield Facilities

APPROX. SCALE:

Kilometers  
0 1 2

Miles  
0 1 2



The two access roads to the picnic area/rest stop will be realigned, as U.S. Highway 212 will be widened to the north and require securing 0.37 hectares (0.92 acres) of the picnic area/rest stop property, which results in a loss of parking. The access roads are currently difficult to safely exit and enter U.S. Highway 212 due to steep approaches and tight turns. The realigned access roads will be located perpendicular to U.S. Highway 212 and provide equally safe, right and left turns and potentially increasing the usage.

Often parks and recreation areas are protected resources as defined in the 1983 Department of Transportation Act. This 4(f) legislation protects “publicly-owned land of a public park recreation area, or wildlife or waterfowl refuge”. FHWA has determined that the resources in the area are tribally-owned, not public, and therefore not regulated by the Section 4(f) legislation.

### **3.7.3 Mitigation**

The Preferred Alternative will not affect or preclude any recreation activities and access would be maintained during construction.

## **3.8 Air Quality**

### **3.8.1 Affected Environment**

The Town of Lame Deer is in an area classified by the Environmental Protection Agency (EPA) as a PM<sub>10</sub> (particulate matter that is ten microns or less in size) non-attainment area and a redesignated Class I Air Quality area shed. The project is in Rosebud County which is identified as an “unclassifiable” attainment area of Montana for carbon monoxide (CO) under 40 CFR 81.327, as amended.

The Northern Cheyenne Tribe (NCT) has taken lead responsibility for developing and executing a tribal implementation plan for control of PM<sub>10</sub> on the Northern Cheyenne Indian Reservation. The EPA has provided assistance in developing technical guidelines; and the MDT, Rosebud County and BIA are responsible for maintaining streets and highways in and around the town of Lame Deer. Those streets and highways have been found to contribute to elevated PM<sub>10</sub> air quality concentrations in Lame Deer.

An area of concern and source of higher PM<sub>10</sub> emissions for the town of Lame Deer has been the MT 39/U.S. Highway 212 intersection. This intersection is located at the western end of the proposed project. A current project by MDT is the reconstruction and concrete overlay of this intersection as a part of the Lame Deer-West project. This is being done in an effort to reduce air quality impacts in the town of Lame Deer. Construction is planned to begin as early as summer of 1999.



### 3.8.2 Air Quality Impacts

No Action Alternative. Emissions of PM<sub>10</sub> will increase over time as vehicle miles traveled increases.

Preferred Alternative. Short-term, construction-related impacts associated with the Preferred Alternative will be dust generated by earthwork activities (land clearing, cut and fill slopes), roadbed preparation equipment, vehicles hauling soil or debris, construction equipment transportation activities and unprotected disturbed soils.

Long-term air quality impacts are not expected to be substantially different than existing conditions since there are no capacity improvements. This is a reconstruction project that begins at the intersection of MT Highway 39 in Lame Deer. The Preferred Alternative involves reconstruction of the roadway with substantial modifications to the horizontal and vertical alignment. There will be no added travel lanes or capacity improvements. According to 40 CFR (Code of Federal Regulations) Parts 51 and 93, these types of projects do not require a conformity determination. Also according to 40 CFR Parts 51 and 93, projects that involve changes to the vertical and horizontal alignment are exempt from regional analysis, but may require hot-spot analysis. (See Appendix A for documentation.)

Within the town of Lame Deer, there will be no changes to the horizontal or vertical alignment of U.S. Highway 212. The minor changes in vertical alignment along the project will not affect PM<sub>10</sub> emissions and do not warrant hot-spot analysis. In addition, EPA has not yet released guidelines for PM<sub>10</sub> hot-spot modeling. Until the guidelines are released, PM<sub>10</sub> hot-spot modeling is not a requirement in conformity determinations.

This project satisfies the requirements of Section 176 (c) of the Clean Air Act, as amended (42 U.S.C. 7521 (a)).

### 3.8.3 Mitigation

According to the signed agreement (see Appendix A) between the NCT, BIA, MDT, EPA and Rosebud County, the following measures will be maintained during and after construction to ensure PM<sub>10</sub> levels are reduced.

- Application of only clean sand to road surfaces. (Sand containing seven percent or less silt by weight).
- Sweeping and cleaning driving lanes, shoulders, gutters and drop drains.



The following agreements will be adhered to as outlined in the Amendment to the Project Specific Agreement (PSA). The PSA is a document under the MOU which details activities that will take place on the project agreed to between MDT and NCT. The details will be worked out as the plans become more refined.

- **MDT Responsibility:** MDT's contractor will suppress dust at all times with water or chemical dust suppressants and will sweep or vacuum paved roads adjacent to the construction site to eliminate dust that is suspended into the air from construction equipment and motor vehicles entering and leaving the unpaved areas. The contractor will document all construction activities occurring in Lame Deer and the immediate vicinity, noting dates and type of work conducted. When PM<sub>10</sub> emissions reach a predetermined level, as set forth below, MDT will order the contractor to 1) apply additional dust suppression, or 2) immediately suspend work until it is shown that additional dust suppression reduces PM<sub>10</sub> emissions.
- **Northern Cheyenne Tribe Responsibility:** The Northern Cheyenne Tribe will conduct daily monitoring for PM<sub>10</sub> emissions during construction of both the above-noted projects. A 24-hour average or one-hour peak of PM<sub>10</sub> emissions level of 75 µg/m<sup>3</sup> shall be used to indicate that the Contractor must employ additional dust suppression. A subsequent one-hour peak PM<sub>10</sub> emissions level 100 µg/m<sup>3</sup> within the 24 hours after employment of additional dust suppression shall be an indicator that the Contractor must suspend work until PM<sub>10</sub> emissions are reduced to 100 µg/m<sup>3</sup> or less. When the PM<sub>10</sub> emissions level reaches either 75 µg/m<sup>3</sup> or 100 µg/m<sup>3</sup> the Tribe will immediately contact MDT Hazardous Waste Bureau or Project Engineer.

In addition to the above-mentioned mitigation measures the following will be implemented to reduce construction-related impacts: re-seed disturbed slopes as soon as practicable to reduce loose soils from becoming windblown.

## 3.9 Noise

A noise analysis for this project was originally performed in 1989, with a supplemental noise analysis reflecting current average daily traffic (ADT) projections being completed in May 1999. Noise monitoring on the project corridor was conducted in May 1999.

### 3.9.1 Affected Environment

The Federal Highway Administration (FHWA) has established national criteria by which to determine noise impacts from traffic sources on certain land uses. These are shown in Table 3-1.

**Table 3-1**  
FHWA Noise Abatement Criteria (NAC)

Activity Category	Leq*(h) dBA	Description of Activity Category
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	-	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

\* leq describes the mean noise level during the peak traffic period.

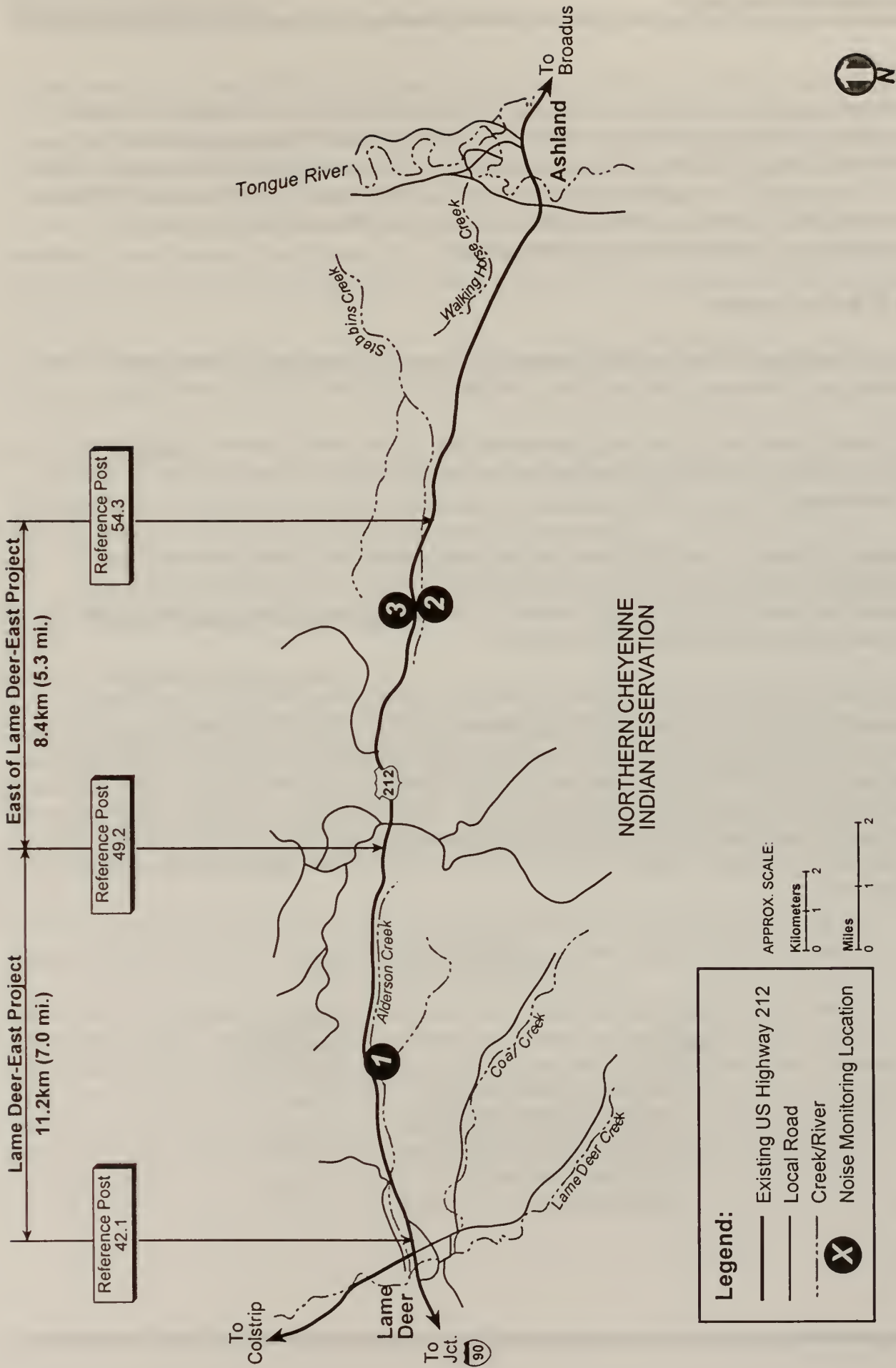
The above criteria are typically applied to outdoor areas of use, which for residences are usually defined as a first-floor outdoor patio/deck area. If a project would result in noise levels above these thresholds, noise mitigation would need to be considered as a part of the project. The existing land uses along the project corridor are agricultural, primarily in the form of livestock and horse grazing/ranching; rural residential; forest; and open space.

Existing ambient noise measurements were taken at various locations along U.S. Highway 212 within the study area to represent the residential receptors within the project corridor. These locations are shown on Figure 3-2. These locations were identified as Category B and representative as being receptors located the shortest distance from U.S. Highway 212. The field measurements were taken at the existing right-of-way line which in all cases was closer to the noise source (U.S. Highway 212) than the actual residence. Noise is defined as noise generated from tire noise on pavement and vehicle noise of a running engine. The computer-generated existing levels were determined to calibrate the model to determine future noise levels. The computer-generated levels were based on a receiver locations at the actual residence distance from the highway. The field results are reported in Table 3-2.

**Table 3-2**  
Existing Noise Levels

Location	Existing Computer-Generated Noise Level at Residence	Monitored Noise Level (Leq)* @ ROW	Monitored Distance from U.S. Highway 212
1. Residence on south side of U.S. Highway 212 approx. RP (MP)44.5	NA	65.5 dBA	11 meters (36 ft.)
2. Residence on south side of U.S. Highway 212 approx. RP (MP)53.5	58.8 dBA	63.2 dBA	18.2 meters (60 ft.)
3. Residence on north side of U.S. Highway 212 approx. RP (MP)53.5	60.3 dBA	65.0 dBA	18.2 meters (60 ft.)

\*leq describes the mean noise level during the peak traffic period.



**Noise Monitoring Locations**  
Figure 3-2



The existing noise levels at the residences are below the FHWA Noise Abatement Criteria (NAC) of 67 dBA level as defined in Table 3-1. Existing noise at these locations and other residences along U.S. Highway 212 in the study area are from vehicular traffic and trucks using U.S. Highway 212. The current traffic counts for U.S. Highway 212 in 1998 are 1810 ADT, with truck traffic comprising approximately 41.6 percent of the total (heavy trucks are approximately 17.4 percent of the total truck count).

### 3.9.2 Noise Impacts

The noise analysis was prepared in accordance to *Montana Department of Transportation Noise Analysis and Abatement Guidelines* (May 1996) and 23 CFR Part 772.9 (as amended).

No Action Alternative. Noise levels measured in the corridor would increase as traffic levels increase with the No Action Alternative, however would likely not exceed the NAC of 67dBA for residences.

Preferred Alternative. The 1989 noise analysis found that the future noise levels will not substantially increase over existing levels (less than 10 dBA), nor will exterior noise levels approach or exceed the FHWA NAC levels of 67 dBA for Category B as identified in Table 3-1. This was confirmed in the May 1999 analysis.

Based on the current (1999) noise analysis, the three representative receptors are estimated to receive future noise levels (year 2019) well below the FHWA NAC of 67 dBA Level and less than a one decibel increase over existing. The methodology used for the current (1999) noise analysis is described below. Noise impacts were determined by forecasting future (Year 2019) noise levels at the representative receiver locations. The STAMINA 2.0 computer model was used to determine the future noise levels by inputting projected Year 2019 traffic volumes and proposed roadway improvements. Table 3-3 identifies the computer-generated forecasted 2019 noise levels.

**Table 3-3**  
Forecast 2019 Noise Levels

Receptor	Forecasted Year 2019 Noise Level
1. Residence on south side of U.S. Highway 212 approx. RP (MP) 44.5	62 dBA
2. Residence on south side of U.S. Highway 212 approx. RP (MP) 53.5	59.7 dBA
3. Residence on north side of U.S. Highway 212 approx. RP (MP) 53.5	61.2 dBA



Future noise levels (Year 2019) will increase due to continued growth in traffic volumes. Traffic volumes are forecast to increase roughly ten percent in the next twenty years. As a basic law of noise physics, doubling the traffic count would cause a noise increase of three decibels (dBA) which is barely noticeable to the human ear. The Preferred Alternative is not expected to substantially affect existing or future noise levels since the proposed action is a highway reconstruction project and is not adding any capacity improvements which would increase the number of vehicles using this highway. For most locations adjacent to residences, the extent of project improvements include shifting the roadway centerline by five meters (16.4 feet) in either direction.

Based on this noise study, the project is found to be in compliance with MDT's and FHWA's noise policies.

### **3.9.3 Mitigation**

No mitigation is required as future noise levels do not exceed the FHWA Noise Abatement Criteria of 67 dBA or increase substantially (10 dBA) over existing.

## **3.10 Water Resources/Quality**

### **3.10.1 Affected Environment**

The study area is within the Middle Yellowstone River Basin in Southeastern Montana. Other waterways within the basin and adjacent to the project area include the Tongue River and Rosebud Creek. Lame Deer Creek and Alderson Creek are both tributaries of Rosebud Creek. Stebbins Creek is a tributary of the Tongue River. The Northern Cheyenne people, who have been involved with the Lame Deer project have all expressed a reverence and respect for their Reservation's water resources.

The Montana Department of Environmental Quality (MDEQ), data bases and resources were contacted and referenced to present general data relating to water quality of these resources.

The MDEQ has designated Alderson and Stebbins Creeks as Class 3 waterbodies. Waters classified as Class 3 are suitable for recreational use, growth and propagation of warm water (non-salmonid) fisheries and associated aquatic life, water fowl and furbearers. Due to naturally high totals of dissolved solids (salinity), water quality of Class 3 waters is naturally marginal for drinking, culinary and food processing purposes, agricultural and industrial uses. Agricultural uses, including livestock watering, are a major water use of the Lame Deer, Alderson, and Stebbins Creeks.

According to Section 303 (d) of the Clean Water Act, states must:

*Identify waters that do not or are not expected to meet applicable water quality standards with technology-based controls alone... After the identification and priority ranking of water quality-limited waters are completed, states are to develop Total Maximum Daily Loads (TMDLs) at a level necessary to achieve the applicable state water quality standards.*

The creeks identified in the project area are not designated as a high priority for TMDL development on the Montana Section 303 (d) or 305 (b) lists. Correspondence to MDEQ was sent September 4, 1997 to comment on this project and no response was received. The Montana DEQ will be reviewing the project as part of the continuing agency/public involvement.

Groundwater is near the surface in many areas as is evidenced by numerous springs and hillside seeps along the project. See Sections 3.12.1 – Saturated Slopes and 3.16.1 – Culturally Significant Springs, for additional references to springs for their functions and value.

### Wild and Scenic Rivers

Lame Deer, Alderson, and Stebbins Creeks are not designated or proposed for inclusion in the National System of Wild and Scenic Rivers published by the U.S. Department of the Interior/ U.S. Department of Agriculture.

### 3.10.2 Water Resource Impacts

No Action Alternative. There would be no impacts to water resources or water quality associated with the No Action Alternative.

Preferred Alternative. MDT recognizes that water resources are important to the Northern Cheyenne from a cultural perspective, and has attempted to design the project with as little impact to wetlands, stream channels and springs, as possible.

The Preferred Alternative includes a total of eight unavoidable stream channel changes on Alderson and Stebbins Creeks as a result of the improved horizontal and vertical alignments and wider roadway surface due to wider shoulders and turnouts. Adding meanders to the relocated channels was evaluated to reduce potential impacts to creek hydrology. The primary constraint to these meanders is the steep adjacent terrain and potential compounded impacts by cutting into adjacent hillsides. Relocated channel stretches will be designed to maintain creek hydrology and accommodate flows.

Approximately 860 meters (2,820 feet) of Alderson and Stebbins Creeks will be impacted by fill slopes associated with the proposed improvements: 778 meters (2,551 feet) of Alderson Creek and 82 meters (269 feet) of Stebbins Creek. The channels will be re-established in these locations with the same cross-section (side slopes, channel gradient and width) as the impacted sections and relocated within a construction easement. Check structures are proposed to reduce water

quality channel impacts. In addition, it is anticipated that these will aid in revegetation efforts along the channels. The total length of the relocated channel would be approximately 780 meters (2560 feet) in length: 701 meters (2,300 feet) of Alderson Creek and 79 meters (260 feet) of Stebbins Creek. This results in an overall loss of approximately 80 meters (262 feet) of stream channel: 77 meters (251 feet) of Alderson Creek and 3 meters (9 feet) of Stebbins Creek.

Construction of the highway improvements and stream channel changes may result in the following short-term water quality impacts:

- Temporary increases in sedimentation from excavation and grading activities.
- Temporary increases in contaminated stormwater runoff.
- Temporary increases in suspended sediment load or turbidity at downstream locations.

Long-term water quality impacts will result from the close proximity of the roadway to the water features within the narrow corridor. Increased impervious surface (wider pavement width) could result in increased runoff volumes and contaminants. Contaminates can include volatile solids, grease, petroleum, rubber, phosphate, nitrate, various heavy metals, and organic particulates abraded from the roadway surface.

The Preferred Alternative will have the following positive benefits on the adjacent water resources and water quality:

- Realignment of Alderson Creek will result in one less culvert crossing under U.S. Highway 212.
- Realigned channels will have longer continuous reaches without crossing under the highway.
- Realigned channels will have wider floodplains and increased opportunity for wetlands and deepwater habitat.
- The proposed roadway will be further away from the creek channels, resulting in less impact from road gravels, sanding, and other pollutants reaching the creeks.
- Existing culverts will be replaced with larger diameter pipes to improve flows under the roadway during storm events, thus reducing the potential for flooding and erosion.

### 3.10.3 Mitigation

An Erosion Control plan will be prepared for this proposed project. Best Management Practices (BMPs) will be included in the design of this Plan using guidelines as established in the *MDT's Highway Construction Standard Erosion Control Workplan*. The objective is to minimize erosion of disturbed areas during and following construction of this proposed project. These measures are particularly applicable to construction activities in and around Alderson Creek, Stebbins Creek or delineated wetlands. BMP measures for water quality include:



- The use of appropriately designed and located silt fences, gravel berms, and straw bale dikes (during construction) to strain excessive sediment from runoff before it leaves the construction area.
- Locate stockpiled materials, material storage, and staging areas a minimum of 30 meters (98 feet) from creeks, drainage channels, or wetlands.
- Do not disturb riparian areas, whenever possible. Riparian areas act as natural filters and provide good buffer zones.
- The use of sediment basins or temporary retention ponds (during construction) to allow sediment to settle out of runoff before it leaves the construction area.
- Minimize disturbance of vegetated areas, identified culturally-significant plants, wetlands and riparian areas by construction-limit fencing.
- Replanting riparian trees and shrubs along relocated channel sections.
- Install culverts and/or water control outlets so that there is maximum distance of overland travel for roadway runoff before discharge to surface water.

Some specific erosion control and revegetation mitigation measures being considered for this project are:

- Immediate revegetation of disturbed areas.
- Specialized seed mixes for quick re-establishment rates, erosion control, as well as blending into the surrounding vegetation.
- Use of hydromulch or compost to improve soil composition.
- Use of run-on diversions, cross-slope drainages, and erosion control fabric to reduce overall slope length on steep cut slopes. Erosion control measures could be constructed to mimic natural draws in the hillside, which break up surface sheet flow and carry water away from exposed slope areas.

### 3.11 Permits Required

The following permits will be acquired prior to any relevant disturbance:

This proposed project will be in compliance with the provisions for both Water Quality under 75-5-401(2) M.C.A. for *Section 3(a)* authorizations, and Stream Protection under 87-5-501 through 509 M.C.A., inclusive.

A *124SPA Stream Protection* Permit (will be required) by the Montana Department of Fish Wildlife and Parks (MDFW&P).



A Notice of Intent (NOI) for Storm Water Discharges under the National Pollutant Discharge Elimination System (NPDES) General Permit (P.L. 92-500) will be required with the U.S. Environmental Protection Agency for the control of water pollution for both specific and non-point sources.

This proposed project will require the following permit under the *Clean Water Act* (33 U.S.C. 1251-1376):

A *Section 404* permit from the U.S. Army – Corps of Engineers. The COE will be notified that this proposed project qualifies for a “Nationwide” 404 permit under the provisions of 33 CFR 330.

All work will also be in accordance with the *Water Quality Act* of 1987 (P.L. 100-4), as amended.

## 3.12 Wetlands/Vegetation

### 3.12.1 Affected Environment

#### Wetlands

Project area wetlands were delineated in 1996 by MDT personnel in accordance with the *US Army Corps of Engineers 1987 Wetlands Delineation Manual* (Environmental Laboratory 1987). A *Biological Resource Report and Wetland Finding*, prepared by Turnstone Biological in 1999, was prepared in compliance with 23 CFR 771, 23 CFR 777 and Technical Advisory T6640.8A and is on file at the MDT office in Helena, MT. Areas were determined to be wetlands based on three primary criteria: presence of hydrophytic vegetation, presence of hydric soils and wetland hydrology.

A total of twenty-three wetland sites were delineated and are identified as the following four Cowardin wetland types:

- Riparian – Perennial. These wetland sites occur within the floodplain of Alderson Creek and typically occur as narrow 1-3 meter (3-10 foot) fringes lining the creek channel. This wetland type is dominated by either herbaceous emergents or wet-tolerant shrubs such as red-osier dogwood and streambank, yellow, and peach-leaved willows. Fringe wetlands are typically overshadowed in both size and function by taller riparian plant communities comprised of green ash, box elder, chokecherry, American plum and occasional serviceberry. The primary functions are streambank stabilization and production export, and a lesser function of wildlife habitat.
- Riparian – Non-perennial. These wetlands are found along Stebbins Creek in a fringe-like nature. This wetland type is dominated by herbaceous emergents such as broad-leaved cattail, both Olney and common three-square bulrush, and a variety of sparse

sedges and hydrophytic grasses Red-osier dogwood is the dominant wet-seeking shrub along with other willow species. Its functions are characterized by streambank stabilization and production export.

- Saturated Slopes. These wetlands are commonly associated with spring seeps and commonly occur on gradients exceeding three percent. These wetlands are dominated by hydrophytic emergents, except two steep hillside sites which support a sparse community of streambank willow. The primary hydrology is groundwater discharge. All six sites have little wetland function, but have a cultural significance to NCT members.
- Closed Depressional-emergent. This wetland type occurs at the top of the plateau dividing Alderson and Stebbins Creeks. Its source of hydrology is solely that of precipitation, predominantly coming from snowmelt. This wetland type is dominated by spikerushes, curly dock, and foxtail barley. This wetland provides little wetland function.

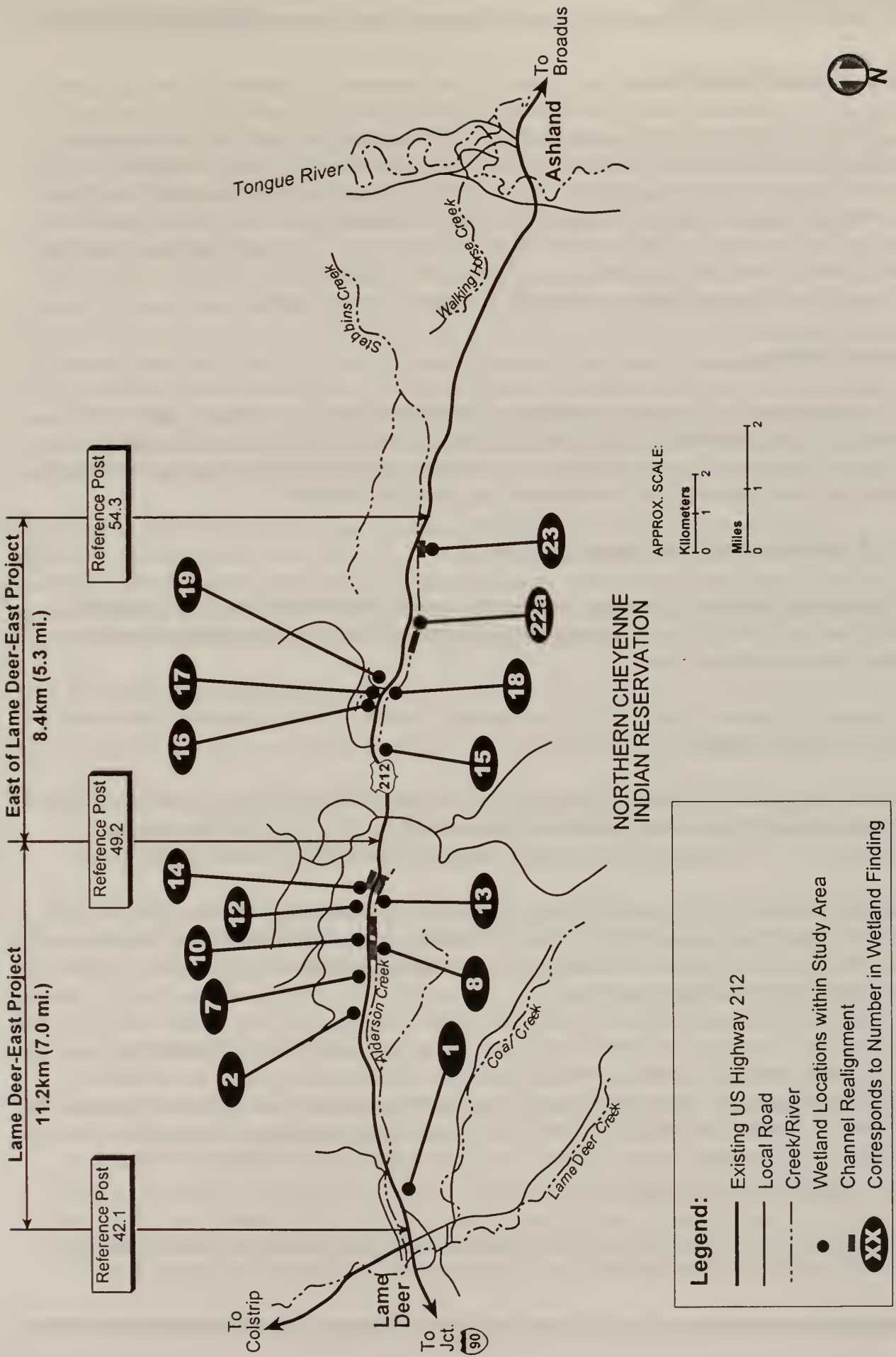
These wetlands were categorized as Category III and IV based on MDT function/value assessment forms. Figure 3-3 identifies general wetland locations within the study area.

### Riparian Vegetation

Riparian habitats are associated with Alderson and Stebbins Creeks and their associated floodplains, as well as side drainages feeding into the two creeks. Many of the affected plant communities are thickets comprised primarily of green ash, box elder, plains cottonwood, quaking aspen, common chokecherry, American plum, serviceberry, red-osier dogwood, and several willow species such as yellow, peach-leaved, and streambank. Riparian groundcover is comprised of a broad range of floodplain grasses and forbs that grow in close association with western snowberry, wild rose, currants, and skunkbrush. Species list with latin names are contained in the Wetland Finding on file at the MDT Helena, MT office.

The riparian vegetation within Alderson Creek quickly transitions to mixed stands containing ponderosa pine. This mosaic of pine and riparian habitat diminishes with increasing elevations to result in a ponderosa pine monoculture just above the drainage's uppermost spring (RP (MP) 48). Extensive wildfires of 1988 initially destroyed most of the vegetation on the surrounding hillsides in this area, that are now in various stages of revegetation of low grass and forb cover. Mixing with this sparse vegetation are ponderosa pine seedlings and sporadic stands of young quaking aspen that are of increasing importance to the area's colony of beaver.

Due to its intermittent hydrology, Stebbins Creek does not possess the abundance of coniferous trees or more functional, beaver-induced wetlands common to Alderson Creek. Comprised of the same riparian species mentioned earlier; with the exception of willows, aspen, and cottonwoods; Stebbins Creek riparian habitat expands eastward to join with that of the nearby Tongue River.



Water Resources and Wetlands  
Figure 3-3



## Culturally Significant Flora

The Northern Cheyenne Tribe holds a number of native plants in the general area as culturally-significant. Traditionally preferring not to disclose the nature of many of these species, the Tribal Cultural Committee normally assesses any reservation-based project for its potential to impact such significant plants and then relates this information as appropriate. Any construction-related losses of berry-producing shrubs such as the native chokecherry (*Prunus virginiana*), American plum (*Prunus americana*), Quaking aspen (*Populus tremuloides*) and serviceberry (*Amelanchier sp.*) would be of broad cultural concern to the Northern Cheyenne Tribe.

## Noxious Weeds

A number of state-listed noxious weeds appear throughout the project corridor. These include Hound's Tongue, common burdock, creeping thistle, flannel-leafed mullein and Russian knapweed. These weeds can contribute to the displacement of desirable native plants, although no one area along the route can be considered as particularly infested.

### 3.12.2 Wetland and Vegetation Impacts

Wetlands along the existing roadway corridor are currently receiving impacts from adjacent agricultural use (grazing), as well as sedimentation and pollutants from the existing roadway during stormwater runoff events.

No Action Alternative. There would be no wetland, riparian, or other vegetation impacts with the No Action Alternative.

Preferred Alternative. Fifteen of the twenty-three wetlands will be impacted to total an estimated 1.0 hectares (2.5 acres). These impacts are broken down to Category III wetland impacts estimated to be 0.65 hectares (1.6 acres) and Category IV wetlands 0.36 hectare (0.9 acres).

The unavoidable loss of some deciduous shrub and tree cover will occur as a result of the Preferred Alternative and remains of cultural concern to the Northern Cheyenne Tribe. A total of eight stream channel changes and impacts to both wetlands and riparian habitat result from a number of horizontal alignment shifts.

The Preferred Alternative will result in both short-term (temporary/construction-related) and long-term (permanent) impacts to wetlands, riparian vegetation, forest and other vegetation within the project area. Short-term impacts may include: temporary disturbance of vegetation or wetlands by construction equipment; potential erosion and sedimentation from construction activities; and/or potential release of fuels or other contaminants into wetlands or waterways from equipment or staging areas.

General long-term impacts will occur to vegetation within the right-of-way due to clearing and grubbing activities and reconstructing the alignment with the proposed new vertical and



horizontal alignments. Impacts to vegetation within the right-of-way will be minimized by selective clearing and grubbing as needed for construction activity within 4.5 meters (15 feet) of the construction limits. The excavation and fill activities will permanently displace much of the existing vegetation within the construction limits. Long-term impacts to wetlands, riparian and streambank vegetation will include placement of fill within wetland areas, stream channels relocation and excavation of saturated slope wetlands as a result of highway embankment fill slopes and channel impacts.

Impacts to forested areas will result from cut and fill slopes as the highway is reconstructed through narrow mountainous areas. As addressed in Section 3.1.2, the sale of commercial timber will be coordinated with the NCT prior to construction and disturbance. Estimated cut slopes along the corridor could be as high as 7 meters (23 feet) and in several locations as long as 480 meters (1575 feet). This loss of vegetation will result in newly exposed slopes and potential erosion problems. These issues are addressed in more detail in Section 3.19.2 Construction mitigation and Section 3.18.3 Visual mitigation.

Impacts to Culturally Significant Flora will be determined prior to construction through additional communications with the NCT. A primary cultural-riparian issue for the NCT is its traditional berry-gathering activities by its Tribal members. Any spraying of noxious weeds by any individual or agency should be considered for direct or indirect impacts to berry-producing vegetation or those identified by the NCT as culturally significant.

### **3.12.3 Practicable Alternatives**

This project is in compliance with the two major provisions of Executive Order 11990:

*That there be no practicable alternative to the proposed construction; and that the proposed project include all practicable measures to avoid and minimize harm to wetlands that may result from such use, with mitigation of inevitable loss.*

In order to reconstruct the highway and avoid wetland impacts, the highway alignment has been shifted as far away as possible from Alderson and Stebbins Creeks. The alignment shifts described as the Preferred Alternative were made to avoid not only wetlands, but several culturally significant springs and archaeological sites. Due to the steep and narrow nature of the canyon in which the project runs, and the meander of the creeks on both sides of the road, some wetlands and riparian areas will be unavoidably impacted.

The following measures were incorporated into the Preferred Alternative to avoid and minimize impacts to wetlands and riparian vegetation:

- The alignment was shifted away from creek channels and spring areas, wherever possible. In many cases, the Preferred Alternative is a compromise between impacts to springs, creek channels, or other culturally significant sites located on either side of the proposed alignment.

- A design exception will be developed to allow the use of steeper, 1 ½:1 fill slopes and guardrail, to minimize the amount of fill placed in wetlands and to avoid further realignment of creek channels.
- Drainage structures were designed to preserve existing wetland hydrology. Culverts and ditch blocks will be placed at the proper elevations along the creeks so as to avoid inadvertently draining existing wetlands or deep water areas.

These avoidance and minimization measures resulted in a direct reduction of approximately 0.9 hectares (0.22 acres) of wetland impacts.

Retaining walls or cantilevered structures were considered to reduce wetland impacts, but are not considered economically feasible. Because of the linear nature of the wetlands along the corridor, use of retaining walls or cantilevered structures will not entirely avoid impacts to wetlands. Retaining walls in these areas could result in a reduction of 0.14 hectares (0.35 acres) of wetland impact when compared to 1 ½:1 fill slopes. However, the cost of typical gabion or Mechanically Stabilized Embankment (MSE) retaining walls compared to the limited reduction of impacts, does not justify the construction cost.

Based on the above considerations, it is determined that there are no practicable alternatives to the proposed construction in wetlands and that the Preferred Alternative includes all practicable measures to minimize harm to wetlands which may result from such use. It is expected that replacement wetlands will be required by the COE for this project. At least a portion of this replacement mitigation will occur on-site. The remainder will occur at an off-site location(s).

### 3.12.4 Mitigation

#### Wetlands and Riparian Vegetation

The Preferred Alternative was designed to avoid and minimize disturbance and impacts to wetlands, wherever possible. However, complete avoidance of wetlands is not possible and some wetland areas will be impacted by the project. All proposed work affecting wetlands will be in accordance with Executive Order No. 11990.

The overall mitigation goal for wetland impacts is *no net loss in wetland area or quality*. The Council on Environmental Quality (CEQ) (40 CFR 1508.20) provides regulations for sequencing of mitigation in the following order of priority:

1. Avoidance of Wetlands – Avoiding the impacts altogether by not taking a certain action or parts of an action.
2. Minimization of Impacts – Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Repair, Rehabilitation, or Restoration – Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

4. Preservation and Maintenance – Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Replacement – Compensating for the impact by replacing or providing substitute resource or environments.

Replacement wetlands can only be used as mitigation if there are no practical alternatives to wetland impacts that will have a less adverse affect on the aquatic ecosystem and without other significant environmental consequences. Montana Department of Transportation (MDT) policy states that when avoidance is not possible, on-site mitigation will be given priority. In the event that replacement or enhancement is not possible on-site; due to construction, safety, maintenance, or other constraints; off-site mitigation will be considered.

Under the Federal Clean Water Act, as amended, a Section 404 Permit is required from the U.S. Army Corps of Engineers (COE) prior to any wetland disturbance. A mitigation plan for wetland impacts will be prepared and coordinated with the COE. In addition to the COE jurisdiction on this project, the Northern Cheyenne Tribe has requested replacement mitigation for all wetland impacts.

The following mitigation strategies are being pursued:

- On-site restoration of wetlands and riparian habitat in areas of channel relocation.
    - Mitigate all stream channel relocations resulting in riparian losses as part of MDT's standard stream bank revegetation/rechannelization efforts.
    - Revegetate disturbed areas with native grasses and native shrub species plantings. This would be cost-effective along the areas of channel relocation and would effectively reduce both short-term erosion concerns and long-term impacts to riparian-based wildlife.
  - Enhancement of existing spring-fed wetlands by fencing livestock out of selected spring areas and providing alternate water sources for livestock.
    - Location(s) are being coordinated with NCT personnel and MDT.
  - Expansion of existing wetlands along the existing creek channels to create new wetland areas. Potential locations and approximate mitigation acreage include:
    - RP (MP) 47.4 (Station 368+60 to 369+60): 0.2 hectares (0.5 acres) of new wetlands.\*
    - RP (MP) 47.8 to 47.9 (Station 374+00 to 376+00): 0.2 hectares (0.5 acres) of new wetlands.\*
    - RP (MP) 48.1 to 48.2 (Station 380+40 to 382+20): 0.2 hectares (0.5 acres) of new wetlands.\*
- \* The acres of mitigation may vary depending on final design.

Creation and restoration of floodplain wetland species, functions and values in off-site location.

- School Reserve Site located along Lame Deer Creek south of U.S. Highway 212, 0.69 hectare (1.7 acres).\*



In accordance with 7-22.2152 and 60-2-208 M.C.A., MDT will re-establish a permanent desirable vegetation community along all areas disturbed by the proposed construction. A set of revegetation guidelines will be developed by MDT that must be followed by the contractor. These specifications will include instructions on seeding methods, seeding dates, types and amounts of mulch and fertilizer, along with seed mix components. Seed mixes include a variety of species to assure that areas disturbed by construction are immediately stabilized by vegetative cover. The Seeding Special Provisions developed for this proposed project will be forwarded to the responsible County Weed Board for approval. In addition, wetland topsoil (which is free of undesirable or noxious weeds) will be stockpiled from impacted wetlands, to be replaced in the wetland creation sites. Relocated creek channels will be revegetated with native riparian trees and shrubs, which should include species considered culturally significant by the NCT.

### Noxious Weeds

With these standard mitigation measures, minimization of weed-related impacts is likely to be achieved throughout the project corridor. Measures to reduce the presence of the mentioned weed species are:

- Prompt reseeding/replanting of any disturbed site.
- MDT's best management practices (BMPs) of the cleansing of all heavy equipment prior to its entering the general project area. This action reduces the possibility of introducing foreign weed seeds unknowingly transported from distant sites.
- MDT's development of containment strategies in the event of a construction-related noxious weed outbreak. Required by Montana Senate Bill 395, such measures are routinely stipulated in a Weed Management Plan specific to each project, and would be filed with both the Northern Cheyenne Tribe and the Rosebud County Weed District.

## 3.13 Wildlife and Fisheries

### 3.13.1 Affected Environment

#### General Wildlife

The project study area provides habitat for a limited number of white-tail deer, mule deer and Rocky Mountain elk, along with some one hundred reintroduced American bison. The latter species often frequent the Tribal Buffalo Pastures located just south of the highway along the upper reaches of Alderson Creek, without vehicle conflict. The bison are known to commonly use the beaver ponds near RP (MP) 48 as a watering source, which is further evidenced by many well-worn trails leading to water's edge. Black bear, mountain lion, and bobcat are also present in the corridor. The once common swift fox (*Vulpes velox*) is now believed to occur so infrequently that it is being considered by the USFWS for 'candidate species' listing. The last reputable sighting of this small, secretive carnivore was reported a number of years ago near



Logging Creek's Patrick Springs, i.e. several miles south of the East of Lame Deer-East segment (Oddan, pers. comm.).

The project area is home to various duck species, songbirds, gamebirds, and a wide variety of raptors. Although a number of species would not be expected in the Lame Deer to Ashland corridor, a *Montana Bird Distribution* (P.D. Skaar) relates documentation for some 222 distinct species within the general area. Some of the species observable in the general area are mallard ducks, the ring-necked pheasant and Merriam's turkeys, while other gamebirds include the native sharp-tailed, sage, and ruffed grouses, along with the introduced and less likely gray and chukar partridges.

The corridor is also home to a number of small mammals, a few of which are semi-aquatic in nature. Striped skunk, raccoon, muskrat, and beaver can be expected along the wetter drainages and riparian thickets, as can a variety of mice, voles, and gophers throughout. Mountain cottontail rabbits are also known to occur within the project area. This variety of wildlife attracts various owls, hawks, falcons, and occasional eagles to the area for much of the year. In addition an infrequently observed Saw-whet owl was observed in a riparian thicket of Alderson Creek during May 1999.

According to *Identification of Montana's Amphibians and Reptiles* (Reichel and Flath) some sixteen different species are possibly occurring in this same vicinity. These individuals contributing to the forage base include: the tiger salamander; both painted and snapping turtles; woodhouse's and great plains toads; the plains spadefoot, western chorus, and northern leopard frogs; the short-horned lizard; common, plains, and western terrestrial garter snakes; western hognose snake; racer; gopher snake; and the ubiquitous western rattlesnake. With nearly three-fourths of these species relying upon area creeks, ponds, and wet meadows; water-quality issues assume added importance within any discussion regarding construction-related impacts.

### General Aquatics

Presently, both the Northern Cheyenne Tribe (NCT) and the Montana Rivers Information System (MRIS) have little aquatic information for the two project-related creeks due to their seasonal nature. Although no data exists whatsoever for Alderson Creek, Stebbins Creek is reported to have a limited fishery within its lowermost perennial reach where it joins the Tongue River. Stebbins Creek, unlike Alderson Creek, is not regarded as a spring creek by resource personnel; while its mentioned perennial portion lies far enough eastward out of the project study area to be of no consequence for this project.

The project-affected reaches of both Alderson and Stebbins Creeks have historically been ephemeral (intermittent) by most accounts; in spite of the headwaters of Alderson Creek containing a small number of seeps and springs. Several of the more traditional springs are of cultural significance to the Northern Cheyenne people, although no individual site flows with sufficient volume at this time to sustain fish. The BIA's reintroduction of beaver to Alderson Creek in the early 1990's effectively elevated the potential for future native fish presence and waterfowl usage within the numerous ponds and backwaters that the beaver have since created.

This circumstance is now gradually transforming the creek's upper reaches and associated floodplains into ones more representative of a perennial stream. The moist, riparian bottoms resulting from this increasing hydrology also foster the variety of aquatic and semi-aquatic reptiles and amphibians mentioned earlier in this section.

### Culturally Significant Fauna

Due to their cultural significance to the Northern Cheyenne people, concern has been expressed over the possible reduction and/or displacement of beavers formerly transplanted along Alderson Creek. Presently, an unknown number of beaver families reside within the upper reaches of Alderson Creek as is evidenced by numerous dams and lodges visible from U.S. Highway 212. That beaver have flourished since their 1990's reintroduction by Bureau of Indian Affairs (BIA) personnel is clear, as is their role in the gradual conversion of these upper, more ephemeral, reaches into ones increasingly perennial in nature.

The same informational request of Tribal Biologist, Steve Oddan, for species considered sensitive by the Northern Cheyenne revealed no official candidates other than the suspected presence of burrowing owl (*Athene cunicularia*) families among prairie dog towns well out of the project's study area.

The possible, yet temporary, displacement of resident bison by construction-related activities is another Tribal concern discussed in the following section.

### 3.13.2 Wildlife and Fisheries Impacts

No Action Alternative. There would be no impacts to wildlife, fisheries or culturally significant fauna as a result of the No Action Alternative.

Preferred Alternative. Wildlife diversity in these somewhat arid surroundings is naturally found along the area's more substantial drainageways. Because of this, a number of preferred habitats presently part of the Alderson and Stebbins Creek systems would be affected by their close proximity to the highway. In spite of the avoidance and minimization measures taken to reduce project impacts, the reconstruction of this segment of U.S. Highway 212 would result in minor, unavoidable impacts to both wildlife and (potential) fisheries habitats primarily within Alderson Creek. For example, bison utilization of the adjacent beaver ponds as a watering source may or may not be affected by the noise of construction; while area beaver may require selective relocation by the time of construction. The spring which feeds the beaver pond will not be affected by the project. Similar impacts to Stebbins Creek should not result in that fewer channel relocations would occur, and because the mentioned furbearers and bison are largely absent from this drainage.

Less certain from a biological perspective is the accumulative effect upon various wildlife species deprived of riparian cover from among these narrow canyon reaches. Consequently,



riparian shrub replacement as part of the proposed channel relocations is highly recommended in order to counter any adverse, long-term effects upon these habitats or to the wildlife species that utilize them. These same riparian sites are also relevant for their cultural (berry gathering) significance to the Northern Cheyenne Tribe.

Some of the more transitory raptors may also experience short-term, construction-related displacement from more traditional foraging areas along the project. This condition is generally offset by their ability to obtain prey in areas slightly removed from the project's actual construction limits; and the fact that any displacement is normally of modest duration – both within any given day or season.

Due to the recognized absence of fish within the affected reaches of either creek at this time, no aquatic impacts are expected beyond the localized loss and/or short-term displacement of aquatic invertebrates, reptiles, and amphibians caused by construction equipment working within the active floodplain.

The short-term displacement and/or localized loss of smaller, wildlife species unable to evade heavy equipment is expected to be minimal and practicably recruitable from adjacent populations.

Although, MDT's proposed channel changes within Alderson Creek would not directly encroach upon colonizing beavers as they are currently found, the possibility remains that an expanding population may move into areas of proposed construction before the letting of the project. Two such potential sites involve proposed channel relocations along Alderson Creek (RP 47.8 and 48.9, Sta. 374+10 and 376+10, resp.). Here, within the north-side stream channel, beaver families maintain a series of small check dams to control water levels within their lodges located well south of the highway. Any future expansion by beaver into these presently unoccupied areas, or ones similar, will be addressed under a Special Provision.

### **3.13.3 Mitigation**

The following mitigation measures, as well as those outlined in Sections 3.10.3 Water Resources mitigation, 3.12.4 Wetlands Mitigation and 3.19.2 Construction Mitigation are expected to reduce the impacts to wildlife, fisheries, and culturally significant species.

- Limit removal of riparian cover or clearing of forested areas to the construction limits or clear zone, as is safely practicable, to maintain natural animal movement within the corridor. Excessively developed clear zones are widely considered to induce increased risk or mortality for many species of mammals attempting to cross the highway. This is particularly true of the larger animals that can provide their own form of risk to motorists. Presently, vehicle-related road kill of either ungulates (hoofed animals), or resident beaver is not an issue for this project.

- MDT's standard practice of locating equipment staging areas and batch plants, susceptible to fuel and other toxic spills, away from aquatic habitats will reduce any point-source contamination from construction activity and help preserve water quality.
- From a fisheries perspective, the channels will be relocated in a manner that is environmentally sensitive to stream hydrology, while not adversely impacting the dynamics of either creek.
- Application of MDT's Best Management Practices (BMPs) for Contractors regarding water quality and clearing/grubbing of right-of-way would also provide for minimization of impacts to beaver, reptiles, and amphibians.
- Although no beavers physically reside within the proposed areas of channel relocation to date, any observance of beaver activity (i.e. individual sightings, newly constructed dams/lodges, or evidence of foraging) within 100 meters (328 feet) of any construction area will warrant notification to both, MDT's district biologist and the Northern Cheyenne tribal biologist. Such occurrence need not adversely affect the progress of the project due to a developing contingency plan that proposes to quickly live-trap subject individuals for relocation to a drainage well removed from Alderson Creek. Live-trapping and relocation of the entire colony along Alderson Creek prior to construction was also considered but rejected on the basis that more mortality might possibly result from that action than would from any construction-related source.

Another option also being discussed is the action of selectively live-trapping threatened beavers prior to the construction period yet during a time not critical to beaver reproduction. This possibility has merit in that the deciduous (riparian) growth available to foraging beavers in Alderson Creek is limited and may soon be insufficient for the area's expanding colony. Regardless of the preferred measure, a BIA biologist will assist in any necessary recapture and transportation of beavers.

## 3.14 Threatened and Endangered Species

### 3.14.1 Affected Environment

Under Section 7 of the Endangered Species Act (ESA), as amended, activities conducted, sponsored, or funded by federal agencies must be reviewed for their effects upon species federally-listed or proposed for listing as threatened or endangered. Of the fifteen Montana species presently classified or proposed for listing by the United States Fish and Wildlife Service (USFWS) as either threatened or endangered, only four are known or suspected to occur within Rosebud County. Correspondence letter dated July 23, 1991 is in Appendix A. These include the threatened bald eagle (*Haliaeetus leucocephalus*) and the endangered peregrine falcon (*Falco peregrinus*), black-footed ferret (*Mustela nigripes*), and pallid sturgeon (*Scaphirhynchus albus*). Although all four were once more common to the general area, the pallid sturgeon is a



recognized bottom dweller of the Yellowstone and Missouri River systems and well outside of this project area.

#### Black-footed Ferret (*Mustela nigripes*)

In light of current land use practices and dwindling prairie dog numbers over much of eastern Montana, the once indigenous black-footed ferret has also been greatly reduced throughout much of its range. Northern Cheyenne Tribal Biologist, Steve Oddan, revealed no documentation or suspicions of the species occurring in this portion of the County, and especially among lands encompassing the two projects. The nearest remnant prairie dog town remains just outside of Ashland and well east of the proposed action. It is not suspected of having any black-footed ferret activity. Further, lands immediately adjoining the project are ill-suited for prairie dog habitat due to the semi-mountainous terrain.

#### Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagles are considered to be merely migrants within this portion of the Northern Cheyenne Indian Reservation. More commonly encountered along the Yellowstone and Tongue Rivers, the nearest active nesting territory occurs many miles distant below the Tongue River Dam. Foraging areas preferred by the species are also largely absent along the corridor.

#### Peregrine Falcon (*Falco peregrinus*)

Peregrines, like the bald eagle, are known to occur in this area as infrequent migrants only. There are no known historic eyries (cliff dwelling, nesting areas) in the general vicinity due to a lack of suitable habitat; and the nearest active territory is distanced many miles from the project within Big Horn Canyon.

A complete description of Threatened and Endangered Species is contained in the Biological Resource Report and Wetland Finding, prepared by Turnstone Biological (May 1999) and are on file at the MDT Helena, MT office.

#### Sensitive Species of Concern

A March 1999 inquiry of the Montana Natural Heritage Program (MNHP) database indicated no records of occurrence for either plant or animal species presently listed by the State. This finding was reported in MNHP's letter of March 12<sup>th</sup>, 1999 (Appendix A) following their 6.4 kilometer (four-mile) wide buffer search of documentation relevant to the two project areas. Although no individuals have been recorded to reside to date, it is possible that several such avian species may infrequently forage or migrate through the general area. Nonetheless, the project cannot be considered a threat to such individuals, or their future use of the corridor beyond the possibility of short-term, construction-related noise displacement.

### 3.14.2 Threatened and Endangered Species Impacts

No Action Alternative. The No Action Alternative will result in no impacts to Threatened or Endangered Species.

Preferred Alternative. As none of the Threatened or Endangered Species listed above are known or suspected to either reside in or frequent the project area at this time, impacts to these species are not anticipated. It is determined that implementation of the Preferred Alternative will have no effect upon the bald eagle, peregrine falcon or the black-footed ferret.

Although no individuals have been recorded to date by the Montana Natural Heritage Program (MNHP) or by the Northern Cheyenne Tribe within the project area, it is possible that several such avian species may infrequently forage or migrate through the general area. Nonetheless, the project cannot be considered a threat to such individuals, or their future use of the corridor beyond the possibility of short-term, construction-related noise displacement.

### 3.14.3 Mitigation

No mitigation measures are recommended beyond MDT's standard practice of raptor-proofing power utility relocations:

- All overhead power utility relocations shall be raptor-proofed in accordance with *Suggested Practices for Raptor Protection on Power Lines* (Olendorff et. al., 1981).

## 3.15 Floodplains

### 3.15.1 Affected Environment

There are two surface waterways within the study area, Alderson Creek and Stebbins Creek. The project-affected reaches of both Alderson and Stebbins Creek have historically been intermittent flows. Federal Emergency Management Agency (FEMA) has not delineated a 100-year floodplain for either creek.

The approximate floodplain has been estimated using data from MDT's preliminary design plans. Since the floodplain is not known for either creek it was estimated to consist of the channel and over-bank areas. The assumption was made that areas designated as "riparian areas" on the plans were generally consistent with the floodplain. Field reviews confirmed this assumption. However, these estimations were made for the purpose of the floodplain assessment required by Executive Order 11988 and FHWA's floodplain regulations. This assessment is not intended for use in the design process.

The headwaters of Alderson Creek contain a number of small seeps and springs. Alderson Creek is deeply incised throughout much of the project area. This deeply incised channel results in a

much narrower floodplain with less riparian vegetation than the floodplain at Stebbins Creek. The floodplain width of Alderson Creek is estimated to range between 0.6 meters and 9.1 meters (2 feet to 30 feet).

Stebbins Creek begins in the middle of the project study area where it originates from a number of small seeps and ponds. The channel throughout the project area is not as deeply incised as Alderson Creek and therefore results in a wider floodplain with a greater amount of riparian vegetation associated with the channel. The floodplain width of Stebbins Creek is estimated to range between 1.4 meters and 7 meter (4.6 feet to 23 feet).

### **3.15.2 Floodplain Impacts**

Executive Order 11988 and FHWA's floodplain regulations (23 CFR 650, Subpart A) requires an evaluation of the proposed action's encroachment on the base floodplain. Any proposal to increase road elevations will need to be evaluated to determine the effects on flood elevation and the increased risk to insurable property.

**No Action Alternative.** The No Action Alternative would result in no new encroachment on the 100-year floodplain.

**Preferred Alternative.** U.S. Highway 212 and the proposed improvements cross the Alderson Creek floodplain approximately 820 meters (2690 feet) east of RP (MP) 43. The floodplain at the point of crossing is approximately 28 meters (92 feet) wide. A new culvert is proposed at this location to convey Alderson Creek under the highway. Heading east, the floodplain of the creek runs parallel to the highway for approximately 4.8 kilometers (3 miles).

The Preferred Alternative crosses the Stebbins Creek floodplain near the end of the project, approximately 480 meters (1575 feet) west of RP (MP) 53. The floodplain at the point of crossing is approximately 20 meters (66 feet) wide. A new culvert is proposed at this location to convey Stebbins Creek under the highway. The Stebbins Creek floodplain parallels the road for approximately 1.9 kilometers (1.2 miles). For these crossings, the increase in backwater during flood events should be minimal and should not result in any property damage.

Due to the proposed increase in road width along the alignment, which includes the realignment of U.S. Highway 212, the Preferred Alternative would occupy an estimated 3.1 hectares (7.6 acres) of the existing floodplains for Alderson and Stebbins Creeks.

By raising the road out of the floodplain, the risk of flooding the road becomes lessened. Consequently, the probability of crashes or road closures due to an inundated road decreases and overall driver safety increases. Construction of the Preferred Alternative would neither increase nor decrease any support for development in the base floodplains. Access to the floodplains is already provided by the existing roadway and would not change with the construction of the Preferred Alternative.



Generalized impacts of the encroachment are:

- Construction of the Preferred Alternative would result in a temporary negative effect to natural and beneficial floodplain values due to increased sediment runoff and deposition during construction. These effects would be minimized by prompt revegetation of disturbed areas.
- Construction of the Preferred Alternative would neither increase or decrease any support for development in the base floodplains. Access to the floodplains is already provided by the existing roadway and would not change with the construction of the Preferred Alternative.
- The Preferred Alternative would result in a permanent positive effect to natural and beneficial floodplain values due to containment of roadway run-off in the roadway ditch.

### **3.15.3 Mitigation**

The following mitigation measures will be implemented as part of the Preferred Alternative:

- Construct the road so the fill is stable, compacted, well-graded, impervious and generally unaffected by water and frost; devoid of trash, asphalt and other petroleum based material; devoid of tree stumps, limbs, leaves, sawdust, or other organic material; and appropriate for the purpose of supporting the intended use or the permanent easement or structure.
- Coordination with Rosebud County to obtain floodplain permit approval will occur. This will ensure compliance with floodplain regulations.
- Restore riparian communities along the relocated channel sections.

## **3.16 Cultural Resources**

### **3.16.1 Affected Environment**

Pursuant to Section 106 of the National Historic Preservation Act (as amended) and the Advisory Council on Historic Preservation's regulations 36 CFR Part 800, historical surveys and literature review were completed for the study area. Findings of the surveys can be found in the cultural resource report documented dated February 1999.

#### **Archaeological Resources**

Site 24RB1586 is a buried lithic scatter located adjacent to the highway right-of-way. Archaeological testing revealed buried cultural material at the site consisted of chipped stone debris, animal bone and pottery fragments. This archaeological site, 24RB1586, is considered eligible for the National Register of Historic Places (NRHP) under Criterion D. Criterion D states that the resource "has yielded, or may be likely to yield, information important in history or prehistory."



## Culturally Significant Springs

Two culturally-significant springs have been identified within the Lame Deer-East project area of potential effect. These springs were identified by Bill TallBull of the Northern Cheyenne Cultural Commission. These two springs are associated with the Northern Cheyenne religious practices and thus they are protected under the American Indian Religious Freedom Act (AIRFA).

MDT recognizes that water is important to the Northern Cheyenne from a cultural perspective, and has attempted to design the project with as little impact to wetlands, stream channels and springs as possible. For details on avoidance and minimization of impacts to wetlands, see Section 3.12 of this document.

### 3.16.2 Cultural Resource Impacts

**No Action Alternative.** There would be no impact to cultural resources from the No Action Alternative.

**Preferred Alternative.** The Preferred Alternative would have no effect on Site 24RB1586 or the two culturally significant springs (Spring #1, Spring #2) in the area of potential effect, the SHPO has concurred with these assertions. The Determination of Effect for Site 24RB1586, was completed by MDT in February 1999. The State Historic Preservation Office (SHPO) concurred with the Determination of No Effect in a letter dated June 22, 1999. This letter is located in Appendix A.

MDT designers were able to avoid both culturally significant springs. MDT has steepened the slopes and adjusted the alignment in the vicinity of these springs in order to avoid them entirely. Spring Locality #1 is located north of the alignment near the beginning of the project. At Spring Locality #1, the centerline of the alignment has been shifted away from the spring.

Spring Locality #2 is located north of the alignment, east of RP (MP) 47. In the vicinity of Spring Locality #2 the highway centerline would shift towards the spring area (in order to minimize impacts to Alderson Creek), however it will remain outside of MDT right-of-way and would not be impacted. Access by the NCT to these springs will remain.

Impacts to both Alderson and Stebbins Creek channels have been minimized and avoided to the extent possible. The alignment is tightly constrained by the channels in several areas along the alignment. Entirely avoiding impacts to both channels would result in additional safety deficiencies.

Impacts to both Alderson and Stebbins Creek channels have been minimized and avoided to the extent possible. The alignment is tightly constrained by the channels in several areas.

### 3.16.3 Mitigation

- A special provision would be put in place to ensure protection of Site 24RB1586 during construction. Construction fencing along the construction limits adjacent to the site would prevent impacts resulting from the construction.
- Both of the springs would remain outside MDT right-of-way and protected behind the established right-of-way fencing. The design plans would also re-emphasize the spring areas noting “Spring Area- Do not Disturb.”
- Twenty-four hours prior to any construction, the Northern Cheyenne Tribe will be notified so that they may monitor ground-disturbing work and be present when cut slopes are made. In addition, if any cultural resources are found during construction, work shall stop and Montana Department of Transportation (MDT), the Northern Cheyenne Tribe (NCT) and the Montana State Historic Preservation Office (SHPO) would be notified if a site was found and construction would cease.

## 3.17 Hazardous Materials

### 3.17.1 Affected Environment

An hazardous materials report dated December 1992, identified results of a subsurface investigation of potential hazardous materials associated with the project. The purpose of the investigation was to document soil conditions in the vicinity of the current and former service stations in the project area. Two of the former service stations were located at the intersection of U.S. Highway 212 and MT 39 in the town of Lame Deer. Subsequent to the investigations, the project limits were modified and no longer include the intersection of US 212 and MT 39 in the town of Lame Deer. (The intersection on U.S. Highway 212 and MT 39 is currently planned as part of the Lame Deer-West project.)

A third abandoned station was identified in the report approximately 0.8 kilometer (one-half mile) east of the town of Lame Deer and is still within the project study area addressed in this EA. There are no structures at this location, only foundation, piping and other solid waste debris. No evidence of petroleum contamination was found.

Following the issuance of the 1992 report, a fourth site containing an abandoned service station was reported to MDT. This site is located within the project area and in 1997, MDT conducted a field review to look for an indication of Underground Storage Tanks (UST's) or evidence of hazardous waste contamination. There were no visible indications of contaminated soils, surface staining, stressed vegetation, fuel islands, or pipes normally associated with filling stations. However, 15 or 20 meters (49 to 65.6 feet) north of the existing edge of roadway there was a depression where there were a series of small metal objects (bolts, nuts, rods) protruding from

the ground. The Department of Environmental Quality (DEQ) did not have any record of this site.

Additionally, the Environmental Protection Agency (EPA) has indicated that Dull Knife Community College located east of the MT 39/U.S. Highway 212 intersection and north of the study area, Lame Deer is a hazardous material site. EPA reports that there are 35 drums of hazardous waste located north of the building.

### **3.17.2 Hazardous Materials Impacts**

**No Action Alternative.** There would be no impacts to hazardous material sites with the No Action Alternative.

**Preferred Alternative.** Planned excavation near the fourth site is minimal, 0.5 meters (1.6 feet) or less, thus it is not expected that hazardous material would be encountered as a result of constructing this project. Since all planned construction activity is planned south of the Dull Knife Community College and there is no acquisition planned north of the building, hazardous waste is not expected to be encountered as a result of this project.

### **3.17.3 Mitigation**

Although no notable contamination has been discovered along the project corridor, there is always a chance that soils impacted by hazardous waste would be encountered during project construction. In the event that contaminated soils or materials are encountered, Article 107.24, “Discovery of Underground Storage Tanks” in MDT’s *Standard Specifications for Road and Bridge Construction*, would be implemented.

## **3.18 Visual Resources**

### **3.18.1 Affected Environment**

U.S. Highway 212 east of Lame Deer traverses a variety of landscapes: gently rolling to mountainous terrain; low-density rural residential; steep mountains; heavily vegetated forests and grasslands; riparian corridors; and an extensive area damaged by a 1988 fire with little plant growth but grasses and young pine trees. The land uses along the project corridor are primarily livestock and horse grazing/agriculture, open space; natural waterways; forest, and sparsely developed rural residential.

#### **Landscape Character**

Foreground landscape units are those that are immediately visible along the corridor. They are created and influenced by such factors as the type of adjacent land use, the width of the roadway, the roadway elements, the surrounding terrain, and the character of the adjacent vegetation.



Combining these factors provides the traveler with a general character of open or closed views along the roadway. For the most part, background views are restricted along the corridor due to the mountainous terrain. Occasional background views are to the forested mountains near the divide.

Landscape character can be broken down into landscape units which contain similar landscape elements that are different from other distinct areas. The foreground landscape units are those immediately visible from the highway and describe the local character of the area. The foreground is defined as the area within 0-0.8 km (0-0.5 mile). The middleground is defined as 0.8 km – 6.4 km (0.5 – 4 miles) from U.S. Highway 212. The background views are 6.4 km (4 miles) or greater.

Foreground landscape units included within this study corridor are:

- Agricultural/Livestock and Horse Grazing. The majority of the adjacent land use is pasture for livestock and horse grazing. Farming equipment and associated buildings can be seen on several properties from the highway. Most of these locations are on flatter terrain, thus providing a more open pastoral view.
- Rural residential. There are a number of dispersed rural homesites located along the project corridor. Most have direct access to U.S. Highway 212 by gravel or dirt driveways. The architectural styles are fairly eclectic and typical rural homestyles. Outbuildings and farm buildings are also varied architectural styles. Common right-of-way fencing is four-strand barbed wire with a metal post and adjacent to most portions of the highway.
- Riparian. Lame Deer Creek, Alderson Creek and Stebbins Creek all cross or run adjacent to the highway in the project corridor. The vegetation along these drainages includes deciduous trees and shrubs, occasional pine trees and areas of wetlands. The drainage channels are fairly incised below the surrounding grades, creating steep side slopes. Stebbins Creek widens at one point to include areas of beaver dams and open water. The riparian landscape units create a diverse focal point.
- Mountains. The project corridor passes through fairly mountainous terrain. Dense, monoculture stands of pine trees cover much of the mountains, while other dryer areas maintain a low grassland community. A large area was damaged by a 1988 forest fire and is in early stages of revegetation. The mountainous areas of the project corridor tend to restrict and focus views to the immediate foreground landscapes.
- Rocky outcroppings. An interesting visual feature within the project corridor is the exposed rocky outcroppings which are mostly Tongue River sandstone and clinker exposures (rocks burned by underground coal seam fires) that vary in color from red, orange or yellow.
- Highway landforms. Initial highway construction in 1941 resulted in many locations along the corridor with large cut slopes. These are in various stages of revegetation and some areas with erosion, resulting in slump areas. Slopes along the alignment are generally steep and are either vegetated by mature stands of Ponderosa Pine or a sparse grassland community. Steep

either vegetated by mature stands of Ponderosa Pine or a sparse grassland community. Steep fill slopes from the edge of the highway occur within the highway right-of-way in many locations. There are limited opportunities to pull off the road onto a flatter side slope. Many of these locations have minimal vegetation, mostly comprising of grasses and occasionally low shrubs.

### 3.18.2 Visual Resource Impacts

**No Action Alternative.** There will be no visual impacts associated with the No Action alternative.

**Preferred Alternative.** Visual impacts associated with the Preferred Alternative will be both short-term as well as long-term. Short-term visual impacts include:

- Construction equipment and excavated material associated with construction in the staging areas.
- Dust and debris associated with construction activity. The dust will be kept to a minimum and controlled by dust suppression techniques to minimize related air quality impacts.
- Traffic congestion and detours associated with construction activity and detours.

Long-term visual impacts associated with the Preferred Alternative include:

- Highway reconstruction and offset alignment: A wider pavement width from 7.9 meters (26 feet) to 12 meters (39.37 feet). The proposed alignment is generally offset to the north by 4 to 50 meters (13 to 164 feet) from the existing roadway. Visual impacts as a result of this offset alignment are:
  - Additional pavement width from widened shoulders, pullout areas and truck chain-up areas will increase pavement width. The expanded pavement width will increase the motorist's foreground view of the roadway from that which currently exists. However, the improved safety associated with wider shoulders, standard lane widths, and pullout areas, should enhance the motorist's driving experience. The wider shoulders also provide more opportunities for motorists to pull-off and enjoy the surrounding views, and NCT members to access culturally significant sites.
  - Cut and fill slopes change the existing land form immediately adjacent to the roadway edge. Some steeper slopes may be difficult to revegetate. Viewsheds will change in areas where the highway alignment is offset from the existing alignment, by opening up new view corridors.
  - Loss of vegetation. A loss of vegetation will occur in most mountainous areas due to cut slopes; offset alignment locations; areas adjacent to the creeks due to fill slopes; and the channel realignment sections of Alderson and Stebbins Creeks. Selective clearing and grubbing within 4.5 meters (15 feet) of the construction limits, instead of clearing the entire right-of-way, will reduce impacts to vegetation within the right-of-way.

- Highway Elements:
  - New right-of-way (ROW) fencing will be installed for all parcels unless stated otherwise in the right-of-way agreement. The ROW fencing will be MDT standard three-strand barbed-wire with steel posts.
  - Addition of standard “w” beam guardrails at the top of slopes steeper than 3:1 horizontal:vertical (h:v).
  - Additional new signing, including speed limit signs and appropriate warning signs.

### 3.18.3 Mitigation

Grading techniques proposed to reduce and mitigate visual impacts are:

- Undulate the edge of the disturbed tree line to create a more natural edge. In addition, revegetate with similar plant communities to enhance and vary the undulation.
- Reduce need for cut slopes by eliminating flat ditches which require more right-of-way and replace with “v” ditches.

In addition, mitigation measures identified in Sections 3.10.3, 3.12.4 and 3.13.3 regarding erosion control, revegetation techniques and minimizing vegetation removal, will all reduce visual impacts.

## 3.19 Construction and Erosion Control

### 3.19.1 Construction Impacts

No Action Alternative. The No Action Alternative will result in no construction-related impacts.

Preferred Alternative. The Preferred Alternative is expected to create short-term construction impacts throughout the construction period. Construction-related impacts include:

- **Air Quality** – Without mitigation measures, construction activities such as earthwork, grading, roadbed preparation, vehicles hauling soil or debris, and unprotected exposed soils can increase local fugitive dust emissions. Fugitive dust is airborne particulate matter, generally of a relatively large particulate size (greater than 100 microns in diameter). Because of the large size, these particles typically settle within nine meters (30 feet) of their source. Smaller particles can travel as much as 100 meters (several hundred feet) depending on wind speed. Through the use of mitigation measures, fugitive dust emissions can be effectively controlled. See Section 3.8.3 Air Quality.



- **Noise and Vibration** – Construction noise and vibration will present the potential for short-term impacts to those receptors located along the corridor. The primary source of construction noise is expected to be diesel-powered equipment such as trucks and earth moving equipment. There is potential for blasting during construction. Vibration will occur with the use of compaction equipment. All residential receptors located along the corridor are of sufficient distance from the proposed roadway that noise and vibration impacts will be minimal.
- **Water Quality** – Stormwater runoff from areas of exposed soils may cause erosion, sedimentation and transport of spilled fuels or other hazardous materials into adjacent waterways. Without mitigation measures, stormwater runoff can cause erosion and sedimentation. See Section 3.10.3 and 3.12.4 for specific mitigation measures.
- **Traffic Control** – U.S. Highway 212 is expected to remain open throughout the construction period. The roadway may be reduced to one-lane of traffic with flagging during some construction activities. Delays are expected to create short-term impacts on traffic. Access to all intersecting roads, residences, and businesses along the corridor will be maintained throughout construction. Minor detours may be required.
- **Visual** – Short-term construction-related visual impacts are likely to occur as a result of this project. These impacts include the presence of construction equipment, stockpiles of earth materials, temporary barriers, guardrail, detours and signs.

### 3.19.2 Construction Mitigation and Erosion Control

Mitigation measures being considered for construction-related impacts, in addition to those detailed in Sections 3.10.3 Water Resource Mitigation, 3.12.3 Wetlands and Vegetation Mitigation, 3.13.3 Wildlife and Fisheries Mitigation are:

- **Air Quality** – A signed agreement between the Northern Cheyenne Tribe (NCT), BIA, MDT, EPA, and Rosebud County addresses the issue of fugitive dust control during and after construction. Further mitigation measures and air quality monitoring during construction will be included in the Amendment to the Project Specific Agreement (PSA) between the NCT and MDT for this project. These measures are discussed in Section 3.8, Air Quality. Other mitigation measures may include:
  - Revegetation of exposed areas.

- **Noise and Vibration** – The following measures may be used to reduce noise and vibration impacts:
  - Limit noise-generating construction activities to occur between the hours of 7:00 a.m. and 6:00 p.m.
  - Notify residents of blasting activities (dates and duration).
  
- **Water Quality** – The following steps may be taken to prevent violation of water quality standards in waterways adjacent to the project:
  - Implement Best Management Practices (BMP's) for erosion control as required by local, state, and national permitting requirements.
  - Provide bank stabilization and erosion control to meet the standards defined by the *MDT Highway Construction Standard Erosion Control Plan*.
  - Protect wetland areas adjacent to construction activities by construction-limit fencing and exposed slopes with erosion control silt fencing.
  - Incorporate wetland delineation boundaries and riparian areas into the design plans.
  - Flag or fence wetland, riparian and culturally-significant areas during construction to avoid unnecessary disturbance due to construction activities.
  - Minimize vegetation removal.
  - Revegetate all exposed areas with desirable ground covers to reduce erosion and sedimentation, and to inhibit invasion of noxious weeds.
  - Coordinate weed control (spraying), seeding, and fertilization with the Northern Cheyenne Tribe, the Rosebud County Weed Control authority, and MDT. Reference Section 3.12.2 regarding direct or indirect impacts to berry-producing shrubs.
  
- **Wetlands** – Construction-related wetland impacts are expected to be mitigated under MDT's proposed revegetation and wetland replacement efforts.
  
- **Traffic Control** – The following steps may be taken to minimize inconvenience to traffic during construction:
  - Develop construction staging and traffic control plans.
  - Maintain at least one-lane of traffic and minimize delays to motorists.
  - Maintain access to local roads, residences, and businesses at all times.
  
- **Visual** – The following steps may be taken to minimize construction-related visual impacts:
  - Store equipment and materials in designated areas.
  - Promptly remove any unused detour pavement or signs.

- Revegetate exposed areas in a timely manner.
- **Northern Cheyenne Tribe Representative** – Appoint a Tribal Resources representative, acceptable to MDT, to monitor on-site water quality, air quality, riparian, and cultural issues throughout the period of construction. This coordination measure should adequately address NCT concerns for potentially-affected resources upon their lands.

### 3.20 Secondary and Cumulative Impacts

Cumulative impacts are defined as impacts that “result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) undertakes such other actions.” Known projects in this vicinity, with an assessment of probable cumulative impact, are:

- Lame Deer-West (NH 37-2(18) 39) is a 5.4 kilometer (3.4 mile) overlay project with widened shoulders along U.S. Highway 212, west of MT 39, including reconstruction of the MT 39/U.S. Highway 212 intersection. This project is expected to begin construction in the summer of 1999.
- Lame Deer-North along MT 39 (STPP 39-1 (25) 0) is a 6.76 kilometer (4.2 mile) crack sealing project with a March 2001 ready date. Construction could begin in the summer of 2001.
- Colstrip-South (STPP 39-1 (21) 13) is a 8.2 kilometer (5.1 mile) overlay project with a February 2000 ready date. Construction could begin in the summer of 2000.
- Highway 314, south of Busby is an overlay and reconstruction project planned by MDT.
- Tongue River Road, south of Ashland is a reconstruction project under construction by the Bureau of Indian Affairs (BIA).

It is anticipated that the Lame Deer-East projects in conjunction with the above mentioned projects, will result in increases in traffic, particularly commercial (heavy truck) traffic, on U.S. Highway 212. However, it is possible that the increase in traffic could improve the economy of the Lame Deer area.

Temporary increases in truck traffic during construction would cause increased dust, noise, and traffic delays along these roads.

### 3.21 Irreversible and Irretrievable Commitment of Resources

Implementation of the Preferred Alternative will involve a commitment of a range of natural, physical, human and fiscal resources. Land that will be used in the construction of a build



alternative will be considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need for use of the land were to arise, or if the highway facility were no longer needed, the land could be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor and highway construction materials such as cement, aggregate and bituminous material will be expended in the construction of a build alternative. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect on continued availability of these resources. Any construction will also require a substantial expenditure of both state and federal funds which are not retrievable and will require allocation of funds which could be used by other projects.

## **4.0 COMMENTS AND COORDINATION**

As the project lies solely within the Northern Cheyenne Indian Reservation, participation in the project development and design by the Northern Cheyenne Tribe representatives has been substantial from the outset.

### **4.1 Public Involvement Activities**

Two public informational meetings have been conducted for the project. In addition, a number of meetings have been held with representatives of the Northern Cheyenne Tribal Council, the Land Committee, the TERO Office, Cultural committee, Natural Resources Committee and the Bureau of Indian Affairs (BIA) in attendance.

Continued coordination with the NCT and the BIA will continue throughout the design and construction process.

A public informational meeting was conducted in Lame Deer on July 19, 1995. The major concerns of the two people who attended the meeting were related to how soon the project could be constructed and the delay/hazards presented by the high volume of truck traffic. They both indicated that climbing lanes would be desirable.

A Location and Design Public Hearing was held August 1, 1991 in the Community Hall in Rabbit Town (west of Ashland). Seventeen people attended the meeting. The meeting was advertised in the local paper. Issues discussed were: the effects of shifting the alignment; project improvement impacts; landowner's need for a stockpass; and right-of-way process. A Chamber of Commerce representative requested some additional signs near the MT 39/U.S. Highway 212 intersection for "Business District" and the rest stop. Requests were made for the archaeological/historical study.

In addition to meetings between MDT and the Northern Cheyenne Tribe (NCT) that have been specific to cultural issues, other more general meetings have taken place between MDT and NCT officials. At these general meetings topics included: air quality, Section 404 permitting, riparian and wetland habitat, cultural issues and Indian employment.

### **4.2 List of Cooperating Agencies and Agencies with Jurisdiction**

In accordance with 23 CFR 771.111(d), the Northern Cheyenne Tribe is a cooperating agency for this project.

The following agencies have jurisdiction over this project.

The Bureau of Indian Affairs (BIA) has jurisdiction over this project on the Northern Cheyenne Indian Reservation as defined by 40 CFR 1508.15.

The U. S. Army Corps of Engineers (COE) has jurisdiction for the Section 404 permitting process.

The Montana Department of Fish, Wildlife and Parks (MDFWP) will issue a 124 Stream Preservation Act (SPA) Permit, unless the NCT has an alternative water quality permit available.

Federal Highway Administration (FHWA)

Montana Department of Transportation (MDT)

### **4.3 List of Other Agencies, Persons, or Groups Contacted or Contributed Information**

Contacts were made with the following agencies or groups regarding this project:

- Northern Cheyenne – TERO
- Bureau of Indian Affairs (BIA)
- Northern Cheyenne Natural Resources Committee
- Northern Cheyenne Cultural Commission
- Northern Cheyenne Tribal Council
- U.S. Environmental Protection Agency (EPA)
- US Army Corps of Engineers (USACOE)
- US Fish and Wildlife Service (USFWS)
- USDA – Natural Resources Conservation Service (NRCS)
- Federal Highway Administration (FHWA)
- Montana Department of Environmental Quality (DEQ)
  - Air Quality Bureau
  - Environmental and Hazardous Waste Bureau
  - Water Quality Bureau
- Montana Natural Heritage Program
- Lame Deer pHs Northern Cheyenne Community Health Center
- Montana Department of Fish Wildlife & Parks
- Lame Deer School Superintendent
- Rosebud County Planning Office
- Federal Emergency Management Agency (FEMA)
- Northern Cheyenne Area Chamber of Commerce



## 4.4 Remaining Public Involvement

A notice of Availability and 30-day Public Comment Period on the signed Environmental Assessment (EA) will be advertised in the local newspaper and mailed to all parties on the project mailing list. Written comments received will be reviewed. If no additional investigation is warranted, and no significant impacts are identified, no additional public involvement is planned. A public hearing will not be held unless requested by members of the public.

After receipt of all public and agency comments, a Finding of No Significant Impact (FONSI) will be prepared, if appropriate, which will summarize written comments received and provide responses. An Environmental Impact Statement (EIS) will be prepared if a FONSI is not appropriate.

MDT design staff will continue to coordinate with the NCT for plan reviews and additional concerns.



## 5.0 LIST OF PREPARERS

The following individuals had responsibility for preparing or reviewing this document:

Agency	Name	Address
Federal Highway Administration	Dale Paulson	2880 Skyway Drive Helena, Montana 59602
Montana Department of Transportation	Joel Marshik	2701 Prospect Avenue Helena, Montana 59620-1001
Carter & Burgess, Inc.	Diana Bell	216 16 <sup>th</sup> Street, #1700 Denver, CO 80202
Turnstone Biological	Robert S. Harris	P.O. Box 316 Conner, MT 59827

“ALTERNATIVE ACCESSIBLE FORMATS OF THIS DOCUMENT WILL BE PROVIDED  
ON REQUEST.”





# Appendix A

## Agency Coordination Letters





Montana Department of Transportation  
Helena, Montana 59620-1001



Memorandum

To: Karl M. Helvik, P.E., Supervisor  
Environmental Engineering Section

From: Cora G. Helm, Hazardous Waste Section  
Environmental Services

Date: August 27, 1996

Subject: AIR QUALITY ASSESSMENT  
F 37-2(3)42 F  
Lame Deer - East  
CN 0874 & A874

This is a reconstruction project that begins at the intersection of MT Highway 39 in Lame Deer. Lame Deer is a non-attainment area for PM-10 and within a PSD (prevention of significant deterioration) Class I air shed. This project will involve reconstruction of the roadway with minor changes to the horizontal alignment and substantial modifications to vertical alignment. There will be no added travel lanes.

Projects that involve widening of narrow pavements, increasing sight distance, hazards elimination and shoulder improvements are listed in 40 CFR Parts 51 and 93 as being exempt from the requirement that a conformity determination be made. However, projects that involve changes to the vertical and horizontal alignment are exempt from regional analysis, but may require hot spot analysis.

Within the town of Lame Deer, there will be no changes to the horizontal alignment, and minor changes to the vertical alignment. The minor changes in vertical alignment will not affect PM-10 emissions and do not warrant hot-spot analysis. In addition, EPA has not yet released guidelines for PM-10 hot-spot modeling. Until the guidance is released, PM-10 hot-spot modeling is not a requirement in conformity determinations.

We conclude that this project satisfies the requirements of the Clean Air Act as amended.

CGH:env



- 6 Lam Deer - E

RECEIVED

APR 08 1996

AGREEMENT

ENVIRONMENTAL

THIS AGREEMENT is made between the Northern Cheyenne Tribe, ("Tribe"), Bureau of Indian Affairs ("BIA"), Montana Department of Transportation ("State"), Rosebud County ("County"), and Environmental Protection Agency ("EPA").

RECITALS

The Tribe is taking lead responsibility for developing and executing a tribal implementation plan ("TIP") for control of PM-10 (particulate matter that is 10 microns or less in size) on the Northern Cheyenne Indian Reservation ("Reservation"). EPA is responsible for providing technical assistance and guidance in the development of the plan; the State, County and BIA are responsible for maintaining streets and highways in and around the Lam Deer townsite on the Reservation. Those streets and highways have been found to contribute to elevated PM-10 air quality concentrations in Lam Deer. High concentrations of PM-10 are known to cause negative health effects in humans.

TERMS AND CONDITIONS

The parties agree as follows:

I. Streets to be Maintained.

The following streets and highways ("subject streets and highways") are covered by this Agreement.

- A. State Highways 212 and 39, Cheyenne Avenue and Route 4 for those portions occurring within the nonattainment boundary.
- B. All remaining paved streets within Lam Deer townsite.

II. Responsible Parties.

The BIA, the County, and the State shall each be a "responsible party" for the purposes of this agreement. The roads designated by each agency's road maintenance plan are set forth in Appendix A to this agreement. Therefore, each agency shall be responsible for the roadways now contained in its road maintenance plan, unless another responsible party has agreed to revise its maintenance plan and accept the responsibility for other routes.

### III. Actions to be Taken.

Each responsible party shall take the following actions with respect to subject streets and highways for which it has maintenance responsibility:

- A. Application of only clean sand to road surfaces. For the purpose of this agreement only clean sand will be defined as sand containing 7% or less silt by weight, when sieved through a 200 mesh (75 micron) screen in accordance with ASTM Testing Method C117-87. If future chemical mass balance (CMB) analyses continue to reveal elevated levels of silt attributable to the use of 7% load sand then a future reduction may be required. Sand which is to be used for maintaining highway and street safety will be analyzed for percent silt content prior to use. Sand will be tested for silt content before each winter season, and before using sand from alternative sources.
  
- B. Sweeping and cleaning driving lanes, shoulders, gutters and drop drains. Data has shown that PM-10 exceedances have occurred in Lame Deer when the silt load on streets was at 98 grains per square foot. Since the data which would allow for a more precise comparative analysis of exceedances to silt load currently is not available, a margin of error was factored into this agreement to enable the tribal staff to notify the responsible agency and allow time for the responsible agency to respond, before silt loads reached levels currently associated with exceedances. Sweeping, flushing, vacuuming or other means shall be employed to remove silt from the subject streets and highways. These activities will be conducted in an effort to meet the silt loading standards set forth in tribal regulations, federal guidance and/or the TIP. The Tribe will enforce these standards as follows:
  - i. The tribal air program personnel will visually survey all paved streets, roads, drop drains, and curbs throughout the nonattainment area for accumulations of sand, reentrained dirt, and eroded soils once every two weeks. The frequency of these surveys may change in response to street/highway maintenance or safety operations, and meteorological conditions, i.e. street sanding occurring simultaneously with prolonged episodes of air stagnation would require more frequent surveys



than clean pavement with good ventilation. Sampling will be conducted according to the method contained in the Montana Quality Assurance Manual, Revised November, 1991, Section 2.40.9, "Protocol for Street Sampling Procedures (Mighty Mite Vacuum)."

- ii. Each sample will be split in accordance with ASTM C702-87 (Reducing Field Samples of Aggregate to Testing Size) procedures. One part of the split sample will be analyzed immediately and the second part stored. If the first analysis indicates a silt load at or above 50 grains per square foot a second analysis will routinely be conducted to confirm the first analysis. This confirmation procedure is intended to provide additional assurance of the results before a responsible party is requested to initiate a cleaning method (III.B.iii.3). In addition, approximately 10% of all samples will be randomly selected for quality assurance checks.
- iii. When a sample analysis indicates silt loads exceed the action level of 50 grains per square foot, the Tribe will:
  - 1) Notify all parties, simultaneously, of the action level exceedance.
  - 2) Provide copies of the sample results to all parties, simultaneously.
  - 3) Provide request to the responsible party that a cleaning method must be initiated.
  - 4) Provide information containing the name of the street or highway, exact sample location(s), and approximation of the length of each street or highway requiring cleaning.
  - 5) Provide information to the responsible party maintaining streets and roads leading to or from any street or highway where action levels have been exceeded.
- iv. The Tribal Program's notice of increasing silt load levels, and the responsible agency's response time may depend upon weather conditions, equipment/staff availability, and the rate of silt deposition. Within 24 hours

after the cleaning has been completed, or prior to additional sanding whichever comes first, the Tribe will collect another sample to determine if the cleaning had sufficiently reduced the silt load to the standards stated herein. If the standards have not been met, additional cleaning will be required by the responsible agency.

- v. The responsible party agrees to respond as soon as possible after notification given the conditions stated in Section III.B.iii., to preclude silt levels exceeding or threatening to exceed the 75 grains per square foot level, and jeopardizing attainment and maintenance of the national ambient air quality standards ("NAAQS") for PM-10.

- C. Reconstruction of Lame Deer Intersection. The State has engineered the reconstruction of Highways 39 and 212 which includes the Lame Deer intersection. Construction is slated to begin in the spring of 1994. This project will widen and crown the road surface, provide curbs, and install improved drop drains and drainage pipes diverting eroded and reentrained material from the roadways.

#### IV. Administration and Record Management.

The Tribe will maintain the records necessary to administer the TIP, monitor PM-10 levels, and document those occasions where concentrations exceed the NAAQS. At a minimum these records will include:

- 1) Silt load readings from samples collected, specifying time and date.
- 2) The dates and times on which calls are made to the responsible parties.
- 3) The dates and times on which cleaning activities are conducted and method of cleaning.
- 4) Silt load readings for samples collected following cleaning activity, also specifying time and date.
- 5) Results of the ASTM test method C117-87 for sand samples which provide the name of the source and sample date.

The Tribe agrees to provide records upon request to all

agencies party to this agreement.

V. Enforcement of the Agreement.

The Tribe will have primary responsibility for supervising this agreement with assistance and oversight provided by EPA. Meetings will be scheduled in May of each year or more frequently if requested by one of the parties, to discuss load standards, response activities, administration of the agreement, or any other issue pertinent to this agreement.

VI. Amendment and Duration of Agreement.

A. This Agreement will remain in force unless terminated as provided in this section. If any party desires to terminate its participation in this Agreement or amend or revise portions of this Agreement, it shall give 120 days written notice thereof to the other parties. During that period, the parties shall negotiate in good faith to preserve this Agreement. If the parties fail to agree within 120 days to preserve or modify the Agreement, the party which provided notice may immediately terminate its participation.

B. If any party seeks to modify the Agreement, it shall provide proposed amendments or revisions in writing to the other parties. In no case shall an amendment or revision jeopardize the attainment and maintenance of NAAQS on the Reservation. The parties shall negotiate in good faith regarding amendments or revisions suggested by one or more of the parties. If the parties do not reach agreement within 120 days on a revision or amendment suggested by a party, that party may terminate this Agreement. Any revisions or amendments to the plan agreed to by the parties will be offered for public comment as provided for under tribal regulations prior to their implementation.

C. This agreement may require modifications once EPA promulgates final "Government to Government" rules under the Clean Air Act Amendments of 1990.

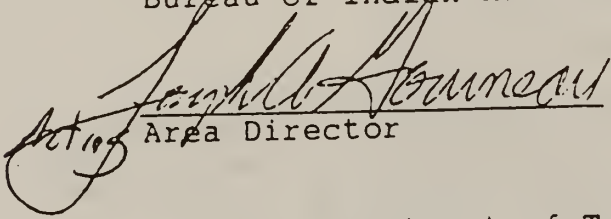
This Agreement shall become effective on the 28 day of January, 1993

Northern Cheyenne Tribe

Shwanda Fisher  
President

1-28-93  
Date

Bureau of Indian Affairs

  
Acting Area Director

1-28-93  
Date

Montana Department of Transportation

  
For Director of Transportation

1/28/93  
Date

Environmental Protection Agency

  
John Wardell, Director  
Montana Office

1/28/93  
Date






# Appendix A



To Colstrip

MT Hwy 39

-  State Highway  
Montana Department of Transportation
-  County Roads/Streets  
Rosebud County Road Department
-  BIA Road Management  
BIA Road Department

Lame Deer Intersection

To Busby

MT Hwy 212

To Ashland

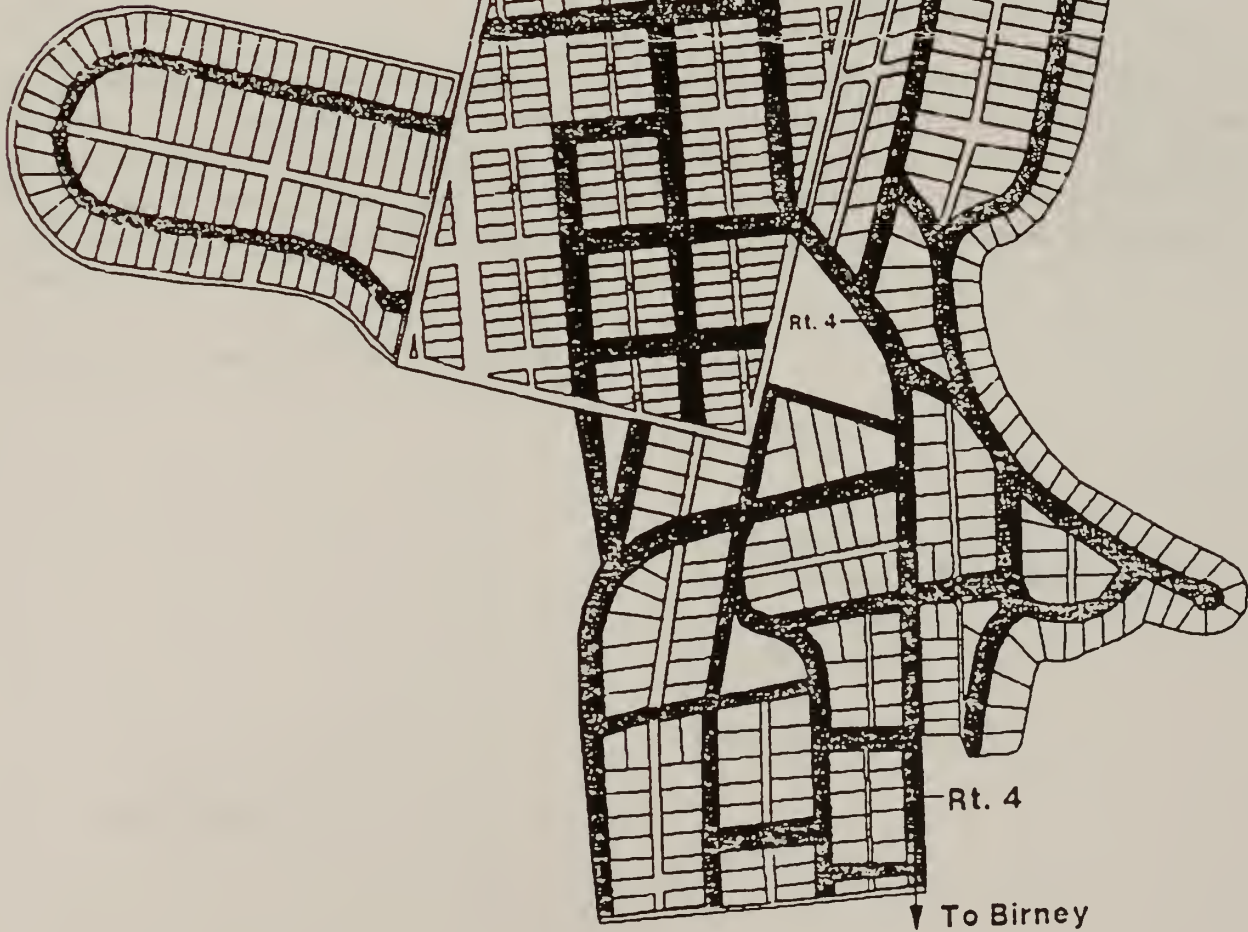
Cheyenne Ave.

Lame Deer  
Townsite

Rt. 4

Rt. 4

To Birney





**Montana Department  
of  
Fish, Wildlife & Parks**



MASTER FILED  
COPY

RECEIVED

NOV 04 1997

ENVIRONMENTAL

1420 East Sixth Avenue  
P O Box 200701  
Helena MT 59620  
October 29, 1997

Karl Helvig, P.E.  
Engineering Bureau Chief, Environmental Services  
Montana Department of Transportation  
P O Box 201001  
Helena MT 59620-1001

Subject F37-2(3)49F & F37-2(3)42F/Control Nos. A874 & 0874  
East of Lame Deer-East & Lame Deer East

Dear Karl

In response to your inquiry of September 3, 1997, the Department of Fish, Wildlife & Parks does not currently own any property, nor are we aware of any proposed FWP land acquisitions within the boundaries shown on the maps you provided for the above projects. In addition, our records do not indicate any lands purchased or developed for recreational purposes under Section 6(f) of the National Land & Water Conservation Fund Act within the project boundaries shown on your maps.

Thank you for the opportunity to comment.

Sincerely,

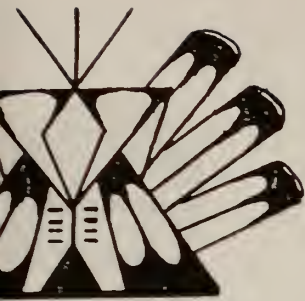
Ken Soderberg  
Resource Program Manager

Debby Dils  
Land Section Supervisor

cc Don Hyypa







RECEIVED  
OCT 21 1997

ENVIRONMENTAL

NORTHERN CHEYENNE  
NATURAL RESOURCES DEPARTMENT

P.O. BOX 128

LAME DEER, MONTANA 59043



10/20/97

Joel Marshick, Environmental Services  
Montana Department of Transportation (MDT)  
2701 Prospect Avenue  
P.O. Box 201001  
Helena, Montana 59620-1001

F37-2(3)42 0874  
Lame Deer - East

To whom it may concern,

During the past two months the Northern Cheyenne Natural Resources Department and Cultural Commission have been working with the MDT in planning the proposed realignment of Highway 212 between Lame Deer and Ashland Montana on the Northern Cheyenne Reservation. Natural and cultural resources like, springs, wetlands, beaver ponds and riparian zones have surfaced many questions as to how best to plan the construction. Given that areas designated as culturally significant by the Cultural Commission are protected via the National Historic Preservation Act, the lack of an established Northern Cheyenne Reservation Water Quality Standards prohibits the Natural Resources Department from designating areas of natural significance for protection. Essentially, the Tribe has no regulatory authority over wetlands, spring or stream channel alteration, beaver pond transplantation or riparian impacts. Thus, any input by the Natural Resources department is by no means the final determination for the project.

It has come to our attention that a 401 permit may be required. Several spring and wetland areas will be inevitably impacted by the proposed construction, ie spring site B, Station 369. The Tribe has no authority to issue a permit of this kind. Hence, we are deferring you to the proper regulatory authorities. To verify if a 401 Wetlands Permit(s) needed, and subsequently a 404 application completed, please contact Dick Blodnick and/or Steve Potts of the United States Environmental Protection Agency (EPA) Montana Office at (406) 441-1140, extension 231.

Sincerely,

Jason Whiteman, Sr., Director  
Natural Resources Department  
Northern Cheyenne Tribe.

FDR

CC: file  
Barbara Burkland, EPA  
Dick Blodnick, EPA  
Steve Potts, EPA  
Jeff Ryan, DEQ





UNITED STATES  
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE  
Fish and Wildlife Enhancement

301 South Park

P.O. Drawer 10023

Helena, Montana 59626

Federal Building, U.S. Courthouse

IN REPLY REFER TO:

FWE-61130-Billings  
M.17-FHWA Informal

Mr. Stephen Kologi  
Montana Department of Highways  
2701 Prospect Avenue  
Helena, Montana 59620

Dear Mr. Kologi:

This responds to your June 24, 1991 Notice of Combined Highway Location and Design Public Hearing concerning Projects F 37-2(3)<sup>42</sup> and (7), Lame Deer-East, and Ashland-West. We note that, although these projects are in an advanced state of planning, we can find no record of previous correspondence regarding them. Our comments are therefore of a preliminary nature and are based on the information received with the Notice itself.

The Federally-listed endangered and threatened species which occur or may occur within the project area are the bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus), and black-footed ferret (Mustela nigripes). Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the Federal Highway Administration, as the responsible Federal agency, must determine if the proposed actions may affect these endangered species. If you or the Federal Highway Administration determine that any of these species may be affected, it will be necessary to initiate formal consultation with this office. The following information and recommendations may aid you in that determination.

Both peregrine falcons and bald eagles may occur in the area as spring and/or fall migrants, and bald eagles may occasionally occur as winter residents. We are not aware of peregrine falcon or bald eagle nest territories in or near the project area. While we do not foresee any substantive issues with the proposed project with regard to the bald eagle and peregrine falcon, any power lines in the vicinity, if not properly constructed, could pose electrocution hazards for these species. To conserve these species and other large raptors protected by Federal law, we urge that any power lines that may need to be modified or reconstructed as a result of the project be raptor-proofed following the criteria and techniques outlined in the Raptor Research Report No. 4, "Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1981". A copy may be obtained from:

Jim Fitzpatrick, Treasurer  
Raptor Research Foundation  
Carpenter St. Croix Nature Center  
12805 St. Croix Trail  
Hastings, Minnesota 55033.

File	
39 Consultant Dsn.	
37 Traffic Operations	
36 Traffic Eng.	
35 Survey & Mapping	
34 Hydraulics	
33 Environment	
32 Road Design	
31 Safety Mgmt	
30 Office Mgr	
29 Assistant	
28 Research Engr	
27	
26	
25	
24	
23	
22	
21	
20	
19	
18	
17	
16	
15	
14	
13	
12	
11	
10	
9	
8	
7	
6	
5	
4	
3	
2	
1	

Initial Attach

MAIL ROUTE

Date Recd. Preconst

Info Act

7/21/91





400 621 5515 1101: 1101: P02

MONTANA NATURAL HERITAGE PROGRAM

1515 East Sixth Avenue  
Helena, Montana 59620  
(406) 444-3009



March 12, 1999

Robert Harris  
Turnstone Biological  
P.O. 316  
Conner, Montana 59827

Re: MDT Control Number A874.

Dear Robert,

I am writing in response to your recent request regarding species of concern in the vicinity of Hwy 212 – eight miles from Lamedeer eastward with a four mile buffer.

In checking our database for this area, I found no records of species of special concern.

Please remember that results of a data search by the Montana Natural Heritage Program are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys which may be required for environmental assessments.

Should you have any questions or require additional information, please feel free to contact me at (406) 444-2817 or via my e-mail address, below.

Sincerely,

Martin P. Miller, Data Assistant  
Montana Natural Heritage Program  
(email: [mmiller@nris.state.mt.us](mailto:mmiller@nris.state.mt.us))

Electronic access to the Montana Natural Heritage Program is available at URL  
<http://nris.state.mt.us/mtnhp/>

The Nature Conservancy and Montana State Library





- WOHEHIV -  
The Morning Star

**NORTHERN CHEYENNE TRIBE**  
INCORPORATED

P.O. Box 128  
LAME DEER, MONTANA 59043



- WOHEHIV -  
The Morning Star

9/30/97

Jason Whiteman Sr., Director  
Natural Resources Department  
Northern Cheyenne Tribe  
P.O. Box 128  
Lame Deer, MT 59043

Dear Mr. Whiteman,

A Cultural Road Survey for the proposed East Highway 212 construction was done on September 23, 1997. Mr. William Warfield from the Montana Department of Transportation showed us where they are going to do soil testing, including roughly eight bore-or-test holes as well as various soil samples.

We located a new spring and need to do some more investigating on this and other spring sites. The very first spring located east of Lame Deer on the southern side of Highway 212 will be a problem if the road is widened. Mr. Phillip Whiteman Jr. and his family still use this spring for their Clothe Ceremonies.

Mr. Warfield, Mr. Charles Sooktis and Desi Rollefson conducted the survey.

Sincerely,

Charles Sooktis, Chairman  
Cultural Commission.





7017

99061702

MASTER  
FILE  
COPY

RECEIVED

JUN 23 1999

ENVIRONMENTAL

June 15, 1999

JUN 17 1999

STAN

Stan Wilmoth  
State Historic Preservation Office  
Montana Historical Society  
1410 East 5<sup>th</sup> Avenue  
Helena, MT 59620

Subject: **Lame Deer East**  
**F 37-2(3)-42 F**  
**Control Number 0874**

Enclosed for your review and comment is the determination of effect for the above Montana Department of Transportation (MDT) project.

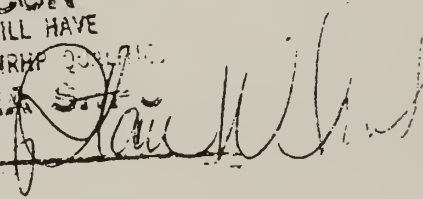
I forwarded copies of this document to the Northern Cheyenne Tribe and Bureau of Indian Affairs on 3/8.99 for comment. I received e-mail comments from Marvin Keller in April.

MDT anticipates having no effect to 24RB1586, Spring #1 and Spring #2. Because the boundary of 24RB1586 is so close to the construction limits, a special provision will be added to the contract to ensure that construction fence is placed along the site boundary in order to keep equipment out of the area.

If you have any questions please call me at 444-0455.



Steve Platt, Archaeologist  
Environmental Services

CONCUR  
PROJECT WILL HAVE  
NO EFFECT ON NRHP  
MONTANA STATE  
DATE 6/22/99 SIGNED 

Cc: Gordon Stockstad, Chief, Resources & Permitting  
Marvin Keller, BIA  
Butch Sooktis, Northern Cheyenne Cultural Commission





