



1.0 INTRODUCTION

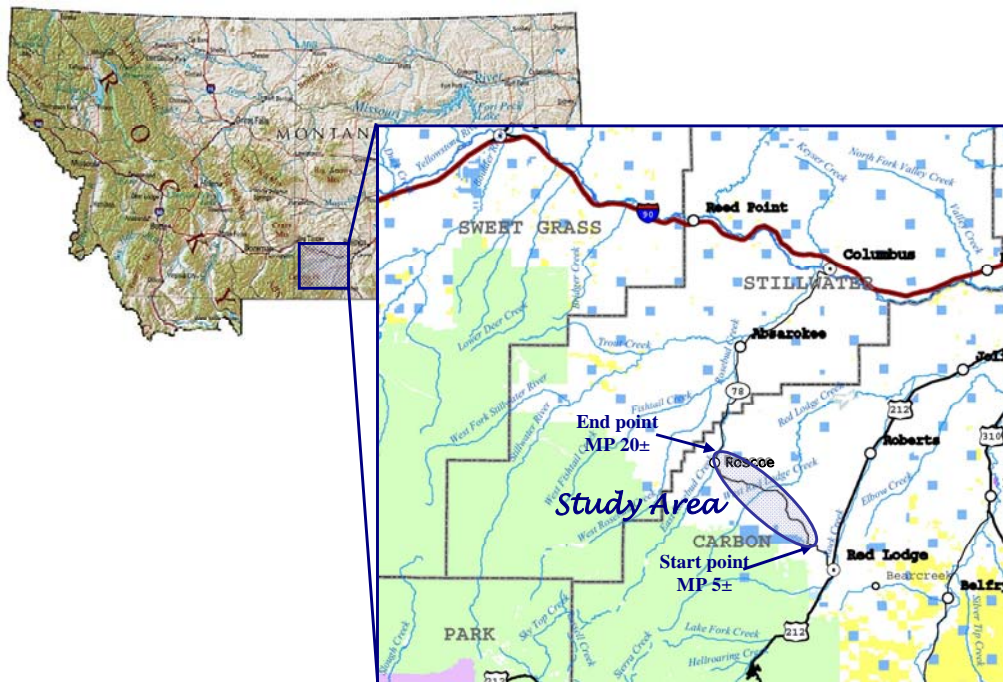
1.1 Background

In the fall of 2005, the Montana Department of Transportation (MDT) initiated a corridor planning process along Montana Primary Highway 78 (MT 78) in order to comprehensively address future transportation needs, prioritize transportation projects, and foster cooperative state and local transportation planning efforts. Corridor planning is a relatively new tool within MDT emphasizing public involvement and consideration of environmental issues at the planning level. The *MT 78 Corridor Study* is part of MDT's corridor planning process emphasizing public involvement and early consideration of environmental issues. This planning process is intended to save the state time and money by giving a context to later planning documents and helping to analyze the feasibility of various improvement options.

1.2 Study Area

MT 78 is a two-lane highway that begins at the town of Red Lodge and runs northwest through the towns of Roscoe, Absarokee, and Columbus before intersecting with Interstate 90. The portion of the highway chosen for this study begins at Mile Post (MP) 5± northwest of Red Lodge and extends to the bridge at the south end of Roscoe (MP 20±), as shown in Figure 1.1. MT 78 is part of the state Primary Highway System and is functionally classified as a rural minor arterial route. Mile post references throughout this document refer to and approximate the location of on-the-ground mile post markers within the corridor, except where otherwise noted.

Figure 1.1 Project Area





1.3 Planning Horizon

This study uses a 20-year planning horizon, with 2006 as the base year. All traffic projects and costs are projected to the year 2026.

1.4 Purpose of the MT 78 Corridor Study

Corridor planning is a process that is collaborative with resource agencies along with local governments and includes public participation opportunities. The process is designed to derive a planning-level analysis of the existing transportation system within the corridor and determine how it could be changed to meet long-term needs. A corridor plan is a document that defines a comprehensive package of recommendations for managing and improving a transportation system. The plan provides an assessment of existing roadway conditions; an overview of the social, economic, and environmental constraints; an analysis of improvement options for the corridor that are intended to make the roadway safer and meet current road design criteria; and an assessment of the financial feasibility of these options. This document provides recommendations regarding how to prioritize these projects and a comparison of the costs of various improvements.



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Pursuant to guidance on linking transportation planning and project development described in 23 CFR 450.212, this corridor study document is intended to provide the following information to be used by MDT and the Federal Highway Administration (FHWA) in future transportation projects:

1. Purpose and Need and goals and objectives statements;
2. General travel corridor and general modes definition;
3. Preliminary screening of alternatives and elimination of unreasonable alternatives;
4. Basic description of the environmental setting; and
5. Preliminary identification of environmental impacts and environmental mitigation.

The information described above and as outlined throughout this document may be incorporated directly into future National Environmental Policy Act (NEPA) and Montana Environmental Policy Act (MEPA) documents in accordance with 40 CFR 1502.21. This corridor plan thereby links transportation and environmental planning in a way that is intended to improve the efficiency of the project development process.

This plan provides a planning-level consideration of existing conditions from operations, geometric, social, economic, and environmental standpoints. The assessment of these existing conditions is intended to be brief and only detailed enough to guide future studies when specific projects are proposed. It is also intended to determine whether improvement concepts can clearly



be eliminated due to failure to satisfy current safety and design standards and meet cost and constructability targets. The plan is not intended to meet the requirements of NEPA or to provide design-level detail of proposed improvements. The cost estimates contained herein are to be used for comparison purposes only and not as project estimates.

1.5 Goals and Objectives of the Montana 78 Corridor Study

Corridor goals and objectives were developed in cooperation with MDT, FHWA, and the public. This study presents a set of improvement options that are intended to:

- Improve safety conditions and address crash concentrations within the corridor.
- Improve geometric elements within the corridor, including horizontal alignment and vertical alignment, meeting current MDT design standards where practicable.
- Avoid or minimize social, environmental, and economic impacts in the corridor where possible.
- Maintain the aesthetic character of the corridor.
- Balance the needs of all users, including local residents, tourists, agricultural vehicles, school buses, motorcyclists, and bicyclists.

1.6 Organization of the Plan

This document is separated into seven chapters, as described below.

1.0 Introduction

Chapter 1 describes the background for the study, introduces the purpose of the study and corridor goals, and provides an overview of the contents of the study.

2.0 Public Process and Corridor Plan Goals

Chapter 2 reviews the public outreach efforts that were conducted for this study.

3.0 Overview of Existing Community and Environmental Conditions

Chapter 3 presents an inventory of existing social, economic, and environmental constraints along the MT 78 corridor.

4.0 Overview of Existing Transportation Conditions

Chapter 4 discusses present transportation conditions in the corridor. Inventories of roadway geometrics, structural conditions, traffic conditions, crash statistics, and the availability of alternative transportation modes are included in this section.

5.0 Population and Transportation Forecasts

Chapter 5 describes projected population and traffic conditions in the design year (2026).

6.0 Improvement Options Analysis

Chapter 6 presents potential improvement options and provides a description of these proposed improvements, cost estimates, and potential funding sources.



7.0 *Discussion and Recommendations*

The final chapter of the plan discusses the improvement options presented in Chapter 6, as well as interim spot improvements and additional corridor improvements. Recommendations are made for specific projects as well as comprehensive, corridor-wide improvements.



2.0 PUBLIC PROCESS AND AGENCY COORDINATION

The MT 78 Corridor Study utilized a public involvement process to engage area residents in a dialogue about the existing conditions and use of the corridor. The process also sought to inform residents about potential improvement options for the corridor and to seek citizen input on those options. Agency coordination was initiated early in the process to identify potential resource constraints and further permitting requirements.

2.1 Public Involvement Activities

A public scoping meeting was held on March 28, 2006 at the Roscoe Community Center. A second public scoping meeting was held March 30, 2006 at the Roosevelt Middle School in Red Lodge. Meeting attendees were asked to identify issues and concerns along the MT 78 corridor. Seventeen citizens attended the meeting in Roscoe and two citizens attended the meeting in Red Lodge. Several people came to the meeting in Red Lodge intending to comment on MDT projects within the city limits. Many of these residents left after learning that the corridor study begins five miles outside of Red Lodge and did not include their areas of interest. The main concerns for meeting attendees were the speed of traffic, traffic flow, sight distance, and wildlife hazards. Some residents expressed concerns about the lack of signage relating to traffic speed, while others expressed concern about slow-moving tourists and agricultural vehicles. Turnouts, wider shoulders and passing lanes were suggested as solutions to the perceived high speed of traffic, traffic flow problems, and sight distance issues. Another safety concern of the locals was the abundance of wildlife along MT 78. Deer crossing signs to warn traffic were discussed. Other comments included concerns regarding hazardous bus stops, steep slopes, and culverts. Two written comments were received after the meetings. An article appeared in the *Carbon County News* documenting the meeting in Red Lodge.

A public information meeting was held on September 20, 2006 at the Roscoe Community Center. At this meeting, the project team solicited input regarding goals and objectives for the corridor. The project team also presented a preliminary set of improvement options. Meeting attendees were asked to review and comment on these options. Meeting attendees discussed the need to replace fencing that would be taken down, speed studies, cost, deer crossings, and the condition of old bridges. Ten citizens attended this meeting and no written public comments were submitted.

A final public meeting was held August 22, 2007 to present the final recommendations of the study. The project team briefly reviewed existing geometric and operational deficiencies within the corridor, and presented the recommended set of improvement options, as well as estimated costs and potential funding sources for each option. Meeting attendees commented on or asked questions about funding availability; speed limits; sight distance problems; wider shoulders for bicycle use; installation of deer crossing and hidden driveway signs; and consideration of scenic pullouts, designated livestock crossings, and separated bicycle/pedestrian pathways within the corridor. Ten members of the public attended this meeting and one written public comment was submitted at the meeting.



Additional written public comments were received after these three sets of meetings. All written comments received are included in Appendix A.

Newsletters were prepared in advance of each of the public meetings detailing the study background, corridor planning process, and existing transportation and environmental conditions. Newsletters are included in Appendix B. A website was also developed for this project and included general information about the project, contact information for project team members, and an online comment form.

2.2 Agency Coordination

Resource agencies were invited to attend an agency coordination meeting on July 27, 2006. The meeting was attended by representatives from the U.S. Fish and Wildlife Service (USFWS) and Montana Fish, Wildlife, & Parks (FWP), who noted the relative lack of habitat for threatened and endangered species along the project corridor. Representatives from the Environmental Protection Agency (EPA), the Montana State Historic Preservation Office (SHPO), the Montana Department of Natural Resources and Conservation (DNRC), and the Montana Department of Environmental Quality (DEQ) declined to attend.

In response to a request for information regarding the MT 78 corridor, two agencies, FWP and the U.S. Army Corps of Engineers (USACE), sent letters. These letters are included in Appendix C.

A draft of the study document was mailed to resource agencies in July 2007. Agencies were asked to review and comment on the draft document. In response to this request, FWP and USACE sent letters, which are included in Appendix C. In their letters, FWP and USACE requested continued sensitivity to the natural environment and an opportunity for early coordination on any future projects.

Prior to further project development resulting from this corridor study, coordination will occur with appropriate resource agencies to determine and discuss agency concerns within the specific project limits. Concerns brought forward will be addressed within the project development and design processes.





3.0 EXISTING SOCIAL, ECONOMIC, AND ENVIRONMENTAL CONDITIONS

This chapter presents an inventory of existing social, economic, and environmental constraints along the MT 78 corridor.

3.1 Environmental, Cultural, and Aesthetic Resources

For full compliance with NEPA and MEPA regulations and permitting requirements, all federally and state funded actions require some level of analysis to determine whether measures can be undertaken to avoid, minimize, or mitigate anticipated impacts to sensitive resources in a given project area. The information in this report is intended as a planning-level overview of natural resources in the corridor. Research methods included a review of the Natural Resource Information System (NRIS) database, Natural Resource Conservation Service (NRCS) soil mapping, a Montana Natural Heritage Program (MNHP) database search, coordination with MFWP and USFWS staff, a review of the U.S. Census Bureau database, and windshield surveys of the existing MT 78 corridor.



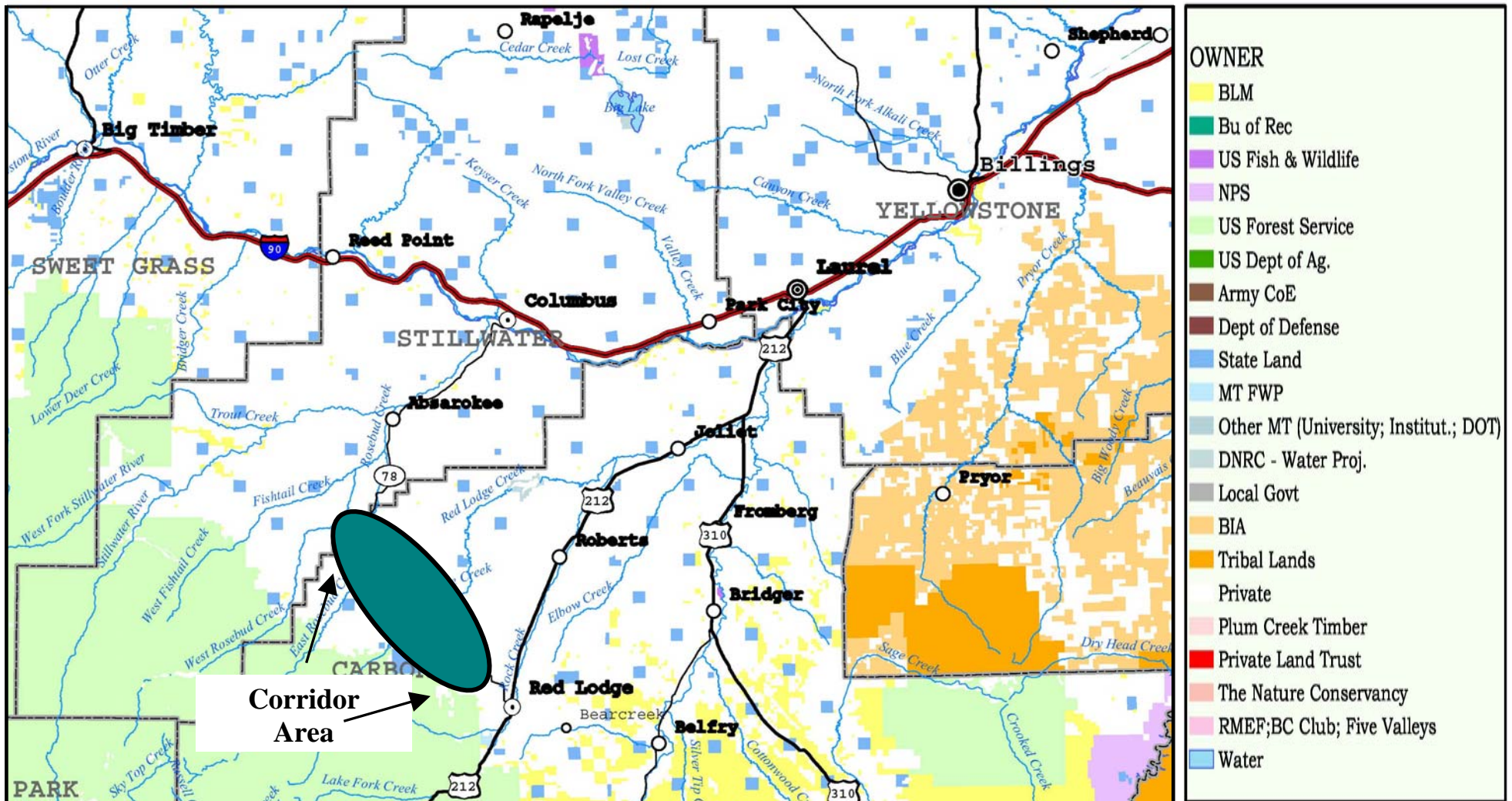
The analysis contained in this report is not intended to meet NEPA/MEPA requirements or provide a detailed accounting of all resources or potential impacts, but is merely intended to point out those resources or areas of cultural and environmental concern that would likely be a factor in future project decisions and permitting processes.

Land Ownership

Based on information collected for the Montana 78 Access Management Study as well as NRIS mapping for the area, land ownership in the corridor is entirely private. Figure 3.1 shows land ownership in the area. As illustrated, there are state trust and forest service lands in the general study area, but neither would be impacted under any of the improvement options proposed in this plan.



Figure 3.1 Land Ownership in the MT 78 Corridor





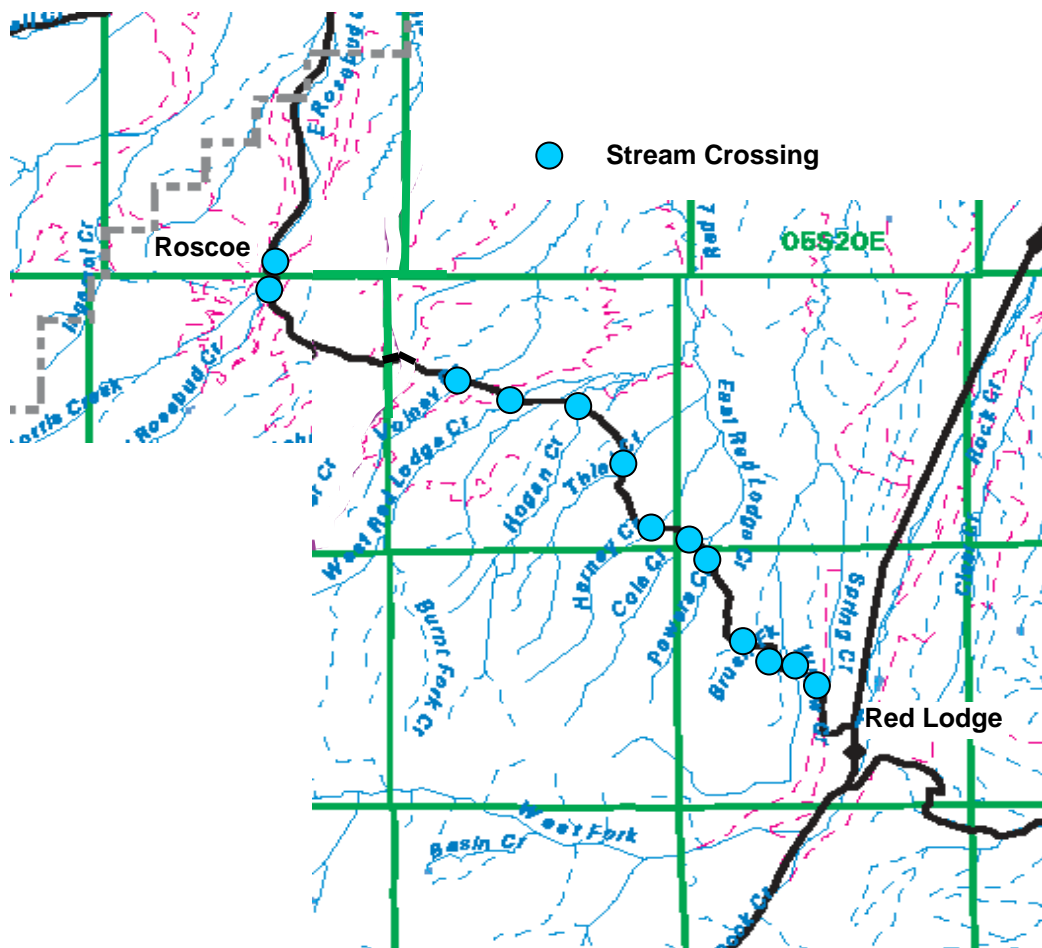
Floodplains

There are no National Flood Insurance Program mapped floodplains within the corridor.

Water Bodies

As shown in Figure 3.2, a number of water resources are located along the MT 78 corridor. West Red Lodge Creek is located at MP 13± and East Rosebud Creek is located at MP 20± near Roscoe. There are also a number of intermittent streams, including Morris Creek, Butcher Creek, Volney Creek, Hogan Creek, Theil Creek, Harney Creek, East Red Lodge Creek, and Cole Creek. Impacts to these water resources would require more detailed hydraulic analysis prior to the initiation of an improvement project in the corridor.

Figure 3.2 Water Body Crossings in the MT 78 Corridor





Irrigation Systems

Based on aerial photographs and a windshield survey, a number of irrigation ditches were identified that run parallel to or cross the MT 78 corridor. The names and specific locations of these ditches have not been determined. Impacts to these ditches would require further study prior to the initiation of an improvement project in the corridor.

Wetlands

According to the National Wetlands Inventory and the Montana Wetlands Survey, there are currently no mapped wetlands within the study area.

A windshield survey was conducted on July 18, 2006. The locations listed in Table 3-1 were identified as potential wetland areas based on visible vegetation and drainage patterns, including several drainage ditches that parallel or cross the roadway.

Table 3-1 Potential Wetland Areas

MP	Comment
19.0	Irrigation ditch on west side of MT 78
18.2	Cattails / wet area on west side of MT 78
17.9	Cattails on west side of MT 78
17.5	Cattails on west side of MT 78
17.2	Small stream
16.5	Potential wetlands – primarily on west side of MT 78
15.5	Irrigation ditch
14-15	Potential wetlands on west and portions of east side of MT 78
14.5	Cattails
14.7	Potential stream
11*	Ditch or creek crossing
9.5	Potential wetlands on east side of MT 78
9	Ditch or creek moves to west side of MT 78
8.3	Ditch / creek crossing
7.0	Ditch / creek crossing
6.5	Ditch / creek crossing

* According to Carbon County soil mapping and the Natural Resource Conservation Service (NRCS) list of hydric soils, this is the only identified area with hydric soils present.

As noted above, only one of the areas displaying wetland vegetation characteristics contains hydric soils according to NRCS soil mapping. The corridor will need to be formally surveyed for wetlands prior to the initiation of any improvement project.



Air Quality

Carbon County's air quality is within attainment levels under National Ambient Air Quality Standards (NAAQS). It is not anticipated that any improvement project would have a long-term negative impact on air quality in the corridor. Construction may cause short-term, temporary impacts to air quality.

Water Quality

DEQ is required by Section 303(d) of the Clean Water Act to identify and prioritize those waters for which total maximum daily loads (TMDLs) are needed. These loads represent the maximum amount of pollutant a water body may receive in order to meet water quality standards. TMDLs have not been developed for any of the water bodies in the corridor.

Fish and Wildlife Resources

The existing road crosses East Rosebud Creek, West Red Lodge Creek, and a number of irrigation ditches and intermittent streams. Impacts to fish species resulting from bridge widening, replacement, or improvement; road widening; culvert replacement; or other activities within or adjacent to these water resources would require further study prior to the initiation of an improvement project in the corridor.



The Montana Fisheries Information System (MFISH) was queried for the two perennial streams in the corridor: East Rosebud and Red Lodge Creeks. The fish species present in the two streams are listed in Table 3-2.



Table 3-2 Fish Species Present in the Corridor

Species	East Rosebud Creek	Red Lodge Creek
Brook Trout	✓	✓
Brown Trout	✓	✓
Lake Chub		✓
Longnose Dace	✓	✓
Longnose Sucker	✓	✓
Mountain Sucker		✓
Mountain Whitefish	✓	✓
Rainbow Trout	✓	✓
White Sucker		✓
Yellowstone Cutthroat Trout	✓	✓

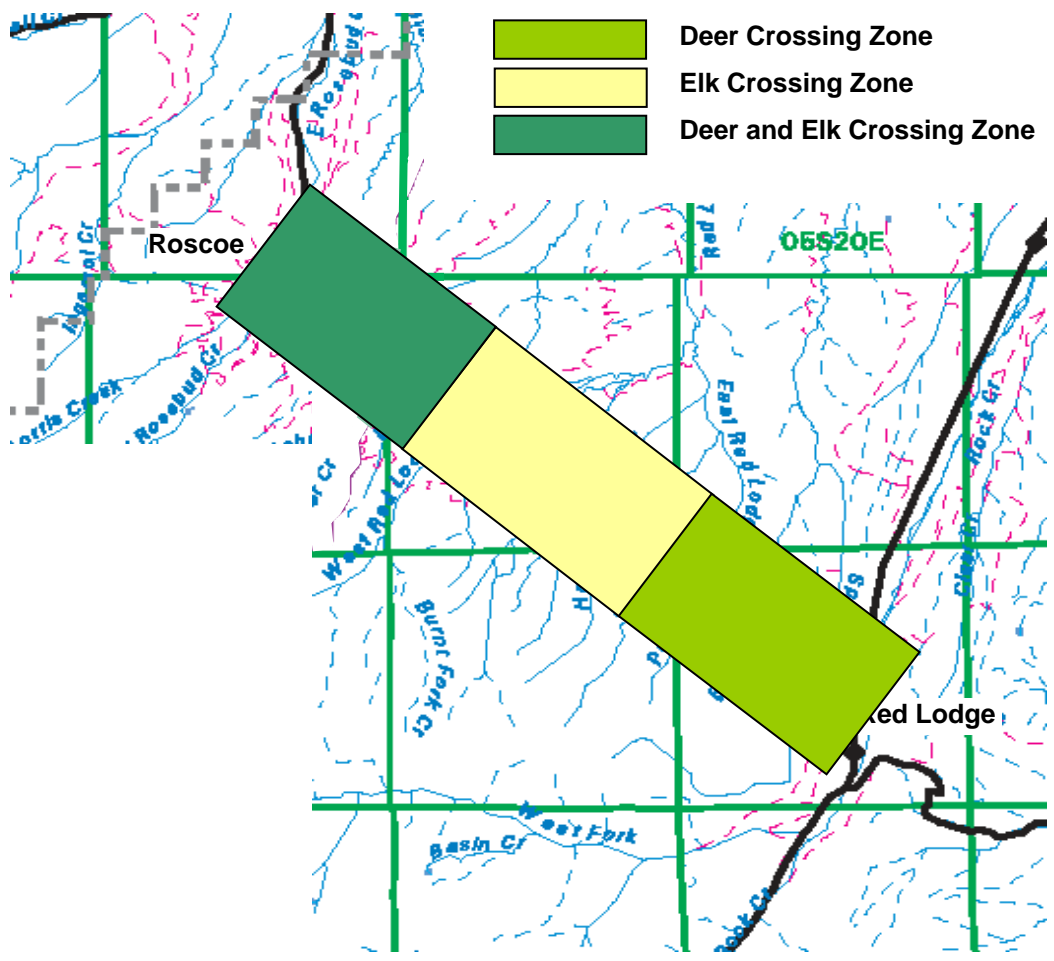
Source: Montana Fisheries Information System (MFISH), 2007.

Wildlife Habitat

According to an MFWP wildlife biologist and local input, the MT 78 corridor is heavily used by wildlife. Specifically, the areas from Roscoe to Volney Creek and from Cole Creek to Red Lodge are used extensively by deer. Elk use the areas between Roscoe and Cole Creek for crossings. Figure 3.3 depicts these crossing zones. There is no sensitive habitat within this corridor.



Figure 3.3 Wildlife Crossings in the MT 78 Corridor



Threatened and Endangered Species and Species of Concern

According to the Montana Natural Heritage Program (MNHP), the following threatened and endangered species *may* exist in the corridor:

Table 3-3 Threatened and Endangered Species

Common Name	Latin Name	Status
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Lynx	<i>Lynx Canadensis</i>	Threatened
Grey Wolf	<i>Canis lupus</i>	XN*

*Experimental Non-essential Population



Additionally, the following state species of concern *may* exist in the corridor:

Table 3-4 State Species of Concern

Common Name	Latin Name
Beautiful Fleabane	<i>Erigeron formosissimus</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Brewer's sparrow	<i>Spizella breweri</i>
Preble's Shrew	<i>Sorex preblei</i>
Yellowstone Cutthroat Trout	<i>Oncorhynchus clarkia bouvieri</i>

Potential impacts to these species would require further study and coordination with the USFWS and MFWP prior to the initiation of an improvement project in the corridor.

Hazardous Waste Sites

Based on an NRIS database search, there are no hazardous waste sites in the project corridor.

Visual Resources

The MT 78 corridor is rural in nature. There are a few scattered rural residences throughout the corridor, but the existing road generally travels through land used for agricultural purposes. Views of the hilly terrain are generally unobstructed, except for a few steep side slopes through the corridor and trees lining brief portions of the roadway. Views of the mountains extend to the south. Public comments received during the planning process included the sentiment that the variation in horizontal and vertical alignments makes the road aesthetically appealing.



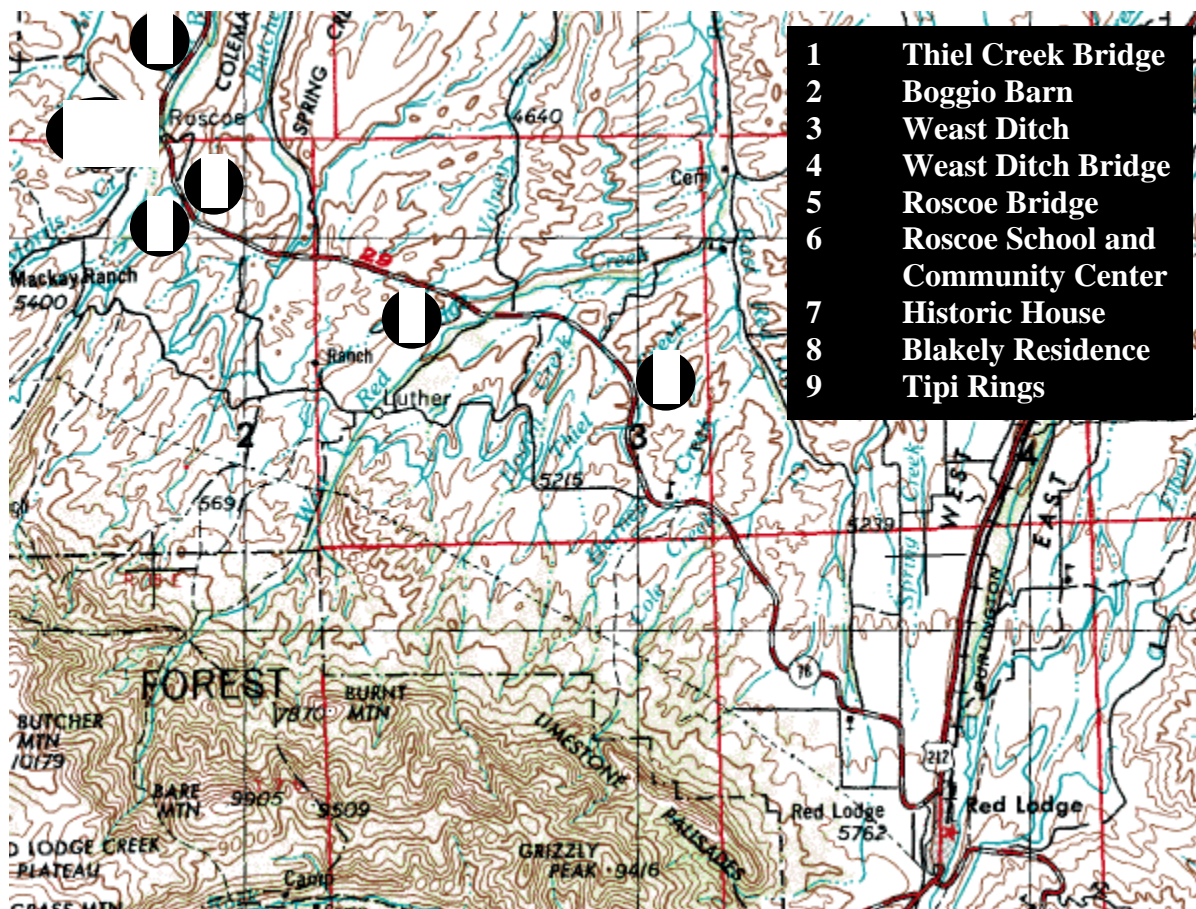
Historic, Cultural, and Archaeological Resources

A cultural resource file search was conducted by the Montana Historical Society on June 28, 2006. Jon Axline of MDT's Environmental Services reviewed this list and determined that there are nine known, eligible sites in the general study area.

These sites are shown in Figure 3.4.



Figure 3.4 Historic Sites in the MT 78 Corridor



Of the nine sites shown in Figure 3.4, the four in the town of Roscoe are relatively far removed from the existing alignment. Any future improvement project that either stays near or to the east of the existing alignment will avoid any impacts to these resources. Thiel Creek Bridge is also located off the existing MT 78 alignment on an abandoned portion of MT 78. The Boggio barn is located in the triangle of land formed by the intersection of Lower Luther Road and MT 78 at MP 8.2±. The tipi rings are located on the north end of the corridor. The current alignment crosses the Weast Ditch, though the Weast Ditch Bridge is on an abandoned portion of the MT 78 alignment to the east of the existing alignment at the top of Roscoe Hill. Any roadway project would likely impact Weast Ditch to some degree due to its perpendicular orientation relative to the existing alignment.

The historic and cultural resources listed above should not be considered an exhaustive list because no cultural resource inventory has been completed. Discovery and recording of additional sites is considered likely because the corridor was historically part of the Crow



Reservation. Any improvements to this segment of the MT 78 corridor could impact historic properties. A detailed cultural resource inventory would be required prior to the initiation of an improvement project in the corridor.

Public Parks and 6(f) Resources

There are no public parks located along the MT 78 corridor between Red Lodge and Roscoe. A search of the MFWP database indicated that there are no N.L.&W.C.F. - 6(f) resources in the project area.¹

Prime Farmland

As illustrated on Figure 3.5, there are a number of areas of Prime Farmland and Farmland of Statewide Importance along the existing MT 78 corridor. There are also several areas of Prime Farmland and Farmland of Statewide Importance within one mile of the existing alignment. Due to the perpendicular orientation of some areas in relation to the existing roadway alignment, no avoidance of these areas is feasible. An AD - 1006 Farmland Conversion Impact Rating Form will need to be prepared, but it is unlikely that any detailed analysis would be required.

¹ <http://fwp.mt.gov/FwpPaperApps/parks/countylist.htm>. Accessed February, 2007.