An aerial photograph of a highway interchange with a bridge in the background. The scene is captured from a high angle, showing the complex network of roads and ramps. The bridge spans across the top of the image, with several buildings and structures visible on the bridge deck. The surrounding area is a mix of paved roads, grassy fields, and some snow patches, suggesting a winter or early spring setting. The sky is overcast, and the overall tone is somewhat muted.

**ENVIRONMENTAL ASSESSMENT**

**BATTLEFIELD REST AREA**

**IM 90-9(97)511**

**CONTROL NUMBER F012**

**AND**

**BATTLEFIELD INTERCHANGE**

**NH 37-1(26)0**

**CONTROL NUMBER 4977**

**August 2007**

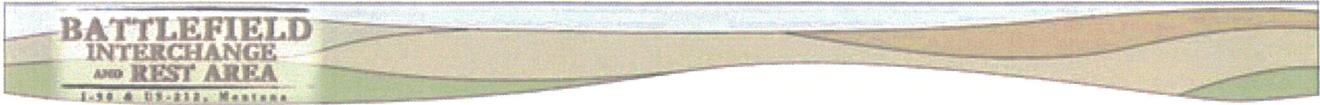
**Montana Department of Transportation**

**and**

**US Department of Transportation**

**Federal Highway Administration**





ENVIRONMENTAL ASSESSMENT

for

NH 37-1(26)0

Battlefield Interchange

Control Number 4977

and

IM 90-9(97)511

Battlefield Rest Area

Control Number F012

in

Big Horn County, Montana

This document is prepared in conformance with the requirements of the National Environmental Policy Act (NEPA) and contains information necessary for an EA under 23 CFR 771.119 and 40 CFR 1500 to 1508. It is also prepared in conformance with the requirements of the Montana Environmental Policy Act (MEPA) for an EA under the provisions of ARM 18.2.237(2) and 18.2.239.

Submitted Pursuant To  
42 USC 4332(2) (c), 49 USC 303,  
and Sections 75-1-201 and 2-3-104, MCA  
by the

Montana Department of Transportation,  
US Department of Transportation Federal Highway Administration, and  
Crow Tribe of Indians and Big Horn County as Cooperating Agencies

Submitted by: [Signature]  
for Montana Department of Transportation

8-1-07  
Date

Reviewed and Approved for Distribution:  
[Signature]  
for Federal Highway Administration

6 August 2007  
Date

**Project Abstract and Location:**

This proposed project is located approximately 1 1/2 miles south of Crow Agency in Big Horn County Montana on the Crow Indian Reservation. The purpose of the project is to develop a new rest area along I-90 near the Battlefield Interchange and address interchange and roadway deficiencies by improving the I-90 and US 212 interchange. This Environmental Assessment has been prepared to document the purpose and need for the project, alternatives evaluated, and potential environmental impacts and mitigation measures.

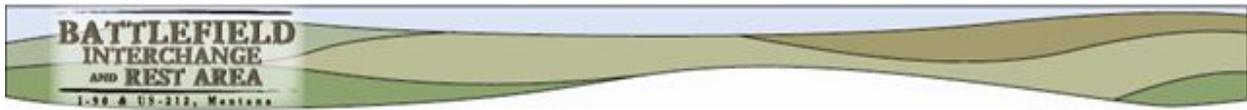
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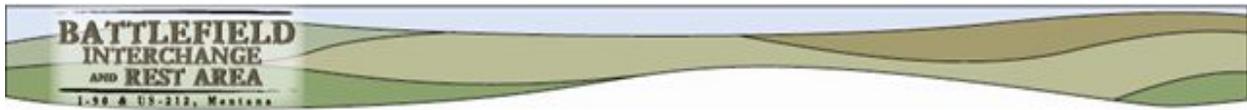
During Public Review, the document will be available on the web site at:  
[http://www.mdt.mt.gov/pubinvolve/eis\\_ea.shtml](http://www.mdt.mt.gov/pubinvolve/eis_ea.shtml)





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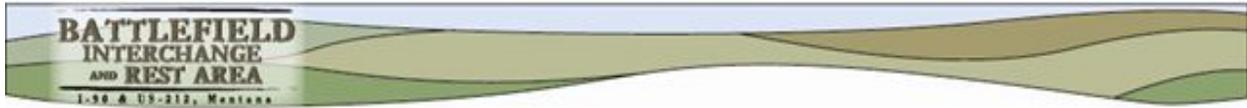
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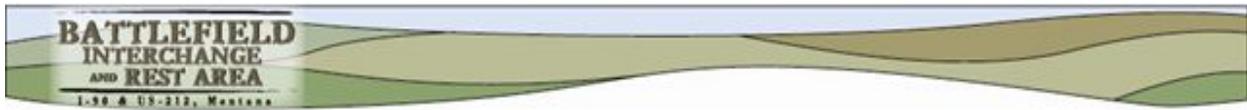
Appendix A: Crow Tribe (Apsaalooke Nation) and MDT Memorandum of Understanding

Appendix B: Agency Letters

Appendix C: List of Reviewers and Preparers

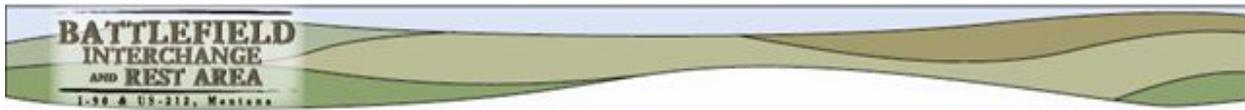






## LIST OF ABBREVIATIONS AND ACRONYMS

AADT	Average Annual Daily Traffic
BMPs	Best Management Practices
COE	US Army Corps of Engineers
EA	Environmental Assessment
EPA	US Environmental Protection Agency
<i>Feasibility Report</i>	<i>Battlefield Rest Area Feasibility Report</i>
FHWA	Federal Highway Administration
MDT	Montana Department of Transportation
<i>MDT Noise Policy</i>	<i>MDT Traffic Noise Analysis and Abatement: Policy and Guidance</i>
MEPA	Montana Environmental Policy Act
MOU	Memorandum of Understanding
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
PM	Particulate Matter
PSA	Project Specific Agreement
<i>Rest Area Plan</i>	<i>Montana Rest Area Plan, as amended</i>
RP	Reference Post
SHPO	State Historic Preservation Officer
SPA	Stream Protection Act
USFWS	US Fish and Wildlife Service



## SUMMARY

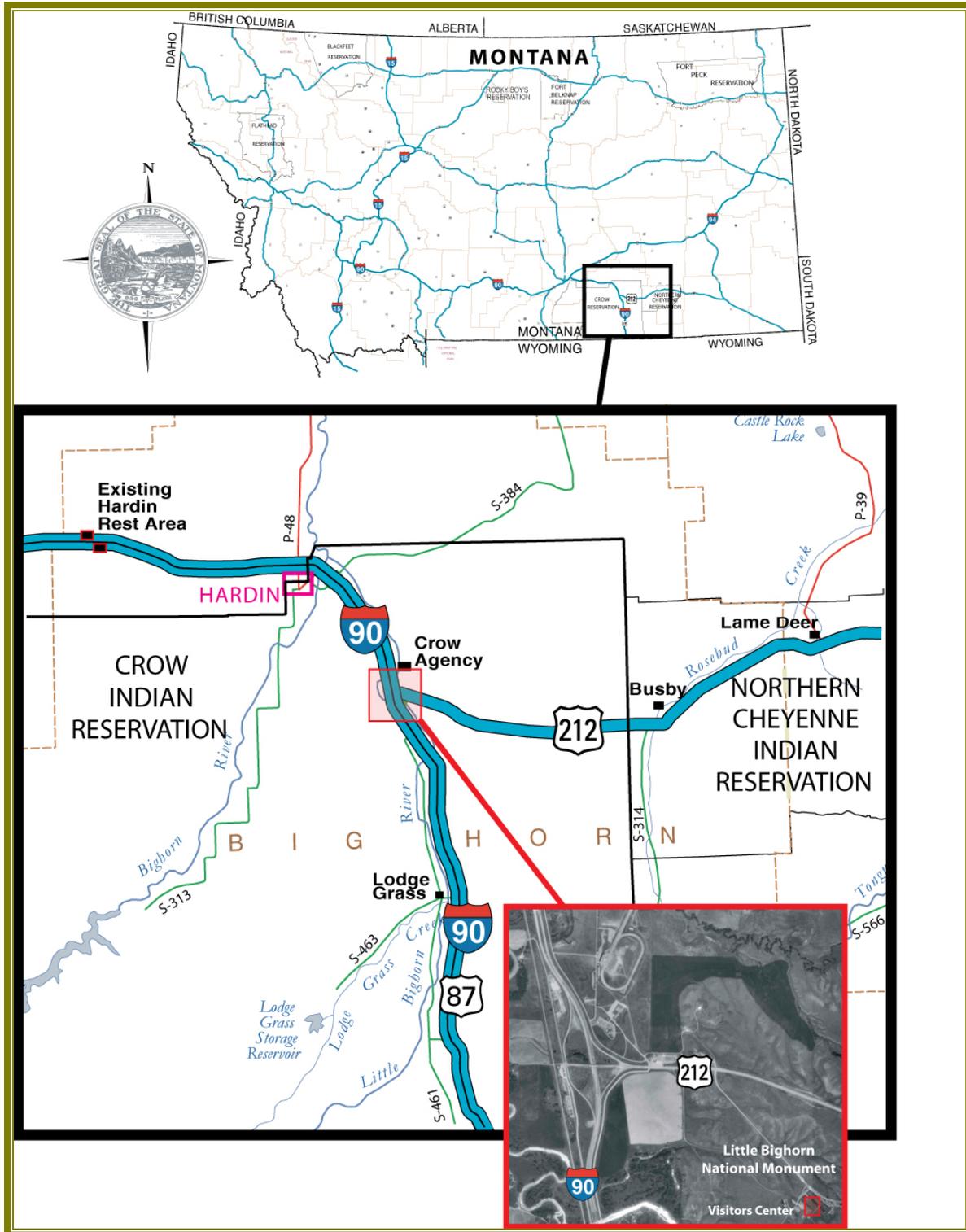
In conjunction with the Federal Highway Administration (FHWA), the Montana Department of Transportation (MDT) has identified improvements to the I-90/US 212 Interchange (Battlefield Interchange) near Crow Agency in Big Horn County, Montana, and as the site for a proposed new rest area (**Figure S-1**). The intersection would be improved to address safety deficiencies. The proposed rest area would replace the outdated and aging facility currently located 29 kilometers (18 miles) west of Hardin on I-90. The new rest area site was identified in the *Battlefield Rest Area Feasibility Report* dated 2001. This site was selected as the Preferred Alternative to serve travelers year-round. The proposed location was also chosen for its ability to support access to the Little Bighorn Battlefield National Monument through an information kiosk, a new pedestrian path, and parking.

Per FHWA regulations contained in 23 CFR 771.111(f), both the interchange and rest area are being addressed together in this Environmental Assessment (EA) to address environmental matters on a broad scope, to ensure meaningful evaluation of alternatives, and to avoid commitments to transportation improvements before they are fully evaluated. The actions are considered together so as not to restrict consideration of alternatives for other reasonably foreseeable transportation improvements. The new rest area and the interchange improvements are considered connected actions. Factors which connect the two proposed actions are: their proximity to each other, the relationship of people and vehicles using both as part of the transportation system, and the desire to have both actions constructed within a few years of each other if not at the same time.

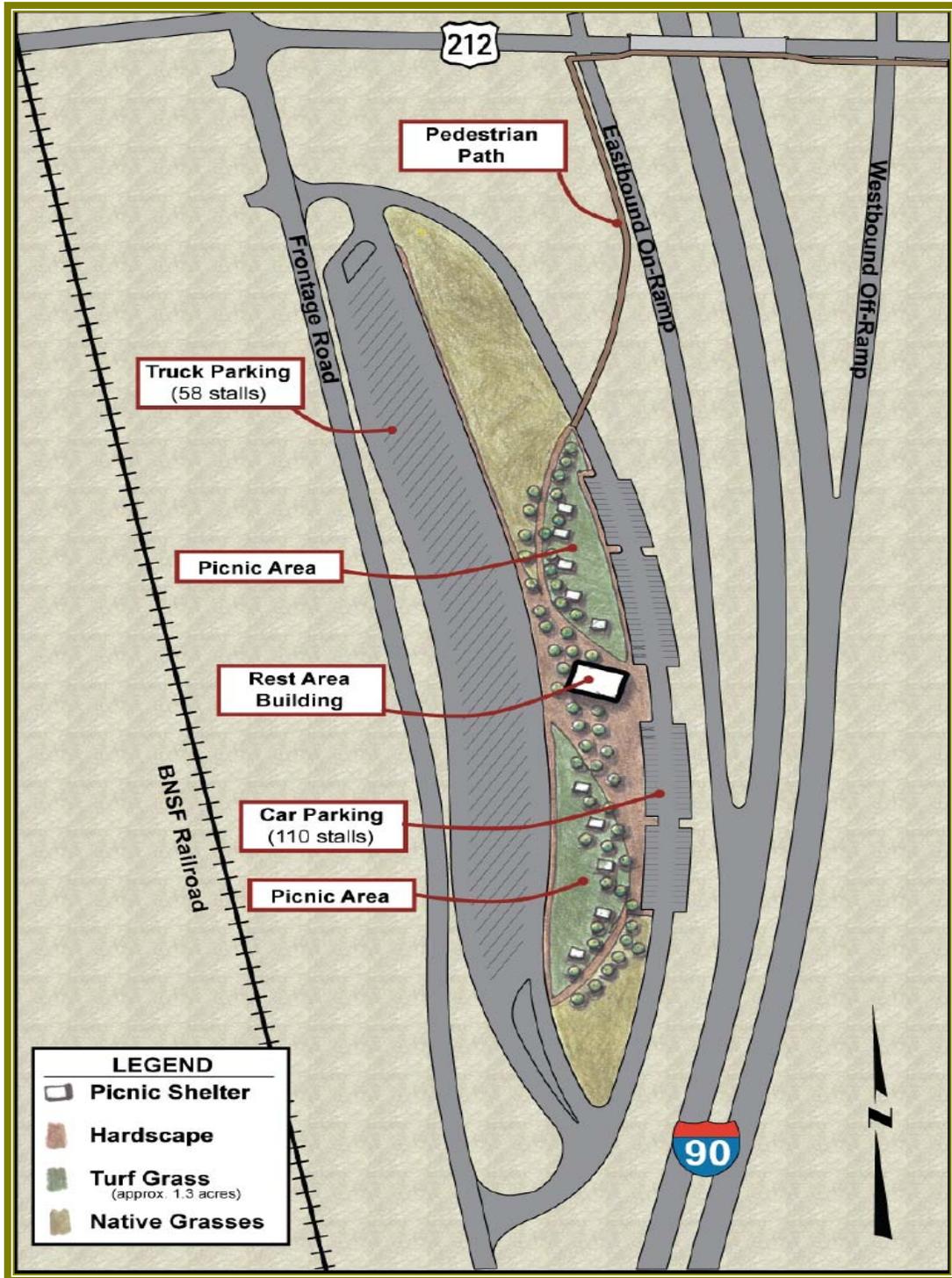
The proposed rest area includes a building that has restrooms, drinking fountains, telephones, a visitor information area, and a security office (**Figure S-2**). This building would be located in the rest area site on land south of US 212 between a realigned I-90 eastbound on-ramp and the West Frontage Road. Adjacent to the building would be picnic areas, a play area for children, an open space for pets, and landscaping. Parking facilities accommodating cars and commercial/recreational vehicles would be included. It is important to note that at this time the rest area design is conceptual and the layout and features could change during the final design process.

Improvements to the Battlefield Interchange would be constructed along with a new rest area. Proposed improvements would include the realignment of the I-90 ramps into a tight diamond interchange to facilitate traffic movements between US 212 and I-90 (see **Figure S-3**). US 212 would be widened to accommodate the new I-90 ramps, shoulders, left turn median, and a pedestrian path that would extend on the south side of the road between the rest area and Secondary 342 (S-342), the Little Bighorn Battlefield National Monument Access Road. The present US 212 structure over I-90 would be replaced with a wider structure accommodating the widened US 212. Additionally, the East Frontage Road intersection would be relocated approximately 200 meters (656 feet) to the west. The present east frontage intersection to the north would remain open, allowing access to local businesses. The southern access would be closed. The relocated access would reduce traffic congestion at the present frontage road intersection and improve the roadway alignment of the southern intersection approach.

**FIGURE S-1: PROJECT VICINITY MAP**



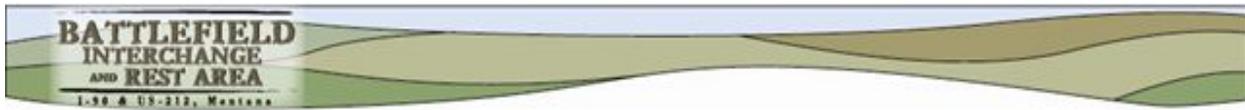
**FIGURE S-2: CONCEPTUAL LAYOUT OF PROPOSED REST AREA**



(Note: Figure is for conceptual purposes only and could vary depending on final design)

**FIGURE S-3: PRELIMINARY LAYOUT OF THE PROPOSED INTERCHANGE**

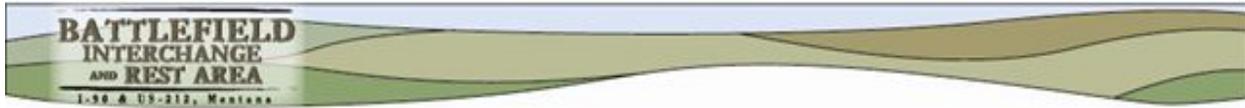




The proposed action would not be expected to create substantial or significant environmental impacts. However, some environmental effects would be associated with the proposed rest area construction and interchange configuration modification. Those effects could include temporary disturbances to traffic; a permanent loss of approximately 4.12 hectares (10.2 acres) of vegetation; impacts to approximately 0.12 hectare (0.30 acre) of one isolated wetland and loss of 3.7 hectares (9.1 acres) of floodplain. New right-of-way for the proposed improvements is required for the relocation of the East Frontage Road, which requires additional permanent (right-of-way) easements on Tribal Trust land on the north side of US 212 affecting several businesses. Temporary use construction permits would be necessary for the proposed reconstruction of approaches to the Little Bighorn Campground from the West Frontage Road. There would be no impacts to farmlands, threatened, endangered, and species of concern, cultural resources, and Section 4(f) properties. Mitigation measures would be applied to offset most impacts. A summary of potential environmental impacts and proposed mitigation measures is included in **Table S-1**.

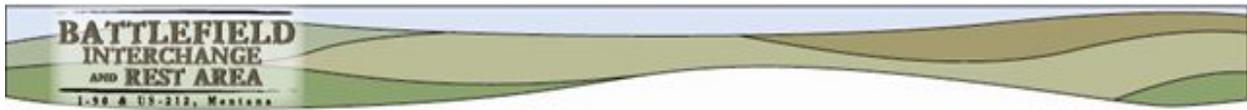
**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
Land Use	<ul style="list-style-type: none"> <li>▪ Undeveloped land in the southwest interchange quadrant would be converted to the rest area facility and transportation use.</li> </ul>	<ul style="list-style-type: none"> <li>▪ None required.</li> </ul>
Farmland	<ul style="list-style-type: none"> <li>▪ No impact.</li> </ul>	<ul style="list-style-type: none"> <li>▪ None required.</li> </ul>
Social Impacts and Environmental Justice	<ul style="list-style-type: none"> <li>▪ No impact.</li> </ul>	<ul style="list-style-type: none"> <li>▪ None required. Applicable Tribal Employment Rights Organization requirements will be addressed.</li> </ul>
Right-of-Way, Relocation, and Utilities	<ul style="list-style-type: none"> <li>▪ No impact to or relocation of structures, homes, or businesses.</li> <li>▪ Access to two properties (hospital and tribal police office) adjacent to new East Frontage Road connection would be altered.</li> </ul>	<ul style="list-style-type: none"> <li>▪ None required.</li> <li>▪ New approaches will be constructed for affected properties and temporary access may be required.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Approximately 0.3 hectare (0.8 acre) of additional right-of-way is required for the northeast portion of the East Frontage Road.</li> <li>▪ Minor relocation of underground utilities required.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Right-of-way would be acquired in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act.</li> <li>▪ Utility relocation in accordance with MDT Policy.</li> </ul>



**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

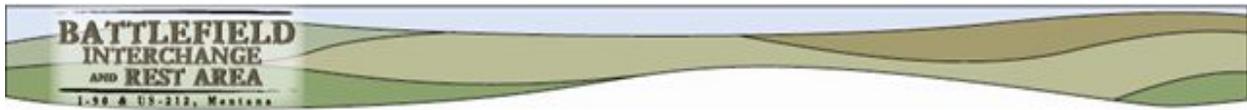
ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
Economic	<ul style="list-style-type: none"> <li>■ No Impact.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>
Non-Motorized Travel (Pedestrians and Bicyclists)	<ul style="list-style-type: none"> <li>■ Improved pedestrian and bicycle travel to the Little Bighorn Battlefield National Monument Visitor's Center.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>■ The immediate vicinity of proposed rest area, including the Little Bighorn Campground, would experience occasional minor noise level increases from idling trucks.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>
Water Resources and Water Quality	<ul style="list-style-type: none"> <li>■ Short-term increased sedimentation potential until disturbed areas are revegetated.</li> <li>■ Potential for long-term increased pollution from vehicles and people due to new impervious areas at rest area site.</li> <li>■ Stormwater runoff would be altered at the Little Bighorn Campground.</li> </ul>	<ul style="list-style-type: none"> <li>■ Best management practices for erosion and sediment control would be adhered to.</li> <li>■ An erosion control and sediment plan would be prepared in compliance with the National Pollution Discharge Elimination System.</li> <li>■ Clearing and grubbing would be limited to the area necessary for construction of the project.</li> <li>■ Potable water would be supplied by the Crow Agency municipal system.</li> <li>■ Adequate drainage culverts would be placed beneath US 212 between the railroad and frontage road to allow drainage flows to move north and away from the Little Bighorn Campground development.</li> <li>■ Drainage facilities would be provided to prevent the ponding of storm runoff water in areas where street and access regrading has occurred.</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>■ Approximately 0.1 hectare (0.3 acre) of non-jurisdictional wetland impacts due to fill for I-90 eastbound off-ramp.</li> </ul>	<ul style="list-style-type: none"> <li>■ According to Executive Order 11990 wetland impact mitigation is to be addressed in the following sequence:</li> </ul>



**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

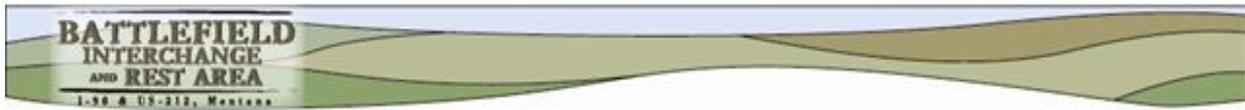
ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
		<ol style="list-style-type: none"> <li>1. Avoid potential impacts to the maximum extent practicable.</li> <li>2. Minimize unavoidable impacts to the extent appropriate and practicable.</li> <li>3. Compensate for unavoidable adverse impacts that remain after appropriate and practicable minimization has occurred.</li> </ol> <ul style="list-style-type: none"> <li>■ Replacement of the impacted wetland is likely and would be coordinated with the Crow Tribe, MDT, and US Corps of Engineers.</li> <li>■ Additionally, minimizing impacts to wetlands during construction would include the following:               <ul style="list-style-type: none"> <li>■ BMPs for erosion and sediment control would be adhered to.</li> <li>■ An erosion control and sediment plan would be prepared in compliance with the NPDES.</li> <li>■ To reestablish permanent desirable vegetation, disturbed areas within MDT right-of-way and easements would be seeded with desirable plant species as soon as practicable after disturbances, as recommended by the MDT Botanist.</li> <li>■ Work in and adjacent to wetlands and water resources would follow applicable regulations, permits, and authorizations.</li> </ul> </li> </ul>





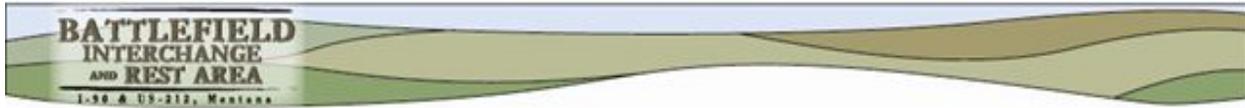
**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
Vegetation	<ul style="list-style-type: none"> <li>■ Approximately 4.1 hectares (10.1 acres) of native vegetation and grasses impacted in the construction area.</li> </ul>	<ul style="list-style-type: none"> <li>■ In accordance with MDT Standard Specifications, topsoil salvaged from construction areas would be stockpiled for reuse and reclamation as the Preferred Alternative is completed.</li> <li>■ According to MDT Standard Specification, the contractor must comply with the Montana County Noxious Weed Control Law, Title 7, Chapter 22, Part 21 MCA, Executive Order 13112 – Invasive Species, and Big Horn County weed management requirements during construction. Direct control of noxious weeds on disturbed ground within the construction area would be required as part of both these proposed projects’ construction contracts.</li> <li>■ To reduce the spread and establishment of noxious weeds and to reestablish permanent vegetation, disturbed areas within MDT right-of-way and easements would be seeded with desirable plant species as soon as practicable after disturbance, as recommended by the MDT Botanist.</li> <li>■ In accordance with MDT Standard Specifications, clearing and grubbing will be limited to the area necessary for construction of the project.</li> </ul>
Wildlife and Fisheries	<ul style="list-style-type: none"> <li>■ Loss of approximately 4.1 hectares (10.2 acres) natural vegetation potentially used for terrestrial species habitat and forage.</li> <li>■ No impacts to aquatic resources.</li> </ul>	<ul style="list-style-type: none"> <li>■ To reestablish permanent vegetation, disturbed areas within MDT right-of-way and easements would be seeded and planted with desirable plant species as soon as practicable after disturbance, as recommended by the MDT Botanist.</li> </ul>



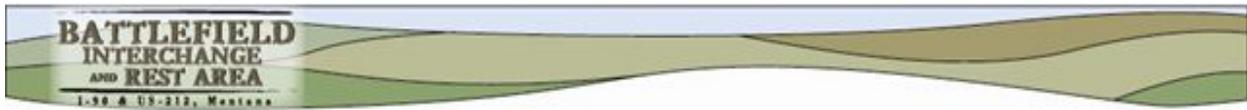
**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
		<ul style="list-style-type: none"> <li>■ Trees and tall shrubs removal would be minimized to the greatest extent practicable.</li> <li>■ As appropriate and directed by the MDT Botanist, native trees, such as green ash or boxelder, would be planted as part of the rest area landscape design to provide future habitat for native/migratory birds.</li> <li>■ Construction would need to be in compliance with the Migratory Bird Treaty Act.</li> <li>■ Power lines relocated within MDT right-of-way as a result of this project would be raptor-proofed in accordance with MDT policy.</li> </ul>
Floodplains	<ul style="list-style-type: none"> <li>■ Loss of approximately 3.7 hectares (9.1 acres) of floodplain area.</li> </ul>	<ul style="list-style-type: none"> <li>■ The project would comply with all floodplain laws, regulations, and permits, if required. No other mitigation would be required.</li> </ul>
Threatened, Endangered, and Sensitive Species	<ul style="list-style-type: none"> <li>■ No impact.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>■ No impact.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>
Contaminated Sites/Hazardous Materials	<ul style="list-style-type: none"> <li>■ Two former underground storage tank sites were identified, but no hazardous materials are anticipated to be encountered.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required</li> </ul>
Visual Quality	<ul style="list-style-type: none"> <li>■ Paving approximately 2.2 hectares (5.5 acres) for the rest area facility and parking area, realignment of the interchange ramps, construction of a rest area building, and placement of exterior lighting fixtures, landscaping,</li> </ul>	<ul style="list-style-type: none"> <li>■ Disturbed areas within MDT right-of-way and easements would be revegetated with desirable plant species as soon as practicable after disturbance, as recommended by the MDT Botanist.</li> </ul>



**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
	<p>and signing would alter the visual character of the vicinity but would not adversely affect the visual quality of the area.</p> <ul style="list-style-type: none"> <li>■ Views to the east from the adjacent campground would be modified to include the rest area and associated truck parking.</li> </ul>	<ul style="list-style-type: none"> <li>■ Landscaped areas with frequent human use (such as picnic and pet areas) would be provided with an appropriate turf grass.</li> <li>■ Interpretive signing could be included for views from proposed rest area building toward Little Bighorn Battlefield National Monument.</li> <li>■ As determined appropriate and feasible during final design, a fence or row of trees will be placed between the rest area and the campground.</li> </ul>
Construction	<ul style="list-style-type: none"> <li>■ Potential short-term impacts to air quality, water quality, and noise during construction. Temporary delays to traffic and traffic detour impacts also would likely occur.</li> <li>■ Short-term impacts associated with the rest area include potential increased sedimentation during and after construction until bare soil surfaces are revegetated.</li> </ul>	<ul style="list-style-type: none"> <li>■ Early notification and coordination with adjacent property owners in regard to construction activities would be carried out in an effort to minimize property access impacts. Access to commercial areas and the Little Bighorn Battlefield National Monument would be provided throughout the construction period.</li> <li>■ An erosion control and sediment plan will be prepared and maintained in compliance with the Clean Water Action Section 302, National Pollution Discharge Elimination System (NPDES) regulations. The contractor will be expected to adhere to MDT best management practices (BMPs) for erosion and sediment control and comply with applicable permit conditions.</li> <li>■ In accordance with MDT Standard Specification, a construction traffic control plan would be developed to provide protection, safety, and convenience for motorists,</li> </ul>



**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
		<p>pedestrians, and construction personnel. The traffic control plan must consider various circumstances such as emergency vehicles, mail delivery, and scheduled school bus operations.</p> <ul style="list-style-type: none"> <li>■ As necessary, dust control measures would be used for environmental compliance, to minimize visual impacts and inconvenience to the traveling public.</li> <li>■ Close coordination with Crow Agency officials would be maintained throughout the proposed construction period. A project-specific agreement (PSA), as specified in the MOU between the Crow Tribe and MDT, would be negotiated and entered into by the Crow Tribe and MDT prior to project advertisement. The PSA would cover the specifics of the proposed project and ensure that provisions of the MOU are incorporated into the projects. MDT will take practicable measures to minimize construction impacts during the Crow Fair in August and the battle re-enactment in June.</li> <li>■ In accordance with MDT Standard Specifications, utility relocations would be coordinated with the utility line owner(s) to minimize interruption to utility service. Notification of service interruptions due to relocations is the responsibility of the utility line owner(s).</li> <li>■ In accordance with MDT Standard Specification, if the contractor discovers hazardous materials, the</li> </ul>

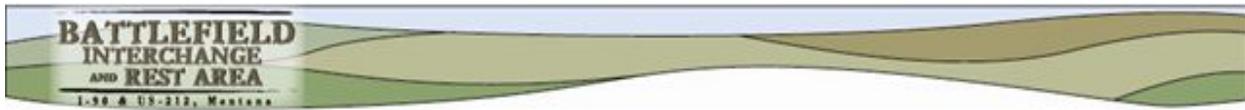




**TABLE S-1: SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES**

ENVIRONMENTAL RESOURCE	PREFERRED ALTERNATIVE	MITIGATION MEASURES
		<p>contractor will stop work and coordinate with the project manager to ensure that the material is managed in accordance with applicable laws and regulations.</p> <ul style="list-style-type: none"> <li>■ In accordance with MDT Standard Specification, in the event that previously unrecorded cultural material is found during construction, activities in the immediate area would be halted, and the MDT archeologist would be contacted to assess the find. Additionally, as appropriate, MDT would invite a Crow Tribe cultural resources specialist to monitor construction during ground-disturbing activities.</li> </ul>
Cumulative	<ul style="list-style-type: none"> <li>■ The Preferred Alternative is not anticipated to create substantial negative cumulative impacts. Potential cumulative benefits regarding accommodating development and land use growth and national monument visitation.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>
Secondary Impacts	<ul style="list-style-type: none"> <li>■ Potential increases in pedestrian activity from new rest area and pedestrian trails.</li> <li>■ Temporary loss of vegetation and trees (discussed under Vegetation).</li> </ul>	<ul style="list-style-type: none"> <li>■ Mitigation for vegetation loss is discussed under vegetation.</li> <li>■ Otherwise, none required.</li> </ul>
Section 4(f)	<ul style="list-style-type: none"> <li>■ No impact.</li> </ul>	<ul style="list-style-type: none"> <li>■ None required.</li> </ul>





## CHAPTER 1.0 PURPOSE AND NEED FOR ACTION

The Montana Department of Transportation (MDT) in conjunction with the Federal Highway Administration (FHWA) proposes to construct a new rest area on the west side of Interstate 90 (I-90) at the present I-90 interchange with US Highway 212 (US 212) south of Crow Agency, Montana. The proposed rest area would replace an outdated and aging facility currently located 29 kilometers (18 miles) west of Hardin on I-90. It is also proposed that interchange and related roadway deficiencies be simultaneously addressed by improving the I-90 and US 212 junction (Battlefield Interchange) near the planned rest area. Interchange and related roadway deficiencies consist of non-standard merge/diverge ramp connections to I-90, non-standard sight distance on US 212 in the interchange area, left hand merge/diverge conditions at the Crow Agency Port-of-Entry, increasing traffic congestion at the East Frontage Road intersection with US 212, and the lack of bike/pedestrian facilities. The interchange project would also affect the frontage roads adjacent to the interchange and extends east along US 212 to the intersection with S-342.

I-90 between northern Wyoming and Hardin, Montana, is a north-south segment of a principle east-west national travel corridor. US 212 begins at the Battlefield Interchange and extends easterly. For purposes of this Environmental Assessment (EA), I-90 and the associated access ramps at the Battlefield Interchange are referenced by their respective north-south direction, and US 212 is referenced as east-west.

This report contains four chapters. Chapter 1.0 describes the purpose and need for the action, including project background and location, the study process, and the elements of the purpose and need. Chapter 2.0 describes the alternatives development and evaluation, preliminary screening of sites, detailed evaluation of sites, and alternatives advanced in the environmental analysis. Chapter 3.0 provides an evaluation of environmental conditions, projects potential impacts, and outlines proposed mitigation measures. Chapter 4.0 contains a summary of public and agency comments and coordination.

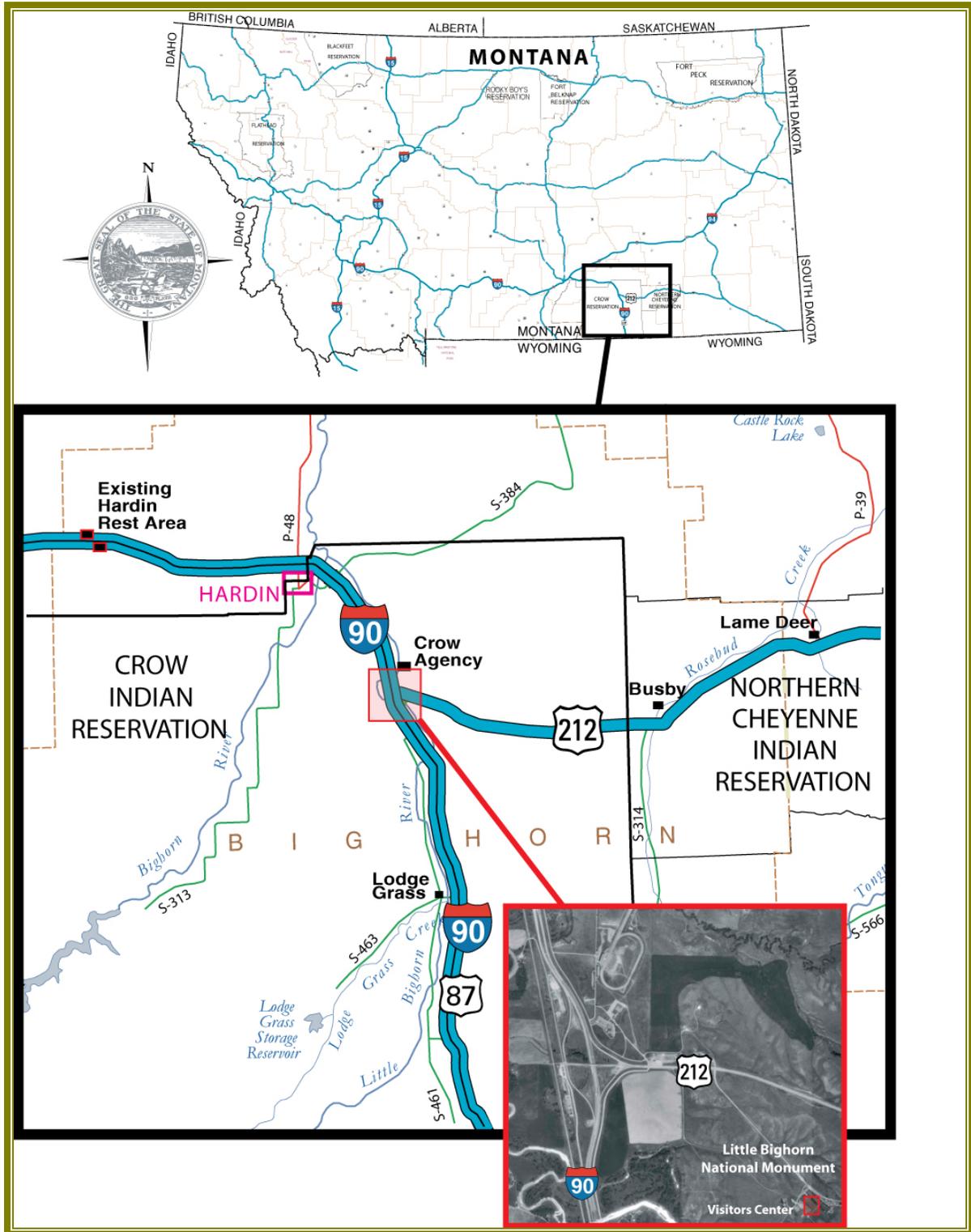
### 1.1 PROJECT LOCATION

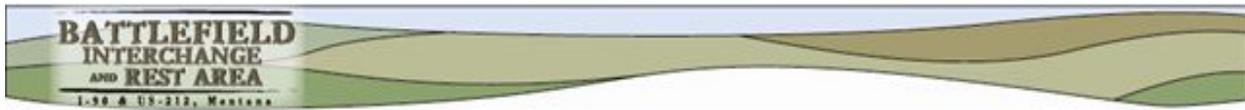
This EA was prepared in accordance with Title 23 of the Code of Federal Regulations Part 771.119, Environmental Assessments. The study area for this EA is in Big Horn County, Montana, and extends from the existing rest area located west of Hardin to Lodge Grass. A project vicinity map is shown in **Figure 1-1**.

### 1.2 STUDY PROCESS

Based on the 1999 *Montana Rest Area Plan (Rest Area Plan)*, a comprehensive planning and engineering process was conducted as part of the 2001 *Battlefield Rest Area Feasibility Report (Feasibility Report)*. The process combined technical work efforts with agency coordination and public involvement. The *Feasibility Report* considered 14 locations for a new rest area between the town of Lodge Grass and the existing rest area west of Hardin. The study findings proposed a new rest area to be constructed in the southwest quadrant of the Battlefield Interchange. The new rest area would provide services and functions served by the Hardin Rest Area; consequentially, the Hardin Rest Area would be retired from service. The *Rest Area Plan* was amended in 2004 and the proposed Battlefield rest area remains consistent with this current document.

**FIGURE 1-1: PROJECT VICINITY MAP**





### 1.3 ELEMENTS OF PURPOSE AND NEED

The need to develop a new rest area along I-90 in Big Horn County and associated roadway/interchange improvements is based on the following factors:

- Existing Rest Area Conditions;
- Rest Area System Deficiencies;
- Traffic on I-90 and US 212;
  - Highway Deficiencies and Safety;
  - Crash History on I-90 and US 212;
- Rest Area Needs of Commercial Trucking;
- The Memorandum of Understanding (MOU) between the Crow Tribe and MDT; and
- Weather Conditions and Highway Closures.

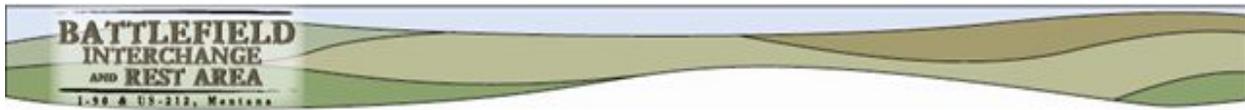
These factors were identified through a series of work tasks conducted for the *Feasibility Report*, which included agency coordination, public involvement, field investigations, document review, and data collection and analysis. As the factors were considered and alternative sites were evaluated, additional elements of purpose and need addressing specific deficiencies at the I-90 and US 212 junction were identified. The additional elements were identified as a result of an MDT review of the I-90 and US 212 junction and pertain to transportation operational deficiencies observed at that location. The additional elements were not considered in the selection of the preferred rest area site as part of the *Feasibility Report*. However, the additional elements are relevant to the proposed Battlefield Interchange project and are discussed in the following subsections of this EA.

#### 1.3.1 Existing Rest Area Conditions

The existing rest area, known as the Hardin Rest Area, is located approximately 51 kilometers (32 miles) east of Billings and 29 kilometers (18 miles) west of Hardin. Built in 1972 and remodeled in 1988, the facility is aging and requires extensive rehabilitation in order to continue to meet the designated functions. In addition, many of the facility design elements are outdated and do not fully meet the needs of the traveling public.

The Hardin Rest Area is a two-sided or split rest area design, providing services for westbound and eastbound travelers through separate facilities. Since there are essentially two facilities, operation and maintenance is substantially greater than that of a single-sided rest area. The split design utilizes a considerable amount of land and resources, as each site requires separate water and sanitation infrastructure. The current design of the facility also requires that each restroom be completely closed for cleaning, leaving no alternative usable restroom. The split design is not consistent with the objectives of the *Rest Area Plan (1999)*.

Water supply has been identified as the primary ongoing problem with the Hardin site. Three different wells have been drilled for the site in an attempt to meet water needs, but the water supply is still inadequate.



Installing water-saving fixtures and replacing supply pipes to increase water flow and pressure have improved restrooms, but water supply continues to be insufficient during high usage periods.

During winter months, from December through May, the rest area is closed because of the lack of insulation within the buildings. This lack of insulation can cause the plumbing to freeze if the pipes are not drained and winterized. Vandalism is problematic during the winter closure period. Typically, bullet holes through doors and other damage require additional repair before the opening of the rest area each spring.

### 1.3.2 Rest Area System Deficiencies

Few services are provided for travelers along I-90 and US 212 in southeastern Montana. Apart from the Hardin Rest Area, the other rest areas in southeastern Montana and northeastern Wyoming are located east along US 212 in Broadus, south along I-90 near Sheridan, Wyoming, and west along I-90 west of Billings. The *Rest Area Plan* (1999) recommends ideal spacing between rest areas to be approximately one hour of travel time. The rest area spacing recommendation and current lack of adequate rest area services indicate that a new or improved rest area is needed along the portion of I-90 between Sheridan, Wyoming and Billings, Montana. **Table 1-1** provides distance and travel times to the closest rest areas along I-90 and US 212.

**TABLE 1-1: APPROXIMATE DISTANCE AND TRAVEL TIME BETWEEN REST AREAS**

INITIAL REST AREA LOCATION	I-90 WEST OF LAUREL	I-90 NORTHWEST OF SHERIDAN	US 212 SOUTHEAST OF BROADUS
I-90 West of Hardin (existing)	96 kilometers (60 miles)/1 hour	140 kilometers (87 miles)/1 hour and 27 minutes	230 kilometers (143 miles)/2 hours and 23 minutes
Battlefield Interchange (proposed)	148 kilometers (92-miles)/1 hour and 32 minutes	89 kilometers (55-miles)/55 minutes	179 kilometers (111 miles)/1 hour and 51 minutes

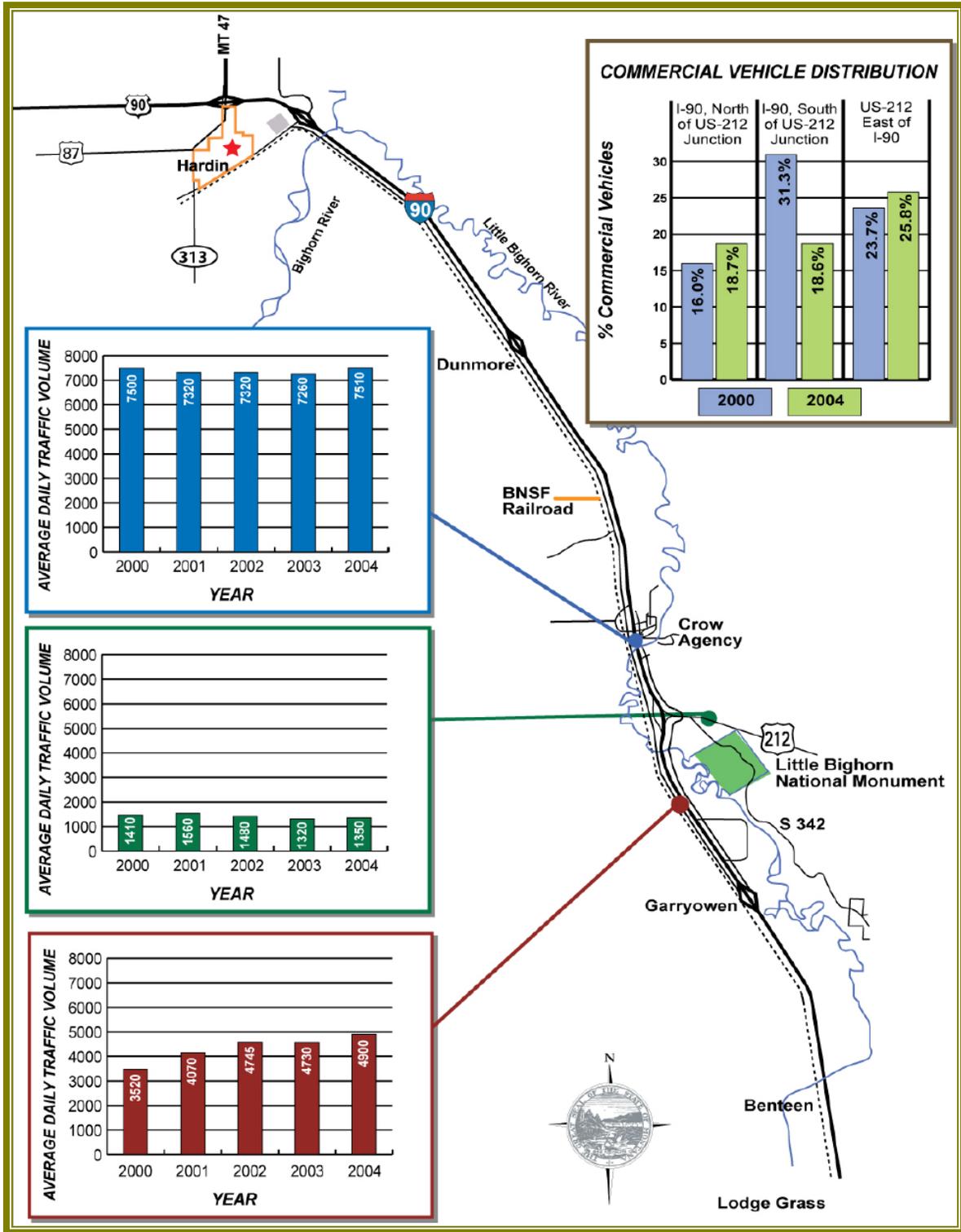
Note: Assumes a speed of 60 miles per hour.

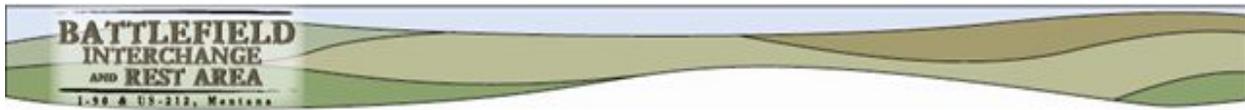
### 1.3.3 Traffic on I-90 and US 212

I-90 and US 212 are the primary roadways in the study area and are utilized by many long-distance travelers in southeastern Montana. As a result, adequate rest area accommodations are necessary. The relatively heavy use of the road is evident by reviewing average annual daily traffic (AADT) volumes for I-90 and US 212, which are provided in **Figure 1-2**. The figure provides data from 2000 to 2004. I-90 traffic volumes north of the US 212 interchange are substantially higher than the volumes south of the interchange, indicating that US 212 is a major feeder into I-90 for traffic traveling to and from the Billings area. The Crow Agency area is also a substantial generator of traffic on I-90. I-90 traffic north of the Battlefield Interchange shows relatively stable volumes over the five-year period, with short-term growth being flat. Traffic volumes on I-90 south of the US 212 interchange are substantially lower, but show an increasing trend with a short-term annualized



**FIGURE 1-2: AVERAGE DAILY TRAFFIC (ADT)**





growth rate of about 7 percent (traffic increased from 3,520 [2000] to 4,900[2005]). US 212 exhibits relatively stable traffic volumes and flat short-term growth rates. (The 2003 traffic volumes on US 212 may be a result of faulty recording equipment and are considered to be not representative of actual US 212 traffic conditions.)

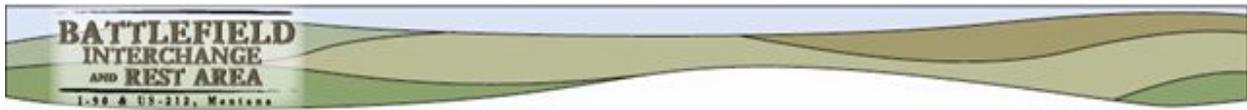
Additionally, frontage roads on either side of I-90 provide access to local destinations. A secondary state roadway, S-342, provides access connecting the Little Bighorn Battlefield National Monument to US 212.

**Highway Deficiencies and Safety:** Numerous deficiencies in the existing highway infrastructure create increasingly unsafe conditions. Those deficiencies include:

- Non-standard exit and merge ramp connections to I-90;
- Non-standard roadway shoulders on US 212;
- Narrow bridge width on existing US 212 bridge over I-90;
- Inadequate configuration of westbound I-90 ramps intersection with US 212;
- Insufficient sight distance on US 212 over I-90; and
- Insufficient spacing of ramp termini and frontage road intersection.
- Lack of bike/pedestrian sidewalk on the I-90 overpass bridge.

**Crash History on I-90 and US 212:** Data collected by MDT during a five-year period from July 1999 to June 2004 revealed 45 reported crashes on I-90. The crashes were located between reference posts (RP) 509 (Crow Agency) and RP 512 (just south of the US 212 interchange), and on US 212 between RP 0.0 and RP 1.0, located at the US 212 and the I-90 eastbound ramps. The first leading cause was cited as driver error and the second was weather. No pedestrians were reported to be involved in the incidents.

Comparison with MDT crash statistics for similar roadways in Montana indicates that crash data along I-90 in the proposed project area are below average values for rural interstate highways (see **Table 1-2** and **Figure 1-3**). The I-90 crash rate is somewhat lower than the statewide average severity index and severity rate. Analysis of crash records indicates no unusual or unexpected roadway conditions that affect motorists' behavior or safety are present in the proposed project area. However, crash data on US 212 exceeds average values for a rural primary National Highway System highway. The crash rate is more than two times higher than the statewide rate. The severity index is 10 percent higher than expected values. The severity rate is just over 2.5 times higher than the statewide averages for this type of highway. The reasons for this may be due to increased development along US 212, speed changes from adjoining sections to the east, or because of the close proximity of several major intersections. Those conditions induce turning, stopping, and weaving movements. Crash records indicate that 71 percent of the crashes are at or near intersections or driveway approaches.



**TABLE 1-2: CRASH STATISTICS, 1999 – 2004**

	PROJECT AREA I-90	PROJECT AREA US 212	MDT AVERAGES FOR SIMILAR ROADWAYS	
			INTERSTATE	NHS <sup>(1)</sup> PRIMARY
Crash Rate <sup>(2)</sup>	1.03	3.05	1.11	1.30
Severity Index <sup>(3)</sup>	1.47	2.57	1.97	2.32
Severity Rate <sup>(4)</sup>	1.51	7.84	2.18	3.02

Source: MDT Crash Records.  
 (1) National Highway System, (2) Number of crashes per million vehicle miles, (3) The severity index accounts for the different degree of severity among crashes involving fatalities, injuries, and property damage, (4) Crash rate multiplied by the severity index.

### 1.3.4 Rest Area Needs of Commercial Trucking

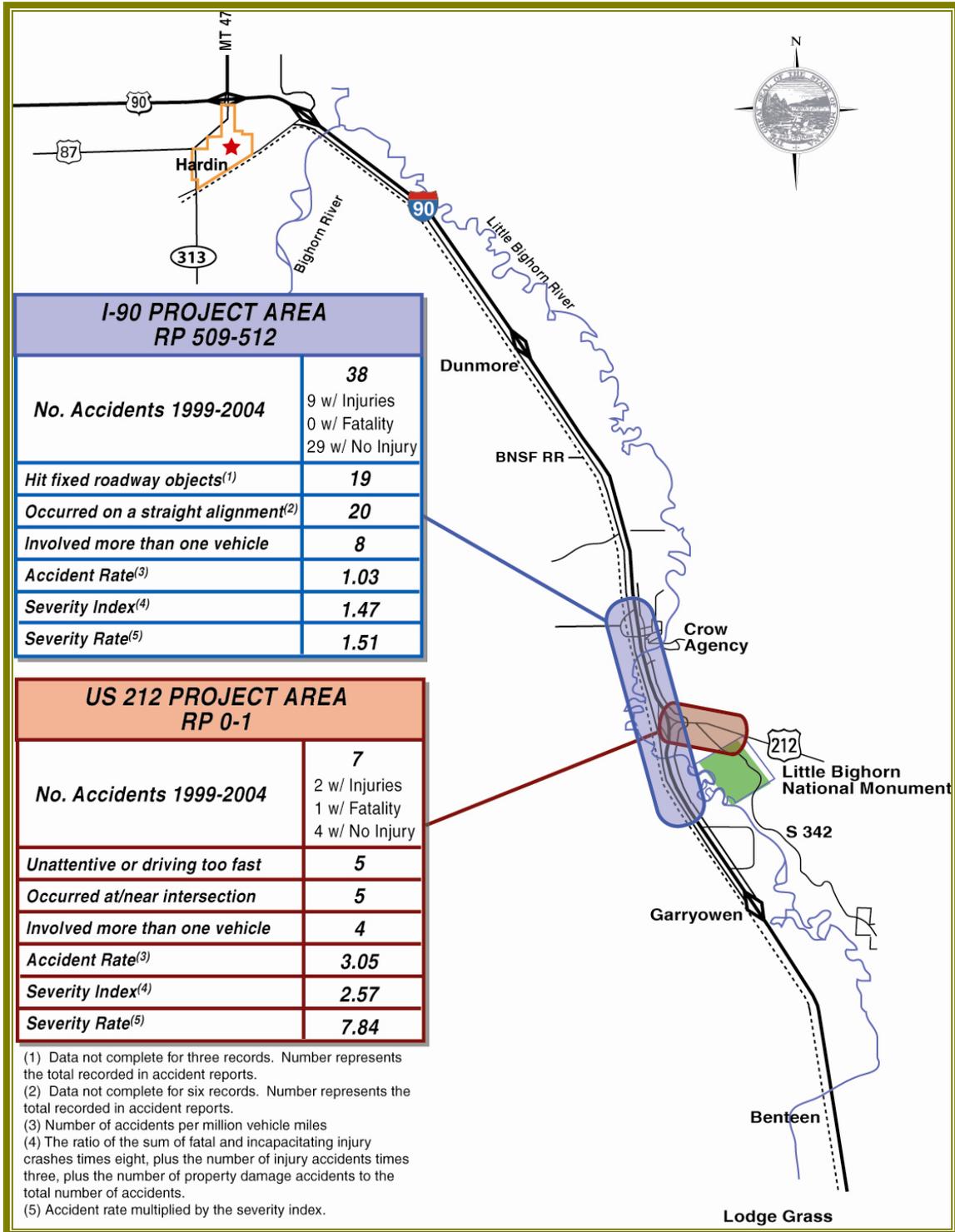
I-90 in Montana is a key route for commercial trucking operations in the northwestern United States. Rest areas are often used for commercial truck parking during inclement weather and required rest periods.

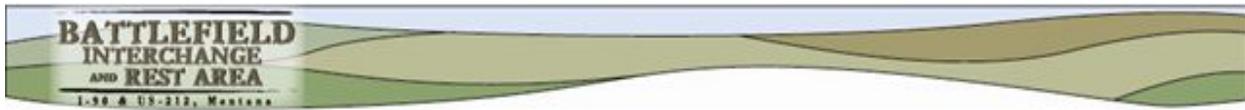
Commercial vehicles make up a large percentage of total traffic volumes on I-90 and US 212. **Table 1-3** and **Figure 1-2** show the commercial vehicle distribution for the years 2000 and 2004. The high percentages of truck traffic in these corridors reinforce the role of I-90 and US 212 as transportation routes that connect regional population centers and are essential highways for shipping and the movement of freight.

**TABLE 1-3: COMMERCIAL VEHICLE DISTRIBUTION FOR I-90 AND US 212**

YEAR	I-90 NORTH OF US 212 JUNCTION	I-90 SOUTH OF US 212 JUNCTION	US 212 EAST OF I-90
2000	16.0%	31.3%	23.7%
2004	18.7%	18.6%	25.8%

**FIGURE 1-3: CRASH STATISTICS AND CHARACTERISTICS, 1999-2004**





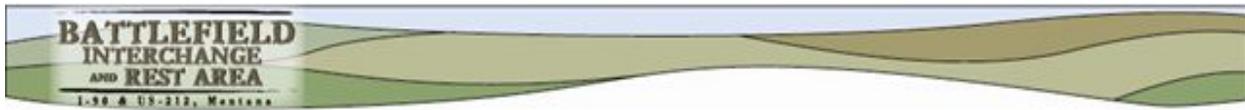
### **1.3.5 Memorandum of Understanding Between the Crow Tribe and MDT**

In the early 1990s MDT and the Crow Indian Tribe (Crow Tribe) developed a MOU related to MDT construction, MDT-contracted maintenance contracts, and other related issues on the Crow Indian Reservation. During the MOU process, the development of a new rest area along I-90 in Big Horn County became a top priority for the Crow Tribe to potentially enhance economic growth or promote expansion in tourist and highway travel-related businesses. Pending a feasibility determination, a commitment was made to build a new rest area at the interchange of I-90 and US 212. Accordingly, the *Feasibility Report* was commissioned by MDT. The MOU was updated in 2006 and states that a visitor center/rest area facility is in the best interest of the public as a whole on or near the junction of US 212 and I-90 on the Reservation. A copy of the MOU is included in **Appendix A**. The *Feasibility Report* is available at MDT.

### **1.3.6 Weather Conditions and Highway Closure**

Southeastern Montana routinely experiences severe weather during the winter months. This weather can create hazardous driving conditions for travelers along I-90 and US 212. As a result, MDT may close I-90 or US 212 at the Battlefield junction during severe weather conditions. MDT reports roadway closures of I-90, which can occur two to three times per winter season while US 212 is rarely closed. Up to 90 percent of the I-90 closures occur in response to the State of Wyoming closing I-90 south of the Montana/Wyoming border during storm conditions. When this occurs, eastbound I-90 vehicles and/or eastbound US 212 vehicles are required to stop and wait at or near the interchange of I-90 and US 212. During highway closures, the traveling public needs a facility where they can safely park while waiting for the highway to reopen.





## CHAPTER 2.0 ALTERNATIVES CONSIDERED

### 2.1 SITE ALTERNATIVES DEVELOPMENT AND EVALUATION

A multi-phased alternatives analysis process was conducted as part of the *Feasibility Report (December 2001)* to determine the preferred site for a new or improved rest area along I-90 in Big Horn County. The first phase of the process was preliminary screening of site alternatives, which focused on “fatal flaw” characteristics and practicality associated with each site. The second phase was a detailed screening of site alternatives, which focused on specific feasibility aspects of the sites. Each phase of the process involved:

- Identification of Site Alternatives;
- Definition of Evaluation Criteria; and
- Technical Evaluations.

During the site evaluation process, coordination meetings were held with the public and local/regional agencies. Input from those stakeholders provided valuable information that was utilized during the development and evaluation of site alternatives. This section summarizes both phases of the screening process and culminates with the selection of a preferred site. The MDT/Crow Tribe MOU was a major factor in consideration of proposed sites.

### 2.2 PRELIMINARY SCREENING OF SITES

#### **2.2.1 Alternatives Considered**

During the first phase of the *Feasibility Report* process, 17 initial site alternatives were identified as a result of reviewing the study area, coordinating with local/regional agencies, and coordinating with the general public to identify physical opportunities and constraints. **Table 2-1** lists the 17 site alternatives and **Figure 2-1** graphically depicts the locations.

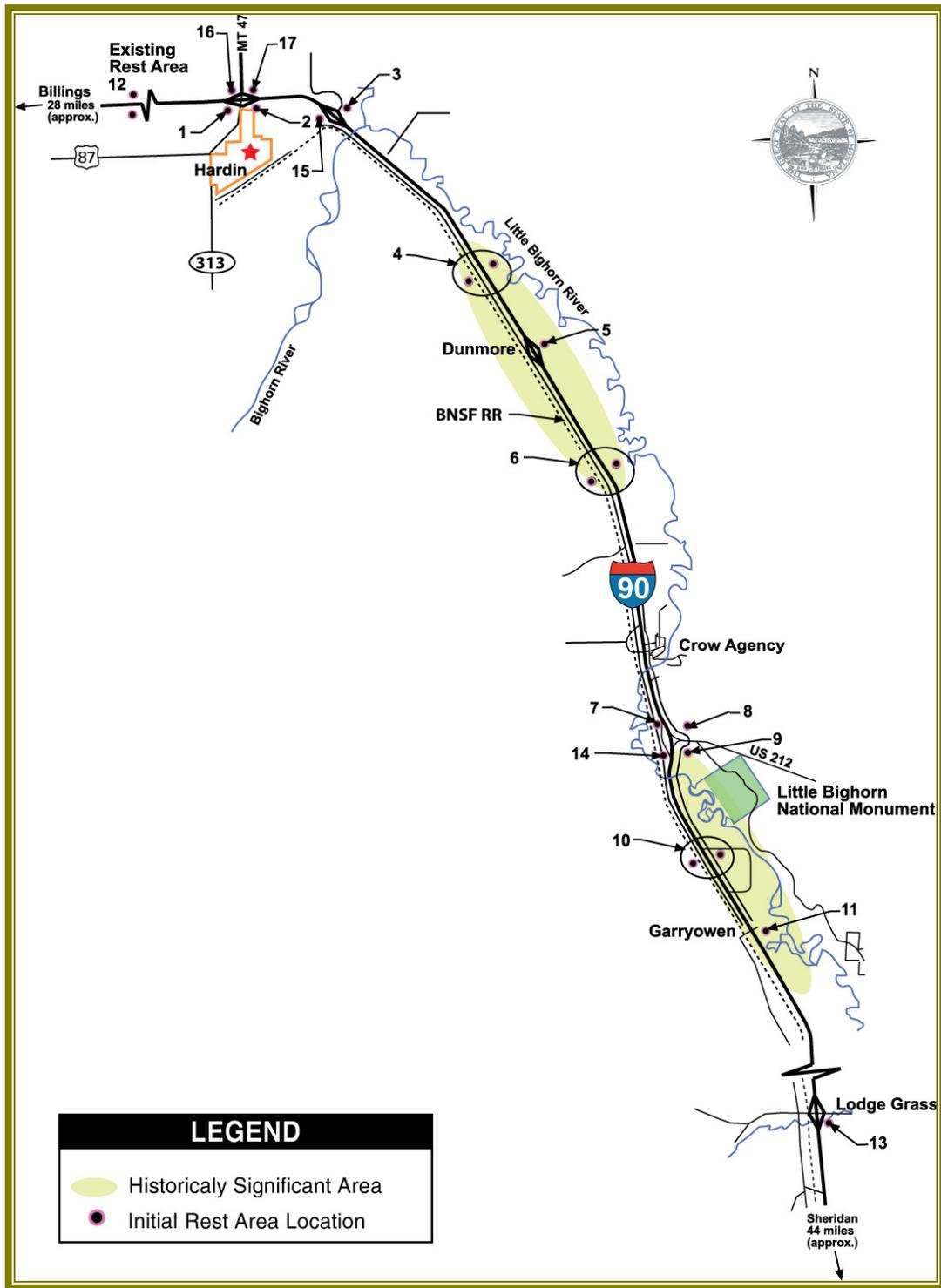
Alternatives considered for the proposed interchange will need to accommodate site constraints for the rest area as well as local traffic conditions and needs. A summary of the criteria and alternatives considered for the interchange is provided in Section 2.4.2, Description of the Preferred Alternative.

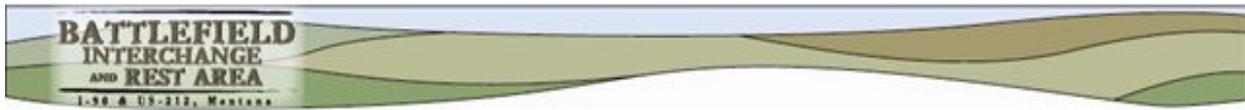


**TABLE 2-1: REST AREA SITE ALTERNATIVES CONSIDERED DURING  
PRELIMINARY SCREENING**

<b>SITE #</b>	<b>LOCATION</b>
1	Hardin West Interchange—Southwest Quadrant
2	Hardin West Interchange—Southeast Quadrant
3	Hardin East Interchange—North Side
4	Between Hardin and Dunmore
5	Dunmore Interchange
6	Between Dunmore and Crow Agency
7	US 212 Interchange—Northwest Quadrant
8	US 212 Interchange—Northeast Quadrant
9	US 212 Interchange—Southeast Quadrant
10	Between US 212 and Garryowen
11	Garryowen Interchange—East Side
12	West of Hardin (Reconstruction of Existing Rest Area)
13	Lodge Grass Interchange—Southeast Quadrant
14	US 212 Interchange—Southwest Quadrant
15	Hardin East Interchange—South Side
16	Hardin West Interchange—Northwest Quadrant
17	Hardin West Interchange—Northeast Quadrant

**FIGURE 2-1: INITIAL ALTERNATIVES FOR REST AREA LOCATIONS**





### 2.2.2 Evaluation Criteria

The following evaluation criteria were utilized during the *Feasibility Report's* preliminary screening to determine fatal flaws associated with sites under consideration:

- Facility Requirements and Site Limitations;
- Safety for Traveling Public/Emergency Service Provisions;
- Potential for Environmental Issues;
- Compatibility and Function within Existing Highway/Roadway System; and
- Attainment of Goals of the *Rest Area Plan (1999)*.

### 2.2.3 Evaluation Results

Each of the 17 initial rest area sites was evaluated to determine if fatal flaws existed that would prohibit advancing the site to the next phase of analysis. Details of the evaluation process are contained in the *Feasibility Report*. A comparison of the alternatives is shown in **Figure 2-2**. Qualitative results from the preliminary screening are summarized in **Table 2-2**. Factors presented in the table focus on reasons for not advancing certain site alternatives. Based on the preliminary screening, Sites 3, 7, 12, 14, 15, 16, and 17 were advanced to the next analysis phase for detailed evaluation of the sites. (Substantial comment was received from members of the Hardin community in support of rehabilitating the existing rest area at Site 12 (Hardin). As a result, rehabilitation of the existing rest area at Site 12 was also forwarded for detailed evaluation in the *Feasibility Report*).



**TABLE 2-2: ALTERNATIVES ELIMINATED AND RATIONALE**

<b>SITE #</b>	<b>LOCATION</b>
<b>1</b>	<b>HARDIN WEST INTERCHANGE - SOUTHWEST QUADRANT</b>
	<ul style="list-style-type: none"> <li>▪ Site is too small to accommodate facility/site requirements.</li> <li>▪ Duplication of services with area businesses.</li> <li>▪ Does not fully serve US 212 travelers.</li> </ul>
<b>2</b>	<b>HARDIN WEST INTERCHANGE - SOUTHEAST QUADRANT</b>
	<ul style="list-style-type: none"> <li>▪ Site is too small to accommodate facility/site requirements.</li> <li>▪ Duplication of services with area businesses.</li> <li>▪ Does not fully serve US 212 travelers.</li> </ul>
<b>4</b>	<b>BETWEEN HARDIN AND DUNMORE</b>
	<ul style="list-style-type: none"> <li>▪ Potential for cultural resources being impacted.</li> <li>▪ Does not meet state <i>Rest Area Plan</i> for one-sided rest area.</li> <li>▪ Conflicts with railroad.</li> <li>▪ Does not fully serve US 212 travelers.</li> </ul>
<b>5</b>	<b>DUNMORE INTERCHANGE</b>
	<ul style="list-style-type: none"> <li>▪ Potential for cultural resources being impacted.</li> <li>▪ Would require reconstruction of interchange.</li> <li>▪ Does not fully serve US 212 travelers.</li> </ul>
<b>6</b>	<b>BETWEEN DUNMORE AND RIGHT-OF-WAY AGENCY</b>
	<ul style="list-style-type: none"> <li>▪ Potential for cultural resources being impacted.</li> <li>▪ Does not meet state <i>Rest Area Plan</i> for one-sided rest area.</li> <li>▪ Conflicts with railroad.</li> <li>▪ Does not fully serve US 212 travelers.</li> </ul>
<b>8</b>	<b>US 212 INTERCHANGE - NORTHEAST QUADRANT</b>
	<ul style="list-style-type: none"> <li>▪ Poor visibility from I-90.</li> <li>▪ Proximity to hospital causes concern for trucks.</li> <li>▪ Does not have adequate open land for the size of rest area needed.</li> </ul>
<b>9</b>	<b>US 212 INTERCHANGE - SOUTHEAST QUADRANT</b>
	<ul style="list-style-type: none"> <li>▪ Potential for impacts to the cultural resources and views significant to the Little Bighorn</li> </ul>

**TABLE 2-2: ALTERNATIVES ELIMINATED AND RATIONALE**

SITE #	LOCATION
	Battlefield National Monument.
<b>10</b>	<b>BETWEEN US 212 AND GARRYOWEN</b>
	<ul style="list-style-type: none"> <li>▪ Potential for impacts to the cultural resources and views significant to the Little Bighorn Battlefield National Monument.</li> <li>▪ Does not adequately serve US 212 travelers.</li> <li>▪ Located within I-90 winter closure area, access is difficult for emergency services.</li> <li>▪ Does not meet state <i>Rest Area Plan</i> for one-sided rest areas.</li> <li>▪ Conflicts with railroad.</li> </ul>
<b>11</b>	<b>GARRYOWEN INTERCHANGE - EAST SIDE</b>
	<ul style="list-style-type: none"> <li>▪ Potential for impacts to the cultural resources and views significant to the Little Bighorn Battlefield National Monument.</li> <li>▪ Located within I-90 winter closure area, access is difficult for emergency services.</li> <li>▪ Does not adequately serve US 212 travelers.</li> </ul>
<b>13</b>	<b>LODGE GRASS INTERCHANGE - SOUTHEAST QUADRANT</b>
	<ul style="list-style-type: none"> <li>▪ Does not fall mid-way between Sheridan and Billings.</li> <li>▪ Located within I-90 winter closure area, access is difficult for emergency services.</li> <li>▪ Concern for environmental impact storm drainage would have on adjacent creek.</li> <li>▪ Does not adequately serve US 212 travelers.</li> </ul>

## 2.3 DETAILED EVALUATION OF SITES

Completion of the preliminary screening phase resulted in the advancement of seven sites (see **Table 2-3**).

### 2.3.1 Evaluation Criteria

The initial list of evaluation criteria developed during the preliminary screening phase was refined and enhanced for application during the detailed screening phase. The refinement of evaluation criteria was intended to provide greater focus on feasibility issues of each site and adherence to the purpose and need of the proposed project. Evaluation criteria used during the detailed screening phase in the *Feasibility Report* are summarized below.



**TABLE 2-3: REST AREA SITE ALTERNATIVES CONSIDERED  
DURING DETAILED SCREENING**

SITE #	LOCATION
3	Hardin East Interchange - North Side
7	US 212 Interchange - Northwest Quadrant
12	West of Hardin (Reconstruction of Existing Rest Area)
14	US 212 Interchange - Southwest Quadrant
15	Hardin East Interchange - South Side
16	Hardin West Interchange - Northwest Quadrant
17	Hardin West Interchange - Northeast Quadrant

- Availability of Water and Sewer Utilities;
- Comparative Construction Costs;
- Ability to Acquire Land;
- Design Standards (Constructability);
- Magnitude of Maintenance/Operation Costs; and
- Duplication or Conflict of Services with Area Businesses or Land Uses.

The seven sites identified in the detailed screening phase were further evaluated based on the following criteria:

- Size of Site;
- Land Acquisition;
- Utilities;
- Access;
- Public Acceptance; and
- Compatibility with Flood Plains.



### 2.3.2 Evaluation Results

Figure 2-3 shows the results of the detailed evaluation screening in the *Feasibility Report* based on the above criteria. This analysis favors the selection of Sites 7 and 14 as the preferred location for the new rest area. Sites 3, 12, and 15 were eliminated as alternatives because of unavailability of utilities. Sites 16 and 17 were eliminated from further consideration because of unsatisfactory public acceptance. Sites 7 and 14 were found acceptable for the criteria. Accordingly, it was determined that a combination of the northwest and southwest quadrants of the I-90 and US 212 interchange (Sites 7 and 14) were the preferred locations for the new rest area facility. While elements of the rest area are proposed for development in both sites, the primary facility is proposed to be located in the southwest quadrant. The factors that support the selection of this site are:

- MDT currently has easements on the site. Additional easements may not be required with only temporary-use construction permits necessary.
- Field investigations indicate that water and sewer systems can be provided on site.
- With on- and off-ramp modifications, the Battlefield Interchange provides good access for this location for both highways.
- The area between a realigned eastbound on-ramp and the frontage road provides approximately 6 hectares (15 acres) for the development of a rest area. The design criteria for the proposed project require a site with a minimum of 5 hectares (12 acres).
- The Little Bighorn Battlefield National Monument can be seen to the southeast from this site. This valuable view shed would accommodate the inclusion of an interpretive center at the rest area and serve to enhance the tourism experience of the area.
- Travel times to the closest rest areas along I-90 and I-94 are approximately one hour from the site.

## 2.4 ALTERNATIVES ADVANCED

### 2.4.1 No-Action Alternative

The No-Action Alternative consists of providing no new rest area or modifications to the present Battlefield Interchange. The present Hardin Rest Area, with its deficiencies, would continue to be available seasonally for travelers use. The present configuration of the Battlefield Interchange would continue to be used by the traveling public and maintained by MDT. The No-Action Alternative would not meet the purpose and need of the proposed project, but was forwarded through the analysis in this EA to provide a baseline for comparison.

**FIGURE 2-3: DETAILED SCREENING OF REST AREA SITES**

Initial Evaluation Criteria	Site 3	Site 7	Site 12	Site 14	Site 15	Site 16	Site 17
Availability of water and sewer utilities							
Comparative construction costs							
Ability to acquire land							
Comparative design standards constructability							
Magnitude of maintenance / operation costs							
Duplication or conflict of services with area businesses or land uses							

	Meets Criteria		Meets Criteria Somewhat		Does Not Meet Criteria
	Not Forwarded		Forwarded		

## 2.4.2 Preferred Alternative

The preferred site would be located just west of the Battlefield Interchange on land south of US 212 between a realigned eastbound on-ramp and the I-90 West Frontage Road. The Preferred Alternative is located within the following 4 parcels in east-central Big Horn County and the Crow Reservation: 1) S ½ (lot 4) Section 7, T3S, R35E, 2) E ½ of SE ¼ of Section 12, T3S, R34E, 3) E ½ of NE ¼ of Section 13, T3S, R34E, and 4) Lots 1 and 2 of Section 18, T3S, R35E. The Preferred Alternative is located directly west of the Little Bighorn Battlefield National Monument and approximately 3 kilometers (1.9 miles) south of Crow Agency. A Burlington Northern Santa Fe mainline track is located west of the I-90 West Frontage Road.

To accommodate the Preferred Alternative for the rest area location and to address local roadway and traffic conditions discussed in the Purpose and Need, improvements to the Battlefield Interchange would be necessary. Criteria for evaluation of potential improvement alternatives included the following:

- Accommodating the rest area site plan;
- Addressing existing system deficiencies;
- Accommodating future traffic conditions;
- Minimizing the need for additional right-of-way;
- Minimizing impacts to adjacent businesses and property owners;
- Minimizing environmental impacts such as wetlands and floodplains; and
- Minimizing construction costs.

Potential alternatives considered for improving the interchange included a typical cloverleaf configuration, a single point urban interchange, and a tight diamond design similar to the existing configuration. The no action alternative (no-build) was also considered for a baseline comparison. After review, the cloverleaf configuration was dismissed from further consideration primarily because of the large amount of additional right-of-way needed for the access ramps. While this configuration would address existing system deficiencies, it would not allow enough space for the rest area, it would accommodate a much larger traffic volume than is really needed, it would have greater impacts to adjacent businesses, wetlands and floodplains, and would have higher construction costs than a typical tight diamond design. The single point urban interchange was also dismissed from further analysis because it would accommodate a much larger traffic volume than needed and would require a larger structure over I-90 than a tight diamond design, increasing construction costs. Lastly, the no action alternative was also dismissed since it did not address the needs of the existing system deficiencies. Under the no action alternative, there would be insufficient land area to accommodate the proposed rest area site plan and the existing deficiencies (narrow bridge width over I-90, inadequate ramp configuration, and insufficient sight distances) would continue to exist and even be exasperated as traffic volumes and tourist related activities increase.

The tight diamond design better meets the selection criteria as it can easily accommodate the rest area site plan, addresses existing system deficiencies and future traffic conditions, can be constructed within the existing right-of-way, and minimizes impacts to adjacent property owners, businesses, and environmental

resources. Therefore, the tight diamond design was chosen as the Preferred Alternative for the Battlefield Interchange.

***Proposed Project Components Addressing Purpose and Need Elements***

Figures 2-4, 2-5, and 2-6 show preliminary conceptual layouts of what the rest area and interchange may look like. As the design process continues, final rest area and interchange plans are likely to evolve from what is shown in those figures.

**1. Rest Area Features**

The proposed rest area features described in **Table 2-4** respond to needs and issues identified during coordination with stakeholders and would be incorporated into final project design as determined reasonable and feasible.

**TABLE 2-4: SUMMARY OF PROPOSED REST AREA COMPONENTS**

REST AREA BUILDING	
<ul style="list-style-type: none"> <li>▪ Men’s and Women’s Restroom Facilities</li> <li>▪ Drinking Fountains</li> <li>▪ Traveler Information</li> <li>▪ Public Use Telephones</li> <li>▪ Interpretive Display Areas</li> <li>▪ Interior Security Cameras</li> </ul>	<ul style="list-style-type: none"> <li>▪ Room with Desk/Telephone for Law Enforcement Representative</li> <li>▪ Panoramic View of Little Bighorn Battlefield National Monument</li> <li>▪ Building Architecture and Color Compatible with Surrounding Area</li> </ul>
REST AREA SITE	
<ul style="list-style-type: none"> <li>▪ Automobile Parking</li> <li>▪ Truck Parking</li> <li>▪ Area Lighting</li> <li>▪ Open Picnic Areas</li> <li>▪ Sheltered Picnic Areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trash Receptacles</li> <li>▪ Open Areas for Pets</li> <li>▪ Sidewalks/Pedestrian Path</li> <li>▪ Exterior Security Cameras</li> <li>▪ Sanitary Sewer and Septic System</li> </ul>

**2. Rest Area Site**

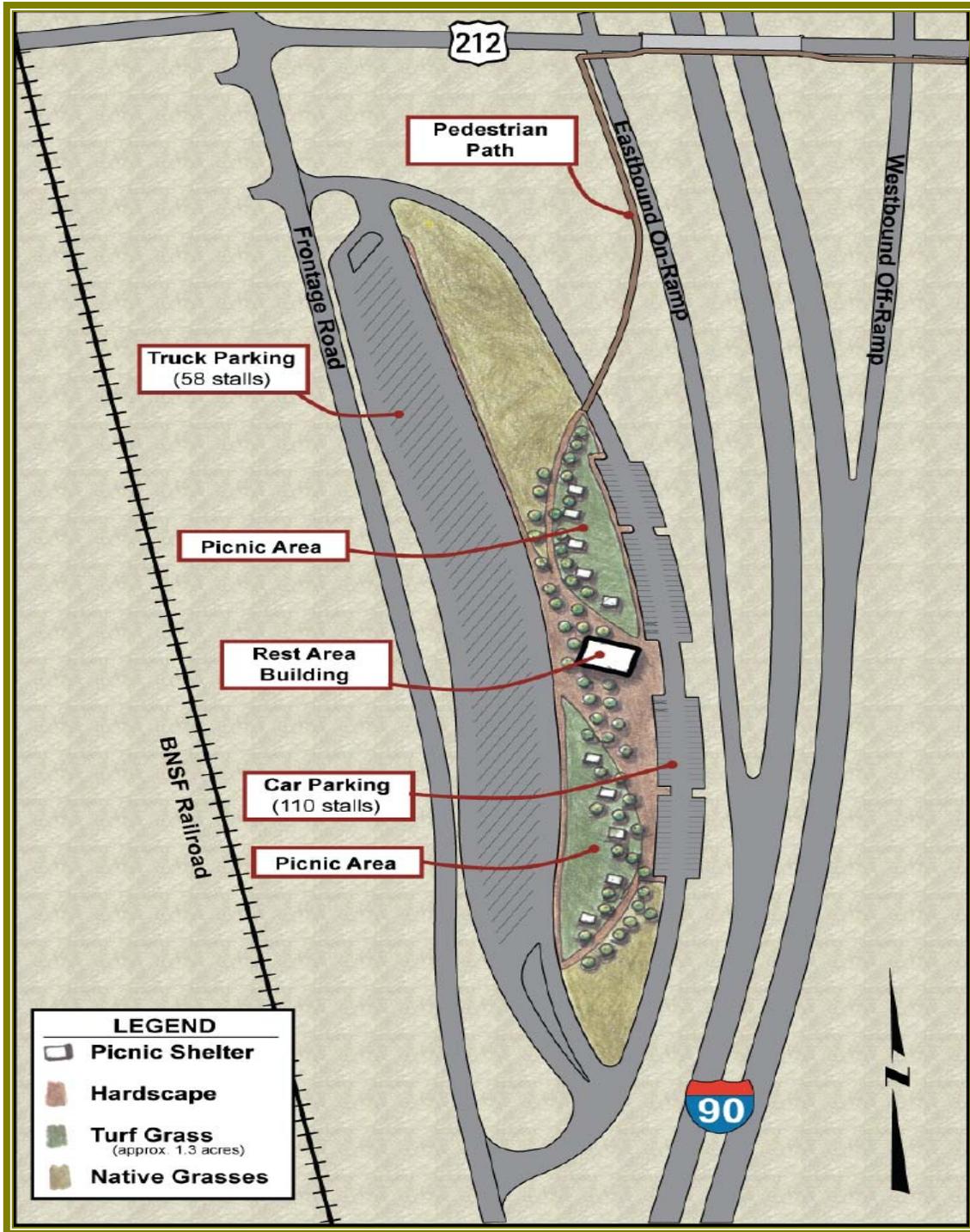
The proposed rest area site features described below respond to needs and issues identified during coordination with stakeholders. Those features would be incorporated into the final project design if determined to be reasonable and feasible.



**FIGURE 2-4: PRELIMINARY CONCEPTUAL LAYOUT OF PROPOSED REST AREA AND INTERCHANGE**

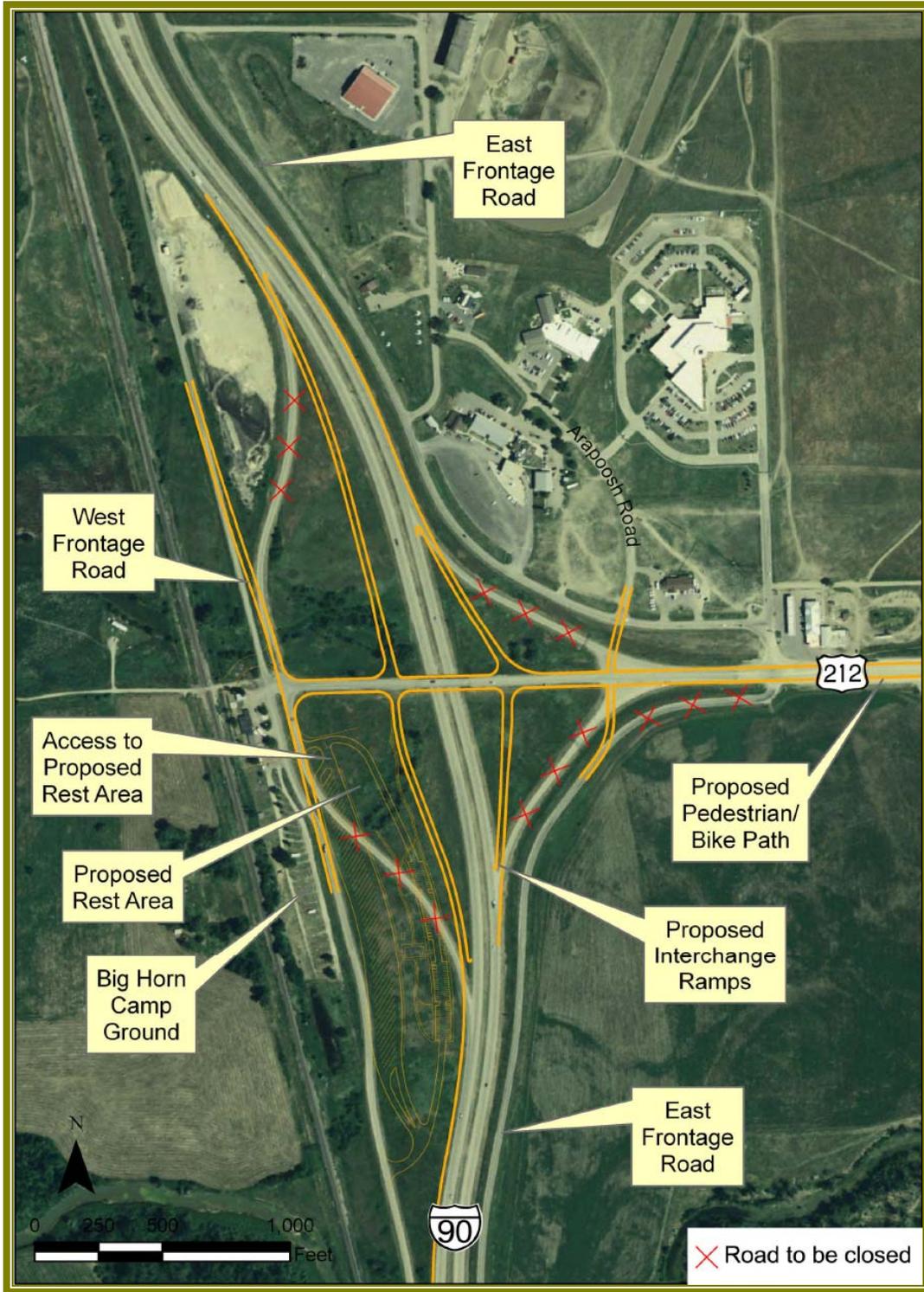


**FIGURE 2-5: PRELIMINARY CONCEPTUAL LAYOUT OF PROPOSED REST AREA**



(Note: Figure is for conceptual purposes only and could vary depending on final design)

**FIGURE 2-6: PRELIMINARY CONCEPTUAL LAYOUT OF PROPOSED INTERCHANGE**



- Floodplain Issues: The northern one third of the proposed rest area site lies below the 50-year floodplain elevation. This portion of the site would likely be elevated approximately 1.2 meters (4 feet) so that the site would not be threatened by a 50-year storm event. Increasing the elevation of the site would complement the increase in elevation of the West Side Frontage Road and US 212.
- Parking: Separated truck and car parking areas would be provided. Truck parking would be located on the west side of the rest area building so that the Little Bighorn Battlefield National Monument view would not be obstructed by truck parking. The parking area would be designed to accommodate the turning characteristics of interstate permitted trucks. Parking spaces for approximately 58 trucks and 110 passenger vehicles would be provided.
- Lighting: For security, parking areas, walkways, the building, and surrounding areas would be lighted.
- Picnic Areas: Sheltered and unsheltered picnic tables may be provided. The picnic areas would likely be located north and south of the rest area building and adjacent to the car parking area as determined to be reasonable and feasible in final design.
- Sidewalks: The proposed rest area would include interconnecting sidewalks to the parking areas and rest area building.
- Walkways: A path or sidewalk along the south side of US 212 would run between the proposed rest area and S-342.
- Connection to the Little Bighorn Battlefield National Monument Pedestrian Path: A paved path would be provided from the rest area to the S-342 intersection with US 212. The path would cross over I-90 on the US 212 bridge.

### **3. Rest Area Building**

The rest area building features described below respond to needs and issues identified during coordination with stakeholders. Those features would be incorporated into the final project design, as determined to be reasonable and feasible.

- Year-Round Operation: The rest area and building are proposed to be open for year-round operation.
- Restrooms: Separate men's and women's restrooms would allow partial closure for cleaning with continuous public access. Wastewater would be connected to the Crow Agency municipal system.
- Cultural resources: A display area within the proposed building could provide information about landscape and historical events associated with the battle. The Crow Tribe would likely be involved with this proposed display area.
- Drinking Fountains: Indoor drinking fountains would be provided year-round. Water supply would be connected to the Crow Agency municipal system. As appropriate, design of the system will consider features to address potential water shortages, such as use of a cistern.
- Traveler Information Kiosk: An indoor kiosk would be provided for visitors travel information.
- Law Enforcement Office: One of the primary concerns for rest areas statewide and one that was indicated for this rest area is adequate security. To encourage law enforcement presence, an office space with a desk and a phone would be provided for law enforcement personnel. The office would have the capability of being locked when an officer is not on site.

- Emergency Phones: A dedicated telephone for direct calls to emergency services would be provided in the vicinity of the proposed law enforcement office.
- Security Cameras: Interior and exterior security cameras would be placed in strategic locations.
- Telephone: Telephone service would be provided.

#### 4. Battlefield Interchange Proposed Project Components

The proposed interchange configuration is designated as a tight diamond design and is illustrated in **Figure 2-6**. The proposed configuration would serve the needs of traffic volumes through the project design year of 2027 and allow developable space for the proposed rest area. Interchange components described below would likely be incorporated into final design, as determined reasonable and feasible.

- *I-90 Eastbound Off-Ramp:* Realignment of the present eastbound off-ramp would reduce its divergence from I-90, and provide an open space for the proposed rest area septic system and drain field. The proposed realignment would move the ramp connection to US 212 by approximately 135 meters (440 feet) to the east toward I-90. Both eastbound ramp connections would align at a common intersection with US 212. MDT's maintenance stockpile site to the northwest of the interchange would be slightly reduced in area.
- *I-90 Eastbound On-Ramp:* The proposed realignment would be necessary for the proposed new rest area site and the common intersection with the eastbound off-ramp at US 212.
- *I-90 Westbound Off-Ramp:* The I-90 westbound off-ramp would be relocated to improve sight distances and to shift the I-90 East Frontage Road alignment. The north end of the ramp would be moved approximately 260 meters (853 feet) to the west. The proposed realignment would allow left-turn movements onto US 212 such as are made on conventional diamond type interchanges, and would allow increased separation from the I-90 East Frontage Road intersection.
- *I-90 Westbound On-Ramp:* The on-ramp from US 212 to the I-90 westbound lanes would be realigned for a common intersection with the relocated (westbound) off-ramp. The realignment would improve left turn movements from US 212 and allow greater separation from the I-90 East Frontage Road.
- *Ramps:* Typical surface widths would be 7.5 meters (24 feet) with 4.5 meters (15 feet) wide driving lanes. I-90 on-ramp and off-ramp lane tapers from or onto I-90 right lanes would be similar to those used at comparable diamond type interchanges with similar National Highway System primary routes.
- *US 212 Bridge Over I-90:* The present US 212 structure over I-90 would be removed and replaced with a wider structure that would accommodate a two-way left turn median, and roadway shoulders on US 212 in support of the realigned ramp connections. The new structure would provide an additional structure width of 3.0 meters (10 feet) for a pedestrian pathway from the rest area to the Little Bighorn Battlefield National Monument. Additional pedestrian safety needs will be evaluated as this project moves through design.
- *US 212:* The current vertical and horizontal alignments of US 212 through the I-90 interchange would be modified. The roadway width would be increased to accommodate two 3.6 meters (12 feet) traffic lanes, a 4.3 meters (14 feet) center lane, and two 1.2 meters (4 feet) shoulders. The center lane would provide space for the left-turn lanes at the frontage road and ramp intersections with US 212. A vertical grade adjustment would be necessary to allow drivers sufficient sight distance and visibility through the I-90 ramp intersections. US 212 would be elevated 3- to 3.5

meters (9.8- to 11.5 feet) on the east and west side of I-90. The horizontal alignment would likely be shifted to accommodate construction of the new bridge over I-90 while maintaining traffic flow on US 212.

- *East Frontage Road and US 212 Intersection:* The East Frontage Road and US 212 intersection would be realigned and relocated approximately 120 meters (395 feet) to the west to the location of the present I-90 westbound ramps/US 212 intersection. The elevation of the new intersection would be raised about 1 meter (3 feet) above the present roadway grade. The frontage road realignment and intersection relocation would improve north-south travel along the frontage road by removing the short radius horizontal curve on the south leg of the present frontage intersection with US 212, and reducing traffic congestion on the north leg of the present intersection by creating an additional access onto US 212. The present frontage road intersection with US 212 would remain available for traffic to access local businesses and destinations. Some access points would be reconstructed.
- *New Frontage Road (Arapoosh Road) Intersection:* A new intersection would be created as shown in **Figure 2-6** connecting the frontage road with US 212. The new intersection would be about 1.3 meters (4 feet) higher in elevation than the present roadway, requiring regrading of the frontage road for a distance of about 150 meters (500 feet) east and west of the new intersection. A similar regrading distance of 150 meters (500 feet) is necessary extending northerly to the hospital access. Access into the Crow Tribal Police Office would be re-graded and restored, with driveway approaches extending onto tribal property in restoring access. A slight grade adjustment may be necessary to restore access at the east driveway into the Bureau of Indian Affairs office on the frontage road. No other accesses are expected to be affected.
- *West Frontage Road and US 212 Intersection:* The West Frontage Road and US 212 intersection would be realigned, relocated 20 meters (65 feet) to the east to the location of the present I-90 eastbound ramps/US 212 intersection, and raised approximately 1 meter (3 feet) over its present location. The proposed frontage road realignment and intersection relocation would provide a tangent connection to the frontage road portion south of the proposed alignment, would allow space for the relatively shallow grades on the private approaches to the west, and would facilitate continued westerly access over the Burlington Northern and Santa Fe railroad tracks.
- *Pedestrian Pathway between I-90 East Frontage Road and S-342:* A paved pathway would be added to the south side of US 212 between the reconstructed I-90 East Frontage Road intersection and S-342. Striped walkway markings and signing may be included for crossing at the reconstructed I-90 eastbound off-ramps and at I-90 East Frontage Road.
- *Crow Agency Port-of-Entry:* The existing truck weigh station and port-of-entry infrastructure, located in the I-90 median immediately north of the I-90 and US 212 interchange, shown in **Figure 1-4**, would be removed from the median area.

## CHAPTER 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides an assessment of how the proposed project is likely to affect the social, economic, and physical environment through comparison of potential impacts and effects of the No-Action and Preferred Alternative. This assessment was conducted in accordance with guidance provided by the National Environmental Policy Act (NEPA 42 USC 4332 (2)(c)), Montana Environmental Policy Act (MEPA, 2-3-104 and 75-1-201 MCA), MDT, and FHWA Technical Advisory (T6640.8A). Those documents outline specific areas of environmental concern to be addressed through environmental analysis.

### 3.1 RESOURCES THAT WERE EVALUATED AND FOUND TO HAVE NO IMPACTS

This section outlines the resources that were evaluated and found to have no involvement or impact with the Preferred Alternative. Therefore, no mitigation measures would be required for these resources.

#### 3.1.1 Farmlands

According to information received from the Natural Resources Conservation Service no soils that are designated by the US Department of Agriculture as prime or unique farmland or farmland of local or statewide importance are found in the study area. A completed Form AD 1006, the Farmland Conversion Impact Rating form, was received from the Hardin Natural Resources Conservation Service field office. That form, which is included in **Appendix B**, indicates no prime, unique, statewide or local important farmlands would be affected by the proposed project.

#### 3.1.2 Threatened, Endangered, and Species of Concern

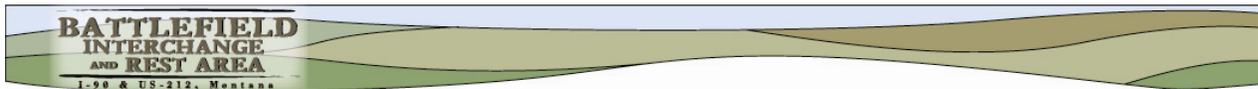
##### Threatened and Endangered Species

Threatened and endangered species include those listed or proposed for listing by the US Fish and Wildlife Service (USFWS). Under Section 7 of the Endangered Species Act, as amended, activities conducted, sponsored, or funded by federal agencies must be reviewed for their effects on species listed or proposed for listing as threatened or endangered.

Based on the USFWS list of threatened, endangered, and proposed species that may be present in the study area and range/habitat descriptions found in technical literature, the following listed, proposed, and candidate species were considered with respect to the proposed project:

- Bald Eagle (*Haliaeetus leucocephalus*), Threatened
- Black-footed Ferret (*Mustela nigripes*), Endangered

Although potential bald eagle habitat exists along the Little Bighorn River, there are no known nest sites along the entire river stretch from its headwaters to the confluence with the Bighorn River. It is probable that migrating or wintering bald eagles may pass through the vicinity temporarily, but there is not suitable habitat or vegetation for a permanent nesting area.



There is not suitable habitat or a preferred food source for the black-footed ferret in the vicinity of the proposed project area. No black-footed ferrets have been observed within Big Horn County and the closest known populations are found in Phillips County of north-central Montana.

The Preferred Alternative would not impact threatened and endangered species. The Preferred Alternative would have no effect on the listed threatened bald eagle and endangered black-footed ferret.

### **Species of Concern**

Montana National Heritage Program (MNHP) has been compiling and maintaining an inventory of elements of biological diversity in Montana since 1985. This inventory includes plant species, animal species, plant communities, and other biological features that are rare, endemic, disjunct, threatened or endangered throughout their range, vulnerable to extirpation, or in need of further research.

Based on a review of the MNHP species of concern report and range/habitat descriptions of the area, one listed species of concern, lark bunting (*Calamospiza melanocorys*), was considered for potential occurrence within the project area. A copy of the report is contained in Appendix B.

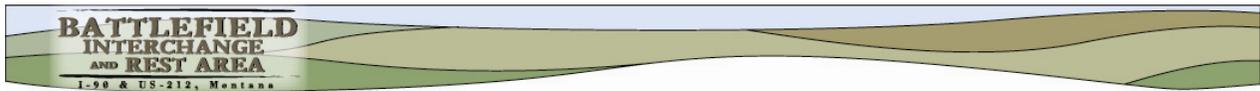
Although there may be potential lark bunting habitat near the project vicinity, there are no known nest sites, recent observations, or critical habitat area mapped within the project area. It is probable that migrating or wintering lark buntings may pass through the vicinity temporarily, but based on the MNHP species of concern report there are no existing populations currently within project limits.

The Preferred Alternative would have no effect on the listed Montana species of concern, lark bunting.

### **3.1.3 Cultural Resources**

Cultural resources records reviews and field inventories were conducted for the Preferred Alternative area. Inventory searches on the Cultural Resource Information System and Cultural Resource Annotated Bibliography System from the Montana State Historic Preservation Office (SHPO) indicated five historic sites with components over 45 years in age within the general area of the proposed project. Of those sites, the bridge over the Little Bighorn River located south of the Battlefield Interchange was previously determined eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C. Three other sites (the Little Bighorn Campground motel complex [24BH3073], a cafe/gift shop [24BH3075], and the remains of a cafe [24BH3074]) were determined not eligible for listing on the NRHP. The fifth site [24BH626] contains segments of abandoned roadways and is covered under the MDT Historic Roads and Bridges Programmatic Agreement, but is outside the project limits and would not be impacted by the Preferred Alternative.

SHPO concurred with the recommendation that the Little Bighorn Campground motel complex, the cafe/gift shop, and café remains were not NRHP eligible. Additionally, SHPO concurred that the Little Bighorn River Bridge and the former highway segments south of US 212 were well outside the Area of Potential Effects of the proposed project. Copies of relevant correspondence between MDT and SHPO are included in **Appendix B**.



The Little Bighorn Battlefield National Monument is the site of the June 25, 1876, battle between the US Seventh Army Cavalry, guided by the Crow and Arikara scouts and several bands of the Lakota, Northern Cheyenne, and Arapaho Indians. The area was designated as a National Cemetery in 1879 and as a National Monument in 1946. The Preferred Alternative would not impact the historic Battlefield or Monument property.

Because of historical disturbance when the interchange was originally constructed, MDT will not conduct a metal detector survey prior to construction. Rather, in accordance with MDT Standard Specification, in the event that previously unrecorded cultural material is found during construction, activities in the immediate area would be halted, and the MDT archeologist would be contacted to assess the find. Additionally, as appropriate, MDT would invite a Crow Tribe cultural resources specialist to monitor construction during ground-disturbing activities.

### **3.1.4 Section 4(f) of the Department of Transportation Act**

Title 49 USC 303 (also 23 USC 138) states that “The Secretary may approve a transportation program or project (other than for a park road or parkway under Section 204 of Title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or land of an historic site of national, state, or local significance, as determined by the federal, state, or local officials having jurisdiction over the park area, refuge, or site only if:

1. There is no prudent or feasible alternative to using that land; and
2. The program or project includes planning to minimize harm to the park recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.”

Potential Section 4(f) properties were investigated and found to be outside the Area of Potential Effect. Because those properties are outside the proposed project limits, the provisions of Section 4(f) are not applicable and no impairment or use of those properties would occur.

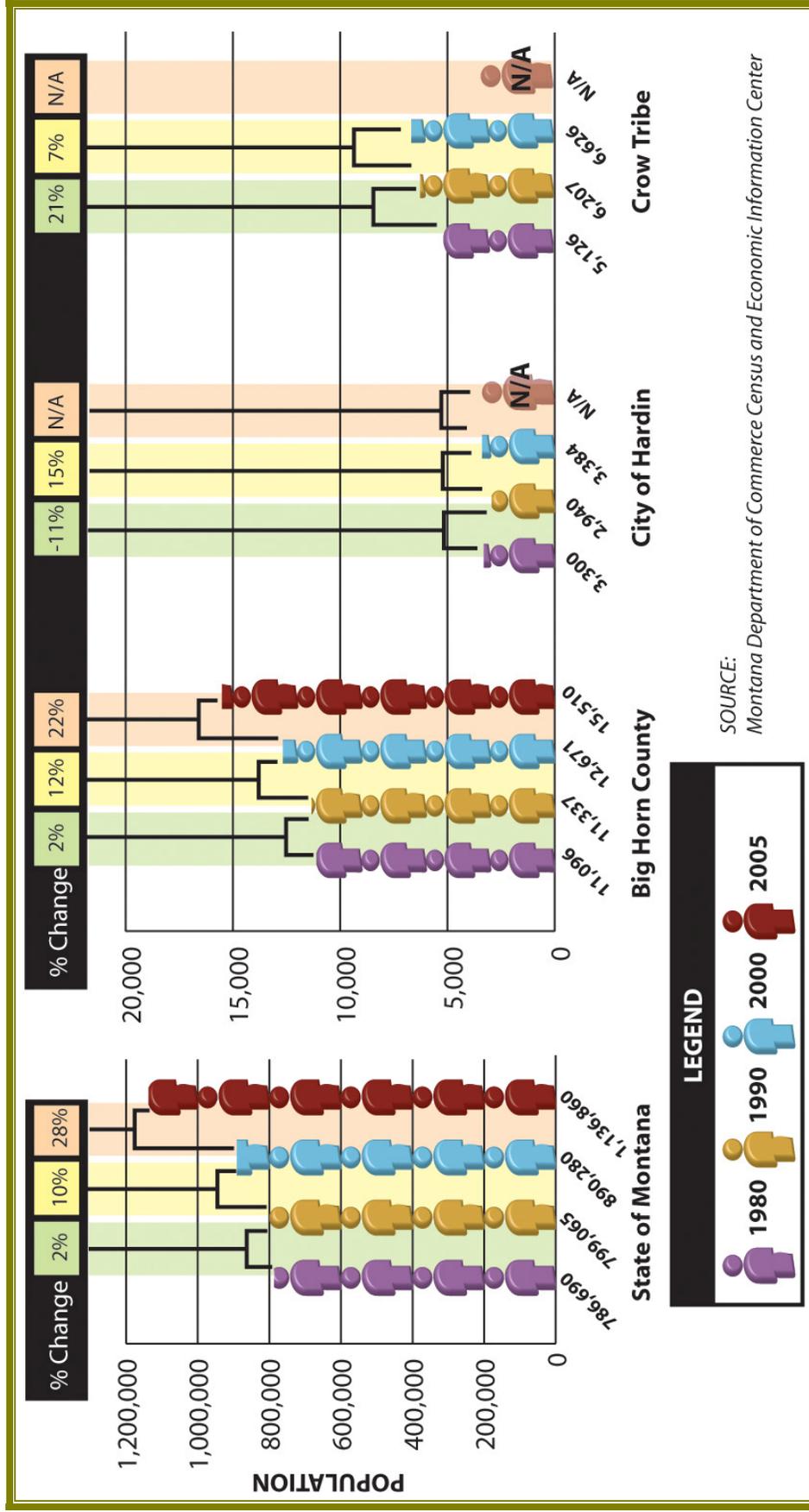
### **3.1.5 Social Impacts and Environmental Justice**

Population trends over the past few decades indicate steady population growth within the Big Horn County region. **Figure 3-1** shows Census Bureau population statistics for the State of Montana, Big Horn County, the City of Hardin, and the Crow Tribe. The State of Montana, Big Horn County, and the Crow Tribe experienced comparable population growth over the past two decades, a trend that is expected to remain steady or continue.

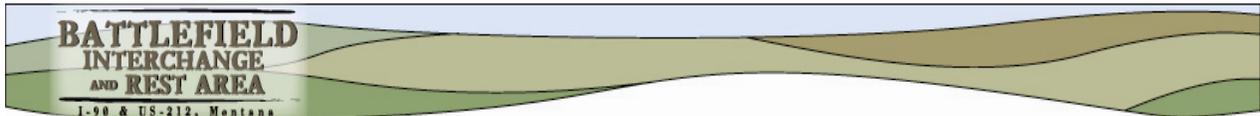
No low-income residential neighborhoods are located in the immediate vicinity of the Preferred Alternative study area. The Little Big Horn Camp is Native American-owned and properties along the East Frontage Road (Bala Street) are tribal lands.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and/or adverse effects of federal projects on the health or environment of minority and low-income populations, and minority-owned businesses to the greatest extent practical and permitted by law.

**FIGURE 3-1: CURRENT AND FORECASTED POPULATION STATISTICS**



SOURCE:  
 Montana Department of Commerce Census and Economic Information Center



According to the United States Census Bureau, the total minority population percentage in Big Horn County is 63.4 percent (minority defined as non-white). On the Crow Reservation, the minority population is 75 percent. In comparison, the state of Montana has a minority population of 9.4 percent. The Crow Reservation would be considered an Environmental Justice population.

The Preferred Alternative would not create disproportionate or adverse affects on the health or environment of minority and/or low-income populations. There would be no displacement of minority or low-income populations. No mitigation would be required. Applicable Tribal Employment Rights Organization requirements will be addressed.

## 3.2 LAND USE

### 3.2.1 Affected Environment

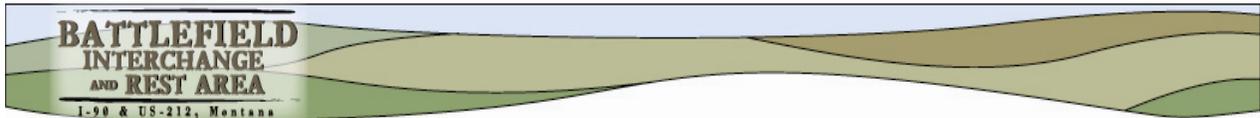
The Preferred Alternative is proposed to be at the interchange of I-90 with US 212, which is approximately 2.7 kilometers (1.65 miles) to the south and east of Crow Agency. The interchange is on an easement from the Crow Tribe, with the I-90 ramps and the frontage roads defining its general area. A MDT maintenance stockpile is in the northwest portion in the immediate vicinity of the interchange. The other three quadrants of the interchange are generally undeveloped lands. The maintenance stockpile site is accessed by way of the West Side Frontage Road extending north from US 212. The stockpile site is used for the storage of road maintenance materials, such as wintertime road sanding and other gravel materials. A small equipment shed is on the site to house maintenance equipment.

Land use in the proposed project area consists of a convenience store and local services both on the east and west side of I-90. The Little Bighorn Campground is located west of the existing frontage road and east of the Burlington Northern and Santa Fe Railroad. A casino, hospital, and other small businesses are located on the northeast side of the interchange. The Little Bighorn Battlefield National Monument and Visitors Center are located southeast of the interchange. (See the proposed rest area configuration **Figure 2-4**.) Jurisdiction of the Little Bighorn Battlefield National Monument has been held by the National Park Service since 1940.

#### *Zoning and Comprehensive Planning*

The Crow Tribe currently has no established zoning code. According to the *Big Horn County Growth Policy of 2000*, subdivision applications are routed to the Crow Tribe Planning and Zoning Commission for comment. According to conversations with Crow Tribe representatives, the land around the preferred rest area location is not formally planned for future development. However, future development that would increase potential tourist traffic is desirable within the surrounding Battlefield Interchange study area.

Big Horn County administers land development regulations including cultural issues, floodplains, and subdivision regulations within the County, but does not have jurisdiction over floodplain development regulations on Crow Tribe lands. Within the reservation, the county administers subdivision review and sewer permit program only on deeded Crow Tribe lands. The *Big Horn County Growth Policy* inventoried existing characteristics of the County and outlined future recommendations. No specific land use proposals or requirements were identified within that policy.



### **3.2.2 Impacts**

*No-Action Alternative:* No existing or planned land uses would be displaced or altered by the No-Action Alternative. There would be no enhancement of visitor or tourist-related land uses.

*Preferred Alternative:* The existing undeveloped lands in the southwest interchange quadrant would be converted to the rest area facility and transportation use. The MDT maintenance facility would remain in its current location but would be slightly reduced in area to accommodate the proposed rest area septic system, if required.

Visitor and tourist-related commercial and retail land uses could be complemented by construction of the Preferred Alternative. Combined with improved traffic conditions from the interchange improvements, the rest area could encourage more visitor stop-overs.

Other land uses in the proposed project area would be unaffected.

### **3.2.3 Mitigation**

None is required.

## **3.3 RIGHT-OF-WAY, RELOCATION, AND UTILITIES**

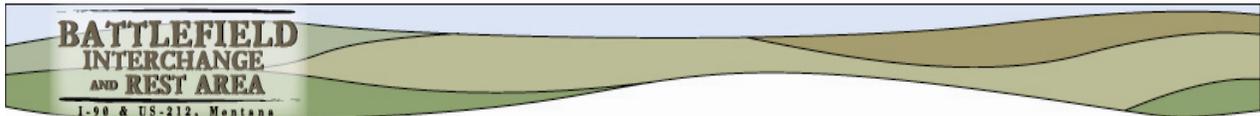
### **3.3.1 Affected Environment**

MDT currently has easements for the existing facility of I-90, including US 212 and the US 212 interchange and both frontage roads. Utilities in the study area include power, telephone, and natural gas.

### **3.3.2 Impacts**

*No-Action Alternative:* The No-Action Alternative would require no acquisition of right-of-way or easements, no relocations, and no impacts to utilities.

*Preferred Alternative:* The Preferred Alternative would not impact nor require relocation of structures, homes, or businesses. The Preferred Alternative rest area site is currently under an easement by MDT from the Crow Tribe. Approximately 0.3 hectare (0.8 acre) of additional right-of-way would be necessary to realign the northeast section of the East Frontage Road. Temporary-use construction permits for reconstruction of the approaches into the Little Bighorn Campground would be required. Improved access to the campground would be facilitated by realigning the West Frontage Road to the east and providing increased distance to accommodate a reasonable driveway slope. Minor relocation of buried utilities may be required in areas where earthwork would be required. Temporary interruptions of service could occur for short periods to relocate utilities.



Realignment and relocation of the East Frontage Road and intersection would create a new frontage road intersection on the north side of US 212 at an elevation about 1.3 meters (4 feet) higher than the present frontage road. The increase in elevation would effect the vertical alignment of the East Frontage Road and Arapoosh Road for a distance of about 150 meters (500 feet) along each intersecting roadway. Access to the Crow Tribal Police Office, at the intersection of the frontage road and Arapoosh Road would be affected by the alignment revision. Re-grading of the north access of the Tribal Police Offices on Arapoosh Road and the two accesses on the frontage road would be necessary to restore those driveways. No other accesses are expected to be affected.

### **3.3.3 Mitigation**

The acquisition of land or improvements for highway construction is governed by federal laws and regulations designed to protect both the landowners and tax paying public. Landowners affected are entitled to receive fair market value for land or buildings acquired and damages to remaining land caused by highway construction. This proposed action will be developed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646 as amended), (42 USC 4601, et. seq.) and the Uniform Relocations Amendments of 1987 (PL 100-17). Access impacts will be coordinated with affected property owners during final design.

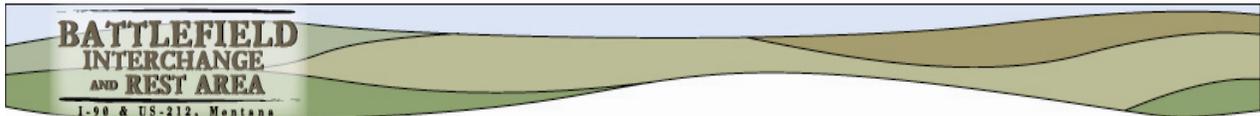
- Areas occupied under construction permits would be returned to the landowner following the proposed construction.
- In accordance with MDT Standard Specifications, utility relocations would be coordinated with the utility line owner(s) to minimize interruption to utility service. Notification of service interruptions due to relocations is the responsibility of the utility line owner(s).
- The three Tribal Police Office accesses and hospital access street would be regraded and may require temporary access.

## **3.4 ECONOMICS**

### **3.4.1 Affected Environment**

The Crow Tribal Council economic figures cite an unemployment rate on the reservation of 14 percent for the year 2000. The US Census Bureau cites an unemployment rate of close to 80 percent for the same period. The Crow Tribal Council and the US Census Bureau use different methods of statistical analysis, but either way, unemployment is a concern on the Crow Indian Reservation. As a result, the Crow Tribe has expressed a desire to pursue opportunities with potential to facilitate economic development.

As discussed in the *Feasibility Report*, the Crow Tribe's interest in a new rest area near Crow Agency is based on the assumed potential for economic development opportunities. The Crow Tribe's goal of economic development and tourist activity includes promoting areas near the I-90 interchange as a prime location for highway commercial businesses and service stations.



Personal conversations with Crow Tribe Economic Development officials outlined future plans for the area. Hotel and restaurant franchises are planned east of the I-90 East Frontage Road in the future. According to the Big Horn County Growth Policy, primary tribal occupations include ranching and farming, government services, retail trade and tourism. **Figure 3-2** shows that the employment sectors with the largest number of employees include agricultural, forestry, and fishing industries, as well as retail trade and educational services. **Figure 3-3** gives general economic trends for Big Horn County over the past two decades.

The Little Bighorn Battlefield National Monument is the major tourist attraction in the vicinity of the Preferred Alternative. Peak tourist season at the Little Bighorn Battlefield National Monument is between the months of June and September. Gross revenues at the Little Bighorn Battlefield National Monument have grown since 1987.

The *Rest Area Plan* recommends partnering rest areas with visitor information centers. The purpose of visitor information at the proposed rest area site would be to tell travelers about attractions in both Bighorn County and the Little Bighorn Battlefield National Monument. Additionally, the Little Bighorn College provides training for small business and tour guides and could provide an additional source for tourism promotion.

### **3.4.2 Impacts**

*No-Action Alternative:* The No-Action Alternative would not substantially affect the current economic condition, although the lack of infrastructure investment at the interchange could dampen future economic activity.

*Preferred Alternative:* No adverse impacts to current economic conditions are expected to occur if the Preferred Alternative were constructed. The Preferred Alternative would support tourism visits at the Little Bighorn Battlefield National Monument. It should be noted that Montana state law forbids the placement of vending machines in rest areas, also forbidden are other forms of private enterprise including local artisans selling arts and crafts.

### **3.4.3 Mitigation**

None is required.



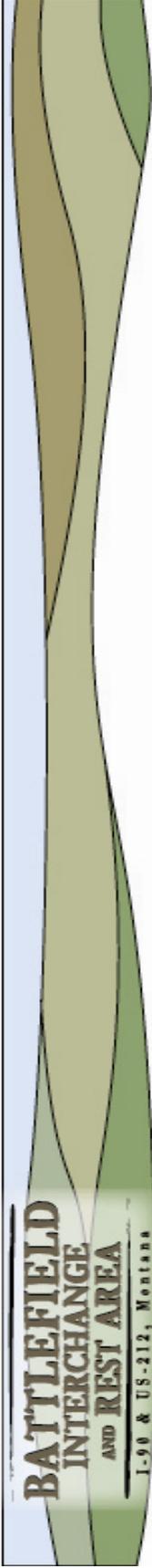
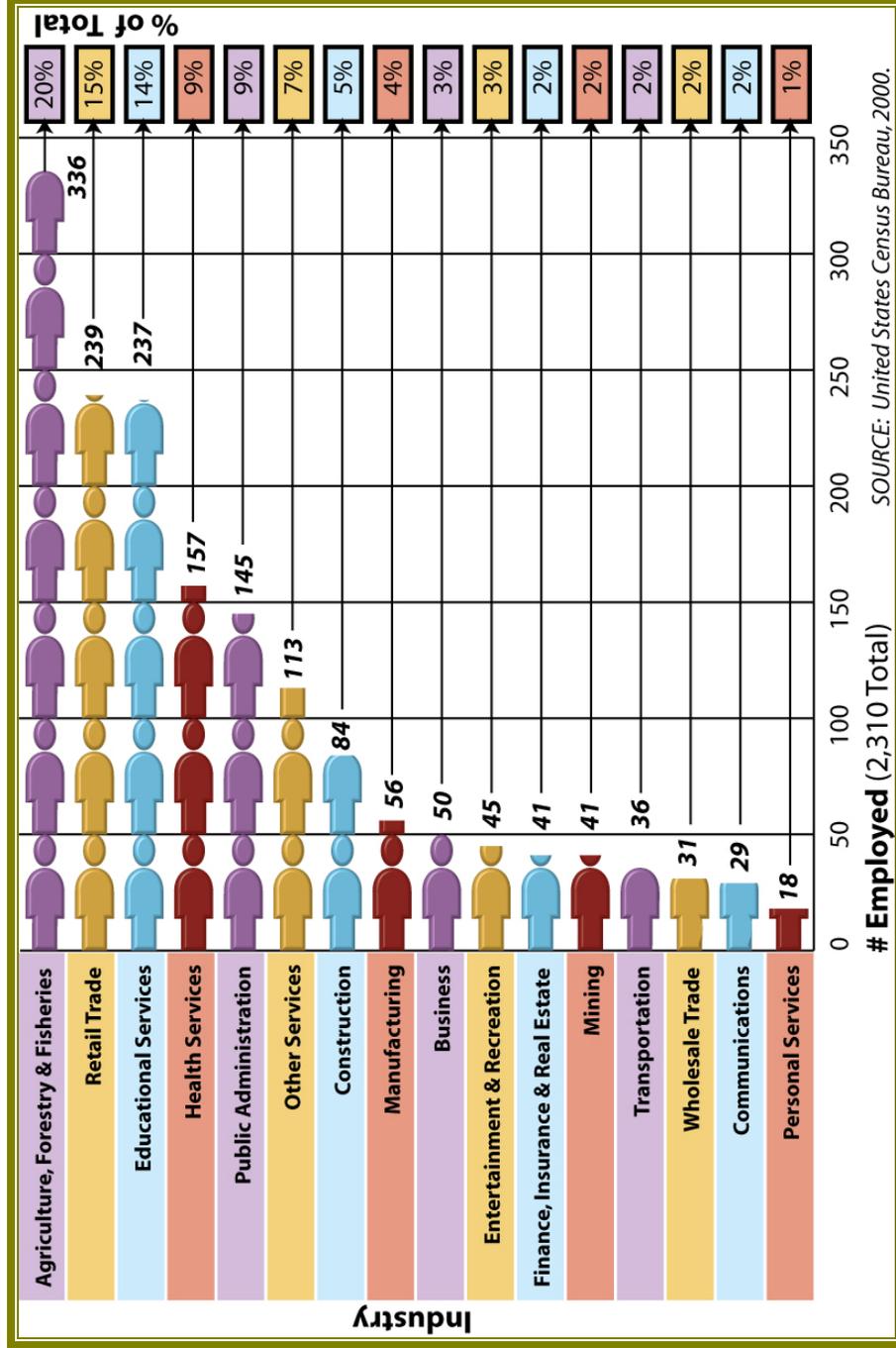
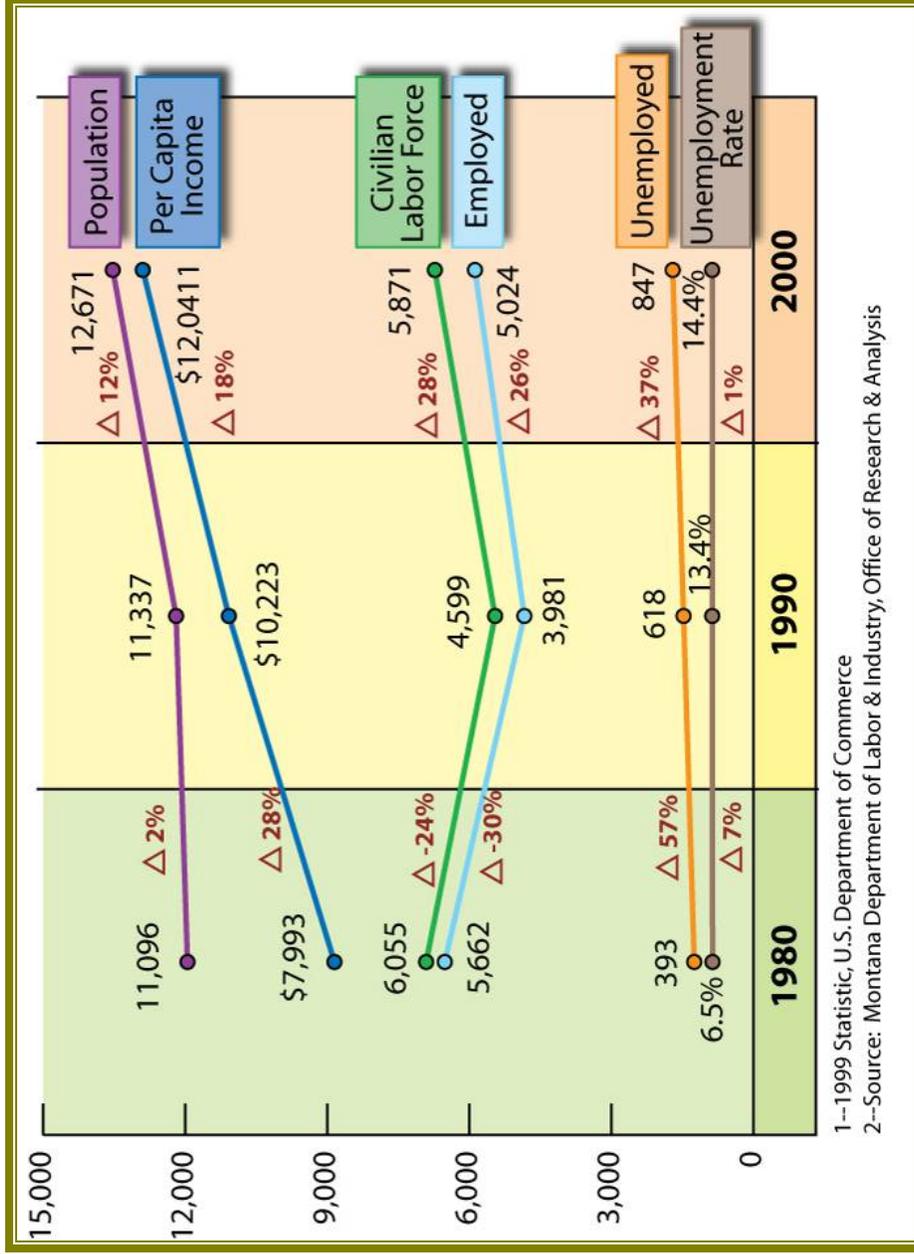


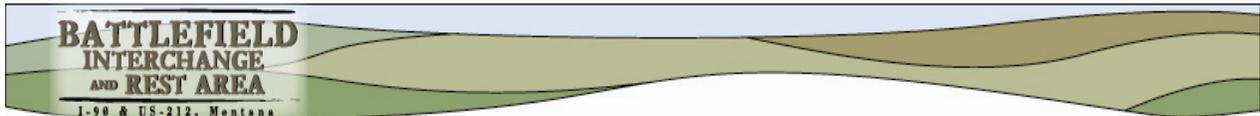
FIGURE 3-2: CROW RESERVATION LABOR FORCE CHARACTERISTICS



**FIGURE 3-3: ECONOMIC TRENDS, BIG HORN COUNTY**



1--1999 Statistic, U.S. Department of Commerce  
2--Source: Montana Department of Labor & Industry, Office of Research & Analysis



## 3.5 NON-MOTORIZED TRAVEL (PEDESTRIANS AND BICYCLISTS)

### 3.5.1 Affected Environment

Representatives of the Crow Tribe confirmed that jogging occurs along the frontage roads adjacent to the highway. Operators of convenience stores and other businesses in the interchange area report that patrons, with permission, regularly park semi-trucks and large motor homes in their parking facilities and then walk to the Monument Visitors Center. No designated trails accommodate this need and pedestrian traffic is required to walk in traffic areas and along roadside shoulders. The high number of commercial trucks and higher traffic speeds create potential safety issues for pedestrians or bicyclists.

### 3.5.2 Impacts

*No-Action Alternative:* There would be no changes or improvements. Pedestrians and bicyclists would continue to be prohibited along I-90, but would still utilize local roads and shoulders.

*Preferred Alternative:* The Preferred Alternative would not adversely impact non-motorized travel and would actually enhance pedestrian and bicyclist facilities. A new pedestrian/bike path is proposed as part of the Preferred Alternative. The proposed rest area would include parking for commercial vehicles and larger recreational vehicles, which cannot be accommodated in the parking area for the Little Bighorn Battlefield National Monument. Travelers in these vehicles who desire to visit the Monument would be provided a pedestrian pathway, separate from rest area traffic. That pathway would follow along the new US 212 structure over I-90, cross the off-/on-ramp intersections at designated crosswalks, and continue to the connection of US 212 and S-342, the Monument access road. Pedestrians then would walk along the roadway shoulders of S-342 to the visitor center. Pedestrians would also be able to cross US 212 at the East Frontage Road intersection in a designated crosswalk.

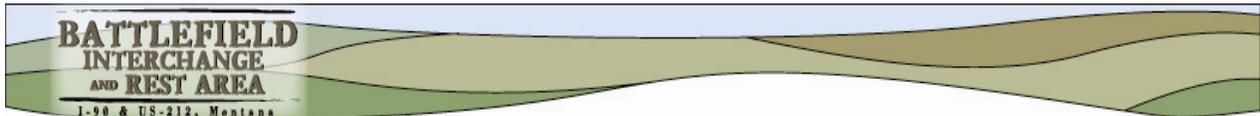
### 3.5.3 Mitigation

None is required.

## 3.6 AIR QUALITY

### 3.6.1 Affected Environment

In accordance with the Clean Air Act, the US Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of NAAQS. Primary standards protect public health and secondary standards protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The EPA has set NAAQS for six principal pollutants, which are called criteria pollutants. The criteria pollutants are carbon monoxide, lead, nitrogen dioxide, particulate matter (PM), ozone, and sulfur oxides. NAAQS for PM have been specified for PM less than 10 microns



(PM<sub>10</sub>) and PM less than 2.5 microns (PM<sub>2.5</sub>). Areas of the country where air pollution levels persistently exceed the NAAQS may be designated "non-attainment." Areas of the country where the NAAQS are met are designated as attainment or unclassified. According to 40 CFR 81.327, the Crow Reservation is currently designated an attainment/unclassified area for criteria pollutants.

Through the Clean Air Act, EPA also considers impacts from Mobile Source Air Toxics (MSATs). Consideration of MSATs applies for projects that substantially increase the number of vehicle miles traveled.

### **3.6.2 Impacts**

*No-Action Alternative:* No air quality impacts would be associated with the No-Action Alternative.

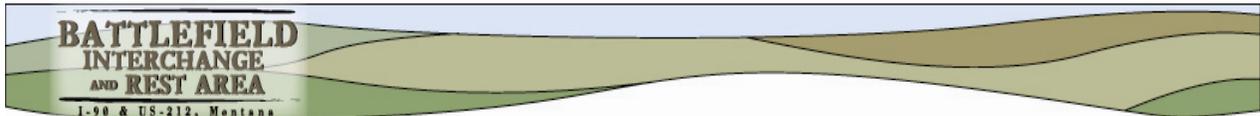
*Preferred Alternative:* The proposed project is in an attainment/unclassified area for criteria pollutants. The Preferred Alternative would have no impacts to EPA "Final Rule" designation under the Clean Air Act. Combustion emissions from idling vehicles at the proposed rest area would cause a negligible impact on a daily basis. In the event that I-90 is closed due to inclement weather and truck traffic is delayed at the rest area, idling trucks could cause localized, short-term increases to ambient air pollutant concentrations in and around the proposed rest area, depending on highways and weather conditions in vicinity. Long-term air quality impacts from transportation sources are not expected to be substantially different than existing conditions.

The purpose of this project is to replace an existing highway rest area and improve an existing interchange. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in vehicle miles traveled, FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in vehicle miles traveled. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

### **3.6.3 Mitigation**

None is required.



### 3.7 NOISE

#### 3.7.1 Affected Environment

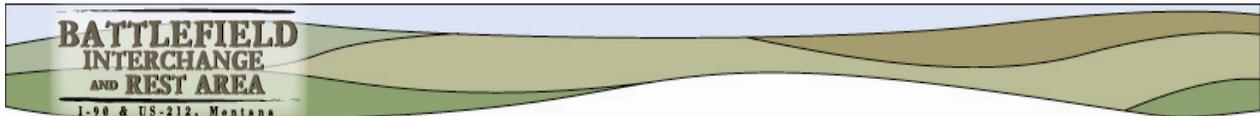
The traffic noise evaluation was conducted in accordance with the *MDT Traffic Noise Analysis and Abatement: Policy and Guidance (MDT Noise Policy)*. MDT’s noise policy can be found at: <http://www.mdt.mt.gov/business/docs/contracting/npolicy.pdf>. The *MDT Noise Policy* was developed to promote compliance with various laws including FHWA’s requirements at 23 CFR 772. Noise, which is unwanted sound, can be a by-product of roadway traffic. Existing noise levels were not monitored because there is no development or residential receptors in the immediate area and because the proposed project does not propose capacity improvements to I-90 or adjacent roadways. The nearby commercial land uses do not accommodate traffic volumes and speeds that generate substantial traffic noise levels of concern. Therefore a quantitative evaluation was not performed.

FHWA has identified Noise Abatement Criteria for five categories of land use activities, A through E, as shown in **Table 3-1**. Land in the northern part of Battlefield Interchange is currently used as a maintenance facility (Activity Category D). Land west of the interchange includes the Little Bighorn Campground and further west and adjacent to the campground is the Burlington Northern Santa Fe Railroad. The Little Bighorn Campground, adjacent to the rest area of the Preferred Alternative, would be classified into Activity Category B. The proposed rest area would also be Activity Category B. Land on the east side on I-90 south of US 212 is undeveloped and would be classified under Activity Category D. Land north of US 212 supports commercial development and would be classified as Activity Category C.

**TABLE 3-1: NOISE ABATEMENT CRITERIA**

ACTIVITY CATEGORY	LEQ (1) dBA	DESCRIPTION OF ACTIVITY CATEGORY
A	57 dBA 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 dBA Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks not included in Category A, residences, motels, hotels, schools, public meeting rooms, churches, libraries, and hospitals.
C	72 dBA Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands; no standards apply unless development planned, designed, programmed and likely to be built, then the applicable A, B, C or D regulation applies.
E	52 dBA Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

*dBA—A-weighted decibel*  
*Source: Federal Highway Administration, Procedures for Abatement of Highway Traffic Noise and Construction Noise. (23 CFR Part 772)*



### 3.7.2 Impacts

The *MDT Noise Policy* and the FHWA regulations require reasonable and feasible application of noise mitigation measures if predicted noise levels at a receptor in the design year approach or exceed specific FHWA Noise Abatement Criteria.

*No-Action Alternative:* There would be no noise impacts associated with the No-Action Alternative.

*Preferred Alternative:* The Little Bighorn Campground is the only sensitive noise receptor in the immediate study area. While the rest area and the campground are compatible land uses, the campground would likely receive noise generated by the rest area. Idling trucks would likely become a new source of noise resulting from the rest area. Some level of idling vehicle noise pre-dates the proposed rest area due to trucks utilizing the MDT maintenance facility. New trucking requirements mandate that drivers can drive for only 12-hour shifts before they must stop. Those new requirements increase the likelihood of regular day and night use of the rest area by truckers and thereby increase the potential for idling vehicle noise. It is expected that the proposed truck parking area could accommodate approximately 58 trucks. However, it is unlikely that 58 trucks would use the rest area at one time, except during a severe weather event that would close I-90, which would be more likely to occur in winter months when the campground is not in use. For comparison purposes, the Federal Transit Administration reports that a typical idling city bus generates 70 to 75 dBA at 50 feet. Camp sites at campground are approximately 200 feet from the nearest truck parking stalls.

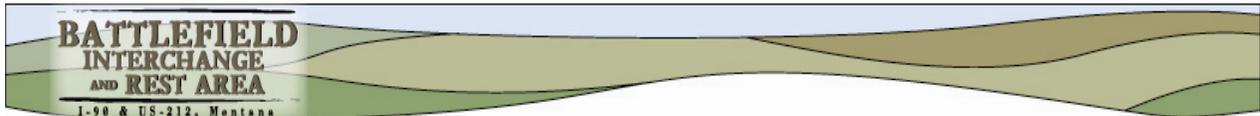
Traffic noise from the west side I-90 on- and off-ramps would be lower than current levels because the new ramps would be relocated further from the campground than the present alignment. The distance between the east side I-90 ramps and the campground would remain sufficiently great that additional noise impacts would not be realized. Please see **Figure S-3**.

MDT does not consider noise abatement for Activity Category C or D land uses including commercial properties and undeveloped lands.

### 3.7.3 Mitigation

During the feasibility study and alternatives development processes, an alternative truck parking location was considered closer to the interchange, on the east side of the rest area farther from the campground and motel complex. However, this location was screened out because parked trucks would block views from the rest area to the Battlefield Monument. Additionally, the site was screened out because of safety concerns regarding pedestrians crossing the truck parking area to access the trail to the Monument.

Mitigation to address noise impacts at the campground from idling trucks was considered, but determined to be impractical for several reasons. The first reason is that the noise generated from the rest area would not be from the typical roadway source (tire noise). Rather, the noise source would be at the elevated truck engines and exhaust stacks, which can be as much as 13 feet above the ground. This elevated source would require a noise barrier higher than the source to reduce impacts. A barrier this height would reduce the visibility of the campground from the interstate (reduce the ability to attract campers) and eliminate views from the campground to the Battlefield Monument area. A second limitation is the campground location between any proposed noise barrier and the railroad tracks. Sound energy from the railroad operations will



not dissipate naturally in the direction of the sound wall and could actually increase rail noise in the campground.

## 3.8 WATER RESOURCES AND WATER QUALITY

### 3.8.1 Affected Environment

The Little Bighorn River is the nearest perennial stream to the proposed project, and flows to the north as shown in **Figure 1- 1**. The Preferred Alternative is approximately 456 meters (1,500 feet) from the Little Bighorn River. Stormwater within the project area currently drains water away from the roadway and interchange through a series of culverts and ditches toward the Little Bighorn River or into wetland areas.

The Montana Department of Environmental Quality maintains a database of impaired waterways under Section 303(d) of the Clean Water Act, referred to as the 303(d) list. That list is updated every two years, and the most current list is dated 2004. (The 2006 list is in draft form.) The Bighorn and Tongue Rivers are on the 2004 303(d) list; the Little Bighorn River is not listed, indicating that no water quality issues are currently identified with that water body.

Well log data for groundwater shows that the static water level for local aquifers range from about 3.5 meters (11.5 feet) to 4.0 meters (13.1 feet) below ground surface.

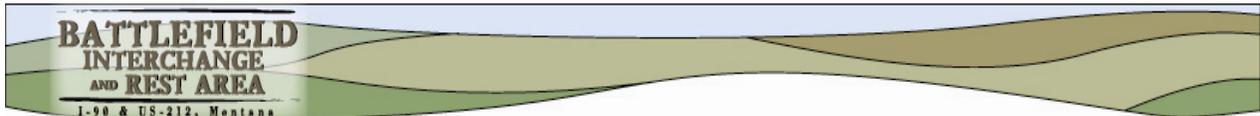
### 3.8.2 Impacts

*No-Action Alternative:* No changes to water resources or water quality would result from the No-Action Alternative.

*Preferred Alternative:* Elevating both US 212 and the I-90 West Frontage Road would block runoff from the north end of the Little Bighorn Campground. To ensure appropriate stormwater management, provisions would be included in final design for draining excess water from the area. Due to an increased area of impervious surfaces, long-term impacts could include increased contaminated runoff. Roadway and parking area runoff can contain organic and inorganic chemicals and suspended solids (heavy metals, sediments, oil, grease, de-icing salts, and litter pollutants). Direct runoff into the Little Bighorn River is not expected during average precipitation events because of the railroad grade providing a direct barrier and from employing stormwater Best Management Practices (BMPs).

### 3.8.3 Mitigation

- BMPs for erosion and sediment control would be adhered to.
- An erosion control and sediment plan would be prepared in compliance with the National Pollution Discharge Elimination System (NPDES).
- Clearing and grubbing would be limited to the area necessary for construction of the project.



- Disposal of wastewater generated at the restroom facility would be connected to the Crow Agency wastewater treatment system. Required permits would be obtained from the appropriate agencies.
- Adequate drainage culverts would be placed beneath US 212 between the railroad and West Frontage Road to allow drainage flows to move north and away from the Little Bighorn Campground development.
- Drainage patterns would be investigated and drainage facilities would be provided to prevent the ponding of storm runoff water in areas where street and access regrading has occurred.
- Potable water would be supplied from the Crow Agency municipal system.

## 3.9 WETLANDS

### 3.9.1 Affected Environment

Wetlands in the vicinity of the project were delineated during May and July 2004 in accordance with the 1987 US Army Corps of Engineers Wetlands Delineation Manual. Six wetland areas (Wetland Sites 1 to 6) were delineated within the Battlefield Interchange vicinity for a total wetland area of approximately 1.2 hectares (less than 3 acres). Those wetlands areas are shown in **Figure 3-4** and summarized in **Table 3-2**. The wetland sites are classified as Category III or IV based on MDT's *1999 Montana Wetland Assessment Method*. The sites were considered low quality because of their proximity to roads, railroad, businesses, and agriculture. Wetland 4 has urban-impacted perennial water as evidenced by the color. This wetland is also fenced and signed warning of hazardous conditions.

Many wildlife species associate with wetland habitats because they provide a diversity of plant structure and species variation and a temporary source of water. Wetlands provide cover, nesting, and foraging habitat for some wildlife species. Limited habitat for aquatic invertebrates is found in Wetlands 3 and 4 within the proposed project boundaries. No wetlands in the proposed project area provide habitat for fish.

Of the six wetlands, four are seasonally flooded pockets within or adjacent to ephemeral drainages, and two are perennially flooded depressions within ephemeral drainages. Those ephemeral drainages are, in part, old remnant river channels. The identified wetlands appear to not be connected directly to a US Army Corps of Engineers (COE)-Jurisdictional Waterway. The COE has determined that Wetland 1 is not located within jurisdictional Waters of the United States. Documentation of that determination is contained in **Appendix B**.

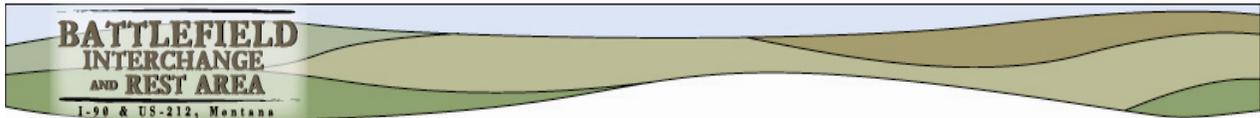
### 3.9.2 Impacts

*No-Action Alternative:* There would be no impacts to existing vegetation or wetlands with the No-Action Alternative.

*Preferred Alternative:* The Preferred Alternative would bisect Wetland 1, which is currently considered a non-jurisdictional wetland. The wetland [approximately 0.1 hectare (0.3 acre)] would be eliminated by the placement of fill materials in support of the realignment of the eastbound off-ramp. The other identified

**FIGURE 3-4: WETLANDS IN PROJECT AREA**





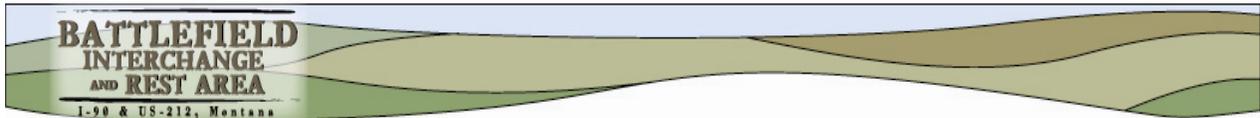
**TABLE 3-2: GENERAL CHARACTERISTICS OF WETLANDS NEAR THE PROPOSED PROJECT**

SITE	MDT WETLAND <sup>1</sup> CLASS	APPROXIMATE WETLAND HECTARE (ACRE)	REPRESENTATIVE SPECIES	PRIMARY SOURCE OF WETLAND HYDROLOGY	NARRATIVE DESCRIPTION
1	IV	0.1 (0.3)	Clasping-leaf dogbane, swamp smartweed, prairie cordgrass	Runoff (sheet flow and culvert) and possible high groundwater table	Corps non-jurisdictional—Depression possibly formed from I-90 construction or may be natural and associated with remnant of old stream channel
2	IV	<0.1 (<0.1)	Clasping-leaf dogbane, swamp smartweed, prairie cordgrass	Runoff (sheet flow and culvert) and possible high groundwater table	Corps jurisdictional—Depression within remnant of old stream channel
3	IV	<0.1 (<0.1)	Cattail, western dock, curly dock	Runoff (sheet flow) and high groundwater table	Corps jurisdictional—Depression possibly formed or altered during original railroad and Frontage Road construction
4	III	0.2 (0.5)	Cattail, bulrush, curly dock, chenopodium	Runoff (sheet flow), possibly groundwater, and campground wastewater	Corps jurisdictional—Depression possibly formed or altered during original railroad and old US 87/I-90 West Frontage Road construction or from campground/motel
5	IV	<0.8 (< 2) <sup>2</sup>	Sandbar willow, red-oiser dogwood, Starry false-Solomon's-seal, green ash	Runoff and possible high groundwater table	Corps jurisdictional—Depression remnant of old meander channel first altered by construction of railroad followed by old US 87/I-90 West Frontage Road and motel/camp
6	IV	<0.8 (< 2) <sup>2</sup>	Sandbar willow, swamp smartweed	Runoff (sheet flow and culvert) and possible high groundwater table	Corps jurisdictional—Depression within ephemeral drainage

<sup>1</sup> From Berglund 1999

<sup>2</sup> A visual estimation determined that the combined size of Wetlands 5 and 6 was less than 2 acres.

Note: The jurisdictional determination noted here is subject to US Army Corps of Engineers (COE) review. Coordination with the COE regarding jurisdictional status will continue as the design process continues.



wetlands would not be affected by the proposed action. The jurisdictional determination noted here is subject to COE review. Coordination with the COE regarding jurisdictional status will continue as the design process continues.

### **3.9.3 Mitigation**

According to Executive Order 11990 wetland impact mitigation is to be addressed in the following sequence:

3. Avoid potential impacts to the maximum extent practicable.
4. Minimize unavoidable impacts to the extent appropriate and practicable.
5. Compensate for unavoidable adverse impacts that remain after appropriate and practicable minimization has occurred.

It would not be feasible to avoid or minimize impacts to Wetland 1 and keep construction within the required limits of the proposed interchange. It would be necessary to fill the entire wetland area. As a result, compensation would be used to address impacts to Wetland 1.

Wetland 1 is a Category IV wetland under the *MDT Montana Wetland Assessment Method*. Mitigation of 0.1 hectare (0.3 acre) would be coordinated with the Crow Tribe and other agencies, as appropriate. MDT is currently working with the Crow Tribe to develop mitigation reserves on the reservation.

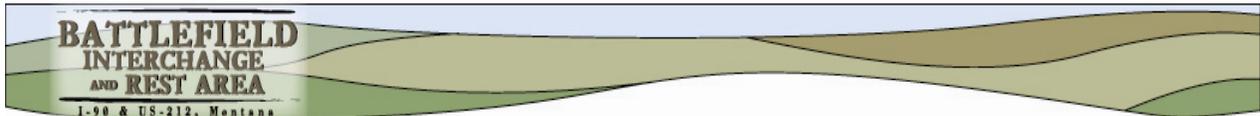
Additionally, minimizing impacts to wetlands during construction would include the following:

- BMPs for erosion and sediment control would be adhered to.
- An erosion control and sediment plan would be prepared in compliance with the NPDES.
- To reestablish permanent desirable vegetation, disturbed areas within MDT right-of-way and easements would be seeded with desirable plant species as soon as practicable after disturbances, as recommended by the MDT Botanist.
- Work in and adjacent to wetlands and water resources would follow applicable regulations, permits, and authorizations.

## **3.10 VEGETATION**

### **3.10.1 Affected Environment**

The Battlefield Interchange area is grassland beyond the paved surfaces and shoulders, with remnant meander channels dominated by trees and shrubs. Much of the native vegetation has been disturbed through the development of the interstate, frontage and highway roads, in addition to a private motel/campground, railroad, and MDT sand/gravel stockpiles.



Five invasive species, also referred to as noxious weeds, were found in the Battlefield Interchange project site. These five are ranked by the State of Montana as Category 1, meaning they are currently established and are generally widespread. Category 1 weeds are capable of rapidly spreading and render land unfit or greatly limit the land's beneficial uses. The five invasive species are hoary cress, diffuse knapweed, Canada thistle, field bindweed, and hound's-tongue. No rare or sensitive plant species were found within the proposed project area.

### **3.10.2 Impacts**

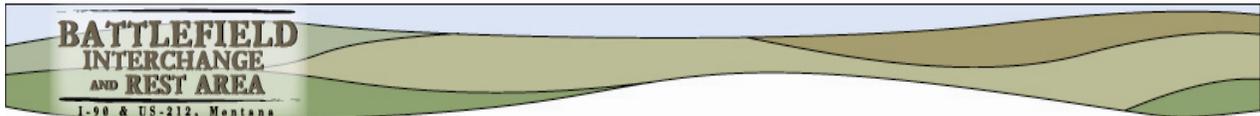
*No-Action Alternative:* There would be no impacts to existing vegetation with the No-Action Alternative.

*Preferred Alternative:* Construction of the various roadway realignments, rest area building, sidewalks, trails, landscaped areas, and parking areas associated with the Preferred Alternative would remove about 4.1 hectares (10.1 acres) of native vegetation and grasses in the construction area.

### **3.10.3 Mitigation**

Mitigation for loss of vegetation by the Preferred Alternative would occur by reclamation of landscaped areas following construction activities. Landscaping would include both turf grasses in areas where human activities would most often occur and seeding the remainder beyond the proposed paved surfaces with desirable grass species. Turf grasses would be used in sites in the proposed rest area subject to frequent human use such as the picnic areas and would likely require an irrigation system. Revegetation and landscaping would be performed in accordance to MDT BMPs and would likely include the following activities:

- In accordance with MDT Standard Specifications, topsoil salvaged from construction areas would be stockpiled for reuse and reclamation as the Preferred Alternative is completed.
- According to MDT Standard Specification, the contractor must comply with the Montana County Noxious Weed Control Law, Title 7, Chapter 22, Part 21 MCA, Executive Order 13112 – Invasive Species, and Big Horn County weed management requirements during construction. Direct control of noxious weeds on disturbed ground within the construction area would be required as part of both these proposed projects' construction contracts.
- To reduce the spread and establishment of noxious weeds and to reestablish permanent vegetation, disturbed areas within MDT right-of-way and easements would be seeded with desirable plant species as soon as practicable after disturbance, as recommended by the MDT Botanist.
- In accordance with MDT Standard Specifications, clearing and grubbing will be limited to the area necessary for construction of the project.



## 3.11 WILDLIFE AND FISHERIES

### 3.11.1 Affected Environment

There are 57 non-domestic mammal species known or suspected to occur in Big Horn County. However, none were observed at the proposed project area during field visits by the biological resources consultant staff. Six amphibian species have been documented within Big Horn County. There is no habitat or presence of fish species within the proposed project area. Limited habitat for aquatic invertebrates is found in Wetlands 3 and 4 in the proposed project boundaries. Thirteen reptile species have been documented to occur in Big Horn County. Within the limits of the Preferred Alternative, potential habitat occurs for snake species, but habitat for turtle or lizard species is minimal or non-existent.

A high number of birds were observed or heard during the field visits. Nests were commonly observed both in trees and underneath the denser shrubs. Ring-necked pheasants, killdeer, mourning doves, Brewer's blackbirds, robins, sparrows, and western kingbirds were seen within the interchange area. In addition, red-wing blackbirds were observed within Wetland 4.

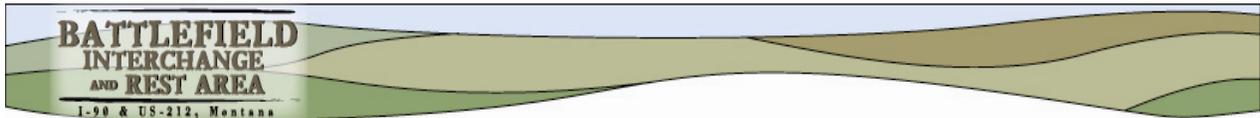
### 3.11.2 Impacts

*No-Action Alternative:* The No-Action Alternative would not impact wildlife, reptile or fish species.

*Preferred Alternative:* The Preferred Alternative would create a direct loss of 4.1 hectares (10.2 acres) of natural vegetation that could be used by wildlife as habitat and forage areas. Most of the construction would occur within the present Battlefield Interchange area, an area already disturbed from past activities and subject to current pollution (traffic noise, vehicle emissions, littering). Consequently, terrestrial wildlife habitat that would be affected by the Preferred Alternative is generally judged to be of moderate to low overall quality. There would be no impacts to aquatic habitat from the Preferred Alternative.

The most limiting habitat within the interchange is wetland and remnant stream channels. Many wildlife species associate with those habitats because they provide a diversity of plant structure and species variation and a temporary source of water, thus providing cover, nesting, and foraging habitat for some wildlife species. Approximately 0.12 hectare (0.3 acre) of wetland would be lost as a result of the proposed realignment of the eastbound off-ramp. Construction of the Preferred Alternative could result in direct wildlife mortality for individuals of those species with limited mobility and/or for those species occupying burrows or nests during the time of construction, such as mice, voles, snakes, and ground squirrels. More mobile species, such as birds, raccoons, and deer, would be able to avoid direct mortality by moving into adjacent habitats. A loss of foraging and nesting habitat for some small mammals would also occur through landscaping.

Generally, indirect disturbance caused by construction activities to wildlife in the Preferred Alternative area would be considered minor. Proposed disturbances would be temporary and alternative habitat similar in nature is available nearby. The survival of displaced species residing exclusively within the construction area (e.g. species with very limited home ranges, such as mice and voles), would depend upon adjacent undeveloped habitat.



### 3.11.3 Mitigation

- To reestablish permanent vegetation, disturbed areas within MDT right-of-way and easements would be seeded and planted with desirable plant species as soon as practicable after disturbance, as recommended by the MDT Botanist.
- Trees and tall shrubs removal would be minimized to the greatest extent practicable.
- As appropriate and directed by the MDT Botanist, native trees, such as green ash or boxelder, would be planted as part of the rest area landscape design to provide future habitat for native/migratory birds.
- Construction activities would be conducted in compliance with the Migratory Bird Treaty Act.
- Power lines relocated within MDT right-of-way as a result of this project would be raptor-proofed in accordance with MDT policy.

## 3.12 FLOODPLAINS

### 3.12.1 Affected Environment

The proposed project occurs in the floodplains of the Little Bighorn River. The floodplain is within the Crow Indian Reservation, and Federal Emergency Management Agency floodplain regulations do not apply. A map of flood-prone areas has been prepared by the United States Geological Survey, but the reoccurrence interval associated with this analysis is not stated. The floodplain in the Battlefield Interchange vicinity is characteristically vegetated, vacant land with meanders of the Little Bighorn River, and sparse development. Fifty- and 100-year flood elevations were determined based on recorded flows in the Little Bighorn River, local river channel characteristics, and topographic conditions. Areas of the 100-year floodplain contours that lie within the study area are shown on the flood mapping map in **Figure 3-5**.

The floodplain analysis concluded that the north one-third of the proposed rest area site, some small areas on the east side of I-90, and an area on the north side of US 212 west of I-90 lie within the 100-year floodplain and consist of a total area of approximately 5.5 hectares (13.6 acres). Historical flood events caused water to accumulate within the interchange area during spring runoff on a few occasions, particularly in 1978 and 2007. Aerial photos taken during a flood in mid-May 1978 show water within and surrounding the present interchange. I-90 was temporarily closed in early June 2007 because of flooding in the interchange area.

### 3.12.2 Impacts

*No-Action Alternative:* There would be no impacts to floodplains with the No-Action Alternative.

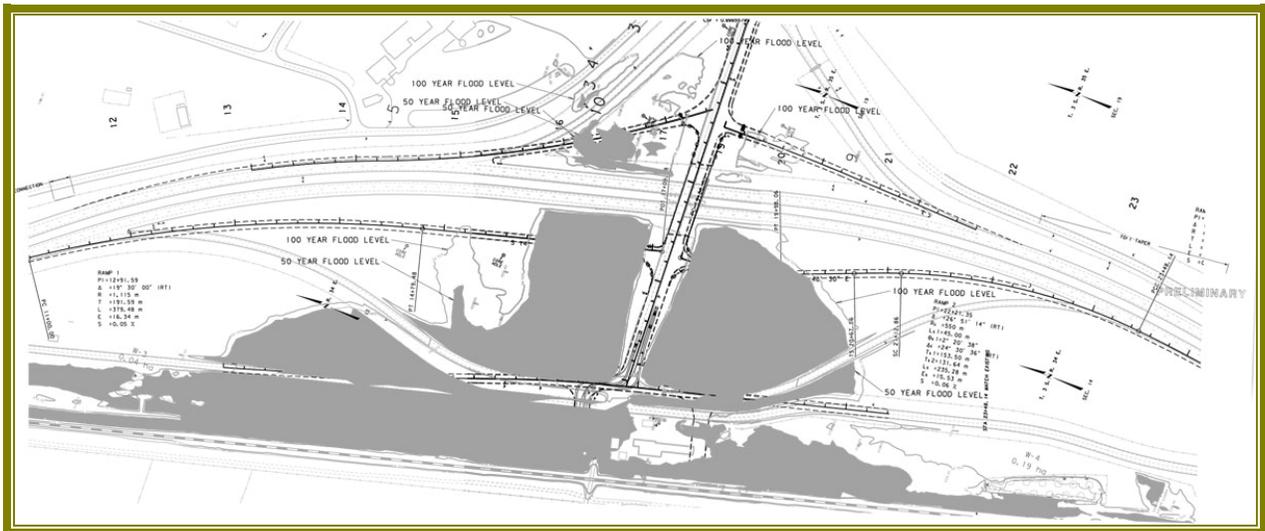
*Preferred Alternative:* The Preferred Alternative would fill in and remove the following areas from the present floodplain:

- The north one-third of the proposed rest area;
- All floodplain area on the east side of I-90; and

- 0.6 hectare (1.5 acres) of the floodplain area on the north side of US 212 east of I-90.

The total floodplain impacted area would be approximately 3.7 hectares (9.1 acres). This area represents about 37,000-cubic meters (48,000-cubic yards) of floodplain volume currently available for storage of floodwaters. The removal of this volume of available floodwater storage from the total floodplain volume is considered an incremental, but not measurable, impact on the total floodplain area. Rise of flood elevation due to the proposed impact would be below the threshold level of prediction methodology.

**FIGURE 3-5: FLOODPLAIN IN THE PROJECT AREA**



The proposed projects would not promote or encourage new development within a delineated floodplain and would not increase flood liability hazards. As a result, the Preferred Alternative is considered to be in compliance with the provision of Executive Order 11988 and no mitigation is required. However, occasional flooding as observed in 1978 and 2007 could still occur under the Preferred Alternative causing temporary disruptions to traffic in the vicinity.

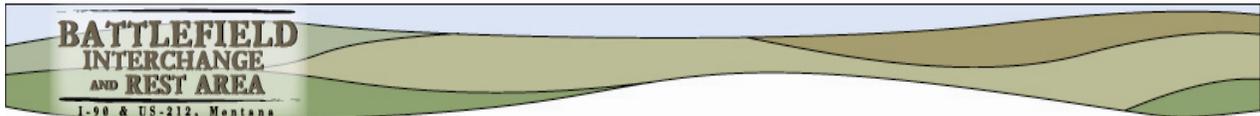
### 3.12.3 Mitigation

The project would comply with all floodplain laws, regulations, and permits, if required. No other mitigation would be required.

## 3.13 CONTAMINATED SITES/HAZARDOUS MATERIALS

### 3.13.1 Affected Environment

A Modified Phase I Environmental Site Assessment or Initial Site Assessment was conducted for the proposed project area. The assessment included information obtained from record review, interviews, aerial



photograph interpretation, and historic USGS 7.5-minute quadrangle topographic maps. An environmental database search of federal and state listed hazardous materials locations was conducted in coordination with Environmental Data Resources, Inc.

The MDT maintenance yard in the northwest quadrant of the Battlefield Interchange is used and contains large sand and gravel piles as well as an asphalt millings pile. There are no known above ground or underground storage tanks, landfills, wells or pipelines located in the maintenance area. There are also no known regulated or hazardous materials stored within the interchange area, including the maintenance site. The site has been rated as being a low-risk for environmental concerns in regard to hazardous material issues.

The Little Bighorn Campground has experienced a low level release of petroleum contaminants from a leaking underground storage tank in the past. Monitoring reports indicate that this site has achieved regulatory closure with respect to its underground storage tank. Groundwater beneath the site reportedly flows towards the west and northwest away from the proposed rest area site.

Additionally, the Battlefield County Market located east of I-90 on the north side of US 212 reportedly had petroleum contaminated soil excavated from the site. Based on recent reports, groundwater beneath the site appears to be flowing towards the north-northeast. Samples from downgradient wells did not reveal the presence of contamination.

Since completion of the Phase I, two wells have been placed on the site of the proposed rest area. Water quality tests of these wells have not detected the presence of hazardous waste substances.

### **3.13.2 Impacts**

*No-Action Alternative:* No impacts to or from hazardous materials would result from the No-Action Alternative.

*Preferred Alternative:* No hazardous materials are anticipated to be encountered with implementation of the Preferred Alternative.

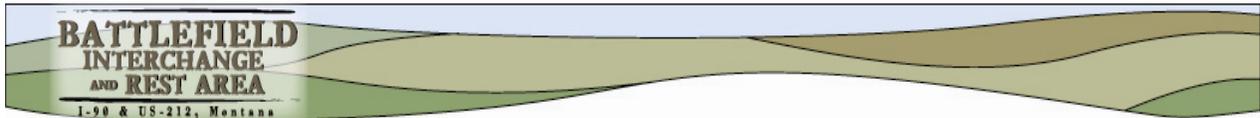
### **3.13.3 Mitigation**

In accordance with MDT Standard Specification, if the contractor discovers hazardous materials, the contractor will stop work and coordinate with the project manager to ensure that the material is managed in accordance with applicable laws and regulations.

## **3.14 VISUAL QUALITY**

### **3.14.1 Affected Environment**

Views in the proposed project area are of gently rolling terrain with open rangeland and the Big Horn Mountains to the west. Low sagebrush and grass vegetation is predominant throughout the area. The Little Bighorn River valley gradually descends to the north, with I-90 crossing the Bighorn River south of the



Battlefield Interchange. Views to the east are elevated with developed lands including small businesses, cultivated pasturelands, and the Little Bighorn Battlefield National Monument. The Big Horn Campground is approximately 130 meters (450 feet) to the southwest and within direct viewing of the proposed rest area site.

Foreground views of the Battlefield Interchange include the present bridge, ramps, and frontage roads in their current configurations. Areas in-between are vegetated with grasses, sedges (predominantly sage), and cottonwoods along the old meandering channels within the westerly portion of the interchange. The nearby views include commercial businesses to the southwest and northeast and the BNSF railroad main line to the west. MDT's maintenance stockpiles and the Crow Agency Port-of-Entry scales site can be seen to the north and west of the interchange.

According to the *Big Horn County Growth Policy*, defining characteristics of the proposed project area and the county as a whole are the expansive vistas and open spaces. High visual quality should be maintained with future human activity.

### **3.14.2 Impacts**

*No-Action Alternative:* No changes to the visual character would occur as a result of the No-Action Alternative.

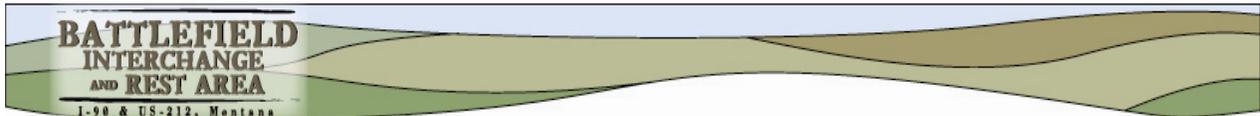
*Preferred Alternative:* The proposed action would impact the view of the rest area site by locating the following features in a previously open and undeveloped area:

- Paving approximately 2.2 hectares (5.5 acres) for the rest area facility and parking area.
- Realignment of the interchange ramps.
- Construction of a rest area building.
- Placement of exterior lighting fixtures and landscaping.
- Placement of rest area signage within the vicinity of the Battlefield Interchange along I-90.

The implementation of the Preferred Alternative would not adversely affect the views of the Battlefield area from the rest area site. The proposed rest area would include an enhanced view of the Little Bighorn Battlefield National Monument, with an opportunity for interpretive description of the historical attributes of the area. Views to the east from the adjacent campground would be modified to include the rest area and associated truck parking.

### **3.14.3 Mitigation**

- Disturbed areas within MDT right-of-way and easements would be revegetated with desirable plant species as soon as practicable after disturbance, as recommended by the MDT Botanist.
- Landscaped areas with frequent human use (such as picnic and pet areas) would be provided with an appropriate turf grass.



- Interpretive signing could be included for views from proposed rest area building toward Little Bighorn Battlefield National Monument.
- As determined appropriate and feasible during final design, a fence or row of trees will be placed between the rest area and the campground.

## 3.15 CONSTRUCTION

### 3.15.1 Affected Environment

The I-90 Battlefield Interchange is utilized by commercial, tourist, local, and regional traffic throughout the year. Usage of the area is greatest during the summer construction months. The Crow Agency commercial area on US 212 (north and east of the East Frontage Road and the Little Bighorn Battlefield National Monument) depends on the continuous operation of the interchange.

### 3.15.2 Impacts

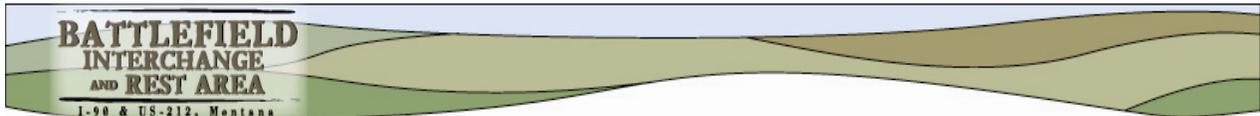
*No-Action Alternative:* The No-Action Alternative would have no construction-related impacts.

*Preferred Alternative:* Construction of the Preferred Alternative would likely take place during the summer months and coincide with peak usage season of the transportation system. Disruptions to normal traffic would occur throughout the construction period, such as delays associated with traffic flagging operations, driving on unpaved surfaces, traffic detours, and related inconveniences. Construction could produce short-term air quality, water quality, visual, utility, and noise impacts. Short-term impacts associated with the rest area include potential increased sedimentation during and after construction until bare soil surfaces are revegetated. Two annual events would have to be accommodated by construction activities because of heavy traffic experienced during these events. One event occurring the third week in August is the Crow Fair that draws 30,000 to 40,000 visitors. The other event occurring in late June is the re-enactment festivities for the battle.

Short-term air quality impacts associated with rest area and interchange construction would include dust generated by earthwork activities, roadbed preparation equipment, vehicles hauling soil or debris, and construction equipment transportation activities.

### 3.15.3 Mitigation

- Early notification and coordination with adjacent property owners in regard to construction activities would be carried out in an effort to minimize property access impacts. Access to commercial areas and the Little Bighorn Battlefield National Monument would be provided throughout the construction period.
- An erosion control and sediment plan will be prepared and maintained in compliance with the Clean Water Action Section 302, National Pollution Discharge Elimination System (NPDES) regulations.



The contractor will be expected to adhere to MDT best management practices (BMPs) for erosion and sediment control and comply with applicable permit conditions.

- In accordance with MDT Standard Specification, a construction traffic control plan would be developed to provide protection, safety, and convenience for motorists, pedestrians, and construction personnel. The traffic control plan must consider various circumstances such as emergency vehicles, mail delivery, and scheduled school bus operations.
- As necessary, dust control measures would be used for environmental compliance, to minimize visual impacts and inconvenience to the traveling public.
- Close coordination with Crow Agency officials would be maintained throughout the proposed construction period. A project-specific agreement (PSA), as specified in the MOU between the Crow Tribe and MDT, would be negotiated and entered into by the Crow Tribe and MDT prior to project advertisement. The PSA would cover the specifics of the proposed project and ensure that provisions of the MOU are incorporated into the projects. MDT will take practicable measures to minimize construction impacts during the Crow Fair in August and the battle re-enactment in June.
- In accordance with MDT Standard Specifications, utility relocations would be coordinated with the utility line owner(s) to minimize interruption to utility service. Notification of service interruptions due to relocations is the responsibility of the utility line owner(s).
- In accordance with MDT Standard Specification, if the contractor discovers hazardous materials, the contractor will stop work and coordinate with the project manager to ensure that the material is managed in accordance with applicable laws and regulations.
- In accordance with MDT Standard Specification, in the event that previously unrecorded cultural material is found during construction, activities in the immediate area would be halted, and the MDT archeologist would be contacted to assess the find. Additionally, as appropriate, MDT would invite a Crow Tribe cultural resources specialist to monitor construction during ground-disturbing activities.

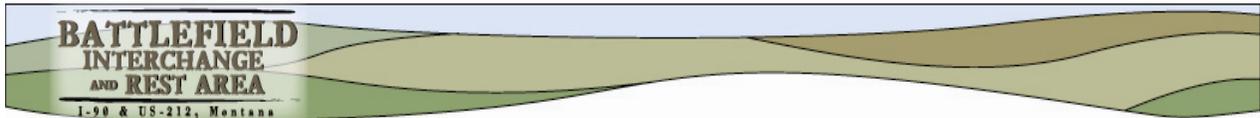
## 3.16 CUMULATIVE IMPACTS

### 3.16.1 Affected Environment

Cumulative impacts are defined as those impacts that result from the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future public and/or private actions. Known projects in the vicinity of the proposed project are listed in **Table 3-3**.

### 3.16.2 Impacts

*No-Action Alternative:* Cumulative impacts of the No-Action Alternative would be related to either an unchanged or presumed declining rate of development in Crow Agency and/or the Battlefield Interchange vicinity.

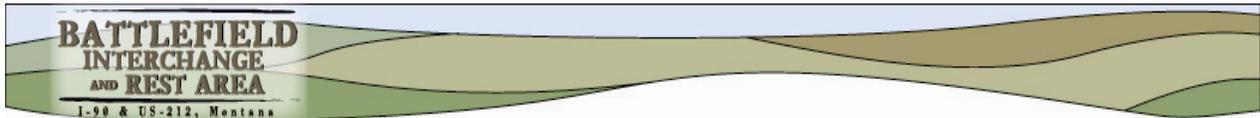


**TABLE 3-3: PAST, PRESENT, AND FUTURE PROJECTS**

PROJECT	TYPE	ESTIMATED SCHEDULE	LOCATION
Local development in Crow Agency	Commercial Development	2004 - 2010	US 212 and Crow Agency east of I-90
Local Utility Development in Crow Agency	Potable Water System Improvements and Wastewater System Improvements	2007 - 2010	Within Crow Agency
I-90, Crow Agency to Garryowen	Resurfacing	2008	Extending from Garryowen to Crow Agency on I-90
I-90, Garryowen - South	Minor Surface Rehabilitation	2008	Extending south from Garryowen on I-90
Crow Agency Port-of-Entry	Closure	TBD	Crow Agency, MT
Big Horn County Line - East	Surfacing	2009	Milepost 473.24 to 486.56
Lodge Grass - North	Minor Surface Rehabilitation	2009	Lodge Grass
County Road 02200 – West Crow Agency	Reconstruction	2009	Crow Agency

*Preferred Alternative:* Impacts of the Preferred Alternative, in conjunction with the present and future projects listed in Table 3-3, are not anticipated to be substantial. Potential cumulative impacts include the following:

- **Land Use** - The Preferred Alternative may support continued expansion of the recently developed Crow Agency commercial enterprises and expanding visitation at the Little Bighorn Battlefield National Monument. As such, cumulative land use impacts could include the conversion of designated open lands and spaces along US 212 and other roadways under Tribal jurisdiction to commercial land uses. Potential growth in the area is difficult to predict because of complex factors involved. Likely growth in the area would happen with or without the Preferred Alternative because of tourism potential in the area.
- **Little Bighorn Battlefield National Monument Visitation** - The Preferred Alternative would support the gradual and continued expansion of visitor volume to the Little Bighorn Battlefield National Monument. No abnormal boost in visitation is expected due to completion of the Preferred Alternative.



### **3.16.3 Mitigation**

None is required.

## **3.17 SECONDARY IMPACTS**

### **3.17.1 Affected Environment**

Secondary impacts are events that occur, or are likely results of a proposed action but were neither intended as part of nor regarded as a direct environmental impact from the proposed project. Usually, secondary impacts are limited in range and effects, and are generally confined to the immediate area of the intended work.

### **3.17.2 Impacts**

*No-Action Alternative:* A secondary impact would be a likely increase in crash numbers as a result of no changes to the present Battlefield Interchange ramps, the US 212 bridge, and/or the I-90 East Frontage Road intersection with US 212.

Pedestrians moving along US 212 between local businesses and the Little Bighorn Battlefield National Monument would continue to face risk that may increase over time with traffic growth. Visitor numbers at the Little Bighorn Battlefield National Monument would most likely continue to grow at or near the same rate as over the previous two decades since completion of I-90 to the Wyoming border.

*Preferred Alternative:* Within the Battlefield Interchange area, an immediate secondary impact could be an increase in pedestrian numbers related to the proposed rest area. An increase in the number of visits to the Little Bighorn Battlefield National Monument is also possible. Local officials have expressed that potential increases in visitors to the Little Bighorn Battlefield National Monument would be a welcome, not adverse, impact.

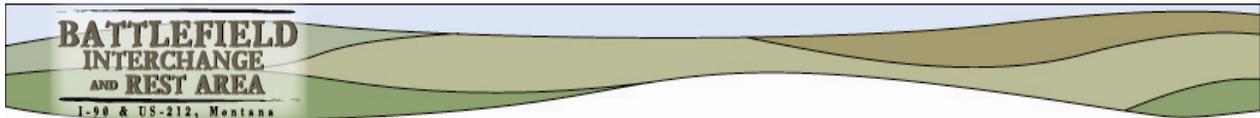
Losses of wildlife habitat and vegetation would be minimal and confined to the immediate area along the eastern side of the I-90 East Frontage Road and from US 212 junction with S-342 to the Crow Agency community. Scenic values that would be lost by this development would be offset to a certain extent by retaining some of the trees and vegetative cover, as well as the improved view from the proposed rest area.

Utilities relocations are not expected to cause secondary impacts, such as better or worse service, or increased fees to users.

### **3.17.3 Mitigation**

Mitigation for vegetation loss is discussed in Section 3.10.3. Otherwise no mitigation is required.



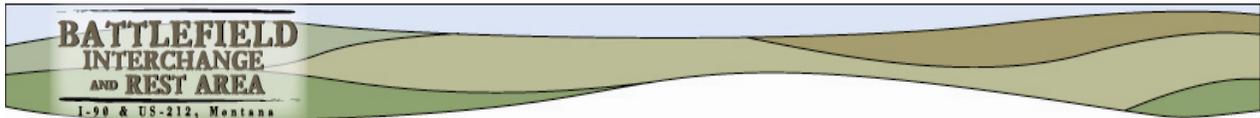


### 3.18 PERMITS REQUIRED

Appropriate permits will be acquired prior to relevant disturbances on the proposed project. Required/potentially required permits include, but are not limited to the following:

- **Stream Protection Act (SPA) 124:** An SPA 124 may be required from the Montana Department of Fish, Wildlife, and Parks prior to any construction disturbances to the bed or banks of any stream in the project area. As discussed in the Biological Resources Report for this project, no construction activities are planned in any streams. As a result, it does not appear that an SPA 124 would be required.
- **Section 402 Permit/National Pollutant Discharge Elimination System (NPDES) Permit:** In accordance with the Clean Water Act (33 USC 1251-1376), MDT would submit a Notice of Intent with a Storm Water Pollution Prevention Plan to EPA under the NPDES general permit.
- **404 Permit:** As required under the Clean Water Act (33 USC 1251-1376), MDT would be required to submit a completed Joint Application to the COE prior to discharge or placement of dredged or fill material into waters of the US, including jurisdictional wetlands. The COE has determined that Wetland #1 is not jurisdictional. As a result, at this time it does not appear that a 404 permit would be required.
- **401 Certification:** As applicable, 401 Certification would be obtained from EPA.





## CHAPTER 4.0 COMMENTS AND COORDINATION

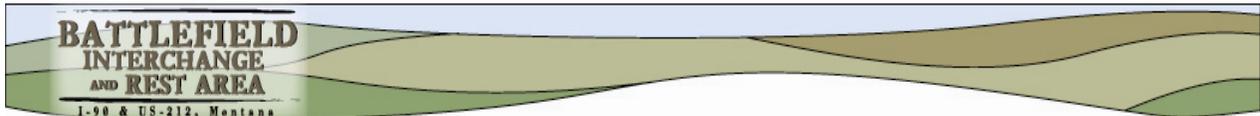
### 4.1 PUBLIC COORDINATION

Public and agency comments were solicited and received related to the proposed project.

#### ***March 7, 2000 Public Workshop***

A public workshop for the proposed Battlefield Rest Area and Interchange project was held in Crow Agency, March 7, 2000, at the Multi-Purpose Building from 4:30 p.m. to 8:00 p.m. The format was open meeting style. No formal presentation was given. Project information (newsletter) was available to the public at the sign-in table. Comments were received from the public by the way of personal comments written on 5" x 8" cards and through comments dropped in a comment box. Nine members of the public attended the meeting. Included below is a summary of paraphrased public comments received. References to the section(s) of the EA where the issue is discussed or assessed are included parenthetically.

- Develop the rest area at #9 (Section 2.2).
- Third week in August is the Crow Fair that draws 30,000 to 40,000 visitors (Section 3.15).
- Late June is the re-enactment festivities for the Battle -heavy traffic (Section 3.15).
- There is a tribal resolution regarding land use on US 212 south (Section 3.2).
- An inventory of land use exists for Big Horn County (Section 3.2).
- Formal tourism studies done by MSU (Dave Sharp) for Big Horn County.
- Cost issues will be important (Section 2).
- Over 50 percent of people stay four or more hours at Battlefield. Most visitors are in the area between 10 a.m. and 2 p.m. (from Billings or Sheridan). Approximately 80 to 85 percent of people book ahead.
- Hardin gets 10 percent of visitors that stop at Battlefield (10 percent based on Big Horn County Visitor Center/Museum). Visitors start around the end of June and go through the beginning of September.
- What would the impacts be from moving the Hardin Rest Area to Dunmore (Site #5)? Or Crow Rest Area 3 miles south? (Section 2.2)
- Northwest Battlefield Interchange (Site #7) is probably the best site (Section 2.3).
- At Crow Agency the sewer line is in the Frontage Road. Water line is near Fairground between stadium and multi-purpose building.
- In Oklahoma and New Mexico artisans sell in the rest areas. Is this possible at this rest area? Requested an area where they can sell arts and crafts. Requested a visitor area to be able to have an artist area (Section 3.4.2).

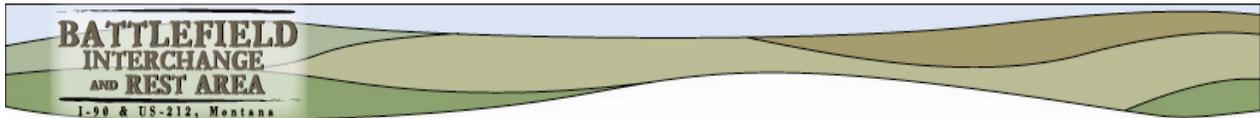


- Little Big Horn College is providing training for small business and tour guides. They could provide staff for an information booth. Talk to Little Big Horn College about staffing visitors/information/tour guides, etc. (Section 3.5).
- Hardin currently has the nearest motels.
- Crow Agency proposes to extend US 212 west to St. Xavier (Secondary 313 to Fort Smith) or BIA Route 91 to Pryor (has the Plenty Coups Museum and Gateway to Yellowstone). Bureau of Indian Affairs Route 91 is an improved road with new overlay scheduled for summer 2000. Funding proposed for US 212 extension would be federal dollars from Indian Reservation Road Program. Therefore, with those proposals, the Southeast Battlefield Interchange (Site #9) may be the most optimal. If not #9, then the other Southwest Battlefield Interchange (Site #14), as Battlefield Interchange is claimed to be the gateway.
- Trucks park in casino parking lot (Section 1.4).
- National Park Service (NPS) land east of I-90, South of US 212 is considered “unique” due to “Little Bighorn (Custer) Battlefield” area (Section 3.1).
- Traveling north from the Wyoming/Montana border, there is no rest area until Garryowen, or community adjoining I-90 along US 212, until Broadus. No place to stop and picnic in Battlefield area. NPS won’t allow it due to cemetery (Section 1.4).
- I-90 has closures at US 212 due to winter weather conditions for eastbound traffic. Where can I-90 traffic park in this event? (Section 1.4)
- Where are people originating from along US 212, Billings or Sheridan? (Section 1.4)
- How much acreage required for site? 5-15 acres? (Section 2.4)

## 4.2 AGENCY COORDINATION

Appendix B contains copies of agency correspondence. Contacts were made with the following agencies:

- Big Horn County Board of Commissioners
- Big Horn County Planning Board
- Big Horn County Floodplain Administrator
- Big Horn County Sanitarian
- Crow Tribe of Indians, Tribal Government
- City of Hardin Economic Development Department
- City of Hardin Planning Board
- Custer Battlefield Preservation Committee
- Frontier Heritage Alliance
- State Historic Preservation Office



- Montana Department of Environmental Quality
- US Army Corps of Engineers
- US Department of Interior/National Park Service
- US Bureau of Indian Affairs
- US Department of Agriculture, National Resources Conservation Service
- US Environmental Protection Agency
- US Fish and Wildlife Service

### 4.3 IDENTIFICATION OF ISSUES BY AGENCIES

To date, no specific issues have been identified by public agencies. Appendix B contains related correspondence.

### 4.4 HEARING AND DECISION PROCESS

A Notice of Availability of the EA and the announcement for the Public Hearing (as applicable) would be placed in the Billings Gazette and the Big Horn County News. As applicable, a Public Hearing would be scheduled during the 30-day public comment period if requested by the public. The Notice of Availability would also be distributed to the addresses on the EA mailing list and published with local media. The general public would be given an opportunity to provide official comments about the proposed action. Written comments, to be included as an official part of the record, would be accepted for 30 days following the Notice of Availability.

The EA would be available for review at the MDT Billings office, the Crow Agency Tribal Headquarters Office, the Little Bighorn Battlefield Visitor Center, Montana State and Big Horn County Public Libraries, and on the MDT Web site at: [http://www.mdt.mt.gov/pubinvolve/eis\\_ea.shtml](http://www.mdt.mt.gov/pubinvolve/eis_ea.shtml).



