

Battlefield Rest Area Project

Phase IA

IM 90-9(97)511

UPN 2012000

Site Evaluation Report

PREPARED FOR:



PREPARED BY:



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Abbreviations and Acronyms

AADT	Annual Average Daily Traffic
AC	Advisory Committee
dBA	A-weighted Decibel
EA	Environmental Assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
I-90	Interstate 90
MDT	Montana Department of Transportation
MOU	Memorandum of Understanding
NAC	Noise Abatement Criteria
NH	Natural Heritage
NHPA	National Historic Preservation Act
NHS	National Highway System
NPS	National Park Service
RP	Reference Post
SF	Square Feet
SHPO	State Historic Preservation Office
THPA	Tribal Historic Preservation Office
USFWS	U.S. Fish and Wildlife Service

1.0 Introduction and Background

In 2007, the Montana Department of Transportation (MDT) and the Federal Highway Administration (FHWA) issued an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for a new MDT rest area near the junction of Interstate 90 (I-90) and Highway 212 south of Crow Agency, MT. Flooding of the Little Bighorn River in 2011 inundated the site identified in the EA/FONSI, and MDT determined that a new site would need to be identified outside the potential influence of the river.

MDT, in cooperation with the Crow Tribe, FHWA, and the National Park Service (NPS), began meeting in 2012 to discuss the development of a new site that could accommodate complementary uses between the parties. In 2013, a feasibility study was initiated by MDT, in cooperation with the Crow Tribe and the NPS, to identify an alternate location within the vicinity of the original rest area site. Four sites were identified by the Crow Tribe for consideration.

Through this planning process, MDT desires to construct a new rest area with provisions for a wastewater system, potable water system, car and truck parking, and a restroom facility. The site for the rest area may also include provisions for a future Crow Tribal museum and a future NPS visitor center. The Crow Tribe has expressed longstanding interest in developing a museum to highlight Crow culture. NPS has determined its visitor center is inadequate to serve its patrons due to its location, as well as safety, code, and accessibility issues. Co-located facilities would provide an opportunity to address the needs of all three entities. While all three uses are being considered, the MDT rest area is the primary focus of this study.

MDT will develop the project in two phases (Phase I and Phase II), with the initial phase separated into two sub-phases (Phase IA and Phase IB). Phase IA assesses the feasibility of potential sites and identifies a preferred site for further analysis. Phase IA is the subject of this report.

Phase IB will address conceptual design constraints at the preferred site, environmental compliance documentation, and permitting or conditional permitting (as necessary) for a new water and wastewater system to be used during a Phase II design-build project for the MDT rest area. Phase IB will also develop a theme outlining visual elements of the project and defining the relation of the three facility uses to each other and to the existing landscape. Through coordination with the Crow Tribe and NPS, MDT will develop orthogonal renderings of the site, depicting a conceptual site layout and conceptual building elements to guide the Phase II design process.

Phase II will include design and construction of the MDT rest area. Improvements are expected to be developed through a design-build project administered by MDT. Future development of a Crow Tribal museum and/or NPS visitor center would be addressed separately, by the individual parties, and as funding allows.

To consider the needs of all of the interested parties throughout project development, a memorandum of understanding (MOU) was developed to outline the roles and responsibilities of MDT, NPS, the Crow Tribe, and FHWA (Attachment 1). A separate document will be drafted by MDT during Phase IB to arrange a long-term lease with the Crow Tribe for any site selected on Tribal land.

The NPS has applied for funding to conduct a planning study for a new visitor center facility, and anticipates support from the Montana congressional delegation. If approved, this funding is expected to be available no earlier than fiscal year 2014. At the time of this report, NPS has not defined the exact needs of the visitor center facility and is relying on available NPS planning information to assist the Phase IA and Phase IB process.

A timeline for development of a tribal museum has not been set and funding has not been identified. At the time of this report, the Crow Tribe and Beartooth Resource Conservation & Development Area, Inc. (Beartooth RC&D) are pursuing funding opportunities.

2.0 Project Location

The project is located within the Crow Nation, south of Crow Agency, in Bighorn County, MT.

Study Sites

Four sites were initially proposed by the Crow Tribal Chairman for consideration in Phase IA. The four sites are located on Crow Tribal land east of the I-90/Highway 212 interchange at reference post (RP) 510. Early in the process, it was determined that one of the sites (Site 4A) was too small to be a feasible consideration, and it was removed from further study. The three remaining sites considered for Phase IA are depicted in Figure 2-1. An additional site (Site 4B) proposed by the Chairman in the late stages of Phase IA was also eliminated from consideration and is further described in Section 4.0.

Site 1 is located east and northeast of the Custer Battlefield Trading Post. Site 2 is located approximately ¼ mile northeast of the Crow/Northern Cheyenne Hospital. Site 3 is located approximately ½ mile southeast of the Custer Battlefield Trading Post, south of Highway 212, and north of the Little Bighorn Battlefield National Monument.

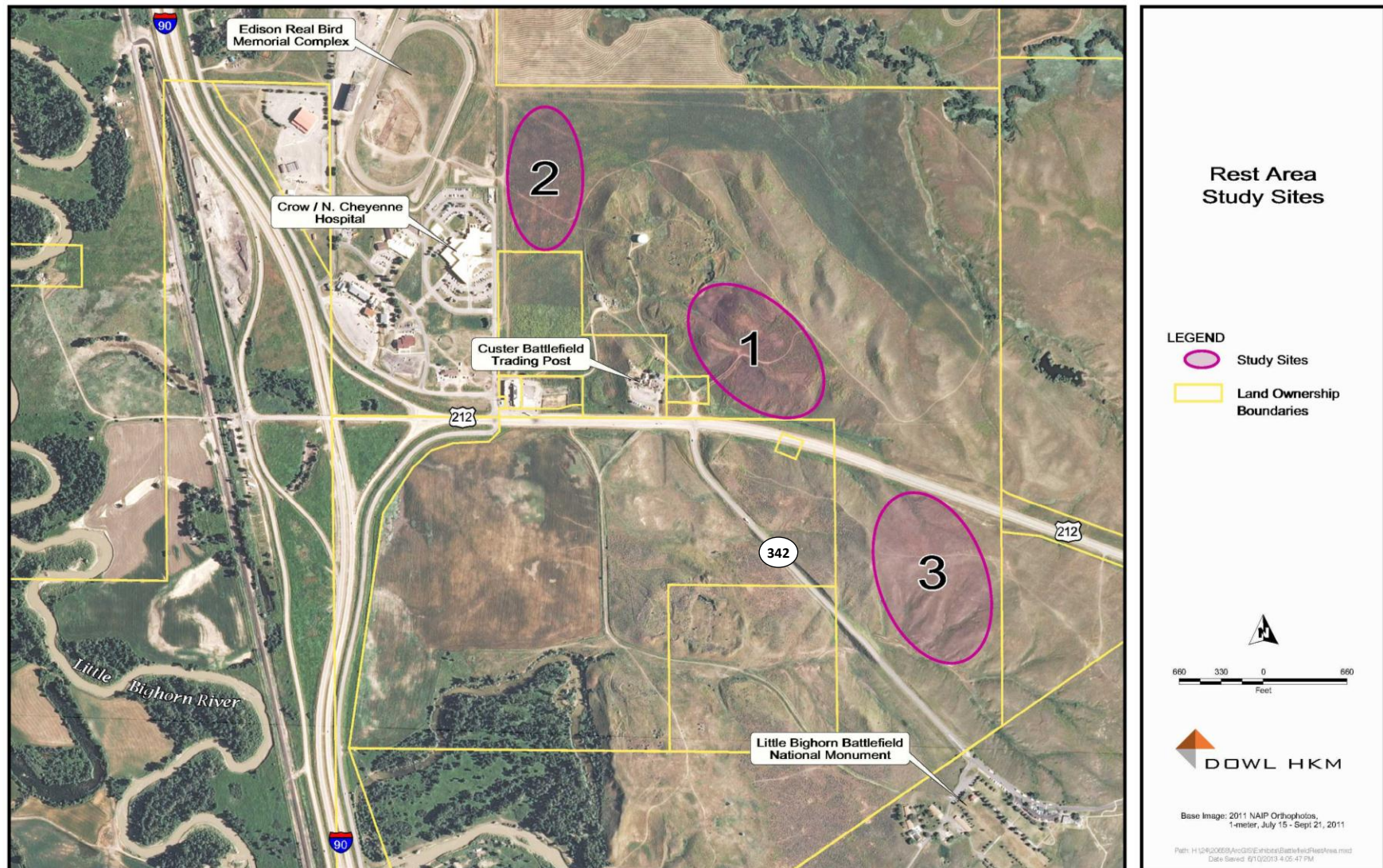
Roadways

I-90 is a controlled-access, National Highway System (NHS) interstate route providing two travel lanes in each direction. Adjacent to the study area, I-90 traverses a north-south direction.

Highway 212 is classified as a non-interstate NHS route, and consists of a three-lane roadway with right-turn lanes and wide shoulders within the study area. Highway 212 transitions to a two-lane highway east of the study area. Adjacent to the study area, Highway 212 runs in an east-west direction.

The Little Bighorn Battlefield National Monument is serviced by MT 342, a narrow two-lane secondary roadway maintained by MDT. This road intersects Highway 212 approximately 2,200 feet east of the northbound I-90 ramp intersection.

Figure 2-1 Rest Area Study Sites



3.0 Advisory Committee Participation

A Battlefield Rest Area Advisory Committee (AC) composed of representatives from the Crow Tribe, FHWA, MDT, NPS, and the project consultants met regularly throughout the planning effort to discuss the Phase IA progress. Attachment 2 includes meeting agendas and minutes. Table 3.1 lists AC members.

Table 3.1 Advisory Committee Members

Affiliation	Name
Crow Tribe	Alvin Not Afraid
	Dana Wilson
	Darrin Old Coyote
	Emerson Bull Chief
	George Reed
	Jackie Blacksmith
	Jay Harris
	Jessi Real Bird
	John Doyle
	Lark Paz
	Larry Kindness
	Loreen Whiteman
	Mallory Real Bird
	Marilyn Blacksmith
	Melissa Holds the Enemy
	Noel Two Leggins
	Rena Yellow Robe
	Roberta Fitch-Harjo
	Shawn Backbone
FHWA	Alan Woodmansey
MDT	Bill Semmens
	Chris Dorrington
	Doug Lieb
	Gary Neville
	Jon Axline
	Kevin Malone
	Stefan Streeter
	Steve Platt
	Tom Gocksch
NPS	Denice Swanke

Table 3.2 lists consultant partners assisting MDT on this project.

Table 3.2 Consultant Partners

Affiliation	Name
Beartooth RC&D Area, Inc.	Chris Mehus
	Luke Walawander
Big Sky Acoustics	Sean Connolly
CTA	Kevin Nelson
DOWL HKM	Emily Peterson
	John Shoff
	Sarah Nicolai
	Todd Cormier
Ethnoscience	Lynelle Peterson

4.0 Sites Not Considered in Phase IA

Site 4A

Site 4A is one of the four sites initially proposed by the Crow Tribal Chairman. It is located directly south of the Crow/Northern Cheyenne Hospital and north of Highway 212. The AC eliminated Site 4A from consideration in the early stages of Phase IA due to its close proximity to existing development and an area inadequately sized to accommodate the proposed rest area, Crow Tribal museum, and NPS visitor center.

Site 4B

During the Phase IA process, the Crow Tribe began considering a separate redevelopment project to be located on the northeast corner of the I-90/Highway 212 interchange. The redevelopment was proposed to accommodate a new casino, hotel, and supporting uses. As part of the redevelopment, the Crow Tribe suggested that MDT consider situating the proposed rest area within the redevelopment area on the corner of Highway 212 and the hospital access road, with the possibility of parking being shared between the rest area, the hotel, and the casino. MDT noted that this site appears to be in the floodplain of the Little Bighorn River, as evidenced from aerial photography of the 2011 flood event. As a result of this potential for flooding, FHWA would not be able to fund a project at this location, as outlined in 23 CFR 650.103, 111, and 113. Through further discussions with the Crow Tribe, Site 4B was removed from consideration.

5.0 Screening Criteria

The following sections outline screening criteria for the three potential sites, including constructability/accessibility conditions, potential project impacts, and public feedback.

5.1 Site Topography

Terrain adjacent to I-90 is generally flat, with some rolling hills. The alignment of I-90 within the study area generally parallels the Little Bighorn River. Terrain adjacent to Highway 212 within the study area is generally rolling and characterized by small to large drainages that cross the study area. A portion of the study area is benched above the Little Bighorn River floodplain.

The general topography at Site 1 consists of gently rolling hills and terraces. Site 2 is generally flat, but is bordered to the south by terraces and rolling hills. The topography at Site 3 includes gently rolling hills and grassland.

5.2 Site Access and Visibility

The three potential sites are located in proximity to the I-90/Highway 212 interchange.

Site 1 is visible from I-90 and Highway 212. Access to the site could be provided directly from Highway 212 at or near the Highway 212/MT 342 intersection.

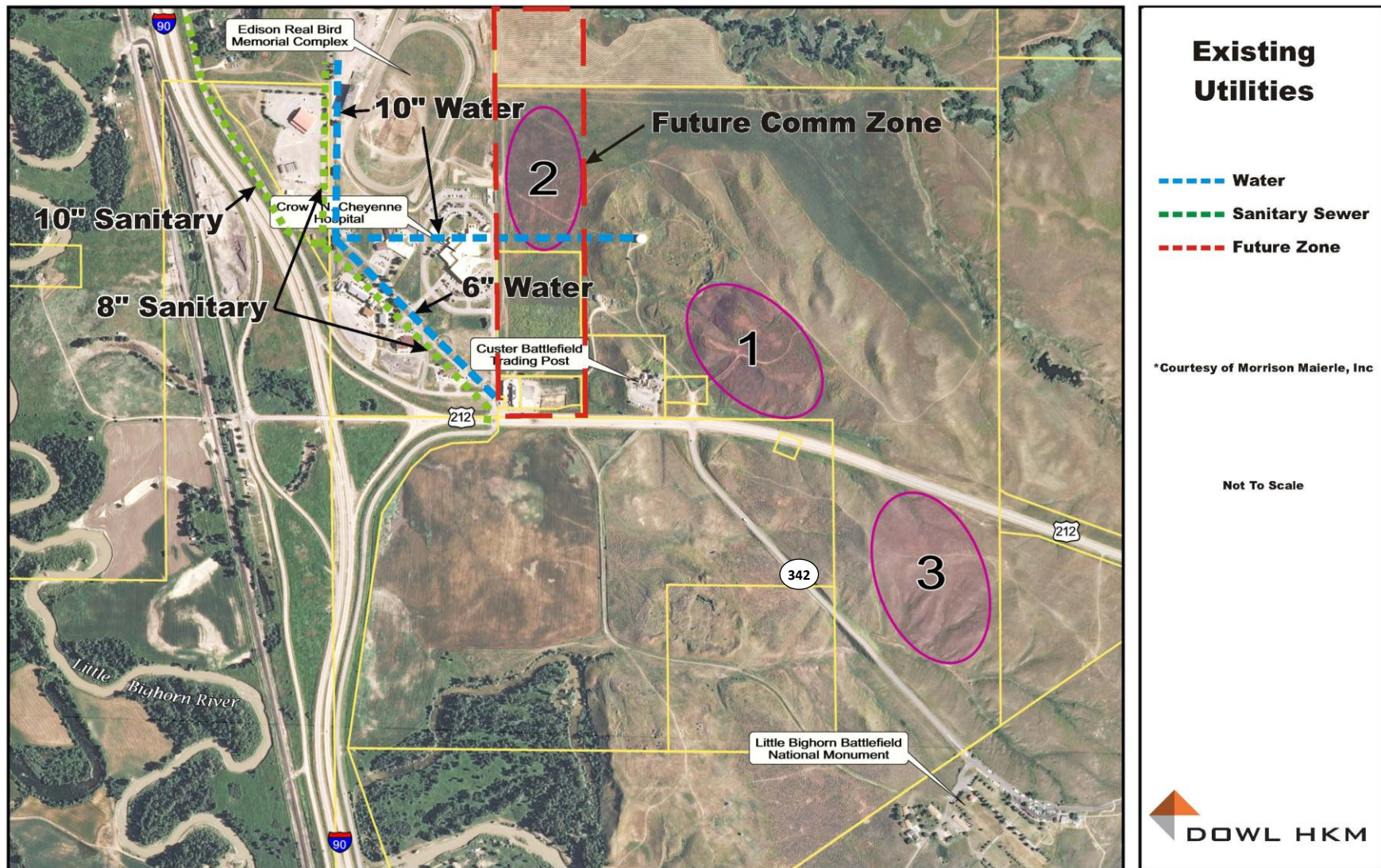
Site 2 is located north and west of previously-developed areas, and is not directly visible from I-90 or Highway 212. Access to Site 2 could be provided via an existing frontage road west of the Crow/Northern Cheyenne Hospital, although this route may not be favorable for truck turning movements.

Site 3 is located south of Highway 212 and northwest of MT 342. It is visible from I-90 and Highway 212. Access to the site could be provided from Highway 212 or MT 342.

5.3 Utilities

Figure 5-1 illustrates available water and wastewater utilities in the study area vicinity (Morrison Maierle, 2013). The Crow Tribe plans to upgrade existing water and sanitary sewer mains adjacent to the proposed sites. With these planned upgrades, the mains could be extended to any of the three sites under consideration and would be capable of accommodating service at a future rest area, Crow Tribe museum, and NPS visitor center.

Figure 5-1 Existing Utilities



5.4 Hydraulic Conditions

DOWL HKM performed a preliminary hydraulic evaluation for the three sites under consideration for Phase IA.

Federal Emergency Management Agency (FEMA) floodplain maps were reviewed to determine if any of the three rest area sites are located within a 100-year floodplain. FEMA-issued floodplain maps are not currently available for the study area and floodplain areas have not been determined. Sites 1 and 3 are at a higher elevation than Site 2, and are likely located outside the floodplain of the Little Bighorn River. Additional analysis would be needed to determine the location of the floodplain in relation to Site 2.

The following sections summarize drainage patterns for each site. Attachment 3 provides the Preliminary Hydraulics Memorandum prepared for Phase IA of this project. A more detailed hydraulic analysis will be performed for the preferred site during Phase IB.

Site 1

Site 1 is located at the top of a hillside, and there are no offsite drainages contributing to the site. It is anticipated that the only drainage concern would be collecting and detaining onsite storm water. Depending on the final site grading plan, Site 1 would likely require a minimum of two storm water collection and detention facilities. The first facility would accommodate runoff from the site at the top of the hill. Depending on site grading and the proposed storm drain system, this could be a single large collection and detention facility or multiple facilities around the site. A second facility could be located at the bottom of the hillside to collect and detain runoff from the access road to the top of the hill.

Site 2

Site 2 is located within a mildly sloping site, descending from the southeast to the northwest. Unlike Site 1, this site is influenced by offsite drainage that would either need to be collected onsite or conveyed around the site. The majority of offsite runoff would be expected to come from the Site 1 hill. If offsite drainage is combined with onsite drainage, the storm water facilities would likely increase in size accordingly. Depending on the grading plan, it may be possible to convey runoff from the Site 1 hill around the site either in a culvert or a drainage swale. The existing grading of Site 2 lends itself to one collection and detention storage facility located on the northwest end of the property. The site has a gradual slope to the northwest corner, and a grading plan could be developed to direct drainage to this location.

Site 3

Site 3 is fairly similar to Site 1, as it is generally located on top of a hillside. Most of the drainage flows in minor swales either southwest towards the Battlefield Access Road or northeast toward Highway 212. There are no offsite drainages contributing to the site. It is anticipated that the only drainage concerns would be collecting and detaining onsite storm water. Similar to Site 1, Site 3 would likely require a minimum of two storm water collection and detention facilities, with one located on the top of the hill, and one located at the bottom of the site and adjacent to the access road leading to the top of the hill.

5.5 Geotechnical Conditions

DOWL HKM conducted a geotechnical reconnaissance at the three sites under consideration on July 12, 2013. The following sections summarize geotechnical and geologic observations and conclusions for each site. Attachment 4 provides the Preliminary Geotechnical Memorandum prepared for Phase IA of this project.

Site 1

According to published geologic maps, geology at the site consists of the Judith River Formation. The Judith River Formation generally consists of fine- to medium-grained sandstone interbedded with shale. Potential slope movement adjacent to the north side of the site was observed and should be further explored. Undocumented fill may also have been placed within or adjacent to the proposed site.

Site 1 appears to be developable based on available subsurface soil and geologic information. Slope movement issues and undocumented fill should be further explored in future phases of this project if Site 1 is selected.

Site 2

Soil borings performed for the Little Bighorn Casino (approximately ¼ mile southwest of Site 2) indicated clay soils extending to approximately 14 to 17 feet in two of the borings. In these two borings, the clay was underlain by gravel, which extended beyond the maximum depths explored (approximately 21.5 feet below existing grade). Gravel was not encountered in the third boring, which extended to a depth of approximately 16.5 feet below existing grade. Shale bedrock was not encountered.

Site 2 appears to be developable based on available subsurface soil and geologic information. Due to soft compressible clay soils, there may be a potential need for subgrade improvements or deep structure foundations at Site 2.

Site 3

According to published maps, geology at the site consists of the Judith River and Bearpaw Shale Formations. The Judith River formation is described above and the Bearpaw Shale Formation generally consists of fissile shale interbedded with thin layers of siltstone and sandstone. Thin bentonite lenses are also common in this formation.

Site 3 appears to be developable based on available subsurface soil and geologic information. Due to known swell potential of the Bearpaw Shale Formation, there may be a potential need for subgrade improvements or deep structure foundations at Site 3.

5.6 Traffic Conditions and Parking/Building Demand

DOWL HKM performed a preliminary traffic analysis to evaluate anticipated traffic conditions and parking/building demands for a proposed rest area, a future Tribal museum, and a future NPS visitor center. Attachment 5 provides the Preliminary Traffic Technical Memorandum prepared for Phase IA of this project.

Table 5.1 presents annual average daily traffic (AADT) volumes, peak-hour traffic volumes, and growth rates for I-90 and Highway 212.

Table 5.1 Traffic Volumes

Traffic Volume	2013	2035
AADT	8,880	11,478
PHV Daytime Period (9 a.m. – 4 p.m.)	871	1,126
PHV Nighttime Period (12 a.m. – 6 a.m.)	137	177

Source: MDT, 2013, [2011 Hourly Full Detail – Bin Data from Short –Term Count Stations 2-4-7 (I-90) and 2-5-1 (US 212)]; DOWL HKM, 2013.

AADT = Annual Average Daily Traffic

PHV = Peak Hour Volume

AADT and PHV values reflect sum of volumes on I-90 and US 212.

Annual Growth Rate (provided by MDT): 1.5 percent (I-90); 1.0 percent (US 212).

DOWL HKM calculated the recommended number of parking spaces and restroom stalls for a future MDT rest area using methodology outlined in the *Rest Area Use: Data Acquisition and Usage Estimation Report* (2011).

DOWL HKM also evaluated potential parking needs for a future NPS visitor center and Tribal museum using data provided by NPS. It is anticipated that the three proposed uses would be constructed adjacent to one another. It is further assumed the NPS visitor center and Tribal museum likely will not generate independent trips and that trips will generally be shared or “captured” between the two uses due to their similarity of use. Both the NPS visitor center and the proposed Crow Tribal museum are expected to only operate during daytime (business) hours. Any demand for the MDT rest area that occurs during the evening to morning hours may be accommodated through a shared use of parking between the facilities.

Table 5.2 presents the results of the parking and restroom stall demand assessment conducted for this study.

Table 5.2 Parking/Restroom Stalls for Rest Area, Visitor Center, and Museum

Variable		Existing (2013)	Future (2035)
Passenger Vehicle Stalls	Rest Area	41	53
	NPS Visitor Center and Tribal Museum	107	119
	Total Passenger Vehicle Stalls	148	172
Commercial Vehicle Stalls	Rest Area	21 (day) 45 (night) ¹	27 (day) 58 (night) ¹
	NPS Visitor Center and Tribal Museum	35	40
	Total Commercial Vehicle Stalls	56 (day) ²	67 (day) ²
Restroom Stalls	Rest Area	8 (women) 6 (men)	11 (women) 7 (men)

Source: WTI, 2011; MDT, 2013; National Park Service, Existing Traffic and Parking Conditions and Implications for Transportation Alternatives: Little Bighorn Battlefield National Monument, 2010; DOWL HKM, 2013.

¹ Night usage controls. ² Combined stalls for day meeting nighttime rest area demand.

Planning-level estimates for approximate building size were identified based on similar rest area, museum, and visitor center uses and through discussions with the Crow Tribe and the NPS. Estimates include a 2,000 square foot (SF) rest area, 10,000 SF museum, and 15,000 SF visitor center. Actual building sizes could range below or above these planning-level estimates as identified in future project phases.

All three sites can accommodate recommended parking spaces and planning-level building sizes for the three proposed uses.

5.7 Traffic Noise

A preliminary traffic noise analysis was conducted for the three sites (Attachment 6). Under federal noise abatement guidelines, noise impacts are analyzed based on the land use activity and Noise Abatement Criteria (NAC) for each of the land use categories. In accordance with the MDT *Traffic Noise Analysis and Abatement Policy* (MDT 2011), a traffic noise impact occurs when the predicted design-year noise levels approach or exceed the NAC for the specified land use or when a proposed project results in a substantial noise increase. The MDT noise abatement policy defines “approach” as 1 A-weighted decibel (dBA) below the land use NAC. A “substantial noise increase” occurs when a design-year noise level is predicted to increase 13 or more dBA above the existing noise level.

Existing (2013) and projected future (2035) traffic data for the nearby roadways and projected traffic use data for the proposed rest area were used in the noise analysis. For each proposed site location, noise levels were modeled of vehicles starting up and moving around the proposed rest area sites at 25 miles per hour (mph), as were the noise levels of 10 heavy trucks

idling continuously during one hour. Actual noise levels will depend on the layout of the rest area and the location of the rest area parking lot. Modeling assumed that the parking lot for the rest area was 650 feet from the sensitive noise receiver.

Site 1

The closest noise-sensitive receptor is the Battlefield Trading Company, a business located to the west of Site 1. The dominant noise source in the present year and in the design year is traffic on US 212. Site 1 will contribute to an increase in noise levels at the Battlefield Trading Company by 2035; however, noise levels are predicted to increase by only 3 dBA compared to 2013, which does not meet the 13 dBA increase criterion for traffic noise impacts. The predicted traffic noise levels are well below the exterior 72 dBA NAC for Category E land uses. No adverse traffic noise impacts for Site 1 are predicted.

Site 2

The closest noise-sensitive receptor is the Crow/Northern Cheyenne Hospital located approximately 650 feet southwest of Site 2. The dominant noise source in the present year is traffic on I-90, whereas the dominant noise source in the design year is traffic at the rest area (Site 2). Noise from the rest area will contribute to an increase in noise levels at the hospital in 2035 by 7 dBA compared to 2013 noise levels, which does not meet the 13 dBA increase criterion for traffic noise impacts. The predicted traffic noise levels are also well below the exterior 67 dBA NAC for Category C land uses. No adverse traffic noise impacts for Site 2 are predicted.

Site 3

The closest noise-sensitive receptors are the Little Bighorn Battlefield National Monument and cemetery located approximately 1,700 feet south of Site 3. Noise at the rest area will contribute to an increase in noise levels at the monument in 2035 by only 2 dBA compared to 2013. Predicted traffic noise levels are also well below the exterior 67 dBA NAC for Category C land uses. No adverse traffic noise impacts for Site 3 are predicted.

5.8 Cultural Resources

A Class I investigation was conducted to identify previous cultural resource inventories and the potential for significant cultural resources at the three sites (Attachment 7). The investigation included a file search from the Montana State Historic Preservation Office (SHPO); examination of aerial photographs, 7.5 quadrangle maps, and 1884 General Land Office maps; and coordination with Mr. Doug Scott, who is responsible for the majority of NPS cultural resource investigations in the vicinity of the Little Bighorn National Monument. Additionally, the Crow Tribal Historic Preservation Office (THPO) conducted a Class III cultural resource inventory on October 15 and October 16, 2013. The Class III investigation included a pedestrian survey of 138.8 acres within and adjacent to Sites 1 and 2.

The Class I investigation identified 50 previous inventories conducted in the study area vicinity. Of the 50 inventories, five inventory areas either include or are in the immediate vicinity of the three potential rest area sites. The file search identified 18 previously-recorded sites in the

general study area. Sixteen of these sites are outside the three rest area sites under consideration. Two sites, including an 1800s stagecoach route and the Little Bighorn Battlefield site, are associated with Sites 2 and 3.

Sites 1 and 2

No cultural resources were identified within Sites 1 and 2 through the file search or the THPO field survey. Both sites have been cultivated and any materials that may have been associated with the 1876 battle lack integrity of location. An 1800s stagecoach route is believed to cross Site 2, although it has been destroyed within the study area due to cultivation. No evidence of the stagecoach route remains.

Site 3

In 2005, Mr. Doug Scott submitted a site form update to the SHPO that increased the Little Bighorn Battlefield site boundaries to 9,000 acres. The new boundary includes Site 3, where several bullets and cartridge cases were found during a 1994 metal detector survey. The recorded site is a contributing element of the National Monument, and the construction of a rest area at this location would adversely affect the integrity of setting, materials, and feeling.

5.9 Water Resources

A preliminary evaluation for the presence of wetlands and non-wetland waterways was conducted at all three rest area sites through a review of aerial photographs, the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Maps, and U.S. Geological Survey topographical maps. No wetlands have been documented within any of the three site locations, and no wetlands have been identified on USFWS National Wetland Inventory maps. Two ephemeral drainages cross Site 3 and one drainage crosses Site 1. Drainages sometimes exhibit characteristics of jurisdictional Waters of the U.S. (as defined under the Clean Water Act). An on-site delineation at the preferred site location would need to be conducted during Phase IB.

5.10 Biological Resources

MDT searched the MT Natural Heritage (NH) Tracker database on April 23, 2013, to determine if any federally-listed threatened and endangered species, state-listed species of concern, or special status species have been documented within three miles of the potential rest area sites. In addition, the February 2013 USFWS list on threatened and endangered species for Big Horn County was also reviewed. The USFWS list includes the black-footed ferret (endangered), the greater sage grouse (candidate) and the Sprague's pipit (candidate).

The NH Tracker revealed no threatened, endangered, candidate or proposed threatened species documented within three miles of the potential rest area sites. Species of concern observed within the general study area include great blue heron, black-billed cuckoo, spiny softshell turtle, snapping turtle, Western hog-nosed snake, common sagebrush lizard, and black-tailed prairie dog.

- A great blue heron rookery was documented 1.3 miles south of the potential rest area sites in 1978. The rookery had 40 active nests in 1978. If this rookery still exists, it would likely not be impacted by this project.
- The spiny softshell turtle and the snapping turtle are associated with the Little Bighorn River. No impacts to the river are anticipated.
- While both the Western hog-nosed snake and the common sagebrush lizard occur in sagebrush-grassland habitats, the proposed project's footprint will be relatively small. Any impacts to these species would be considered insignificant to the species as a whole.
- A black-tailed prairie dog town is located south and west of the proposed site locations. Impacts to the prairie dog town should be avoided or minimized to the extent practicable.
- Bald and golden eagles are state sensitive species that are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The NH Tracker database search revealed that no eagle nests have been documented as occurring within three miles of the potential project sites.
- Montana Natural Resources Information System records show noxious weeds, including spotted knapweed and Dalmatian toadflax in the study area.

An on-site biological resources survey at the preferred site location would need to be conducted during Phase IB.

5.11 Public Participation

Public Survey

A non-scientific survey was conducted by AC members on Sunday, June 23, 2013, at the Crow Native Days event in Crow Agency, MT. The purpose of the survey was to gather input from the Crow Tribal community about their vision for the development of a shared site for a MDT rest area, a future Tribal museum and a future NPS visitor center. Attachment 8 provides a memorandum describing this effort in more detail. Common themes are summarized below.

Site Location

The largest number of respondents (42, or 45%) preferred Site 1. Equal numbers (23, or 25%) preferred either Site 2 or Site 3. The remainder indicated none of the above (3 responses), no site preference (2 responses), and Site 1 or Site 3 (1 response).

Crow Tribal Culture

The largest number of respondents (50) expressed a desire to incorporate a teepee symbol at the site or as part of the building design. Other suggestions included horse (30 responses), circle (13 responses), arrowhead (12 responses), Crow Culture/Apsalalooke (5 responses), Tribal colors (3 responses), and chiefs (2 responses).

Site Visibility

A majority of respondents (58 or 62%) noted the site should be highly visible from the highway and interstate. A smaller contingent noted the site should be visible, but compatible with the surroundings (17 or 18%) or did not specify a preference (16 or 17%). The remainder (3, or 3%) would like the site to blend into the landscape and be modest.

Building Orientation

The largest number of respondents (39 or 41%) noted buildings should face east toward the sunrise. Approximately one-third of respondents (33 or 35%) did not respond to the question or did not note a preference. The remainder preferred the building to face north (5 responses), south (3 responses), west (1 response), or southwest (1 response).



Public Meetings


Public informational meetings were conducted for Phase IA in Lodge Grass, Crow Agency, and Pryor, MT. Meeting locations, dates, times, and notifications were scheduled by the Crow Tribe, and each meeting was administered by the Crow Tribe and attended by project members. The purpose of the meetings was to provide an overview of the project for the benefit of Crow Tribal members and to solicit comments for the project. Attachment 9 provides a summary of the meetings.

A presentation was provided at each meeting, including an overview of coordination with the Crow Tribe regarding the project, the sites being considered, and the field review and document search completed to date. General comments received during the public informational meetings included requests for interpretive signing to highlight Crow Tribal culture, concerns about potential effects to local businesses, and requests for site accessibility.

6.0 Screening Results and Recommendations

The Battlefield Rest Area AC conducted a screening process at the October 30, 2013, meeting in Crow Agency, MT. In consideration of information presented in Section 5 of this report, the AC assigned positive, neutral, and negative screening outcomes to the screening criteria for each site.

- A  symbol indicates a **positive screening outcome**. The site is considered desirable due to favorable constructability and accessibility conditions, anticipated lack of adverse impacts, and/or positive public feedback compared to the other sites.
- A  symbol indicates a **neutral screening outcome**. Constructability and accessibility considerations, potential project impacts, and/or public feedback do not affect the screening result.

- A  symbol indicates a **negative screening outcome**. The site is considered less desirable due to unfavorable constructability and accessibility conditions, anticipated adverse impacts, and/or less favorable public feedback compared to the other sites.

AC discussions are summarized below. Attachment 10 and Table 6.1 document the screening results.

1. **Topography** – Each site was discussed in terms of its general topography. Based on the topography of each site, Site 2 was assigned a positive score. The remaining sites were considered neutral.
2. **Site Access and Visibility** – It was noted that Site 1 and Site 3 meet MDT’s current goals for a rest area in terms of visibility and accessibility, while Site 2 is not visible and would be difficult to access. Based on site access and visibility of each site, Site 1 was considered the most positive, followed by Site 3. Site 2 was considered negative due to its location.
3. **Utilities** – The Crow Tribal water and wastewater system can accommodate each of the sites. It was noted that Site 3 would be the most difficult to serve and would require the most new infrastructure, due to its location and topography. Based on this information, Site 3 was assigned a negative score, while the remaining sites were considered neutral.
4. **Hydraulic Conditions** – Due to their location and topography, Site 1 and Site 3 would be expected to have good drainage conditions. Site 2 is located at the toe of a large hill and would likely need to convey off-site drainage away from the site. Based on this information, Site 2 was assigned a negative score, while the remaining sites were considered neutral.
5. **Geotechnical Conditions** – Each of the sites are expected to be able to accommodate development, and no observable issues were identified. Based on this information, each of the three sites are considered neutral.
6. **Building and Parking Demand** – Each of the sites can accommodate the desired parking needs and building sizes currently proposed. Based on this information, each of the three sites are considered neutral.
7. **Traffic Noise** – Each site is expected to experience an increase in ambient noise levels, with Site 2 experiencing the greatest increase. Due to the proximity of Site 2 to the hospital, the AC agreed that Site 2 should be scored negatively with respect to noise. The remaining sites were considered neutral.

8. **Cultural Resources** – A comprehensive survey of Site 3 was performed prior to this project, and Site 3 was noted as having substantial instances of cultural resources. The Crow THPO conducted a field survey of Site 1 and Site 2, and did not document any cultural instances. A review of SHPO documentation also did not find documented instances for Site 1 or Site 2. Due to the substantial instances identified on Site 3, FHWA noted that rules regarding the expenditure of federal funding preclude Site 3 as a viable option, while Site 1 and Site 2 are considered viable from a cultural resource standpoint. The AC assigned neutral scores for Site 1 and Site 2, and a negative score for Site 3.
9. **Water Resources** – No known surface bodies of water, wetlands, or floodplains were identified for Site 1, Site 2, or Site 3. Based on this information, the three sites are considered neutral. Sites 1 and 3 are at a higher elevation than Site 2, and are likely located outside the floodplain of the Little Bighorn River. Additional analysis would be needed to determine the location of the floodplain in relation to Site 2.
10. **Biological Resources** – No federally-listed species were located within the immediate vicinity of each site, and only minor impacts to general wildlife habitat are expected. Based on this information, the three sites are considered neutral.
11. **Public / Stakeholder Feedback** – Survey results from the Crow Native Days survey identified Site 1 as the preferred location, followed equally by Site 2 and Site 3. It was noted that the hospital had expressed concern regarding Site 2. After some discussion among the AC, it was determined that each site should receive a positive score as the project is generally supported by the public.

Table 6.1 Screening Matrix

Criteria		Site 1	Site 2	Site 3
Constructability/Accessibility Conditions	1 Site Topography	○ Site has some flat and level areas, as well as some steep grades.	⊕ Site is relatively flat.	○ Site has some flat and level areas, as well as some steep grades.
	2 Site Access and Visibility	⊕ Easily accessible and visible from Interstate 90 and Highway 212.	— Poor access and low visibility from Interstate 90 and Highway 212.	○ Easily accessible and visible from Interstate 90 and Highway 212.
	3 Utilities	○ Tribal utilities can be extended to site.	○ Tribal utilities can be extended to site.	— Tribal utilities can be extended to site.
	4 Hydraulic Conditions	○ Site expected to have few drainage issues, as there are no offsite drainages contributing to the site.	— Site is influenced by some offsite drainage that would need to be collected or conveyed around the site.	○ Site expected to have few drainage issues, as there are no offsite drainages contributing to the site.
	5 Geotechnical Conditions	○ Undocumented fill on site, otherwise no observable issues.	○ Some soft compressible clay soils, otherwise no observable issues.	○ Known swell potential, otherwise no observable issues.
	6 Building and Parking Demand	○ Site can accommodate desired parking/buildings for proposed uses.	○ Site can accommodate desired parking/buildings for proposed uses.	○ Site can accommodate desired parking/buildings for proposed uses.
Potential Project Impacts	7 Traffic Noise	○ Increase in traffic noise would not require mitigation.	— Closest noise-sensitive receptor and greatest increase in traffic noise.	○ Increase in traffic noise would not require mitigation.
	8 Cultural Resources	○ No cultural sites; area has been cultivated.	○ No cultural sites; area has been cultivated.	— Known instances of cultural resources; eligible for listing; adjacent to National Monument.
	9 Water Resources	○ No surface water bodies, wetlands, or floodplains.	○ No surface water bodies, wetlands, or floodplains.	○ No surface water bodies, wetlands, or floodplains.
	10 Biological Resources	○ No federally-listed species within vicinity; minor impacts to general wildlife habitat.	○ No federally-listed species within vicinity; minor impacts to general wildlife habitat.	○ No federally-listed species within vicinity; minor impacts to general wildlife habitat.
	11 Public Feedback	⊕ Survey respondents generally prefer Site 1 (42 of 94, or 45%).	⊕ Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%).	⊕ Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%).
Recommendation:		Advance to Phase IB	Discontinue	Discontinue

Key: ⊕ indicates a positive screening outcome. ○ indicates a neutral screening outcome. — indicates a negative screening outcome.

Site 1 is preferred based on the screening outcomes presented in Table 6.1. The AC assigned two positive outcomes for site access/visibility and public feedback. Site 1 ranked neutrally compared to Sites 2 and 3 in all other categories. The AC did not assign any negative screening outcomes for Site 1.

The AC assigned three negative screening outcomes for Site 2 for site access/visibility, hydraulic conditions, and traffic noise. These negative screening outcomes indicate less-desirable conditions compared to Site 1.

Site 3 received a single positive screening outcome for public feedback and two negative screening outcomes for utilities and cultural resources. Site 3 is considered unacceptable because it would adversely affect a contributing element to the National Monument. Where federal funds are used for a project, MDT and FHWA must comply with Section 106 of the National Historic Preservation Act (NHPA) to avoid, minimize, or mitigate adverse effects on historic properties.

7.0 Design Theme and Conceptual Site Layout

The intent of the project is to create a rest area facility that improves safety on I-90 and Highway 212, and gives users a sense of place. Since the rest area will be located on the Crow Reservation near the Little Bighorn Battlefield, the AC determined that the design should be culturally respectful and representative of its location. Aesthetically, the goal will be to incorporate Crow motifs while utilizing contemporary building systems and materials. The Phase II design may consider Crow themes such as abstractions of horses, teepees, circles, and other strong cultural elements.

The horse has played a significant role in Crow culture from hunting and horse breeding to modern-day racing and rodeo. At one time, the Crow had herds said to be the largest owned by the Plains Indians.

The teepee is the traditional Crow shelter. Teepees represent the Crow historical way of life in their simplistic, efficient design. They use natural materials in a form that complements the environment and the Crow way of life by resisting weather, incorporating natural ventilation, and integrating fully collapsible and portable design to accommodate a nomadic lifestyle. Teepees are still prolific in modern day, and are highlighted annually at Crow Fair, known as "The Teepee Capitol of the World."

The circle is predominant in Native American society and the Crow culture in particular. Circles represent "the never-ending cycle of life." There is no beginning and no end. Many aspects of life can be seen as a circle. The sun and moon are round, and their paths rise and fall like a circle. The seasons can be thought of as following a circular pattern as they change and come back again. A circle divided into quadrants with an axis represents the cardinal directions. Teepees, sacred hoops, sweat lodges, and the medicine wheel are some of the most common Crow elements that have circular connotations.

In addition to the physical form of cultural references, the ideology behind their function is also important. Working with nature and the physical aspects of a site, adapting to climate, focusing on the east, and incorporating efficiency are among many cultural principles that are emphasized in Crow design. Additional cultural references that could be integrated into the design of the facility are listed in the Tribal Culture section of the Public Survey Summary (Attachment 8).

Tribal cultural themes and values were considered in the design scheme illustrated in a conceptual rendering (Attachment 11). Minimizing the site impact was considered by utilizing flatter areas to the extent practicable and minimizing cut and fill. The buildings are situated to allow for an eastern focus, with major views from inside the building also looking towards the east. An amphitheater is depicted as a possible shared element for all three uses. This would allow spoken-word presentations and opportunities to showcase the Crow native language. Circular references are depicted in the site elements with radial paths and paving, which link buildings and provide access to the site. Conical forms are incorporated as picnic shelters to provide visual cues of the Crow teepee culture as part of functional facility elements. All depicted elements are conceptual in nature and presented for illustrative purposes only. Specific design elements will be defined during Phase II.

8.0 Next Steps

Through ongoing coordination efforts with MDT, the Crow Tribe and the NPS have indicated support for selection of Site 1 as the preferred location for an MDT rest area and potential future development of a Crow Tribal museum and NPS visitor center.

Following completion of Phase IA, MDT will coordinate with the project team and stakeholders to complete Phase IB tasks at the preferred site. These tasks are expected to include environmental documentation, utility permitting, and a conceptual site plan for the proposed rest area. Phase IB is expected to begin in 2014 and be completed in 2015. A design-build process (Phase II) to develop the MDT rest area will likely follow Phase IB.

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 1

Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING

Among

**The United States Department of the Interior
National Park Service,**

Federal Highway Administration,

Crow Tribe, and

State of Montana Department of Transportation

[Battlefield Rest Area, IM 90-9(97)511]

THIS AGREEMENT (Memorandum of Understanding; MOU) is entered into among the Department of the Interior, National Park Service - Little Big Horn Battlefield National Monument (“NPS”), the Federal Highway Administration (“FHWA”), Crow Tribe (“Tribe”), and the State of Montana Department of Transportation (“MDT”).

I. PURPOSE

This MOU establishes a formal relationship for coordination and collaboration by, between, and among NPS, FHWA, the Tribe, and MDT, and relates to timelines and other issues regarding development of the Battlefield Rest Area.

This MOU is neither a fiscal document nor a funds-obligation document. This MOU does not authorize or compel NPS, FHWA, the Tribe, and MDT to exchange or transfer anything of value. Expenditures or contribution of funds by, between, or among NPS, FHWA, the Tribe, and MDT shall be made and effected in accordance with separate written agreements or contracts, which shall be independently authorized and controlled by appropriate statutory and regulatory authorities and applicable policies.

II. BACKGROUND

MDT proposes to construct a Rest Area on or near the junction of Highway 212 (N-37) and Interstate 90 on the Crow Reservation, through a Federal Aid project known as Battlefield Rest Area, IM 90-9(97)511, UPN 2012;

NPS, FHWA, the Tribe, and MDT anticipate that the Project will include construction of a parking area large enough to accommodate a new Rest Area, NPS facility (visitor center and/or curatorial facility) and a Crow Tribe Museum. The parking area will include

landscaping and appendices normally associated with MDT rest area projects. The buildings from the various vested partners will be constructed independently;

The Tribe intends to provide a location on Tribal lands and may enter into an agreement with MDT and NPS for a long-term easement on the land for the location of the Rest Area, parking and new NPS facility;

A Rest Area committee will be formed to collaborate on making decisions for the location, layout and aesthetics for the Rest Area and the parking lot. The Tribe, NPS and MDT will each have at least one member on the committee, which will meet as needed to assist in achieving the objectives of this MOU.

III. CONSTRUCTION PHASES AND TIMELINE

A. Construction phases

MDT will develop and construct the Rest Area in two phases. The first phase will be to hire a consultant to recommend the best location from among several locations initially provided by the Tribe. The first phase will include consultant services to design the water and wastewater system and obtain all necessary conditional permitting from DEQ, and/or EPA depending on jurisdictional rights on the Reservation. Consideration will be given to connecting to the Crow Agency community services. The consultant will coordinate with the Rest Area committee for completion of Phase I.

All State, Local, Tribal, and Federal laws and regulations for compliance and permitting will be followed as required for Federal-aid projects. A no-build decision for the Rest Area is possible if minimum requirements for Federal-aid projects are not met.

Phase II is the actual design/build contract for the rest area administered through MDT. The contractor will have various themes for the Rest Area building and the Rest Area committee will have final input on the chosen theme.

B. Timeline

Phase I for the Rest Area will have a timeline to enable a Phase II Federal Fiscal Year letting of 2016 for the Design/Build contract. Archeological or other findings, beyond the control of signatories can potentially change delivery dates and will not be a basis of nullifying this MOU.

Phase I activities completed;

- Formed a Rest Area Committee: Spring 2013
- MDT selected a consultant: Spring 2013
- Consultant worked with Committee to develop/administer survey about project to local residents and visitors: Crow Native Days, June 2013
- Consultant and Committee conducted public meetings: Fall 2013

- MDT consultant and Committee identified preferred location: Winter 2013 - 2014
- Committee identified preferred Rest Area location: Winter 2013 - 2014

Phase I activities to be completed:

- Complete formal selection of Rest Area site location: Summer 2014
- MDT's consultant provide conceptual 3D rendering overview and site plan: by Winter 2014 - 2015
- Rest Area Committee's consensus of 3D rendering for future Rest Area site: Winter 2014 - 2015
- Completed and signed MDT and Tribal agreement for long-term easement of the land for Rest Area and parking area: Summer/Fall 2015
- MDT and Consultant execute an environmental document and complete all permitting for the water and sewer spring-summer 2015
- MDT Design/Build Letting for Rest Area: Federal Fiscal Year 2016 (depending on completion of prior activities and availability of funding).

IV. STATEMENTS OF WORK

A. MDT Responsibilities

1. Participate in the Rest Area Committee;
2. Adhere to the time frames in this agreement;
3. Hire a consultant for Phase I of the Rest Area in the Summer 2013;
4. Develop preliminary concepts for the Rest Area and parking lot, including accommodation of a location for the NPS facility and the Tribal Museum;
5. Provide a conceptual site layout and 3D rendering for the Rest Area and parking lot by Winter 2014 - 2015;
6. Obtain a signed long-term easement agreement with the Tribe for the land that will be used for the Rest Area and parking lot by Summer/Fall 2015;
7. MDT's consultant executes an environmental document and complete all permitting for the water and sewer. Approximately a nine month long process, complete in spring-summer 2015
8. Contract Design/Build project for the Rest Area and parking lot in Federal Fiscal Year 2016, contingent upon the completion of all preconstruction activities by MDT and others, and availability of funding. MDT will notify

all parties in the event preconstruction cannot be completed or funding is not available to meet the Federal Fiscal Year 2016 date for contract let; and

9. Participate financially in the project with State and Federal Aid Funds, and administer the funds as per FHWA and State requirements. Nothing in this agreement shall be construed as binding any party to expend any sum in excess of allotted appropriations for any fiscal year.

B. Tribe Responsibilities

1. Participate in the Rest Area Committee;
2. Adhere to the time frames in this agreement;
3. Provide a long-term easement agreement with MDT for the Rest Area, Parking lot and NPS facility by Summer/Fall 2015; and
4. Zone the area adjacent to and surrounding the Rest Area complex as a buffer to preserve the aesthetical appeal of the site by Summer/Fall 2015.
5. If a museum is built; provide their own funding and construct Tribal Museum in the future to the planned theme agreed to during development of the site.

C. NPS Responsibilities

1. Participate in the Rest Area Committee;
2. Adhere to the time frames in this agreement; and
3. May enter into an agreement with the Tribe for a long-term easement for a new NPS facility (visitor center and/or curatorial facility).
4. May provide funding for construction of a new NPS facility, which may be built in the future consistent with the planned theme agreed to during development of the site.
5. Nothing in this document shall be construed to obligate the Department of the Interior (DOI) or the National Park Service (NPS) to make any current or future expenditure of resources in advance of, or in excess of, an existing appropriation from Congress. In addition, nothing in this document shall be construed to obligate DOI or NPS to spend funds on any particular project or purpose, even if funds are available.

D. FHWA Responsibilities

1. Participate in the Rest Area Committee;
2. Adhere to the time frames in this agreement and use best efforts to meet them;
and
3. As allowed by law and procedure, provide Federal-aid funding for the design and construction of a new Rest Area and parking lot providing all the necessary conditions are met for federal funding, with funding to be administered by MDT. Nothing in this agreement shall be construed as binding any party to expend any sum in excess of allotted appropriations for any fiscal year.

V. OTHER TERMS AND CONDITIONS

A. Liability

The State of Montana agrees:

1. To indemnify, save and hold harmless, and defend the United States against all fines, claims, damages, losses, judgments, and expenses arising out of, or from, any act or omission of the State of Montana, its officers or employees relative to activities authorized pursuant to this Agreement. This obligation shall survive the termination of the Agreement.
2. To provide workers' compensation insurance protection to the State officers, employees and representatives.
3. To pay the United States the full value for all damage to the land or other property of the United States caused by the State, its officers, employees or representatives.

The Crow Tribe agrees:

1. To indemnify, save and hold harmless, and defend the State of Montana and the United States against all fines, claims, damages, losses, judgments, and expenses arising out of, or from, any act or omission of the Tribe, its officers or employees relative to activities authorized pursuant to this Agreement. This obligation shall survive the termination of the Agreement.
2. To provide workers' compensation insurance protection to Tribal officers, employees and representatives.
3. To pay the State of Montana and the United States the full value for all damage to the land or other property of the State of Montana or the United States caused by the Tribe, its officers, employees or representatives.

4. For the purposes of the Agreement, the Crow Tribe expressly grants a limited waiver of sovereign immunity from suit for the sole purpose of enforcement of this Agreement by the other parties and recovery of any damages for breach of any term of this Agreement. The parties agree that no word, phrase, sentence, paragraph or section, in whole or in part, separate or together, contained in this Agreement may be interpreted, other than expressly provided in this provision, as an express or implied waiver generally of the sovereign immunity of the Crow Tribe.

B. Choice of Law.

The parties agree that this Agreement shall be governed by and interpreted according to applicable federal laws and regulations, applicable State of Montana laws and regulations, and applicable Crow tribal laws and regulations which are not in conflict with State of Montana or federal laws. The parties will adhere to the 2006 State and Crow Tribe Memorandum of Understanding on MDT construction contracts for tribal construction requirements.

C. Dispute Resolution and Venue.

The parties agree to first meet and confer for the purposes of resolving any disputes that may arise under this Agreement. If resolution is not possible, the parties agree that venue for enforcement of the terms shall be in United States District Court, or if jurisdiction does not lie in United States District Court, the Montana First Judicial District Court, Lewis and Clark County, Montana.

D. Non-Discrimination

MDT agrees not to discriminate in the fulfillment of this MOU on the basis of race, color, religion, creed, sex, age, marital status, national origin or actual or perceived sexual orientation, gender identity or disability. All MDT activities pursuant to this MOU shall be in compliance with the requirements of Executive Order 11246, as amended; Title VI of the Civil Rights Act of 1964, as amended; Title V, Section 504 of the Rehabilitation Act of 1973, as amended; the Age Discrimination Act of 1975; and with all other federal laws and regulations prohibiting discrimination. MDT agrees this requirement shall apply to the hiring and treatment of employees, contractors, and sub-contractors.

E. Access to Records

The Tribe agrees to provide MDT, Montana Legislative Auditor, or their authorized agents, access to any records necessary to determine contract compliance (Mont. Code Ann. §18-1-118). The Tribe agrees to create and retain records supporting the services rendered or supplies delivered for a period of three years after either the completion date of the MOU, or

the conclusion of any claim, litigation or exception relating to the MOU taken by the State of Montana or third party.

F. Assignment, Transfer, Subcontracting

The Tribe shall not assign, transfer or subcontract any portion of this MOU without the express written consent of MDT (Mont. Code Ann. §18-4-141). FHWA may assign this Agreement to other U.S. agencies or bureaus.

G. Termination

The parties may mutually terminate this MOU by written agreement at any time.

MDT, at its sole discretion, may terminate or reduce the scope of this MOU or project in the event that any one of the signatories of this agreement fail to provide support and/or timely decisions within certain time frames or if funding is reduced for any reason.

H. Modification and Amendment

This MOU may be modified or amended, in writing, by agreement of the parties involved.

I. Binding Effect

The obligations set forth in this MOU shall be binding upon, and the benefit of this MOU shall inure to the benefit of each party's respective successors and assigns.

J. Relationship of the Parties

Nothing contained in this MOU shall be deemed or construed by any party hereto or by any third party to create the relationship of principal and agent or create any partnership, joint venture or any other association between MDT, the Tribe, NPS and FHWA.

K. Survival

Any and all provisions which, by themselves or their nature, are reasonably expected to be performed after the expiration or termination of this MOU shall survive and be enforceable after the expiration or termination of this MOU. Any and all liabilities, actual or contingent, which have arisen during the term of and in connection with this MOU, shall survive expiration or termination of this MOU.

L. Partial Invalidity

If any provision of this MOU or the application thereof to any party or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of the MOU or the application of such provisions to the parties or circumstances others than those to which it is held invalid

or unenforceable, shall not be affected thereby, and each provision of this MOU shall be valid and be enforced to the fullest extent permitted by law.

M. Debarment and Suspension

All transactions shall be in compliance with subpart C of CFR part 180 "OMB Guidelines to Agencies on Government-wide Debarment and Suspension (Non-procurement)," as supplemented by subpart C of 2 CFR part 1400 and participants shall also include a similar term or condition in lower-tier covered transactions. The following certification is required in accordance with this provision and made a part of this MOU:


DI-2010, U.S. Department of the Interior Certification Regarding Debarment, Suspension and Other Responsibility Matters, Drug-Free Workplace Requirement and Lobbying.

N. Final Agreement

This agreement does not supersede, discharge, or extinguish any prior agreement between the parties, unless by specific reference and in clear terms.

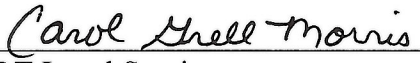
This agreement shall become effective upon execution by the State (MDT), Tribe, NPS and FHWA and shall remain in effect until completion of the Battlefield Rest Area Project, IM 90-9(97)511, UPN 2012, unless terminated or amended under the terms set forth in Section G and Section H of V. Other Terms and Conditions of the MOU.

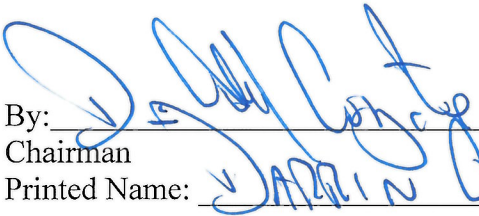
STATE OF MONTANA, DEPARTMENT OF TRANSPORTATION

By: 
Stefan Streeter
MDT Billings District Administrator

Date: 9/12/, 2014

APPROVED FOR LEGAL CONTENT:


MDT Legal Services


Chairman
Printed Name: DARRIN Old Coyote

Crow Nation

Date: 8-5, 2014.

Department of the Interior-National Park Service

By: Denice Swanke Date: August 18, 2014
Denice Swanke
Superintendent, Little Bighorn Battlefield National Monument

Federal Highway Administration

By: Paul K Hariker Date: August 22, 2014
FOR Division Administrator
Printed Name: Paul K HARIKER

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 2

Meeting Agendas and Minutes

**DOWL HKM****MEMORANDUM**

Physical Address:
222 North 32nd Street
Suite 700
Billings, Montana 59101

Mailing Address:
P.O. Box 31318
Billings, Montana 59107-1318

Phone: (406) 656-6399

Fax: (406) 656-6398

To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: April 23, 2013

Subject: Battlefield Rest Area Phase I
IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #1
Meeting Minutes

An advisory committee meeting for the Battlefield Rest Area project was held at the Little Bighorn Battlefield National Park Service (NPS) administration building on Tuesday, April 23, 2013. The purpose of the meeting was to discuss the initial stages of the project with Crow tribal members selected by the Tribe to represent Crow interests through a project advisory committee. The following people attended the meeting in person or via conference call:

Kevin Malone	MDT – Consultant Design, via Telephone
Rod Nelson	MDT – Billings District
Shawn Backbone	Crow Tribe – Vice Secretary
Prince Three Irons	Crow Tribe - THPO
Lark Paz	Crow Tribe - Tourism
George Reed, Jr.	Crow Tribe - Historian
Jessi Real Bird	Crow Tribe – Public Works
Marilyn Blacksmith	Crow Tribe – Tribal Secretary
John Shoff	DOWL HKM
Todd Cormier	DOWL HKM
Chris Mehus	Beartooth RC&D
Jim Wertman	CTA

Denice Swanke, representing the Little Bighorn Battlefield National Park was unable to attend the meeting due to a conflicting appointment, but was advised of the topics discussed after the meeting had ended.

The meeting began at 10:20 AM and ended at 11:30 AM.

Meeting Minutes

The purpose of the meeting with the advisory committee was to provide background information, introduce the MDT project manager, MDT project consultant team, and to discuss the next steps for the Battlefield Rest Area project. It was noted that there are three interests for this development; an MDT rest area, a future Crow tribal museum, and a future National Park Service (NPS) visitor center. To accommodate these uses, four potential sites have been selected for further consideration. Each site has been identified by the Tribe and is located on Tribal lands.

Copies of meeting minutes from previously held meetings between the Crow Tribe, MDT, and NPS were handed to the committee for their reference. Information covered in those meeting was summarized to the group.

It was noted that the purpose of this meeting is to define the process expected to occur towards developing an MDT rest area while considering a future Tribal museum and a future NPS visitor center. The first stage of this project will be to select a suitable site based on engineering considerations, environmental considerations, and a common “theme” or “vision” for the overall development. Once a site is selected, MDT will proceed with a conceptual site plan and utility plan for an MDT rest area. These two stages of the project will be conducted as part of a Phase I effort. Phase II of the project will result in a design-build project administered by MDT to design and construct a new rest area. A future Tribal museum or a future NPS visitor center is not included in the Phase II project.

It was noted that MDT will be contracting with the consultant, DOWL HKM, and that contracts are expected to be completed by early June.

The primary purpose of the committee will be to help guide and develop the theme or vision for this project. In that regard, the project team asked the committee to consider the following items for the next scheduled meeting (June 4, 2013):

- How best should the team engage the Crow community regarding the development of a theme or vision? This should be a consideration for the next scheduled meeting

- In terms of visioning, consider how does this project benefit the local people? What issues or variables should be considered? (i.e. orientation, spatial considerations, view shed, proximity or separation from existing businesses)
- What can the project team provide to assist in the development of a theme or vision?
- Are there any other community members that should be involved with this committee?

Through discussion, it was determined that the current committee was adequate and did not need to be expanded. There was a suggestion about including the Tribal college, but the committee stated that they did not need to be involved.

The committee and the MDT project team considered the appropriate level of public involvement to assist in the development of the project theme and vision. It was determined that the project team would conduct the following outreach:

- Attend the Crow Native Days in conjunction with the Little Bighorn Battlefield reenactment scheduled for June. The team will develop a survey to solicit input from the Crow tribal members.
- Facilitate one set of public informational meetings to be conducted at three separate locations. The committee suggested Black Lodge, Crow Agency, and Lodge Grass. These meetings will occur after the Crow Native Days. The meeting will be hosted by the Crow Tribal Chairman, and will be facilitated by the consultant team and MDT.
- Presentation in front of the Crow Tribal government's legislative session, expected to be in session the second week of July

No further public involvement was considered necessary.

Presentation material for the public informational meetings was discussed. One suggestion would be to take outlines and limits of similar facilities (MDT rest areas, museums, visitor centers) depicted on clear plastic so the shapes could be overlaid on aerial maps of the study area. CTA will research museum and visitor center facilities, and DOWL HKM will research rest areas.

There was a question about the ownership of the proposed sites; if the land was wholly owned by the Tribe, of if there was underlying ownership associated with each location. The committee said they would confirm the ownership.

Next Steps

- The committee should consider 8-10 questions or ideas for the survey to be conducted at the Crow Native Days event.
- The committee should consider theme or vision ideas for discussion.
- The committee will confirm the ownership of the land surrounding each of the four proposed sites.
- The project team will consider limits for similar rest area, museum, and visitor center facilities that can be used to illustrate the likely extents for comparable uses on this project.
- The next meeting will occur on Tuesday, June 4, 2013 at 9:00 AM.

**DOWL HKM****MEMORANDUM**

Physical Address:
222 North 32nd Street
Suite 700
Billings, Montana 59101

Phone: (406) 656-6399

Mailing Address:
P.O. Box 31318
Billings, Montana 59107-1318

Fax: (406) 656-6398

To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: June 5, 2013

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #2 Meeting Minutes

An advisory committee meeting for the Battlefield Rest Area project was held at the Little Bighorn Battlefield National Park Service (NPS) administration building on Tuesday, June 4, 2013. The purpose of the meeting was to provide background information, discuss the scope and schedule of the project, describe initial facility requirements, and plan a public outreach survey to be conducted at the Crow Native Days.

The following people attended the meeting:

Kevin Malone	MDT – Consultant Design
Gary Neville	MDT – Billings District
Chris Dorrington	MDT – Planning
Jon Axline	MDT – Environmental
Steve Platt	MDT – Environmental
Douglas Lieb	MDT – Environmental
Anthony Maule	MDT – Environmental
Alan Woodmansey	FHWA
Shawn Backbone	Crow Tribe – Vice Secretary
Emerson Bull Chief	Crow Tribe – THPO
Lark Paz	Crow Tribe – Tourism
George Reed, Jr.	Crow Tribe – Historian
Jessi Real Bird	Crow Tribe – Public Works
Marilyn Blacksmith	Crow Tribe – Tribal Secretary
Denice Swanke	National Park Service
Todd Cormier	DOWL HKM
Sarah Nicolai	DOWL HKM
Chris Mehus	Beartooth RC&D
Kevin Nelson	CTA

The meeting was scheduled to begin at 9:00 AM, and ended at approximately 1:45 PM. A meeting agenda was distributed to the attendees. A copy of the agenda is provided as an attachment to these minutes.

Project Background

The purpose of the Phase IA project is to consider site selection towards developing an MDT rest area, while considering a future Tribal museum and a future NPS visitor center. Site selection will be guided by engineering considerations, environmental considerations, and a common “theme” or “vision” for the overall development (Phase IA).

It was noted that the Phase IA process will not include a complete environmental analysis of the sites or preferred site, nor will it include detailed site layouts, plans, construction, or identify funding sources.

Once a site is selected, a Phase IB project will develop a conceptual site plan and utility plan, as well as conduct the appropriate level of environmental documentation for an MDT rest area. At this time, it is believed that the appropriate level of MDT documentation for the preferred site will be a Categorical Exclusion. It was noted by the National Park Service (NPS) that a separate environmental document would likely be necessary for any future NPS facility.

Phase IA and Phase IB of the project will be conducted as part of a Phase I effort. Phase II of the project will result in a design-build project administered by MDT to design and construct a new rest area. A future Tribal museum or a future NPS visitor center is not included in the Phase II project.

Previous Meetings

Meetings were held prior to the development of this project between MDT, the Crow Tribe, and the NPS. These meetings resulted in the development of a framework for this project and identified the 4 sites to be evaluated.

It was noted that these previous meetings were very productive in advancing the development of a shared-use concept between MDT, the Crow Tribe, and the NPS.

Memorandum of Understanding (MOU)

An MOU between MDT, FHWA, the Crow Tribe, and the National Park Service has been created for this project. The MOU has been through MDT Legal review, and is expected to be transmitted to the NPS and the Crow Tribe shortly. It was noted that the MOU is not a legally binding agreement.

Once the next stage of the project is scoped, it is anticipated that the Bureau of Indian Affairs (BIA) would need to be included in the process.

Prior Studies and Documents

Known studies or documents related to the proposed uses were discussed:

- *Environmental Assessment: Battlefield Rest Area and Battlefield Interchange (MDT, August 2007)*. This study reviewed several locations along the interstate corridor through the Crow Reservation. Through this evaluation, a preferred site was selected just west of and adjacent to the Highway 212 interchange. Recommendations for the rest area included 110 parking stalls plus 58 truck/RV stalls. MDT noted the demand indicated in the 2007 report was likely developed using the American Association of State Highway and Transportation Officials (AASHTO) methodology, which is no longer used by MDT.
- *FONSI: Battlefield Rest Area and Battlefield Interchange (MDT, November 2007)*.
- *Existing Traffic and Parking Conditions and Implications for Transportation Alternative: Little Bighorn Battlefield National Monument Final Report (NPS, December 2010)*. This study considered parking demand needs for the existing NPS visitor center. Current parking at visitor center was noted as being nearly enough to handle the “design day” for the facility, but not the highest use day. The current site was noted as providing 128 parking stalls plus accommodations for up to 16 oversized vehicles. The report recommended at least 128 parking stalls plus at least 22 oversized vehicle stalls.
- Replacement Museum Site Plan and Environmental Assessment, Little Bighorn Battlefield National Monument (NPS, Current). This is a current project to consider site planning for a NPS visitor center. The project is currently on hold, and there is no indication of the project restarting in the near term.

It was noted by NPS that there was an updated report completed in March 2013 detailing the existing and projected traffic demand for the visitor center. The report was located, but did not appear to contain any new traffic data or parking recommendations from the 2010 document. A copy of the report is located on the NPS website.

A feasibility study for a Crow Tribe museum was thought to have been completed in the early 1990’s. Chris Mehus will assist the Tribe in locating this document.

FHWA noted that although an EA and FONSI had already been completed for the rest area concept, that an environmental document would still need to be developed for any

new site. It was noted, however, that the previous EA and FONSI could be referenced for this project.

It was recommended by the Crow THPO that the section 106 process should be started early in the project planning.

Project Scope and Schedule

Specific scope items or milestones were detailed, including expected completion dates. It was noted that the dates are somewhat flexible, and that the project team would attempt to complete each milestone sooner than scheduled.

The Crow Tribal Historical Preservation Office (THPO) suggested that they could do a cultural ground survey of each of the sites. It was noted by Jon Axline that this assistance would be very beneficial. DOWL HKM will have Ethnoscience contact the Crow THPO to coordinate efforts for the cultural survey. It was further noted by Jon Axline that sites closer to the Battlefield would likely have a higher probability of having cultural instances, and that the Crow THPO's involvement would further help to identify these locations, if any.

The NPS noted that they have several months of noise data that they have collected as a part of their operation. DOWL HKM will have Big Sky Acoustics coordinate with Denice Swanke to obtain this data.

Planning Level Rest Area, Museum, and Visitor Center Requirements

Requirements for determining the feasibility of each site were discussed. It was noted that there are specific requirements that MDT must consider when developing a project, including: environmental, topographical, function, accessibility, utilities, and cost. For this project, the vision or theme for the overall site will also be an important aspect. However, the physical requirements noted previously will dictate site selection as mandated by Federal law.

The group discussed water and wastewater services for the project site, including the possibility of connecting with existing service lines. DOWL HKM will contact the Crow Tribe's consultant (MMI) to identify current utility plans.

At this time, specific requirements for a Crow Tribal museum have not been determined. For preliminary purposes, a building approximately 10,000 SF to 15,000 SF will be considered. The Crow Tribe and CTA will coordinate these needs through the Phase IA process.

The NPS has conducted a few preliminary studies for a new visitor center, and estimate a building sized between 17,000 SF and 20,000 SF. The building would likely contain

display areas, office and staff areas, and curatorial space. Specific requirements would follow NPS standards. NPS noted parking needs for the three buildings could be combined to reduce the total number of parking spaces at the site.

To illustrate general area needs for each facility based on the current understanding of building size and parking demand, scale overlays of general layouts for each proposed facility were superimposed on scale plan sheets of each site location. Through this process, the project team and advisory committee could visualize approximate area requirements for each use. As a result of this exercise, the proposed site located just south of the hospital was removed from further consideration as it was not large enough to accommodate any of the proposed general layouts. The remaining 3 sites appear to be viable based on available land area and will be studied further.

Crow Native Days Survey

At the end of June, the Crow Tribe will be sponsoring Crow Native Days, which coincides with the reenactment of the Battle of the Little Bighorn. A flyer for the event was provided at the meeting, and is included as an attachment to these minutes.

A questionnaire / survey will be conducted at the Crow Native Days to collect information from the community regarding their vision for the development of the shared use site. Several suggested questions and questionnaire formats were discussed by the group. A draft questionnaire will be developed by the project team and transmitted to MDT and the advisory committee for comments.

The advisory committee will secure a booth for the survey, and will provide Tribal members to administer the questions. The survey will be conducted on Sunday, June 23 from approximately 11:00AM to 3:00 or 3:30PM. Lark Paz will coordinate the effort for the advisory committee. Shawn Backbone will be the advisory committee point-of-contact. DOWL HKM will provide one staff member to assist the Tribe during the survey.

The advisory committee suggested that the questionnaire could also be left at the Tribal office for the week following the Crow Native Days. The advisory committee will set this up and collect the forms at the end of the week.

To inform the Crow community of the survey, the advisory committee contacted Benjamin Cloud, editor of the Apsaalooke Nation Newspaper. Information on the date and purpose for the survey will be printed in the next newspaper edition, expected for this Friday, June 7.

Selection Criteria / Matrix

Once preliminary planning information has been collected for each site, the sites will need to be ranked against each other for the purpose of selecting a preferred location.

This will be accomplished through the development of criteria for each site, assigning scoring to each criteria, and summarizing the scoring through a matrix. It is anticipated that the site that best meets each of the defined criteria will be further studied as the preferred site. It was noted that a “No Build” alternative would also be considered. Specific criteria will be developed through the Phase IA process.

Visioning and Public Outreach

CTA presented a wide range of examples of Native American themed structures. The examples detailed literal as well as abstract interpretations of Native American themes. The presented examples were intended to spur initial discussions on themes or a vision for the sites.

The advisory committee noted that the Crow Tribe has only a few specific cultural identifiers, as opposed to other Native American Tribes. Important identifiers include the teepee, circles, and avoidance of the color “black.” Furthermore, it was noted that building entrances should not face west, as west is associated with death and bad weather.

It was noted that while a theme or vision for the site would be an important criteria of the overall development, the rest area facility is a relatively small structure and may not have the opportunity to be “significant” in design or appearance. Regardless, the overall site would be planned to incorporate the recommended theme and vision. To that end, the Crow Tribe would be involved in the selection process of the Phase II design-build project.

To assist with the visioning, it was suggested that the advisory committee could involve the Crow Cultural Committee further along in the process. It was further suggested that the Crow Cultural Committee could present the project at the scoped public meetings, and that the Crow community could provide additional suggestions at these events.

Currently, the project is scoped to present to the Crow Legislature during their October session. The advisory committee asked if we should try to make the July session. It was noted that there will have been very little field work accomplished by the July session and that the October session would allow for a majority of the Phase IA scope to be completed. After some discussion, the advisory committee suggested that instead of a presentation to the entire Legislature, a presentation could be made to the Legislature’s Cultural Committee as part of a regular agenda.

Next Steps

- The committee will set up and administer the survey at the Crow Native Days event. The project team will provide staff to assist with the data collection.

- The committee should further consider theme or vision ideas for discussion.
- The committee will confirm the ownership of the land surrounding each of the four proposed sites.
- The Crow THPO will schedule a cultural ground survey of the 3 remaining sites.
- The committee will coordinate with the Crow Legislature and Cultural Committee regarding an agenda slot during the October session.
- The next meeting will occur on Wednesday, July 17 at 1:00 PM at the administration building of the Little Bighorn National Monument. The meeting is expected to last no more than 2 hours.

Meeting Agenda

Steering Committee Meeting #2

Tuesday, June 4, 2013

I. INTRODUCTION

A. Introduce team, agencies, Tribal steering committee

B. Project Needs and Objectives

1. Rest Area is a high priority for MDT
2. NPS visitor center unable to house museum collection and does not meet current demand
3. Crow Tribe desires a museum facility to attract visitors to explore the Crow culture

C. Scope of Project

1. Phase IA Planning Process
 - a) *Determine a preferred site based on an established set of evaluation criteria*
 - b) *Consider interaction of a rest area, NPS visitor center, and Crow Tribe museum*
 - c) *Develop a theme or vision for the overall project*
 - d) *Consider water and wastewater needs*
 - e) *Develop framework for Phase IB (water/wastewater design/permitting and environmental documentation), to be followed by a Phase II project (design-build) for the MDT rest area*
2. Phase IA Project will NOT:
 - a) *Complete environmental analysis of preferred site*
 - b) *Complete detailed site layouts, plans, or identify funding sources*



3. Phase IB will follow the initial phase, and will consist of an environmental document, a water/wastewater analysis and permitting (as necessary), and a conceptual site layout for the MDT rest area
4. Phase IB environmental document is expected to be a Categorical Exclusion and will be developed by the Consultant in cooperation with MDT
5. A Design-Build project (Phase II) will develop detailed site layouts and construction plans based on Phase IB

II. RECAP OF PREVIOUS MEETINGS

A. MDT, Crow Tribe, NPS

B. Memorandum of Understanding (Quad Agreement)

1. Crow Tribe will provide a location on Tribal lands
2. Crow Tribe will enter into an agreement with MDT to allow the construction of a rest area on this land
3. Crow Tribe to confirm the ownership of the land surrounding each of the four proposed sites

III. RECAP OF PREVIOUS STUDIES

A. Environmental Assessment: Battlefield Rest Area and Battlefield Interchange (MDT, August 2007)

1. Reviewed several locations
2. Preferred site located west of Hwy 212 interchange
3. Recommended 110 parking stalls plus 58 truck/RV stalls

B. FONSI: Battlefield Rest Area and Battlefield Interchange (MDT, November 2007)



C. Existing Traffic and Parking Conditions and Implications for Transportation Alternative: Little Bighorn Battlefield National Monument Final Report (NPS, December 2010)

1. Current parking at visitor center nearly enough to handle the “design day” for the facility, but not the highest use day
2. Current site provides 128 parking stalls plus accommodations for up to 16 oversized vehicles
3. Report recommended at least 128 parking stalls plus at least 22 oversized vehicle stalls (based on current numbers, exclusive of future growth)

D. Replacement Museum Site Plan and Environmental Assessment, Little Bighorn Battlefield National Monument (NPS, Current)

1. Current project to consider site planning for a NPS visitor center

IV. PROJECT SCOPE FOR PHASE IA

A. Project Tasks and Schedule

1. Traffic Review (July 2013)
2. Initial Site Review (August 2013)
3. Environmental (September 2013) – Cultural and Environmental Resources, Traffic Noise
4. Site Evaluation (November 2013)
5. Technical Memo (November 2013)
6. Final Memo (January 2014)
7. Steering Committee (Through January 2014)



B. Rest Area, Museum, Visitor Center Requirements

1. MDT Rest Area Requirements
 - a) *Environmental / Cultural / Historical Issues*
 - b) *Topography / Terrain*
 - c) *Function / Accessibility*
 - d) *Services (water, wastewater, power)*
 - e) *Vision / Theme*
2. Crow Tribal Museum
 - a) *Size (+/- 15,000 SF)*
 - b) *Sufficient Parking*
 - c) *Culturally Significant*
3. National Park Service Visitor Center
 - a) *Public Areas, including lobby, restrooms, bookstore, exhibit area, theater*
 - b) *Office and staff areas, Curatorial spaces*
 - c) *Approximately 17,000 to 20,000 SF, 150 auto stalls, 50 oversized vehicle stalls*

C. Selection Criteria / Matrix

1. Objective: Develop matrix to rank each site based on the requirements of each entity.
2. Site that best fits the requirements will be further studied
3. A “No Build” alternative is a possible outcome of this process



V. CROW TRIBAL INVOLVEMENT

A. Visioning

1. How does the project benefit the Crow community?
2. What is important to be considered? (i.e., orientation, spatial considerations, view-shed, proximity of existing structures/businesses, utilities, location, terrain, cultural/historical preservation)
3. What can the project team provide to the committee to assist in developing a theme or vision for the project?
4. Are there specific tribal members that the team or steering committee should consult with for this project?

B. Crow Native Days Survey

1. Consider questions to ask regarding vision, theme, design variables, location; 6-10 questions
2. Administration of survey by committee or Tribal members with assistance from team members
3. Timeframe (i.e., one day, two days, afternoon or morning only?)
4. Method (i.e., verbal survey, written survey, both)

C. Public Informational Meetings (September 2013)

1. Meeting locations and dates to be arranged by the steering committee
2. Meeting to be facilitated by the steering committee
3. Purpose is to solicit the community's comments regarding each site and the selection criteria for evaluating each site



D. Crow Tribal Legislature Session (October 2013)

1. Schedule a presentation with the Legislature to discuss the project, project scope, “quad” agreement, and selection criteria

E. Additional Resources

1. Are there any additional ideas on how best to engage the Crow community regarding the development of a vision or theme?

VI. NEXT STEPS



Battlefield Rest Area Phase IA Project
Advisory Committee Meeting #2
Tuesday, June 4, 2013

NAME (Please Print)	ORGANIZATION	CONTACT EMAIL
CHRISTOPHER DORRINGTON	MDT - PLANNING	cdorrington@mt.gov 444-7239
Chris Mehus	Bearfoot K&P Area Inc.	cmehus@bearfooti.org 962-3914
GARY NEVILLE	MDT-BILLINGS	gneville@mt.gov 657-0232
KEVIN NELSON	CTA	kevin@ctagroup.com 896-6189
Denice Swanke	NPS	denice_swanke@nps.gov
George Reed, Jr.	Apsachoke Nation	GREEN@Apsachoke.net
Alan Woodmansey	FHWA	alan.woodmansey@dot.gov

Battlefield Rest Area Phase IA Project
 Advisory Committee Meeting #2
 Tuesday, June 4, 2013

NAME (Please Print)	ORGANIZATION	CONTACT EMAIL
Todd Cernier	Dowl Hkm	T.C.Cernier@dowlhkm.com 686-6399
Sarah Nicolai	Dowl Hkm	snicolai@dowlhkm.com 442-0370
Douglas LieB	MDT	dlieb@mt.gov
Anthony Maule	MDT	amaule@mt.gov
Jon Axline	MDT	JAxline@mt.gov
KEVIN MALONE	MDT	KMALONE@mt.gov
STEVE PIATT	MDT	SPLATT@MT.GOV

Battlefield Rest Area Phase IA Project
Advisory Committee Meeting #2
Tuesday, June 4, 2013

NAME (Please Print)	ORGANIZATION	CONTACT EMAIL
Shawn Backbone	Crow Tribe Vice Sec.	Shawn bb@Crownations.net
Marilyn Blacksmith	Crow Tribe Executive Secretary Office of Vice Secretary	mblacksmith@crownations.net
Jessie Real Bird	Crow Tribe Public Works	jessieb@crownations.net
Emerson Bull Chief	Crow Tribal Historic Preservation	ebullchief@crownations.net
Lark Paz	Crow Tribal Tourism	larkp@crownations.net

**DOWL HKM****MEMORANDUM**

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**To: Kevin Malone, PE
MDT Project Manager**

**From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager**

Date: July 25, 2013

**Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #3 Meeting Minutes**

An advisory committee meeting for the Battlefield Rest Area project was held at the Little Bighorn Battlefield National Park Service (NPS) administration building on Wednesday, July 17, 2013. The purpose of the meeting was to discuss the results of the public outreach survey conducted at the Crow Native Days, and to update the Committee on the current status of the project.

The following people attended the meeting:

Kevin Malone	MDT – Consultant Design
Gary Neville	MDT – Billings District
Douglas Lieb	MDT – Environmental
Alan Woodmansey	FHWA
George Reed, Jr.	Crow Tribe – Historian
Marilyn Blacksmith	Crow Tribe – Tribal Secretary
Mimi Real Bird	Crow Tribe – Representing Lark Paz
Denice Swanke	National Park Service
Todd Cormier	DOWL HKM
Sarah Nicolai	DOWL HKM
Chris Mehus	Beartooth RC&D
Kevin Nelson	CTA

Several Bureau of Indian Affairs (BIA) staff were invited to the meeting, but none attended.

The meeting was scheduled to begin at 1:00 PM, and ended at approximately 2:45 PM. A meeting agenda and a copy of the previous meeting minutes were distributed to the attendees. A copy of the agenda is provided as an attachment to these minutes. No additional comments were received for the previous minutes.

Project Schedule

A brief review of the current project schedule was presented to the attendees. The following tasks have either been completed or are underway:

- Crow Native Days Public Outreach Survey - **Completed**
- Initial Site Review Activities (Traffic, Geotech, Topo) - **Underway**
- Environmental (cultural, noise, initial review) - **Underway**

It was noted by Denice Swanke that the NPS has additional traffic data that she can provide to the team, and that she would transmit that data to DOWL HKM.

A meeting between the Crow THPO, Ethnoscience, MDT, and NPS to discuss the cultural field work related to the Battlefield is scheduled for July 29 to be held at the Battlefield.

Traffic Data

DOWL HKM has received traffic and crash data from MDT, and is in the process of compiling the data. This data will be used to assist in estimating parking demands and sizing the rest area.

Utilities

DOWL HKM has coordinated with Morrison Maierle (MMI) regarding the available water and sanitary sewer adjacent to the sites. MMI has included the proposed site development in their future planning efforts for the systems, and believes that each of the proposed sites can be served. As the project evolves, further coordination with MMI will occur.

Environmental

Information from a recent previous field investigation surrounding Site 3 was shared with the group. As a result of recent grass-fires, a thorough investigation revealed the location of previously undocumented shell casings, bullets, and other metal artifacts. Details of this investigation will be discussed further at the July 29th meeting by Ethnoscience. To supplement the information from this investigation that encompasses Site 3, the Crow THPO in cooperation with Ethnoscience will perform a comprehensive review of Site 1 and Site 2.

It was noted by Denice that the “official” battlefield is approximately 750 acres in size, but that estimates of the extent of the battle range from 5,000 acres up to 10,000 acres.

Due to the possibility of locating additional battlefield occurrences in Site 1 and Site 2, beyond those identified in Site 3, the question of how these instances would be addressed or mitigated was raised. It was noted that these types of instance would likely be “historical but not significant”, and may only require documentation of the location and classification of the instances. This will be addressed further as the environmental task develops.

DOWL HKM informed the group that the noise study will begin now that traffic data has been provided, and is expected to be completed by the next committee meeting.

Crow Native Days Survey

A public outreach survey was conducted at the Crow Native Days event on Sunday, June 23, 2013. This survey asked members of the public to comment on a series of predetermined questions as well as to provide their own suggestions and opinions. The survey was well received with nearly 100 respondents, nearly 93% representing tribal members.

Results of the survey were compiled and summarized, and presented to the group for consideration. A copy of the summary is attached to these minutes.

In general, Site 1 was noted to be the preferred location by those responding to the survey, as it was relatively close to Crow Agency and provided a visible location. Site 2 was thought to provide better access to Crow Agency, but was noted as being close to the hospital and the fairgrounds. Site 3 was thought to provide a better view, but was too far away from Crow Agency.

In regards to a theme for the development, images or representations of the tee-pee, the horse, and circles were most identified by the public as representing the Crow culture.

Respondents generally felt that the site should be “highly visible”. It was noted by Kevin Malone that this is consistent with MDT desire to make their rest area sites visible to attract roadway users, to promote safety, and to deter vandalism.

About ½ of respondents suggested that the proposed Tribal museum should face east with patio or seating amenities facing north and/or south. No preferences were noted for the proposed rest area or NPS visitor center.

Suggestions regarding structure preference were varied. It was suggested that the Crow language should be incorporated into the structures or features of the site. MDT noted

that signing, wayfinding, or historical markers on the site could be bi-lingual using the Crow language.

The same survey form was available to NPS events the same weekend. No responses were received.

Memorandum of Understanding (MOU)

The MOU document between MDT, FHWA, the Crow Tribe, and the National Park Service has been through its final MDT legal review, and is being transmitted to the Crow Tribe.

Next Steps

- The Committee should further consider theme or vision ideas for discussion.
- The Committee agreed to confirm the ownership of the land surrounding each of the remaining 3 proposed sites.
- The Crow THPO will schedule and conduct a cultural ground survey of the 2 remaining sites.
- The committee will coordinate with the Crow Legislature and Cultural Committee regarding an agenda slot during the October session.
- The next meeting will occur on Wednesday, September 11 at 1:00 PM at the administration building of the Little Bighorn National Monument. The meeting is expected to last no more than 2 hours.

Meeting Agenda

Steering Committee Meeting #3

Wednesday, July 17, 2013

I. RECAP OF PREVIOUS MEETING

A. Review Minutes

II. PROJECT TASKS AND SCHEDULE

A. Project Tasks and Schedule

1. Traffic Review (July 2013) - **Underway**
2. Initial Site Review (August 2013)
 - a) *Utilities – MMI*
 - b) *Topography - Underway*
 - c) *Geotechnical Memo – Site visit conducted*
3. Environmental (September 2013) – Cultural and Environmental Resources, Traffic Noise - **Underway**
4. Site Evaluation (November 2013)
5. Technical Memo (November 2013)
6. Final Memo (January 2014)
7. Steering Committee (Through January 2014)

III. CROW TRIBAL INVOLVEMENT

A. Crow Native Days Survey Results (Sarah, Kevin)



IV. TRAFFIC DATA

- A. Traffic Volumes, Average Daily Traffic (Todd)**
- B. Crash Statistics (Todd)**

V. ENVIRONMENTAL

- A. Recent Field Study (Sarah)**
- B. Current Status of Review (Sarah)**

VI. BASECAMP FILE SHARING

- A. Overview and Use Through Project (Sarah)**

VII. NEXT MEETING



**DOWL HKM****MEMORANDUM**

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**To: Kevin Malone, PE
MDT Project Manager**

**From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager**

Date: September 24, 2013

**Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #4 Meeting Minutes**

An advisory committee meeting for the Battlefield Rest Area project was held at the Tribal Legislative Offices in Crow Agency on Wednesday, September 11, 2013. The purpose of the meeting was two-fold: to provide an overview of the project for the benefit of the Crow Tribe Transportation Committee, and to conduct the fourth Crow advisory committee meeting for the project. Specifically, items related to environmental findings and the upcoming public involvement efforts were discussed.

The following people attended the meeting:

Kevin Malone	MDT – Consultant Design
Gary Neville	MDT – Billings District
Chris Dorrington	MDT – Planning
Doug Lieb	MDT – Environmental
Denice Swanke	National Park Service
Dana Wilson	Crow Tribe Vice-Chairman
Angie Bear Claw	Crow Tribe – Transportation
Polly Yarlott	Crow Tribe – Transportation
Emerson Bull Chief	Crow Tribe – THPO
James Morrison	Crow Tribe – Roads
Jeannie Pretty Paint	Crow Tribe – Legislature
Stephen Amyotte	Crow Tribe – Transportation
Lucille Other Medicine	Crow Tribe – Legislative Branch
Rudolph "Knute" Old Crow	Crow Tribe – Legislative Branch
Lorenzo Mountain Sheep IV	Crow Tribe – Legislative Branch
Gerald Stewart	Crow Tribe – Legislative Branch
Conrad J. Stewart	Crow Tribe – Legislative Branch

Vincent Crooked Arm	Crow Tribe – Legislative Branch
Sheri Chandler	Crow Tribe – Legislative Branch
Charine Whiteman	Crow Tribe – Executive Branch
Larry Blacksmith	Crow Tribe – Executive Branch
Carlson Goes Ahead	Crow Tribe – Speaker of the House
Gerald “Jay” Harris	Crow Tribe – Legal Office
Noel Two Leggins	Crow Tribe – Black Lodge
Marlin Not Afraid	Crow Tribe – Big Horn
Chip Watts	7 th Ranch RV
Sandy Watts	7 th Ranch RV/Superintendent of Schools
Rena Yellowrobe	Crow Tribe
Todd Cormier	DOWL HKM
Sarah Nicolai	DOWL HKM
Chris Mehus	Beartooth RC&D
Kevin Nelson	CTA
Lynelle Peterson	Ethnoscience

Note: Names transcribed from handwritten entries. Spelling may not be accurate.

The meeting was scheduled to begin at 10:00 AM, and ended at approximately 12:30 PM. The meeting agenda and sign-in sheet are provided as attachments to these minutes. Video of the meeting was recorded by the Crow Tribe, and is available on the Crow Legislature’s YouTube channel:

<http://www.youtube.com/watch?v=QVwdf4PZAc8>

Introductions and Project Overview

Vice-Chairman Dana Wilson opened the meeting with introductions. Todd Cormier provided an overview of project tasks and coordination with Crow Tribal members to date. Vice-Chairman Wilson asked for clarification on project funding for the rest area, Tribal museum, and National Park Service (NPS) visitor center. Todd confirmed the project would consider a location to accommodate all three uses, although funding is only available for the MDT rest area at this time. Todd noted the project would consider the parking and utility needs for all three uses. Kevin Malone confirmed MDT would size utilities to accommodate ultimate build-out for all three uses.

Chris Dorrington requested an update on the status of the Memorandum of Understanding (MOU) between MDT, NPS, and the Crow Tribe. Gary Neville noted MDT provided a draft MOU to the Tribe a month ago, and had not received feedback. Vice-Chairman Wilson had not seen the MOU, but he would follow up with Tribal legal counsel.

The group discussed the land agreement for the project. Todd noted MDT would lease land from the Tribe. Kevin Malone stated the Bureau of Indian Affairs (BIA) would be involved in the negotiation for lease of trust lands. Chris Mehus suggested the Tribe

could review the legal requirements for the land agreement and report back to the project team.

Traffic Analysis

A Tribal representative asked which of the three sites would be best for traffic operations. Todd provided a brief summary of the traffic analysis for the project, noting each site would have different access points on Highway 212. The main purpose of the traffic analysis is to determine the approximate number of parking stalls required for the three uses. Kevin Malone noted the study includes a reasonable assessment of what a site would accommodate without substantial impacts (e.g., earthwork for parking lots).

Cultural Resources

Lynelle Peterson provided an overview of the cultural resources review. She noted a government land office (GLO) map identified a stagecoach route occurring within Site 2, although the route no longer exists. Further, Doug Scott conducted a metal detector survey of the area surrounding and including Site 3, and identified cartridges and bullets from the 1876 battle. As a result, Area 3 is of greatest concern from a cultural standpoint. Areas 1 and 2 have both been cultivated and are highly disturbed.

Lynelle noted the Crow Tribal Historic Preservation Office (THPO) has not yet conducted a survey of the sites. Chris Dorrington asked about the anticipated timing of the Tribal survey. Emerson Bull Chief responded that he submitted a budget and was planning to do the survey as soon as it was approved. Lynelle noted the Tribal survey probably would not occur this year. Kevin Malone confirmed MDT does not plan to conduct a ground survey until after the initial site selection at which time MDT would request that the Crow THPO perform a survey.

Chris Dorrington asked when Site 3 would be eliminated from further consideration given the level of anticipated cultural impacts. Todd responded all three sites would be given due consideration in the screening process, which would include traffic, environmental, geotechnical, and cultural criteria. Site 3, however, is anticipated to be eliminated after the screening as a result of the cultural instances associated with the location.

Vice-Chairman Wilson summarized that the selection is between Sites 1 and 2, since Site 3 includes culturally-significant elements. Emerson stated that a Tribal ground survey should proceed for at least Site 1; the THPO is most concerned with Site 1 since it is located on top of a hill.

Noise Analysis and Other Environmental Items

Sarah Nicolai provided an overview of the noise analysis. Traffic noise impacts were modeled at the three sites based on existing and projected volumes provided by MDT.

The increase in noise at each of the sites is anticipated to be below the threshold for noise mitigation. Of the three sites, Site 2 (adjacent to the hospital) would experience the largest increase in noise levels compared to present conditions. The group discussed the increase in noise at Site 2. Chris Dorrington asked if the group had coordinated with the hospital. Vice-Chairman Wilson agreed it would be a good idea to involve the hospital in the process. Chris Mehus agreed to contact the hospital and request feedback.

Rudolph "Knut" Old Crow noted the Tribe is considering construction of a Tribal hotel and asked how that might affect MDT's efforts on this project. Todd responded that a Tribal hotel would not affect the site selection process for the MDT rest area. Chris Mehus responded the Tribe should plan for compatible uses. For example, the Tribe may not want to develop residential housing next to the rest area site. Vice-Chairman Wilson noted he would like to identify economic development opportunities for the Tribe in combination with this project, instead of opportunities that would benefit the trading post. Conrad J. Stewart noted the lease for the trading post is up next year, although the Tribe hasn't approached the business owner yet. Conrad stated the Tribe should allow the lease to expire and reclaim that corner for a Tribal venture. Vice-Chairman Wilson confirmed he would like to encourage economic benefits for the Tribe.

Sarah outlined findings of the environmental review, including biological resources, water resources, floodplains, wetlands, and hazardous sites. No environmental fatal flaws have been identified that would influence site selection. Vice-Chairman Wilson asked about potential groundwater impacts resulting from the rest area project. Todd stated MDT would consider storm drainage at the time of design. Chris Dorrington noted that a detailed analysis is not included as part of the Phase I effort. Kevin Malone stated MDT would mitigate any impacts under the design-build portion of the project. Todd clarified that groundwater and stormwater impacts are not a deciding factor in the site selection process.

Design Theme

Kevin Nelson provided an overview of the Crow Native Days survey, summarizing the suggestions offered by those who participated. It was noted that participants were primarily Crow tribal members.

The group discussed how Tribal input would be considered through the site selection and design process. Todd noted a representative of the Crow Tribe would participate in the selection committee for the design-build team and would have the opportunity to score proposals. Carlson Goes Ahead noted it is important to tell the story about the Crow land and keep the process tied to Crow culture. Vice-Chairman Wilson stated the Tribe should play a large role in the project design. He would like to see creative elements from the Crow people (such as beadwork) incorporated in the project design.

Chris Mehus confirmed the project would represent the Crow people and community. It was also noted that specific design considerations could be included in the requirements of the design-build proposal.

Gary noted the first phase of the project is focused on site selection, and that the consultants would provide a three-dimensional rendering of the site. Todd clarified that the rendering would illustrate a conceptual site layout only, and not a specific building design or shape.

Vice-Chairman Wilson stated the Crow people are very creative and should be involved in the design. He would like to see “green” elements, such as recycled glass or other recycled materials included in the project. Kevin Malone noted the project will evolve as MDT meets with the Crow Legislative Districts to identify desired themes. Conrad reiterated the project should be a reflection of the community. He proposed involving Crow college students and local artists. Conrad stated it is difficult for community members to visualize the rest area project. It would help to provide building examples and scaled drawings showing the size of parking lots. Kevin Malone noted the design theme could be incorporated in other elements, such as picnic shelters, in addition to the main rest area building. He reminded the group that the Phase I process is focused on site selection, not design. Chris Mehus suggested graphics with moveable pieces to illustrate the buildings, parking, and picnic areas. Kevin Malone agreed a concept plan of the area would be helpful.

Public Involvement and Next Steps

Vice-Chairman Wilson reiterated the need to maintain open communication with the Tribal Legislature. Representatives from BIA, Indian Health Services (HIS), and the Tribal Legal Department should be invited to attend the next advisory committee meeting. It was noted that that BIA has been invited to attend in the past, but that the group would continue to seek their attendance.

The group discussed upcoming legislative meetings. It was noted September 20th is the submission deadline for an “action item” to be included in the next legislative session, which will be held October 7th through the 18th. Attendees suggested we may need additional committee meetings before we present to the entire legislative body. Chris Mehus asked who would draft legislative action for consideration of the MOU. Tribal representatives noted it would be a joint action resolution through the Transportation Committee. Tribal representatives noted the project team could provide a 30-minute presentation after the legislation is introduced. The presentation should include a brief summary, handouts, and maps for the legislative body. After October, the next regularly-scheduled legislative session will be held in January.

Noel Two Leggins and Jeannie Pretty Paint will coordinate with the group on behalf of the Transportation Committee. Noel's term will end in December and his position will transition to a newly-elected committee chair.

The group discussed upcoming public information meetings. Carlson noted the Pryor Community Center hosts elder committee meetings Tuesday mornings. Tribal representatives suggested holding meetings in Crow Agency (for the Black Lodge, Big Horn, and Center Lodge Districts), Lodge Grass (for the Valley of the Chiefs and Mighty Few Districts), and Pryor (for Arrow Creek District). Tribal representatives noted the meetings should be advertised on social media (such as Facebook). Higher turnout could be expected if food is offered. Chris Mehus will coordinate with Tribal representatives to schedule the public information meetings.

Following the close of the meeting, MDT reconsidered the proposal for the THPO ground survey on Sites 1 and 2. The contract agreement will be amended to include the additional cultural investigation.

Meeting Agenda

Steering Committee Meeting #4

September 11, 2013, 10:00AM to 12:00PM

I. RECAP OF PREVIOUS MEETING

A. Review Minutes

II. PROJECT TASKS AND SCHEDULE

A. Project Tasks and Schedule

1. Traffic Review (July 2013) – **Submitted for Comments**
2. Initial Site Review (August 2013) - **Completed**
 - a) *Utilities – MMI*
 - b) *Topography - Completed*
 - c) *Geotechnical Memo – Completed*
3. Cultural and Environmental Resources (September 2013) – **Submitted for Comments**
4. Traffic Noise – **Completed**
5. Site Evaluation (November 2013)
6. Technical Memo (November 2013)
7. Final Memo (January 2014)
8. Steering Committee (Through January 2014)

III. TRAFFIC ANALYSIS

A. Review of Analysis (Todd)



IV. ENVIRONMENTAL

- A. Review of Cultural Resources (Lynelle, Ethnoscience)**
- B. Review of Noise (Sarah)**
- C. Other Environmental Items (Sarah)**

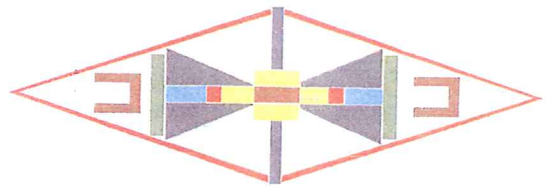
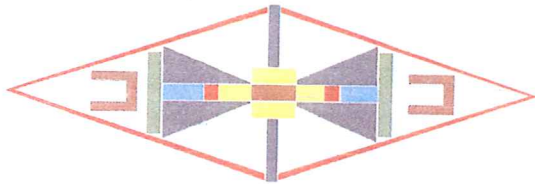
V. SITE EVALUATION

- A. Visioning and Theme**
- B. Selection Criteria**
- C. Selection Matrix**

VI. NEXT STEPS

- A. Crow Tribal Legislative Meeting (October)**
- B. Public Informational Meetings (October)**





Meeting Title: MDOT/NPS Proposed Visitor / Rest Area

Date/Time: 9/11/2013 10:00^{am} Location: Legislative Branch

Facilitator: Chris Mehus / Dana Wilson

Name	Department/Company	E-mail Address	Phone No.
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TODD CORMIER	DOWL HKM	tcormier@dowlhkm.com	656-6399
KEVIN MALONE	MDT - HELDUA	KMALONE@mt.gov	444-9369
Chris Mehus	Bearfoot BC+D	cmehus@bearfootbc.com	930-6290
Angie Bear Claw	Crow Tribal Transportation	angie.bearclaw@crow-nsn.gov	679-3368
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Emerson Bull Chief	THPO	emerson.bullchief@crow-nsn.gov	638-3769
James Morrissey	Roads		
Lucille Otha	Transportation	Lucille.Otha@crow-nsn.gov	623-0427
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[illegible]

**DOWL HKM****MEMORANDUM**

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To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: October 30, 2013

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #5 Meeting Minutes

An advisory committee meeting for the Battlefield Rest Area project was held at the Community Center building in Crow Agency on Wednesday, October 30, 2013.

The following people attended the meeting:

Kevin Malone	MDT – Consultant Design
Gary Neville	MDT – Billings District
Alan Woodmansey	FHWA
Denice Swanke	National Park Service
Dana Wilson	Crow Tribe Vice-Chairman
Shawn Backbone	Crow Tribe Vice-Secretary
Lark Paz	Crow Tribe – Tourism
Star Pretty Paint	Crow Tribe – THPO
Melissa Holds The Enemy	Crow Tribe – Executive Branch, Legal
Darcy Medicine Horse	Crow Tribe – Executive Branch, Legal
Larry Blacksmith	Crow Tribe – Executive Branch, C.O.O.
DyAnna Wilson	Crow Tribe
Clayton Old Elk	Indian Health Services, Crow/N. Cheyenne Hospital
Todd Cormier	DOWL HKM
Sarah Nicolai	DOWL HKM
Chris Mehus	Beartooth RC&D
Kevin Nelson	CTA
Lynelle Peterson	Ethnoscience
Leonard Bends	AGM Committee

Note: Names transcribed from handwritten entries. Spelling may not be accurate.

The meeting was scheduled to begin at 10:00 AM, and ended at approximately 12:00 PM. The meeting agenda and sign-in sheet are provided as attachments to these minutes.

Meeting Purpose

The purpose for the meeting was to:

- discuss the current on-going public meetings, occurring at Lodge Grass, Crow Agency, and Pryor, MT;
- discuss Crow THPO field survey of Site 1 and Site 2; and
- present the site selection criteria and matrix, and to rank each site.

Previous Meeting Minutes

No comments or suggested edits of the previous meeting's minutes were offered.

Public Meetings

Public informational meetings are being held by the Crow Tribe at Lodge Grass, Crow Agency, and Pryor, MT, with attendance by project staff. The first meeting occurred the previous day in Lodge Grass, MT, and was attended by 6 members of the public and 5 project staff. The next public informational meeting is scheduled to occur after the Advisory Committee meeting, followed by the final public informational meeting in Pryor, MT on Monday.

Environmental – Cultural Resources

Lynelle Peterson of Ethnoscience provided a brief overview of the current Crow THPO field work. Initial review indicated Site 1 and Site 2 have no instances of cultural resources. As a reminder to the group, Site 3 was previously field surveyed under a separate project.

It was suggested by Dana Wilson that Site 1 and Site 2 may still have buried artifacts. Lynelle noted that the Crow may request to include a Tribal monitor during construction.

Chris Mehus noted that the mayor of Lodge Grass had suggested that the title for this property (Site 1) may be encumbered and that the site may be being used for practicing sun dances, although he was unsure of both.

It was noted that Alan Three Irons is the BIA liaison for Real Estate, and that he may be able to answer the title question.

Environmental – Crow / N. Cheyenne Hospital

While noise levels are not expected to exceed mitigation thresholds, Clayton Old Elk of the Crow / N. Cheyenne Hospital is concerned about the increase in noise levels that an adjacent rest area facility may bring. Although the hospital supports the project, Site 2 located adjacent to the hospital should not be considered further. Additionally, the hospital would like to expand in the future, and developing a rest area / museum / visitor center adjacent to the hospital could limit this ability.

Clayton further noted that there have been issues in the past with the local water and sewer system being able to provide consistent services, and that the addition of a rest area / museum / visitor center may further overload the system. It was noted by DOWL HKM that they had conferred with Morrison Maierle Inc. (MMI) that the system is designed to be able to handle the additional loading, and that their future plans include this project.

Dana Wilson noted that the addition of a rest area / museum / visitor center site along the hospital access road could also impact the ability of emergency vehicles to quickly access the hospital.

Selection Criteria and Matrix

A general list of selection criteria was presented to the group in a matrix format. The criteria will allow the committee and design team to collaborate on selecting a preferred site based on the available information. Each site was ranked in the following manner:



Indicates a positive screening outcome. Site is considered desirable due to favorable constructability and accessibility conditions, anticipated lack of adverse impacts, and/or positive public feedback.



Indicates a neutral screening outcome. Constructability and accessibility considerations, potential project impacts, and/or public feedback do not affect the screening result.



Indicates a negative screening outcome. Site is considered less desirable due to unfavorable constructability and accessibility conditions, anticipated adverse impacts, and/or less favorable public feedback.

Each of the following criteria was discussed. A summary of the outcome is depicted in Table 1.

1. **Topography** – Each site was discussed in terms of its general topography. Based on the topography of each site, Site 2 was assigned a positive score. The remaining sites were considered neutral.

2. **Site Access and Visibility** – It was noted that Site 1 and Site 3 meet the current goals MDT has for rest areas, while Site 2 is not visible and would be difficult to access. Dana Wilson noted that Site 1 and Site 3 would be easier to access from the highway while Site 2 would be more difficult to access. Based on site access and visibility of each site, Site 1 was considered the most positive, followed by Site 3. Site 2 was considered negative due to its location.
3. **Utilities** – Based on conversations with MMI regarding the Crow water and wastewater system, each of the sites could be accommodated. It was noted that Site 3 would be the most difficult to serve, due to its location and topography. Furthermore, Dana Wilson noted that it would require the most new infrastructure. Based on this information, Site 3 was assigned a negative score, while the remaining sites were considered neutral.
4. **Hydraulic Conditions** – Due to their location and topography, Site 1 and Site 3 would be expected to have good drainage conditions. Site 2, located at the toe of a large hill, would likely need to convey off-site drainage away from the site. Based on this information, Site 2 was assigned a negative score, while the remaining sites were considered neutral.
5. **Geotechnical Conditions** – Each of the sites are expected to be able to accommodate development, and no observable issues were identified. Based on this information, each of the three sites are considered neutral.
6. **Building and Parking Demand (Size)** – Each of the sites can accommodate the desired parking needs and building sizes currently proposed. Based on this information, each of the three sites are considered neutral.
7. **Traffic Noise** – Each site is expected to experience an increase in ambient noise levels, with Site 2 experiencing the greatest increase. It was noted that due to its proximity to the hospital, that this increase would have a negative effect. Due to the proximity of Site 2 to the hospital, the Advisory Committee agreed that Site 2 should be scored negatively with respect to noise. The remaining sites were considered neutral.
8. **Cultural Resources** – A comprehensive survey of Site 3 was performed prior to this project, and Site 3 was noted as having substantial instances of cultural resources. The Crow THPO conducted a field survey of Site 1 and Site 2 did not document any cultural instances. A review of SHPO documentation also did not find documented instances for Site 1 or Site 2. Due to the substantial instances identified on Site 3, FHWA noted that rules regarding the expenditure of Federal

funding preclude Site 3 as a viable option, as Site 1 and Site 2 are considered viable from a cultural resource standpoint. It was further noted that the NPS has specific guidelines regarding lighting, and that Site 3 may impact the National Monument, based on the lighting needs of the rest area. The Advisory Committee further noted that this level of lighting would also impact the hospital for Site 2. Because lighting is not documented in this phase of the project, it was determined by the Advisory Committee that Site 1 and Site 2 were neutral based on the cultural information, and that Site 3 should be scored with a negative.

9. **Water Resources** – No surface bodies of water, wetlands, or floodplains were identified for Site 1, Site 2, or Site 3. Based on this information, each of the three sites are considered neutral.
10. **Biological Resources** – No federally listed species were located within the immediate vicinity of each site, and only minor impacts to the general wildlife habitat are expected. Based on this information, each of the three sites are considered neutral.
11. **Public / Stakeholder Feedback** – Survey results from the Crow Native Days survey identified Site 1 as the preferred location, followed equally by Site 2 and Site 3. While it was noted that the hospital was concerned with Site 2, Dana Wilson did not want to consider this as a negative with respect to public opinion. After some discussion among the Advisory Committee, it was determined that each site should be provided a positive score as the project is generally supported by the public.

Table 1. Selection Criteria and Matrix

Criteria		Site 1	Site 2	Site 3
Constructability/Accessibility Conditions	1 Site Topography	○ Site has some flat and level areas, as well as some steep grades.	+ Site is relatively flat.	○ Site has some flat and level areas, as well as some steep grades.
	2 Site Access and Visibility	+ Easily accessible and visible from Interstate 90 and Highway 212.	- Poor access and low visibility from Interstate 90 and Highway 212.	○ Easily accessible and visible from Interstate 90 and Highway 212.
	3 Utilities	○ Tribal utilities can be extended to site.	○ Tribal utilities can be extended to site.	- Tribal utilities can be extended to site.
	4 Hydraulic Conditions	○ Site expected to have few drainage issues, as there are no offsite drainages contributing to the site.	- Site is influenced by some offsite drainage that would need to be collected or conveyed around the site.	○ Site expected to have few drainage issues, as there are no offsite drainages contributing to the site.
	5 Geotechnical Conditions	○ Undocumented fill on site, otherwise no observable issues.	○ Some soft compressible clay soils, otherwise no observable issues.	○ Known swell potential, otherwise no observable issues.
	6 Building and Parking Demand	○ Site can accommodate desired parking/buildings for proposed uses.	○ Site can accommodate desired parking/buildings for proposed uses.	○ Site can accommodate desired parking/buildings for proposed uses.
Potential Project Impacts	7 Traffic Noise	○ Increase in traffic noise would not require mitigation.	- Closest noise-sensitive receptor and greatest increase in traffic noise.	○ Increase in traffic noise would not require mitigation.
	8 Cultural Resources	○ No cultural sites; area has been cultivated.	○ No cultural sites; area has been cultivated.	- Known instances of cultural resources; within boundaries of National Monument.
	9 Water Resources	○ No surface water bodies, wetlands, or floodplains.	○ No surface water bodies, wetlands, or floodplains.	○ No surface water bodies, wetlands, or floodplains.
	10 Biological Resources	○ No federally-listed species within vicinity; minor impacts to general wildlife habitat.	○ No federally-listed species within vicinity; minor impacts to general wildlife habitat.	○ No federally-listed species within vicinity; minor impacts to general wildlife habitat.
	11 Public Feedback	+ Survey respondents generally prefer Site 1 (42 of 94, or 45%).	+ Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%).	+ Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%).
Recommendation:				

Key: + indicates a positive screening outcome. ○ indicates a neutral screening outcome. - indicates a negative screening outcome.

Site 4

A fourth site was originally included for consideration, but was rejected by the Advisory Committee early due to its small size and inability to serve the three proposed uses. It was recently suggested by the Crow that a new Site 4 might be viable, should a proposed commercial and casino redevelopment of the NE corner of the Highway 212 interchange occur. Shawn Backbone asked MDT what would be needed to include this new location.

MDT noted that they would need to consider this further, and inform the District Administrator. Should it be considered, it is likely that the new site would need to go through the same review process that occurred at each of the other sites, delaying the project. It was further noted that MDT is prohibited from combining a rest area facility with a commercial site. The NPS also indicated concerns with being co-located in a commercial development.

Based on this information, Dana Wilson stated that this new site should not be included in our remaining public informational meetings so as to not disrupt the current process.

MDT will consider the request, and will coordinate directly with the Crow Tribe in this regard. A follow-up meeting to discuss this was tentatively scheduled for Friday, November 15, 2013 with Dana Wilson, Shawn Backbone, and Melissa Holds the Enemy.

Next Advisory Committee Meeting

The next committee meeting is tentatively scheduled for Thursday, December 5, 2013 at 9AM, and will be held at the NPS Administration Building. It is anticipated that the draft report, selection criteria and matrix, and draft renderings will be discussed at this meeting.

Meeting Agenda

Steering Committee Meeting #5

October 30, 2013, 10:00AM to 11:30AM

Multipurpose Building – Crow Agency

I. SUMMARY OF PREVIOUS MEETING

- A. Meeting with Legislative Transportation Committee (9/11/13)

II. PUBLIC INVOLVEMENT

- A. Overview of Informational Meeting in Lodge Grass (10/29/13)
- B. Upcoming Informational Meetings in Crow Agency (10/30/13) and Pryor (11/4/13)

III. ENVIRONMENTAL

- A. Update on Cultural Resources

IV. SITE EVALUATION

- A. Selection Criteria and Screening Matrix

V. STEERING COMMITTEE MEMBERSHIP & COMMUNICATION

- A. Basecamp E-mail Addresses

VI. ACTION ITEMS, ASSIGNED PARTIES, AND TIMEFRAMES



**DOWL HKM**

www.dowlhkm.com

COMPUTATIONS

Project #:

Client Name:

Sheet _____ of _____

Project Name:

Prepared by:

Date

Checked by:

Date

BATTLEFIELDAC #510-30-81NameOrganization/TitleE-mail

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**DOWL HKM****MEMORANDUM**

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To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: December 5, 2013

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #6 Meeting Minutes

An advisory committee meeting for the Battlefield Rest Area project was held at the NPS Administrative Building at the Bighorn Battlefield National Monument on Thursday, December 5, 2013.

The following people attended the meeting:

Kevin Malone	MDT – Consultant Design
Gary Neville	MDT – Billings District
Doug Lieb	MDT Helena (By Telephone)
Chris Dorrington	MDT Helena (By Telephone)
Jon Axline	MDT Helena (By Telephone)
Steve Platt	MDT Helena (By Telephone)
Alan Woodmansey	FHWA
George Reed, Jr.	Crow Tribe
Emerson Bull Chief	Crow Tribe - THPO
Denice Swanke	National Park Service
Todd Cormier	DOWL HKM
Emily Peterson	DOWL HKM (By Telephone)
Kevin Nelson	CTA

Note: Names transcribed from handwritten entries. Spelling may not be accurate.

The meeting was scheduled to begin at 9:00 AM, and ended at approximately 11:00 AM. The meeting agenda is provided as an attachment to these minutes.

Meeting Purpose

The purpose for the meeting was to:

- summarize the public meetings, occurring at Lodge Grass, Crow Agency, and Pryor, MT;
- summarize findings from the revised cultural report and THPO survey;
- review and comment on current iteration of renderings; and to
- provide an update on the current status of the draft document.

Previous Meeting Minutes

No comments or suggested edits of the previous meeting's minutes were offered.

General Items

- MDT noted that the Tribe has received the MOU, but is not taking action on the memorandum until a determination has been made on the proposed Site 4B.
- It is believed that the MOU may require Tribal legislative action. It is MDT's understanding that the MOU has not yet been put on the legislative agenda.
- The project group has not yet heard from the Tribal Chairman about removing Site 4 from further consideration.

Conceptual Renderings

Preliminary conceptual renderings of the proposed development were provided by CTA for consideration by the committee. It was noted that the concepts represent a "high elevation" general depiction, and that specific designs and enhancements are not necessarily defined.

It was suggested that two entrances may benefit a potential site. Also, there was a suggestion to show possible phasing of the site. After some discussion, it was agreed that the purpose of the concepts at this phase are to depict only a conceptual layout and that specific geometric details and layouts will be considered during a subsequent phase of the project. The concepts as currently depicted will be sufficient for this phase of the project.

Public Meetings

Public informational meetings were held by the Crow Tribe at Lodge Grass, Crow Agency, and Pryor, MT, with attendance by project staff. The meetings were attended by both Tribal and non-Tribal members. General comments received at each meeting favored Site 1.

Environmental – Cultural Resources

Emily Peterson of DOWL HKM provided a brief overview of the current Crow THPO field work and the revised cultural report. Initial review indicated Site 1 and Site 2 have no instances of cultural resources. As a reminder to the group, Site 3 was previously field surveyed under a separate project, and was not surveyed again for this project.

Site Evaluation and Documentation

A draft site evaluation document has been prepared by DOWL HKM, and will be completed upon a final determination of Site 4 and the implementation of the MOU.

General comments are listed below.

- In the screening matrix under cultural resources, remove “within boundaries of the National Monument,” and change to “eligible for listing, and adjacent to the National Monument.”
- MDT is still waiting for confirmation from the Tribal Chairman that Site 4 can be removed from further consideration.
- MDT will provide an initial review the draft site selection report. Once reviewed, the report will be provided to the AC through Basecamp for their review and consideration.
- It was suggested that an executive summary be included at the front of the document, and that the summary include the matrix.
- Denice Swanke stated she would provide DOWL HKM with a summary of the work she has completed to date towards the relocation of the National Monument visitor center to the rest area site.

Action Items

- Tribal concurrence on the removal of Site 4 from further consideration.
- Agreement on the MOU
- NPS summary of the work completed to date towards the relocation of the National Monument visitor center to the rest area site.

Next Advisory Committee Meeting

The next committee meeting will be determined at a later date.

Meeting Agenda

Steering Committee Meeting #6

December 5, 2013, 9:00AM to 10:30AM

NPS Building – Little Big Horn Battlefield Conference Room

I. SUMMARY OF PUBLIC INVOLVEMENT

- A. Meetings in Lodge Grass (10/29/13), Crow Agency (10/30/13), and Pryor (11/4/13)

II. ENVIRONMENTAL

- A. Update on Cultural Resources

III. SITE EVALUATION

- A. Screening Matrix Summary and Identification of Preferred Site
- B. Alternative Site – Update

IV. SITE RENDERING

- A. Draft Illustrations

V. SITE SELECTION MEMORANDUM

- A. Update on Schedule

VI. ACTION ITEMS, ASSIGNED PARTIES, AND TIMEFRAMES



**DOWL HKM****MEMORANDUM**

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To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: June 30, 2014

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Advisory Committee Meeting #7 Meeting Minutes

An advisory committee meeting for the Battlefield Rest Area project was held at the Little Bighorn Battlefield National Park Service (NPS) administration building on Thursday, June 19, 2014. The following people attended the meeting.

Gary Neville	MDT – Billings District
Chris Dorrington	MDT – Rail, Transit and Planning Division
Doug Lieb	MDT – Environmental Services Bureau
Denice Swanke	National Park Service
Shawn Backbone	Crow Tribe Vice-Secretary
Woodrow “Shorty” Plainfeather	Crow Tribe – Land Management
Alan Three Irons	BIA
Christian “Keene” Bends	BIA
Shana L. Ten Bear	BIA
Diane M. Leider	BIA
Todd Cormier	DOWL HKM
Sarah Nicolai	DOWL HKM
Earl Atwood	Beartooth RC&D
Luke Walawander	Beartooth RC&D
Kevin Nelson	CTA

The meeting was scheduled to begin at 9:00 AM, and ended at approximately 11:30 AM. The meeting agenda and sign-in sheet are provided as attachments to these minutes.

Meeting Purpose

The purpose for the meeting was to discuss the Phase IA draft site selection report, and discuss next steps for Phase IB.

Project Overview and Phase IA Site Selection Report

Todd Cormier provided an overview of the Battlefield Rest Area project to date. Phase IA evaluated the feasibility of four sites to support an MDT rest area, a potential future NPS visitor center, and a potential future Crow Tribal museum. Phase IB will provide water/wastewater design, environmental compliance documentation, and preliminary permitting for the MDT rest area at the preferred site. Phase II is anticipated to be a design-build process to design and construct the MDT rest area. The draft site selection report documents the Phase IA planning process.

Of the four sites initially proposed by the Crow Tribal Chairman, one was initially eliminated from further consideration due to both its close proximity to existing development and its inadequate size to accommodate the proposed rest area, Crow Tribal museum, and NPS visitor center. The remaining three sites were evaluated using a series of screening criteria, including site topography, site access and visibility, utilities, hydraulic conditions, geotechnical conditions, traffic conditions and parking/building demand, traffic noise, cultural resources, water resources, biological resources, and public/stakeholder feedback. Through this screening and evaluation process, Site 1 was deemed the preferred location for an MDT rest area.

AC members did not offer any further comments on the draft site selection report or the preferred location. A copy of the report was provided to AC members for reference.

Next Steps

Leasing Agreement

MDT is currently working with the Crow Tribe to obtain a long-term business lease for Site 1. It was noted that the BIA and the Tribe have not executed a long-term business lease before, and that the BIA will need to investigate the proper approach. Per federal regulations, BIA staff will review the lease and the environmental document, and make a recommendation to the BIA Regional Director. BIA staff will complete a lease form to confirm all requirements are met. MDT asked for a copy of the form to help guide development of the lease agreement. MDT stressed the desire to move forward as quickly as possible.

The AC discussed the parameters of a lease agreement, including primary and sub-lease options. BIA proposed that a Tribal economic development entity secure a long-term lease for the entire parcel (which includes each of the previously-identified sites: Sites 1, 2, and 3), and then sub-lease only the portion of Site 1 necessary to accommodate the MDT rest area and a separate portion of Site 1 to NPS for development of a potential future visitor center. Shawn Backbone noted the Tribe had recently developed an economic development entity as a cattle company, and that this could serve as a

framework for leasing the land to MDT. A similar entity appointed by the Crow Tribal Chairman could hold the master lease and then sublease a portion to MDT and to NPS.

The BIA noted that this is common practice in Indian country, and offers the advantage of separation from changing political administrations. The Tribe could allocate the remainder of the parcel (including Sites 2 and 3) for other economic development ventures. A certificate of survey likely would not be needed under this arrangement.

Alternately, the Tribe could subdivide the parcel and enter into an agreement with MDT for development of a rest area on Site 1. Under this scenario, the lease or sublease of the subdivided parcel would need the Tribal Chairman's signature, but would not need Legislative approval.

BIA noted there are some questions about how the land was acquired by the Tribe and the chain of title. To date, these challenges have been dismissed upon appeal. More appeals are anticipated, although few options remain for the challenging party.

BIA further noted that the Crow Tribe is not included in the list of tribes that may enter into a 99-year business lease, per federal regulations. However, the regulations allow some flexibility for tribes to enter into a business lease that meets their needs. BIA will research the relevant regulations and provide additional guidance to MDT. MDT noted the facility will be designed for a 40-year useful life; a minimum 50-year lease term will likely be required by the Federal Highway Administration (FHWA) to expend federal funds on this project. MDT asked that the Tribe consider a minimum 50-year lease with an automatic 50-year renewal option. BIA noted that the lease term must be "reasonable" and in the best interest of the Tribe. Woodrow "Shorty" Plainfeather will coordinate with the BIA, and report back to the AC regarding the lease.

National Park Service Visitor Center

Denice Swanke noted that she has received approval to move forward with the public process for the NPS visitor center. She expects to initiate an environmental assessment next week, and construction at Site 1 will be one of the alternatives NPS considers. The public process will extend for 12 months, ending in June 2015. MDT may be able to incorporate the results of the NPS decision at the completion of the Phase IB process.

Memorandum of Understanding

MDT is still waiting to finalize the memorandum of understanding with the Tribe. It was unclear as of this meeting if the most current version of the MOU is with the Tribe or with MDT. The AC discussed the need for Legislative approval of the MOU. The next Tribal Legislative session is in July, and tomorrow is the last day to submit an agenda item. As such and upon the close of this meeting, Shawn Backbone will work to get the MOU on the agenda for the next session.

Utilities and Site Improvements

The AC discussed utilities and parking at Site 1. During the Phase IA site evaluation process, the Tribe's engineer (Morrison Maierle, Inc.) indicated planned upgrades to water and sanitary sewer mains would be capable of accommodating service at a future rest area, Crow Tribe museum, and NPS visitor center. MDT can provide anticipated concentration and total hydraulic loading data to verify the capability of the system to handle this development. DOWL HKM will coordinate with the Tribe and their engineer to identify any capacity issues. Denice will provide NPS usage data (including combined domestic and irrigation water usage).

BIA noted historically there have been water shortage issues every summer, and the Tribe typically issues notices prohibiting irrigation during July and August. The Tribe is looking at options to upgrade the water supply treatment system. Replacing aging pipe infrastructure has helped reduce system losses. The Tribe would allow MDT to drill a new well at the rest area site, which could be used for irrigation and potable facility use/consumption.

Site 1 would be sized to accommodate parking for all three uses, although MDT would only pave the area necessary for the rest area parking.

Phase IB Scoping

Shawn noted the Chairman has already granted approval and authority to move forward with the rest area project through the MOU, and the Tribe recognizes the need to expedite the process. MDT confirmed the desire for DOWL HKM and CTA to move forward with Phase IB tasks concurrently with the lease agreement process.

BIA will require environmental documentation to support the federal action. MDT previously completed an environmental assessment (EA) to construct a new rest area at the interchange site. MDT/FHWA will need to close out that EA and document that the previous site was no longer considered suitable due to validation of flooding concerns. MDT/FHWA will complete a category (c) checklist categorical exclusion.

Todd provided an overview of the following anticipated MDT activities for Phase IB. Specific scoping for each activity will occur at a later date, including modifications to the items listed below.

Activity	Anticipated Tasks
102	DOWL HKM will prepare a press release. No additional informational meetings are anticipated, as a substantial public process was conducted in Phase IA.
106	DOWL HKM will drill more than the typical number of test pits in an attempt to provide data for the future building site.

Activity	Anticipated Tasks
108	DOWL HKM will conduct topographic survey. A certificate of survey is not anticipated at this time. Specific needs of this activity will be developed upon a more complete understanding of the leasing agreement between the Tribe and MDT.
112	DOWL HKM will prepare a brief memorandum confirming that the Phase IA traffic and parking analysis is still valid.
113	DOWL HKM will coordinate with the Tribe, the U.S. Environmental Protection Agency (EPA), and the Montana Department of Environmental Quality (DEQ) to evaluate utility issues.
170	DOWL HKM will identify hard surfaces that would influence storm water runoff (including the rest area and the total combined uses).
177	No cultural resource efforts are anticipated for Phase IB, as the Crow THPO provided a thorough field review of Site 1 during Phase IA.
178	No resource agency letters are anticipated for Phase IB.
179	No traffic noise analysis efforts are anticipated for Phase IB.
181	DOWL HKM will prepare an initial site assessment (ISA) form summarizing data collected for Phase IA.
182	DOWL HKM will conduct a field review and prepare a biological resources report for Site 1.
116	It is expected that a categorical exclusion will suffice for environmental compliance for Site 1.
118	DOWL HKM will prepare a conceptual site layout. CTA will prepare elevation renderings of the MDT rest area only for use during the Phase II design-build team selection process.
140	DOWL HKM will provide conceptual plans under this activity.

During Phase IB, MDT will coordinate with the Tribe and the AC to further define the vision and theme for the rest area. CTA will lead this effort and facilitate future AC meetings. No public informational meetings are anticipated for Phase IB.

Next Steps and Action Items

- Shawn Backbone will coordinate with appropriate parties to include the MOU on the agenda for the next Tribal Legislative session. MDT District personnel will coordinate with the Tribal Legal Department to determine next steps for finalizing the MOU.
- Woodrow “Shorty” Plainfeather will coordinate with BIA and Tribal staff to identify next steps for the long-term business lease, and to present a proposed leasing plan to MDT for response.
- BIA will furnish a copy of the lease form to MDT.
- Denice will provide NPS usage data to MDT and DOWL HKM.
- DOWL HKM will coordinate with MDT to finalize the site selection report and scope activities for Phase IB.

Meeting Agenda

Steering Committee Meeting #7

June 19, 2014, 9:00AM to 2:00PM

NPS Building – Little Big Horn Battlefield Conference Room

I. PHASE IA SITE EVALUATION REPORT

- A. AC Comments
- B. Finalize Report

II. PHASE IB SCOPING

- A. MDT Activities



Battlefield Rest Area Phase 1A Project
Advisory Committee Meeting #7
Thursday, June 19, 2014

NAME (Please Print)	ORGANIZATION	CONTACT EMAIL / PHONE
Shana L. Ten Bear	BIA	shana.tenbear@bia.gov 406-638-2321, ext 261
Maree M. Leider	BIA	mar.leiter@bia.gov 638-2321 ext 264
Christian "Keeve" Bands	BIA	christian.bands@bia.gov 638-2321
Alan Threirons	BIA	alan.threirons@bia.gov
Shawn Backhorn	Oroville US	shackhorn@NSN-cro.gov
Kevin Harsen	CTA	kevin@cta-grp.com
Denise Swank	NPS	denise-swank@nps.gov

Battlefield Rest Area Phase 1A Project
Advisory Committee Meeting #7
Thursday, June 19, 2014

NAME (Please Print)	ORGANIZATION	CONTACT EMAIL / PHONE
Woodward Plainfeather	Christlike Land Trust	woodward.plainfeather@yale-usa.org

Battlefield Rest Area Phase 1A Project
Advisory Committee Meeting #7
Thursday, June 19, 2014

NAME (Please Print)	ORGANIZATION	CONTACT EMAIL / PHONE
Todd Cozmiere	Dowl Hkm	TCozmiere@DowlHkm.com 656-6399
Sarah Nicolai	Dowl Hkm	Snicolai@dowlhkm.com 406.442.0370
CHRISTOPHER BORRINGTON	ADT-FLANNING	cdorrington@mt.gov 406 844 7239
Doug Liebs	MDT - EAB	dliebs@mt.gov 406.444.0825
GARY NEVILLE	MDT-BILLINGS	gneville@mt.gov 406-657-0232
Late Walander	Beartooth RCAD	lwalanders@beartooth.org 406-962-3914
Earl Arwons	BEAR TOOTH REID	earwood@beartooth.org 962-3914



DOWL HKM

MEMORANDUM

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To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: July 15, 2014

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Crow Tribal Legislature Infrastructure Committee Meeting

A Tribal legislature committee meeting to discuss the Memorandum of Understanding (MOU) between MDT, FHWA, NPS, and the Crow Tribe for the Battlefield Rest Area project was held at the Crow legislative building on Monday, July 14, 2014.

Seven Crow senators and a representative of the Crow Tribal Water Resource Department attended the meeting. The project was represented by Stefan Street (MDT District Administrator), Gary Neville (MDT Billings District), and Todd Cormier (DOWL HKM). The meeting was also attended by the Crow Vice-Secretary, Shawn Backbone.

The committee meeting was scheduled to begin at 9:00 AM, officially started at 10:00 AM, and concluded at approximately 11:15 AM. The MOU was the only item on the agenda for discussion, and was referenced as Joint Action Resolution No. JAR-14.

The resolution, agenda, and subsequent handouts are provided as an attachment to these minutes.

Memorandum of Understanding

The MOU was read into the record by the Committee Chairman. After a brief explanation by DOWL HKM of the project to date, the MOU was opened to the committee for discussion.

There were several questions raised regarding the wording of the MOU by the legislative legal advisor, specifically regarding sovereign immunity and legal property descriptions. It was noted by the Tribal lawyer that the MOU is intended only to initiate the next

phase of the project, and that subsequent agreements will be developed to address more specific items, such as a right-of-way agreement.

Initial text edits to the MOU were already incorporated prior to the committee meeting, and the edited document was provided to Gary Neville for MDT's consideration.

It was suggested that going forward, a member of the legislative body should be included as part of the Tribal advisory committee. In that regard, Senator Eric Birdinground was appointed to represent the legislative body. In case of a scheduling conflict, Senator Paul Hill was appointed as his back-up.

Titus Takes Gun, representing the Crow Tribal Water Resource Department, noted that the Crow are in the process of developing an essential water treatment system for the reservation through a rural water system. These updates are expected to occur now through 2030, and will include the community of Crow Agency. Mr. Takes Gun suggested that the project coordinate with his office regarding water needs for the site.

Committee Action

A voice vote was called by the Chairman to recommend approval of the MOU to the legislative body. The vote passed 7-0.

Next Steps and Action Items

- Shawn Backbone will continue with the advisory committee for the project.
- MDT District personnel will coordinate with MDT Legal to determine if the changes suggested by the Tribe are acceptable, and will determine the next steps for finalizing the MOU.
- DOWL HKM will finalize the Phase IA report upon acceptance of the MOU, and will work with MDT afterwards to scope the next phase of the project (Phase IB).

JULY 2014 CROW TRIBAL LEGISLATURE

JOINT ACTION RESOLUTION NO. JAR 14-___

INTRODUCED BY DARRIN OLD COYOTE, CHAIRMAN
CROW TRIBAL EXECUTIVE BRANCH

JOINT ACTION RESOLUTION OF THE CROW TRIBAL LEGISLATURE AND THE
CROW TRIBAL EXECUTIVE BRANCH ENTITLED:

“RESOLUTION APPROVING THE CROW TRIBE’S LIMITED WAIVER OF SOVEREIGN IMMUNITY IN THE MEMORANDUM OF UNDERSTANDING FOR THE BATTLEFIELD REST AREA.”

WHEREAS, the National Park Service, Federal Highway Administration, the Montana Department of Transportation and the Crow Tribe are entering into a Memorandum of Understanding regarding the development for the Battlefield Rest Area; and

WHEREAS, the Montana Department of Transportation has prepared the attached “Memorandum of Understanding, Battlefield Rest Area, IM 90-9(97)511” (the “MOU”) which establishes a formal relationship for coordination and collaboration by, between, and among NPS, FHWA, the Tribe and MDT; and

WHEREAS, the MDT proposes to construct a Rest Area on or near the junction of Highway 212 (N-37) and Interstate 90 on the Crow Reservation, through a Federal Aid project known as Battlefield Rest Area, IM 90-9(97)511, UPN 2012; and

WHEREAS, NPS, FWHA, the Tribe and MDT anticipate that the Project will include construction of a parking area large enough to accommodate a new Rest Area, NPS facility (visitor center and/or curatorial facility) and a Crow Tribe Museum; and

WHEREAS, a Rest Area Committee will be formed to collaborate on making decisions for the location, layout and aesthetics for the Rest Area and the parking lot. The Tribe, NPS and MDT will each have at least one member on the committee, which will meet as needed to assist in achieving the objectives of the MOU; and

WHEREAS, the Chairman of the Executive Branch has authority and responsibility pursuant to the “enumerated powers” in Article IV, Section 3 of the Constitution and Bylaws of the Crow Tribe of Indians to represent the Crow Tribe in negotiations with Federal, State and local governments and other agencies, corporations, associations, or individuals in matters of welfare affecting the Crow Tribe, and to “negotiate and approve limited waivers of

sovereign immunity when such a waiver is necessary for business purposes in accordance with Article V, Section 2(f) of [the] Constitution;" and

WHEREAS, the Legislative Branch has authority and responsibility pursuant to its "powers and duties" in Article V, Section 2(f) of the Constitution to "grant final approval or disapproval of limited waivers of sovereign immunity by the Executive Branch when waivers are necessary for business purposes;" and

WHEREAS, the Chairman of the Executive Branch has negotiated the terms of the limited waiver of the Crow Tribe's sovereign immunity as set forth in Section V.A.4 of the MOU, the limited waiver of sovereign immunity is necessary for the business purpose of establishing the formal relationship among the parties;

NOW, THEREFORE, BE IT RESOLVED BY THE CROW TRIBAL LEGISLATURE AND THE CROW TRIBAL EXECUTIVE BRANCH:

Section 1. That the limited waiver of sovereign immunity in the form set forth in the Montana Department of Transportation "MOU, IM 90-9(97)511," attached hereto and incorporated herein by reference, is hereby approved.

Section 2. That the approval granted herein is effective on the date of approval of this Resolution.

(Remainder of Page Intentionally Left Blank)

CERTIFICATION

I hereby certify that this Joint Action Resolution entitled **“RESOLUTION APPROVING THE CROW TRIBE’S LIMITED WAIVER OF SOVEREIGN IMMUNITY IN THE MEMORANDUM OF UNDERSTANDING FOR THE BATTLEFIELD REST AREA”** was duly enacted by the Crow Tribal Legislature with a vote of _____ in favor _____ opposed, and _____ abstaining and that a quorum was present on this _____ day of _____, 2014.

Speaker of the House
Crow Tribal Legislature

ATTEST:

Secretary
Crow Tribal Legislature

EXECUTIVE ACTION

I hereby

_____ approve or

_____ veto.

This Joint Action Resolution entitled **“RESOLUTION APPROVING THE CROW TRIBE’S LIMITED WAIVER OF SOVEREIGN IMMUNITY IN THE MEMORANDUM OF UNDERSTANDING FOR THE BATTLEFIELD REST AREA”** pursuant to the authority vested in the Chairman of the Crow Tribe by Article V, Section 8 and Article IV, Section 3(k) of the Constitution and Bylaws of the Crow Tribe of Indians, on this _____ day of _____, 2014.

Darrin Old Coyote, Chairman
Crow Tribal Executive Branch



AGENDA
CROW TRIBAL LEGISLATURE

INFRASTRUCUTRE COMMITTEE

Chair:

Conrad J. Stewart

Secretary:

Brandon Good Luck

Members:

Carlson Goes Ahead

Lawrence DeCrane

Bryce Hugs

Patrick Alden, Jr.

Vincent Crooked Arm

Paul Spotted Horse

Greg Three Irons

Bryson Rogers

Gordon Real Bird, Jr

Tyson Gros Ventre

Arnold Coyote Runs

Paul J. Hill

Eric Birdinground

Date: July 14, 2014

Meeting Called To Order:

Time: _____

Invocation: _____

Number of Members Present: _____

New Business:

Item 1: MOU Rest Area

Item 2: _____

Item 3: _____

Item 4: _____

Guests: _____

Notes: _____

Motion to: _____

Motion by: _____ 2nd by: _____ Question: _____

CONSENSUS OF VOTE: YES: _____ NO: _____ ABSTAIN: _____

Approved _____ Disapproved: _____

Motion to Adjourn: _____ 2nd by: _____ Question: _____

VOTE: YES: _____ NO: _____ ABSTAIN: _____

Approved _____ Disapproved: _____

Time: _____ A.M. / P.M.

Crow

Surface Land Status
TAAMS Date: 05/01/2005
Township: T003S R035E

Trust Land Status Legend

- Allotted
- Tribal
- Tribal Reserve

Geographic Data Service Center

Produced by Land Title Mapper: July 01, 2010
Universal Transverse Mercator projection, Zone 13
Principal Meridian, NAD 83, GRS1980



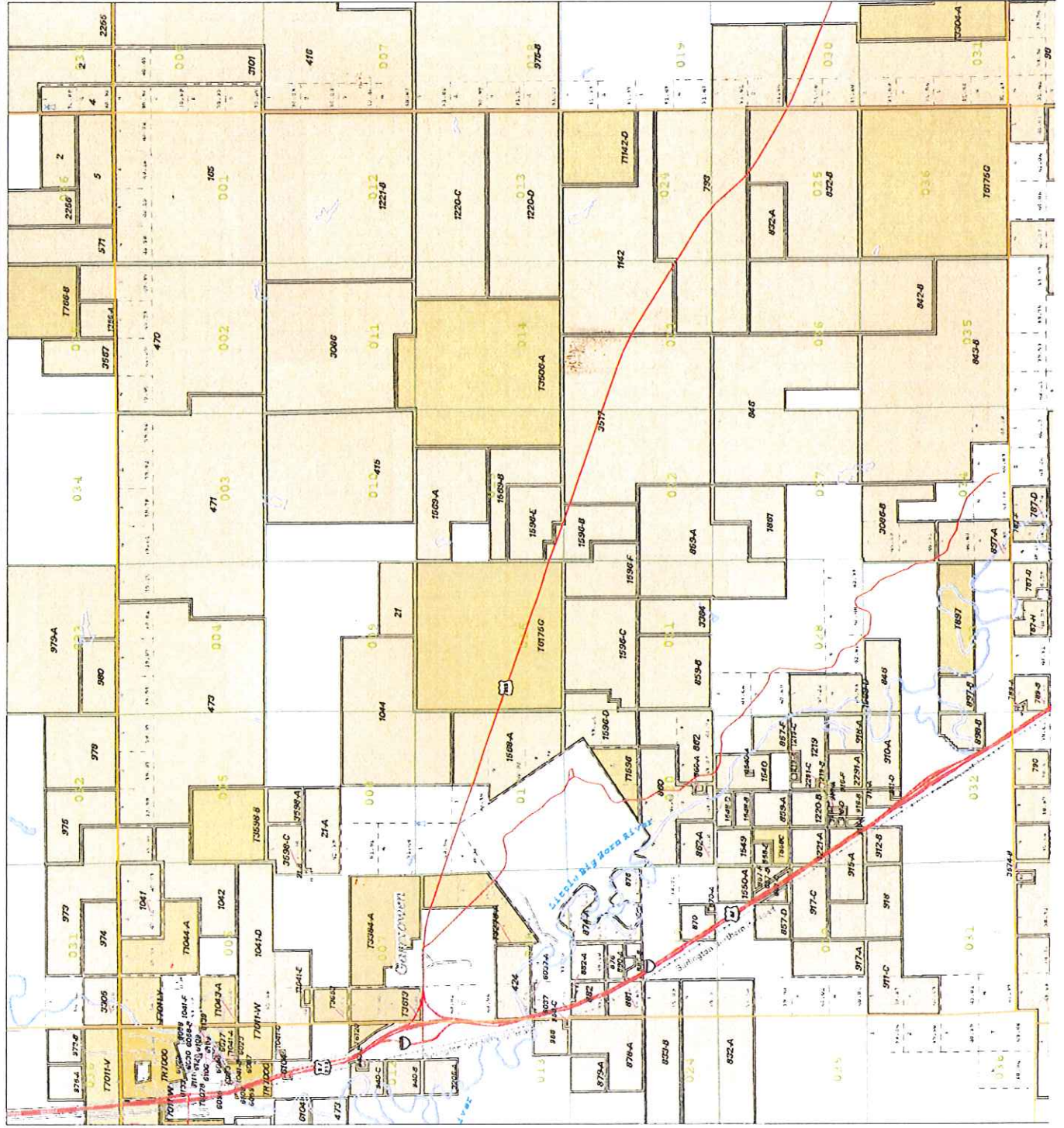
0 0.25 0.5 0.75 1 1.25 1.5 1.75
MILES

LTM maps constitute a representation of tract ownership and may be INCOMPLETE. They do not portray exact location, boundary or area, which an accurate survey may disclose.

Manager, Land Titles and Records Office

Date

U.S. Department of the Interior
Bureau of Indian Affairs
Land Titles and Records Office



**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 3

Preliminary Hydraulics Memorandum



MEMORANDUM

Address:
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Phone: (406) 656-6399
Fax: (406) 656-6398

To: Todd Cormier, PE, PTOE, AVS
DOWL HKM - Project Manager

From: Greg Gabel, PE
DOWL HKM – Project Engineer

Date: October 11, 2013

Subject: **Battlefield Rest Area (IM 90-9(97)511 UPN 2012001)**
Preliminary Hydraulics Memo

INTRODUCTION

This preliminary hydraulics memo was developed in support of the Phase I of the Battlefield Rest Area project to determine a preferred site. The information within this memo is for planning level only to help determine the preferred site. A more detailed hydraulic analysis will be performed for the preferred site during Phase IB once site limits are further refined/defined.

The project is located within the Crow Nation, just south of Crow Agency, Bighorn County, MT. Several sites have been identified for consideration. The three potential sites are generally located east of the Interstate 90 interchange with Highway 212 (N-37) at MP 510. All of the currently defined sites are located on Crow tribal land.

SITE DRAINAGE CRITERIA

The proposed site is located on the Crow Indian Reservation. The Crow Tribe does not currently have specific hydrologic and hydraulic design criteria guidelines for site development. Furthermore, hydrologic and hydraulic design criteria guidelines for site development are not specially addressed in the MDT Hydraulics Manual. As such, assumptions to the stormwater requirements were made based on current industry standards. It assumed that this project will require retention storage coupled with oil-water separators to treat runoff from the water quality storms (2-Year, 1-hour storm as defined in MDT Hydraulics Manual Chapter 13). A detention basin will be sized to limit post-development discharge to pre-developed rates for all ranges of storms. It is anticipated that culvert will be required in locations along the access roads to perpetuate existing drainage conditions. Culvert locations will be identified after the preferred site is selected. All three Sites are located outside the of FEMA delineated floodplain.

SITE 1 DRAINAGE PATTERNS

Site 1 is located on the north side of the Highway 212 (N-37) across from the Battlefield access road. The site would most likely be located on the top of the hillside directly southeast of the existing water storage tank. This site would be expected to have few drainage issues as there are no offsite drainages contributing to the site. It is anticipated that the only drainage concern would be collecting, treating, and detaining onsite stormwater. Depending on the final site grading plan, Site 1 would most likely have a minimum of two stormwater treatment and detention facilities. The first facilities would handle the runoff from the Site at the top of the hill. Depending on site grading and the proposed storm drain system, this could be a single large treatment and detention facility or multiple facilities around the site. The second stormwater treatment and detention facility would likely be located at the bottom of the hillside to treat and detain runoff from the access road to the top of the hill.

SITE 2 DRAINAGE PATTERNS

Site 2 is located on the east side of the Frontage Road just east of the Crow Agency fairgrounds and grandstand, and just northwest of the water tower. Site 2 is located within a mildly sloping site which falls from the southeast to the northwest. Unlike Site 1, this site is influenced by some offsite drainage that would either need to be collected onsite or conveyed around the site. The majority of the offsite runoff would be expected to come from the Site 1 hill. If offsite drainage is combined with onsite drainage, the stormwater facilities would increase in size accordingly. Depending on the grading plan, it may be possible to convey runoff from the Site 1 hill around the site either in a culvert or a drainage swale. The existing grading of Site 2 lends itself to having one treatment and detention storage facility located on the northwest end of the property. The site has a gradual slope to this northwest corner and a grading plan could be developed to keep all drainage flowing northeast.

SITE 3 DRAINAGE PATTERNS

Site 3 is located on the south side of the Highway 212 (N-37) along the hillside between Highway 212 and the Battlefield Access Road. This site would be fairly similar to Site 1, where it is generally located on top of a hillside. On this hillside, most of the drainage spills in minor swales either to the southwest towards the Battlefield Access Road or northeast towards Highway 212. This site would be expected to have few drainage issues as there are no offsite drainages contributing to the site. It is anticipated that the only drainage concerns would be collecting, treating, and detaining onsite stormwater. Similar to Site 1, Site 3 would likely require a minimum of 2 stormwater treatment and detention facilities with one located on the top of hill and one located at the bottom of the access road to the top of the hill.

CONCEPTUAL ESTIMATE FOR RETENTION/DETENTION FACILITIES

A conceptual evaluation was performed to determine the rough size of retention/detention facilities needed for the proposed Battlefield Rest Area project. The following assumptions were used to determine the approximate size of the stormwater facilities:

- Parking Lot = 5 acres (based on parking needs, Preliminary Traffic Technical Memorandum, August 2013)
- Buildings (rest area, visitor center, Crow museum) and Sidewalks = 1 acre
- Landscaping and Undeveloped Areas = 3 acres
- Total Site Area = 9 acres

For conceptual sizing of the storm facilities, we have assumed to look at a worst case scenario where each site would retain the difference between the existing site runoff volume to that of the proposed site runoff volume.

The SCS method was used to determine the stormwater facility size. Impervious areas such as parking lots, buildings, and sidewalks assume a CN value of 98, where the landscaped and undeveloped areas assume a CN value of 74. Based on published storm data in the MDT Hydraulics Manual in Chapter 7, Table B-5, the 2-year and 100-year, 24-hour storms have a rainfall depth of 1.51 inches and 3.84 inches, respectively. Under existing conditions and using a total site CN value of 74, the existing runoff volume for the 2-year and 100-year storms are 0.1 acre-feet and 1.1 acre-feet, respectively. Using a weighted runoff CN value of 90 for the developed site, the proposed site runoff volumes for the 2-year and 100-year storms are 0.5 acre-feet and 2.1 acre-feet, respectively. This would result in retention storage of roughly 0.4 acre-feet to 1.0 acre feet. Assuming a maximum depth of 2 to 4 feet the stormwater facility would range from 0.1 acres (4,400 square feet) to 0.5 acres (21,780 square feet).

CONCLUSION

All three sites have little to none drainage concerns and are mostly controlled by the proposed site grading plans. Site 1 and 3 are really similar in that they are on top of a hillside and have no offsite runoff. Site 2 is located on a gradual sloping terrain and will have some offsite runoff to deal with, but the offsite runoff would be minor. There is no substantial difference between the required storm drain facilities for all three sites.

A more detailed hydraulic analysis will be performed for the preferred site during Phase IB.

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 4

Preliminary Geotechnical Memorandum



MEMORANDUM

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To: Todd Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

From: Steve Weisenberger, PE
Geotechnical Engineer

Date: July 22, 2013

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Preliminary Geotechnical Site Visit

Project Background

The purpose of the Phase IA project is to consider site selection towards developing an MDT rest area, while considering a future Tribal museum and a future NPS visitor center. Site selection will be guided by engineering considerations, environmental considerations, and a common “theme” or “vision” for the overall development (Phase IA).

It was noted that the Phase IA process will not include a complete environmental analysis of the sites or preferred site, nor will it include detailed site layouts, plans, construction, or identify funding sources.

Once a site is selected, a Phase IB project will develop a conceptual site plan and utility plan, as well as conduct the appropriate level of environmental documentation for an MDT rest area. At this time, it is believed that the appropriate level of MDT documentation for the preferred site will be a Categorical Exclusion. It was noted by the National Park Service (NPS) that a separate environmental document would likely be necessary for any future NPS facility.

Phase IA and Phase IB of the project will be conducted as part of a Phase I effort. Phase II of the project will result in a design-build project administered by MDT to design and construct a new rest area. A future Tribal museum or a future NPS visitor center is not included in the Phase II project.

Site Reconnaissance

On July 12, 2013 a site reconnaissance was performed at the three rest area sites under consideration for the above referenced project. The purpose of the site visit was to make general geotechnical and geologic observations at each site in order to help further discussion toward site selection.

In general, the area around Crow Agency is located in an alluvial valley surrounded by gently rolling hills and terraces. The following presents general site topography, geology, and conclusions for each site.

- Site 1 – This site is generally located east and northeast of the Custer Battlefield Trading Post. The general topography at the site consisted consists of gently rolling hills and terraces. To the north of the site is a water tank located on an elevated terrace above the alluvial plain where Site 2 is located. According to published geologic maps, the general geology at the site consists of the Judith River Formation. The Judith River Formation generally consists of fine to medium grained sandstone interbedded with shale. Potential slope movement adjacent to the north side of the site was observed and should be further explored. Undocumented fill may also have been placed within or adjacent to the proposed site.
- Site 2 – This site is located approximately ¼ mile northeast of the Crow/Northern Cheyenne Hospital. The general topography at the site is flat, but is bordered to the south by terraces and rolling hills. Soil borings performed for the new Little Bighorn Casino in Crow Agency (approximately ¼ mile southwest of Site 2) indicated clay soils extending to approximately 14 to 17 feet in two of the borings. In these two borings, the clay was underlain by gravel which extended beyond the maximum depths explored of approximately 21.5 feet below existing grade. Gravel was not encountered in the third boring which extended to a depth of approximately 16.5 feet below existing grade. Shale bedrock was not encountered.
- Site 3 – This site is located approximately ½ mile southeast of the Custer Battlefield Trading Post and on the south side of Highway 212. The general topography at the site consisted of gently rolling hills and pasture land. According to published maps, the general geology at the site consists of the Judith River and Bearpaw Shale Formations. The Judith River formation is described above and the Bearpaw Shale Formation generally consists of fissile shale interbedded with thin layers of siltstone and sandstone. Thin bentonite lenses are also common in this formation.

General Conclusions

Based on our knowledge of the subsurface soils and geology, we anticipate all three sites can be developed. The following items should be considered during final site selection.

- Past slope movement or undocumented fill was observed within and adjacent to Site 1,
- Due to soft compressible clay soils, there is a potential for subgrade improvements or deep foundations for structure foundations at Site 2, and
- Due to known swell potential of the Bearpaw Shale Formation, there is a potential for subgrade improvements or deep foundations for structure foundations at Site 3.

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 5

**Preliminary Traffic Technical
Memorandum**

Battlefield Rest Area (Phase IA)
IM 90-9(97)511
UPN 2012001

Preliminary Traffic Technical Memorandum

MDT Activity 102

Prepared for:



Prepared by:



August 20, 2013

1.0 Introduction

This Preliminary Traffic Technical Memorandum was developed in support of the Battlefield Rest Area project (Phase IA) to evaluate potential traffic demands for a proposed rest area, the future Tribal museum, and future NPS visitor center.

The proposed Battlefield Rest Area will consist of a single rest area located near the junction of I-90 and U.S. Highway 212 (US 212) in Big Horn County, MT and will serve all directions of travel from both highways. Three potential sites are being considered. Figure 1 presents the approximate locations of the three proposed sites.

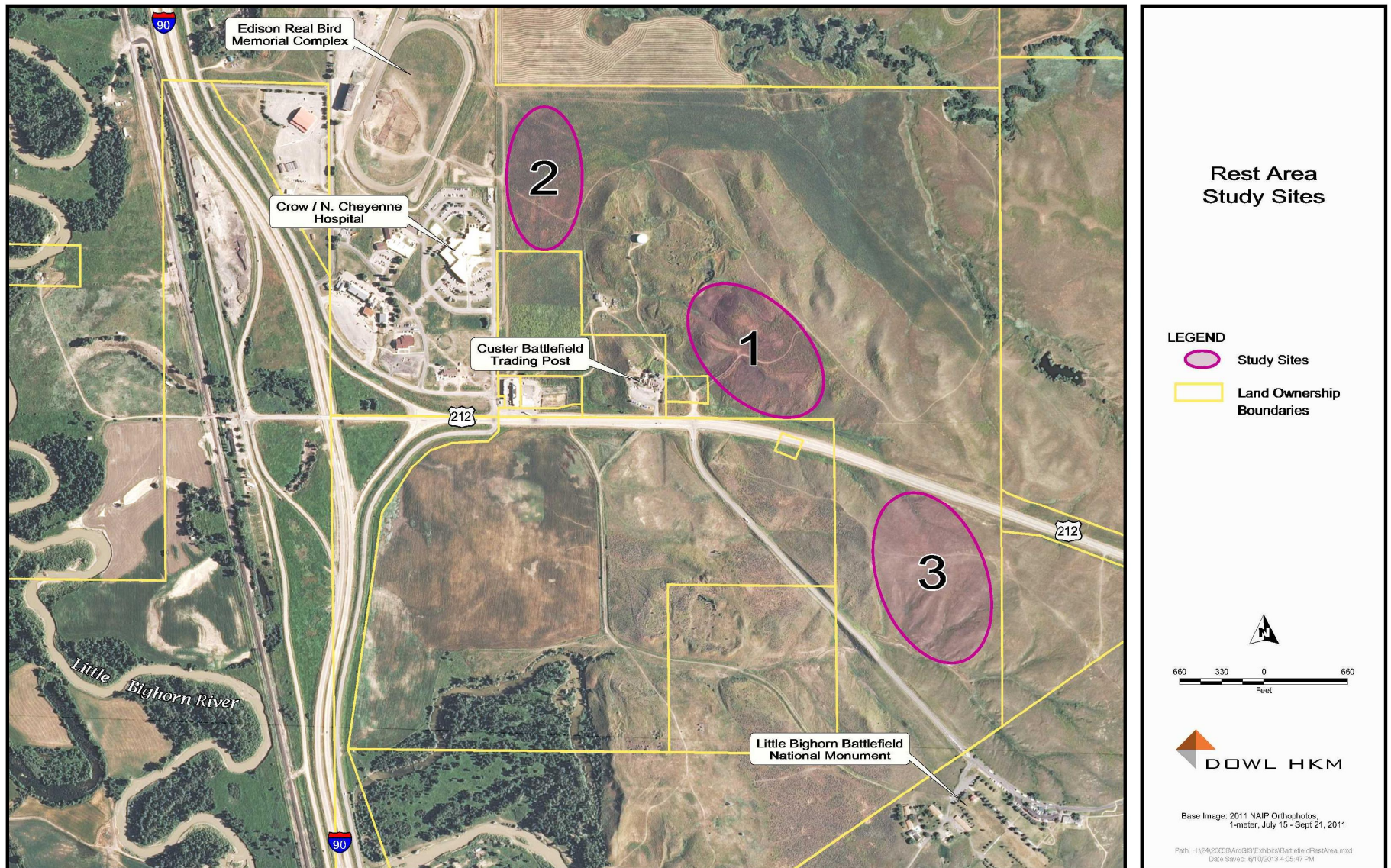
It is anticipated that each site may also be shared with a future Crow Tribal museum as well as a planned redevelopment of the NPS visitor center currently located on the Bighorn National Monument. Development of the preferred rest area site will consider these possible uses.

2.0 Rest Area Usage

The *Montana Rest Area Plan* (2004), developed by MDT in cooperation with the Western Transportation Institute (WTI), provides guidance regarding estimating rest area usage based on American Association of State Highway and Transportation Officials (AASHTO) formulas. The number of vehicles stopping at a rest area site per hour is calculated as a percentage of the directional traffic volume, with factors for the type of vehicle as well as the type of mainline route to account for mainline traffic composition. While the AASHTO methodology for estimating rest area usage is used throughout the United States, it is considered highly conservative by MDT.

In an effort to develop guidelines that more accurately reflect conditions specific to Montana, MDT initiated a research project with WTI that culminated in the completion of the *Rest Area Use: Data Acquisition and Usage Estimation Report* (2011). As part of this study, traffic data was collected at nearly all MDT-maintained rest areas on Montana highways, with recommendations for estimating parking and facility demand usage factors based on a cross-section of representative rest areas. Four control stations were chosen to represent high-volume Interstate rest area sites. Short-term data was collected at all other locations (defined as coverage stations). The WTI method detailed in the Rest Area Use report was used in this memorandum to determine rest area parking and usage needs at the proposed Battlefield Rest Area. The AASHTO method will not be referenced further in this memorandum.

Figure 1 Potential Rest Area Study Sites



The guidelines provided in Chapter 5 of the WTI report were used in estimating usage at the Battlefield Rest Area. Equation 1 identifies the variables used for estimating the recommended number of passenger vehicle and commercial vehicle parking spaces.

Equation 1
$$N_c / N_t = \frac{PHV * P * D_c\% \text{ or } D_t * PF * VHS_c / VHS_t}{60}$$

Where:

- N_c = Number of parking spaces for cars
- N_t = Number of parking spaces for trucks
- PHV = Peak hour volume
- P = Proportion of mainline traffic stopping at rest area
- $D_c\%$ = Percentage of cars (passenger vehicles) stopping at facility
- $D_t\%$ = Percentage of trucks (commercial vehicles) stopping at facility
- PF = Peak factor (ratio of average-day usage during the five peak summer months compared with the average over the entire year)
- VHS_c = Average dwell time for cars (passenger vehicles) in minutes
- VHS_t = Average dwell time for trucks (commercial vehicles) in minutes

Equation 2 identifies the variables used for estimating the recommended number of restroom stalls.

Equation 2
$$T = \frac{UV * PF * D_2}{30}$$

Where:

- T = Number of restroom stalls
- UV = Restroom users per vehicle
- PF = Peak factor (ratio of average-day usage during the five peak summer months compared with the average day usage over the entire year)
- D_2 = Total vehicles stopping at facility during peak hour (factored)

The following sections discuss the methods and data used to identify the above variables.

2.1 Existing Traffic Volumes

MDT provided 2013 Annual Average Daily Traffic (AADT) data on I-90 corresponding to the segment from RP 509.9 to RP 511.9 in a traffic memorandum dated July 3, 2013. This two-mile segment extends past the east/west on/off ramps of I-90 at the junction of US 212, just west of the proposed sites being considered for the Battlefield Rest Area. MDT also provided 2013 AADT data on US 212 corresponding to the segment from RP 0.0 to RP 1.1. This approximate one-mile segment extends from the junction of I-90 and US 212 eastward beyond the proposed sites for the Battlefield Rest Area. Within the same traffic memorandum, MDT provided 2011 AADT data and hourly traffic data from two short-term count stations corresponding to locations on I-90 (Site ID 2-4-7) at RP 506.0, a few miles north of the I-90 and US 212 junction, and on US 212 (Site ID 2-5-8) at RP 1.0, one mile east of the I-90 and US 212 junction.

The 2011 AADT data corresponding to I-90 at RP 506.0 was higher at 7,300 than the 2013 AADT on I-90 corresponding to the segment from RP 509.9 to RP 511.9 at 5,190. The variation in traffic volume between the two counts can also be observed over the last ten years at the short term count station 2-4-7 at RP 506.0. The 2011 AADT data corresponding to US 212 at RP 1.0 was similar at 1,580 to the 2013 AADT on US 212 corresponding to the segment from RP 0.0 to RP 1.1 at 1,600. MDT confirmed the discrepancy between 2011 and 2013 data is typical for I-90 near the junction of US 212.

WTI methodology requires daytime Peak Hour Volume (PHV) and nighttime PHV to calculate rest area usage. Therefore, the hourly 2011 data provided by MDT is used in this report. The 2011 hourly traffic data on I-90 (RP 506.0) and on US 212 (RP 1.0) were assumed to be representative of existing 2013 conditions and were used to calculate the percent of vehicles on I-90 and US 212 passing by the rest area sites during the daytime and nighttime periods. The daytime PHV and nighttime PHV are the highest hourly volume occurring within each period. The daytime is defined as the period from 9:00 a.m. to 4:00 p.m. and the nighttime is defined as the period from 12:00 a.m. to 6:00 a.m. Table 1 lists the AADT, daytime PHV, and nighttime PHV for existing 2013 conditions. The traffic volumes provided in Table 1 reflect the sum of volumes on both I-90 and US 212 due to the location of proposed Battlefield Rest Area sites near the junction of the two highways.

Table 1 AADT, Daytime PHV, and Nighttime PHV (2013)

AADT	PHV Daytime Period (9 a.m. – 4 p.m.)	PHV Nighttime Period (12 a.m. – 6 a.m.)
8,880	871	137

Source: MDT, 2013, [2011 Hourly Full Detail – Bin Data from Short –Term Count Stations 2-4-7 (I-90) and 2-5-1 (US 212)]; DOWL HKM, 2013.

PHV = Peak Hour Volume

AADT = Annual Average Daily Traffic

Note: AADT and PHV values reflect sum of volumes on I-90 and US 212.

2.2 Growth Rates and Future Traffic Volumes

MDT provided an annual growth rate of 1.5 percent for I-90 and an annual growth rate of 1.0 percent for US 212. The respective annual growth rates were applied to volumes on I-90 and on US 212 to calculate future 2035 AADT volumes adjacent to the proposed Battlefield Rest Area.

Daytime and nighttime PHV percentages identified for existing 2013 conditions were applied to 2035 AADT volumes. Table 2 lists the AADT, daytime PHV, and nighttime PHV for future 2035 conditions. The traffic volumes provided in Table 2 reflect the sum of volumes on I-90 and US 212 due to the location of proposed Battlefield Rest Area sites near the junction of the two highways.

Table 2 AADT, Daytime PHV, and Nighttime PHV (2035)

AADT	PHV Daytime Period (9 a.m. – 4 p.m.)	PHV Nighttime Period (12 a.m. – 6 a.m.)
11,478	1,126	177

Source: MDT, 2013, [2011 Hourly Full Detail – Bin Data from Short –Term Count Stations 2-4-7 (I-90) and 2-5-1 (US 212)]; DOWL HKM, 2013.

PHV = Peak Hour Volume

AADT = Annual Average Daily Traffic

Note: AADT and PHV values reflect sum of volumes on I-90 and US 212.

2.3 Proportion of Mainline Traffic Stopping at Rest Area (P)

WTI Guideline #1 concluded a reasonable estimation for the proportion of mainline traffic stopping at rest areas on Interstate highways and rural arterials is 16 percent and 25 percent, respectively. The proposed Battlefield Rest Area would be situated near the junction of I-90 and US 212. I-90 is classified as an Interstate highway, and US 212 is classified as a rural arterial two-lane highway. The proportion of mainline traffic stopping from each roadway facility was independently analyzed. The calculated volumes were added together to determine the total number of vehicles anticipated to stop at the proposed rest area from each roadway facility.

2.4 Percentage of Commercial Vehicles and Percentage of Passenger Vehicles Using Facility ($D_c\%/D_t\%$)

MDT supplied daily percentages of commercial vehicles within the overall traffic stream. Within the WTI report, Guideline #3 concludes for planning and design purposes, it is reasonable to assume the percentage of commercial vehicles during the daytime and nighttime periods is equivalent to 70 percent and 200 percent, respectively, of the daily commercial vehicle percentage for the mainline served by the rest area. The percent of passenger vehicles using the Battlefield rest area was calculated by subtracting the percent of commercial vehicles from 100 percent.

2.5 Peak Factor (PF)

The peak factor is defined as the ratio of the average day usage during the five summer months of peak usage compared with the average day usage over the entire year. The WTI report recommends using the AASHTO PF value of 1.8 for all Montana rest areas.

2.6 Average Dwell Time (VHS)

The WTI report investigated parking dwell times at three Montana rest areas to better understand rest area parking needs. Of the three rest areas studied, the Divide Southbound (SB) rest area is most similar to the average dwell time expected on I-90, because both are located on an Interstate highway. Similarly, of the three rest areas studied, the Clearwater Junction rest area is most similar to the average dwell time expected on US 212, because both are located on rural arterial two-lane highways. Table 3 lists the average dwell time by vehicle type during the day and night at the Divide SB and Clearwater Junction rest areas.

Table 3 Average Dwell Time at Clearwater Junction Rest Area

Location	Vehicle Type	Average Dwell Time (Minutes)	
		Day	Night
Divide SB	Cars	11	50
	Trucks	38	202
Clearwater Junction	Cars	10	22
	Trucks	25	96

Source: WTI, 2011.

Note: Average dwell times were rounded to the nearest minute.

2.6 Restroom Users per Vehicle (UV)

WTI Guideline #9 concludes for rest area planning and design purposes, a rate of 1.5 restroom users per vehicle may be used in estimating the number of patrons using the rest area building.

2.7 Summary of Estimated Usage

Table 4 summarizes data elements used for the proposed Battlefield rest area site according to the WTI methodology for rest area usage estimation.

Table 4 Data Elements Employed in Usage Calculations for the Future Battlefield Rest Area

Variable	WTI Methodology		Notes
	Existing 2012	Future 2034	
Peak Hour Volumes (PHV)	871 (day) 137 (night)	1,126 (day) 177 (night)	Based on short-term count stations 2-4-7 (I-90) and 2-5-1 (US 212)
Proportion of Mainline Traffic Stopping at Rest Area (P)	0.16 (I-90) 0.25 (US 212)		Based on WTI Guideline #1
Percentage of cars (passenger vehicles) stopping at facility ($D_c\%$)	83.93% (I-90) 73.48% (US 212)		Based on measured day percentages of commercial vehicles from short-term count stations 2-4-7 (I-90) and 2-5-1 (US 212)
Percentage of trucks (commercial vehicles) stopping at facility ($D_t\%$)	11.25% (day, I-90) 32.14% (night, I-90) 18.56% (day, US 212) 53.04% (night, US 212)		WTI Guideline #3 and based on measured day percentages of commercial vehicles from short-term count stations 2-4-7 (I-90) and 2-5-1 (US 212)
Peak Factor (PF)	1.8		Based on AASHTO recommended value
Average Dwell Time (VHS)	I-90	11 minutes (cars) 38 minutes (trucks - day) 202 minutes (trucks - night)	Based on research from Divide SB and Clearwater Junction rest areas
	US 212	10 minutes (cars) 25 minutes (trucks - day) 96 minutes (trucks - night)	
Restroom Users per Vehicle (UV)	1.5		Based on WTI Guideline #9

Source: WTI, 2011; MDT, 2013; DOWL HKM, 2013.

Table 5 presents the recommended number of parking and restroom stalls according to the WTI methodology. Calculation formulas are presented on page 2 of this memorandum. Detailed calculations are provided in Appendix B.

Table 5 Recommended Parking and Restroom Stalls at the Future Battlefield Rest Area

Variable	Existing 2013	Future 2035
	WTI Methodology	WTI Methodology
Passenger vehicle stalls	41	53
Commercial vehicle stalls	21 (day) 45 (night) ¹	27 (day) 58 (night) ¹
Restroom stalls	8 (women) 6 (men)	11 (women) 7 (men)

Source: WTI, 2011; MDT, 2013; DOWL HKM, 2013.

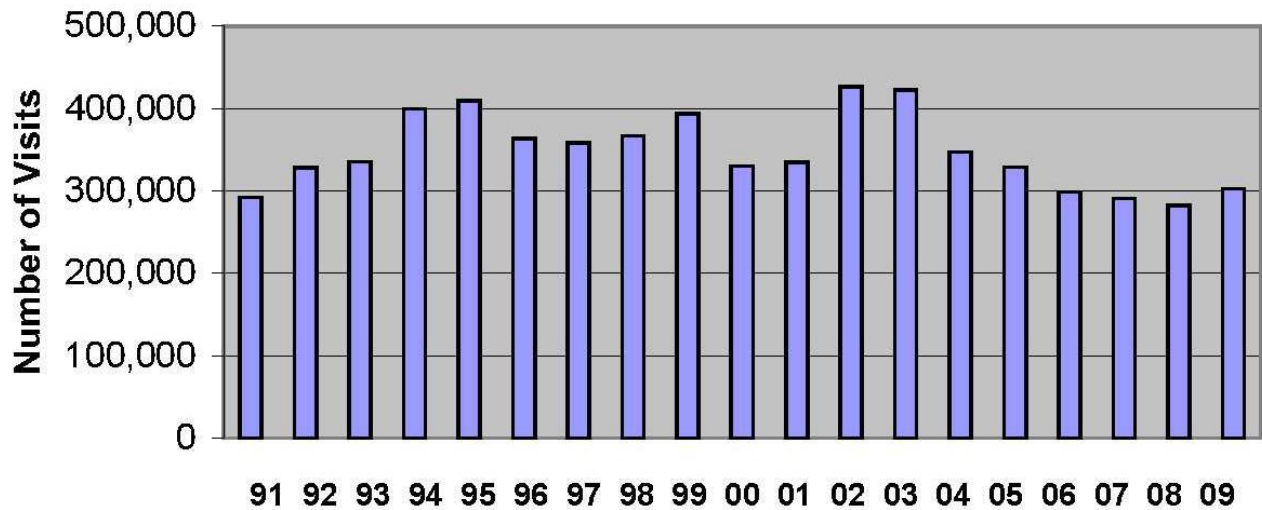
¹ Night usage controls.

3.0 Anticipated Future NPS Visitor Center and Tribal Museum

The National Park Service developed a report entitled *Existing Traffic and Parking Condition and Implications for Transportation Alternatives: Little Bighorn Battlefield National Monument Final Report* (NPS Report) in December 2010. The report details annual traffic volumes/visitations over a nineteen-year period from 1991 to 2009, as well as hourly traffic data on July 22, 2010 at the existing NPS visitor center. The hourly traffic data observed on July 22, 2010 was the seventh highest day in 2010. As stated on page 14 of the NPS Report, “it is often customary to select a day between the fifth highest and tenth highest day of the year as the Design Day.” As such, July 22, 2010 was determined to be representative of a design day.

It is anticipated that the proposed NPS visitor center, Tribal museum, and MDT rest area will be constructed adjacent to one another and will share parking facilities. It is further assumed the NPS visitor center and Tribal museum likely will not generate independent trips; that trips will generally be shared or “captured” between the two uses due to their similarity of use. These trips have been separated from the trips generated by the proposed rest area. Figure 4 from the NPS Report (pg. 7) was used in determining an appropriate compound annual growth rate (CAGR).

Figure 1 Little Bighorn (LIBI) Annual Number of Recreational Visits

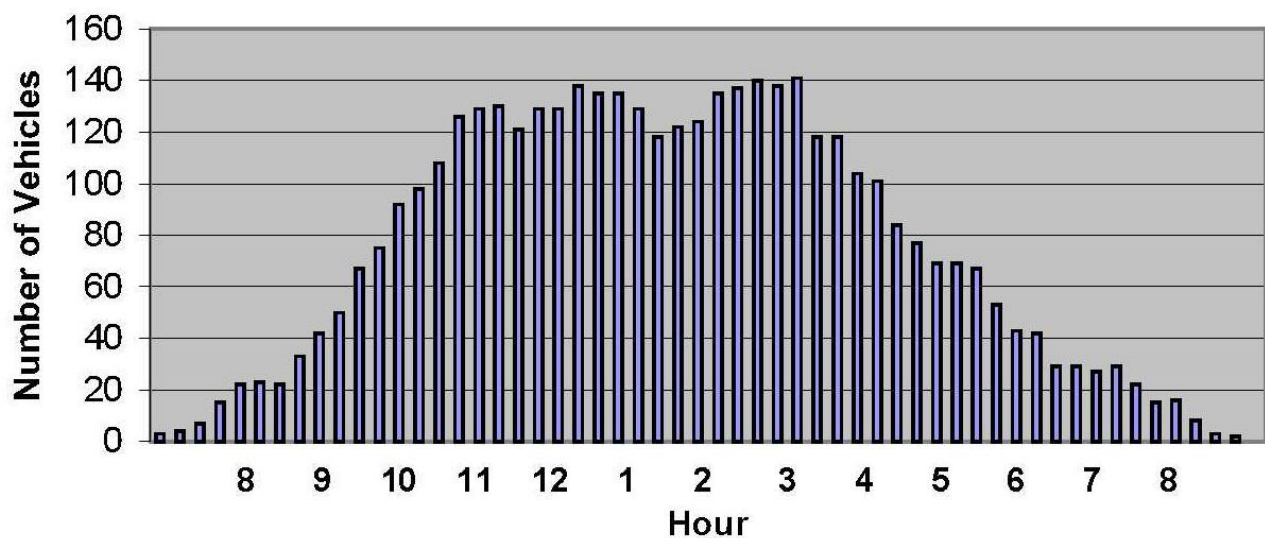


Source: NPS Report (Figure 4), 2010.

As indicated in the figure above, the trend in annual visitations between the years 2002 to 2009 was generally decreasing. Therefore, a conservative CAGR of 0.5% was applied to 2010 data to determine existing 2013 and future 2035 parking demand at the proposed NPS visitor center and Tribal museum site.

Figure 14 from the NPS report (pg. 20) was used to identify 2010 parking demand at the existing NPS visitor center.

Figure 2 Vehicle Accumulation in NPS Visitor Center Area by 15 Minute Period from 7:00 a.m. to 8:45 p.m. – July 22, 2010



Source: NPS Report (Figure 14), 2010

As indicated in the figure above, the maximum hourly vehicles visiting the existing NPS visitor center for a design day in 2010 was approximately 140. The NPS Report noted on page 27 “vehicles that can fit in regular parking spaces account for 75 to 81 percent of vehicles.” Therefore, a conservative estimate of 75 percent of all vehicles was determined to be passenger vehicles and 25 percent was determined to be oversized vehicles (e.g., RVs and buses) visiting the proposed NPS visitor center and Tribal museum site. A CAGR of 0.5% was applied to the 2010 hourly vehicles visiting the existing NPS visitor center (140) to determine parking demand for the proposed NPS visitor center and Tribal museum site in the years 2013 and 2035.

Table 6 presents existing 2013 and future 2035 parking demand at the proposed NPS visitor center and Tribal museum site.

Table 6 Recommended Parking Stalls at the Proposed NPS Visitor Center and Tribal Museum Site

Type of Vehicle	Existing 2013	Future 2035
Passenger vehicle stalls	107	119
Oversized vehicle stalls (e.g., RVs and Buses)	35	40

Source: National Park Service, Existing Traffic and Parking Conditions and Implications for Transportation Alternatives: Little Bighorn Battlefield National Monument, 2010; DOWL HKM, 2013.

It should be noted that both the NPS visitor center and the proposed Crow Tribal museum are expected to only operate during daytime (business) hours. As such, any demand for the MDT rest area that occurs during the evening to morning hours may be accommodated through a shared use of parking between the facilities.

4.0 Summary of Crash Analysis

MDT provided crash data for I-90 from RP 509.9 to RP 511.9 and for US 212 from RP 0.0 to RP 1.1 for the ten-year period from January 1, 2003 to December 31, 2012. During this period, 30 crashes occurred on I-90 and 4 crashes occurred on US 212.

MDT also provided crash rate, severity index, and severity rate data for I-90 and US 212 during the analysis period. The crash rate is a measure of the number of crashes in a roadway corridor per million vehicle miles (MVM) travelled. Since a higher number of crashes can generally be expected on roadway corridors with higher traffic volumes, this measurement offers an objective way to compare crash statistics for roadways with varying traffic volumes (which is also described as vehicle exposure). The crash rate is calculated as follows:

$$\text{Crash Rate} = \frac{(\text{Total Number of Crashes})}{(\text{Traffic Volume})(\text{Analysis Time Period})(\text{Segment Length})(1,000,000 \text{ Vehicles})}$$

The severity index is a weighted measure of crashes occurring in a roadway corridor, with fatal crashes and crashes resulting in incapacitating injuries weighted more heavily (using a multiplier of 8) compared to crashes resulting in less serious injuries (multiplier of 3) or property damage only (multiplier of 1) as provided by AASHTO. The severity index is calculated as follows:

$$\text{Severity Index} = \frac{8(\text{Fatal \& Incapacitating Injury}) + 3(\text{Other Injury}) + 1(\text{Property Damage})}{\text{Total Number of Crashes}}$$

Finally, the severity rate is a measure of the severity of crashes per million vehicle miles (MVM) travelled and is calculated as follows:

$$\text{Severity Rate} = (\text{Crash Rate})(\text{Severity Index})$$

As presented in Table 7, the crash rate and severity rate for I-90 were lower than the statewide average for similar facilities, while the severity index was slightly higher during the 2003 to 2012 analysis period.

Table 7 Crash History Comparison – Rural Interstate Routes (2003 to 2012)

Criteria	Statewide Average for Rural Interstate Routes (2003 – 2012)	I-90 RP 509.9 – RP 511.9 (2003 – 2012)	Comparison of I-90 to Statewide Average
Crash Rate (All Vehicles)	0.90	0.71	0.79 times lower
Severity Index (All Vehicles)	1.83	1.97	1.08 times higher
Severity Rate (All Vehicles)	1.64	1.40	0.85 times lower

Source: MDT, 2013.

As presented in Table 8, the crash rate, severity index and severity rate for US 212 were all lower than the statewide average for similar facilities during the analysis period.

Table 8 Crash History Comparison – Rural Non-Interstate National Highway System (2003 to 2012)

Criteria	Statewide Average for Rural NINHS (2003 – 2012)	US 212 RP 0.0 – RP 1.1 (2003 – 2012)	Comparison of US 212 to Statewide Average
Crash Rate (All Vehicles)	1.01	0.61	0.60 times lower
Severity Index (All Vehicles)	2.05	1.50	0.73 times lower
Severity Rate (All Vehicles)	2.07	0.92	0.44 times lower

Source: MDT, 2013.

The three proposed locations for the Battlefield Rest Area are located off of US 212. As such, the location of the rest area is not likely to be affected by crash occurrences on I-90.

The four crashes on US 212 occurred between RP 0.3 to RP 0.5., which corresponds to a segment of US 212 between the junction of I-90 and US 212 and the intersection of Secondary Route 342/Battlefield Tour Road. Four crashes over a ten-year period is a relatively low crash frequency. No causal trends were identified for the four crashes on US 212.

Traffic volumes along the on/off ramps at the junction of I-90 and US 212 would likely increase due to construction of the proposed rest area. This increase in traffic volume may result in an increase in crash frequency near the junction of I-90 and US 212. It is recommended that crash statistics near the junction of I-90 and US 212 be monitored following construction of the rest

area. Possible crash mitigation strategies near the junction of I-90 and US 212 could include signalization of the I-90 on/off ramps and US 212 intersections and modifications to the on/off ramp geometry.

5.0 Left- and Right-Turn Lanes

The need for left- and right-turn lanes was considered at the three proposed rest area entrances from US 212. Based on guidelines provided in the MDT Road Design Manual, Chapter 13, Section 3, a right-turn lane may be justified at proposed site 3 south of US 212. The other two proposed locations north of US 212 do not appear to justify a left-turn lane or right-turn lane based strictly on the volumes expected for the rest area site.

Currently, Highway 212 is configured with a two-way left turn lane through the project study area, and has an eastbound right turn lane to the Battlefield entrance (Site 3). It is not recommended that this current configuration be modified.

Left- and right-turn analysis sheets are provided in Appendix C.

6.0 Conclusion

This preliminary traffic technical memorandum identifies the need for 53 daytime passenger vehicle stalls, and 27 daytime or 58 nighttime oversized vehicle parking stalls to meet future 2035 demand at the proposed Battlefield Rest Area. To meet the future 2035 restroom demand at the proposed rest area, 11 restroom stalls for women and 7 restroom stalls for men are proposed. For the proposed NPS visitor center and Tribal museum site, 119 passenger vehicle stalls and 40 oversized vehicle stalls (e.g., RVs and buses) are recommended to meet future 2035 demand. It is expected the NPS visitor center and Tribal museum will have independent restroom facilities, which will likely be unaffected by restroom usage at the proposed Battlefield Rest Area. This technical memorandum does not identify expected restroom demand at the NPS visitor center or at the proposed Tribal museum.

The proposed Battlefield Rest Area, NPS visitor center, and Tribal museum facilities are planned to be built adjacent to one another, and as such, will be able to share one parking lot. The combined 2035 passenger vehicle parking demand for all three facilities includes 119 passenger vehicle stalls for the NPS visitor center and Tribal museum plus 53 daytime passenger vehicle stalls for the proposed Battlefield Rest Area, for a total of 172 passenger vehicle stalls. The combined 2035 oversized vehicle parking demand for all three facilities includes 40 daytime oversized vehicle stalls for the NPS visitor center and Tribal museum plus 27 daytime oversized vehicle stalls for the proposed Battlefield Rest Area, for a total of 67 daytime oversized vehicle stalls. This combined daytime demand for oversized vehicles will meet the rest area nighttime demand for 58 oversized vehicle stalls. Table 9 presents the combined recommended number of passenger vehicle stalls and oversized vehicle stalls for the three facilities.

Table 9 **Recommended Parking Stalls at the Proposed Battlefield Rest Area, NPS Visitor Center and Tribal Museum Site**

Type of Vehicle	Future 2035
Passenger vehicle stalls	172
Oversized vehicle stalls (e.g., RVs and Buses)	67

DOWL HKM, 2013.

These recommendations will be considered during upcoming tasks to develop a conceptual layout of the sites. The conceptual layout will be used to assess the recommended number of parking spaces and restroom stalls to fit within the physical constraints of each site, including consideration of existing right-of-way boundaries, topography, sensitive natural resources, and state-required setbacks from groundwater wells and wastewater systems.

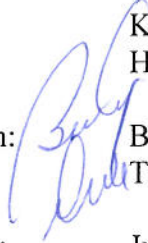
Appendix A

Traffic Data

**Montana Department of Transportation
Helena, Montana 59620**

Memorandum

To: Kevin Malone, P.E.
Helena Consultant Design Engineer

From:  Becky Duke, Supervisor
Traffic Data Collection & Analysis Section

Date: July 2, 2013

Subject: IM 90-9(97)511
Battlefield Rest Area
Control No. 2012001

Attached is the traffic information requested in a memo dated June 18, 2013. There are no major traffic breaks within the project. Please note that the equivalency factors used to calculate ESAL values are determined using information from our weigh-in-motion sites and reflect a five-year average.

Also included in this request are the AADT's for the Little Big Horn Interchange ramps and two vehicle classification counts. One VC count was done on I-90 in 2011 and the other one was done on N-37/US 212 in 2012.

If you have any questions or need further assistance, please contact me at 6122.

CC: Steve McEvoy, Pavement Analysis and Research - Helena
Project File

RAIL TRANSIT AND PLANNING DIVISION
DATA COLLECTION SECTION
Worksheet for Engineering and Planning Purposes

Project Description:

Interstate Flexible

IM 90-9(97)511

Battlefield Rest Area

Control No. 2012001

I-90: RP 509+0.900 to 511+0.900

*Truck Distribution**

DATE: 02-Jul-13

<u>2013</u>	AADT= <u>5,190</u>	PRESENT	5	5.7 %	1.3 %
			6	3.3 %	0.8 %
			7	0.6 %	0.1 %
<u>2015</u>	AADT= <u>5,300</u>	LETTING YEAR	8	14.4 %	3.3 %
<u>2035</u>	AADT= <u>6,600</u>	DESIGN YEAR	9	56.3 %	12.9 %
	DHV= <u>870</u>		10	5.6 %	1.3 %
	D= <u> </u>		11	0.7 %	0.1 %
	T= <u>22.9%</u>		12	0.7 %	0.2 %
	EAL= <u>684</u>		13	12.7 %	2.9 %
	AGR= <u>1.1%</u>				
				100.0 %	22.9 %

2012

AADT*= 5,130

BUS= 0.5%

28

COM= 22.9%

1176

FUT= 1.1%

DHV= 13.20%

* Distribution: 2011 Vehicle Class Count
(Site ID: 2-4-7)

* AADTs and Growth Rate: 2012 TYC
(Weighted Average)

PROJECT DESCRIPTION: Interstate Flexible
IM 90-9(97)511
Control No. 2012001

DATE: 02-Jul-13

PAVEMENT:

RIGID:

FLEXIBLE: X

LETTING YEAR ADT:
DESIGN YEAR ADT:

5,300 LETTING YEAR
6,600 DESIGN YEAR

2015
2035

LANE DESIGN FACTOR

90 %

VEHICLE TYPE	% OF TYPE	LETTING YEAR ADT	DESIGN YEAR ADT	MEAN YEAR ADT	DIRECTIONAL ADT	DESIGN LANE ADT	18K EQUIV RATE FAC	MEAN YEAR ADL
CLASS 1 & 2	40.3	2135.90	2659.8	2397.9	1198.9	1079.0	0.001	1.08
CLASS 3	36.2	1918.60	2389.2	2153.9	1077.0	969.3	0.007	6.78
CLASS 4	0.5	28.93	36.0	32.5	16.2	14.6	0.689	10.07
CLASS 5	1.3	69.13	86.1	77.6	38.8	34.9	0.139	4.85
CLASS 6	0.8	40.09	49.9	45.0	22.5	20.3	0.473	9.58
CLASS 7	0.1	7.05	8.8	7.9	4.0	3.6	0.815	2.90
CLASS 8	3.3	175.20	218.2	196.7	98.3	88.5	0.390	34.52
CLASS 9	12.9	684.51	852.4	768.5	384.2	345.8	1.329	459.58
CLASS 10	1.3	67.55	84.1	75.8	37.9	34.1	0.959	32.73
CLASS 11	0.1	7.90	9.8	8.9	4.4	4.0	1.260	5.03
CLASS 12	0.2	8.63	10.7	9.7	4.8	4.4	0.734	3.20
CLASS 13	2.9	154.79	192.8	173.8	86.9	78.2	1.453	113.62
CLASS 14		0.00	0.0	0.0	0.0	0.0		0.00
CLASS 15		0.00	0.0	0.0	0.0	0.0		0.00
CLASS 16		0.00	0.0	0.0	0.0	0.0		0.00
TOTAL VALUES	22.9 100.0	1214.85	1512.8	1363.8				683.94

AVERAGE DAILY 18 KIP EQUIVALENT AXLE LOAD:

683.94

20 YEAR EQUIVALENT AXLE LOAD:

4,992,769

2013 AADT = 5,190
2015 AADT = 5300
2035 AADT = 6600
DHV = 870
Direction =
Com Trks = 22.9%
ESAL = 683.94
AGR = 1.100%

* Equivalency Factors: WIM Data (2009 to 2013)

RAIL TRANSIT AND PLANNING DIVISION
DATA COLLECTION SECTION
Worksheet for Engineering and Planning Purposes

Project Description:

Principal Flexible

IM 90-9(97)511

Battlefield Rest Area

Control No. 2012001

N-37: RP 000+0.000 to 001+0.100

*Truck Distribution**

Date: 02-Jul-13

<u>2013</u>	AADT= <u>1,600</u>	PRESENT	5	9.96 %	2.6 %
			6	2.58 %	0.7 %
			7	0.18 %	0.0 %
<u>2015</u>	AADT= <u>1,650</u>	LETTING YEAR	8	5.72 %	1.5 %
<u>2035</u>	AADT= <u>2,230</u>	DESIGN YEAR	9	63.84 %	16.9 %
	DHV= <u>360</u>		10	6.09 %	1.6 %
	D=		11	2.03 %	0.5 %
	T= <u>26.5%</u>		12	0.00 %	0.0 %
	EAL= <u>236</u>		13	9.59 %	2.5 %
	AGR= <u>1.5%</u>				
				100.0 %	26.5 %

2012

AADT*= 1,580

BUS= 1.3%

20

COM= 26.5%

418

FUT= 1.5%

DHV= 16.00%

* Distribution: 2012 Vehicle Class Count
(Site ID: 2-5-1)

* AADTs and Growth Rate: 2012 TYC

PROJECT DESCRIPTION: IM 90-9(97)511
Battlefield Rest Area
Control No. 2012001

DATE: 02-Jul-13

PAVEMENT:

RIGID: FLEXIBLE: X

LETTING YEAR AADT: 1,650 LETTING YEAR
DESIGN YEAR AADT: 2,230 DESIGN YEAR

LANE DESIGN FACTOR: 100 %

VEHICLE TYPE	% OF TYPE	LETTING YEAR ADT	DESIGN YEAR ADT	MEAN YEAR ADT	DIRECTIONAL ADT	DESIGN LANE ADT	18K EQUIV RATE FAC	MEAN YEAR ADL
CLASS 1 & 2	37.2	613.80	829.6	721.7	360.8	360.8	0.001	0.36
CLASS 3	35.1	579.15	782.7	680.9	340.5	340.5	0.007	2.38
CLASS 4	1.3	20.89	28.2	24.6	12.3	12.3	0.673	8.26
CLASS 5	2.6	43.48	58.8	51.1	25.6	25.6	0.150	3.83
CLASS 6	0.7	11.26	15.2	13.2	6.6	6.6	0.569	3.77
CLASS 7	0.0	0.79	1.1	0.9	0.5	0.5	0.839	0.39
CLASS 8	1.5	24.97	33.7	29.4	14.7	14.7	0.370	5.43
CLASS 9	16.9	278.67	376.6	327.7	163.8	163.8	0.981	160.71
CLASS 10	1.6	26.58	35.9	31.3	15.6	15.6	0.932	14.57
CLASS 11	0.5	8.86	12.0	10.4	5.2	5.2	0.759	3.95
CLASS 12	0.0	0.00	0.0	0.0	0.0	0.0	0.696	0.00
CLASS 13	2.5	41.86	56.6	49.2	24.6	24.6	1.324	32.58
CLASS 14		0.00	0.0	0.0	0.0	0.0		0.00
CLASS 15		0.00	0.0	0.0	0.0	0.0		0.00
CLASS 16		0.00	0.0	0.0	0.0	0.0		0.00
TOTAL VALUES	26.5 100.0	436.48	589.9	513.2				236.24

AVERAGE DAILY 18 KIP EQUIVALENT AXLE LOAD: 236.24

20 YEAR EQUIVALENT AXLE LOAD: 1,724,580

2013 AADT = 1,600
2015 AADT = 1650
2035 AADT = 2230
DHV = 360
Direction =
Com Trks = 26.5%
ESAL = 236.24
AGR = 1.500%

* Equivalency Factors: WIM Data (2009 to 2013)

RAIL TRANSIT AND PLANNING DIVISION
DATA COLLECTION SECTION
Worksheet for Engineering and Planning Purposes

Project Description:

Minor Flexible

IM 90-9(97)511

Battlefield Rest Area

Control No. 2012001

S-342: RP 000+0.000 to 000+0.859

*Truck Distribution**

Date: 2-Jul-13

<u>2013</u>	AADT= <u>580</u>	PRESENT	5	59.3 %	3.3 %
			6	3.7 %	0.2 %
			7	0.0 %	0.0 %
<u>2015</u>	AADT= <u>590</u>	LETTING YEAR	8	20.4 %	1.1 %
<u>2035</u>	AADT= <u>720</u>	DESIGN YEAR	9	13.0 %	0.7 %
	DHV= <u>200</u>		10	1.9 %	0.1 %
	D= _____		11	0.0 %	0.0 %
	T= <u>5.6%</u>		12	0.0 %	0.0 %
	EAL= <u>11</u>		13	1.9 %	0.1 %
	AGR= <u>1.0%</u>				
				100.0 %	5.6 %

2012

AADT*= <u>570</u>	
BUS= <u>1.2%</u>	7
COM= <u>5.6%</u>	32
FUT= <u>1.0%</u>	
DHV= <u>28.00%</u>	

* Distribution: 2012 Vehicle Class
Count (Site ID: 2-5-8)

* AADT & Growth Rate: 2012 TYC

PROJECT DESCRIPTION:

IM 90-9(97)511
Battlefield Rest Area
Control No. 2012001

DATE: 02-Jul-13

PAVEMENT:

RIGID:
FLEXIBLE: X

LETTING YEAR AADT:
DESIGN YEAR AADT:

590 LETTING YEAR
720 DESIGN YEAR

2015
2035

LANE DESIGN FACTOR:

100 %

VEHICLE TYPE	% OF TYPE	LETTING YEAR AADT	DESIGN YEAR AADT	MEAN YEAR AADT	DIRECTIONAL AADT	DESIGN LANE AADT	18K EQUIV RATE FAC	MEAN YEAR AADT
CLASS 1 & 2	47.0	277.30	338.4	307.9	153.9	153.9	0.001	0.15
CLASS 3	46.2	272.58	332.6	302.6	151.3	151.3	0.007	1.06
CLASS 4	1.2	7.25	8.8	8.0	4.0	4.0	0.672	2.70
CLASS 5	3.3	19.63	24.0	21.8	10.9	10.9	0.143	1.56
CLASS 6	0.2	1.23	1.5	1.4	0.7	0.7	0.526	0.36
CLASS 7	0.0	0.00	0.0	0.0	0.0	0.0	0.802	0.00
CLASS 8	1.1	6.75	8.2	7.5	3.7	3.7	0.375	1.40
CLASS 9	0.7	4.29	5.2	4.8	2.4	2.4	1.078	2.57
CLASS 10	0.1	0.61	0.7	0.7	0.3	0.3	0.959	0.33
CLASS 11	0.0	0.00	0.0	0.0	0.0	0.0	0.811	0.00
CLASS 12	0.0	0.00	0.0	0.0	0.0	0.0	0.694	0.00
CLASS 13	0.1	0.61	0.7	0.7	0.3	0.3	1.517	0.52
CLASS 14	0.0	0.00	0.0	0.0	0.0	0.0	0.00	0.00
CLASS 15	0.0	0.00	0.0	0.0	0.0	0.0	0.00	0.00
CLASS 16	0.0	0.00	0.0	0.0	0.0	0.0	0.00	0.00
TOTAL VALUES	5.6 100.0	33.12	40.4	36.8				10.65

AVERAGE DAILY 18 KIP EQUIVALENT AXLE LOAD:

10.65

20 YEAR EQUIVALENT AXLE LOAD:

77,723

2013 AADT = 580
2015 AADT = 590
2035 AADT = 720
DHV = 200
Direction =
Com Trks = 5.6%
ESAL = 10.65
AGR = 1.000%

* Equivalency Factors: WIM Data (2009 to 2013)

RAMP_ID	INT_NAME	AADT_2003	AADT_2004	AADT_2005	AADT_2006	AADT_2007	AADT_2008	AADT_2009	AADT_2010	AADT_2011	AADT_2012
R090E5100FA	LITTLE BIG HORN BATTLEFIELD - Exit 510	1420						1440			
R090E5100NA	LITTLE BIG HORN BATTLEFIELD - Exit 510	130						140			
R090W5100FA	LITTLE BIG HORN BATTLEFIELD - Exit 510	240						180			
R090W5100NA	LITTLE BIG HORN BATTLEFIELD - Exit 510	1430						1360			

Vehicle Class Count

For Year: 2011
Big Horn County
Station 4-007
Tech:

Location ID: 02-4-7

Functional Class: Principal Arterial - Int - Rur

Traffic Factor Group: RI

I-90, RP 506, N of Crow Agency

(AVCC)

Vehicle Types	TYPE (Bin)	Ascending Direction EB All Lanes	Descending Direction WB All Lanes	Roadway
Motorcycles	1	70	61	131
Passenger Cars	2	2640	2400	5040
Pickups	3	1210	1553	2763
Buses	4	18	29	47
Small Trucks	5	44	44	88
	6	25	26	51
	7	5	4	9
Large Trucks	8	95	128	223
	9	433	438	871
	10	44	42	86
	11	4	6	10
	12	4	7	11
	13	97	100	197
Other	14	46	50	96
	TOTAL	4735	4888	9623
	Directional Spilt	0.49%	0.51%	100%
% Usage by Vehicle Type	Ascending Direction	Descending Direction		
	EB All Lanes%	WB All Lanes%	Total %	Total #
Motorcycles (Type 1)	1.48%	1.25%	1.36%	99
Passenger Car (Type 2)	55.76%	49.10%	52.37%	3823
Pickups (Type 3)	25.55%	31.77%	28.71%	2096
Buses (type 4)	0.38%	0.59%	0.49%	36
Small Trucks (type 5-7)	1.56%	1.51%	1.54%	112
Large Trucks (type 8-13)	14.30%	14.75%	14.53%	1061
All Vehicles (Types 1-13)	99.03%	98.97%	99%	7227
Unclassified (Type 14)	0.97%	1.02%	1.00%	73
TYPE 5 - 13	Commercial	Commercial		
	EB All Lanes%	WB All Lanes%	Total Commercial %	Total Commercial
	15.86%	16.26%	16.07%	1173
			AADT	7300

* NOTES-- None

Short Term Profile
For Year: 2011
Big Horn County
Station 4-007
Tech:

Location ID: 02-4-7
Functional Class: Principal Arterial - Int - Rur
Traffic Factor Group: RI
I-90, RP 506, N of Crow Agency

(STP)

Year	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
AADT	7,300	7,490	7,730	5,550	5,930	5,830	7,580	7,580			6,290		5,730	6,800			6,940	6,170	7,030	
Source	A	A	A	E	E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

HOURLY FULL DETAIL

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
07/12	Class 1	E	0	0	0	0	0	0	0	5	6	10	6	7	7	6	3	9	7	5	4	1	0	1	0	0	0	70
07/12	Class 1	W	0	0	0	0	0	0	0	2	4	4	4	4	4	2	5	5	7	12	8	2	2	3	1	0	0	61
07/12	Class 1	T	0	0	0	0	0	0	0	5	8	14	10	11	11	8	8	14	14	17	12	3	2	4	1	0	0	131
07/12	Class 2	E	38	27	11	7	9	20	59	139	179	164	162	170	170	170	167	192	180	176	168	159	132	96	90	73	52	2,640
07/12	Class 2	W	28	18	12	9	8	11	29	65	95	115	127	156	178	195	184	186	238	230	155	108	80	69	59	45	2,400	
07/12	Class 2	T	66	45	23	16	17	31	88	204	274	279	289	326	348	362	376	366	414	398	314	240	176	159	132	97	5,040	
07/12	Class 3	E	13	8	8	4	10	14	36	69	77	73	78	82	80	75	88	83	81	72	62	58	48	44	31	16	1,210	
07/12	Class 3	W	13	11	7	5	7	14	23	48	69	81	100	108	113	125	121	117	148	126	90	69	58	46	29	25	1,553	
07/12	Class 3	T	26	19	15	9	17	28	59	117	146	154	178	190	193	200	209	200	229	198	152	127	106	90	60	41	2,763	
07/12	Class 4	E	1	1	0	1	0	1	0	2	1	1	1	2	0	2	0	1	2	1	0	0	1	0	0	0	0	18
07/12	Class 4	W	1	0	0	1	0	1	0	0	2	1	5	3	2	3	0	2	3	1	1	1	1	1	0	0	0	29
07/12	Class 4	T	2	1	0	2	0	1	1	0	4	2	6	5	5	2	5	0	3	5	2	1	1	2	1	1	0	47
07/12	Class 5	E	0	0	0	0	1	1	1	2	4	5	3	2	3	3	3	5	2	2	2	2	1	2	1	1	0	44
07/12	Class 5	W	0	0	0	0	0	0	1	1	1	2	4	6	4	3	5	4	3	2	3	3	0	1	1	0	0	44
07/12	Class 5	T	0	0	0	0	1	1	2	3	5	7	7	8	7	6	8	9	5	4	5	4	2	2	2	0	0	88
07/12	Class 6	E	0	0	0	0	1	0	4	2	2	2	2	2	1	1	3	3	1	0	0	1	0	0	0	0	0	25
07/12	Class 6	W	0	0	0	0	0	0	0	2	2	3	3	3	1	2	2	2	2	1	2	1	1	0	0	0	0	26
07/12	Class 6	T	0	0	0	0	1	0	4	4	4	5	5	5	3	3	5	5	3	1	2	2	1	0	0	0	0	51
07/12	Class 7	E	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	5
07/12	Class 7	W	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	4
07/12	Class 7	T	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	2	1	1	0	0	0	0	0	0	0	9
07/12	Class 8	E	0	0	0	1	1	0	1	4	7	9	9	9	9	4	8	7	6	5	10	3	2	3	3	2	1	95
07/12	Class 8	W	1	0	0	0	1	1	1	3	6	6	8	8	9	9	12	13	11	17	13	7	3	3	2	1	1	128
07/12	Class 8	T	1	0	0	1	2	1	2	7	13	15	17	18	13	13	20	20	17	22	23	10	5	6	5	3	2	223
07/12	Class 9	E	7	7	5	5	8	10	16	20	23	30	25	36	31	28	29	23	26	20	23	17	16	11	8	9	433	
07/12	Class 9	W	11	7	5	8	9	13	9	18	20	24	23	17	27	31	29	28	26	24	26	21	22	14	16	10	438	
07/12	Class 9	T	18	14	10	13	17	23	25	38	43	54	48	53	58	59	58	51	52	44	49	38	38	25	24	19	871	
07/12	Class 10	E	1	0	0	1	0	1	1	3	5	2	3	3	3	4	3	2	1	4	2	1	1	1	1	1	1	44
07/12	Class 10	W	0	1	0	0	0	1	1	1	2	2	3	2	3	5	3	4	3	4	3	3	0	1	0	0	0	42
07/12	Class 10	T	1	1	0	1	0	2	2	4	7	4	6	5	6	6	9	6	6	4	8	5	4	1	2	1	1	86
07/12	Class 11	E	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	4
07/12	Class 11	W	0	0	0	0	0	0	1	0	0	1	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	6
07/12	Class 11	T	0	0	1	0	0	0	1	0	1	1	2	0	1	1	0	0	0	0	1	0	0	1	0	0	0	10
07/12	Class 12	E	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
07/12	Class 12	W	0	0	0	0	0	1	1	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	7

Short Term Profile
For Year: 2011
Big Horn County
Station 4-007
Tech:

Location ID: 02-4-7
Functional Class: Principal Arterial - Int - Rur
Traffic Factor Group: RI
I-90, RP 506, N of Crow Agency

(STP)

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
07/12	Class 12	T	0	0	0	0	0	0	1	2	0	0	1	0	1	0	1	2	0	0	0	0	0	0	0	1	2	11
07/12	Class 13	E	1	1	1	2	1	2	3	5	7	9	8	5	3	6	6	6	6	4	4	4	3	6	3	4	3	97
07/12	Class 13	W	0	1	1	1	4	4	3	4	5	7	6	5	7	8	8	7	11	6	4	2	2	2	1	2	1	100
07/12	Class 13	T	1	2	2	3	5	6	6	9	12	16	14	10	10	14	14	13	15	10	8	5	8	4	6	4	197	
07/12	Unclassed	E	0	1	0	0	0	1	2	3	3	5	5	2	3	4	3	2	3	3	2	1	1	1	1	0	46	
07/12	Unclassed	W	0	1	0	0	0	0	0	1	3	2	3	3	4	6	2	6	7	5	3	2	1	1	0	0	50	
07/12	Unclassed	T	0	2	0	0	0	1	2	4	6	7	8	5	7	10	5	8	10	8	5	3	2	2	1	0	96	
07/12	Sm. Truck	E	0	0	0	0	2	1	5	4	6	8	6	5	4	4	6	9	4	2	2	2	2	1	1	0	74	
07/12	Sm. Truck	W	0	0	0	0	0	0	1	3	3	5	7	7	7	6	7	7	5	4	5	4	1	1	1	0	74	
07/12	Sm. Truck	T	0	0	0	0	2	1	6	7	9	13	13	12	11	10	13	16	9	6	7	6	3	2	2	0	148	
07/12	Lg. Truck	E	9	8	7	9	10	13	22	32	43	51	45	53	41	47	45	37	36	38	32	23	27	18	16	15	677	
07/12	Lg. Truck	W	12	9	6	9	14	20	16	26	33	40	42	34	47	57	55	50	57	48	40	29	27	18	19	13	721	
07/12	Lg. Truck	T	21	17	13	18	24	33	38	58	76	91	87	87	88	104	100	87	93	86	72	52	54	36	35	28	1,398	
07/12	CV	E	9	8	7	9	12	14	27	36	49	59	51	58	45	51	51	46	40	40	34	25	29	19	17	15	751	
07/12	CV	W	12	9	6	9	14	20	17	29	36	45	49	41	54	63	62	57	62	52	45	33	28	19	20	13	795	
07/12	CV	T	21	17	13	18	26	34	44	65	85	104	100	99	99	114	113	103	102	92	79	58	57	38	37	28	1,546	
07/12	Volume	E	61	45	26	21	31	49	125	252	316	312	303	321	304	302	343	319	307	288	258	216	176	154	123	83	4,735	
07/12	Volume	W	54	39	25	24	29	46	69	143	207	248	288	315	353	397	374	375	470	422	296	215	171	137	108	83	4,888	
07/12	Volume	T	115	84	51	45	60	95	194	395	523	560	591	636	657	699	717	694	777	710	554	431	347	291	231	166	9,623	

RAW BIN DETAIL

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
07/11	Class 1	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	8	7	2	2	2	0	2	0	2	0	0	23
07/11	Class 1	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	2	7	12	9	0	0	2	2	1	0	35	
07/11	Class 2	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	203	174	182	147	167	135	85	89	58	33	1273	
07/11	Class 2	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	181	194	235	234	133	112	75	55	54	37	1310	
07/11	Class 3	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	93	73	78	68	53	60	56	35	28	12	556	
07/11	Class 3	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	109	116	157	116	77	63	54	39	26	20	777	
07/11	Class 4	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	0	3	1	0	0	1	0	0	0	5	
07/11	Class 4	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	1	2	4	1	1	1	1	1	1	0	13	
07/11	Class 5	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	2	4	2	4	2	0	2	0	0	1	17	
07/11	Class 5	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	6	7	4	2	1	2	0	1	1	0	24	
07/11	Class 6	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	3	1	0	0	0	0	1	0	1	0	6	
07/11	Class 6	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	2	3	1	2	0	0	0	0	0	8	
07/11	Class 7	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	0	1	0	0	0	0	0	0	0	1	
07/11	Class 7	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	1	0	2	0	0	0	0	0	0	3	
07/11	Class 8	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	7	3	2	8	3	0	0	3	2	1	29	
07/11	Class 8	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	13	10	11	8	2	3	2	2	2	2	55	
07/11	Class 9	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	16	17	23	21	15	16	12	13	9	6	148	
07/11	Class 9	W	N	N	N	N	N	N	N	N	N	N	N	N	N	0	26	27	24	20	26	22	23	14	13	11	206	
07/11	Class 10	E	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	2	0	3	2	0	1	1	0	0	9	

Short Term Profile
For Year: 2011
Big Horn County
Station 4-007
Tech:

Location ID: 02-4-7
Functional Class: Principal Arterial - Int - Rur
Traffic Factor Group: RI
I-90, RP 506, N of Crow Agency

(STP)

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
07/11	Class 10	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	3	1	1	2	1	2	0	0	0	0	10
07/11	Class 11	E	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	1	0	0	0	1
07/11	Class 11	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	0	0	1	0	0	0	0	0	0	1
07/11	Class 12	E	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	0	1	1	2
07/11	Class 12	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	3	0	0	0	0	0	0	0	0	1	4
07/11	Class 13	E	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	4	6	3	3	5	3	8	2	4	3	41
07/11	Class 13	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	5	9	11	6	2	1	1	0	2	0	37
07/11	Unclassified	E	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	3	2	3	1	2	0	1	0	0	0	12
07/11	Unclassified	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	3	5	7	4	3	2	0	0	0	0	24
07/12	Class 1	E	0	1	0	0	0	0	0	11	4	6	5	6	5	2	7	6	8	1	1	0	1	0	0	0	0	64
07/12	Class 1	W	0	1	0	0	0	0	1	0	3	5	4	5	1	3	4	5	7	7	4	3	2	1	0	0	0	56
07/12	Class 2	E	31	23	5	4	9	20	62	143	177	154	158	157	180	147	177	174	149	171	139	125	104	93	82	59	2543	
07/12	Class 2	W	20	19	11	9	8	12	28	57	93	115	127	159	162	175	164	186	231	219	169	90	82	70	59	40	2305	
07/12	Class 3	E	12	4	2	7	5	13	34	70	77	77	61	80	72	72	75	81	97	73	57	52	42	38	31	15	1147	
07/12	Class 3	W	13	10	7	4	9	15	19	51	73	73	98	108	109	118	118	120	138	131	94	63	61	47	35	21	1535	
07/12	Class 4	E	0	2	1	0	0	0	2	0	1	0	0	2	0	3	0	1	1	0	1	0	2	0	2	1	1	19
07/12	Class 4	W	1	0	0	1	0	1	0	0	2	1	7	2	2	2	0	1	4	2	2	0	1	2	1	0	0	30
07/12	Class 5	E	0	0	0	1	1	1	0	3	4	8	3	2	4	4	3	4	1	1	2	2	1	1	1	0	0	47
07/12	Class 5	W	1	0	0	1	0	0	1	0	1	0	1	8	5	2	5	1	3	3	6	6	0	0	0	1	0	45
07/12	Class 6	E	0	0	0	0	0	0	4	2	2	2	4	1	2	1	3	3	1	0	1	2	0	0	0	0	0	28
07/12	Class 6	W	0	0	0	0	0	0	0	3	2	2	3	1	0	1	3	0	1	0	1	2	0	1	0	0	0	20
07/12	Class 7	E	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4
07/12	Class 7	W	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	4
07/12	Class 8	E	0	0	0	1	1	0	0	7	5	9	6	4	4	3	5	4	3	6	9	5	3	4	2	1	1	79
07/12	Class 8	W	0	0	0	0	2	1	1	5	4	5	7	12	8	7	12	11	21	11	10	2	6	1	0	0	0	126
07/12	Class 9	E	4	7	4	7	6	5	14	23	21	24	25	27	28	29	28	28	24	17	25	13	17	10	11	12	409	
07/12	Class 9	W	6	6	5	5	10	10	12	17	13	20	28	19	21	26	37	22	18	24	29	20	21	15	14	13	411	
07/12	Class 10	E	0	1	1	1	1	0	2	2	2	1	2	4	3	5	5	1	2	5	0	3	3	1	1	2	48	
07/12	Class 10	W	0	0	0	0	0	0	2	1	1	3	2	1	1	5	2	5	2	3	3	3	0	1	0	0	0	38
07/12	Class 11	E	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	6
07/12	Class 11	W	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4
07/12	Class 12	E	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
07/12	Class 12	W	0	0	0	0	0	2	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	8
07/12	Class 13	E	1	1	0	2	2	1	2	4	4	6	9	8	3	2	4	9	3	5	5	4	7	4	3	3	3	92
07/12	Class 13	W	0	0	0	2	3	3	3	5	6	5	6	6	7	8	6	6	9	4	2	3	3	1	2	2	2	92
07/12	Unclassified	E	0	0	0	0	0	0	1	1	4	7	7	3	3	3	3	3	2	4	3	1	1	2	1	0	0	47
07/12	Unclassified	W	0	0	0	0	0	1	0	1	2	3	3	2	3	6	1	7	6	7	6	0	0	2	0	0	0	50
07/13	Class 1	E	0	0	0	0	1	0	1	2	10	13	6	8	7	4	12	8	6	9	0	1	1	0	0	0	0	89
07/13	Class 1	W	0	0	0	0	0	0	0	0	2	3	3	3	3	7	8	8	16	8	2	2	5	0	0	0	0	70
07/13	Class 2	E	27	25	11	8	11	22	56	129	183	173	165	182	159	187	197	191	196	185	170	137	99	88	79	64	2744	

Short Term Profile
For Year: 2011
Big Horn County
Station 4-007
Tech:

Location ID: 02-4-7
Functional Class: Principal Arterial - Int - Rur
Traffic Factor Group: RI
I-90, RP 506, N of Crow Agency

(STP)

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
07/13	Class 2	W	21	12	12	8	13	7	29	67	104	115	126	152	194	214	206	178	249	237	162	121	84	83	63	58	2515
07/13	Class 3	E	13	6	12	3	13	16	37	74	68	69	95	83	88	78	95	95	69	76	77	63	45	59	35	21	1290
07/13	Class 3	W	14	13	5	5	9	12	31	35	64	89	102	108	117	131	137	116	148	130	98	80	59	51	27	34	1615
07/13	Class 4	E	3	1	0	2	0	1	0	0	3	2	1	2	0	1	0	1	3	1	0	0	1	0	0	0	22
07/13	Class 4	W	2	0	0	1	0	1	1	1	2	1	3	3	2	3	0	4	2	1	1	1	1	0	0	0	29
07/13	Class 5	E	0	0	0	0	0	1	2	3	3	2	3	1	2	2	4	7	4	2	2	1	2	1	3	0	45
07/13	Class 5	W	0	0	1	0	0	0	1	2	0	4	6	4	3	4	5	3	3	1	2	2	1	2	1	0	45
07/13	Class 6	E	0	0	0	0	2	0	4	0	0	0	1	2	0	1	2	4	1	1	0	1	0	1	0	0	20
07/13	Class 6	W	0	0	1	1	0	0	1	3	5	3	3	0	3	3	2	3	2	2	2	2	2	0	0	0	37
07/13	Class 7	E	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	4
07/13	Class 7	W	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	4
07/13	Class 8	E	1	0	0	1	2	0	1	2	7	8	11	14	4	11	10	13	8	13	1	4	4	3	2	0	120
07/13	Class 8	W	2	0	0	0	0	1	2	0	9	7	8	6	9	17	14	12	18	21	9	4	1	3	0	0	143
07/13	Class 9	E	5	5	9	4	10	11	17	21	22	35	25	45	33	27	44	25	32	21	30	23	20	11	5	8	488
07/13	Class 9	W	13	11	5	13	7	10	8	15	25	27	18	14	32	36	24	34	37	28	24	21	21	14	20	6	463
07/13	Class 10	E	1	0	0	1	0	0	0	1	5	3	3	2	2	3	4	3	2	3	4	1	0	1	3	0	42
07/13	Class 10	W	0	0	0	0	0	0	0	1	2	1	3	3	4	4	3	6	6	7	4	3	0	2	1	1	51
07/13	Class 11	E	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	0	1	7
07/13	Class 11	W	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	5
07/13	Class 12	E	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	1	7
07/13	Class 12	W	0	0	0	0	0	1	2	0	0	0	0	1	0	0	2	0	0	0	0	1	0	0	0	1	8
07/13	Class 13	E	0	1	2	1	1	3	5	6	6	11	6	2	3	9	10	4	6	5	2	3	4	4	5	2	101
07/13	Class 13	W	0	1	1	0	4	4	2	4	5	8	5	4	6	8	12	5	12	7	9	2	2	2	1	1	105
07/13	Unclassed	E	0	0	0	0	0	2	3	7	3	3	2	1	2	4	3	3	1	4	2	1	1	2	1	0	45
07/13	Unclassed	W	0	0	0	0	0	0	0	1	2	0	3	3	4	6	3	5	8	4	1	3	2	1	0	0	46
07/14	Class 1	E	0	0	0	0	0	0	0	1	4	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	7
07/14	Class 1	W	0	0	0	0	0	0	0	0	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	5
07/14	Class 2	E	56	33	18	9	6	18	59	146	176	183	N	N	N	N	N	N	N	N	N	N	N	N	N	N	704
07/14	Class 2	W	42	22	13	11	2	13	31	72	89	118	N	N	N	N	N	N	N	N	N	N	N	N	N	N	413
07/14	Class 3	E	14	13	9	3	11	14	36	63	86	70	N	N	N	N	N	N	N	N	N	N	N	N	N	N	319
07/14	Class 3	W	11	9	8	5	4	14	18	58	70	95	N	N	N	N	N	N	N	N	N	N	N	N	N	N	292
07/14	Class 4	E	0	1	0	0	1	0	0	0	1	0	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3

FACTOR USED: SDOWF 0.759 RI

* NOTES-- None
Source Legend: A (Actual) , E (Estimate) , M (Manually Entered), L (Legacy), C (Unknown)

Vehicle Class Count

For Year: 2012
Big Horn County
Station 5-001
Tech: SHEILA

Location ID: 02-5-1

Functional Class: Principal Arterial - Rur

Traffic Factor Group: RPA

US-212 (N-37), RP 1, E of S-342

(AVCC)

Vehicle Types	TYPE (Bin)	Ascending Direction EB All Lanes	Descending Direction WB All Lanes	Roadway
Motorcycles	1	13	20	33
Passenger Cars	2	479	298	777
Pickups	3	264	385	649
Buses	4	11	15	26
Small Trucks	5	18	36	54
	6	7	7	14
	7	0	1	1
Large Trucks	8	14	17	31
	9	180	166	346
	10	18	15	33
	11	4	7	11
	12	0	0	0
	13	29	23	52
Other	14	8	8	16
	TOTAL	1045	998	2043
	Directional Split	0.51%	0.49%	100%
% Usage by Vehicle Type	Ascending Direction	Descending Direction		
	EB All Lanes%	WB All Lanes%	Total %	Total #
Motorcycles (Type 1)	1.24%	2.00%	1.62%	26
Passenger Car (Type 2)	45.84%	29.86%	38.03%	601
Pickups (Type 3)	25.26%	38.58%	31.77%	502
Buses (type 4)	1.05%	1.50%	1.27%	20
Small Trucks (type 5-7)	2.39%	4.41%	3.38%	53
Large Trucks (type 8-13)	23.44%	22.85%	23.15%	366
All Vehicles (Types 1-13)	99.22%	99.2%	99.22%	1568
Unclassified (Type 14)	0.77%	0.80%	0.78%	12
TYPE 5 - 13	Commercial	Commercial		
	EB All Lanes%	WB All Lanes%	Total Commercial %	Total Commercial
	25.83%	27.26%	26.53%	419
			AADT	1580

* NOTES-- None



Montana Department
of Transportation
MDTA

Short Term Profile
For Year: 2012
Big Horn County
Station 5-001
Tech: SHEILA

Location ID: 02-5-1
Functional Class: Principal Arterial - Rur
Traffic Factor Group: RPA
US-212 (N-37), RP 1, E of S-342

(STP)

Year	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993
AADT	1,580	1,490	1,910	1,640	1,390	1,630	1,930	1,740	1,740	1,320	1,480	1,560	1,410	1,170	1,320	1,080	1,500	1,430	1,230	1,030
Source	A	A	A	A	A	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L

HOURLY FULL DETAIL

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
08/22	Class 1	E	0	0	0	0	0	0	0	0	0	0	1	3	4	0	0	1	1	0	1	1	0	0	0	0	13
08/22	Class 1	W	0	0	0	0	0	0	0	0	0	0	2	3	5	1	2	0	1	2	4	0	0	0	0	0	20
08/22	Class 1	T	0	0	0	0	0	0	0	0	0	0	1	3	6	9	1	2	1	2	2	5	1	0	0	0	33
08/22	Class 2	E	7	3	0	3	2	6	12	28	31	26	19	27	34	25	30	36	34	37	26	17	23	24	17	12	479
08/22	Class 2	W	1	2	1	1	0	0	3	7	10	19	16	13	27	20	21	31	26	32	20	9	12	14	10	3	298
08/22	Class 2	T	8	5	1	4	2	6	15	35	41	45	35	40	61	45	51	67	60	69	46	26	35	38	27	15	777
08/22	Class 3	E	4	2	2	0	2	1	9	21	14	19	16	17	14	18	15	17	18	15	18	14	9	9	5	5	264
08/22	Class 3	W	2	2	2	1	2	3	2	11	18	25	26	32	25	34	33	36	32	30	25	12	10	13	8	1	385
08/22	Class 3	T	6	4	4	1	4	4	11	32	32	44	42	49	39	52	48	53	50	45	43	26	19	22	13	6	649
08/22	Class 4	E	0	0	1	0	0	0	0	0	0	1	1	1	1	0	2	0	0	2	0	1	0	0	0	0	11
08/22	Class 4	W	0	0	0	0	0	0	0	0	0	0	1	1	2	0	2	1	2	1	2	1	1	1	0	0	15
08/22	Class 4	T	0	0	1	0	0	0	0	1	0	1	2	2	3	0	4	1	2	3	2	2	1	1	0	0	26
08/22	Class 5	E	0	1	0	0	0	0	0	1	2	2	2	1	1	3	0	1	1	1	1	0	1	0	0	0	18
08/22	Class 5	W	1	0	0	0	0	0	0	2	0	2	3	3	1	5	2	2	3	4	3	1	1	1	1	1	36
08/22	Class 5	T	1	1	0	0	0	0	0	3	2	4	5	4	2	8	2	3	4	5	3	2	1	1	2	1	54
08/22	Class 6	E	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	0	1	0	0	0	0	7
08/22	Class 6	W	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	1	0	0	1	0	1	0	0	0	7
08/22	Class 6	T	0	0	0	0	0	0	0	0	1	0	2	1	0	1	2	2	1	1	1	1	1	0	0	0	14
08/22	Class 7	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/22	Class 7	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
08/22	Class 7	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
08/22	Class 8	E	0	0	0	0	0	0	0	3	1	0	2	1	2	1	1	1	1	1	0	1	0	0	0	0	14
08/22	Class 8	W	0	1	0	0	1	0	0	1	0	2	0	2	1	1	2	1	2	1	1	1	0	0	0	1	17
08/22	Class 8	T	0	1	0	0	0	0	0	4	1	2	2	3	3	2	3	2	3	1	2	0	0	0	1	0	31
08/22	Class 9	E	3	1	1	3	4	6	6	11	10	9	12	9	11	10	16	12	7	11	11	11	6	2	4	4	180
08/22	Class 9	W	3	3	2	3	3	3	6	8	6	8	9	8	13	13	13	9	8	9	10	7	6	4	8	4	166
08/22	Class 9	T	6	4	3	6	7	9	12	19	16	17	21	17	24	23	29	21	15	20	21	18	12	6	12	8	346
08/22	Class 10	E	0	0	0	0	0	0	0	2	0	1	1	1	1	1	2	1	1	3	0	1	1	1	1	0	18
08/22	Class 10	W	0	1	0	0	0	0	0	0	1	0	1	1	1	1	2	0	1	1	2	1	2	0	0	0	15
08/22	Class 10	T	0	1	0	0	0	0	0	2	1	1	2	2	2	2	4	1	2	4	2	2	3	1	1	0	33
08/22	Class 11	E	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
08/22	Class 11	W	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3	2	0	0	0	0	0	7
08/22	Class 11	T	0	0	0	0	1	0	1	2	1	0	0	0	0	0	0	0	1	3	2	0	0	0	0	0	11
08/22	Class 12	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/22	Class 12	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Short Term Profile
For Year: 2012
Big Horn County
Station 5-001
Tech: SHEILA

Location ID: 02-5-1
Functional Class: Principal Arterial - Rur
Traffic Factor Group: RPA
US-212 (N-37), RP 1, E of S-342

(STP)

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
08/22	Class 12	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/22	Class 13	E	1	1	0	0	0	2	1	0	0	1	2	3	2	2	0	1	4	1	2	1	1	1	0	1	3
08/22	Class 13	W	0	0	0	1	1	1	1	1	0	1	1	1	2	0	1	2	0	2	2	2	1	1	1	1	23
08/22	Class 13	T	1	1	0	1	1	3	2	1	0	2	3	4	4	2	1	3	4	3	4	3	2	1	2	4	52
08/22	Unclassed	E	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	8
08/22	Unclassed	W	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	0	0	8
08/22	Unclassed	T	0	0	1	0	0	0	0	1	0	0	1	2	1	2	2	0	1	2	2	1	1	1	0	0	16
08/22	Sm. Truck	E	0	1	0	0	0	0	0	1	3	2	2	1	1	4	1	2	2	2	0	0	0	0	1	0	25
08/22	Sm. Truck	W	1	0	0	0	0	0	0	2	0	2	5	4	1	5	4	3	3	4	4	1	2	1	1	1	44
08/22	Sm. Truck	T	1	1	0	0	0	0	0	3	3	4	7	5	2	9	5	5	5	6	4	3	2	1	2	1	69
08/22	Lg. Truck	E	4	2	1	3	5	8	7	18	12	11	17	14	16	14	19	15	13	15	14	13	8	3	6	7	245
08/22	Lg. Truck	W	3	5	2	4	5	4	8	10	7	11	11	12	17	15	18	12	12	16	17	10	9	5	10	5	228
08/22	Lg. Truck	T	7	7	3	7	10	12	15	28	19	22	28	26	33	29	37	27	25	31	31	23	17	8	16	12	473
08/22	CV	E	4	3	1	3	5	8	7	19	15	13	19	15	17	18	20	17	15	17	14	15	8	3	7	7	270
08/22	CV	W	4	5	2	4	5	4	8	12	7	13	16	16	18	20	22	15	15	20	21	11	11	6	11	6	272
08/22	CV	T	8	8	3	7	10	12	15	31	22	26	35	31	35	38	42	32	30	37	35	26	19	9	18	13	542
08/22	Volume	E	15	8	4	6	9	15	29	69	60	60	57	64	70	62	68	71	69	71	60	49	40	36	29	24	1,045
08/22	Volume	W	7	9	6	6	7	7	13	30	35	57	61	66	78	76	81	83	76	85	73	33	35	35	29	10	998
08/22	Volume	T	22	17	10	12	16	22	42	99	95	117	118	130	148	138	149	154	145	156	133	82	75	71	58	34	2,043

RAW BIN DETAIL

		Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
08/21	Class 1	E	N	N	N	N	N	N	N	N	N	4	0	4	1	0	0	0	0	0	0	2	1	0	0	0	0	12
08/21	Class 1	W	N	N	N	N	N	N	N	N	N	0	1	4	6	0	1	0	1	0	5	0	0	0	0	0	18	
08/21	Class 2	E	N	N	N	N	N	N	N	N	N	24	22	23	33	27	34	36	34	41	22	9	20	24	20	14	383	
08/21	Class 2	W	N	N	N	N	N	N	N	N	N	6	19	13	33	24	28	28	27	30	21	9	16	9	8	3	274	
08/21	Class 3	E	N	N	N	N	N	N	N	N	N	14	13	15	15	19	18	17	16	16	18	21	8	9	5	6	210	
08/21	Class 3	W	N	N	N	N	N	N	N	N	N	24	28	34	31	33	30	34	31	27	18	12	13	12	3	1	331	
08/21	Class 4	E	N	N	N	N	N	N	N	N	N	0	1	1	1	0	2	0	0	0	1	0	1	0	0	0	7	
08/21	Class 4	W	N	N	N	N	N	N	N	N	N	0	1	1	3	0	2	1	1	1	0	2	1	1	2	0	15	
08/21	Class 5	E	N	N	N	N	N	N	N	N	N	0	1	1	0	3	0	1	1	0	0	1	0	0	0	0	8	
08/21	Class 5	W	N	N	N	N	N	N	N	N	N	1	4	3	0	6	1	2	2	4	1	0	1	2	1	0	28	
08/21	Class 6	E	N	N	N	N	N	N	N	N	N	1	0	0	0	0	1	1	1	0	0	1	0	0	0	0	4	
08/21	Class 6	W	N	N	N	N	N	N	N	N	N	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	3	
08/21	Class 7	E	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08/21	Class 7	W	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08/21	Class 8	E	N	N	N	N	N	N	N	N	N	0	1	1	1	0	0	1	0	0	1	0	0	0	0	0	5	
08/21	Class 8	W	N	N	N	N	N	N	N	N	N	2	0	2	0	2	1	2	3	0	0	0	0	0	0	0	12	
08/21	Class 9	E	N	N	N	N	N	N	N	N	N	5	11	9	12	7	14	12	8	9	11	11	6	3	3	3	124	
08/21	Class 9	W	N	N	N	N	N	N	N	N	N	13	3	6	11	17	15	12	7	8	7	13	5	1	5	6	129	
08/21	Class 10	E	N	N	N	N	N	N	N	N	N	0	0	1	2	0	4	1	0	2	0	1	1	0	1	0	13	

Short Term Profile
For Year: 2012
Big Horn County
Station 5-001
Tech: SHEILA

Location ID: 02-5-1
Functional Class: Principal Arterial - Rur
Traffic Factor Group: RPA
US-212 (N-37), RP 1, E of S-342

(STP)

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
08/21	Class 10	W	N	N	N	N	N	N	N	N	N	2	1	0	1	0	2	0	1	1	1	2	0	1	0	0	11	
08/21	Class 11	E	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
08/21	Class 11	W	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	4
08/21	Class 12	E	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/21	Class 12	W	N	N	N	N	N	N	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/21	Class 13	E	N	N	N	N	N	N	N	N	N	2	2	2	2	3	0	1	1	3	0	0	1	1	0	1	3	21
08/21	Class 13	W	N	N	N	N	N	N	N	N	N	3	0	1	2	0	1	1	0	3	2	1	0	1	0	0	15	
08/21	Unclassed	E	N	N	N	N	N	N	N	N	N	2	0	2	0	0	1	0	0	0	1	0	0	0	0	0	6	
08/21	Unclassed	W	N	N	N	N	N	N	N	N	N	0	0	0	1	2	2	0	0	0	0	0	0	1	0	0	7	
08/22	Class 1	E	0	0	0	0	0	0	0	0	0	1	2	1	7	0	0	1	1	1	0	0	0	0	0	0	13	
08/22	Class 1	W	0	0	0	0	0	0	0	0	0	2	2	1	4	2	2	0	3	3	4	2	0	0	0	0	18	
08/22	Class 2	E	8	1	0	4	3	6	12	28	31	26	16	30	34	23	26	36	36	33	29	25	25	23	13	9	474	
08/22	Class 2	W	1	2	1	1	0	0	3	7	10	19	13	13	20	16	14	34	25	33	19	8	8	18	11	3	279	
08/22	Class 3	E	4	3	1	0	2	1	9	21	14	19	19	18	12	17	12	16	19	13	18	7	10	8	4	3	250	
08/22	Class 3	W	1	3	1	2	2	3	2	11	18	25	23	29	19	34	35	37	32	32	31	11	6	13	13	1	384	
08/22	Class 4	E	0	0	1	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	2	0	0	0	0	0	7	
08/22	Class 4	W	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	2	1	1	0	0	0	0	0	9	
08/22	Class 5	E	0	0	0	0	0	0	0	1	2	2	2	1	0	1	1	1	1	1	0	0	0	0	1	0	14	
08/22	Class 5	W	0	0	0	0	0	0	0	2	0	2	1	3	2	4	2	2	3	4	5	1	1	0	0	1	33	
08/22	Class 6	E	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	5	
08/22	Class 6	W	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	1	0	0	0	0	0	5	
08/22	Class 7	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08/22	Class 7	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
08/22	Class 8	E	0	0	0	0	0	0	0	3	1	0	2	0	2	1	2	0	1	0	0	0	0	0	0	0	0	12
08/22	Class 8	W	0	0	0	0	1	0	0	1	0	2	0	2	1	0	2	0	1	2	1	0	0	0	0	1	0	14
08/22	Class 9	E	1	0	2	4	5	6	6	11	10	9	13	9	9	12	17	12	5	13	11	10	5	1	4	4	179	
08/22	Class 9	W	3	2	1	2	2	3	6	8	6	8	14	9	15	8	10	6	8	10	12	1	7	7	11	2	161	
08/22	Class 10	E	0	0	0	0	0	0	0	2	0	1	1	0	0	1	0	0	2	3	0	1	0	1	0	0	12	
08/22	Class 10	W	0	0	0	0	0	0	0	0	1	0	0	2	0	1	2	0	1	0	1	2	2	0	0	0	12	
08/22	Class 11	E	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
08/22	Class 11	W	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	0	6	
08/22	Class 12	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08/22	Class 12	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08/22	Class 13	E	1	2	0	0	0	2	1	0	0	1	1	3	1	0	0	1	4	2	3	1	0	0	1	2	26	
08/22	Class 13	W	0	0	0	0	1	1	1	1	0	1	1	1	2	0	0	2	0	0	1	3	1	1	1	2	1	20
08/22	Unclassed	E	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	2	0	0	1	0	0	0	0	6	
08/22	Unclassed	W	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	
08/23	Class 1	E	0	0	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	
08/23	Class 1	W	0	0	0	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	
08/23	Class 2	E	6	5	0	1	1	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	17	

Short Term Profile
For Year: 2012
Big Horn County
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(STP)

Date	Bin	Road	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
08/23	Class 2	W	0	1	1	0	0	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
08/23	Class 3	E	4	1	2	0	1	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	12
08/23	Class 3	W	2	1	2	0	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	10
08/23	Class 4	E	0	0	0	0	0	0	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0

* NOTES-- None

Source Legend: A (Actual) , E (Estimate) , M (Manually Entered), L (Legacy), C (Unknown)

FACTOR USED: SDOWF 0.772 RPA

Appendix B

Usage Calculation Spreadsheet

Battlefield Rest Area (I-90)

	Description	Variable	Existing (2013) DAY	Existing (2013) NIGHT	Future (2035) DAY ¹	Future (2035) NIGHT ¹	Notes
DATA	Average Annual Daily Traffic	AADT	7,300	7,300	9,286	9,286	Traffic Count Site 2-4-7
	Average Annual Daily Traffic (Trucks)	AADT _t	1,173	1,173	1,492	1,492	Traffic Count Site 2-4-7
	Peak Hour Volume	PHV	717	115	912	146	Traffic Count Site 2-4-7
	Proportion of Mainline Traffic Stopping at Rest Area	P	0.16	0.16	0.16	0.16	Guideline #1 (Rural Highway = 0.25, Interstate = 0.16)
	Total Vehicles Stopping at Facility (Initial Assumption)	D ₁	115	19	146	24	D = PHV * P
	Percentage of Cars Stopping at Facility	D _{c%}	83.93%	83.93%	83.93%	83.93%	D _{c%} = (AADT - AADT _t) / AADT
	Percentage of Trucks Stopping at Facility	D _{t%}	11.25%	32.14%	11.25%	32.14%	Guideline #3 (Day = AADT _t / AADT x 0.7 Night = AADT _t / AADT x 2.0)
	Number of Cars Stopping at Facility	D _c	97	16	123	20	D _c = D _{c%} * D ₁
	Number of Trucks Stopping at Facility	D _t	13	6	16	8	D _t = D _{t%} * D ₁
	Total Vehicles Stopping at Facility During Peak Hour (Factored)	D ₂	110	22	139	28	D = D _c + D _t
	Peak Factor	PF	1.8	1.8	1.8	1.8	AASHTO recommended value
	Average Dwell Time for Cars (Minutes)	VHS _c	11	NA	11	NA	Research from Greycliff (East) Rest Area
	Average Dwell Time for Trucks (Minutes)	VHS _t	38	202	38	202	
	Restroom Users Per Vehicle	UV	1.5	1.5	1.5	1.5	Guideline #9
RECOMMENDED PARKING SPACES	Parking Spaces for Cars (Day Controls)	N _c	32	NA	41	NA	N _c = (PHV * P * D _{c%} * PF * VHS _c) / 60
	Parking Spaces for Trucks (Night Controls)	N _t	15	36	19	46	N _t = (PHV * P * D _{t%} * PF * VHS _t) / 60
RECOMMENDED RESTROOM STALLS	Total Restroom Stalls	T	10	NA	13	NA	T = (UV * PF * D ₂) / 30
	Total Restroom Stalls - Women	T _w	6	NA	8	NA	T _w = T * 0.6
	Total Restroom Stalls - Men	T _m	4	NA	5	NA	T _m = T * 0.4
RECOMMENDED PICNIC TABLES	Total Picnic Tables	PT	19	NA	24	NA	PT = (N _c (Day) + N _t (Day)) * 0.4
RECOMMENDED WASTE RECEPTACLES	Total Waste Receptacles	R	14	NA	18	NA	R = (N _c (Day) + N _t (Day)) * 0.3

Green highlighted cells indicate input values. White cells indicate calculated values. NA: Not Applicable

¹ Compound Annual Growth Rate = 1.1%

Battlefield Rest Area (US 212)							
Description		Variable	Existing (2013) DAY	Existing (2013) NIGHT	Future (2035) DAY ¹	Future (2035) NIGHT ¹	Notes
DATA	Average Annual Daily Traffic	AADT	1,580	1,580	2,192	2,192	Traffic Count Site 2-5-1
	Average Annual Daily Traffic (Trucks)	AADT _t	419	419	581	581	Traffic Count Site 2-5-1
	Peak Hour Volume	PHV	154	22	214	31	Traffic Count Site 2-5-1
	Proportion of Mainline Traffic Stopping at Rest Area	P	0.25	0.25	0.25	0.25	Guideline #1 (Rural Highway = 0.25, Interstate = 0.16)
	Total Vehicles Stopping at Facility (Initial Assumption)	D ₁	39	6	54	8	D = PHV * P
	Percentage of Cars Stopping at Facility	D _{c%}	73.48%	73.48%	73.48%	73.48%	D _{c%} = (AADT - AADT _t) / AADT
	Percentage of Trucks Stopping at Facility	D _{t%}	18.56%	53.04%	18.56%	53.04%	Guideline #3 (Day = AADT _t / AADT x 0.7 Night = AADT _t / AADT x 2.0
	Number of Cars Stopping at Facility	D _c	29	4	40	6	D _c = D _{c%} * D ₁
	Number of Trucks Stopping at Facility	D _t	7	3	10	4	D _t = D _{t%} * D ₁
	Total Vehicles Stopping at Facility During Peak Hour (Factored)	D ₂	36	7	50	10	D = D _c + D _t
	Peak Factor	PF	1.8	1.8	1.8	1.8	AASHTO recommended value
	Average Dwell Time for Cars (Minutes)	VHS _c	10	NA	10	NA	Research from Clearwater Junction Rest Area
	Average Dwell Time for Trucks (Minutes)	VHS _t	25	96	25	96	
	Restroom Users Per Vehicle	UV	1.5	1.5	1.5	1.5	Guideline #9
RECOMMENDED PARKING SPACES	Parking Spaces for Cars (Day Controls)	N _c	9	NA	12	NA	N _c = (PHV * P * D _{c%} * PF * VHS _c) / 60
	Parking Spaces for Trucks (Night Controls)	N _t	6	9	8	12	N _t = (PHV * P * D _{t%} * PF * VHS _t) / 60
RECOMMENDED RESTROOM STALLS	Total Restroom Stalls	T	4	NA	5	NA	T = (UV * PF * D ₂) / 30
	Total Restroom Stalls - Women	T _w	2	NA	3	NA	T _w = T * 0.6
	Total Restroom Stalls - Men	T _m	2	NA	2	NA	T _m = T * 0.4
RECOMMENDED PICNIC TABLES	Total Picnic Tables	PT	6	NA	8	NA	PT = (N _{c(Day)} + N _{t(Day)}) * 0.4
RECOMMENDED WASTE RECEPTACLES	Total Waste Receptacles	R	5	NA	6	NA	R = (N _{c(Day)} + N _{t(Day)}) * 0.3

Green highlighted cells indicate input values. White cells indicate calculated values. NA: Not Applicable

¹ Compound Annual Growth Rate = 1.5%

Appendix C

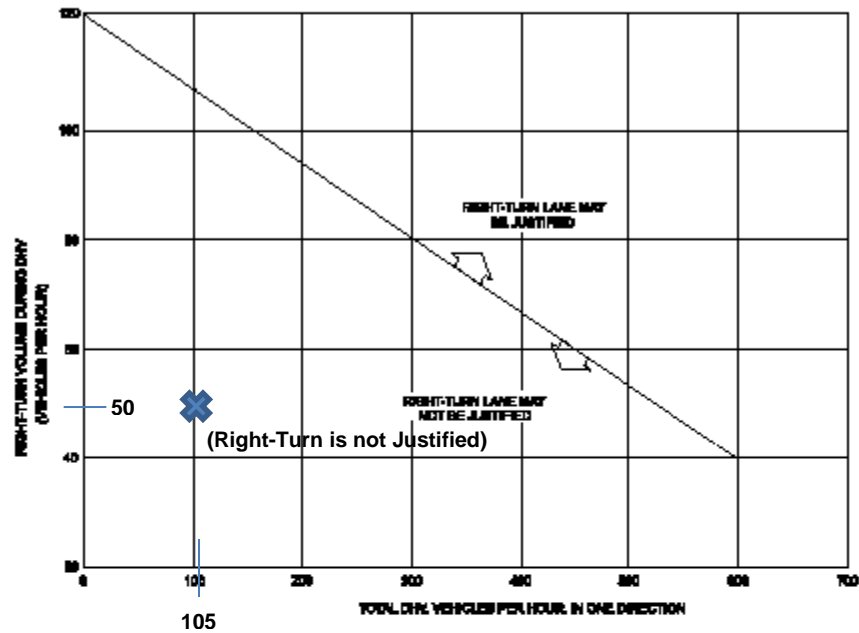
Left- and Right-Turn Analysis Sheets

Proposed Battlefield Rest Area Sites 1 and 2

December 2004

INTERSECTION AT-GRADE

13.3(3)



Note: For highways with a design speed below 50 mph (80 km/h) with a DHV <300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/h)
 DHV = 250 vph
 Right Turns = 100 vph

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high accident rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

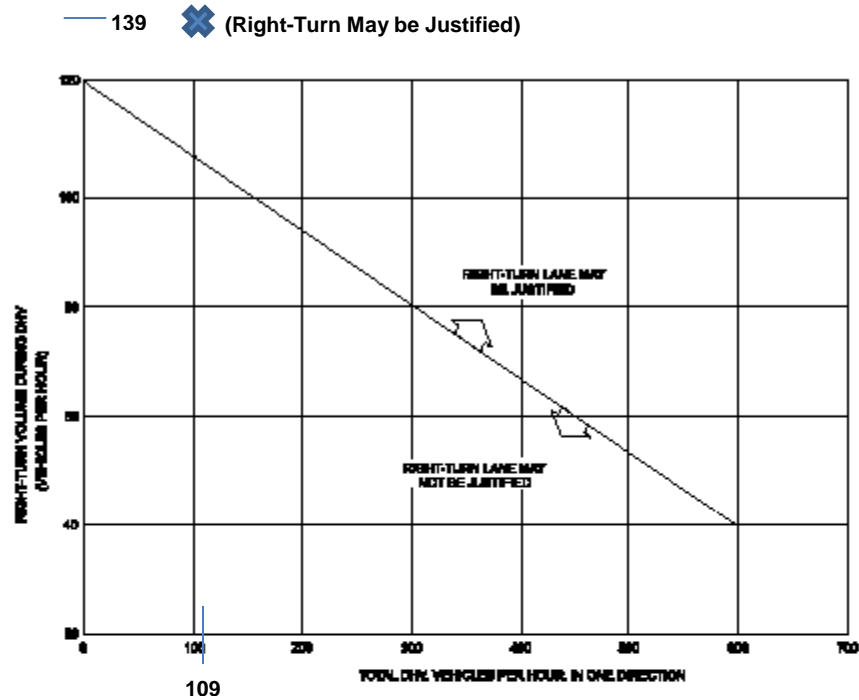
Figure 13.3A

Proposed Battlefield Rest Area Site 3

December 2004

INTERSECTION AT-GRADE

13.3(3)



Note: For highways with a design speed below 50 mph (80 km/h) with a DHV <300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/h)
 DHV = 250 vph
 Right Turns = 100 vph

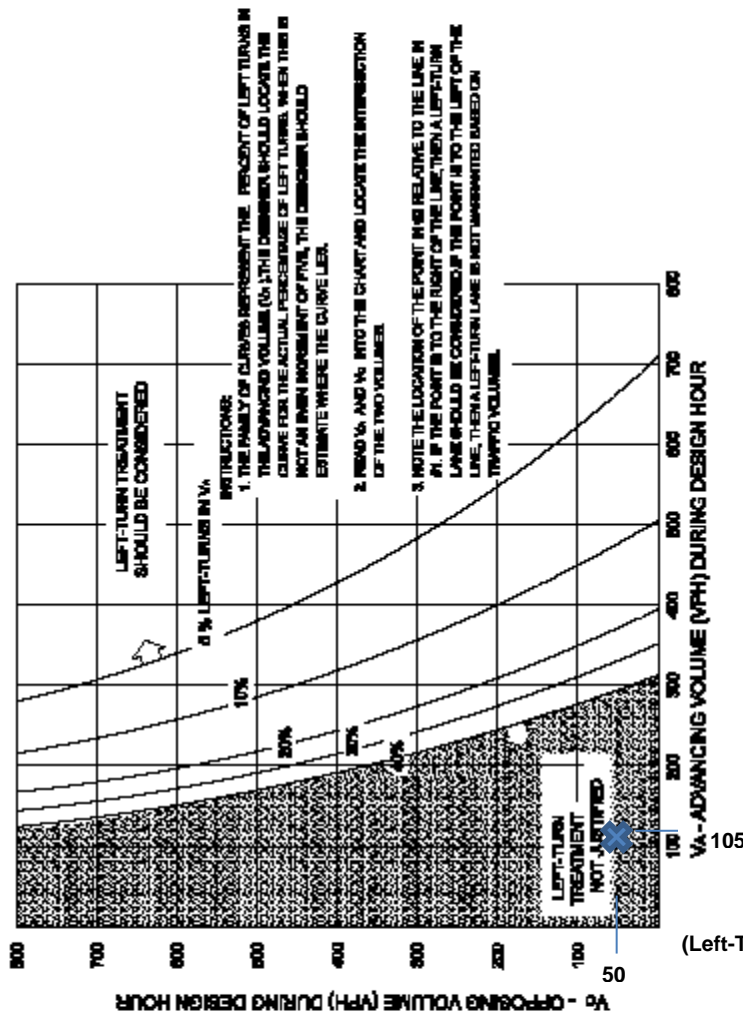
Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high accident rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 13.3A

Proposed Battlefield Rest Area Sites 1 and 2

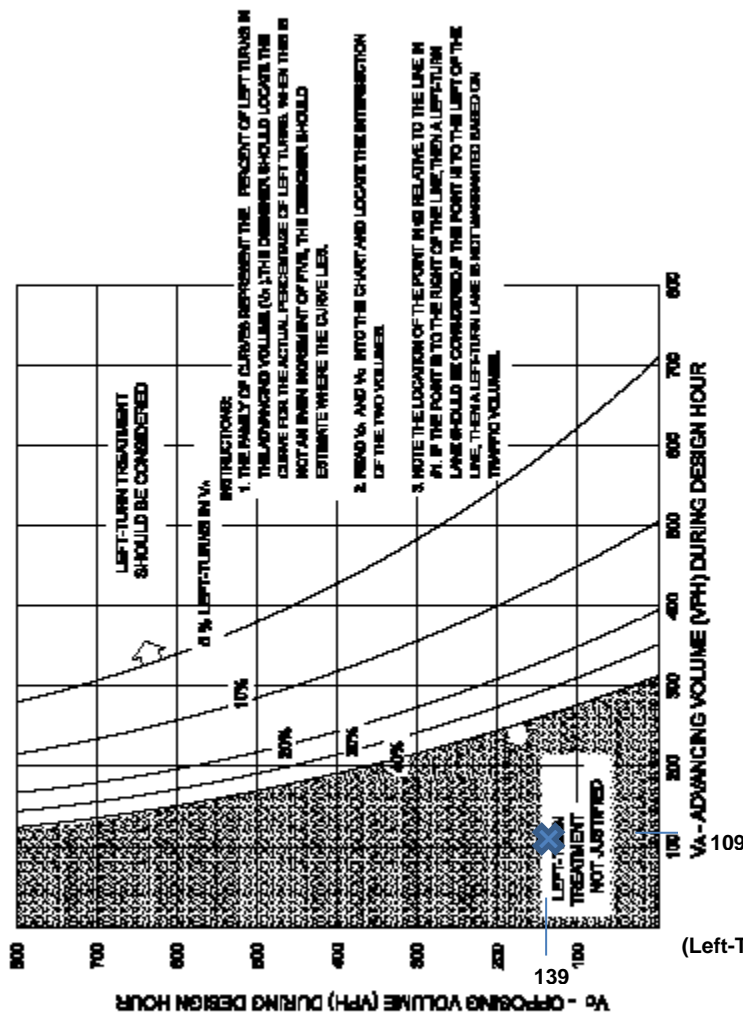


(Left-Turn is not Justified)

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS 50 mph (80 km/h)

Figure 13.3E

Proposed Battlefield Rest Area Site 3



(Left-Turn is not Justified)

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS 50 mph (80 km/h)

Figure 13.3E

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 6

Preliminary Noise Memoranda



MEMORANDUM

DATE: July 31, 2013
TO: Sarah Nicolai / DOWL HKM
FROM: Sean Connolly
RE: **Battlefield Rest Area - Study Site 1**
IM 90-9(97)511, Control No. 2012001
Screening Traffic Noise Analysis (BSA Project #13129)

The Montana Department of Transportation (MDT) is intending to construct a new rest area near the Bighorn Battlefield, Crow Agency, Montana. Three sites are being considered for the development of the rest area, which may also include a new Crow Tribal Museum and a new National Park Service Visitor Center. Study Site 1 is located north of Highway 212, just east of the Custer Battlefield Trading Post (**Figure 1 -attached**). This memo summarizes the adjacent land uses, closest noise-sensitive receptor, traffic data, screening noise level modeling and potential traffic noise impacts for Study Site 1.

Since the rest area will be constructed on undeveloped land, the Battlefield Rest Area project is considered a Type I Project per the U.S. Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise* and MDT's *Traffic Noise Analysis and Abatement Policy* (MDT 2011).

Land parcels adjacent to Study Site 1 are shown on **Figure A**, and ownership information about the parcels is summarized in **Table 1** (MSL 2013). According to the MDT noise policy, Land Use Activity Categories F and G land uses are not sensitive to highway noise, and therefore, traffic noise analysis is not required for Parcels 1-7 (MDT 2011).

The closest noise-sensitive receptor is located west of Study Site 1 on Parcel 8, the Custer Battlefield Trading Company (**Figure A**). This commercial business is classified as Land Use Activity Category E, and therefore, potential traffic noise impacts need to be evaluated (MDT 2011). Therefore, BSA modeled the noise levels at the business located on Parcel 8, due to the I-90, Hwy 212, Battlefield Tour Road and Rest Area – Study Site 1 traffic using FHWA's Traffic Noise Model (TNM), Version 2.5.

Figure A: Parcels Adjacent to Study Site 1

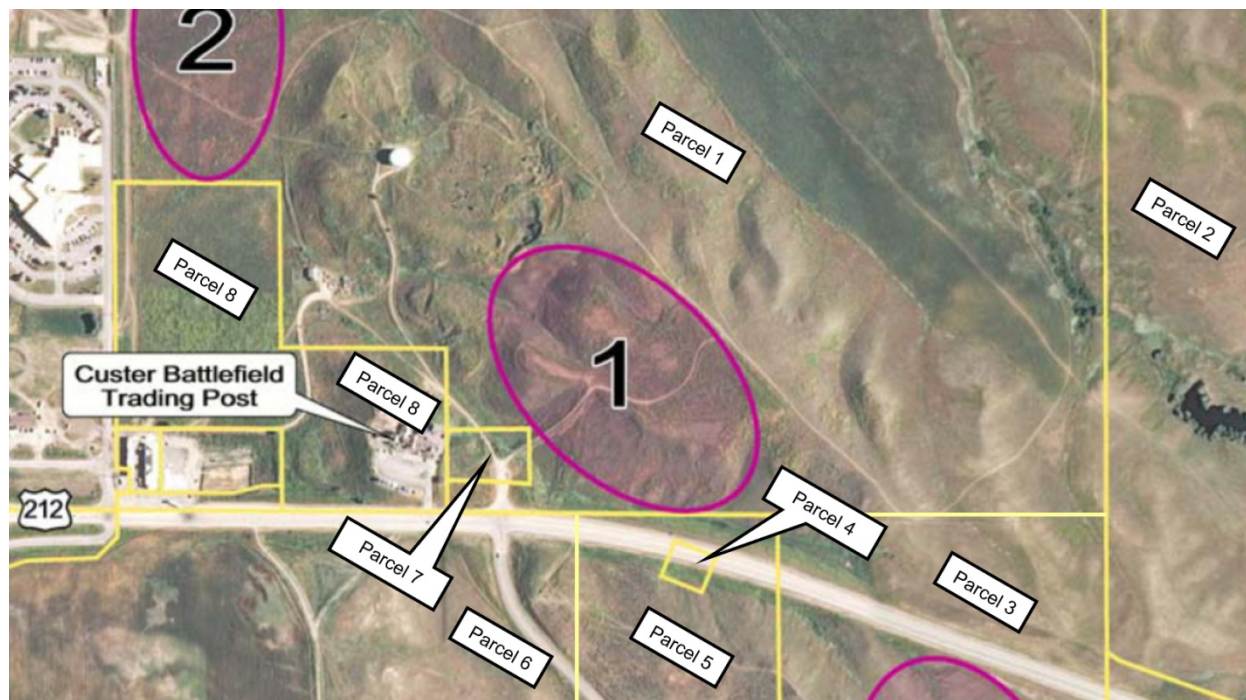


Table 1: Ownership Summary of Parcels Adjacent to Study Site 1

Parcel #	Owner	Geocode	Property Type	MDT Land Use Activity Category	MDT Activity Criteria $L_{eq}(h)$ (dBA)
Parcel 1	USA in trust for Crow Tribe	22-0735-07-2-01-01-0000	Tribal Property	F – utilities (water tower)	NA
Parcel 2	Custer Battlefield Preservation Committee, Inc.	22-0735-08-3-02-01-0000	Agricultural Rural	F – Agriculture	NA
Parcel 3	USA in trust for Crow Tribe	22-0735-18-1-01-01-0000	Tribal Property	G – Undeveloped	NA
Parcel 4	State of Montana	22-0735-18-1-02-01-0000	Exempt Property	G – Undeveloped	NA
Parcel 5	Custer Battlefield Preservation Committee, Inc.	22-0735-18-1-02-04-0000	Agricultural Rural	F – Agriculture	NA
Parcel 6	Custer Battlefield Preservation Committee, Inc.	22-0735-18-2-01-01-0000	Agricultural Rural	F – Agriculture	NA
Parcel 7	Montana Dept. of Transportation	22-0735-07-4-03-03-0000	Exempt Property	G – Undeveloped	NA
Parcel 8	Custer Battlefield Trading Company	22-0735-07-3-04-04-0000	Commercial Rural	E – Business	72 (exterior)

Sources: MDT 2011, MSL 2013

The traffic data for the nearby roadways and the proposed Rest Area – Study Site 1 are shown in **Table 2**. The Present Year of the project is 2013, and the Design Year is 2035. The distance between the Rest Area – Study Site 1 to the closest receptor was taken from the approximate center of the site shown on **Figure 1**. For Study Site 1, BSA modeled the noise levels of vehicles starting up and moving around the Rest Area at 25 mph, and included the noise of 10 heavy trucks idling continuously during 1-hour.

Table 2: Traffic Data for Noise Analysis – Study Site 1

Roadway	AADT in 2013	AADT in 2035	DHV in 2035	% Trucks	Vehicle Speed	Distance to Closest Receptor – Custer Battlefield Trading Post
Interstate 90	5,190	6,600	870	22.9%	75 mph	2,500 feet
US 212	1,600	2,230	360	26.5%	50 mph	290 feet
Battlefield Tour Rd. (S-342)	580	720	200	5.6%	30 mph	400 feet
Rest Area – Study Site 1	N/A	Not provided	348	19.0%	25 mph	800 feet

Sources: MDT 2013, DOWL HKM 2013a.

Table 3 compares the Present Year 2013 and Design Year 2035 preliminary traffic noise levels at the closest receptor (Custer Battlefield Trading Post) (**Figure A**). As shown, the dominant noise source in the Present Year and in the Design Year is traffic on US 212. Although the noise of the Rest Area – Study Site 1 will contribute to an increase in noise levels at the receptor in the Design Year 2035, the increase in total noise level is +3 dBA compared to the Present Year 2013, which does not meet the +13 dBA increase criterion for traffic noise impacts (MDT 2011). The predicted traffic noise levels are also well below the exterior $L_{eq}(h)$ 72 dBA Noise Abatement Criteria (NAC) for Category E land uses (**Table 1**), and therefore, no traffic noise impacts for Study Site 1 are predicted.

Table 3: Preliminary Predicted Traffic Noise Levels at the Closest Receptor – Custer Battlefield Trading Post

Traffic Noise Source	$L_{eq}(h)$ Traffic Noise Level in 2013	$L_{eq}(h)$ Traffic Noise Level in 2035
Interstate 90	41 dBA	42 dBA
US 212	54 dBA	55 dBA
Battlefield Tour Rd. (S-342)	32 dBA	33 dBA
Rest Area – Study Site 1	N/A	51 dBA
TOTAL	54 dBA	57 dBA

The actual noise levels at the receptor due to the Rest Area – Study Site 1 will depend on the layout of the site, and the actual distance between the receptor and the site facilities. If the parking area for Study Site 1 remains approximately 800 feet from the Trading Post, the Rest Area noise levels will be similar to those listed in **Table 3**, and there will not be a traffic noise impact.

REFERENCES

DOWL HKM. 2013a. Email from Sarah Nicolai regarding the anticipated number of vehicles stopping at the rest area, visitor center and museum during the peak hour in 2013 and 2035.

DOWL HKM. 2013b. Figure 1, Rest Area Study Area Sites map, Battlefield Rest Area.

Montana Department of Transportation (MDT). 2011. *Traffic Noise Analysis and Abatement Policy*. July 1.

Montana Department of Transportation (MDT). 2013. Traffic Data memorandum for Battlefield Rest Area, IM 90-9(97)511, Control No. 2012001. Prepared by Becky Duke, MDT Traffic Data Collection & Analysis Section. July 2.

Montana State Library (MSL). 2013. Montana Cadastral Mapping Project of the Base Map Service Center. Website: <http://svc.mt.gov/msl/mtcadastral/>. Viewed on July 29, 2013.

U.S. Code of Federal Regulations. 2010. Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise*.



FIGURE 1

Rest Area Study Sites

LEGEND

-  Study Sites
-  Land Ownership Boundaries



Base Image: 2011 NAIP Orthophotos,
1-meter, July 15 - Sept 21, 2011

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Date Saved: 6/10/2013 4:05:47 PM



MEMORANDUM

DATE: July 31, 2013
TO: Sarah Nicolai / DOWL HKM
FROM: Sean Connolly
RE: **Battlefield Rest Area - Study Site 2**
IM 90-9(97)511, Control No. 2012001
Screening Traffic Noise Analysis (BSA Project #13129)

The Montana Department of Transportation (MDT) is intending to construct a new rest area near the Bighorn Battlefield, Crow Agency, Montana. Three sites are being considered for the development of the rest area, which may also include a new Crow Tribal Museum and a new National Park Service Visitor Center. Study Site 2 is located northeast of the Crow / N. Cheyenne Hospital (**Figure 1 -attached**). This memo summarizes the adjacent land uses, closest noise-sensitive receptor, traffic data, screening noise level modeling and potential traffic noise impacts for Study Site 2.

Since the rest area will be constructed on undeveloped land, the Battlefield Rest Area project is considered a Type I Project per the U.S. Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise* and MDT's *Traffic Noise Analysis and Abatement Policy* (MDT 2011).

Land parcels adjacent to Study Site 2 are shown on **Figure A**, and ownership information about the parcels is summarized in **Table 1** (MSL 2013). According to the MDT noise policy, Land Use Activity Category F land uses are not sensitive to highway noise, and therefore, traffic noise analysis is not required for Parcel 2 (MDT 2011).

The closest noise-sensitive receptor is located on Parcel 2, the Crow / N. Cheyenne Hospital, located approximated 650 feet southwest (**Figure A**). The hospital is classified as Land Use Activity Category C, and therefore, potential traffic noise impacts need to be evaluated (MDT 2011). Therefore, BSA modeled the noise levels at the hospital due to the I-90, Hwy 212, Battlefield Tour Road and Rest Area – Study Site 2 traffic using FHWA's Traffic Noise Model (TNM), Version 2.5.

Figure A: Parcels Adjacent to Study Site 2

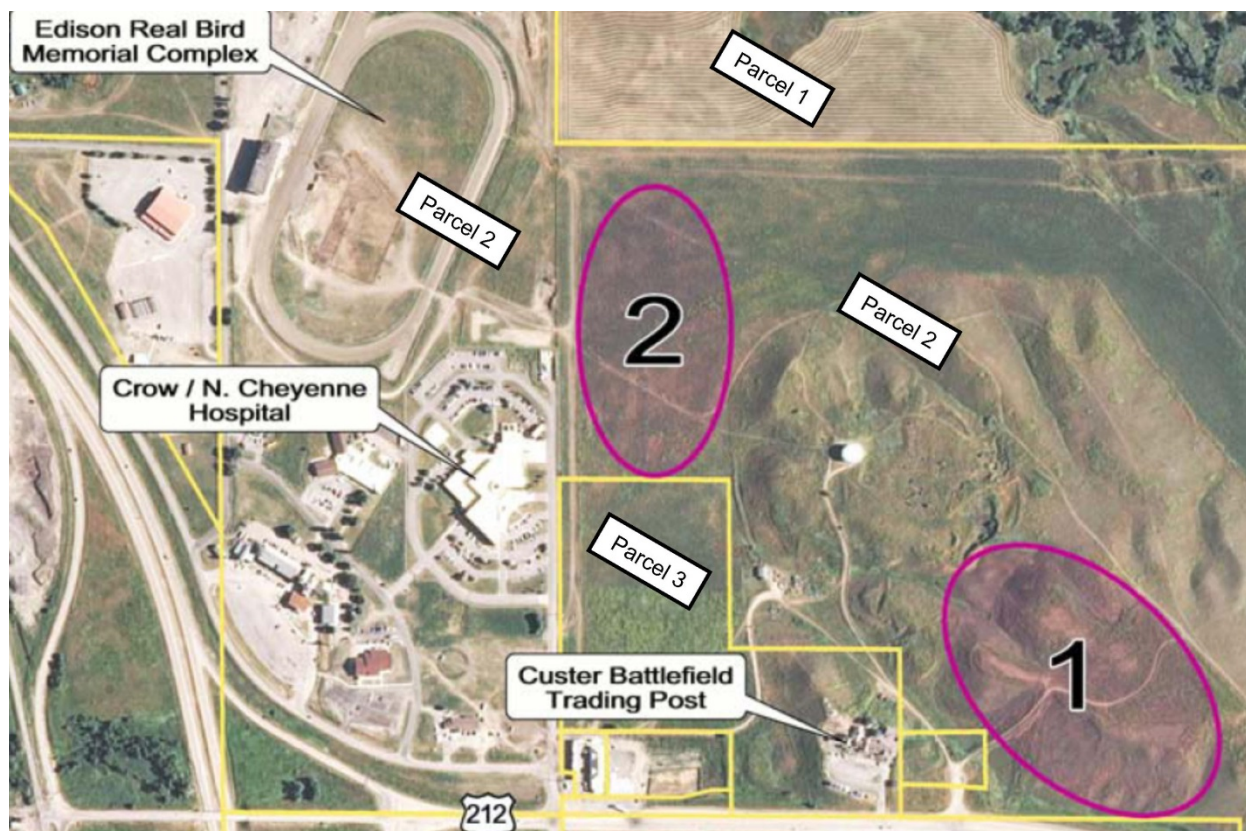


Table 1: Ownership Summary of Parcels Adjacent to Study Site 2

Parcel #	Owner	Geocode	Property Type	MDT Land Use Activity Category	MDT Activity Criteria $L_{eq}(h)$ (dBA)
Parcel 1	John Doyle	22-0735-07-2-01-01-0000	Agricultural Rural	F – Agriculture	NA
Parcel 2	USA in trust for Crow Tribe	22-0735-07-1-01-01-0000	Tribal Property	C – Hospital	67 (exterior)
Parcel 3	Custer Battlefield Trading Company	22-0735-07-3-04-04-0000	Commercial Rural	E – Business	72 (exterior)

Sources: MDT 2011, MSL 2013

The traffic data for the nearby roadways and the proposed Rest Area – Study Site 2 are shown in **Table 2**. The Present Year of the project is 2013, and the Design Year is 2035. The distance between the Rest Area – Study Site 2 to the closest receptor was taken from the approximate center of the site shown on **Figure 1**. For Study Site 2, BSA modeled the noise levels of vehicles starting up and moving around the Rest Area at 25 mph, and included the noise of 10 heavy trucks idling continuously during 1-hour.

Table 2: Traffic Data for Noise Analysis – Study Site 2

Roadway	AADT in 2013	AADT in 2035	DHV in 2035	% Trucks	Vehicle Speed	Distance to Closest Receptor – Crow / N. Cheyenne Hospital
Interstate 90	5,190	6,600	870	22.9%	75 mph	1,450 feet
US 212	1,600	2,230	360	26.5%	50 mph	1,450 feet
Battlefield Tour Rd. (S-342)	580	720	200	5.6%	30 mph	2,250 feet
Rest Area – Study Site 2	N/A	Not provided	348	19.0%	25 mph	650 feet

Sources: MDT 2013, DOWL HKM 2013a.

Table 3 compares the Present Year 2013 and Design Year 2035 preliminary traffic noise levels at the closest receptor (Crow / N. Cheyenne Hospital) (**Figure A**). As shown, the dominant noise source in the Present Year is traffic on I-90, and in the Design Year is traffic at the Rest Area – Study Site 2. Although the noise of the Rest Area will contribute to an increase in noise levels at the hospital in the Design Year 2035, the increase in total noise level is +7 dBA compared to the Present Year 2013, which does not meet the +13 dBA increase criterion for traffic noise impacts (MDT 2011). The predicted traffic noise levels are also well below the exterior $L_{eq}(h)$ 67 dBA Noise Abatement Criteria (NAC) for Category C land uses (**Table 1**), and therefore, no traffic noise impacts for Study Site 2 are predicted.

Table 3: Preliminary Predicted Traffic Noise Levels at the Closest Receptor – Crow / N. Cheyenne Hospital

Traffic Noise Source	$L_{eq}(h)$ Traffic Noise Level in 2013	$L_{eq}(h)$ Traffic Noise Level in 2035
Interstate 90	46 dBA	47 dBA
US 212	38 dBA	39 dBA
Battlefield Tour Rd. (S-342)	21 dBA	22 dBA
Rest Area – Study Site 2	N/A	53 dBA
TOTAL	47 dBA	54 dBA

The actual noise levels at the receptor due to the Rest Area – Study Site 2 will depend on the layout of the site, and the actual distance between the Hospital and the site facilities. If the parking area for Study Site 2 remains approximately 650 feet from the Hospital, the Rest Area noise levels will be similar to those listed in **Table 3**, and there will not be a traffic noise impact.

REFERENCES

DOWL HKM. 2013a. Email from Sarah Nicolai regarding the anticipated number of vehicles stopping at the rest area, visitor center and museum during the peak hour in 2013 and 2035.

DOWL HKM. 2013b. Figure 1, Rest Area Study Area Sites map, Battlefield Rest Area.

Montana Department of Transportation (MDT). 2011. *Traffic Noise Analysis and Abatement Policy*. July 1.

Montana Department of Transportation (MDT). 2013. Traffic Data memorandum for Battlefield Rest Area, IM 90-9(97)511, Control No. 2012001. Prepared by Becky Duke, MDT Traffic Data Collection & Analysis Section. July 2.

Montana State Library (MSL). 2013. Montana Cadastral Mapping Project of the Base Map Service Center. Website: <http://svc.mt.gov/msl/mtcadastral/>. Viewed on July 29, 2013.



U.S. Code of Federal Regulations. 2010. Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise*.



FIGURE 1

Rest Area Study Sites

LEGEND

-  Study Sites
-  Land Ownership Boundaries



Base Image: 2011 NAIP Orthophotos,
1-meter, July 15 - Sept 21, 2011

Path: H:\24\20658\ArcGIS\Exhibits\Battlefield\RestArea.mxd
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MEMORANDUM

DATE: July 31, 2013
TO: Sarah Nicolai / DOWL HKM
FROM: Sean Connolly
RE: **Battlefield Rest Area - Study Site 3**
IM 90-9(97)511, Control No. 2012001
Screening Traffic Noise Analysis (BSA Project #13129)

The Montana Department of Transportation (MDT) is intending to construct a new rest area near the Bighorn Battlefield, Crow Agency, Montana. Three sites are being considered for the development of the rest area, which may also include a new Crow Tribal Museum and a new National Park Service Visitor Center. Study Site 3 is located east of Battlefield Tour Road and north of the Little Bighorn Battlefield National Monument (**Figure 1 -attached**). This memo summarizes the adjacent land uses, closest noise-sensitive receptor, traffic data, screening noise level modeling and potential traffic noise impacts for Study Site 3.

Since the rest area will be constructed on undeveloped land, the Battlefield Rest Area project is considered a Type I Project per the U.S. Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise* and MDT's *Traffic Noise Analysis and Abatement Policy* (MDT 2011).

Land parcels adjacent to Study Site 3 are shown on **Figure A**, and ownership information about the parcels is summarized in **Table 1** (MSL 2013). According to the MDT noise policy, Land Use Activity Categories F and G land uses are not sensitive to highway noise, and therefore, traffic noise analysis is not required for Parcels 1 – 4 and Parcels 7 – 9 (MDT 2011).

The closest noise-sensitive receptor is located on Parcel 5 and 6, the Little Bighorn Battlefield National Monument and cemetery, located approximated 1,700 feet south (**Figure A**). The Monument and cemetery are classified as Land Use Activity Category C, and therefore, potential traffic noise impacts need to be evaluated (MDT 2011). Therefore, BSA modeled the noise levels at the Monument due to the I-90, Hwy 212, Battlefield Tour Road and Rest Area – Study Site 3 traffic using FHWA's Traffic Noise Model (TNM), Version 2.5.

Figure A: Parcels Adjacent to Study Site 3

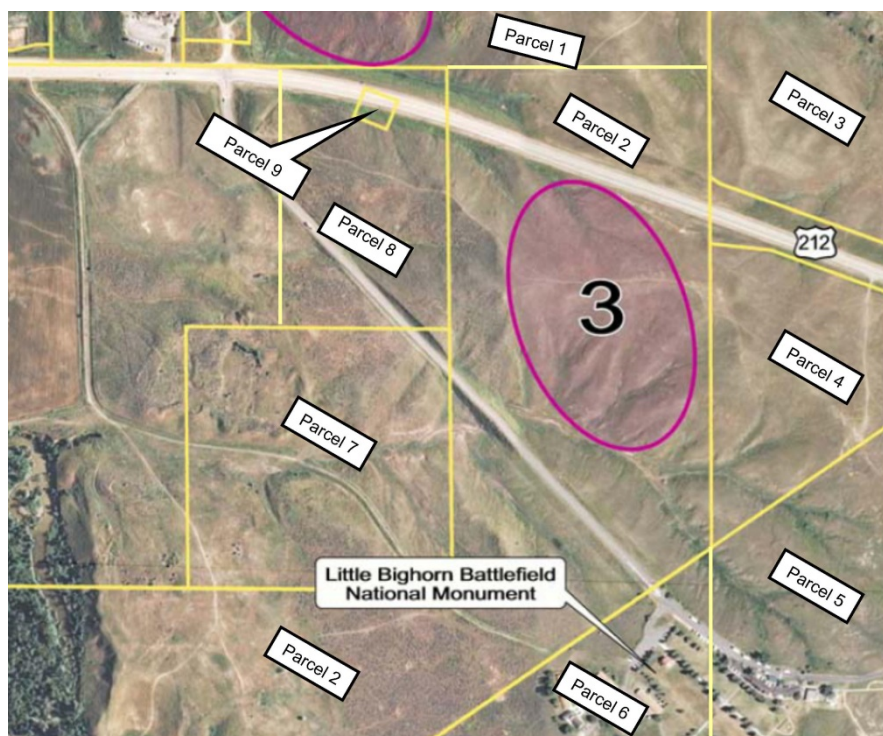


Table 1: Ownership Summary of Parcels Adjacent to Study Site 3

Parcel #	Owner	Geocode	Property Type	MDT Land Use Activity Category	MDT Activity Criteria $L_{eq}(h)$ (dBA)
Parcel 1	USA in trust for Crow Tribe	22-0735-07-2-01-01-0000	Tribal Property	F – utilities (water tower)	NA
Parcel 2	USA in trust for Crow Tribe	22-0735-18-1-01-01-0000	Tribal Property	G – Undeveloped	NA
Parcel 3	Custer Battlefield Preservation Committee, Inc.	22-0735-08-3-02-01-0000	Agricultural Rural	F – Agriculture	NA
Parcel 4	Custer Battlefield Preservation Committee, Inc.	22-0735-17-2-03-02-0000	Agricultural Rural	F – Agriculture	NA
Parcel 5	USDI National Park Service	22-0735-17-2-03-01-0000	Exempt Property	C – Cemetery and Recreation Area	67 (exterior)
Parcel 6	USDI National Park Service	22-0735-18-4-01-01-0000	Exempt Property	C – Cemetery and Recreation Area	67 (exterior)
Parcel 7	Custer Battlefield Preservation Committee, Inc.	22-0735-18-1-03-01-0000	Agricultural Rural	F – Agriculture	NA
Parcel 8	Custer Battlefield Preservation Committee, Inc.	22-0735-18-1-02-04-0000	Agricultural Rural	F – Agriculture	NA
Parcel 9	State of Montana	22-0735-18-1-02-01-0000	Exempt Property	G – Undeveloped	NA

Sources: MDT 2011, MSL 2013

The traffic data for the nearby roadways and the proposed Rest Area – Study Site 3 are shown in **Table 2**. The Present Year of the project is 2013, and the Design Year is 2035. The distance between the Rest Area – Study Site 3 to the closest receptor was taken from the approximate center of the site shown on **Figure 1**. For Study Site 3, BSA modeled the noise levels of vehicles starting up and moving around the Rest Area at 25 mph, and included the noise of 10 heavy trucks idling continuously during 1-hour.

Table 2: Traffic Data for Noise Analysis – Study Site 3

Roadway	AADT in 2013	AADT in 2035	DHV in 2035	% Trucks	Vehicle Speed	Distance to Closest Receptor – Little Bighorn Battlefield National Monument
Interstate 90	5,190	6,600	870	22.9%	75 mph	5,000 feet
US 212	1,600	2,230	360	26.5%	70 mph	2,100 feet
Battlefield Tour Rd. (S-342)	580	720	200	5.6%	25 mph	90 feet
Rest Area – Study Site 3	N/A	Not provided	348	19.0%	25 mph	1,700 feet

Sources: MDT 2013, DOWL HKM 2013a.

Table 3 compares the Present Year 2013 and Design Year 2035 preliminary traffic noise levels at the closest receptor (Little Bighorn Battlefield National Monument) (**Figure A**). As shown, the dominant noise source in the Present Year and Design Year is traffic on Battlefield Tour Road. Although the noise of the Rest Area will contribute to an increase in noise levels at the Monument in the Design Year 2035, the increase in total noise level is +2 dBA compared to the Present Year 2013, which does not meet the +13 dBA increase criterion for traffic noise impacts (MDT 2011). The predicted traffic noise levels are also well below the exterior $L_{eq}(h)$ 67 dBA Noise Abatement Criteria (NAC) for Category C land uses (**Table 1**), and therefore, no traffic noise impacts for Study Site 3 are predicted.

Table 3: Preliminary Predicted Traffic Noise Levels at the Closest Receptor – Little Bighorn Battlefield National Monument

Traffic Noise Source	$L_{eq}(h)$ Traffic Noise Level in 2013	$L_{eq}(h)$ Traffic Noise Level in 2035
Interstate 90	36 dBA	37 dBA
US 212	35 dBA	37 dBA
Battlefield Tour Rd. (S-342)	52 dBA	53 dBA
Rest Area – Study Site 3	N/A	42 dBA
TOTAL	52 dBA	54 dBA

The actual noise levels at the receptor due to the Rest Area – Study Site 3 will depend on the layout of the site, and the actual distance between the Monument and the site facilities. If the parking area for Study Site 3 remains approximately 1,700 feet from the Monument, the Rest Area noise levels will be similar to those listed in **Table 3**, and there will not be a traffic noise impact.

REFERENCES

DOWL HKM. 2013a. Email from Sarah Nicolai regarding the anticipated number of vehicles stopping at the rest area, visitor center and museum during the peak hour in 2013 and 2035.

DOWL HKM. 2013b. Figure 1, Rest Area Study Area Sites map, Battlefield Rest Area.

Montana Department of Transportation (MDT). 2011. *Traffic Noise Analysis and Abatement Policy*. July 1.

Montana Department of Transportation (MDT). 2013. Traffic Data memorandum for Battlefield Rest Area, IM 90-9(97)511, Control No. 2012001. Prepared by Becky Duke, MDT Traffic Data Collection & Analysis Section. July 2.

Montana State Library (MSL). 2013. Montana Cadastral Mapping Project of the Base Map Service Center. Website: <http://svc.mt.gov/msl/mtcadastral/>. Viewed on July 29, 2013.



U.S. Code of Federal Regulations. 2010. Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise*.



FIGURE 1

Rest Area Study Sites

LEGEND

-  Study Sites
-  Land Ownership Boundaries



Base Image: 2011 NAIP Orthophotos,
1-meter, July 15 - Sept 21, 2011

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**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 7

Cultural Resources Report

Montana Department Of Transportation: Cultural Resource Investigations of Three Areas Under Consideration as a Rest Area and Associated Facilities Near Crow Agency, Montana.

Prepared by
Lynelle A. Peterson
Ethnoscience Inc.
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Prepared for
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Montana Department of Transportation
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Helena, Montana 59620-1001

November 2013

*Confidential information submitted under 10 CFR 2.390. Disclosure is limited under
the National Historic Preservation Act, Section 304 (16 USC 470w-3(a))*

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Figure 4. Close-up of 1884 General Land Office map of T3S R34E	15

1.0 INTRODUCTION

The Montana Department of Transportation, the Crow Nation and the National Park Service are jointly looking for an appropriate location on Crow trust lands that can serve as a rest area, new offices for the Little Big Horn National Monument, and a Crow museum. Approximately 20 acres are required to support the proposed facilities and associated parking lot. Construction activities could cause extensive ground disturbances that have the potential to adversely impact cultural resources. There are three locations currently under consideration (Figure 1).

The Montana Department of Transportation is the lead agency for this project, and the ultimate location for the proposed facilities will occur on Crow Trust Lands. As such, the Department of Transportation, the Crow Nation and the Bureau of Indian Affairs are required to take into consideration the effect of the undertaking on significant cultural resources.

The Montana Department of Transportation contracted DOWL HKM to help identify an appropriate location and provide preliminary environmental investigations for their review and evaluation. DOWL HKM contracted Ethnoscience to conduct a Class I investigation to identify previous cultural resources inventories and the potential of significant resources for each of the identified locations.



Figure 1. Aerial showing the three areas currently under consideration

2.0 ENVIRONMENTAL SETTING

The project area is located on rolling hills immediately to the east and southeast of Crow Agency, Montana. The geological formations include late Cretaceous sandstone and shale (Alt and Hyndman 1986). Soils are sandy and gravelly to heavy alluvial clays and grayish-brown topsoil dominate the area. The climate of the study area is a dry continental type characterized by varying extremes of temperatures and occasional short-term droughts.

The undisturbed lands in the area are generally associated with the Montana vegetative zone classified as Central Grassland (Payne 1973). The distinguishing feature of this

environment is the general prevalence of sagebrush, of which Big Sagebrush dominates. Other common shrubs include prickly pear cactus, silver sagebrush, fringed sagewort, and broom snakeweed. Grasses include Sandberg bluegrass and green needlegrass, blue bunch cheatgrass, Plains reedgrass, prairie junegrass, and Plains muhly. Sedges and forbs include threadleaf sedge, needleleaf sedge, phlox, scarlet globemallow and wild buckwheat.

Areas 1 and 2 are both cultivated. They no longer support native vegetation and the upper soil deposits are disturbed. Area 1 is currently vegetated with crested wheatgrass. Area 3 is undisturbed and retains its native vegetation.

Animal species in the area were once diverse and numerous in the open uplands and broken terrain. In the early historic period, grizzly and black bear, moose, wolf, mountain lion, bighorn sheep, rabbit, red fox, mule deer, coyote, skunk, prairie dog, deer, jackrabbit, badger, pronghorn, and bison were found in the study area.

3.0 CULTURAL SETTING

It is believed the Mountain Crow separated from the Hidatsa horticulturalists in North Dakota and followed bison migrations into eastern Montana around 1440 (Kehoe 1981:282) and expanded to the southwest along the Yellowstone River drainage. The River Crow separated from the Hidatsa circa 1670 and moved into central Montana (Voget 1984:4-9). By 1720, they were concentrated in the Yellowstone and Bighorn River drainages of southern Montana (Voget 1984:409).

By 1800 the domino effect of tribes pushing other tribes out of their traditional homeland reached southeast Montana. The Sioux were pushing the Cheyenne to the west. In turn, the Cheyenne were encroaching upon Crow Territory (Weist 1977:29). The Cheyenne and Crow came into conflict as the Cheyenne tried to expand their territory into southeastern Montana. As the pressures increased, the Bighorn, Yellowstone and Wind River regions became the arena for repeated conflict.

By the 1820s, the fur trade was well established in Montana. However, conflicts between the tribes limited not only the fur trade but also the potential for further exploration. In 1825 a number of tribes in the northern plains signed a treaty of friendship with the US government. This included both the Crow and Cheyenne (Medicine Crow 1992:3; Stands In Timber and Liberty 1972:125; Weist 1977:39). Despite disease and continuing conflicts, the next few years were relatively good for the Crow. The treaty between the Cheyenne and Mountain Crow was maintained, and the River Crow's territory was expanding into Blackfoot territory. The expansion of the fur trade into their territory also provided them with the opportunity to be middlemen in the trade and made them wealthy.

Because of their close relationship with fur traders, the Crow had ready access to guns and ammunition. This was not acceptable to either the Blackfoot or Sioux. This created a dangerous climate for Crow and trader alike (Brown 1969:78). According to Edwin Denig the Crow were the primary target of the Blackfoot and Sioux (Brown 1969:78-7). However, when the Crow were not readily available for attack, the traders became the object of the Blackfoot and Sioux aggressions. By the late 1840s the Cheyenne became allies with the Sioux and the peace between the Cheyenne and Crow broke down.

Once again, the US government attempted to relieve tensions through the use of treaties. In 1851, 10,000 Plains Indians, including the Arapaho, Arikara, Assiniboiné, Crow, Cheyenne, Gros Ventre, Hidatsa, Mandan, Shoshone, and Sioux (dominated by Brulé and Oglala) met with the US government at Fort Laramie (Bradley 1991: 84-85; Larson 1990:14-15). The meeting resulted in the signing of the Fort Laramie Treaty of 1851. This treaty allowed the Sioux and Cheyenne control of the Powder River basin, which was becoming increasingly important for summer hunting. The Crow, who were decimated by war and disease, were given the promise of peace. Furthermore, the government agreed to provide the tribes with annuities in the form of hardware, tools and farm animals for 50 years (Bradley 1991:84-85; Medicine Crow 1992:3, 14; Stands In Timber and Liberty 1972:125; Weist 1977:39, 444).

By the mid-1860s, the tribes in the region were facing a new threat. The discovery of gold in western Montana in 1862 led to a massive movement of gold-seekers through Crow territory. By 1864 wagon trains were traveling the Bozeman trail every couple of weeks, and along the Yellowstone River, travelers crossed Crow territory every couple of days (Bradley 1991:90). Meanwhile, the Powder, Tongue and Bighorn regions still contained large populations of bison, deer and antelope for hunting, and was still sufficiently remote that problems associated with white encroachment were relatively small. The Sioux and Cheyenne were determined to keep it that way (Medicine Crow 1992; 64; Vestal 1984:48). The stakes became even higher as the US government began building forts along the Bozeman trail, which the Sioux viewed as a clear violation of the 1851 Fort Laramie Treaty. In response, the Sioux and Cheyenne (Vestal 1984:68) attacked nearly every wagon train crossing the Bozeman trail.

The loss of men and money led the US government to reconsider their policy in Indian Territory. In the spring 1868, the government held a series of meetings with the northern tribes. This treaty further reduced Indian Territory, with the Crow losing their lands north of the Yellowstone, south of the Montana territorial line and east of the 17th meridian. In return for not fighting, the government closed down the Bozeman trail and its forts. Furthermore, the tribes received a guarantee of money, buildings, tools, agents, and teachers to train them into becoming farmers.

The 1868 Fort Laramie Treaty met with little success. Unlike the council held in 1851, most of the Sioux did not attend. Furthermore, there was confusion on what constituted tribal lands. For instance, the River Crow thought that they had received land along the Missouri River (Medicine Crow 1992). The Sioux thought the ceded Crow lands in Wyoming were now part of their reservation (Bradley 1991:98). The treaty had no effect

in curbing the conflicts between the tribes and white immigrants. If anything, the fighting escalated.

In partial fulfillment of the treaty, the government established the first Crow Agency near present-day Livingston, Montana, in 1869 (Medicine Crow 1992; Bradley 1991:96-98). If the placement of the agency was designed to minimize conflicts between the Crow and prospectors, it was unsuccessful. Throughout the early-1870s the Crow faced numerous conflicts with prospectors trespassing into their territory, as well as with Sioux who continued to hunt on their land, steal their horses and even attack the Crow Agency (Bradley 1991:100). Furthermore, 36 lodges of Nez Perce arrived at the Crow Reservation, seeking freedom from Sioux aggression and disputes with whites. This strained the already lacking resources (Bradley 1991:99). Attempts at farming were largely unsuccessful.

Under pressure from the expanding white populations in the area to do something about the Indian problem, the US government chose to take a tougher stand. It was common for tribal members to leave the reservation to hunt game, especially in the Bighorn regions of Montana and Wyoming. In the winter of 1875, the US government ordered all Indians to return to their reservations by January of 1876. If they did not, the government would consider them hostile and would use military force to send them back to their reservations (Grinnell 1985:328; Bradley 1991:105). The Sioux and Cheyenne hunting in southern Montana did not comply, and their numbers swelled as tribal members joined them to begin their summer hunting season.

That spring, General Gibbon negotiated with the Crow to join the US in war against the Sioux, Cheyenne and Arapaho. The Crow, whose territory continued to be eroded by Sioux and Cheyenne aggression, readily agreed (Linderman 1962:154). Several battles ensued.

In March, members of Two Moons' Cheyenne band were camped near the mouth of the Rosebud River (Grinnell 1985: 346-347). On March 17th, US troops led by Col. Joseph Reynolds attacked the camp, chased away the Cheyenne, and burned their lodges and food supplies to the ground (Vestal 1984: 177-183; Weist 1977:74; Strahorn 1876:3-19). Although the Cheyenne were able to recapture their horses the following morning, they were destitute. The Cheyenne moved up the Powder River where they joined the Oglala under Crazy Horse (Weist 1977:74; Dusenberry 1956:33; Vestal 1984:181-182). Together they joined Sitting Bull's Hunkpapa camp, which was located in the Blue Hills along Beaver Creek. There they were provided with food and shelter (Weist 1977:74; Vestal 1984:177-182). Because of the Reynolds attack, all thoughts of returning to the reservation were abandoned. The Indians were committed to fighting (Moeller and Moeller 1987:90).

Their most famous battle occurred near the current study area. While camped along the Little Bighorn, government troops with Crow and Arikara scouts attacked the Sioux, Cheyenne and Arapaho on June 25, 1876. Over 1000 warriors counter-attacked and won a decisive victory (Bradley 1991:109; Grinnell 1985: 334-358; Jackson 1876:41-62;

Stands in Timber and Liberty 1972: 189-211; Vestal 1984: 191-203). Over 250 military troops were killed and approximately 60 Sioux and 11 Cheyenne warriors were lost (Hardoff 1993). This would be their only significant victory. By 1880, US government had essentially subdued the “hostile” tribes and confined them to the reservation.

The Crow’s new enemy was the miner. The mountainous regions of the Crow Reservation contained highly desirable minerals the mining industry wanted. Under pressure by the US government, the Crow agreed to cede western boundaries of their land. In exchange, the government agreed to build houses for the Crow and buy livestock for them (Bradley 1991:113-114; Medicine Crow 1992:3). The passing of the How-How Treaty on April 11, 1882, required moving the Crow Agency to a place near Absarokee. Despite the loss of almost one-quarter of their reservation, the call by miners and white settlers for more land continued.

White attempts to obtain reservation lands were further fueled by the signing of the General Allotment Act on February 8, 1887 (Bradley 1991:134). Ostensibly, the Act was designed to provide Indians with the same homesteading rights as whites. It also set up a system designed to break tribal unity and to open surplus lands for white settlement (Nordstrom et al 1977:6-10).

In 1891, Congress once again bowed to mining interests by passing an act that ceded the western third of the Crow Reservation. In return, the Crow received \$940,000, which was far less than the land was worth (Bradley 1991:1116; Medicine Crow 1992:3). The Act technically allowed the Crow to homestead in ceded lands, however they could not establish homes along rivers. Several Crow attempted to homestead in the ceded portions of the reservation, but harassment and murder by white settlers forced the Crow to abandon their homes and move onto the reservation (Bradley 1991:139-140). After some deliberation, it was decided the Crow Agency would once again move, this time to the Little Bighorn River (Bradley 1991:132; Medicine Crow 1992:150). This is immediately to the west of the current project area.

In 1905, they ceded more of their lands (Medicine Crow 1992:3). Despite governmental mismanagement and continuing efforts to take their lands away, the early 1900s are viewed as being good days. By the turn of the century, the Crow were nearly self-sufficient. They sold surplus vegetables on the market, flour and oats to the Agency and supplied all of the flour needed on both the Crow and Northern Cheyenne Reservations (Bradley 1991:144-146). Despite overgrazing and rustling, the cattle business was thriving. As time went on, the Crow became savvier both economically and politically.

In 1917, the US entered into World War I. Indians who were wards of the state were drafted at a higher rate than the rest of the nation (Bradley 1991:209). However, the experience ultimately benefited the Indians. The Crow Act of 1920 provided allotments to members of the Crow tribe who did not already have one and conferred rights of the mountains and minerals to the tribe. It also distributed the tribal herds among tribal members. In gratitude for their actions in the war, the US passed the Snyder Act of 1924, which gave Indians full citizenship (Bradley 1991:212). They now had the ability to vote

and with it the ability to influence policies. The Crow continue to fight for control of their lands and future.

4.0 METHODS

Several avenues of investigation were used to identify the adequacy of past projects and the potential for significant cultural resources within the alternatives presented. To ascertain the level of effort conducted in the past and to identify previously recorded sites, Ethnoscience requested a files search from the Montana State Historic Preservation Office. The results of the files search were received on June 13, 2013 under number 2013061302. Ethnoscience also examined aerial photographs, the 7.5 quadrangle maps and the 1884 General Land Office maps for possible site leads.

Because of the proximity to the Little Bighorn Battlefield National Monument, Ethnoscience contracted Doug Scott to compare his knowledge of the Battlefield and previous investigations with the areas under consideration. Mr. Scott is responsible for the majority of the National Park Service's cultural resource investigations of the site, both within and adjacent to the monument. His expertise was critical to this investigation. The results of his investigation and recommendations for future work are presented in Appendix A.

Finally, Ethnoscience presented their initial findings to representatives of the Montana Department of Transportation, the Bureau of Indian Affairs, the Crow Tribal Preservation Office, the National Park Service, and Beartooth Resource Conservation & Development Are, Inc. During this meeting, Ethnoscience presented its initial findings and requested input on possible deficiencies and future directions. Several of the meeting members examined Area 1 directly and Area 2 from a distance. This allowed them to determine that both locations are associated with previously cultivated fields. Appendix B presents the notes from this meeting.

5.0 RESULTS OF CLASS I INVESTIGATION

The files search for the sections crossed by the proposed alternatives identify 52 previous inventories in the area (Table 1). The table also contains a report that was conducted in 1987 but does not appear in the file inventory reports. Other reports may also be missing.

Montana Department of Transportation archaeologist Steve Platt noted that he had conducted a Class III inventory of the plowed field located west of Area 3 in Section 18 of T3S R34E (Platt verbal communication during project meeting, August 12, 2013).

Table 1. Class III Investigations conducted within Sections 7 and 18 of T3S R35E of Big Horn County, Montana

Author	Date	Title	In or Out of Study Areas
Axline	2000	Inventory and Assessment: Reinforced Concrete T-Beam Bridges 1913-1956	Out
Bales and Peterson	2004	SR-212 Interchange and Rest Area	Out
Brumley	2000	A Cultural Resources inventory of Select Portions of the Worden to Crow Fiber Optic Cable Report	Out
**Charles	1987	THS Proposed Clinic Site (50BAO/CA-87).	In- Area 2 (not in files search)
Conner	1986	Exhumation Grave 402, Block B, Custer Battlefield National Cemetery	Out
Conner	1994	Exhumation of Human Remains on the Pitsch Property Near Little Bighorn National Battlefield, MT	Out
DeVore	2002	Letter Report: Trip Report-Inadvertent Discovery of Remains Related to Fort Phil Kearney	Out
Fandrich	2002	Battlefield-North: US Highway 212 Soil Disposal Area Cultural Resource Inventory	Out
Fox	1983	1983 Archeological Investigations at Custer Battlefield National Monument	Out
Glenner et al.	1994	Back to the Little Bighorn: Remains of a 7th Cavalry trooper, recovered at the Little Bighorn Battlefield in 1903, provide a glimpse of 19th century dental practices	Out
Hall	1992	Falls Down Fee Patent	In-Area 1 and 2
Hall	1992	Hospital Access Road	near Area 2
Hall	1992	Yellow All Over Spotted Tail Fee Patent	Out
Hall	1992	Spotted Tail Gravel Source	Out
Hall	1995	Crow Agency Access Road	Out
Keller	1988	Proposed Rock Borrow Area on Allotment No. 3598	Out
Keller	1992	Three Housing Sites at Crow Agency	Out
Keller	1992	#2281-B Kelly Fee Patent	Out
Keller	1999	Crow Fair Access Road	In or near Area 1
Keller	2003	Cultural Resources Inventory of Fifteen Negative Inventory Reports in Various Counties	Out
Rom	2001	Visual Impacts Assessment of Performance Development Group Inc.'s 272 and 273 Crow Indian Reservation, Big Horn County, MT	Out
Scott	1987	Prehistoric Resources of Custer Battlefield	Out
Scott	1989	Testing and Evaluation of Two Prehistoric Sites at Custer Battlefield National Monument	Out
Scott (editor)	1991	Papers on Little Bighorn Battlefield Archeology: The Equipment Dump, Marker 7, and the Reno Crossing	Out
Scott	1992	Deep Ravine Overlook Site	Out
Scott	1992	Exhumation of Little Bighorn Battle-Related Human Remains from the Custer Battlefield National Cemetery	Out
Scott	1993	Archeological Mapping of the Pitsch Property: The Valley Fight Segment of the Battle of the Little Bighorn, Montana	Out

Author	Date	Title	In or Out of Study Areas
Scott	1995	Waste Water System, Little Bighorn Battlefield National Monument.	Out
Scott	1998	Archeological Inventory of the Indian Memorial Site, Little Bighorn Battlefield National Monument, MT	Out
Scott	1999	Archaeological Inventory of the Site of a Water Gauging Station on the Little Bighorn River, Montana	Out
Scott	2002	Archeological Investigations of the "Horse Cemetery" Site, Little Bighorn Battlefield National Monument	Out
Scott	2004	Archeological Inventory of the Little Bighorn Battlefield National Monument Visitors Center	Out
Scott	2005	Archeological Mitigation of the Federal Lands Highway Program Plan to Rehabilitate Tour Road, Route 10, Little Bighorn Battlefield National Monument, Montana	Out
Scott	2010	Uncovering History: The Legacy of Archeological Investigations at the Little Bighorn Battlefield National Monument, MT	Out
Scott	2010	Investigating Oxbows and Testing Metal Detector Efficiency at Little Bighorn Battlefield National Monument, MT	Out
Scott and Bleed	1997	A Good Walk Around the Boundary	in Area 3
Scott and Fox	1985	Archeological Insights into the Custer Battle	Out
Scott and Fox	1987	Archeological Insights into the Custer Battle: An Assessment of the 1984 Field Season	Out
Scott and Owsley	1991	Oh, what tales bones could tell-and often do!	Out
Scott et al	1988	Nameless Faces of Custer Battlefield	Out
Scott et al	1988	Archaeological Perspectives on the Battle of the Little Bighorn	Out
Scott et al	1997	An Inscribed native American Battle Image from the Little Bighorn Battlefield	Out
Vihlne	2004	Custer's Last Drag: An Examination of Tobacco Use among the Seventh Cavalry during the Nineteenth Century	Out
Walker-Kuntz and Walker-Kuntz	1999	Battlefield-East Highway 212 Cultural Resource Inventory in Big Horn County, Montana	In or near Area 1 and Area 3
Willey	1994	Human Osteology of the Pitsch Burials	Out
Willey	1994	Osteological Analysis of Human Skeletons Excavated from the Custer National Cemetery	Out
Willey	1995	Osteological Analysis of Scattered Human Bones from the Little Bighorn Battlefield National Monument	Out
Willey and Scott	1994	The Custer Battlefield National Cemetery Human Remains Identification Project	Out
Willey and Scott	1999	Who's Buried in Custer's Grave	Out
Willey et al.	1996	Human Skull and Mandible (LIBI 1996 HR-1 and HR-2) Attributed to and Non-Human Bones (IBI HR-3 through HR-6) Found on the Little Bighorn Battlefield	Out
Willey et al.	1996	Oral Health of Seventh Cavalry Troopers: Dentitions from the Custer National Cemetery	Out
Wood	2003	Battlefield East Gravel Sources and Staging Area	In -Area 1

*** not included in files search*

Five previously inventoried areas are located within or immediately adjacent to the proposed rest areas under consideration (Figure 2). With the possible exception of a small

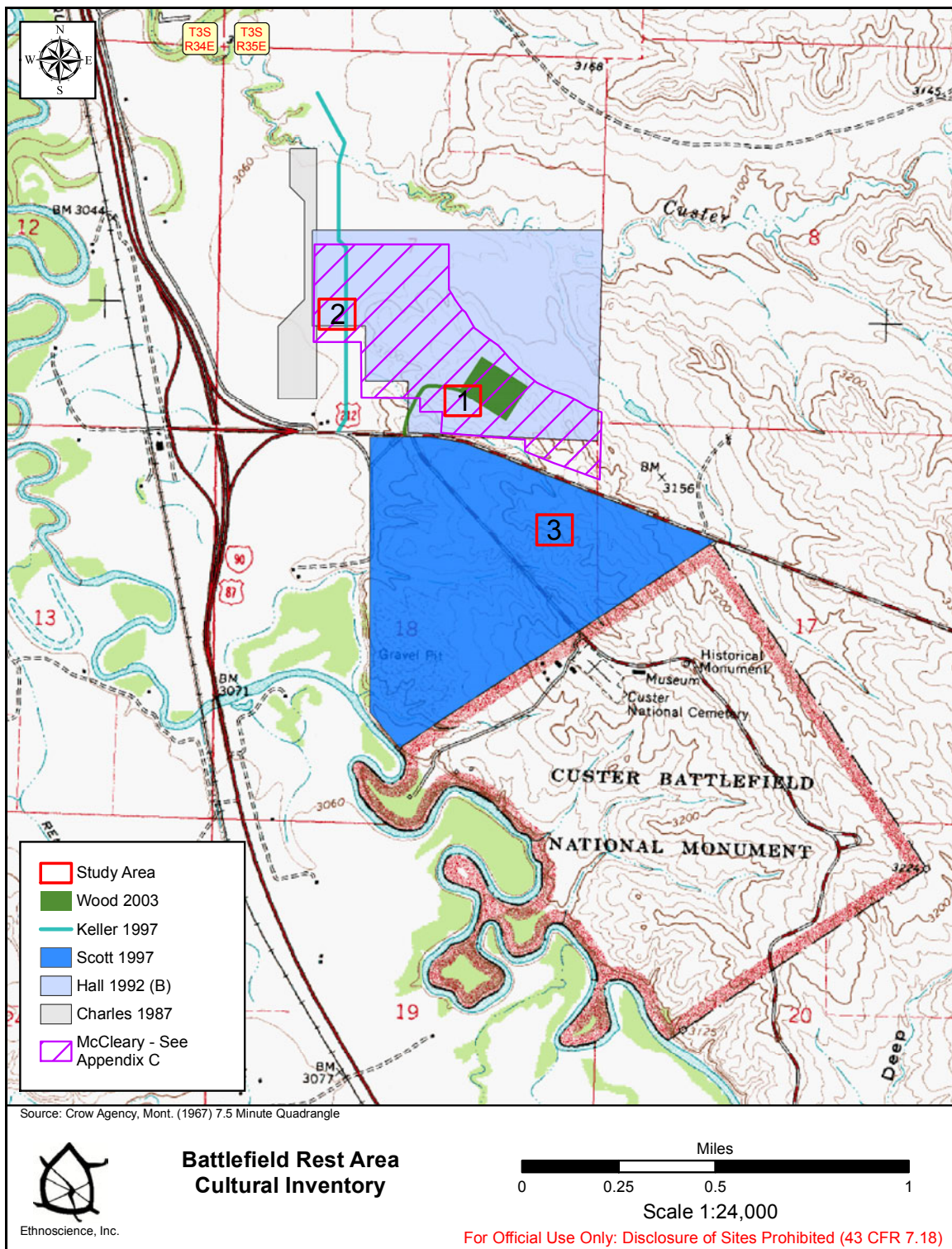


Figure 2. Location of projects associated with or near the areas under consideration, including the 2013 Crow Cultural Resource Inventory

portion of Area 1, each of the proposed areas was inventoried using current Montana archaeological/historical survey standards. The following provides a brief discussion of these five studies.

In 1987 Charles reported on a proposed clinic site. Although this report did not appear in the files search, it is mentioned in the Hall (1992a) and Keller (1999) inventory reports. The eastern edge of the Charles (1987) inventory occurs in the vicinity of Area 2. The investigation observed no sites.

Hall (1992b) inventoried 160 acres, in the vicinity of Area 2, for a proposed transfer of trust land to a Fee Patent. The inventory consisted of 40 acre transects on undisturbed lands. The inventory did not systematically examine the portion of the project area that was cultivated. No sites were identified.

In 1999, Keller conducted a Class III cultural resource inventory of a proposed Crow Fair Access Road. The inventory measured 30 m wide and was in a previously cultivated area. No sites were identified. This inventory occurs adjacent to Area 2.

In 1983 a widespread drought in Montana greatly decreased vegetation and increased ground surface visibility. While examining the battlefield, Richard Fox observed artifacts associated with the 1876 battle. This led to 25 years of archaeological investigations and a plethora of reports and articles based on these investigations (See Table 1). One investigation included a metal detecting inventory south of Highway 212 and west of the Little Bighorn Battlefield Monument within Section 18 of T3S, R35E (Scott and Bleed 1994). The investigation observed a variety of bullets and cartridges associated with Indian activity and a possible Native American battle position (Figure 3).

In 2003, Gar Wood conducted an inventory of several locations to obtain gravel for the proposed highway construction. One location was a staging area for gravel operations, which occurs at Area 1. The investigation observed no evidence of cultural activity.

Results of the Montana Class I Files Search

The files search identifies 17 previously recorded sites, an Isolated Find and Site Lead in Sections 7 and 18, T3S R35E (Table 2). Most of the sites are associated with activities conducted during the 20th century and are outside the areas under consideration. Only one previously recorded site (24BH2175) and one Site Lead are located in areas associated with one or more of the alternatives.

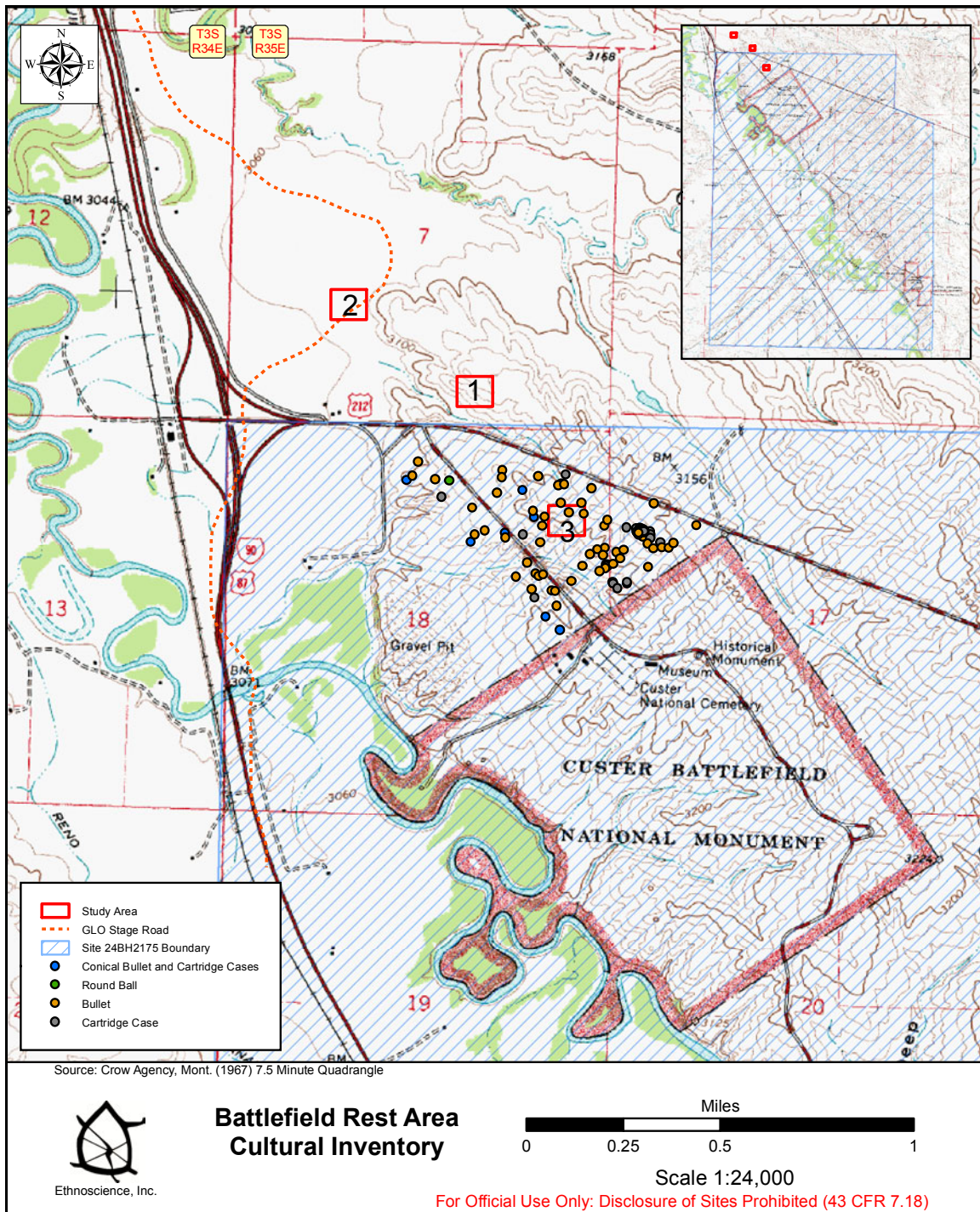


Figure 3. Location of 24BH2175 and an 1800s stage route that occur within the vicinity of the areas under consideration

Table 2. Known Sites, Isolated Find and Site Lead located within the vicinity of the Proposed Battlefield Rest Area Alternatives

Site	Site Type	Eligibility	In Areas
24BH1642	Bridge	Determined Eligible with SHPO consensus	No
24BH1999	Railroad	Determined Eligible with SHPO consensus	No
24BH2471	Isolated Projectile	Undetermined	No
24BH2175	Battlefield	Listed Eligible	Area 3
24BH2427	Bridge	Undetermined	No
24BH2468	Isolated flake	Undetermined	No
24BH2469	Isolated flake	Undetermined	No
24BH2470	Isolated Projectile	Undetermined	No
24BH2472	Isolated Projectile	Undetermined	No
24BH2573	Cairn	Unresolved	No
24BH2574	Depression	Determined Ineligible	No
24BH2575	Depression	Unresolved	No
24BH3073	Motel	Determined Ineligible	No
24BH3074	Foundation, Café	Determined Ineligible	No
24BH3075	Café and gift shop	Determined Ineligible	No
24BH626	1930s road	Unresolved	No
24BH627	1902 Road	Undetermined	No
Isolated Find	Isolated Projectile	Undetermined	No
Site Lead	Stagecoach Road	Undetermined	Area 2

24BH2175 was originally assigned to the 1890 two-story superintendent's lodge. At some point it also came to be used for the Battlefield. This likely occurred after archaeological investigations of the battle began in the 1980s. For the most part, these investigations are not pertinent to the current study. However, there are two documents of particular relevance. In 1992, the National Park Service submitted a supplement to the 1966 National Register nomination form for the Battlefield, adding Criterion D as an area of significance. In 2005, Doug Scott submitted a site form update that increased the site boundaries to 9000 acres. The new boundary includes Area 3 (Figure 3).

Although not recorded, an examination of the General Land Office map of January 6, 1884 shows a stage line running through portions of Sections 7 and 18, T3S R35E, which crosses into Area 2 (Figure 4). The route may have been initially established as a conduit between Fort McKinney and Fort Custer between 1877 and 1878 (Scott personal communication). The fact that it appears in the 1884 map suggests it continued to be used even after Fort McKinney was moved in 1879. Based on its location, the route occurs in the vicinity of Area 1. However, an examination of aerial photographs found no evidence of the trail. Cultivation likely destroyed the site and it no longer exists.



Figure 4. Close-up of 1884 General Land Office map of T3S R34E

6.0 RESULTS OF THE CROW TRIBE CLASS III CULTURAL RESOURCE INVENTORY

To address tribal concerns the project area may contain traditional cultural properties, the Crow Tribe conducted a Class III cultural resource inventory of 138.8 acres within Section 7 of T3S R35E (see Figure 2). The investigation identified no cultural resources (Appendix C).

7.0 CONCLUSION AND RECOMMENDATIONS

From a cultural resource perspective, Ethnoscience recommends the Montana Department of Transportation remove Area 3 from further consideration. This location is within the recently expanded boundaries of 24BH2175, which is a contributing element of a National Register of Historic Places listed site. The construction of a facilities complex at this location will adversely affect the integrity of setting, materials and feeling of this site.

The Crow tribal cultural resource inventory, as well as previous archaeological inventories, has adequately examined Areas 1 and 2 to current Montana standards. As long as the chosen location is within a previously investigated area, no further archaeological/historical/ inventory is recommended.

Although Area 1, and possibly Area 2, may have been part of the 1876 battle, both locations are cultivated. As such, the materials that exist within the site lack integrity of location and cannot convey its significance or address pertinent archaeological research questions. Area 2 is also associated with an 1800s stage route. However, subsequent cultivation has destroyed the site within the study areas.

Based on these findings, Ethnoscience recommends no further archaeological investigations, including metal detecting, is needed prior to construction¹.

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¹ Although Doug Scott (Appendix A) recommended metal detecting at both Areas 1 and 2 to ascertain whether evidence of the battle extended into these areas, he did not have an opportunity to examine the physical integrity of the locations. He therefore did not know the locations were cultivated when he wrote the report. His recommendations were predicated on the assumption the areas were undisturbed.

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Appendix A
Douglas Scott Report

Assessment of MDOT Battlefield Rest Area Alternatives for Battle of the Little Bighorn Archaeological Materials

Prepared for Ethnoscience Inc. of Billings, Montana

By Douglas D. Scott, PhD, RPA
Connor Consulting
Grand Junction, Colorado
July 2, 2013

Introduction

Initially MDOT proposed four alternatives to consider for developing a rest stop at the Little Bighorn Battlefield National Monument and Broadus Highway 212 interchange on Interstate 90. One alternative was subsequently removed from consideration. The purpose of this assessment is to identify the potential for archaeological deposits associated with the Battle of the Little Bighorn on each of the three remaining parcels.

Methods

Each alternative rest stop site was evaluated using a variety of original and synthetic source material on previous archaeological investigations of the Little Bighorn Battlefield. Since 1984 approximately thirty archeological projects, using metal detecting transects, have inventoried over 1900 acres of land in and around the park including alternative 3. The park itself consists of 765 acres, all inventoried in 1984 and 1985. In subsequent years over 1200 acres outside the park boundary were inventoried. Over 5000 battle-related artifacts have been collected, analyzed, reported, and cataloged (Scott 2013). Additional sources consulted include the vast array of published historical studies and available Lakota and Cheyenne oral history accounts both published and those found in the White Swan Library at Little Bighorn Battlefield National Monument.

Battle-related Archaeological Assessment Results

Alternative 1. The first rest stop alternative is located north of Highway 212 and west of Custer Battlefield Trading Post. The area is hilly and dissected by ravines and coulees. No formal archaeological investigations have taken place on this property. No known Little Bighorn battle materials are reported from this area in Greene's (1986) compilation of relic finds or by Weibert (1989) in his compilation of his father's relic collecting activities. An 1877 map of the field of battle by William Philo Clark, an army officer visiting the field, indicates warrior activity in the area that could be construed as part of Alternative 1 (Donahue 2008:96-99).

Oral history suggests (John Doerner to author, personal communication, October 22, 2006) that some combatants may have used some part of this general area. However, the source material is general and open to interpretation as to the actual location.

Recommendation for Alternative 1 – Should this alternative be selected it is recommended that an intensive archaeological inventory of the affected area be undertaken as part of any mitigation plans. Both visual and 2 meter wide spacing metal detector transects can be employed to fully cover the area to determine if there are battle-related materials are present or not.

Alternative 2. Alternative 2 is located about ¼ mile north of Highway 212 and slightly north and east of the Crow/ Northern Cheyenne Hospital. The ground is relatively flat. No formal archaeological investigations are recorded for this property. No battle-related relic finds are reported for this area and no battle-related oral histories appear to mention this parcel.

Recommendation for Alternative 2 - Should this alternative be selected it is recommended that an intensive archaeological inventory of the affected area be undertaken. Both visual and 5 meter wide spacing metal detector transects can be employed to fully cover the area to determine if there are battle-related materials are present or not. The wide metal detector transect spacing is suggested as the likelihood of battle-related materials being present is low. No doubt metal debris from later land uses will be present. Should battle-era materials be found then readjusting the metal detector transect spacing to 2 meters wide is recommended.

Alternative 3. This parcel is located south of Highway 212 and north of the Little Bighorn Battlefield National Monument entrance road. The ground dissected and is composed of ridgelines and ravines and coulees. It is located on area now referred to as Custer Ridge Extension (Scott and Bleed 1997).

No relic finds are reported from the area by Weibert (1989). Greene's (1986) maps suggest several bullets were found in this general area by various collectors. An 1877 map of the field of battle by William Philo Clark indicates warrior activity in this general area (Donahue 2008:96-99). One of John Stands In Timber's maps, a Northern Cheyenne historian and leader, assembled from accounts he collected from warriors who participated in the fight suggest that Alternative 3 was used by warriors at some point in the battle (Donahue 2013:40-41).

The area was archaeologically inventoried in 1994 as part of an effort to assess the archaeological potential of selected areas outside the national park boundary. Permission was obtained from the Crow Tribe and other owners by park staff during the spring of 1994. The archaeological investigations used a 3 meter wide metal detector transect spacing to cover the entire Alternative 3 parcel.

The 1994 investigations recovered 28 battle-related artifacts in the metal detector sweeps of the parcel (Scott and Bleed 1997). The majority of artifacts were Army .45-caliber 405 grain Springfield carbine fired bullets (19 total). The other artifacts include four Army 45-55-caliber Springfield carbine fired cartridge cases, four .45-caliber Colt Army revolver cartridge cases, and one .44-caliber 220 grain civilian bullet fired in a Winchester made firearm such as the Henry rifle, Model 1866 carbine or rifle, or the Model 1873 rifle. All used the same rifling system. All artifacts and records of the investigations are part of the Little Bighorn Battlefield National Monument collections currently housed at the Western Archeological Conservation Center in Tucson, Arizona.

Firearms identification (Scott and Bleed 1997:72-73) determined that two of the Colt .45-caliber cartridge cases were fired in the same gun indicating that three separate Colt revolvers were represented by the four clustered Colt cartridge cases. None of the .45-55-caliber carbine cases matched to other cartridge case indicating there were four separate guns represented by these four cartridge cases. Other .45-55-caliber cartridge cases were found along the Custer Ridge extension on adjacent properties. Some matched to cartridge cases found at Calhoun Hill at the south end of the Custer battlefield. Scott and Bleed (1997) suggest these weapons may have been in soldier hands at the beginning of the battle but were captured by the victorious Lakota and Cheyenne and turned against Custer's soldiers during the late phases of the battle.

The 19 .45-caliber carbine bullets were among many more found on adjacent properties. Scott and Bleed (1997) interpret these bullets, based on the directional angle of impact, as coming from the Last Stand Hill area. While few cartridge cases were found during the archaeological investigations of Last Stand Hill the presence of army carbine bullets on Custer Ridge extension and in Alternative 3 strongly suggest that Custer's men were returning fire from warrior

positions located in this area. The number of bullets recovered from Alternative 3 and elsewhere on Custer Ridge extension indicate the soldiers' fire was sustained for a period of time.

The archaeological, relic collecting, and oral history combine to indicate that the parcel identified as Alternative 3 is a significant part of the Battle of Little Bighorn landscape. The military crests of the ridge tops provided cover and concealment for warriors firing at Custer and his soldiers as they occupied Last Stand Hill and possibly the area now used as the park visitor center and parts of Custer National Cemetery. It is also possible, based on other archaeological finds on adjacent property that a portion of Custer's command, possibly a flanking element, used the ridge before being pushed back to Last Stand Hill through the visitor center and national cemetery areas (Scott and Bleed 1997, Scott 2013).

Recommendation for Alternative 3. Given the rich oral tradition of warrior use of this parcel as well as the extensive archaeological record of battle-related artifacts indicating both warrior and soldier use it is recommended this parcel be avoided. This parcel is very significant to the Little Bighorn story and preservation is strongly recommended by avoidance. If Alternative 3 is selected it is recommended that an intensive 2 meter wide transect metal detecting survey be undertaken as part of any full archaeological mitigation effort. Such an endeavor should be supervised by a qualified and experienced conflict archaeologist(s).

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Appendix B
Meeting Minutes

Meeting Minutes

Project: Battlefield Rest Project

When: July 8, 2013, 1:30-3:30

Where: Little Bighorn Battlefield National Monument Conference Room

Attendees: Lynelle Peterson (Ethnoscience), Denise Swanke (NPS); Doug Lieb (MDT), Steve Platt (MDT), Emerson Bull Chief (Crow Tribe), Chris Mehus (Beartooth RC&D Area, Inc), Justin Moschelle (BIA).

The purpose of the meeting was to discuss the cultural resource aspects of the Battlefield rest area alternatives. This meeting allowed the members of the Crow Tribe, NPS, BIA and MDT to hear about the Ethnoscience findings and to provide input on deficiencies or give recommendations on future work.

The meeting began with Lynelle Peterson handing out four figures. Two figures showed the location where inventories have been completed in the past (both in 7.5 quad and aerial format), and the location of nearby cultural resources (both in 7.5 and aerial format). The other two figures show the locations of previously recorded sites (also in 7.5 quad and aerial).

Lynelle informed the group that she was hired to complete background information for the remaining three locations that are currently on the table for the proposed rest area/museum/NPS office facilities. She then provided a brief discussion of the sources of her information and her findings.

The primary sources of information came from an examination of files available from the Montana State Historical Society, General Land Office maps and Doug Scott, who has conducted many projects associated with the 1876 Little Bighorn battle. Lynelle then referred to the handouts, noting that none of the previous investigations or sites recorded for the monument are shown, nor would they be discussed in any great detail within the report as they are not pertinent to the current project. She noted that several studies have been done in the past. Indeed, with the possible exception of a small portion of Area 2, all three areas have been investigated since 1987, using current standard archaeological survey methods.

The only previously recorded site located within or immediately adjacent to the alternatives is part of the Little Bighorn battlefield. In 2005, Doug Scott conducted a study to the north and west of the monument that included Area 3. As two of the handout maps show, the study found several bullets and cartridges associated with the battle; it also found a possible Indian position. Some of the artifacts are located within the Area 3 spot.

There are two additional bits of information that is pertinent to this finding. In 1999, Scott submitted an update to the National Register form that indicated that the battlefield was also NRHP eligible under Criterion D. And in 2005, Scott updated the boundaries of the battlefield to include the area south of Highway 212. This means Area 3 is located within the expanded boundaries of a National Register listed site.

Another possible, but unrecorded site, is a stage route that is identified on a GLO map, and which goes through Area 2. This trail is believed to have provided a link between Fort Custer and Fort McKinney, though it was likely used even after Fort McKinney was moved, as it still shows up on the GLO maps a decade later. Lynelle noted that when she looked at the aerial she saw no evidence of the trail. Although she had not physically looked at the location, she suspected it had been cultivated in the past. She planned to look at the area after the meeting. If the area was cultivated, it was unlikely the location would be considered eligible for the National Register.

Lynelle then asked if people knew of other sources of information or data that she should be looking at. For instance, the information was gathered from written sources and there could be people who live on the reservation who know of things that have happened in the past that are not in the records she looked at.

Emerson Bull Chief indicated that they (the Crow) may have information. Tim McCleary has a database that has information on important Crow locations. They could gather it as part of their study.

Lynelle then asked if there was any other missing information people would like to bring up.

Emerson indicated that a TCP study was not done and that it needed to be done.

Steve Platt stated having a TCP study would be good and would need to be done.

Lynelle said that it was outside her scope of work; however, it might be possible to move back the deadline a bit if the work could be done quickly.

Emerson stated that he could get 20 people on the project if needed and get it done quickly.

Lynelle stated that it was her understanding that the tribe may be willing to do the survey for free.

Emerson indicted that he felt they should get paid.

Lynelle asked how much did he think it would cost. She had a little bit of money in her budget but not a lot. Her client may or may not have money available. She would also have to talk to her client about this.

Steve Platt stated that the work should be done. If more money is needed then DOWL HKM may need to go back for an adjustment.

Lynelle Peterson asked, other than the TCP study, does anything else need to be done? Inventories have been done, so a normal Class III study may not be needed. However, Doug Scott recommended a metal detecting study if Areas 1 or 2 are chosen. In Area 1, he recommends a spacing of two meters because of its proximity to the battlefield. In Area 2, he recommends a wider transect that could be narrowed down if positive results occurred.

Justin agreed that metal detecting should definitely be done. Steve Platt agreed. Emerson stated they could do the work. Lynelle said that if metal detecting was going to be done, she would recommend that Doug Scott be hired to lead the project. Not only would this insure continuity with the previous study, but he is also the person with the casts and is the most qualified to analyze the bullets. Steve, Justin and Emerson agreed.

Lynelle stated that she did not think anything had to be done in Area 3. Given its location within an eligible site, she felt Area 3 was probably off the table as a possible location.

Denise Swanke is uncomfortable with stating Area 3 is off the table. She has several constituents that absolutely want Area 3 developed. The Friends of the Battlefield have bought the cultivated field to the west of Area 3, and they would like to see the rest area moved slightly to the northwest, immediately adjacent to their land.

Lynelle explained that her report will be based completely from a Section 106 perspective. There will definitely be other perspectives, based on plants, water etc., that will also play a part in the decision. The NPS, MDT and Crow will ultimately weigh these factors and make a final decision. She was only talking from a 106 perspective.

Doug Lieb agreed. He indicated that a variety of factors will be reviewed to determine where the rest area will be placed. For instance, he will be reviewing these locations from an engineering perspective.

Steve Platt stated that from his perspective Area 3 is out of the running. MDT has a more strict policy regarding significant sites that most federal agencies have. Under MDT Regulation 4F the highway department is not allowed to adversely affect significant cultural resources if a reasonable alternative is available. Areas 1 and 2 both represent reasonable alternatives. He does not see how he could justify Area 3 under these circumstances.

Chris Mehus noted that although this is a joint project, in which MDT, NPS and Crow are all working together to find a mutually acceptable location, MDT is the lead on this project. Plans for a rest area have been occurring off and on for over a decade. It is his understanding that MDT will be developing a rest area and as the agency with funding,

they will move forward on this project.

It was decided that Lynelle had sufficient information to move forward, and that Emerson would arrange to have a cost estimate sent the following day. Although Denise was not able to attend, the other members of the group decided to visit Area 1.

Areas 1 and 2 (which was visible from Area 1) are clearly cultivated. Several informal comments were made during this visit. Steve Platt was more comfortable with the location based on evidence of previous disturbances. Doug Lieb noted that although the location of Area 1 on the map Ethnoscience presented showed it located on a slope, the top would be a better location because it would require less ground moving. Several people commented on the good view from that location, as you can see much of the monument and most of the battlefield from the top of the hill. Lynelle indicated that she did not think that metal detecting would be needed because nothing would be in context. Steve Platt agreed. Justin Moschelle felt doing a metal detecting project would provide a good training opportunity for the tribe.

Appendix C
Crow Tribe Cultural Resource Inventory

Crow THPO NEGATIVE REPORT

Report No.	Crow THPO101513						
Project Title	Proposed I-90 Rest Area, Crow Agency, MT						
Report Date	11-14-13		Surveyor		Lila Bull Chief		
Reservation	Crow	Project	MDT	Acres	Site 1: 98.38 acres. Site 2: 37.44 acres	County	Bighorn
				Quad Map Name			
Town	Range	Section		(Attach copy of 7.5 Min Quadrangle Map clearly showing the area inventoried.)			
SEE BELOW							

Description of Project and Setting:

The project was a survey of two purposed sites (Sites 1 and 2, SEE attached map) for the development of a highway rest area. Site 1 (SWSE of Section 7, T3S R35E) consisted of 98.38 acres and was surveyed above the ridgeline to the northwest and northeast, all the way to the road on the south. Site 2 (NESW of Section 6, T3S R35E) consisted of 37.44 acres and was surveyed below the ridgeline located to the southeast.

Both sites are cultivated, rural agricultural property with limited two-track trail access (SEE attached photos).

The archeological survey was conducted on October 15, and October 16, 2013 by Lila Bull Chief, Crow THPO Field Supervisor and Archaeology Technicians, McKinley Spotted Bear, Avery Bulls Shows, Jason Kills Pretty Enemy and Marie F. Scott.

Description of Survey Methods:

A standard pedestrian survey (3 meter transects) was conducted and ground visibility was good.

Results/Recommendations:

No cultural resources were located and upon review of the field report, I recommend a finding of no significant impact (FONSI).

Reviewer: Timothy P. McCleary Ph.D., Crow THPO Archaeologist

Date: 11-14-13

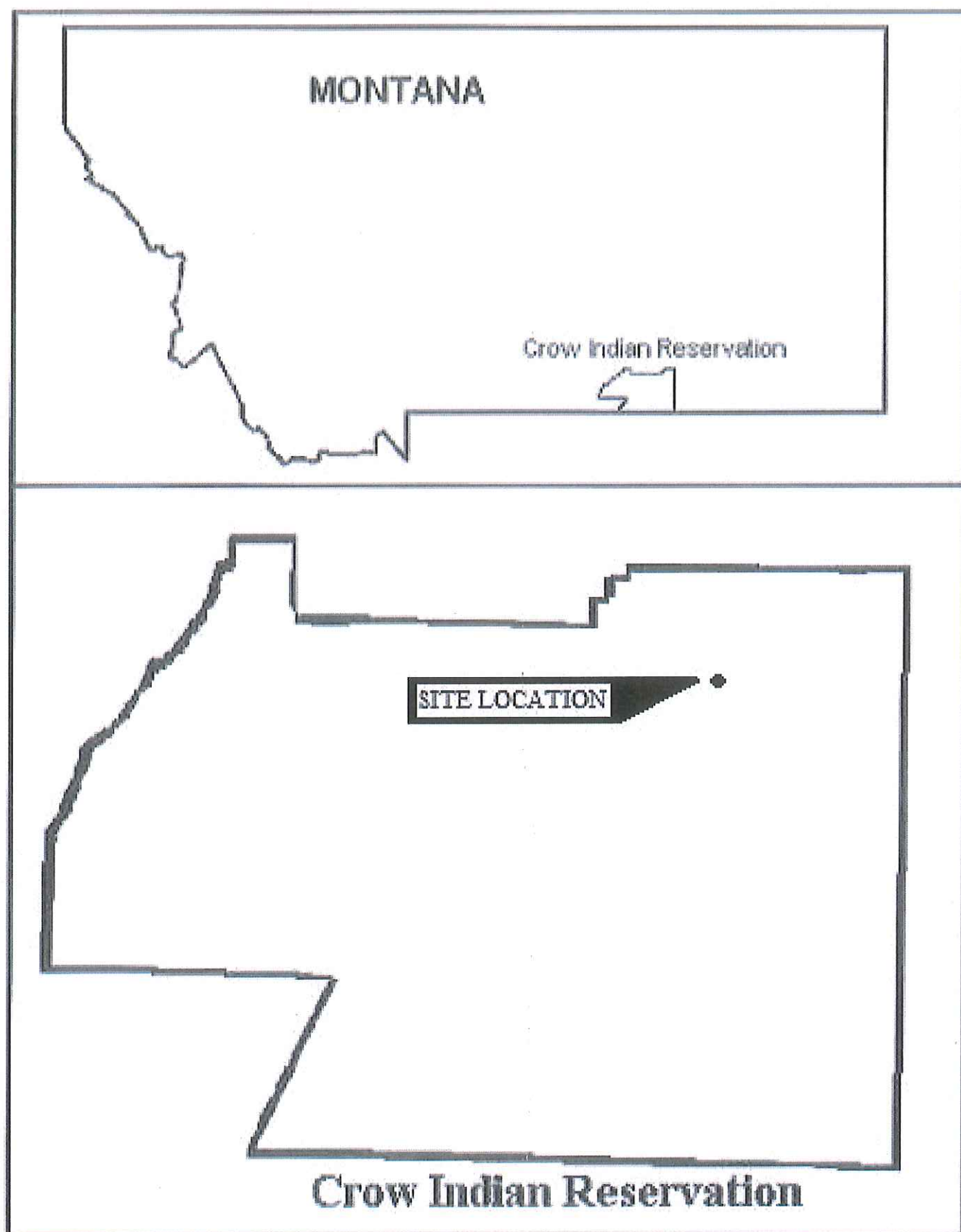
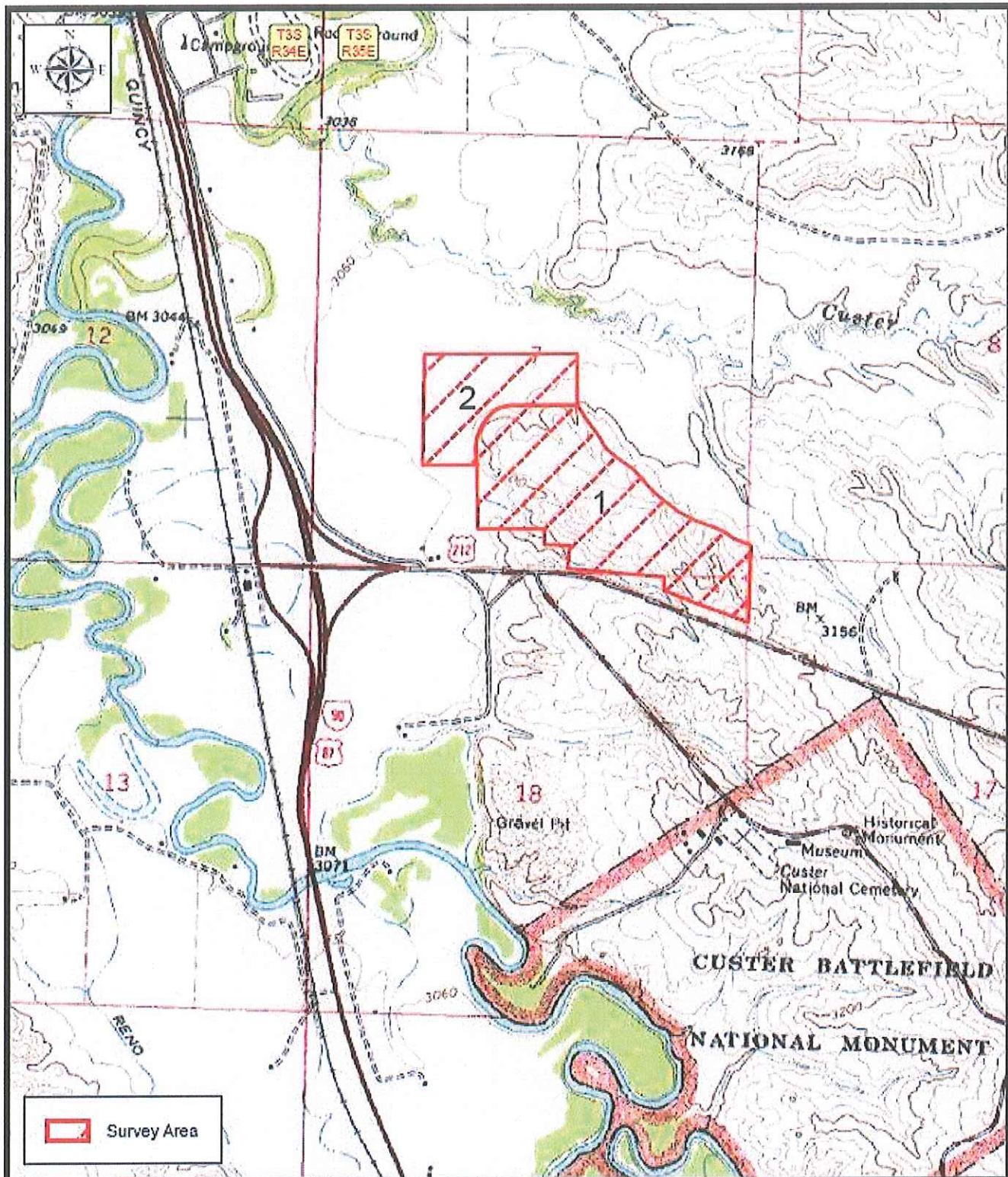


Figure 1: Project Area location in south-central Montana.

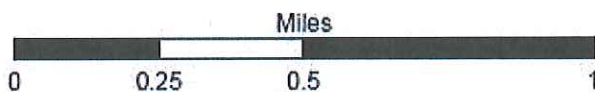


Source: Crow Agency, Mont. (1987) 7.5 Minute Quadrangle



Ethnoscience, Inc.

Battlefield Rest Area Cultural Inventory



Scale 1:24,000

For Official Use Only: Disclosure of Sites Prohibited (43 CFR 7.18)



Proposed rest area Site 1 looking east (top) and north (bottom)



Proposed rest area Site 2 looking east (top) and north (bottom)

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 8

Public Survey Summary



MEMORANDUM

Physical Address:
222 North 32nd Street
Suite 700
Billings, Montana 59101

Mailing Address:
P.O. Box 31318
Billings, Montana 59107-1318

Phone: (406) 656-6399

Fax: (406) 656-6398

To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: August 7, 2013

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012001
Crow Native Days Survey Summary

A non-scientific survey was conducted by the following advisory committee members on Sunday, June 23, 2013 at the Crow Native Days Event in Crow Agency, MT.

Jessi Real Bird	Crow Tribe – Public Works
Sarah Nicolai	DOWL HKM
Nathan Perius	DOWL HKM

Survey Purpose and Format

The purpose of the survey was to gather input from the Crow Tribal community about their vision for the development of a shared site for a Montana Department of Transportation (MDT) rest area, and a future Tribal museum and National Park Service (NPS) visitor center.

A two-page survey form was developed in coordination with representatives from MDT, the Crow Tribe, Federal Highway Administration (FHWA), and NPS. The form (Appendix A) includes questions about preferred site location and potential design themes/characteristics.

Survey Booth Location and Displays

The survey booth was located underneath the Tribal Grandstand facility near concession booths from 8:00 a.m. until 12:00 p.m. to coincide with the Ultimate Warrior Challenge event. Survey booth displays included figures illustrating the three potential development sites under consideration and examples of Native American-themed building designs.

Survey Method and Sample Population

Survey administrators approached event attendees to request their participation in the survey. Survey administrators read the survey questions to some participants, and recorded responses on the form. Other survey participants read and completed the form on their own using pens, clipboards, and chairs provided at the booth.

A majority of event attendees were Tribal members, varying in age from young children to elders. Survey participants ranged in age from under 20 years old to more than 60 years old. Survey participants were generally approached at random, with the exception of participants known by Jessi Real Bird. Survey participants were offered candy and other complimentary items after answering survey questions.

Survey Results

Survey results were presented during an advisory committee meeting on July 17, 2013. A total of 94 survey forms were completed. Responses to the first four survey questions are summarized below. Appendix B summarizes additional survey comments.

Question 1. Of the three sites, which individual location do you prefer and why?

The largest number of respondents (42 or 45%) preferred Site 1. Equal numbers (23 or 25%) preferred either Site 2 or Site 3. The remainder indicated none of the above (3 responses), no site preference (2 responses), and Site 1 or Site 3 (1 response).

Question 2: How would you like to see Crow Tribal culture represented at the site?

The largest number of respondents (50) expressed a desire to incorporate a teepee symbol at the site or as part of the building design. Other suggestions included horse (30 responses), circle (13 responses), arrowhead (12 responses), Crow Culture/Apsalalooke (5 responses), Tribal colors (3 responses), and chiefs (2 responses). Some survey respondents noted multiple suggestions.

Question 3: Would you like the site to be noticeably visible and attract attention?

A majority of respondents (58 or 62%) noted the site should be highly visible from the highway and interstate. A smaller contingent noted the site should be visible, but compatible with the surroundings (17 or 18%) or did not specify a preference (16 or 17%). The remainder (3 or 3%) would like the site to blend into the landscape and be modest.

Question 4: For the Crow Tribal Museum, do you have any preferences for building orientation (N/S/E/W), views from the site, or design features?

The largest number of respondents (39 or 41%) noted buildings should face east toward the sunrise. Approximately one-third of respondents (33 or 35%) did not respond to the question or did not note a preference. The remainder preferred the building to face north (5 responses), south (3 responses), west (1 response), or southwest (1 response).

Appendix A
Survey Form



Surveyor Initials _____
Date: _____

Battlefield Rest Area Survey

Crow Native Days - Sunday, June 23, 2013

Three sites are being considered for development of an MDT rest area, and each site may also include a new Crow Tribal museum and a new National Park Service (NPS) visitor center. The site will be developed for all three facilities (see reverse for locations).

1. Of the three sites, which individual location do you prefer? Why?

☐ Site 1 ☐ Site 2 ☐ Site 3

Comments: _____

2. How would you like to see Crow Tribal culture represented at the site? For example, themes incorporating a teepee, circle, arrowhead, horse? Subtle or abstract themes? Literal/direct themes?

Comments: _____

3. Would you like the site to be noticeably visible and attract attention?

- ☐ Yes, the site should be highly visible from the highway and interstate.
☐ The site should be visible, but compatible to its surroundings
☐ No, the site should blend into the landscape and be modest.

4. For the Crow Tribal museum, do you have any preferences for building orientation (N/S/E/W), views from the site, or design features?

Comments: _____

5. Any preferences for the rest area or NPS visitor center buildings?

Comments: _____

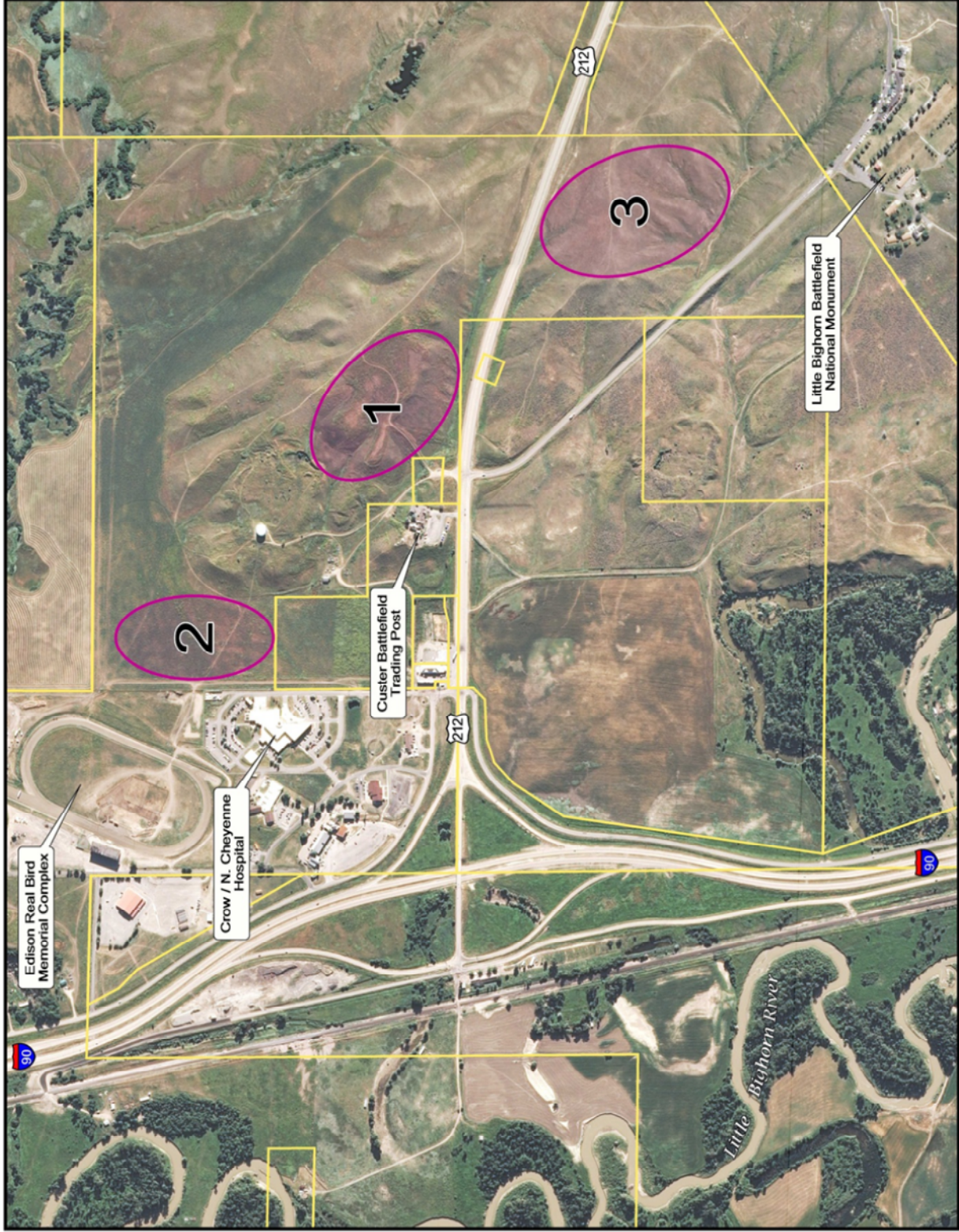
6. Please indicate:

- ☐ Tribal Member ☐ Non-Tribal Member
☐ 10-19 years old ☐ 20-39 years old ☐ 40-59 years old ☐ 60 years or older

7. Other Comments (Please print):

Please contact the Crow Tribal Office (406.638.3715) for more information about this project. Comments may also be left at the Crow Tribal Office or returned to DOWL HKM, PO Box 31318, Billings, MT 59107-1318.





Rest Area Study Sites

LEGEND

Study Sites

Land Ownership
Boundaries



Base Image: 2011 NAD Orthophotos
Created: July 15 - Sept 21, 2011
File: H:\04\00000\040000\040000\040000.mxd
Data Source: G:\2007\03_08\07_08.mxd

Appendix B

Survey Results



CROW NATIVE DAYS SURVEY RESULTS

LITTLE BIGHORN BATTLEFIELD

Rest Area & Museum Complex

Survey conducted June 23rd, 2013



1. SITE LOCATION

“Of the three sites, which individual location do you prefer and why?”

SITE 1

- It's a bigger site.
- It will not be right in town area.
- Most traffic passing through to North or South Dakota.
- In between the battlefield and the Trading Post is better for access.
- It's a little bit closer to civilization.
- Seems closer to the highway (212), not as far as the other two sites.
- This site looks like it will draw more travelers, visitors to Crow Agency when they stop. Maybe get them more interested or curious visitors.
- Probably best location for tourists.
- Off the highway.

SITE 2

- Soil near site 3 is bad.
- Ideal place because it needs to attract tourists.
- The site will be closer to the Tribal properties and also near potential tribally owned businesses.
- The location is through town and easy access off the highway.
- Would like to have more people/tourists on the rez to visit our culture

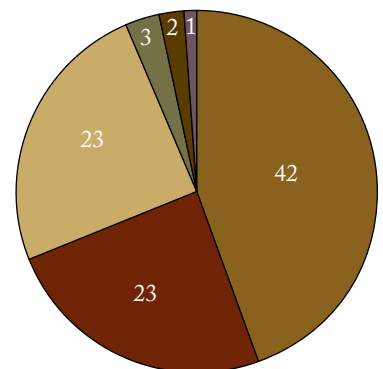
SITE 3

- All Crow.
- 1 & 2 too close to other areas for events. 3 goes by Battlefield.
- Easy access from I-90 & HWY 212.
- Visible.
- Overlooks Valley and Mountains.
- It has a wide open area and more parking space.

NONE OF THE ABOVE

- All three sites look to benefit Custer Battlefield Trading Post or the Little Bighorn Battlefield. It would be nice if the site were nearby Crow Tribe or Crow member businesses.
- Closer to Hardin.
- Opposed to any site work for MDT.

- Site 1 - 42
- Site 2 - 23
- Site 3 - 23
- None of Above - 3
- No Preference - 2
- Site 1 or 3 - 1



Listed in number of responses each - 94

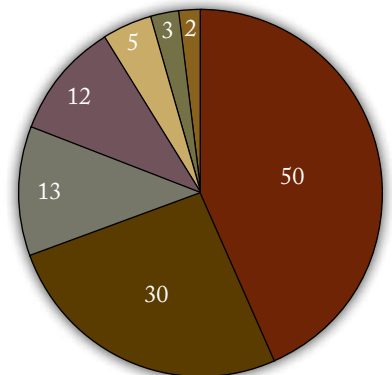
2. TRIBAL CULTURE

“How would you like to see Crow Tribal Culture represented at the site?”

IDEAS

- Teepee
 - “Teepee Capitol of the World”
- Horse
- Circle
- Arrowhead
- Crow Culture/Apsaalooke
- Crow Tribal Colors
- Chiefs
- All Crow
- Crow Family
- Pictures of the People
- Clan System
- Crow Lodge Poles
- Buffalo
- Travois
- Camp Sites
- History / Stories
- Crow Woman
- War Bonnet
- Bighorn Mountains
- Grass on the building
- Children of the Large Beaked Bird
 - Crow Tribe of Montana
- Scouts area where they were dismissed when they retreated to watch the battle.
 - they weren’t part of the battle.
- Statue of Curly
 - early scout
 - family have residential landmarks right before the battlefield
 - ½ mile away by the Bighorn River.
 - I appreciate this.
- Replica of Old Round House
 - events have taken place there for many generations.
- Bighorn Visitor Center
- Like all of the examples
 - CTA
- We had a design years ago
 - look for it
- The forgotten College Design
- Something that would get tourist’s and traveler’s attention and actually gain something from it.
- Be imaginative.
- Would be so awesome!
 - much for the Crow staffs the other tribe
 - subtle themes
 - direct themes

- TeePee - 50
- Horse - 30
- Circle - 13
- Arrowhead - 12
- Crow Culture/Apsaalooke - 5
- Tribal Colors - 3
- Chiefs - 2



*Listed in number of responses each
Some surveys listed several ideas*

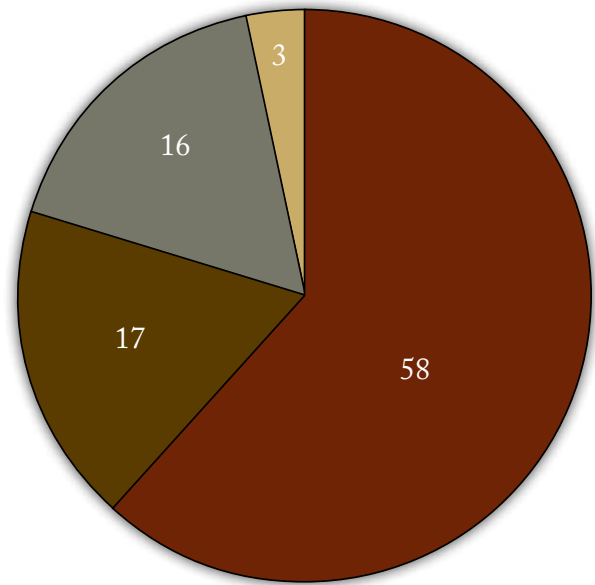
3. SITE VISIBILTY

Would you like the site to be noticeably visible and attract attention?

SITE VISIBILITY

Listed in number of responses each - 94 total

- Highly visible from highway and interstate - 58
- Visible, but compatible with surroundings - 17
- No preference - 16
- Blend into the landscape and be modest - 3





4. BUILDING ORIENTATION

For the Crow Tribal Museum, do you have any preferences for building orientation (N/S/E/W), views from the site, or design features?

NORTH COMMENTS

- Info on history for Crow Tribal members, Clan info, colors

EAST COMMENTS

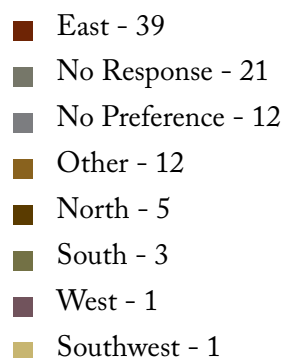
- Facing east the way teepees face.
- Crow designs.
- Sunrise.
- Main door facing east.

NO RESPONSE OR PREFERENCE

- No comments were made

OTHER COMMENTS

- Door faces East where the sun rises, patio to the north for talks or on the south with stadium seating.
- Face highway.
- Crow emblem in each direction.
- Crow style design.
- A Crow Tribal museum needs to be first class like the National Museum of American Indians.
- Appropriately ventilated for preservation of artifacts.
- Teepee shaped building.



Listed in number of responses each - 94



5. BUILDING PREFERENCES

Any preferences for the rest area or NPS visitor center building

GENERAL COMMENTS

- Keep maintained and cleaned daily.
- Wind and solar powered.
- By the museum.
- Should represent the Apsaalooke Nation to the fullest extent.
- Bulletin referring to the Apsaalooke Nation.
- Crow enrolled members have preference to employment if qualified.
- Design from each of the tribes involved with the Battlefield and 7th Cavalry.
- Chiefs should include Longhair (Sore Lip) and Sore Belly.
- Needs to have a welcoming vibe, bright.
- Incorporate language on site.
- Use Crow design, paint it Crow colors, and fly the Crow flag.
- Pop machines, candy machines, baby changing table.
- Hire more Crows than non-Crows.
- Facing East.
- Octagon building with arbor shades for picnicing.
- Site 1.
- Not applicable unless it benefits Crow Tribe or Tribal Members.
- Air conditioning inside of building.

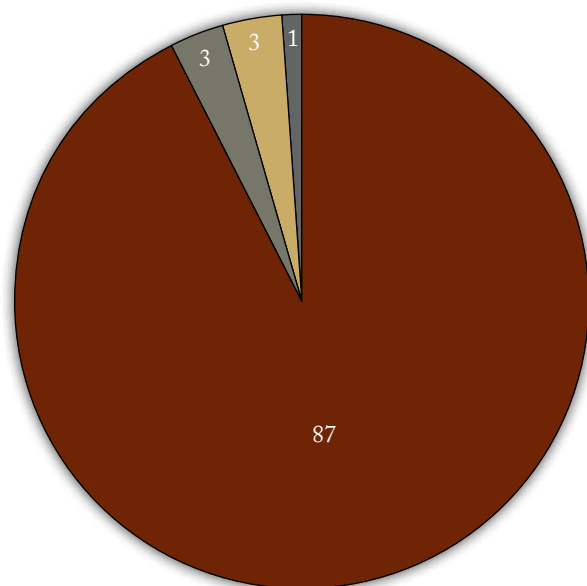


6. ADDITIONAL INFORMATION

TRIBAL MEMBERSHIP

Listed in number of responses each - 94 total

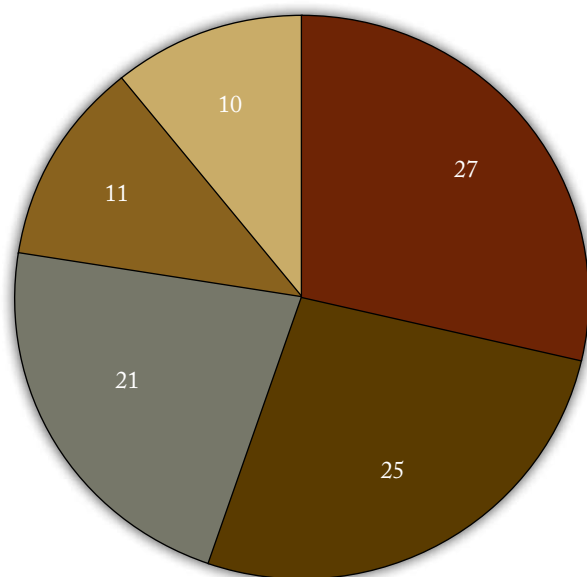
- Crow Tribal Member - 87
- Non-Tribal Member - 3
- No Response - 3
- Other Tribal Member - 1



AGE OF PARTICIPANTS

Listed in number of responses each - 94 total

- 10-19 - 10
- 20-39 - 25
- 40-59 - 27
- 60+ - 11
- No Response - 21





7. COMMENTS

GENERAL PUBLIC COMMENTS

- Looking forward to the project.
- Great!
- Don't mind what it looks like, we just need one.
- Hire someone from Security to watch the place.
- This is so needed in this area.
- Make sure the place is well maintained.
- Get it done. Hope revenue doesn't go to the Tribe Administration. Hope it has its own account and generates forever for future generations.
- Use a mixture of western and Crow Design for décor throughout the buildings.
- The new proposed MDT rest area should be built on Crow Tribe's trust lands. The MDT

should enter in a 25-year business lease with Crow Tribe. Conducting business with the State of Montana would strengthen business relationship between two parties.

- Positive change.
- I'm glad this is going to be done! Exciting!
- Remember the tobacco society.
- Add a small business shop to pay the bills.
- Should have artifacts and media opportunities for tribal events, as well as Crow materials from around the world.

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 9

Public Meeting Summary



DOWL HKM

MEMORANDUM

Physical Address:
222 North 32nd Street
Suite 700
Billings, Montana 59101

Phone: (406) 656-6399

Mailing Address:
P.O. Box 31318
Billings, Montana 59107-1318

Fax: (406) 656-6398

To: Kevin Malone, PE
MDT Project Manager

From: Todd G. Cormier, PE, PTOE, AVS
DOWL HKM Project Manager

Date: November 7, 2013

Subject: Battlefield Rest Area Phase IA, IM 90-9(97)511, UPN 2012000
Public Informational Meeting Minutes

Public informational meetings were conducted for this phase of the project at three locations: Lodge Grass, Crow Agency, and Pryor. Meeting locations, dates, times, and notifications were scheduled by the Crow Tribe, and each meeting was attended by project members.

The purpose of the meetings was to provide an overview of the project for the benefit of Crow Tribal members, and to solicit comments for the project. A summary of the attendance for each meeting is summarized below:

Lodge Grass City Hall, Lodge Grass MT (October 29, 2013)

- 6 attendees
- Project staff:
 - Kevin Malone, MDT
 - Alan Woodmansey, FHWA
 - Todd Cormier, DOWL HKM
 - Kevin Nelson, CTA
 - Chris Mehus, Beartooth RC&D

Crow Agency Community Center, Crow Agency MT (October 30, 2013)

- 18 attendees
- Project staff:
 - Kevin Malone, MDT
 - Gary Neville, MDT
 - Alan Woodmansey, FHWA

- Todd Cormier, DOWL HKM
- Sarah Nicolai, DOWL HKM
- Kevin Nelson, CTA
- Chris Mehus, Beartooth RC&D
- Lynelle Peterson, Ethnoscience

Pryor Community Center, Pryor MT (November 4, 2013)

- 9 attendees
- Project staff:
 - Kevin Malone, MDT
 - Todd Cormier, DOWL HKM
 - Kevin Nelson, CTA

Each meeting was scheduled to begin at 12:00 PM with lunch provided by the Tribe and a formal presentation beginning at 12:30 PM. Each meeting ended between 1:30 PM and 2:00 PM. Copies of the sign-in sheets and comment sheets are provided as attachments to these minutes.

Todd Cormier provided a PowerPoint presentation at each meeting, including an overview of coordination with the Crow Tribe regarding this project, the sites being considered, and the field review and document search completed to date. It was explained that four sites were provided to the project team for consideration by the Crow Tribe. Early in the project, Site 4 (adjacent to the intersection of Highway 212 and the hospital access road) was removed due to its small size. The remaining three sites (Site 1, Site 2, and Site 3) were advanced for further evaluation. An evaluation matrix identifying each of the criteria by which the sites will be evaluated was presented to the public for their consideration. During each meeting, members of the public were provided the opportunity to ask questions during and after the presentation.

During the meeting at Lodge Grass (October 29), members of the Crow Tribe provided a supplemental presentation regarding a proposed redevelopment of the NE corner of the Interstate 90 and Highway 212 interchange, presented by Mohammed Lawal, AIA, of Lawal Scott Erickson Architects Inc., Minneapolis, MN.

The Crow are proposing to redevelop this area with a new casino, hotel, and supporting uses. A conceptual rendering was displayed to assist in the visualization of the concept, although it was cautioned that the rendering was strictly conceptual at this time.

As part of the redevelopment, it was suggested by Mr. Lawal that MDT could consider situating the proposed rest area within the redevelopment area on the corner of Highway 212 and the hospital access road. To facilitate this, Mr. Lawal suggested that parking could be shared between the rest area, the hotel, and the casino.

It was noted that the current MDT project is scoped to review the 3 sites presented, and that each site has already been studied. Regardless, MDT noted that they will take this opportunity under consideration.

Public Comments

General comments received during the public informational meetings are summarized below. Handwritten comment forms are provided as an appendix to this report.

Lodge Grass Meeting

- No Comments

Crow Agency Meeting

- Site 4 would provide the best draw for local businesses and would facilitate Crow Tribal economic development efforts.
- Construction of a rest area at any of the identified sites may affect local businesses.
- Interpretive signing at the rest area should highlight Crow Tribal culture.

Pryor Meeting

- Site 1 looks more appropriate for Rest Area – Right off highway, whereas Site 2 would be congested especially for trucks.
- The site should be higher up and away from congested area so there will be easy access.
- Consider MT State Parks as part of your advisory group, particularly in directing visitors to state park opportunities. Site 1 is preferable due to its proximity to both roads.

MDT Battlefield Rest Area Phase IA Informational Meetings, October 27-November 4

Location: Lodge Grass
Date: 10-29

Please use this form to sign-in.

Name (Please Print):	Leonard Bends
Address:	1463 Bear Creek Rd Lodge Grass, MT 59050
Telephone or Email (Optional):	lbends@msn.com

Name (Please Print):	MOHAMMED LAHAL
Address:	100 PORTLAND AVE S, MPLS
Telephone or Email (Optional):	612-343-1010

Name (Please Print):	Alan Woodmansey
Address:	FHWA, Helena MT
Telephone or Email (Optional):	

Name (Please Print):	KEVIN MALONE
Address:	MDT Helena, MT
Telephone or Email (Optional):	444-9369 KMALONE@MT.GOV

Name (Please Print):	KEVIN NELSON CTA
Address:	13 N. 23RD BILLINGS MT
Telephone or Email (Optional):	248-7455

Name (Please Print):	Marilyn Blacksmith
Address:	Box 412 Crow Agency MT. 59022
Telephone or Email (Optional):	406-629-0033

Name (Please Print):	Patricia Jefferson
Address:	P.O. Box 282 Lodge Grass
Telephone or Email (Optional):	



MDT Battlefield Rest Area Phase 1A

Informational Meetings, October 27-November 4

Location: LODGE GRASS
Date: 10-29-2013

Please use this form to sign-in.

Name (Please Print):	Chris Mehus
Address:	110 S. Main, Joliet, MT 59041
Telephone or Email (Optional):	cmehus@beartooth.org

Name (Please Print):	William T. Africa
Address:	PO Box 586 L. G.
Telephone or Email (Optional):	

Name (Please Print):	Darrell Lefthand
Address:	P.O. Box Pryor, MT, 59066
Telephone or Email (Optional):	259-8741

Name (Please Print):	Larry Blacksmith
Address:	P.O. Box 707 Lodge Grass
Telephone or Email (Optional):	

Name (Please Print):	
Address:	
Telephone or Email (Optional):	

Name (Please Print):	
Address:	
Telephone or Email (Optional):	

Name (Please Print):	
Address:	
Telephone or Email (Optional):	



MDT Battlefield Rest Area Phase 1A Informational Meetings, October 27-November 4

Location: Crow Agency
Date: 10-31-2013

Please use this form to sign-in.

Name (Please Print):	Bryce Rogers
Address:	P.O. Box 325 Crow Agency MT 59922
Telephone or Email (Optional):	bryce14rogers@hotmail.com

Name (Please Print):	Yolanda GoodVoice
Address:	P.O. Box 970, Crow Agency, MT 59022
Telephone or Email (Optional):	Yolanda.GoodVoice@crowtribe.net

Name (Please Print):	Larry Blacksmith
Address:	Lodge Grass
Telephone or Email (Optional):	

Name (Please Print):	John Rife
Address:	2121 Rosebud Drive, Billings MT 59102
Telephone or Email (Optional):	655 6075 jrife@mt.gov

Name (Please Print):	Roberta Backbone Fitch
Address:	P.O. Box 606
Telephone or Email (Optional):	406 679-2478

Name (Please Print):	Michael Boyd
Address:	GAJ22402000
Telephone or Email (Optional):	679 3825

Name (Please Print):	Carm Yellowknife
Address:	P.O. Box 13 Wyola MT 59098
Telephone or Email (Optional):	343-5335



MDT Battlefield Rest Area Phase 1A Informational Meetings, October 27-November 4

Location:
Date:

Please use this form to sign-in.

Name (Please Print):	EARL ATWOOD, BEARTOOTH ROAD
Address:	JOULET, MT SB
Telephone or Email (Optional):	406-962-3914

Name (Please Print):	Deb Pretty Paint
Address:	PO Box 832 Crow Agency
Telephone or Email (Optional):	dprettypaint@yahoo.com

Name (Please Print):	RHOWDA ELTHARD
Address:	P.O. Box 363 Crow Agency MT
Telephone or Email (Optional):	406-638-2398 rhondaelthard@me.com

Name (Please Print):	Latonna Old Elk
Address:	Box 891 Crow Agency MT
Telephone or Email (Optional):	406 638 3139 latonna@ibhce.edu

Name (Please Print):	Alda Goodluck
Address:	Box 690 Lodge Grass
Telephone or Email (Optional):	638-3144

Name (Please Print):	Senator Sharon S Perez
Address:	P.O. Box 211 Crow Agency MT
Telephone or Email (Optional):	639-2198

Name (Please Print):	George Ratz MD
Address:	456 Road-120, LA MT 57050
Telephone or Email (Optional):	679-2019



MDT Battlefield Rest Area Phase 1A

Informational Meetings, October 27-November 4

Location:
Date:

Please use this form to sign-in.

Name (Please Print):	Jeff McDowell
Address:	PO Box 324, Hardin MT 59034
Telephone or Email (Optional):	406-625-5120 js.mcdowell@yahoo.com
Name (Please Print):	Liz Ching, Gov Office - Blgs
Address:	1413 4th Ave N St C
Telephone or Email (Optional):	696-4371 lching@mt.gov
Name (Please Print):	Sharon Peterson
Address:	102 Sky Ranch Dr. Blgs 59106
Telephone or Email (Optional):	406-670-8279
Name (Please Print):	
Address:	
Telephone or Email (Optional):	
Name (Please Print):	
Address:	
Telephone or Email (Optional):	
Name (Please Print):	
Address:	
Telephone or Email (Optional):	
Name (Please Print):	
Address:	
Telephone or Email (Optional):	





MDT Battlefield Rest Area Informational Meeting Comment Form

Three sites are being considered for development of an MDT rest area, and each site may also include a future Crow Tribal museum and a new National Park Service (NPS) visitor center. The site will be developed with all three facilities in mind.

Please use this form to provide any comments you may have regarding the development of the site and the proposed rest area. Your comments may be left behind, or mailed to the address below.

Name:	Yolanda GoodVoice
Address:	
Telephone or Email (Optional):	Yolanda.GoodVoice@gmail.com

Note: Please print

Site ⁴ ~~two~~ would be the Best Draw for ^{Local} Businesses
& facilitate the Crow Tribe to create economic development

Please contact the Crow Tribal Office (406.638.3715) for more information about this project. Comments may also be left at the Crow Tribal Office or returned to DOWL HKM, Attn: Todd Cormier, PO Box 31318, Billings, MT 59107-1318.



MDT Battlefield Rest Area Phase 1A Informational Meetings, October 27-November 4

Location: *Perce*
Date: *Nov 4*

Please use this form to sign-in.

Name (Please Print):	<i>AARON KIMP</i>
Address:	<i>CHIEF PLENTY LOUP STATE PARK</i>
Telephone or Email (Optional):	<i>406-252-1289</i>

Name (Please Print):	<i>SHERY RIDES HORSE</i>
Address:	<i>4157 Swan Ave. P.O. Box 185</i>
Telephone or Email (Optional):	<i>Pryor Mt. 59066 Phone # 256-7628</i>

Name (Please Print):	<i>Rose Marie Bear Tuck</i>
Address:	<i>P.O. Box 318 Pryor Mt 59066</i>
Telephone or Email (Optional):	<i>702-4661</i>

Name (Please Print):	<i>KEVIN MALONE</i>
Address:	<i>MDT - HELOWA</i>
Telephone or Email (Optional):	<i>406-444-9369</i>

Name (Please Print):	<i>KEVIN NELSON</i>
Address:	<i>CTA Billings</i>
Telephone or Email (Optional):	<i>406-248-7455</i>

Name (Please Print):	<i>DOUG HABERMANN</i>
Address:	<i>2300 Lake Elmo Dr. Blgs MT 59105</i>
Telephone or Email (Optional):	<i>dhabermann@mt.gov</i>

Name (Please Print):	<i>Renita Ziep</i>
Address:	<i>Box 202 Pryor, Mt. 59066</i>
Telephone or Email (Optional):	<i>259-9864</i>



MDT Battlefield Rest Area Phase 1A Informational Meetings, October 27-November 4

Location: Pryor
Date: Nov 4

Please use this form to sign-in.

Name (Please Print):	Mellie C. De Crane
Address:	P.O. Box 129 Pryor, MT. 59066
Telephone or Email (Optional):	371-1542

Name (Please Print):	LUJAHUA PLAINFEATHER
Address:	P.O. Box 253
Telephone or Email (Optional):	(406) 794 8057

Name (Please Print):	BERNADETTE SMITH
Address:	P.O. Box 68 PRYOR, MT 59066
Telephone or Email (Optional):	259-6000

Name (Please Print):	
Address:	
Telephone or Email (Optional):	

Name (Please Print):	
Address:	
Telephone or Email (Optional):	

Name (Please Print):	
Address:	
Telephone or Email (Optional):	

Name (Please Print):	
Address:	
Telephone or Email (Optional):	





Battlefield Rest Area Survey Comment Form

Informational Meetings, October 27-November 4

Three sites are being considered for development of an MDT rest area, and each site may also include a future Crow Tribal museum and a new National Park Service (NPS) visitor center. The site will be developed with all three facilities in mind.

Please use this form to provide any comments you may have regarding the development of the site and the proposed rest area. Your comments may be left behind, or mailed to the address below.

Name:	LUTUANA PLAINFEATHER
Address:	P/O Box 253
Telephone or Email (Optional):	plainfeather-sioux@yahoo.com

Note: Please print

Site 1 looks a more appropriate for Rest Area - Right-off highway whereas (2) would be kinda of congested especially for trucks.

Please contact the Crow Tribal Office (406.638.3715) for more information about this project. Comments may also be left at the Crow Tribal Office or returned to DOWLHKM, Attn: Todd Cormier, PO Box 31318, Billings, MT 59107-1318.





Battlefield Rest Area Survey Comment Form

Informational Meetings, October 27-November 4

Three sites are being considered for development of an MDT rest area, and each site may also include a future Crow Tribal museum and a new National Park Service (NPS) visitor center. The site will be developed with all three facilities in mind.

Please use this form to provide any comments you may have regarding the development of the site and the proposed rest area. Your comments may be left behind, or mailed to the address below.

Name:	Mellie C. DeCrane
Address:	PO Box 129 Pryor Mtn
Telephone or Email (Optional):	

Note: Please print

I think it should be higher up -
+ away from congested area.
So it'll be easy access.

Please contact the Crow Tribal Office (406.638.3715) for more information about this project. Comments may also be left at the Crow Tribal Office or returned to DOWL HKM, Attn: Todd Cormier, PO Box 31318, Billings, MT 59107-1318.





Battlefield Rest Area Survey Comment Form Informational Meetings, October 27-November 4

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Please use this form to provide any comments you may have regarding the development of the site and the proposed rest area. Your comments may be left behind, or mailed to the address below.

Name:	DOUG HABERMANN
Address:	2300 LAKE ELMO DR, BLGS 59105
Telephone or Email (Optional):	dhabermann@mt.gov 247-2954

Note: Please print

I like the idea of partnering and providing for the needs of the tribe + national Battlefield. Consider Mt. State Parks as part of your advisory group, particularly in directing visitors to State Park opportunities (Chief Plenty Coups SP in Pryor), Pictograph Cave SP (Billings).

Like site 1 due to its proximity to both roads. Should come and look at the ~~Plenty Coups~~ Plenty Coups SP visitor center to get another idea of how to integrate cultural themes into buildings.

Consider walking/riding trails connecting to the Battlefield, ~~Crow~~ + Crow agency to allow alternative modes of travel.

Emphasize "Warrior Trail" in interpretation.

Please contact the Crow Tribal Office (406.638.3715) for more information about this project. Comments may also be left at the Crow Tribal Office or returned to DOWL/HKM, Attn: Todd Cormier, PO Box 31318, Billings, MT 59107-1318.



BATTLEFIELD REST AREA

PHASE IA – SITE SELECTION

MDT IM 90-9(97)511 UPN 2012001

Public Informational Meetings

Lodge Grass, October 29

Crow Agency, October 30

Pryor, November 4



Introduction

⦿ This Project

- Result of Previous Study Efforts
- To Add Rest Area Site
- Consider Museum and Visitor Center (By Others)

⦿ Current Activities

- Field Work
- Existing Data Collection
- Documentation / Site Selection

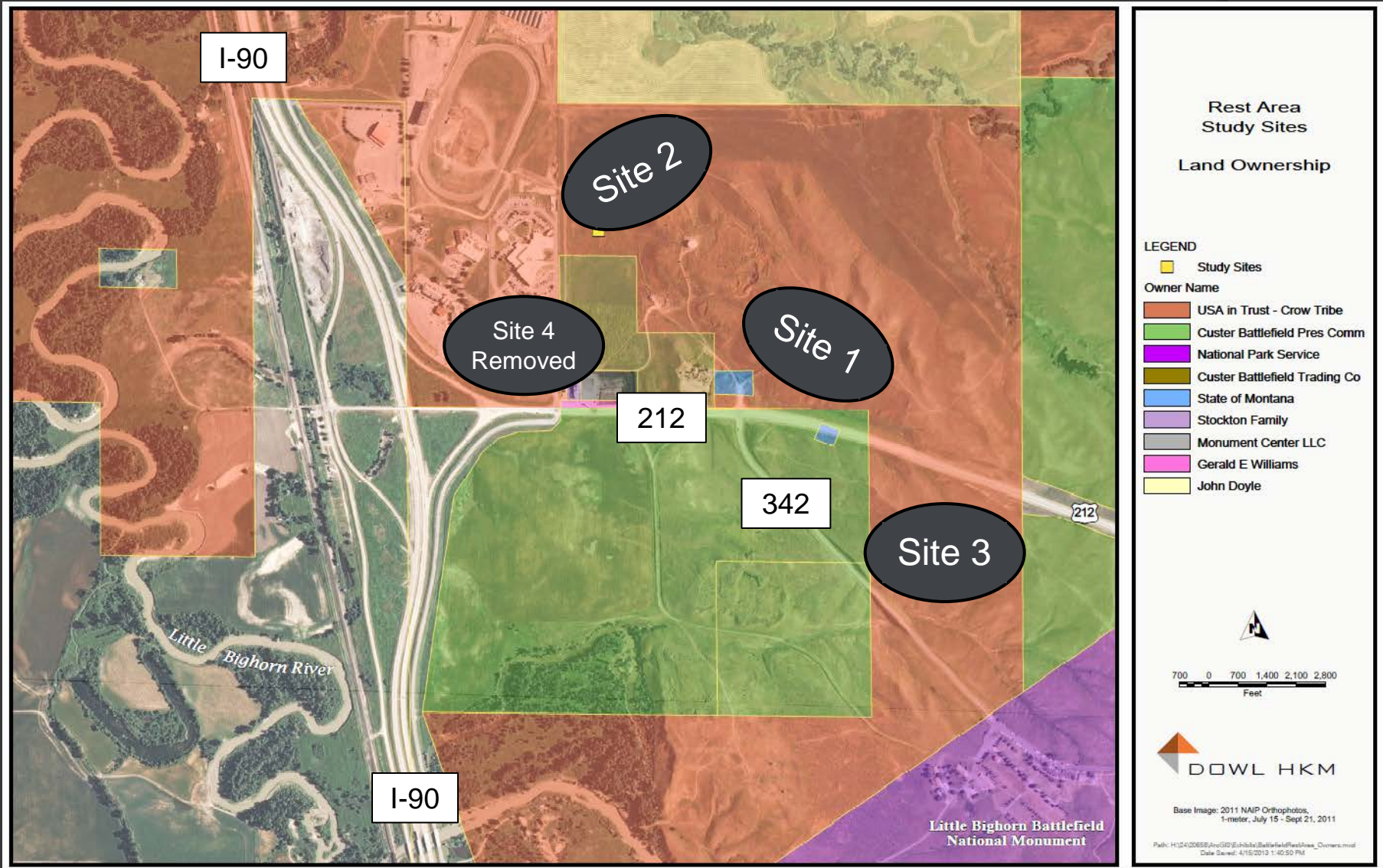
⦿ Future Project (2014 and Beyond)

- Conceptual layout
- Permitting
- Design and Construction

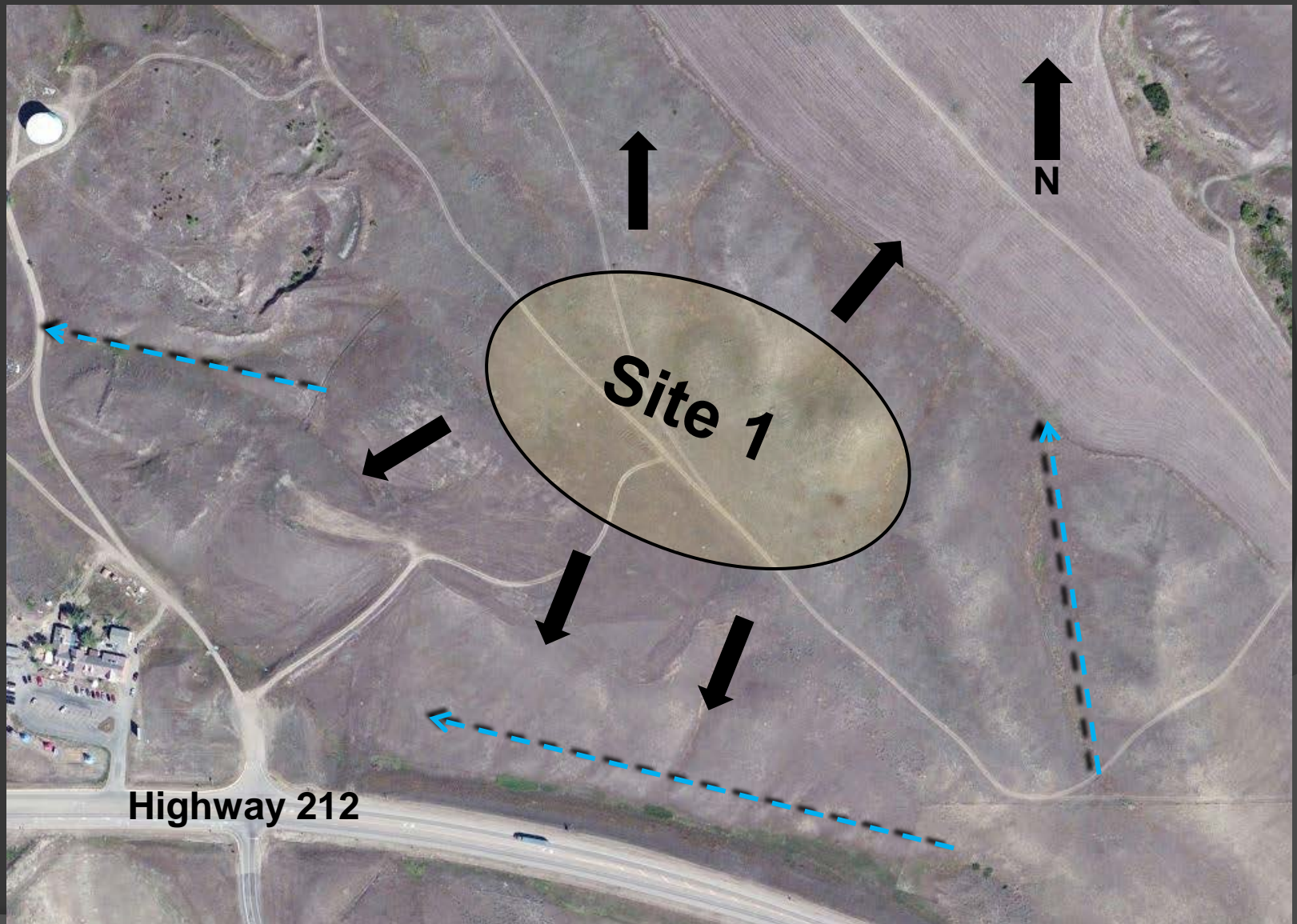
Flooding - 2011



Study Area



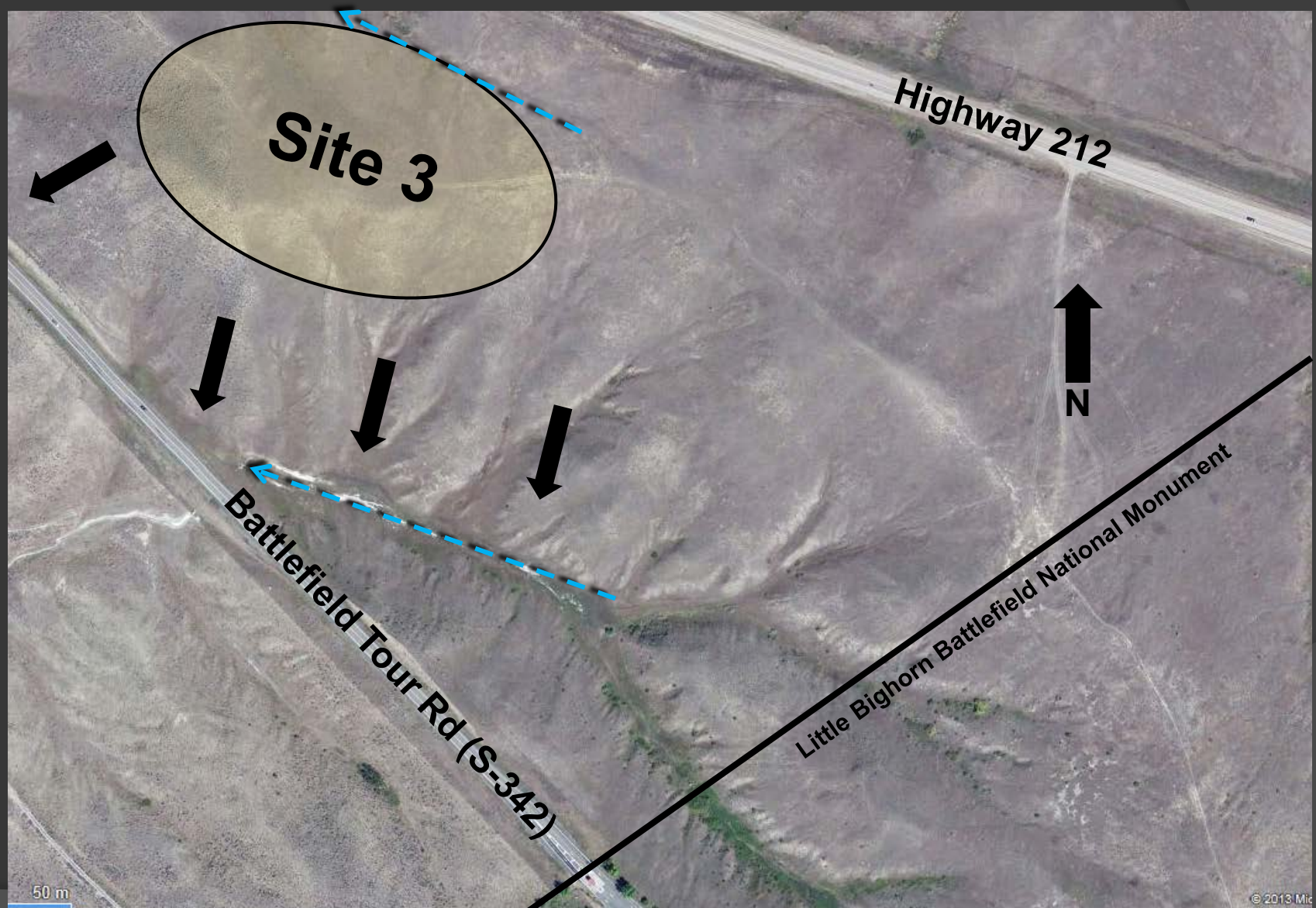
Site 1



Site 2

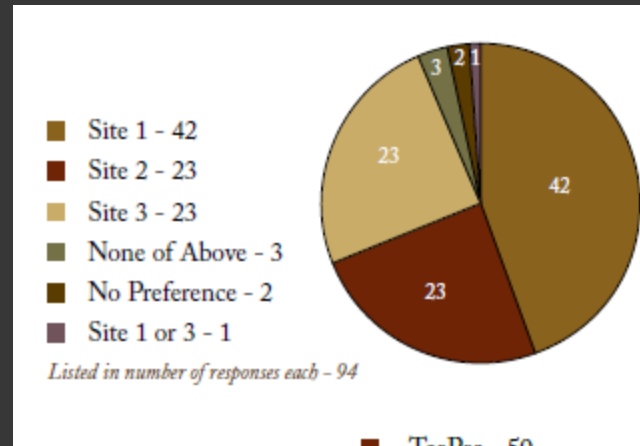


Site 3

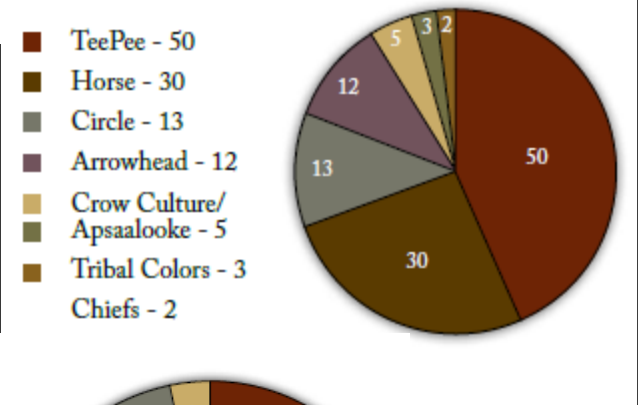


Crow Native Days Survey

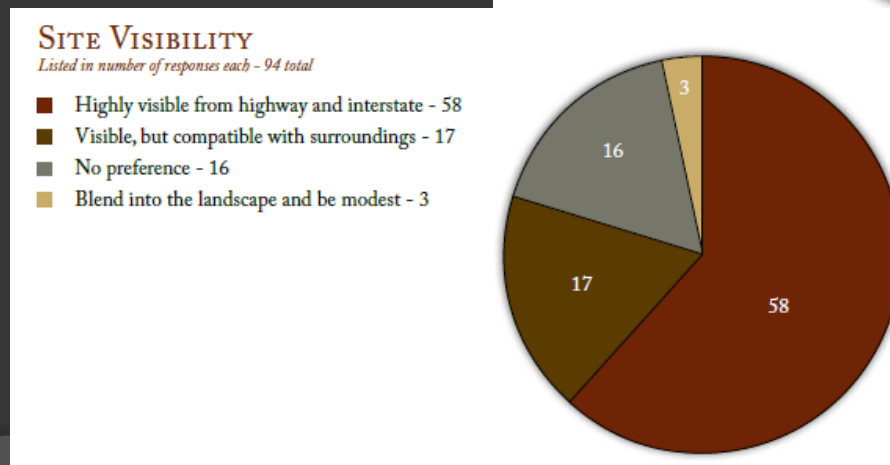
Site Preference



Representation of Crow Culture



Site Visibility



Traffic

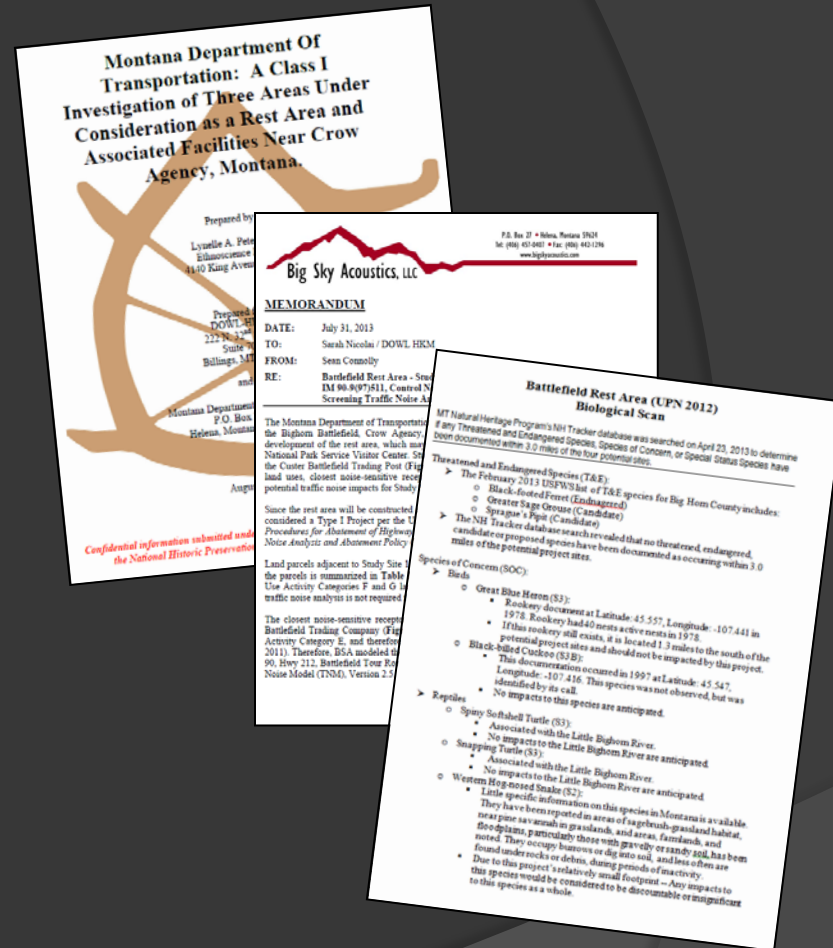
- ⦿ Traffic and Crash Data Provided by MDT
- ⦿ Traffic Statistics (to Design Year)

	Year 2013	Year 2035
Interstate 90	± 8,880 vpd	± 11,500 vpd
Highway 212	± 1600 vpd	± 2230 vpd

- ⦿ Large percentage of Trucks
- ⦿ Crash Statistics
 - Generally lower than state-wide averages

Additional Evaluation Criteria

- Topography
- Utilities
- Hydraulic Conditions
- Geotechnical Conditions
- Environmental
 - Noise
 - Cultural
 - Water
 - Biological
- Public Feedback

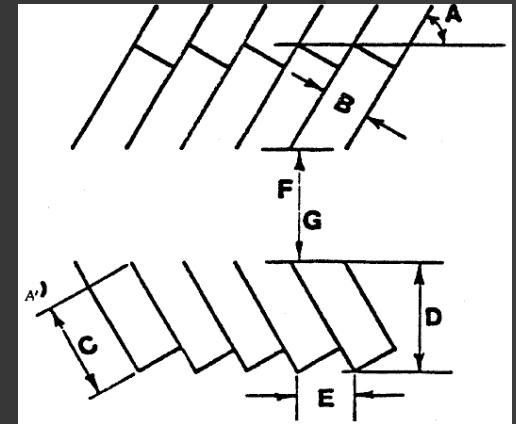


Evaluation Criteria Matrix

Criteria		Site 1	Site 2	Site 3
Constructability/Accessibility Conditions	1 Site Topography	Site has some flat and level areas, as well as some steep grades.	Site is relatively flat.	Site has some flat and level areas, as well as some steep grades.
	2 Site Access and Visibility	Easily accessible and visible from Interstate 90 and Highway 212.	Poor access and low visibility from Interstate 90 and Highway 212.	Easily accessible and visible from Interstate 90 and Highway 212.
	3 Utilities	Tribal utilities can be extended to site.	Tribal utilities can be extended to site.	Tribal utilities can be extended to site.
	4 Hydraulic Conditions	Site expected to have few drainage issues, as there are no offsite drainages contributing to the site.	Site is influenced by some offsite drainage that would need to be collected or conveyed around the site.	Site expected to have few drainage issues, as there are no offsite drainages contributing to the site.
	5 Geotechnical Conditions	Undocumented fill on site, otherwise no observable issues.	Some soft compressible clay soils, otherwise no observable issues.	Known swell potential, otherwise no observable issues.
	6 Building and Parking Demand	Site can accommodate desired parking/buildings for proposed uses.	Site can accommodate desired parking/buildings for proposed uses.	Site can accommodate desired parking/buildings for proposed uses.
Potential Project Impacts	7 Traffic Noise	Increase in traffic noise would not require mitigation.	Closest noise-sensitive receptor and greatest increase in traffic noise.	Increase in traffic noise would not require mitigation.
	8 Cultural Resources	No cultural sites identified by Crow THPO; area has been cultivated.	No cultural sites identified by Crow THPO; area has been cultivated.	Known instances of cultural resources; within boundaries of National Monument.
	9 Water Resources	No surface water bodies, wetlands, or floodplains.	No surface water bodies, wetlands, or floodplains.	No surface water bodies, wetlands, or floodplains.
	10 Biological Resources	No federally-listed species within vicinity; minor impacts to general wildlife habitat.	No federally-listed species within vicinity; minor impacts to general wildlife habitat.	No federally-listed species within vicinity; minor impacts to general wildlife habitat.
	11 Public Feedback	Survey respondents generally prefer Site 1 (42 of 94, or 45%).	Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%).	Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%).
Recommendation:		TBD	TBD	TBD

Trip Generation

- Rest Area (based on I-90 traffic)
- NPS Visitor Center (assumed*)
- Crow Tribal Museum (assumed*)
 - Shared use with visitor center



	Passenger Car Stalls	Commercial Truck / RV Stalls
Rest Area	53 (Day)	27 (Day) 58 (Night)
NPS Visitor Center	119 (Day)	40 (Day)
Future Crow Tribal Museum	Shared	Shared
Total Parking (All Uses)	172	67

**future needs to be determined at time of their development*

Other Design Elements

⦿ Rest Stop

- About 11 women / 7 men stalls
- \pm 1000 ~ 2000 SF for building*

⦿ NPS Visitor Center

- \pm 15,000 SF for building (assumed*)

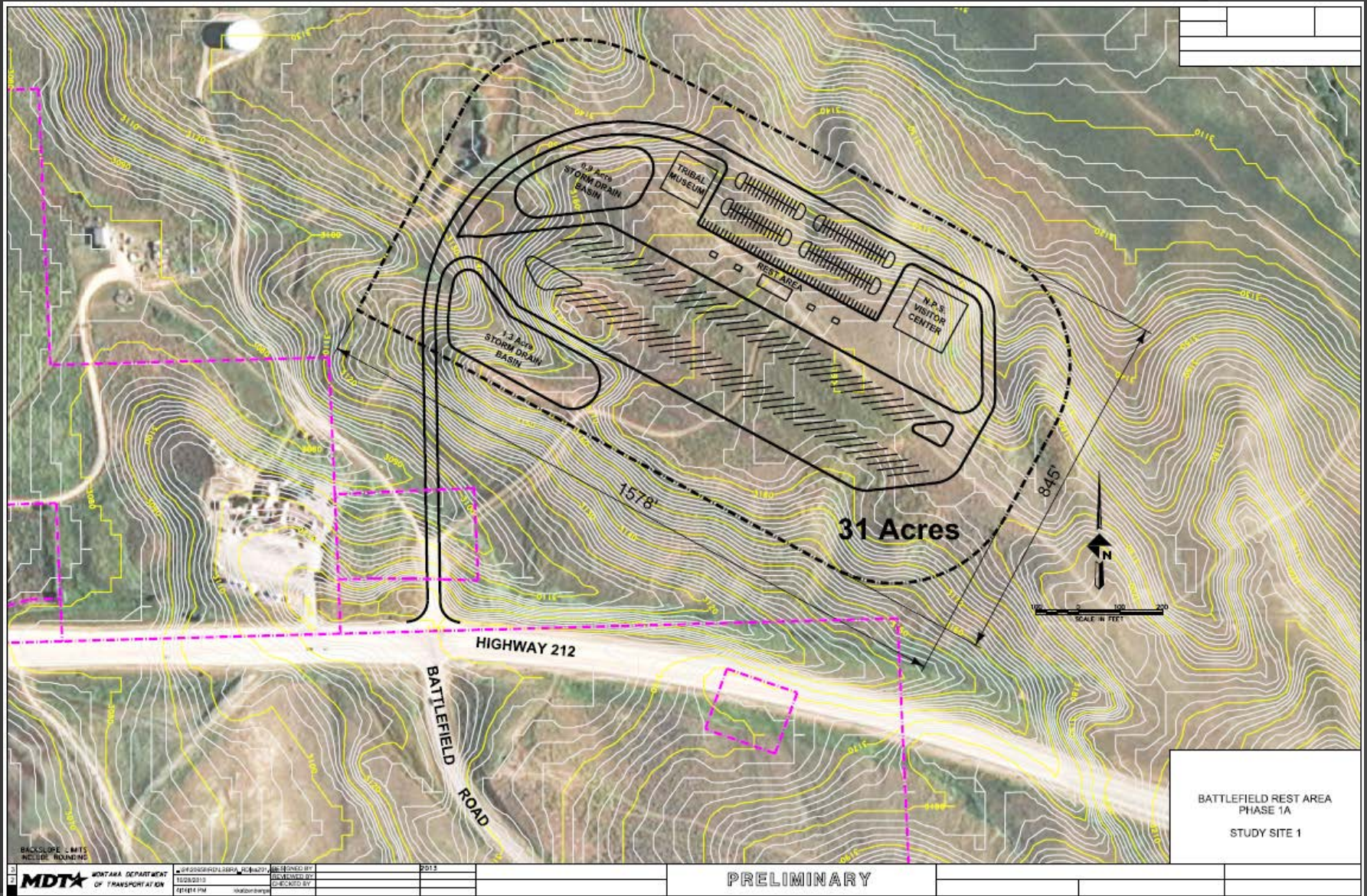
⦿ Future Crow Tribal Museum

- \pm 10,000 SF for building (assumed*)



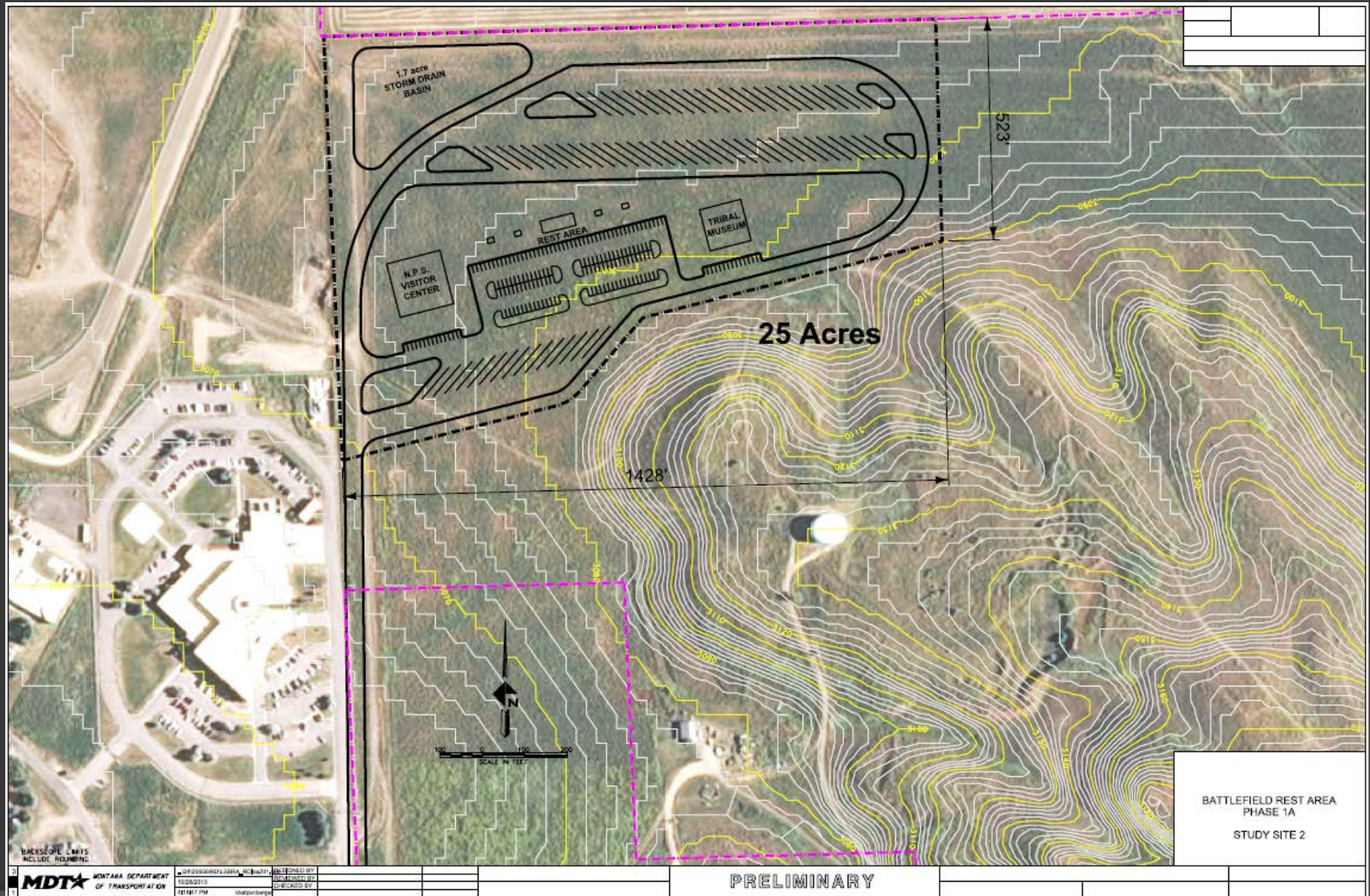
**Exact design needs will be developed by others.*

Site 1 Concept (\pm 31 Acres)



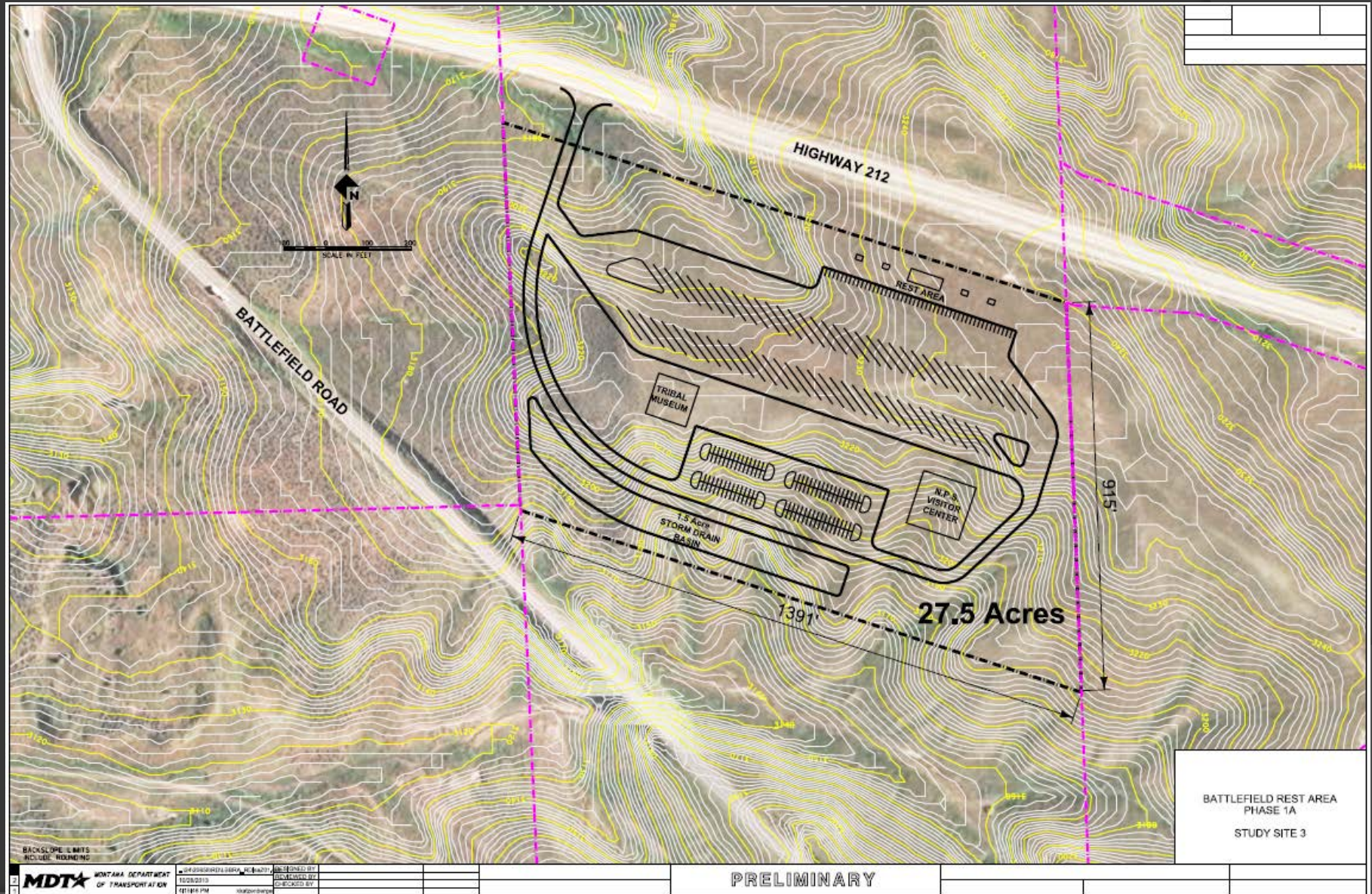
Preliminary / Conceptual Only

Site 2 Concept (\pm 25 Acres)



Preliminary / Conceptual Only

Site 3 Concept (\pm 27 Acres)



Preliminary / Conceptual Only

Site Evaluation

- ◎ Purpose will be to select one site for further analysis for next phase (Phase IB)
 - Concept
 - Permitting / Environmental
 - Water / Wastewater
- ◎ Phase II – Design Build Project
 - MDT process to select both a Contractor and an Engineer / Architect
 - DOWL HKM will not participate in Phase II, except to assist MDT
 - Selection committee will include Crow representation

Next Steps

- ⦿ Site Selection
- ⦿ Documentation
- ⦿ Initiate Phase IB
 - NEPA documentation
 - Utility permitting
 - Conceptual Site Plan
- ⦿ MDT Phase II Design Build (By Others)

Thank you!

Send comment forms to:

DOWL HKM

Attn: Todd Cormier

PO Box 31318

Billings, MT 59107-1318



**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 10

Screening Outcomes

Criteria		Site 1	Site 2	Site 3
1	Site Topography	Site has some flat and level areas, as well as some steep grades. <input type="radio"/>	Site is relatively flat. <input checked="" type="radio"/>	Site has some flat and level areas, as well as some steep grades. <input type="radio"/>
2	Site Access and Visibility	Easily accessible and visible from Interstate 90 and Highway 212. <input checked="" type="radio"/>	Poor access and low visibility from Interstate 90 and Highway 212. <input checked="" type="radio"/>	Easily accessible and visible from Interstate 90 and Highway 212. <input checked="" type="radio"/>
3	Utilities	Tribal utilities can be extended to site. <input type="radio"/>	Tribal utilities can be extended to site. <input type="radio"/>	Tribal utilities can be extended to site. <input checked="" type="radio"/>
4	Hydraulic Conditions	Site expected to have few drainage issues, as there are no offsite drainages contributing to the site. <input type="radio"/>	Site is influenced by some offsite drainage that would need to be collected or conveyed around the site. <input checked="" type="radio"/>	Site expected to have few drainage issues, as there are no offsite drainages contributing to the site. <input type="radio"/>
5	Geotechnical Conditions	Undocumented fill on site, otherwise no observable issues. <input type="radio"/>	Some soft compressible clay soils, otherwise no observable issues. <input type="radio"/>	Known swell potential, otherwise no observable issues. <input type="radio"/>
6	Building and Parking Demand	Site can accommodate desired parking/buildings for proposed uses. <input type="radio"/>	Site can accommodate desired parking/buildings for proposed uses. <input type="radio"/>	Site can accommodate desired parking/buildings for proposed uses. <input type="radio"/>
7	Traffic Noise	Increase in traffic noise would not require mitigation. <input type="radio"/>	Closest noise-sensitive receptor and greatest increase in traffic noise. <input checked="" type="radio"/>	Increase in traffic noise would not require mitigation. <input type="radio"/>
8	Cultural Resources	No cultural sites identified by Crow THPO; area has been cultivated. <input type="radio"/>	No cultural sites identified by Crow THPO; area has been cultivated. <input type="radio"/>	Known instances of cultural resources; within boundaries of National Monument. <input checked="" type="radio"/>
9	Water Resources	No surface water bodies, wetlands, or floodplains. <input type="radio"/>	No surface water bodies, wetlands, or floodplains. <input type="radio"/>	No surface water bodies, wetlands, or floodplains. <input type="radio"/>
10	Biological Resources	No federally-listed species within vicinity; minor impacts to general wildlife habitat. <input type="radio"/>	No federally-listed species within vicinity; minor impacts to general wildlife habitat. <input type="radio"/>	No federally-listed species within vicinity; minor impacts to general wildlife habitat. <input type="radio"/>
11	Public Feedback	Survey respondents generally prefer Site 1 (42 of 94, or 45%). <input checked="" type="radio"/>	Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%). <input checked="" type="radio"/>	Survey respondents equally prefer Sites 2 and 3 (23 of 94, or 25%). <input checked="" type="radio"/>
Recommendation:				

**Battlefield Rest Area Project
Site Evaluation Report**

Attachment 11

Site Renderings

IMAGES ARE CONCEPTUAL ONLY.
FINAL DESIGN OF SIZE, LOCATION, AND LAYOUT
WILL BE DETERMINED UNDER A SEPARATE PROJECT.



MDT BATTLEFIELD REST AREA BASIC CONCEPTUAL RENDERING AERIAL VIEW



DOWL HKM



ARCHITECTS ENGINEERS

IMAGES ARE CONCEPTUAL ONLY.
FINAL DESIGN OF SIZE, LOCATION, AND LAYOUT
WILL BE DETERMINED UNDER A SEPARATE PROJECT.



NOT TO SCALE



MDT BATTLEFIELD REST AREA BASIC CONCEPTUAL RENDERING NIGHT AERIAL VIEW



DOWL H&M

CTA

ARCHITECTS ENGINEERS

IMAGES ARE CONCEPTUAL ONLY.
FINAL DESIGN OF SIZE, LOCATION, AND LAYOUT
WILL BE DETERMINED UNDER A SEPARATE PROJECT.



MDT BATTLEFIELD REST AREA BASIC CONCEPTUAL RENDERING INTERSTATE APPROACH VIEW



DOWL H&M



ARCHITECTS ENGINEERS

IMAGES ARE CONCEPTUAL ONLY.
FINAL DESIGN OF SIZE, LOCATION, AND LAYOUT
WILL BE DETERMINED UNDER A SEPARATE PROJECT.



MDT BATTLEFIELD REST AREA BASIC CONCEPTUAL RENDERING NIGHT INTERSTATE APPROACH VIEW

