

## **Appendix A: Existing Conditions – Memorandum**





## MEMORANDUM

**To:** Jenny Staroska, NPS DSC – Transportation Division

**From:** Freddy He, URS Corporation

**Date:** November 18, 2011

**Re:** An Overview of Existing Conditions, Project Goals, and Critical Issues

For the Alternative Transportation Feasibility Study, Little Bighorn Battlefield National Monument, LIBI – 163914

URS Project No. 22242502

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This memorandum presents the goals of this alternative transportation (AT) feasibility study, summarizes the existing transportation conditions, and identifies critical issues in relation to parking and traffic operations in and adjacent to the Little Bighorn Battlefield National Monument (Park).

### 1.0 PROJECT GOALS

The purpose of this technical study is to develop and evaluate alternatives to provide visitors access to the Park, in a safe, non-stressful way that impacts the park resources as little as possible, and all in an economically responsible manner. The study team has reviewed relevant information provided by the National Park Service (NPS) and collected and reviewed data from secondary sources. Subsequently, the following draft goals of this study as established in the Scope of Services are proposed for review and discussion:

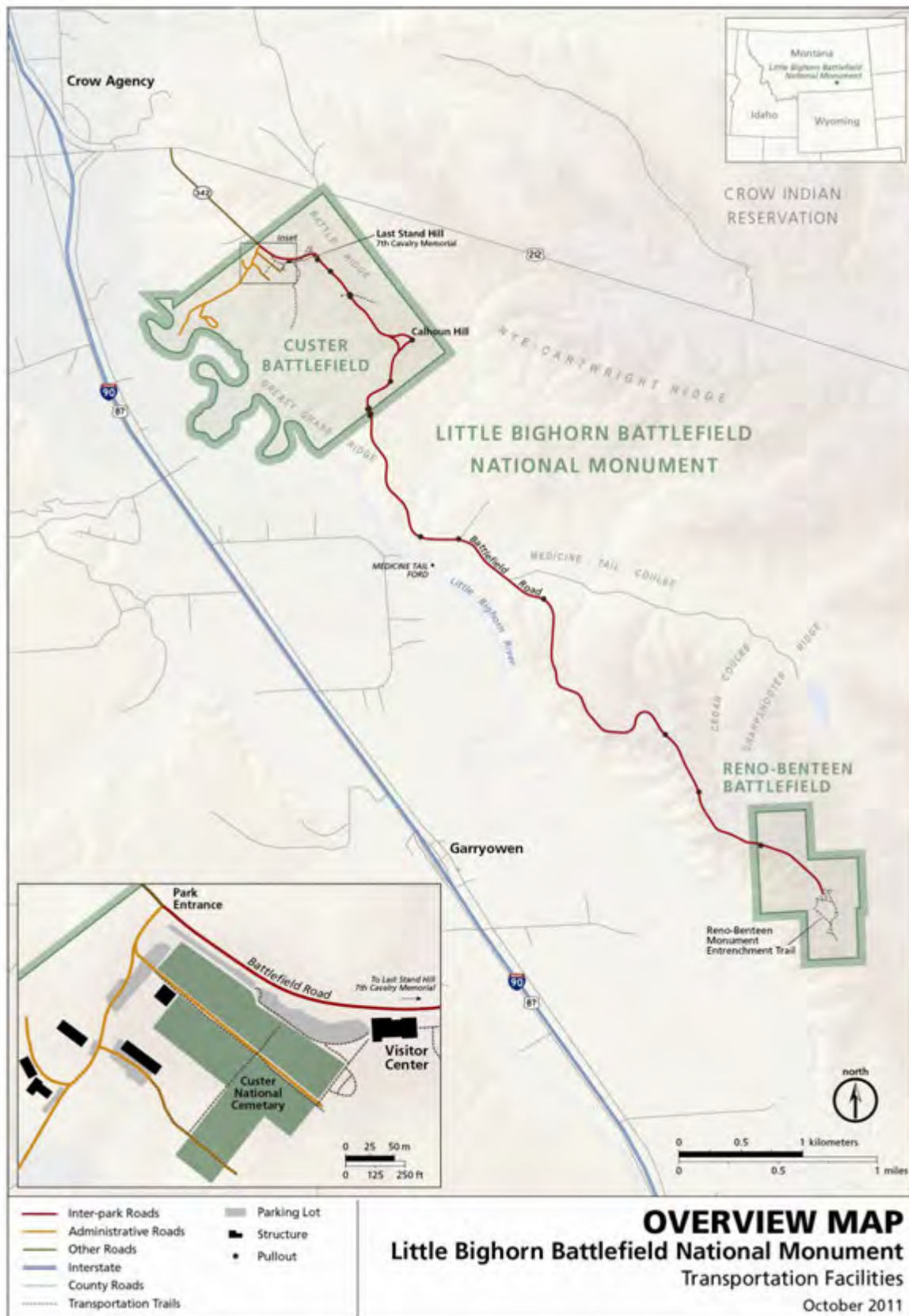
- Determine whether AT can solve the Park's transportation issues
- Determine whether AT is financially feasible at the Park. If AT is feasible, then recommend the AT type and level of service and identify source(s) of sustainable funding
- Share information with stakeholders

### 2.0 EXISTING TRANSPORTATION SYSTEM

Little Bighorn Battlefield National Monument is located in Big Horn County, southeastern Montana, approximately 61 miles southeast of Billings, Montana and 70 miles north of Sheridan, Wyoming (**Figure 1**). The Park is located in a rural area southeast of Crow Agency within the Crow Indian Reservation area. The closest city to the Park is Hardin, the county seat of Big Horn County, located approximately 16 miles northwest of the Park. The population of Hardin was 4,522 according to the 2010 census [Reference 1].

As shown in **Figure 1**, Interstate 90 (I-90) runs generally in the north-south direction west of the Park and provides visitors regional access to the Park via an interchange with U.S. Highway 212. Two-way frontage roads extend parallel to and on both sides of I-90. Montana State Route 342 connects U.S. Highway 212 on the north and the Park's entry station on the south via an approximately 0.6 mile roadway segment.

Figure 1. An Overview Map of Little Bighorn Battlefield National Monument



Little Bighorn Battlefield National Monument encompasses approximately 765 acres of federal land in two separate units (**Figure 1**) – Custer Battlefield on the north and Reno-Benteen Battlefield on the south. The Custer Battlefield unit consists of the park entry station, visitor center, Last Stand Hill, and Custer National Cemetery. An approximately 5.2-mile long Battlefield Road (Tour Road), from the entry station to the parking lot in Reno-Benteen Battlefield, connects the two units. Both park units are surrounded by Crow Indian Reservation land, and the Tour Road traverses through Crow Indian Reservation and other private lands.

The Tour Road consists of two travel lanes, one in each direction, and has a pavement width varying between 17 feet and 20 feet without shoulders. The typical section is 18 feet wide. Outside of the park units, the Tour Road has a 60-foot right-of-way [Reference 5]. The alignment of the Tour Road consists of many horizontal and vertical curves and some steep grades as the road traverses the rolling territory. South of the Last Stand Hill, the posted speed limit on the Tour Road is 30 miles per hour (mph). Between the visitor center and Reno-Benteen parking lot, the Tour Road has white edge lines on both sides but does not have any center line striping.

Parking spaces are provided in both park units and approximately 17 wayside pullout areas along the Tour Road [Reference 2]. The aerial images (dated September 2010) in **Figure 2** and **Figure 3** display parking areas in the Custer Battlefield and Reno-Benteen Battlefield units, respectively.

**Figure 2. Google Earth Aerial Photograph near the Visitor Center**



Copyright by Google. Imagery Date: September 2010.  
Map north points vertically to top of the page. Not to scale.



Figure 3. Google Earth Aerial Photograph of the Reno-Benteen Parking Lot



Copyright by Google. Imagery Date: September 2010.  
Map north points vertically to top of the page. Not to scale.

The Custer Battlefield unit has three general parking areas: the visitor center parking lot consists of 57 regular parking spaces, two handicapped parking spaces, and four parking spaces reserved for government vehicles; the Main Road parking lot includes 34 regular parking spaces; the Stone House parking lot consists of 34 regular parking spaces and one handicapped parking space. In total these three areas provide 128 parking spaces for use by the general public (including three handicapped parking spaces).

In addition, parallel parking spaces are provided along the southwest curb of Main Road across the splitter island from the visitor center parking lot, and on the northeast shoulder of Main Road leading to exit of the entry station [Reference 2]. These spaces are intended for use by oversize vehicles and had an original design capacity of 21 oversize vehicles. According to the 2010 Traffic and Parking Conditions report [Reference 2]; many of these spaces are often occupied by regular size vehicles. Due to increasing sizes of oversize vehicles, currently the parallel parking areas can fit approximately 16 oversize vehicles.

The Reno-Benteen Battlefield unit provides 13 regular-size plus two oversize parking spaces at the end of road parking and turnaround area. The 17 wayside pullouts along the Tour Road consist of a total of 59 parking spaces, most of which are unmarked. **Table 1** displays a breakdown of parking spaces at each wayside [Reference 2].

**Table 1. Wayside Pullouts along Park Tour Road**  
(Reproduced from 2010 Traffic and Parking Conditions Report [Reference 10])

Wayside number (in north to south order)	Wayside name	Distance from Visitor Center (miles)	Side of Road (east or west)	Configuration (simple pullout or other)	Number of parking spaces	
					marked	unmarked
1	Last Stand Hill	0.1	west	diagonal parking - 3 handicapped spaces	3	
2	Deep Ravine	0.2	east	pullout		3
3	unnamed	0.3	west	pullout - unpaved		2
4	Keogh - Crazy Horse Fight	0.4	east	pullout		2
5	Cheyenne Warrior Markers	0.4	west	pullout		6
6	Calhoun Hill	0.7	east	one-way loop road		4
7	Lame White Man Charge	0.9	east	pullout		3
8	Greasy Grass Ridge	1.1	east	pullout		2
9	Greasy Grass Ridge	1.1	west	pullout - unpaved		2
10	Indian Encampment	1.1	east	pullout		2
11	Indian Encampment	1.1	west	pullout		3
12	Deep Coulee	1.8	east	pullout		2
13	Medicine Tail Ford	2.0	east	pullout separated from road by narrow island		4
14	Medicine Tail Coulee	2.6	east	pullout		5
15	Weir Point	3.8	east	pullout		4
16	Sharpshooter Ridge	4.1	east	pullout		5
17	Custer's Advance Reno's Valley Fight Reno's Retreat	4.5	west	pullout		7

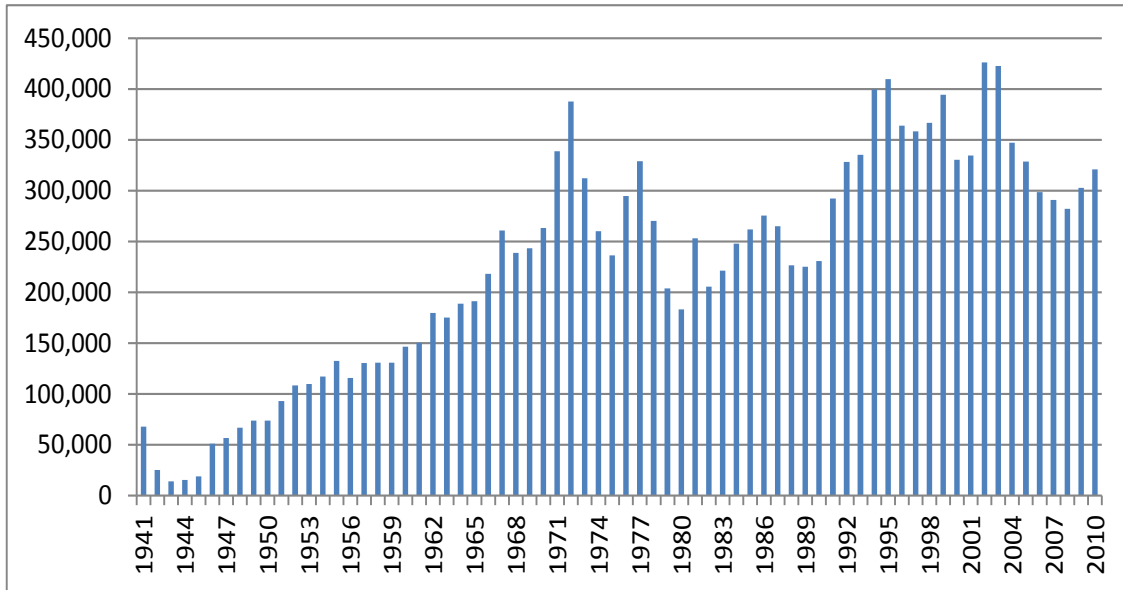
A Park concessionaire offers guided interpretive motorized tours, a one-hour guided tour on the Tour Road. The tours operate from Memorial Day to Labor Day weekend and leave five times a day. In addition to the park admission fee, visitors pay \$8.00 (adults), \$2.00 (children), or \$5.00 (seniors) per person for the guided tour. The concession is held by Little Bighorn College doing business as Apsaalooke Tours. On average, six to seven percent of park visitors took the bus tour. The recorded largest number of passengers on a single day is 131 visitors [Reference 2].

### 3.0 VISITOR VOLUMES AND TREND

The NPS Public Use Statistics Office has provided existing and historical visitation data. **Figure 4** illustrates variation of annual park visitation from 1941 to 2010. As shown in **Figure 4**, over the last decade park visitation declined, but started increasing in the last several years. From 2002 to 2008, annual visitors decreased from approximately 426,000 to 282,200, or by 34%; from 2008 to 2010, annual visitors increased to 321,000, or by 14%. In addition, as of August 2011, the year-to-date (YTD) recreational visitors are 251,782 (January – August, 2011), a 3.5% decrease from the same months in 2010 [Reference 3].

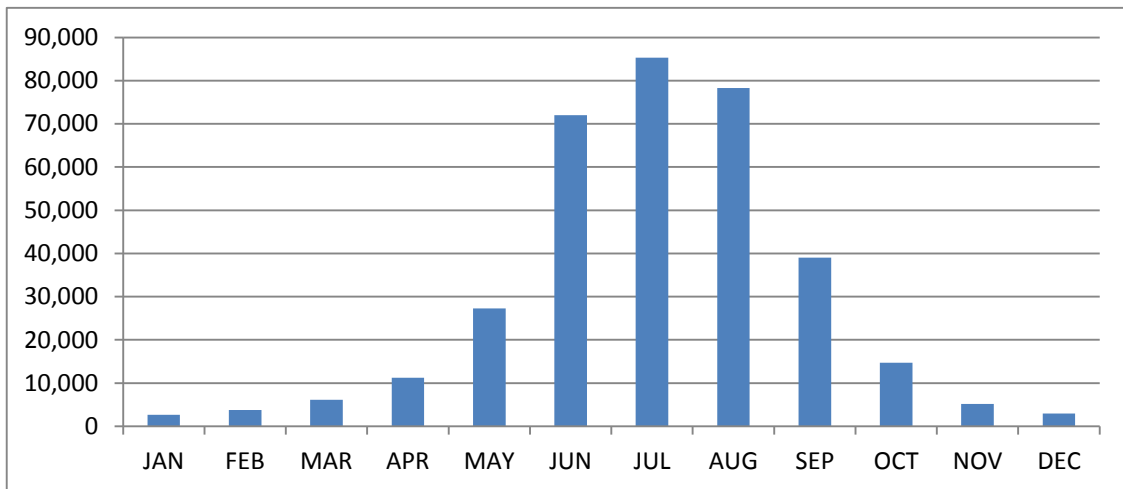
As with many other national parks, visitation to Little Bighorn Battlefield National Monument is highly seasonal due to climate. **Figure 5** shows that the summer months from June to August account for approximately 68% of annual visitors to the Park. It should be noted that the vertical scale (visitor volume) in **Figure 5** is exaggerated compared to **Figure 4**, and therefore the two figures should be evaluated individually.

**Figure 4. Annual Recreational Visitors**



Source: NPS Public Use Statistics Office [Reference 3].

**Figure 5. Monthly Average Recreational Visitors (1995-2010)**



Source: NPS Public Use Statistics Office [Reference 3].

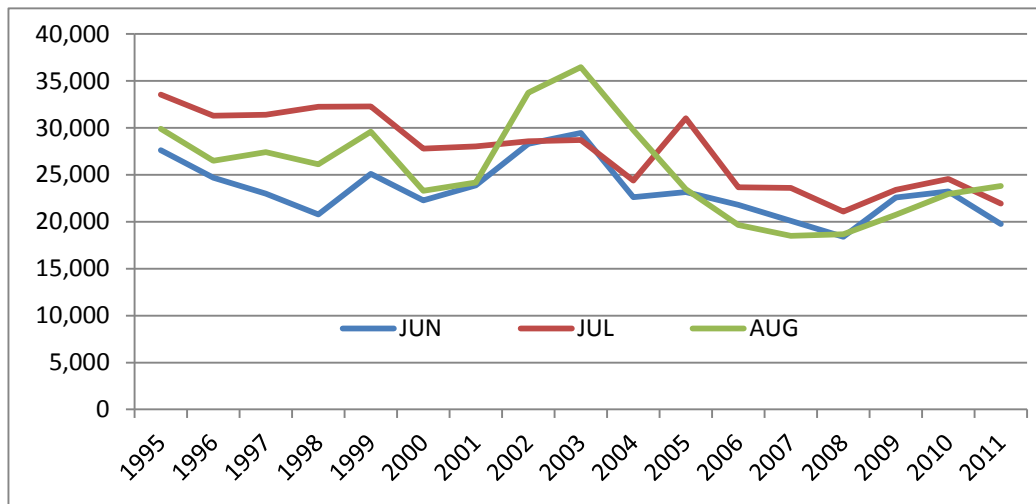
#### 4.0 TRAFFIC CIRCULATIONS AND PARKING

Vehicular traffic counts, in terms of vehicles entering the Park via the entry station each month, are available from the NPS Public Use Statistics Office [Reference 3]. Because park visitation concentrates in the three summer months June, July, and August; it is expected that traffic and parking issues are most significant in these months. **Figure 6** illustrates year-by-year variation in traffic volumes during the three summer months. In recent years, between 20,000 and 25,000 vehicles per month entered the Park in June, July, and August.



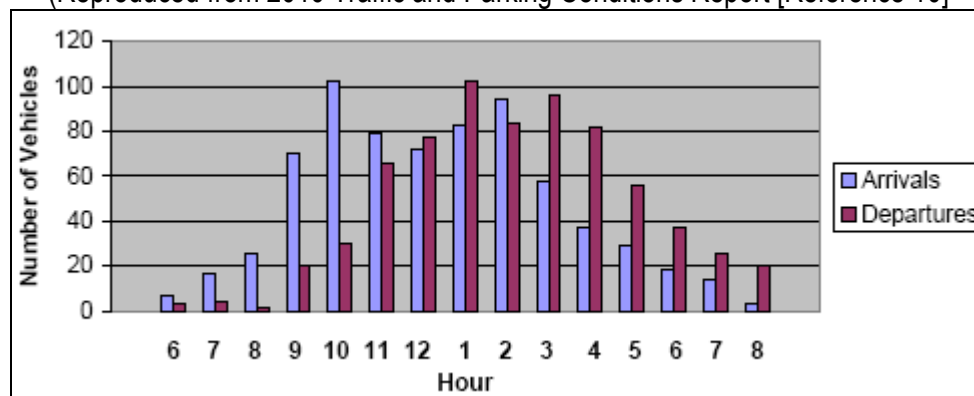
The 2010 Traffic and Parking Conditions report analyzed daily traffic volumes entering and circulating in the Park during the peak summer months, using 2009 and 2010 daily traffic counts generated from the Park's traffic counter at the entry station and new tube counts (presented in 15-minute intervals) conducted from June 24 to July 8 and from July 21 to July 29, 2010. The 2010 report identified July 22, 2010 as the "Design Day", which lies between the fifth and tenth highest visitation days in both 2009 and 2010. During the 2010 Design Day, 660 vehicles enter the Park, and their arrivals and departures by hour are illustrated in **Figure 7**. Arrival rates reached the peak at 10:00 AM with more than 100 vehicles arriving at the gate during the hour. With two fee booths open at the entry station, each booth needed to process over 50 vehicles, or close to one vehicle per minute on average. The highest departure rate occurred at 1:00 PM, with slightly over 100 vehicles leaving during the hour, and then decreased steadily until 8:00 PM. It should be noted that since the gate opens at 8:00 AM and closes at 9:00 PM, vehicles arriving or departing beyond this time frame are mostly non-recreational, including park staff and other official vehicles.

**Figure 6. Vehicle Traffic Volumes during the Summer Months**



Source: NPS Public Use Statistics Office [Reference 12].

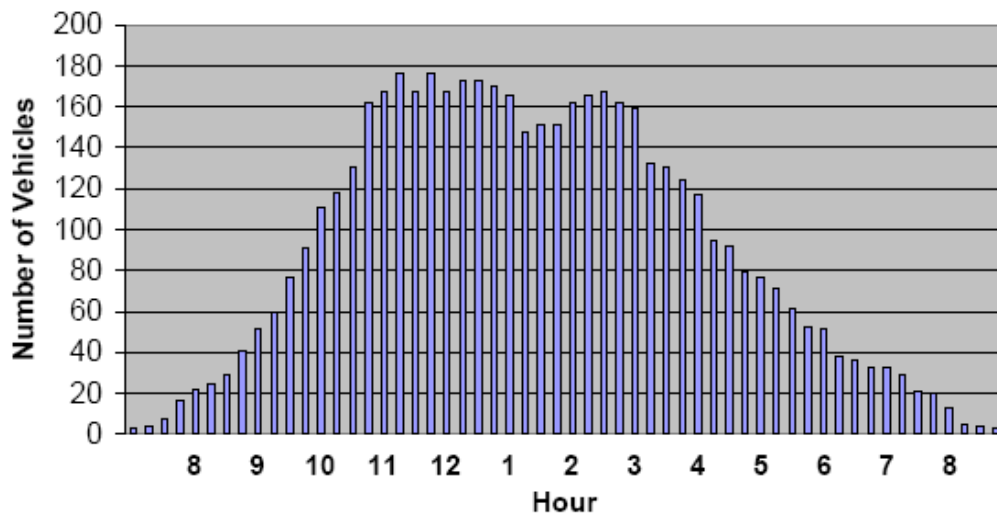
**Figure 7. Arrivals and Departures by Hour – July 22, 2010**  
(Reproduced from 2010 Traffic and Parking Conditions Report [Reference 10])



Throughout the day, the accumulation of vehicles inside the Park is of particular interest since it serves as an indicator of potential parking and traffic congestion problems. **Figure 8** illustrates

such accumulation by 15-minute intervals on the 2010 Design Day. During the peak periods around noon, close to 180 vehicles are inside the Park at the same time. These vehicles include both visitors and non-visitors, mainly park staff who typically account for approximately 16 vehicles in the Park. The 2010 Traffic and Parking Conditions report further stated that during the peak periods approximately 140 vehicles were in the visitor center parking areas compared with 144 total parking spaces (128 regular-size spaces plus 16 oversize spaces), indicating the parking areas are near or at capacity. Field observations performed for the 2010 Traffic and Parking Conditions report corroborate the above analysis. The report also stated the highest number of vehicles on the Park Tour Road, at any time point during the Design Day, is close to 50. Overall about 50 to 55 percent of visitor vehicles would drive on the Tour Road, while an additional six to seven percent of visitors take the concession-operated tour buses on the Tour Road. Approximately 75-81% of the visitor vehicles can fit into the regular-size parking spaces and the rest 19-25% are oversize vehicles. On the Tour Road, approximately 11% of the vehicles are oversized, lower than the percentage of oversize vehicles entering the Park [Reference 10].

**Figure 8. Vehicle Accumulation Inside the Park by 15-Minute Intervals – July 22, 2010**  
(Reproduced from 2010 Traffic and Parking Conditions Report [Reference 10])



## 5.0 CRITICAL TRANSPORTATION ISSUES

This section summarizes traffic and parking issues in the Park that have been identified and documented in previous planning and study documents, including those described in Section 6.0, Bibliography of Previous Planning and Projects; and listed in Section 7.0, References.

- There is an overall shortage of parking spaces, particularly for oversize vehicles. The parking areas in the Custer Battlefield unit are near or at capacity during the 2010 Design Day which lies between the fifth and tenth highest visitation days of both 2009 and 2010. It should be noted that June 25, the Park's anniversary, is typically the highest visitation day and could have 50% more visitors than the Design Day. Visitors also tend to stay longer in the Park on June 25 than other days.
- The narrow Tour Road with no shoulders; compound with high volume of traffic, rugged surfaces, deep drop-offs, steep grades, and horizontal and vertical curves; presents serious

safety concerns. Large vehicles often have to drive off the road, or scrape off each other's mirror while passing, creating aggravated safety hazards and negative resource impact.

- The majority of parallel parking spaces designated for oversize vehicles are located on the outbound side of the Main Road, forcing oversize vehicles to exit the Park on State Route 342, find somewhere to turnaround, and reenter the Park if they want to continue on the Tour Road.
- Near the visitor center, the tour road is divided into two one-way lanes by an island which is also the site of a restroom building. The inbound (southbound) lane also serves as the regular size parking aisle, while the outbound (northbound) lane has oversize vehicle parking on both sides. Frequent pedestrian-vehicle and vehicle-vehicle conflicts have been observed, mainly due to high volume of traffic in the area, parked oversize vehicles blocking views, and oversize vehicles making difficult turning maneuvers. As a result, this area sometimes experiences traffic congestions and raises safety concerns.

## **6.0 ANNOTATED BIBLIOGRAPHY OF PREVIOUS PLANNING AND PROJECTS**

This section summarizes, in a chronological order, previous major planning efforts and projects related to the transportation system of the Little Bighorn Battlefield National Monument.

### ***1995 Final General Management and Development Concept Plans (GMP) (Update to the 1986 GMP).***

The GMP noted overall inadequate parking capacity in the Park, in particular for oversized vehicles, and suggested relocating the visitor center to a site outside the current park boundaries. A potential location for the new visitor center/administrative facility is at the junction of I-90 and U.S. Highway 212. In conjunction with the new visitor/administrative facility, the GMP recommended extending the Park Tour Road from Reno-Benteen Battlefield to I-90 so that it would form a one-way loop with the existing Frontage Road. The GMP also suggested a transit system to provide visitor with tour bus services on the new one-way loop road. Note that the 1995 GMP Update also suggested an additional potential VC location near Garryowen.

For various political reasons, the visitor center and its parking lots have not been relocated, nor has the Park Tour Road been extended.

### ***1998 Traffic Safety Study for Little Bighorn Battlefield National Monument.***

This study examined traffic safety issues in the Park and developed a set of short- and long-term recommendations to improve the transportation system. The study noted that according to NPS records and park staff, no motor vehicle accidents had been reported in the Park during the previous 20 years. The traffic safety problems described in this study are derived from field observations and should be considered as representing potential safety issues.

Short-term recommendations from this safety study included minor changes to the road system and parking area. Some of them, such as signing, striping, and parking lot reconfiguration have been implemented. Long-term recommendations included constructing a remote parking area at the corner of State Route 342 and U.S. Highway 212, providing a transit system between the remote parking and the Park and throughout the Park Tour Road, and prohibiting private vehicles from entering the Park during the peak summer season (from May 15<sup>th</sup> to September 15<sup>th</sup>). These long-term recommendations have not been implemented.

**2001 Field Report of Little Bighorn Battlefield National Monument.**

This FHWA & FTA Field Report noted that the Park could be a strong candidate for the introduction of an alternative transportation system due to high levels of summer visitation; a single constrained ingress and egress point; inadequate parking at the visitor center and the interpretive wayside pullouts; a narrow Park Tour Road connecting the visitor center, Custer Battlefield, and Reno-Benteen Battlefield; and NPS' reluctance to further impact natural and cultural resources by widening the Tour Road and expanding parking areas.

The Field Report acknowledges traffic safety issues and recommendations from the 1998 Traffic Safety Study, as well as other planning efforts such as the 1995 GMP updates and the 1999 Resources Management Plan. In addition, The Field Report suggested a range of long-term alternative transportation improvements, several of which would only be required during the peak summer season. These include restricting access to the Park Tour Road to vehicles over a certain length during the summer season, establishing a visitor reservation system, a transit system in conjunction with a remote parking area, relocation of the visitor center jointly with a Crow cultural center to the Garryowen area, and a new roadway segment and road improvements to connect the new visitor center to the Reno-Benteen Battlefield. These recommended long-term improvements have not been implemented.

**2001 Federal Lands Alternative Transportation Systems Study, Volume III, Summary of National ATS Needs.**

The goal of this nationwide study undertaken by the FHWA and FTA was to:

*"...identify opportunities for application of Alternative Transportation Systems (ATS), or transit, to relieve traffic congestion and parking shortages; enhance visitor mobility and accessibility; preserve sensitive natural, cultural, and historic resources; provide improved interpretation, education, and visitor information services; reduce pollution; and improve economic development opportunities for surrounding communities" [Reference 4].*

The Field Report as described above is part of the nationwide study efforts. Along with 117 other sites in the nation, Little Bighorn Battlefield was identified as needing an ATS.

**2002 Construction Project of the Park Tour Road.**

The 3R (rehabilitate, restore, resurface) construction project was completed in 2002 in order to address tour road safety concerns. The project purpose was to rehabilitate poor pavement and drainage conditions and widen the road without any earthwork. However, upon completion of the project additional safety concerns arose due to steep drop-offs that were created and pavement rutting resulting from inadequate thickness. This construction project did not address parking safety or capacity issues.

**2005 Environmental Assessment / Assessment of Effect: Rehabilitate Tour Road.**

The park staff, led by then Superintendent Cook, worked with the Denver Service Center to develop an FHWA project to mitigate immediate and deteriorating safety problems related to parking and the narrow Park Tour Road. This EA study examined three alternatives of this FHWA project: No-Action, Road Widening – 24-foot Width, and Road Widening – 22-foot Width. As a result, the Road Widening – 24-foot Width was identified as the Preferred Alternative which



includes rehabilitating, restoring, restoring, and reconstructing the Tour Road, the visitor center parking area, and the Reno-Benteen parking lot to improve the condition of the pavement and its underlying structure. The Tour Road would be widened to have two 11-foot travel lanes, one in each direction, and a one-foot shoulder on both sides. The visitor center and Reno-Benteen parking lots would be reconstructed to increase capacity and improve traffic flow.

The EA and a resulting Finding of No Significant Impact (FONSI) were completed in 2005. Design of the Preferred Alternative followed and the project was scheduled for construction in 2011. The construction has been postponed indefinitely as concerns remain among park staff, Superintendent Hammond, some stakeholders, and some regional staff about whether there is any other viable option that can effectively address safety and parking issues without increasing the project's footprint on the landscape.

#### ***2007 Resources Management Plan.***

This Resources Management Plan identified several transportation related issues as current threats. These include safety concerns with the Park Tour Road, interim visitor center expansion, and pedestrian safety and access to cultural resources. The plan noted long-term goals as part of the five-year program strategy. In relation to parking and traffic operation, one of the goals states "By September 30, 2011, 96% of visitors to LBI are satisfied with appropriate park facilities, services, and recreational opportunities."

#### ***2010 Preliminary Feasibility Study – Alternative Transportation***

This report documents several transit and transportation options, which have been discussed or brainstormed for the Park in recent times, and their order of magnitude costs at the Park. The study followed the decision to indefinitely postpone the previously approved FHWA roadway and parking construction project in lieu of potential controversies about the project. The report recognizes previous planning efforts and projects undertaken to address parking and roadway deficiencies, many of which are discussed in this section, and identifies remaining transportation issues at the Park.

A total of eight transit and transportation options were discussed in this preliminary feasibility study, including five main ideas (Options A through E) and three less feasible options. The five main ideas include [Reference 5]:

***Option A – Expand Existing Parking Lots & Widen Road (4R project)***

***Option B – Off-site Oversize Vehicle Parking & Shuttle. Seasonal Oversize Vehicle Restrictions Possible***

***Option C – Oversize Vehicle Demand Management (No Build)***

***Option D – Close Battlefield Road to Motorized Vehicles***

***Option E – One-way Road (from GMP)***

The three additional options include No Action, a Permit System that requires visitors to call ahead and only allows a certain number of visitors/vehicles in the Park at one time, and Private Vehicle Restrictions on Battlefield Tour Road. Finally, this report recommends an in-depth transportation



study be completed that includes collecting data specific to the Park, using this preliminary feasibility study as a springboard.

### ***2010 Existing Traffic and Parking Conditions and Implications for Transportation***

#### ***Alternatives: Little Bighorn Battlefield National Monument.***

This study examined existing traffic and parking conditions at Little Bighorn Battlefield National Monument and gathered traffic data in anticipation of an alternative transportation feasibility study. It also evaluated possible transportation alternatives in the context of study findings. The study noted that under existing conditions, there is a shortage of parking space for oversize vehicles and overall parking demand is near or at capacity. It also stated that visitation to the Park is seasonal and that traffic and congestion problems occur only during several weeks of the summer. The study concluded that a shuttle bus system appears to be necessary, but would be needed only from mid-June through the third week in August, a period of approximately 10 weeks.

### ***2010 Public Engagement on Management Issues and “Next Steps”***

Through this public engagement process, the NPS asked the public to share its thoughts about four management issues that have significantly impacted Little Bighorn Battlefield National Monument for three decades, including [Reference 14]:

- The Park’s inadequate and undersized visitor center
- Insufficient museum collection storage
- Narrow and failing roads and insufficient parking
- Significant portions of the battlefield remaining unprotected and inaccessible

This extensive public engagement process included a series of 32 pre-briefings with NPS officials, representatives from the Park’s 17 historically associated tribes, elected officials, and stakeholder groups; a formal government-to-government multi-tribal consultation meeting; public meetings in Billings and Hardin, Montana, and in Golden, Colorado; and two virtual webinars. Approximately 170 comments were received by the NPS. As results from this public involvement process, NPS recommended the following next steps [Reference 14]:

- Negotiations with the Crow Tribe, the Custer Battlefield Preservation Committee, and other interested parties aimed at an agreement that would allow for the construction of a new visitor center, museum collection storage, and parking area outside of the current Park boundaries, as called for in the 1986 GMP.
- Protecting the museum collection by temporarily moving it to the NPS Western Archeological and Conservation Center in Tucson, Arizona. The NPS will pursue ways to return the collection to the Park when proper facilities are available
- Implementation of short-term, partial solutions to the parking issues, including moving employee parking and improving signage. The Park will commence an alternative transportation feasibility study in 2011 to help determine midterm and long-term solutions
- Inviting stakeholders to participate in focused discussions regarding whether a modest boundary expansion is feasible for the purpose of addressing the visitor center, museum collection, and parking issues. To protect the entire battlefield, more conversation and exploration of land-protection options will be required

## 7.0 REFERENCES

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4. *Federal Lands Alternative Transportation Systems Study – Summary of National ATS Needs*. Cambridge Systematics, Inc. and BRW Group, Inc. for Federal Highway Administration and Federal Transit Administration. August 2001.
5. *Preliminary Feasibility Study – Alternative Transportation (Draft)*. Little Bighorn Battlefield National Monument, National Park Service - Denver Service Center, and National Park Service – Intermountain Region; February 2010.
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**Appendix B:**  
**Synthesis of Project Kickoff Workshop Results – Memorandum**







## MEMORANDUM

**To:** Jenny Staroska, NPS DSC – Transportation Division

**From:** David Cooper, URS Corporation

**Date:** November 1, 2011

**Re:** Summary of Project Kickoff Workshop (October 24-26, 2011)

Alternative Transportation Feasibility Study, Little Bighorn Battlefield National Monument, LIBI – 163914

URS Project No. 22242502

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This memorandum summarizes the results of the Project Kickoff Workshop (October 24-26, 2011) that was held at the Little Bighorn Battlefield National Monument (Park). The workshop was conducted in three parts: (1) Monday afternoon was used to introduce the project and teams, followed by a site tour; (2) Tuesday was devoted to the planning workshop that included a discussion of project issues, goals and objectives, and formulation of preliminary Alternative Transportation System (ATS) options; and (3) Wednesday included the Tribal Consultation meetings and follow-up work related to preliminary ATS options.

The descriptions in the following sections follow a chronological order consistent with the **Workshop Agenda, Attachment A**. Other attachments include sign-in sheets for each of the meetings and sketch diagrams illustrating the basic concepts that were discussed.

Participants of the Monday and Tuesday meetings included (note that some attended one but not both):

- Kate Hammond, Superintendent (Park)
- Rene Laya, Facility Manager, Park Point of Contact (Park)
- Melana Stichman, Biological Technician (Park)
- Abigail Buchin, Facility Services Assistant (Park)
- Ken Woody, Chief of Interpretation (Park)
- Michael Stops, Chief Ranger (Park)
- Debra Frye, Alternative Transportation Program Coordinator (Intermountain Region – IMR)
- Patrick Shea, Project Manager (NPS Denver Service Center – DSC)
- Jenny Staroska, Project Specialist, Contracting Officer's Representative (DSC)
- David Cooper, Facilitator (URS)
- Freddy He, URS Project Manager (URS)

## **1.0 MONDAY – PROJECT AND TEAM INTRODUCTIONS (1:00 – 5:00 PM)**

### **Introduction**

Superintendent Hammond oversaw the introduction of team members; reviewed the project charter; and began a preliminary discussion of Park staff goals for the project, project issues, and parameters. Mrs. Staroska summarized the three-day agenda. After the introductions and discussion, a smaller group embarked on a tour of the Park, led by Mr. Laya.

Superintendent Hammond summarized previous planning efforts and their relevance to ATS. The Park has experienced increasing visitor volumes and faces challenges presented by oversized vehicles, lack of parking, and a narrow Tour Road. Although some of the issues present themselves mostly during the summer season, the narrow Tour Road presents year-round challenges. These issues have been the subject of several studies and plans



since the mid-1990s. The 1986 General Management Plan (GMP) identified a one-way loop system to solve and/or mitigate the transportation issues. This proposed project involved a significant extension of the Tour Road and a new Visitor Center at the Garryowen area, and was never constructed. Currently, the extension of the Tour Road is considered to be non-viable due to cost and resource concerns. A construction project to widen the Tour Road to 24 feet and create an oversized vehicle turnaround and parking area near the Visitor Center was slated for construction in 2011, but was put on hold while the NPS considered other options. This project is not off the table but awaits the results of the ATS study, and might be broken down or phased into smaller components.

The 2010 public engagement process sought input on four critical management issues at the Park: (1) Visitor Center is inadequate, (2) museum collections are not adequately protected, (3) parking and roads are inadequate and at times, unsafe, and (4) the park boundaries are not sufficient to protect park resources. The ATS study is intended to address #3 and the concurrent Visitor Center and museum collections study is to address #1 and #2. Superintendent Hammond hopes to see the ATS study present a continuum of options that do not require large changes and expense (such as the Visitor Center relocation and one-way loop road), some of which may be implemented directly by park management and staff.

Mr. Shea provided background on ATS as it relates to NPS planning and this project. The key question is: What can NPS do to move visitors through the Park, while enhancing the visitor experience and protecting Park resources? The feasibility of an ATS depends on many factors, but special consideration should be given to the costs of ATS including buying, maintaining, replacing, and operating vehicles. The scope of ATS needs to be based on the specific needs, visitation patterns, and other factors of the Park. In addition to transit solutions, the ATS study should identify management practices and lower-cost physical improvements to relieve congestion and improve

circulation within the Park. These strategies will become especially important if transit is determined to be infeasible.

The team also discussed declining visitation patterns and how they might impact demand for ATS.

- Mr. Stops: 12:30 to 1:15 is the typical peak parking period. After that, parking areas start flowing much better
- Mr. Woody: visitation had been decreasing during the past 10 years, but recently it appears to be increasing. Reasons for this are not clear.
- Mr. Shea: NPS is concerned about the trend. Will visitation come back and even grow? How will the trend affect the ATS study? The historical trend in visitor volume variation provides insight and essential input for estimating future visitor volumes, which will largely determine key factors of an ATS, such as shuttle ridership, financial sustainability, and resource impacts.

### Initial Park Goals for the AT Study

1. Options should not require big moves (for example - Visitor Center relocation).
2. Some options should be low cost management-only solutions.
3. Deferred pavement maintenance should be incorporated into the options
4. Options should avoid concentrating visitors in one place ("packed prairie") – this is a poor visitor experience.

### Sideboards

- Park boundaries cannot be changed w/o Congressional action.
- Changes in physical footprint of developed areas within the Park concern historical stakeholders (planned expansion for 4R road and parking project was on "prime real estate" with high resource values)
- Making the Tour Road a one-way loop is not very viable due to cost and resource concerns.
- Smaller shuttles may be better because they disperse visitors in time and space.
- If we take people to Reno-Benteen we could have ranger talks; but how would this affect tours? Currently visitors stop at the waysides and use cellphone tours.
- Existing contract with the interpretive tour concessionaire, Little Bighorn College, is 5-6 years into a 10 year contract. This contract requires a good deal of management by NPS;



Reno-Benteen Battlefield Parking Lot

Little Bighorn College is looking to transfer the tour contract to another party, potentially the Crow Tribe.

- Alternative transportation system options must be financially sustainable.
- The Custer Battlefield unit is more visited than Reno-Benteen Battlefield unit. Reno-Benteen is five miles out, but private

vehicle parking is usually not an issue there. Data suggests 50-55% of visitors drive on the Tour Road, while an additional six to seven percent of visitors take the concession-operated tour buses on the Tour Road.

- Economics - potential to use the Park's operations budget for ATS is zero probability. There has not been an increase in the operations budget since 2002.
- Grasslands at the Park are "pristine" and "intact", so the 4R road widening project of several feet would have significant impacts.

## Other Issues

- Mrs. Frye: the Visitor Center/Museum Collection planning process could take a few years, so the AT study will have parallel tracks with or without the new Visitor Center
- Mr. Laya: Any options that increase footprint could be uphill efforts
- Road is not designed for



Visitor Center

- oversize vehicles of today
- Mr. Stops: historical values of the park (e.g., expanding parking may affect historical values/boundaries)
- Ms. Stichman: dispersing the crowd is important.
- Mr. Shea: Pulses adjusting visitor movements. Avoid creating new problems by solving one problem
- Mr. Cooper: Marvin mentioned using website as a tool to attract visitors to the Park. Mr. Shea: "visitation starts from home"
- Financially sustainability is the key
- Superintendent Hammond: at the end of this study, we would like to have the financial data to back up the "favorable" options
- Current concession provides interpretive motorized coach tours (not a shuttle)
- Mr. Woody: current interpretive tour service operates one large bus (25-30 passengers), two middle-size buses, and two or three vans. Tours operate from Memorial weekend through Labor Day. The service originally provided opportunities for Little Bighorn College student training, but it fell through several years ago
- Mr. Stops: current interpretive tour service has potential to be profitable.
- The Park charges an entrance fee of \$100 for large tour buses (commercial) and \$40 for small buses.
- Restricting RVs on the Tour Road may not work if it results in more congested parking.
- Superintendent Hammond: ONPS flexibility financially is almost zero. Relying on ONPS dollars contributing to AT operations is not viable
- Mr. Stops: intact vegetation landscape. Target pristine.

## **2.0 TUESDAY – PLANNING WORKSHOP (9:00 AM – 5:00 PM)**

David Cooper led the workshop discussion that was planned in the following segments: (1) Introduction, (2) Issues, (3) Goals and Objectives, and (4) Conceptual ATS planning options. The following are highlights that were recorded on the easel tablet. Sketch diagrams developed subsequently are attached to this memorandum to help clarify ATS concepts.

### **Issues Discussion**

The workshop group brainstormed issues for consideration of ATS at the Park, organized in the following categories:

#### **Infrastructure, Operations, and Management**

- Vehicular and pedestrian conflicts in parking areas
- Deferred pavement maintenance
- Lack of guardrails on tour road
- No pavement shoulder and steep drop-off
- Narrow pavement (18 feet is typical width)
- Oversize vehicles (narrow lanes 9-10 feet wide)



Park Tour Road

#### **Transportation Modes**

- Bicycle safety on the Tour Road
- Potential for accidents (near misses)
- 4R road and parking project should be reviewed for relevance to the ATS. Potential to modify or narrow the scope of the 4R project
- Lack of parking capacity, especially for oversize vehicles
- Differences in the visitor experience of “readers” compared with “listeners”, and how this contributes to vehicle congestion

#### **Public and Community**

- Proposed RV parking expansion (in the 4R project) was stopped due to local opposition
- The boundaries of the Park and developed “footprint” within the Park are sensitive issues
- Stakeholder concerns about the 4R road and parking project
- Potential impact of remote (off-site) parking

#### **Visitor experience issues**

- Visitor safety is an important part of the visitor experience
- Visitor needs are different
- Visitor pre-planning (using internet and other media)
- Rewards at Reno-Benteen (why is the trip worth it?)
- Lack of turnaround opportunities on the Tour Toad



- Remote parking (how to attract visitors to use remote parking and move them into the Park)
- Differences in “readers”, “listeners” and “drivers” visitor experiences
- Parking lot layouts affect visitor experiences
- Parking and vehicle access requirements have changed over time
- Vehicles waiting for parking block traffic
- Wayside exhibit locations require visitors to cross the road at times
- In some cases no parking is provided at access to a recognized trail

### **Cultural and environmental issues**

- Preservation of the historic and cultural landscape is paramount
- Footprint expansion will cause significant effects
- High historic and cultural character and integrity
- Historic patterns of use
- Parking and access requirements have changed over time
- Redistribute pavement to result in “no net increase”
- Access routes and points have changed over time
- The physical development of the Park occurred in stages. Key dates (approximate) that figured in the physical development are: 1879, 1940, 1946, 1952 and 1966. Lack of recent development has resulted in negative impacts on park resources

### **Management practices issues**

- Confusion in pavement marking for “no parking allowed”
- Oversize vehicle parking (numbers and size of vehicles)
- Proportion of cars and RV parking is dynamic
- RV access is sometimes handled on a “case-by-case” basis
- There are advantages/disadvantages of management policies that are objective vs. discretionary



Parallel Parking for Oversize Vehicles

- Stone House parking is underused
- Should parking supply equal demand at all times? The answer is no. (NPS Management Policies, 9.2.4 Parking Areas: “Permanent parking areas will not normally be sized for the peak use day, but rather for the use anticipated on the average weekend day during the peak season of use”.)
- Restrict vehicle load limit to manage use
- Manage employee parking
- Identify “thresholds” of intervention options
- Special events management
- Devil’s Tower National Park experience and examples may be informative
- Holidays + reenactments+ special events are high visitation times



## **Goals and Objectives Discussion**

The workshop group formulated the following draft goals and objectives to help guide the development and evaluation of ATS options at LIBI:

### **Goal #1: Reduce Operation and Management requirements through asset management**

- Reduce impacts on pavement shoulders, adjacent facilities, and resources.
- Contribute to sustainable maintenance practices and funding.
- New construction projects must be sustainable
- Identify both short-term (easier) and long-term projects

### **Goal #2: Exercise management practices to solve short-term transportation problems**

- Improve signs and information (“way-finding”)
- “Manage” way out instead of “building” your way out
- Rework patterns within existing paved footprint
- Better manage existing visitor parking inventory. Park staff can adapt improved private vehicle parking practices (16-20 parking spaces currently used by Park staff during peak use)
- Rework RV circulation and parking.
- Use combination of incentives and enforcement to implement new management practices

### **Goal #3: Develop transportation alternatives that enhance visitor experience and protect resource values**

- Reduce noise impacts and air emissions
- Protect resources by limiting expansion of parking and vehicle “footprint”
- Recognize a continuum of resource significance at the Park
- Examine appropriate technical alternative transportation system options

### **Goal #4: Enhance visitor experience and understanding through use of alternative transportation system**

- Reduce parking frustrations for visitors
- Improve “waysides” experience
- Consider Intelligent Transportation Systems (ITS) applications
- Use trip planning and the Park website as a tool
- Improve visitor safety

### **Goal #5: Recognize opportunities to improve public and community support**

- Public and community input and communication.
- Engage in identifying and evaluating solutions.
- Consider options outside the Park boundaries.
- Utilize and enhance local concession capability.

## **Unordered ideas to consider when developing for ATS options**

The workshop group brainstormed a list of ideas that might be useful in developing preliminary concepts later in the workshop.

- Develop management plans for special events and times
- Improve signs and way-finding

- Improve website to aid in pre-trip planning
- Intelligent Transportation System
- Provide a towed vehicle drop-off area
- Develop strategies to better manage RVs
- Daily interpretive program alternatives and management
- Remote parking with shuttle
- Rework vehicle circulation at Visitor Center and reconfigure the parking area
- Expand parking supply to the area west of the entry station
- Widen roads
- Separate parking expansion from road expansion in the 4R project
- Impose vehicle load and/or size limits
- Define numbers and limits for roads and parking
- Permit reservations system
- Encourage car pooling
- Encourage visits to Reno-Benteen to spread out the traffic
- Make Reno-Benteen more of an attraction
- Adjust messages to manage parking (timing)
- Use parking spaces as a reward during congested periods
- When visitors first arrive at the Park, they often times use the restroom facilities. This “bathroom stop” phenomenon has been one of the critical contributing factors of parking congestion and vehicle-pedestrian conflicts in the visitor center area.
- Consider bicycles as a component of ATS?
- Off-site staging for visitors and vehicles – will moving the entrance farther away reduce congestion?
- Can we co-relocate some facilities off-site with others?

## **Preliminary ATS Options Discussion**

The workshop group convened as three subgroups to develop preliminary concepts for multi-modal ATS, transit-only ATS, and non-transit options. These are summarized below and illustrated in the attached diagrams.

### **Multi-Modal Options (Group A)**

Group A developed three approaches to providing multi-modal options at the Park. These included the one-way loop in the GMP, a detached multiuse path for pedestrians and bicyclists, and multi-modal use of the roadway. The latter two included transit and assumed that the Tour Road would be closed to private vehicles and RVs during peak periods when multiple modes were operating. The workshop group recognized that the multi-modal options should be considered for comparison purposes, but that there might not be sufficient visitor demand for bicycles, hikers, and other modes to justify this option.

1. One-way multi-modal loop – based on the 1986 GMP recommendation. Advantages of working with the existing road cross section (12 foot travel lane for cars and RVs and an 8 foot bike lane = 20 feet) and reducing vehicle to vehicle conflicts. This option would expand footprint of the park and requires unusual infrastructure costs (i.e. new bridge and new roads).

2. Two-way tour road with detached hiker/bike trail – provides for alternative modes which may reduce vehicular traffic. Requires additional paved area on Park land and within right-of-way on Tribal land which may be problematic. Potential use/demand for alternative mode is not known, given weather conditions. Addresses a problem that might not exist?
3. Two-way tour road for bikes, transit, and possibly other modes – introduce transit and alternative modes during periods of high visitation, and close tour road to private vehicles to ensure visitor safety. Provide bicycles for free or small rental charge at Visitor Center to encourage use. Bicyclists and hikers could pick up shuttle any stop along the route to offset the long (9-10 mile) round-trip. Potential demand for bicycle tours is not known.
4. Please refer to the three attached sketch diagrams

### **Transit Options (Group B)**

Group B focused on transit-only options. They presented an overview of elements of a single prototypical transit concept that can be refined later in the project, including developing a number of sub-alternatives for the Park.

1. Off-site parking for all visitors.
2. Shuttle system provides transportation to all sites in the Park.
3. Operates only during busy season (Memorial Day to Labor Day/end of September).
4. Shuttle system is staged outside of park.
5. Operation options: (a) NPS partners with local business to operate shuttle (maybe the Tribe Casino?), (b) NPS contracts for shuttle service with shuttle or transportation concession operation (Little Bighorn College which holds the current interpretive tour contract or Crow Nation Transit).
6. Dual shuttle system segments: (a) remote parking to Visitor Center, and (b) Visitor Center to Reno-Benteen turnaround.
7. Partner and locate transit staging area at new Visitor Center/Curatorial Building located off Highway 212.
8. Provide incentives for visitors to use the shuttle.
9. Special events transit operations.
10. Financial factors question – Do we have the visitation to support a system?
11. Short-term parking, possibly using pervious pavement, on Park site for special events only.
12. Direct cemetery visitors to park near the Stone House.
13. Solicit partners to help with operations and/or funding of the shuttle system during special events (to reduce costs).
14. Potential for temporary satellite parking area at Custer Battlefield Preservation Committee property during special events (partnership with Park).
15. Guided commercial shuttle tour begins outside of the Park.
16. Please refer to attached sketch diagram (Attachment C).

### **Non Transit Options (Group C)**

Group C came up with a menu of different management and construction strategies to address vehicular congestion and RV parking, assuming that a transit system would not be implemented.

They were further characterized as a “no build” option (meaning management options only), and a “light build” options (which included smaller construction projects to alleviate congestion, relocating RV parking, improving vehicular circulation on the Tour Road, and providing basic visitor amenities at the Reno-Benteen turnaround).

1. Pre-trip planning and pre-arrival planning – internet, ITS (I-90 access), Dial 511 information, changeable message signs.
2. Additional welcoming/arrival media – signs, interpretive materials. RVs with trailers staging area outside of Park - partnership with local organizations to promote and provide additional staffing during peak visitation periods in summer/weekends.
3. Improve efficiency of entrance station by expanding to three inbound lanes and three fee booths.
4. Parking management – RV and regular size vehicle parking areas. Relocate RV parking and provide additional RV parking.
5. Park access road has in the past been used to expand the inventory of peak period parking, and this could be a useful tool in the future.
6. Whether or not there is a convenient turnaround for oversize vehicles affects how parking is managed. The location of the turnaround is also important.
7. Create different visitor experiences - For example, typical summer visitor experience: film (12 minutes), ranger talk (40 minutes), museum and Last Stand Hill (40 minutes), tour loop (40 minutes) = total 120 minute visitor experience. Potential for shorter stays to reduce parking demand: 75-105 minutes.
8. Incentive parking on road – an idea is to provide a “reward” and reopen Last Stand parking area (5 – 10 spaces, approx.) for those who agree to park farther from the Visitor Center.
9. Relocate concession tour parking and pickup to near the Visitor Center thereby gain parking.
10. Provide additional turnarounds on the tour road to allow shorter site visits that do not extend as far as the Reno-Benteen Battlefield.
11. Please refer to attached sketch diagrams in Attachment C.



Entrance Station

### **“Long List” of Alternative Transportation System Options**

The workshop group discussed the various options developed in the breakout groups and identified the following list of preliminary ATS options for further consideration. There will need to be additional discussion of how to get from the “long list” to the “short list”, and where the loop road in the GMP and the 3R/4R projects will be evaluated in the ATSFS:

1. Seasonal transit (with and without private vehicles)
2. Special event transit (with and without private vehicles)
3. One-way loop multi-modal and transit (from GMP)



4. Two-way road with private vehicles plus detached hiking/bike trail
5. Seasonal transit on a two-way road with bicycle lane(s) (no private vehicles)
6. Pre-trip and pre-arrival actions
7. Limited build (without transit)
8. Private vehicle and RV management actions only (no build and without transit)
9. Road and parking 4R project

### **3.0 WEDNESDAY – TRIBAL CONSULTATION (9:00 AM – 3:00 PM)**

This meeting was scheduled as two sessions: a morning session on the Museum Collection/Visitor Facility Planning project and an afternoon session on the AT Feasibility Study project. Seventeen tribes as historical stakeholders, including the Crow Nation, were invited to this consultation meeting. The attendance sheet (see Attachment B) lists those who attended and some tribal affiliations are indicated.

#### **Morning Session – New Museum Collection/Visitor Center**

Superintendent Hammond started the meeting with opening remarks on background of both projects and reasons for this consultation meeting. Christine Landrum made a presentation on the Museum Collection/Visitor Facility Planning project. The following items were discussed during the presentation:

- The current Visitor Center was built in 1952. The facility is small, outdated, and located in the middle of Battlefield resources
- The 1986 GMP calls for construction of a new visitor facility on a different site and demolition of the existing Visitor Center
- The Park does not own the land needed for the new visitor facility
- There is no room within the Park that is suitable for a new visitor facility
- Park areas are over capacity. During peak periods in the summer season, vehicles have to park on the shoulders of the Park Access Road, outside of the entrance
- The number and size of oversize vehicles is increasing
- Parking areas have a tight turning radius or oversize vehicles
- The GMP calls for a shuttle system to relieve congestion, expand the Tour Road, and increase parking capacity
- The early public engagement process in 2010 reached several conclusions, or “next steps”. One of them is that the NPS will recommend negotiations with the Crown Nation, the Custer Battlefield Preservation Committee, and other interested parties to see if an agreement can be reached to allow for construction of a new visitor center, museum collection storage, and parking area outside of current park boundaries, as called for in the 1986 GMP
- The purpose of this consultation meeting is to provide information on both projects, which are at very early stages, and to have open and honest discussions between the Tribes and the Park
- Extending the Tour Road as called for in the 1986 GMP would have significant impacts on landscape, traverse Tribal lands, and would be expensive. Therefore, it is unlikely to be implemented
- Project schedules were discussed



- Changes to current Park boundaries requires an Act of Congress
- Current negotiations between Crow Nation and Custer Battlefield Preservation Committee on outstanding issues need to be completed before taking a project to Congress
- Spring to summer 2012 seems to be a good time to schedule another consultation meeting to discuss study alternatives
- Tribal representatives expressed concerns about land issues and the location of the new museum collection/visitor facility

### **Afternoon Session – Alternative Transportation Feasibility Study**

After the lunch break, Tribal representatives requested for an internal session among Tribes which lasted for about an hour. When the consultation meeting (afternoon session) resumed, Conrad Fisher on behalf the Tribes announced that due to remaining concerns about land issues, locations, and negotiation status between Crown Nation and Custer Battlefield Preservation Committee, that this consultation not be continued. The scheduled afternoon session on the Alternative Transportation Feasibility Study project was therefore cancelled.

## **4.0 SYNTHESIZED SUMMARY OF WORKSHOP RESULTS**

The purpose of this multi-day Kick-off Workshop is to provide the URS study team with enough information about and familiarity with the site to complete all tasks. The NPS and URS staff participating in this workshop had extensive discussions, conducted field tours and additional observations, and collected necessary information including photos and additional documents.

The following categorical issues in relation to transportation challenges facing the Park were identified:

1. Deficiencies in Park infrastructure (such as visitor center, parking, and roads), operations (such as vehicle-pedestrian conflicts in parking areas), and asset management (such as deferred maintenance)
2. Lack of alternative transportation (private vehicles being the only realistic mode to enter the Park and travel through the Tour Road)
3. Stakeholder and community concerns on potential expansion of parking, roads, and Park boundaries
4. Visitor experience issues, such as safety, information, mobility, access, and connectivity
5. Cultural and environmental issues, including challenges in preservation of cultural and historic landscape and natural resources
6. Management practice issues, such as policies and regulations regarding RV access, parking, signing, and pavement markings

The following draft goals, around each of which several objectives were organized, were developed to help guide development and evaluation of AT options in this study:

1. Reduce Operation and Management requirements through asset management
2. Exercise management practices to solve short-term transportation problems
3. Develop transportation options that enhance visitor experience and protect resource values
4. Enhance visitor experience and understanding through use of alternative transportation system
5. Recognize opportunities to improve public and community support

Based on identified issues and established draft goals and objectives, workshop participants worked to identify a variety of ideas that may be useful in solving specific issues and achieving some of the objectives. These ideas provide initial input in options development and were further developed into preliminary ATS options in three categories: multi-modal, transit-oriented, and non-transit options. Accordingly, a number of preliminary options were formulated including those described under the “Long List” of Alternative Transportation System Options between page 9 and page 10. Some of the options were initially developed in previous studies and planning efforts, such as the 1986 GMP.

Built upon the results from this productive Kickoff Workshop, the study team will conduct options development and evaluation in two major steps. First, a broad range of initial options that may be capable of solving some or all of the transportation issues will be formulated, followed by an initial screening process to evaluate the options. The list of preliminary options identified through this workshop will be analyzed for possibly inclusion into the initial set of options. Options from previous studies and planning efforts, such as the one-way loop and 4R project, may also be included in the initial set of options. Criteria to be used in the initial screening process will be able to qualitatively test each option against the goals and identify “fatal flaws”. For example, if an option is anticipated to have significant negative impacts on visitor experience, it may be considered as not being able to meet the goal of enhancing visitor experience, and therefore, have a fatal flaw. Options surviving the initial screening will be carried forward into the second step, as described below.

The second step involves a detailed screening process and refinement of options. Only options that survive the initial screening plus a No Build option will be considered in this step. A set of weighted criteria will be identified for this evaluation purpose, including both quantitative and qualitative measures. Compared with initial screening criteria which are organized around the goals, detailed screening criteria reflect measurable elements of critical objectives, such as total lifecycle costs and extent of footprint changes. Instead of identifying a preferred option, the anticipated results from this detailed screening process will include a small number of options that can be further studied in a future planning or design process.

## **5.0 ATTACHMENTS:**

- A. Workshop Agendas
- B. Workshop Sign-In Sheets
- C. Sketch Diagrams of Preliminary Options
  - a. Multi-Modal, One-way w/RVs/PVs/Bicycles/Other
  - b. Multi-Modal, Two-way w/Detached Hiking/Bike Trail
  - c. Multi-Modal, Two-way w/Transit/ /Bicycles/Other
  - d. Transit, Two-way (no RVs/PVs during peak)
  - e. Non-Transit (structural and management improvements)
  - f. Land Use
  - g. Parking + Circulation
  - h. RV parking Concept

**ATTACHMENT A**  
**Workshop Agendas**

# LITTLE BIGHORN BATTLEFIELD NATIONAL MONUMENT PROJECT KICKOFF WORKSHOP

## ALTERNATIVE TRANSPORTATION FEASIBILITY STUDY

*October 24 – October 26, 2011*



## AGENDA

### Monday, October 24

- |         |   |
|---------|---|
| Morning | Team Travel, Lunch on the way   |
| 1:00 pm | Meet @ LIBI Administration Building, 2 <sup>nd</sup> floor conference room (turn right after park entrance gate, building is at the bottom of the hill) <ul style="list-style-type: none"><li>-Opening comments from Superintendent</li><li>-Team introductions</li><li>-Project charter</li><li>-Project goals, sideboards</li></ul> |
| 2:00 pm | Tour park / key sites <ul style="list-style-type: none"><li>-via automobile / walking</li></ul>   |
| 4:00 pm | Daily Debrief @ LIBI Administration Building, 2 <sup>nd</sup> floor conference room   |
| 4:30 pm | Park Gate closes  |

*Note: LIBI Administration Building, 2<sup>nd</sup> floor conference room is equipped with a large screen monitor (with laptop connection capability), easels, flipcharts, markers, and tape. Contractor team will bring other supplies as necessary including scaled base maps, charrette drawing supplies (trace paper, graphic pens...), presentations, laptop, camera, etc.*

### *Tuesday, October 25, 8:00 AM - 4:30 PM*

- 8:00 am Meet @ LIBI Administration Building, 2<sup>nd</sup> floor conference room  
- Charrette (detailed agenda provided by URS)  
*Note: Park team is not available in the morning, URS and DSC/IMR team will work together*
- 11:30 pm Lunch (sack lunch recommended)
- 12:30 pm Continue charrette with Park staff
- 4:00 pm Daily Debrief & Closeout with Superintendent @ LIBI Administration Building, 1<sup>st</sup> floor conference room
- 4:30 pm Park Gate closes

### *Wednesday, October 26, 8:00 AM - 4:30 PM*

- 8:30 am Meet @ LIBI Administration Building, 2<sup>nd</sup> floor conference room  
- Tribal Consultation Meeting (detailed agenda provided by Park)  
- Coordination with Museum Collection/Visitor Facility team  
- Continued charrette activities
- 4:00 pm Daily Debrief & Kickoff Closeout @ LIBI Administration Building, 1<sup>st</sup> floor conference room
- 4:30 pm Park Gate closes, DSC team departs

### *Thursday, October 27*

URS team continues field work for additional observations, etc.

### *Participant Contact Information*

Kate Hammond	LIBI Superintendent	406.638.3201 (o)
Rene Laya	LIBI Facility Manager/POC	406.638.3210 (o)
Melana Stichman	LIBI Biological Technician	406.638.3225 (o)
Ken Woody	LIBI Chief of Interpretation	406.638.3216 (o)
Michael Stops	LIBI Chief Ranger	406.638.3215 (o)
Les Frickle	LIBI Maintenance	406.638.3212 (o)
Debra Frye	IMR ATP Coordinator	303.969.2626 (o)
Patrick Shea	DSC Project Manager	303.969.2347 (o)
Jenny Staroska	DSC Project Specialist/COR	303.969.2297 (o)
Freddy He	URS Project Manager	303.796.4772 (o) 303.927.8118 (c)
David Cooper	URS Architect and Planner	303.740.3982 (o) 303.810.2420 (c)

-End of Agenda-



## Workshop #1 - October 25, 2011

### Agenda

8:30 am Setup by URS

**9:00 am Introduction to the Workshop #1**

- Review workshop agenda, process and logistics
- Recap Monday results – study purpose, observations, background, etc.
- Coordination with other studies
- Other input

**9:30 am Issues**

- Identify and record relevant issues (from site tour, NPS staff, others, and URS data gathering)
- Sort/arrange the issues by category (large group discussion)

**10:30 am Goals and Objectives**

- Do we need to set a high target? (mission or vision statement)
- Identify/discuss goals from previous studies relevant to ATFS
- Formulate draft goals/objectives for ATFS
- Discuss and prioritize (large group exercise)

**12:00 noon Lunch (individual)**

**12:30 Recap Morning Results (LIBI staff in attendance)**

- Summarize morning results for benefit of LIBI staff

**1:00 pm Conceptual Planning Options**

- Concepts and projects from previous studies
- New ideas and discussion
- Create a “long list” of options
- Small group exercise to develop draft options (ie – multi-modal, transit options, non-transit, other), use matrix handout to guide discussion
- Small groups report back and discussion with URS diagrams
- Develop “short list” of options for further refinement by URS (name, purpose, key features, benefits, issues, etc.)





**3:30 Preliminary Evaluation Criteria**

- Discuss goals, objectives and other inputs to evaluation criteria
- Develop preliminary list of evaluation criteria/performance measures

**4:00 pm Debrief and next steps**

- Review results from the workshop
- Identify action items
- Review Wednesday agenda

**4:30 Workshop complete (LIBI closes)**

Little Bighorn Battlefield National Monument  
Government-to-Government Tribal Consultation Meeting

Wednesday October 26, 2011

DRAFT AGENDA

- |            |  |
|------------|--|
| 8:30 am    | Check-in; Coffee available   |
| 9:00 am    | Welcome – Kate Hammond, Superintendent                                     |
|            | Blessing   |
|            | Introductions – meeting participants                                       |
|            | Meeting purpose – Kate   |
| 9:30       | Introduction to Museum Collection/Visitor Center Conceptual Study/EA       |
|            | Why is a new facility needed?  |
|            | Proposed location of a new facility  |
|            | What the study will address  |
|            | Possible complications for the study                                       |
|            | Discussion of the study – thoughts, input, opinions                        |
| 12:00 noon | Lunch on-site  |
| 1:00 pm    | Further discussion of Museum Collection/Visitor Center Conceptual Study/EA |
| 2:00 pm    | Alternative Transportation Feasibility Study                               |
|            | Why is the study needed?   |
|            | What the study will address  |
|            | Discussion of the study – thoughts, input, opinions                        |
| 4:00 pm    | Next steps and expected schedule   |
|            | Closing remarks  |

## **ATTACHMENT B**

### **Sign-In Sheets**

# B-1

ATFS  
LIBI  
Meeting 10.24.11 1:00 PM

Name	Org	Email	Telephone
Freddy He	URS	freddy.he@urs.com	303-927-8118
Debra Frye	NPS/IMP-Fm	debra.frye@nps.gov	303-909-2020
Ken Woody	NPS/LIBI	ken.woody@nps.gov	(406) 638-3216
David Cooper	URS	david.cooper@urs.com	303-740-3982
Melana Stichman	NPS-LIBI	melana.stichman@nps.gov	406-638-3228
Michael Stops	LIBI-NPS	michael.stops@nps.gov	406-638-3015
Rene Laya	LIBI-NPS	rene.laya@nps.gov	406-638-3210
Patrick Shea	ESG-NPS	patrick.shea@nps.gov	303-969-2891
Kate Hammond	LIBI-NPS	kate.hammond@nps.gov	406-638-3201
Jenny Stawoska	NPS-DSC	jennifer.stawoska@nps.gov	303.909.2297

## SIGN-IN, 10/25/2011 (TUESDAY) B-2

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>EMAIL</u>
Freddy He	URS	303-927-8118	freddy.he@urs-cor
Rene Laya	NPS	406-638-3210	rene-laya@nps.gov
Abigail Buchin	NPS	406-638-3219	abigail.buchin@nps.gov
Debra Frye	NPS-IMP	303-969-2626	debra.frye@nps.gov
Patrick Shea	NPS-DSC	303-969-2341	patrick-shea@nps.gov
David Cooper	URS	303-740-3982	david.cooper@urs-cor
Jenny Stawaska	NPS-ISC	303-969-2297	jennifer-stawaska@nps.gov
Melina Stichman	NPS-LIBI	406-638-3225	melina-stichman@nps.gov
Ken Woody	NPS-LIBI	406-638-3226	ken-woody@nps.gov





Little Bighorn Battlefield National Monument  
Environmental Assessment Museum Collection Storage Facility/Visitor Center  
An Alternative Transportation Plan  
October 26, 2011

SIGN IN SHEET

<u>NAME</u>	<u>ORGANIZATION</u>	<u>MAIL ADDRESS / EMAIL ADDRESS</u>	<u>PHONE</u>
FREDDY HE	URS	FREDDY.HE@URS.COM	303-796-4772
LaDonna Allard	SRST	LaDonna.bravel@aol.com	701-854-8698
Janome Whitely Crow Tribe		Ladye Brass Box 78	406-639-2012
Auctioneer Party Outfit		Crow Agency i.p.t. 59022	(406) 620-1885
Miki Stuebe	NPS	miki.stuebe@nps.gov	(303) 968-2437
Christine Landrum	NPS	christine_landrum@nps.gov	(303) 969-2436
Kelly Branam	EMI	kbranam@stcloudstate.edu	317-604-9522
Melana Stichman	NPS-UBI	melana-stichman@nps.gov	406-618-3225
Renville, Monzbe	SOLD	---	605 698-3584
Jim Whitted	SWATHP	jmswhitted@yahoo.com	605-698-3584
Dana Dupris	CRST-CPS	dana.dupris@crst-nsn.com	605-964-7534
DEBRA FENLE	NPS-IMP-	debra.fenle@nps.gov	303-969-2626
SUE ANDERSON	CTA	suea@cta group.com	406.248.7455





**Little Bighorn Battlefield National Monument  
Environmental Assessment Museum Collection Storage Facility/Visitor Center  
An Alternative Transportation Plan  
October 26, 2011**

October 26, 2011

SIGN IN SHEET

NAME	ORGANIZATION	MAIL ADDRESS / EMAIL ADDRESS	PHONE
Karen Little Coyote	Cheyenne	klittlecoyote@ccq-tribes.org	371-40215
Jean Starok	NPS - DSC	jean.starok@nps.gov	303.917.9796
Kate Hammond	NPS - LBI	Kate.hammond@nps.gov	406.638.3201
Karen Wurzbarger	NPS - IMP	Karen-wurzbarger@nps.gov	303-767-2148
Steve Brady, Sr.	NCLW Culture Comm.	Steve.Brady@cheyennation.com	477-4888
Robert J. Twoleggings	Apsáalooké	Robert@ceonations.net	(46)677-9677
JAMES WESTON	FST	JB.weston@fst.org	WOS 633-1537
Conrad Fisher	N. Cheyenne	Conrad.fisher@cheyennation.com	406 477-4839
Gilbert Whitehorse	N. Cheyenne		
Billie Wolf	FAT	peo@cheyennation.com	406.862.2424
Russell Eagle Bear	Roshead Sioux	rstthpo@yahoo.com	605-747-4255
Sharon Small	NPS - LBI	Sharon-Small@nps.gov	406.638.3213

## **ATTACHMENT C**

### **Sketch Diagrams of Preliminary Options**

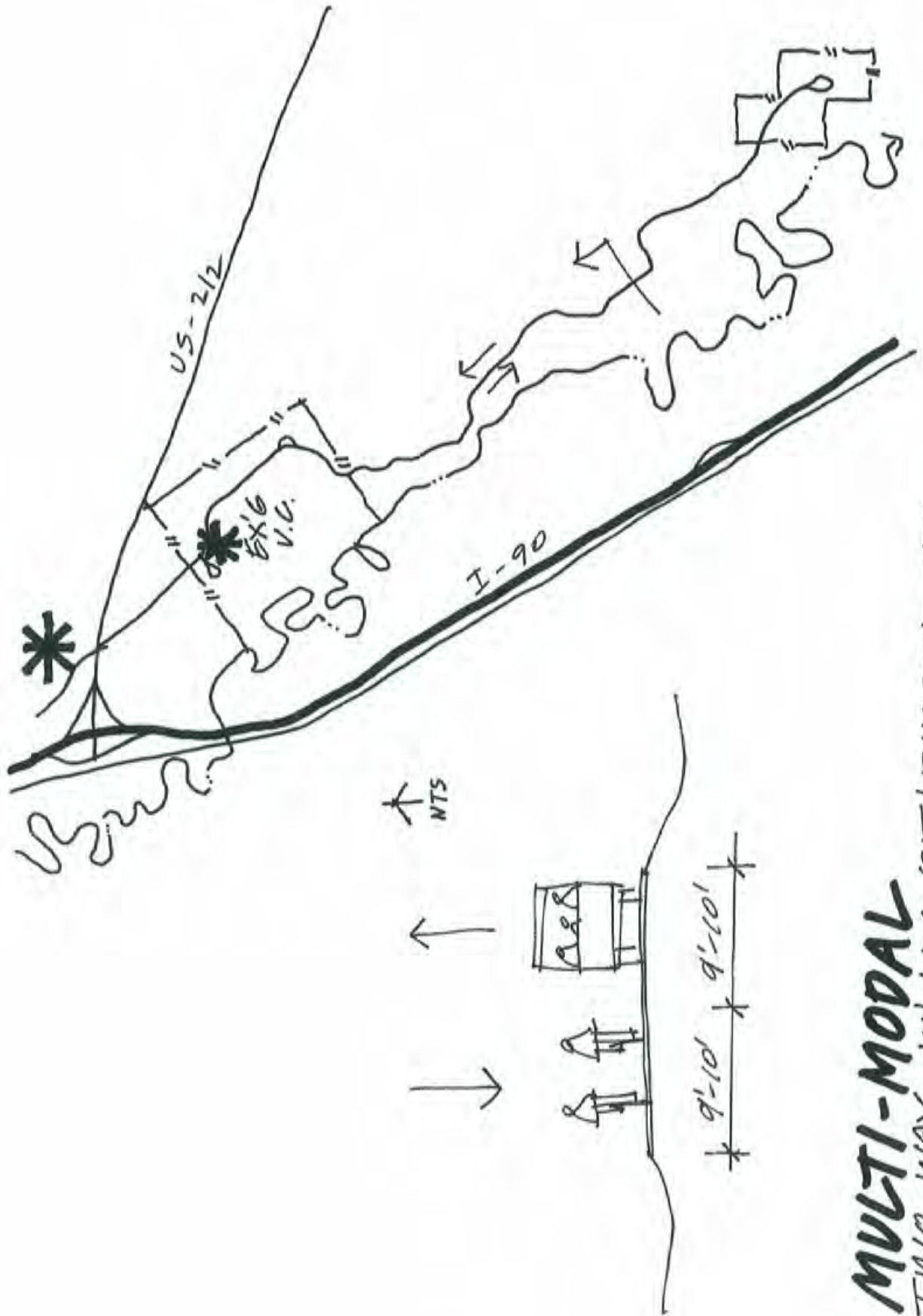
C-1



**MULTI-MODAL**  
TWO WAY W/DETACHED HIKER/BIKER  
(NO PVS/RVS DURING PEAK)



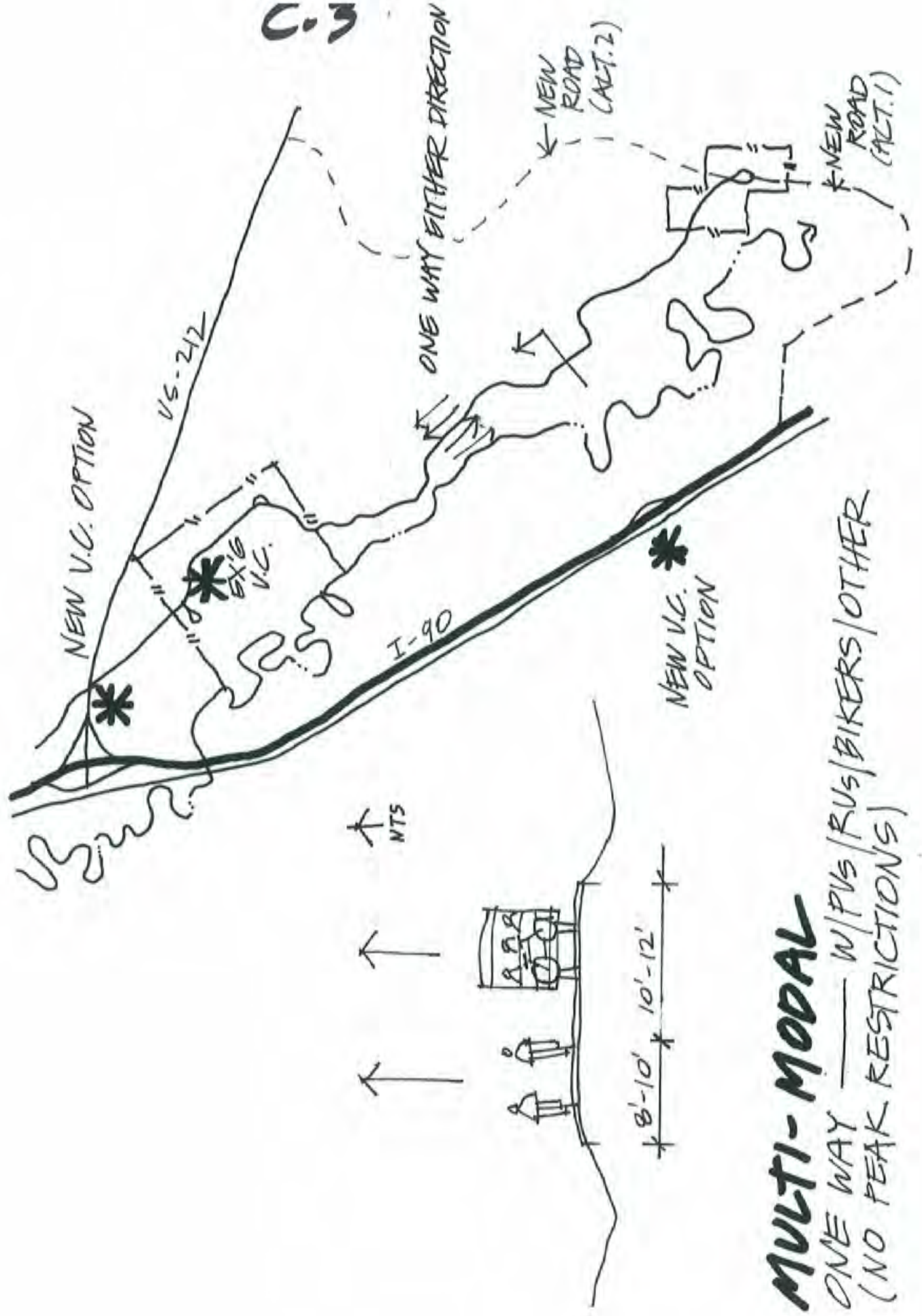
C-2



**MULTI-MODAL**  
TWO WAY W/ TRANSIT/BIKER/OTHER  
TWO PUS/KVS DURING PEAK

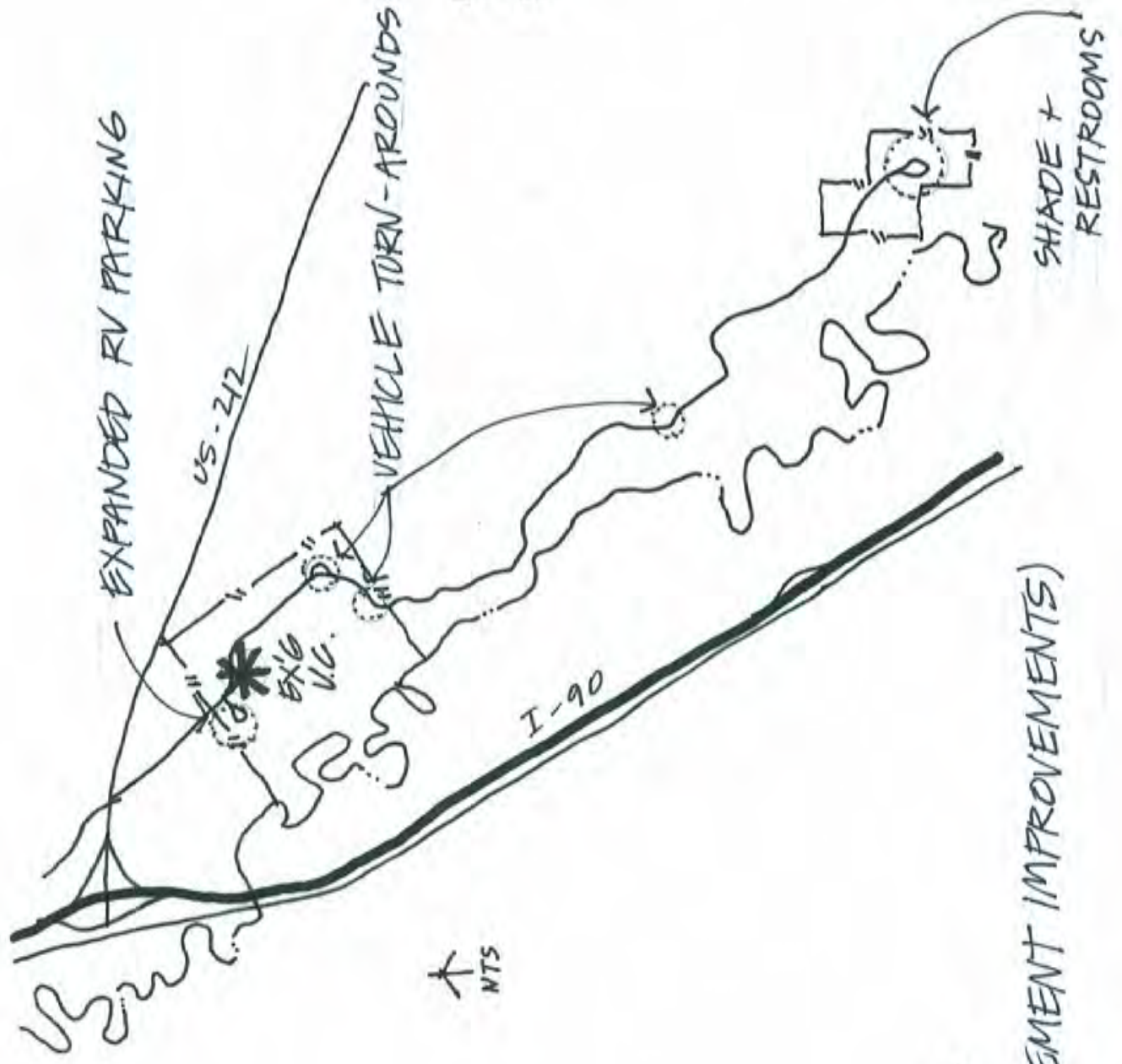
## MULTI-MODAL

ONE WAY — W/PVS/RVS/BIKERS/OTHER  
(NO PEAK RESTRICTIONS)









**NON-TRANSIT**  
(STRUCTURAL + MANAGEMENT IMPROVEMENTS)



BATTLEFIELD

VISITOR  
CONTACT

C-6

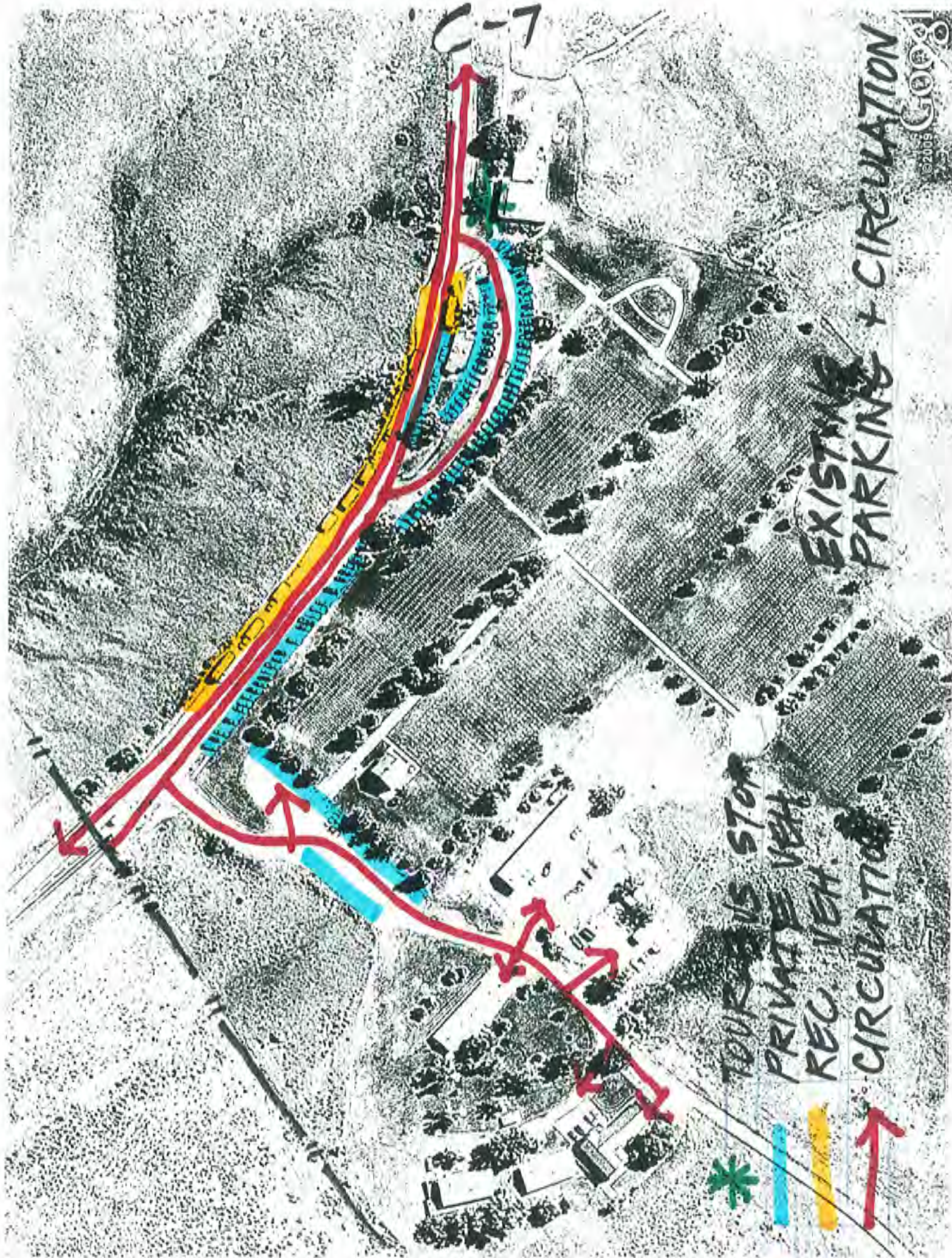


CEMETERY

EXISTING  
LAND USE







C-7

TOUR BUS STOP  
PRIVATE VEH.  
REG. VEH.  
CIRCULATION

EXISTING  
PARKING + CIRCULATION



NEW R.V.  
PARKING

REMOVE  
R.V. PARKING

PEDEST  
SIDEWALK

SHORT-  
TERM  
R.V.  
PARKING

\* CONCESSION TOUR

R.V. PARKING CONCEPT





## **Appendix C:** **Evaluation of Options Workshop – Synthesized Results**





## MEMORANDUM

To: NPS DSC – Transportation Division

From: URS Corporation

Date: October 15, 2012

Re: Evaluation of Options Workshop (May 7, 2012) – Synthesized Results

Alternative Transportation Feasibility Study, Little Bighorn Battlefield National Monument, LIBI – 163914

URS Project No. 22242502

This memorandum summarizes the results of the Evaluation of Options Workshop that was held at the Little Bighorn Battlefield National Monument (LIBI) on May 7, 2012. The purpose of this workshop was to:

- review the five transportation options that were carried forward from the initial screening process and refine or modify these options, if necessary;
- review and refine a set of detailed screening criteria and associated weighting factors, and use these criteria to evaluate the transportation options; and
- gather input and viewpoints from National Park Service (NPS) personnel and primary stakeholders.



Figure 1. Evaluation of Options Workshop, May 7, 2012

Participants of this workshop included the following:

- Gus Sanchez, Acting Superintendent (LIBI)
- Rene' Laya, Facility Manager (LIBI)
- Melana Stichman, Biological Technician (LIBI)
- Ellen Waldhart, Natural Resources and Compliance Assistant (LIBI)
- Jerry Jasmer, Ranger (LIBI)
- Ken Woody, Chief of Interpretation (LIBI)
- Marvin Dawes Sr., Interpretive Ranger (LIBI)
- Michael Stops, Chief Ranger (LIBI)
- Jerry Case, BICA Superintendent (Bighorn Canyon National Recreation Area [BICA])
- Debra Frye, Alternative Transportation Program Coordinator (Intermountain Region [IMR])
- Patrick Shea, Project Manager (NPS Denver Service Center [DSC])
- Jennifer Orozco, Planner/Urban Designer (URS)
- Freddy He, URS Project Manager (URS)

## 1.0 STUDY OVERVIEW

Major study activities prior to this workshop include the kickoff workshop held at the park on October 24 – 26, 2011; data collection and compilation; existing conditions analysis; review and syntheses of previous studies and planning documents; and development and screening of transportation options. Major transportation issues in the park were identified as the following:

- There is an overall shortage of parking spaces in the visitor center area, in particular for oversized vehicles. During busy days in the summer season, parking lots in the visitor center area are full. During these busy times, park staff is sometimes deployed to direct visitors to drive the tour road and then return to the visitor center once parking spaces are available.
- The existing two-way tour road is narrow (pavement width varies between 17- and 20-feet), has no shoulders, and has structural deficiencies. Over the last several decades, multiple pavement layers have been added without strengthening the foundation. These road conditions are ineffective at handling modern oversized vehicles.
- Due to lack of parking spaces, deficiencies in roadway and parking configuration, sight distance issues, and tight turning radius; there is potential for pedestrian-vehicle and vehicle-vehicle conflicts in the visitor center area. These conflicts further aggravate safety concerns.

Participants at the workshop acknowledged that these transportation issues typically occur only on the busiest days during the summer months (from Memorial Day to Labor Day). No vehicle collisions have been reported in the park, although minor incidents such as side mirrors broken by passing vehicles traveling on the tour road have been reported. There is a strong consensus among the workshop participants that these issues have substantial negative impacts on visitor experience and park resources. Transportation improvements are needed to address these issues and improve visitor safety.

The study team initially formulated 13 transportation options in three categories – construction options, no-build options, and transit options. A set of screening criteria was developed by the study team to include (1) enhance visitor experience, (2) minimize impacts to resources, (3) reduce traffic congestion and parking shortage, (4) manage transportation assets to maintain acceptable conditions, and (5) improve visitor safety. The study team derived the initial screening criteria from the project goals and objectives developed during the kickoff workshop, taking into consideration the park's transportation issues, park mission, and balance of short-term and long-term transportation needs. This set of five initial screening criteria was then applied to assess the 13 options in order to identify which options have “fatal flaws”, i.e., failed against one or more criteria.

Results from the initial screening process were presented in the Evaluation of Options Workshop and are shown in Table 1. Five transportation options (marked with a star in Table 1) were carried forward from the initial screening, while the other eight options failed the initial screening and were eliminated from further evaluation. It should be noted that, per NPS' guidance, the following two options (previously cleared for environmental compliance in prior planning efforts) were carried forward for further evaluation, even though each of them initially failed against the criterion “minimize impacts to historical, cultural, and natural resources”:

- Widen Road and Expand Existing Parking Lots (Resurfacing, Restoration, Rehabilitation, and Reconstruction [4R] Project)
- One-Way Loop via I-90 Frontage Road (General Management Plan (GMP) Option)

The environmental impacts of the 4R project have been evaluated for compliance in the 2005 *Environmental Assessment / Assessment of Effect: Rehabilitate Tour Road (EA)*, and a resulting *Finding of No Significant Impact (FONSI)* was completed in the same year. The National Park Service considers the GMP option as the long-term solution and will continually work toward its eventual implementation.

**Table 1. Initial Screening Matrix**

	Initial Screening Criteria				
	A	B	C	D	E
<b>Initial Set of Options</b>	Enhance visitor experience	Minimize impacts to historical, cultural, and natural resources	Reduce traffic congestion and parking shortage in the Park	Manage transportation assets to maintain acceptable conditions	Improve visitor safety

#### CONSTRUCTION OPTIONS

1) Repair Tour Road and Reconfigure Parking	Pass	Neutral	Neutral	Pass	Neutral
2) Widen Road and Expand Existing Parking Lots (4R Project)	Pass	Fail	Pass	Neutral	Pass
3) One-Way Loop via I-90 Frontage Road (GMP Option)	Pass	Fail	Pass	Neutral	Pass
4) One-Way Loop via U.S. 212	Pass	Fail	Pass	Neutral	Pass
5) Detached Multiuse Trail Paralleling Road	Pass	Fail	Fail	Fail	Neutral
6) Alternate Infrastructure Improvements	Pass	Neutral	Neutral	Pass	Fail

#### NO-BUILD OPTIONS

7) Management Improvements and Parking Reconfiguration	Neutral	Neutral	Neutral	Neutral	Neutral
8) Seasonal Reservation/ Permit System	Fail	Neutral	Pass	Neutral	Neutral
9) Permanently Close Tour Road to Motorized Vehicles and Maintain it as a Trail	Fail	Pass	Fail	Neutral	Neutral

#### TRANSIT OPTIONS

10) Voluntary Transit	Pass	Pass	Neutral	Neutral	Pass
11) Mandatory Peak/Seasonal Transit for All Visitors with Motorized Vehicles	Fail	Pass	Pass	Fail	Pass
12) Mandatory Transit for Visitors with Oversized Vehicles	Fail	Pass	Neutral	Neutral	Pass
13) Mandatory Year-round Transit for All Visitors with Motorized Vehicles	Fail	Pass	Pass	Fail	Pass

Source: URS Corporation

Note: ★ = option carried forward from initial screening

The second step of the options evaluation process was detailed screening. The study team conducted preliminary evaluation of the five options using a set of weighted screening criteria. Visitor and traffic forecast, transit ridership forecast, financial analysis, and calculation/estimation of criterion values were performed during this evaluation. The workshop participants built on the results from the preliminary evaluation.

It is emphasized that the purpose of this study was not to make a decision or recommendation on a preferred option; instead, the expected final results from this study represent a short list of feasible options to assist the park in managing visitation, traffic, and parking.

## 2.0 ISSUES DISCUSSION

The items/issues discussed during the workshop were as follows:

1. The GMP option should stress that the long-term plan is working toward the implementation of the GMP. However, in the interim, measures need to be implemented to mitigate congestion and visitor safety issues.
2. Following the completion of this study, the National Park Service will consider one or more of the options for transportation improvements in the park.
3. The concession-operated (by Little Big Horn College) interpretive tour shuttle typically runs five times a day from Memorial Day to Labor Day, although in the past the tours have sometimes continued into September past Labor Day.
4. The park previously contracted (more than 10 years ago) with a local Hardin firm to run school buses during a few busy days between an off-site parking area and the visitor center. The agreement lasted a few years during the park's visitation peak of around 400,000 annually; visitation has since fallen to around 300,000. The requirements for park staff to manage the contractual obligations for this minimal service proved too time-consuming to be worthwhile.
5. There is the possibility of engaging the Apsaalooke Tour, Crow Nation Transit, or a local school district to provide assistance during busy days or special events.
6. In April 2011, the Crow Nation Transit started transporting passengers, via two minibuses, throughout the Crow Indian Reservation and Big Horn County between Billings and Fort Smith, connecting the towns and communities that include Hardin, Crow Agency, Lodge Grass, Pryor, and Wyola.
7. Some park employees expressed concerns over whether a voluntary transit system is needed and can work in the park, given the moderate visitation in recent years and potential impacts on park management in terms of staffing and paperwork to manage the contract or operate the voluntary transit. Detailed analysis will be included with the Options and Criteria for Evaluation Report.
8. Other national parks, such as Zion and Bryce Canyon, have been contracting with national or regional transit providers for shuttle services in and around the park. Their experience and lessons learned should be taken into consideration while evaluating transit options for the park. In addition, consideration needs to be given for transit options to work with existing transit services, including the Apsaalooke Tour and Crow Nation Transit.
9. Wayside pullouts along the tour road technically do not have any parking spaces. The extra pavement by travel lanes is merely for "pull-through" instead of parking. Visitors are not supposed to step out of their vehicles, nor should they park their vehicles. The cell phone audio tours were developed so that the visitor would stop the car and then listen to the audio tour.
10. The percentage of oversized vehicles (19-25% based on the 2010 *Existing Traffic and Parking Conditions and Implications for Transportation Alternatives* by Jonathan Upchurch), in



Figure 2. Crow Nation Transit Bus

particular buses, appears to be higher than usual. Park employees feel a lower percentage, such as 15-18%, would be closer to their observations in a common year.

11. Park employees have noticed visitation changes in the last few years, including more tour buses and more international visitors.
12. Prior to 2004, during an approximately three-year timeframe, oversized vehicles were not allowed to drive on the tour road between the visitor center and Reno-Bentzen Battlefield. Travel by oversized vehicles on the damaged and narrow road was considered too dangerous. This restriction was lifted after a pavement rehabilitation project improved the sub-structure and surface of the tour road; however, the road continues to be damaged by oversized vehicles and the safety problems on the narrow road have not been addressed.
13. Repeated pavement treatments on the tour road have resulted in a de-facto 24-foot or wider footprint in spots where the bottom layer(s) pavement has been installed wider than the original roadway. This has created unofficial and non-standard paved, but not maintained, shoulders. The traveled way varies from 17- to 20-feet in width, averaging about 18-feet.
14. The construction options, including the 4R project and GMP option, should be considered as proactive safety improvements that would effectively improve visitor safety.
15. A series of low-cost, low-impact improvements included in the options, such as flip and portable signs, pavement markings at parking areas and main road, and sign modifications, could be implemented this year to help park management. The Intermountain Region can assist the park in developing signing and striping that conform to Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD)* and NPS standards.



Figure 3. Example Customized and MUTCD Signs



### 3.0 REVIEW AND REFINEMENT OF TRANSPORTATION OPTIONS

The five options carried forward from the initial screening were discussed for refinement. All participants agreed to keep the first four options and to modify *Option V – Voluntary Transit* into two new transit options. The resulting six options are described below.

#### Option I) Repair Existing Road

Option I is a reconstruction project that would repair, but not substantially increase, the footprint of the existing tour road. The option is illustrated in Figures 4 and 5.

##### Proposed Features:

- Repairs to the road should be properly engineered and may widen the road slightly for standardization and proper construction.
- The current road width varies from 17- to 20-feet. The improved tour road would have a consistent 20-foot cross-section.
- The tour road improvements would work with existing cattle guards and box culverts.
- Parking lots would be reconfigured or restriped without enlarging the footprint.
- Shoulders would not be provided; however, proper roadside treatment, such as side slopes, would be created to improve safety.

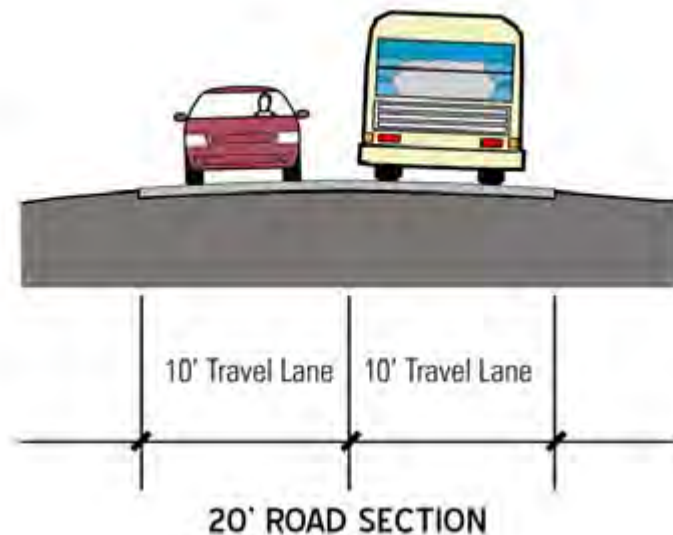


Figure 4. Proposed Cross-section for Option I



Figure 5. Option I: Repair Existing Road

## Option II) 4R Road Widening and Parking Expansion

This option consists of a resurfacing, restoration, rehabilitation, and reconstruction (4R) project that would widen the tour road from an average 18-foot width to 24-feet wide, correct structural deficiencies of the pavement, and improve horizontal and vertical alignment.

This option is described in the *2010 Preliminary Feasibility Study* and was the preferred alternative in the *2005 Environmental Assessment/Assessment of Effect: Rehabilitate Tour Road*. This option would not preclude transit; the widened road could support future shuttle service with larger transit vehicles and the improved visitor center parking lot could serve as a staging area for transit.

### Proposed Features:

- The tour road would be widened to 24-feet in order to accommodate safe passing for oversized vehicles and to correct structural deficiencies in the road.
- The tour road cross-section would consist of two 11-foot travel lanes with one-foot shoulders on both sides.
- Parking at the visitor center and Reno-Bentzen Battlefield would be modified and expanded to include bus pull-outs, motorcycle parking, better accommodations for oversized vehicles, and improved traffic flow.

This option is illustrated in Figures 6 and 7.

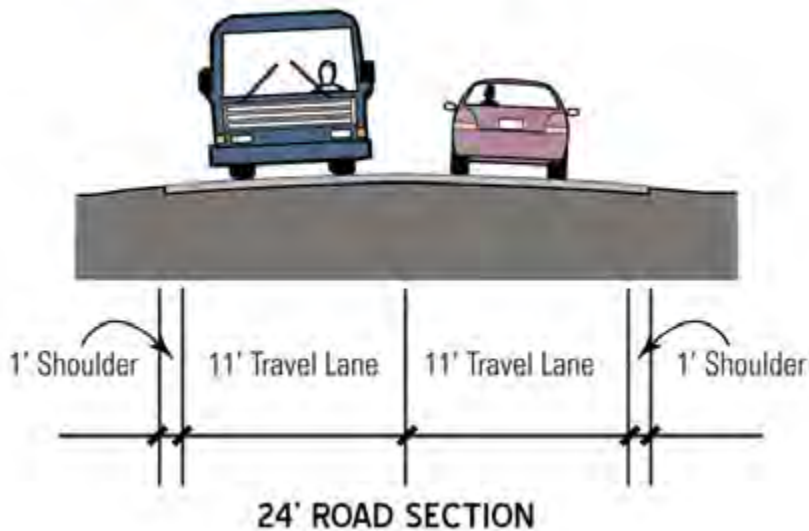


Figure 6. Proposed Cross-section for Option II



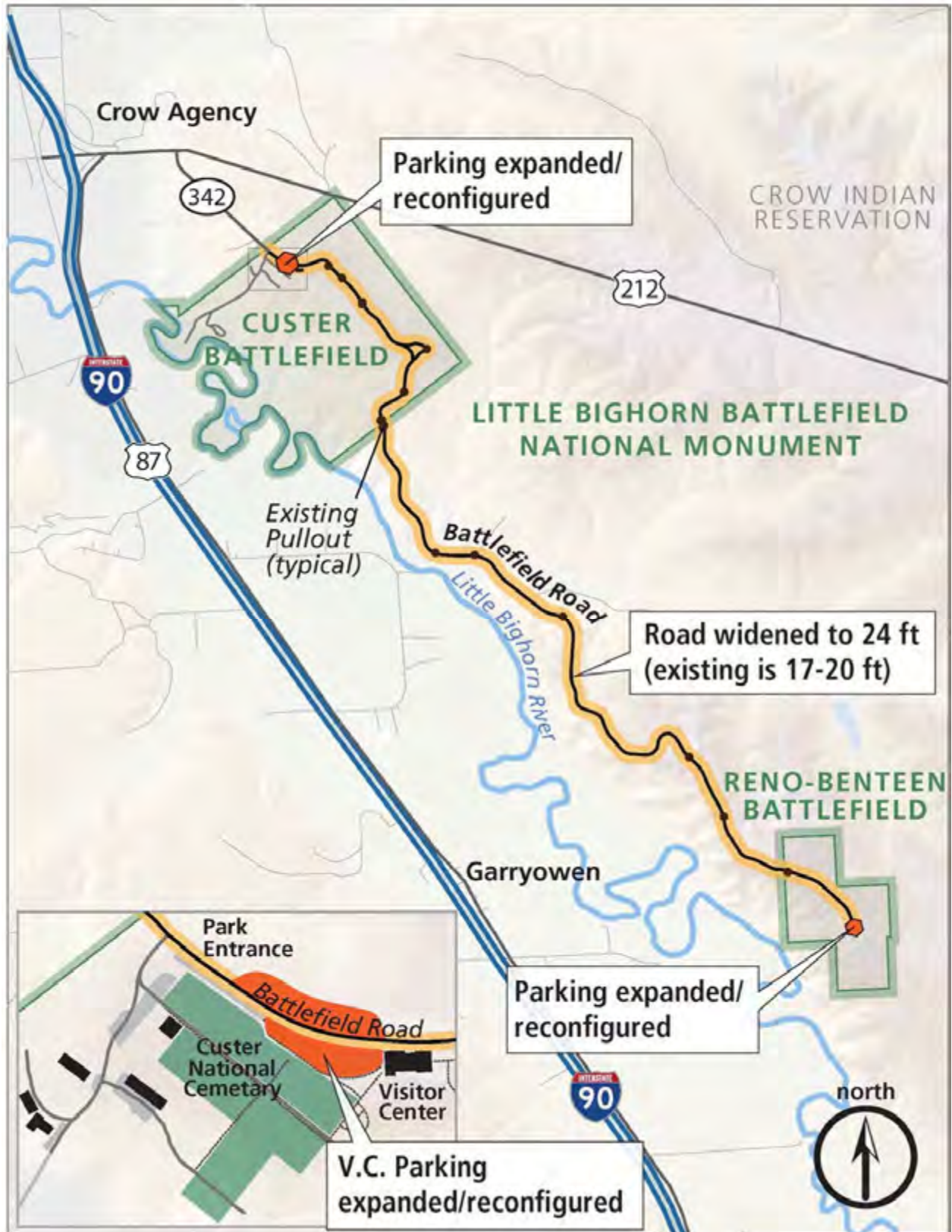


Figure 7. Option II: 4R Road Widening and Parking Expansion

### Option III) GMP One-Way Tour Loop

This option would extend the tour road from Reno-Benteen Battlefield south to the I-90 frontage road, forming a counter-clockwise one-way tour loop. This option was first presented in the 1986/1995 *General Management Plan* and again in the 2010 *Preliminary Feasibility Study*. It was also revisited during the ATFS Project Kick-off Workshop in October 2011. This option would not preclude transit service on the tour road.

#### Proposed Features:

- A proposed tour road extension from Reno-Benteen Battlefield south to the I-90 frontage road would form a counter-clockwise one-way tour loop.
- The one-way tour road would allow visitors to experience the historic sites in the chronological sequence of the battle.
- The beginning of the one-way tour road would consist of a new visitor orientation/administration facility and parking area, presumably located adjacent to the US 212/MT 342 intersection.
- The tour road extension would require a bridge over Little Bighorn River.
- Additional parking has been proposed west of the Little Bighorn River, at the beginning of the one-way tour road segment.
- Under this option, Option I – Repairing Tour Road and Reconfiguring Parking will be included as one element.
- A seasonal, voluntary transit service will be provided to all visitor, which will operate along the entire one-way loop from Memorial Day to Labor Day, 9:00 a.m. to 5 p.m.

This option is illustrated in Figures 8 and 9.

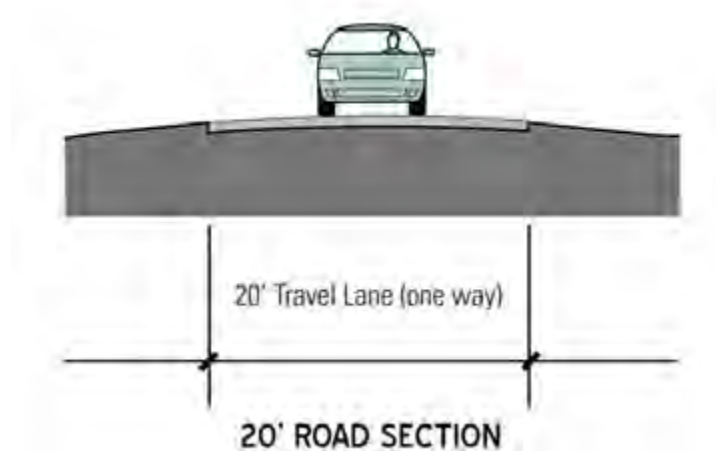


Figure 8. Proposed Cross-section for Option III

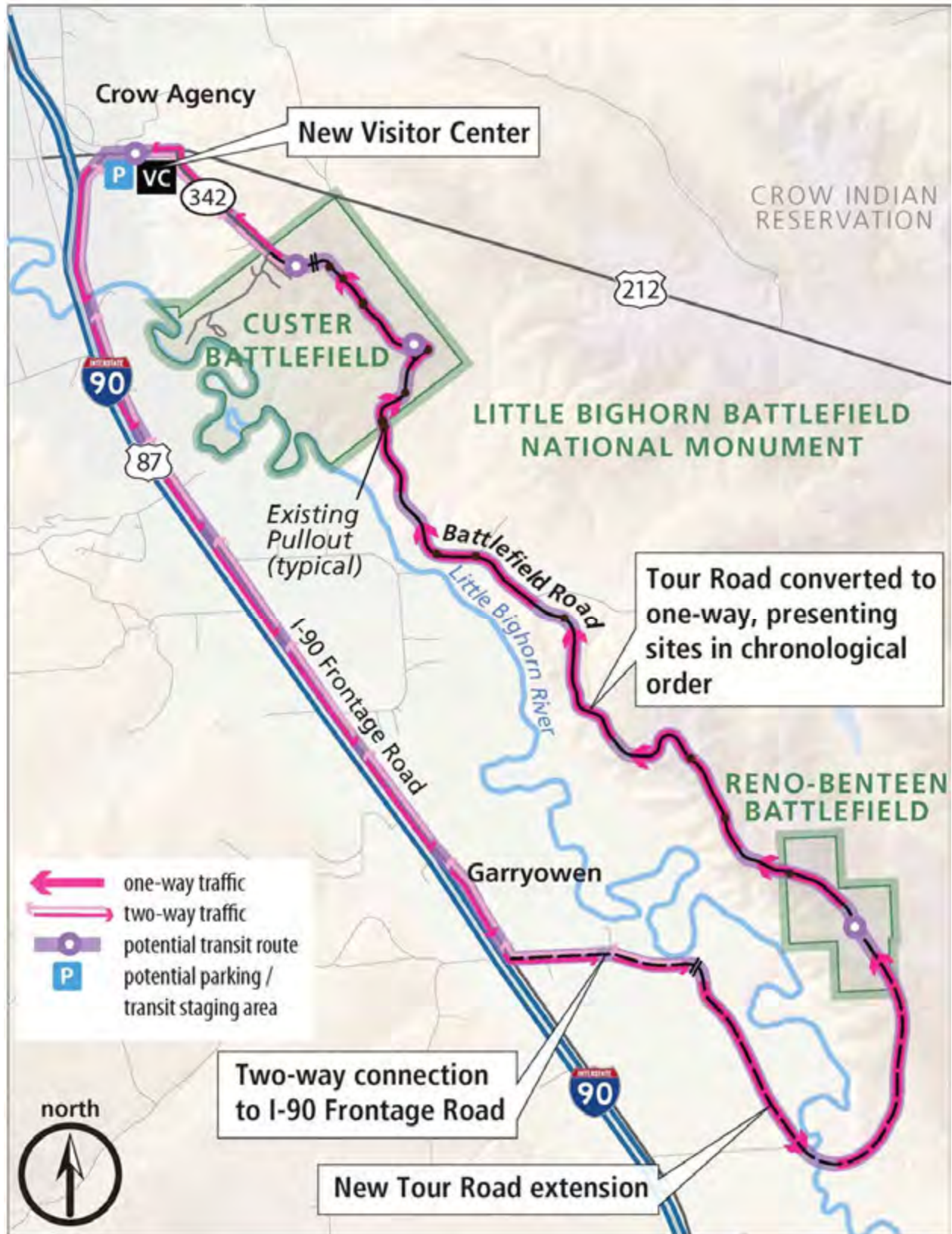


Figure 9. Option III: GMP One-way Loop Tour





#### **Option IV) Management Improvements**

This option is a collection of lower-cost and lower-impact operations/management changes to enhance visitor experience. This option utilizes existing facilities, but seeks to improve the parking experience with better signage and striping. It also seeks to provide better communications with visitors, with efficient directions to areas of interest. Many of these changes were suggested in the *2010 Preliminary Feasibility Study – Alternative Transportation* and the *2010 Existing Traffic and Parking Conditions and Implications for Transportation Alternatives* by Jonathan Upchurch.

Option IV includes various elements that could be implemented at the discretion of park management, including seasonal, peak time, and trial applications.

##### Proposed Features:

- Variable message signs could be added on I-90 and on the entrance road before the entrance station. The message signs could alert visitors to parking options and restriction, including oversized vehicles, and provide information about special events such as times or special limitations.
- The park's internal signage/striping could be improved. The following recommendations from the 2010 Upchurch report have been retained:
  - New signage would direct visitors to additional parking areas located by the Stone House and the visitor center.
  - Change "Towed Vehicle Parking Only" to "Oversized Vehicle Parking Only." Supplement with pavement markings adjacent to the edge line that read, "Oversized Vehicles Only."
  - New signage on the west side of the oversized vehicle parking area (the curb north and south of the restrooms) to indicate oversized vehicles only.
  - "Additional Car Parking" directional signing at both the beginning and end of the island (north and south of the restrooms) to direct regular sized vehicles to main road parking area.
  - Signing for pedestrian wayfinding from Stone House parking lot to visitor center.
  - New "No Parking" signs and yellow, cross-hatched pavement marking, and a solid white line that separates the travel lane from the shoulder parking to deter parallel parking in unsafe locations at the north and south ends of the island in visitor center parking lot.
  - Increase handicapped parking spaces near the visitor center from two to four to comply with American's with Disabilities Act.
- Visitor Use Assistants (VUA) could be employed on a seasonal basis to assist with managing visitors and congestion. The VUAs would proactively direct visitors to available parking and provide other critical information to entering visitors to help mitigate congestion, especially during peak events. The use of volunteers to assist with parking management is not included due to staff impacts in arranging for and managing the volunteers. The seasonal employee could perform the following duties:
  - be stationed or float around inside the entrance station and parking areas to assist visitors with wayfinding and parking;
  - help reduce regular vehicle parking in the oversized vehicle parking area;
  - discourage parking in non-designated locations; and
  - promote use of the park's audio tour at peak times when parking is unavailable at visitor center.



- Alternatively, existing park staff could continue to carry out these duties as part of their “collateral duties.” The use of existing staff would be more flexible, only requiring deployment at peak times. However, this variation takes staff time away from other important duties.
- The visitor center parking area could be signed with time limits to encourage turnover. Additional turnover could be encouraged by shortening the length of the visitor orientation movie and program.
- The park could provide cemetery tours to attract parking into the Stone House lot. While this element requires additional programming, this management strategy does not require significant construction and redistributes parking activities away from the visitor center parking lots.
- No significant changes are proposed for the tour road.
- An offsite parking lot should be provided, via partnership with existing land owners, for towed vehicle drop-off and recreational vehicles that tow a smaller automobile. Potential locations include the old casino parking lot and other underutilized parking areas adjacent to the junction of US 212 and MT 342.

This option is illustrated in Figure 10.

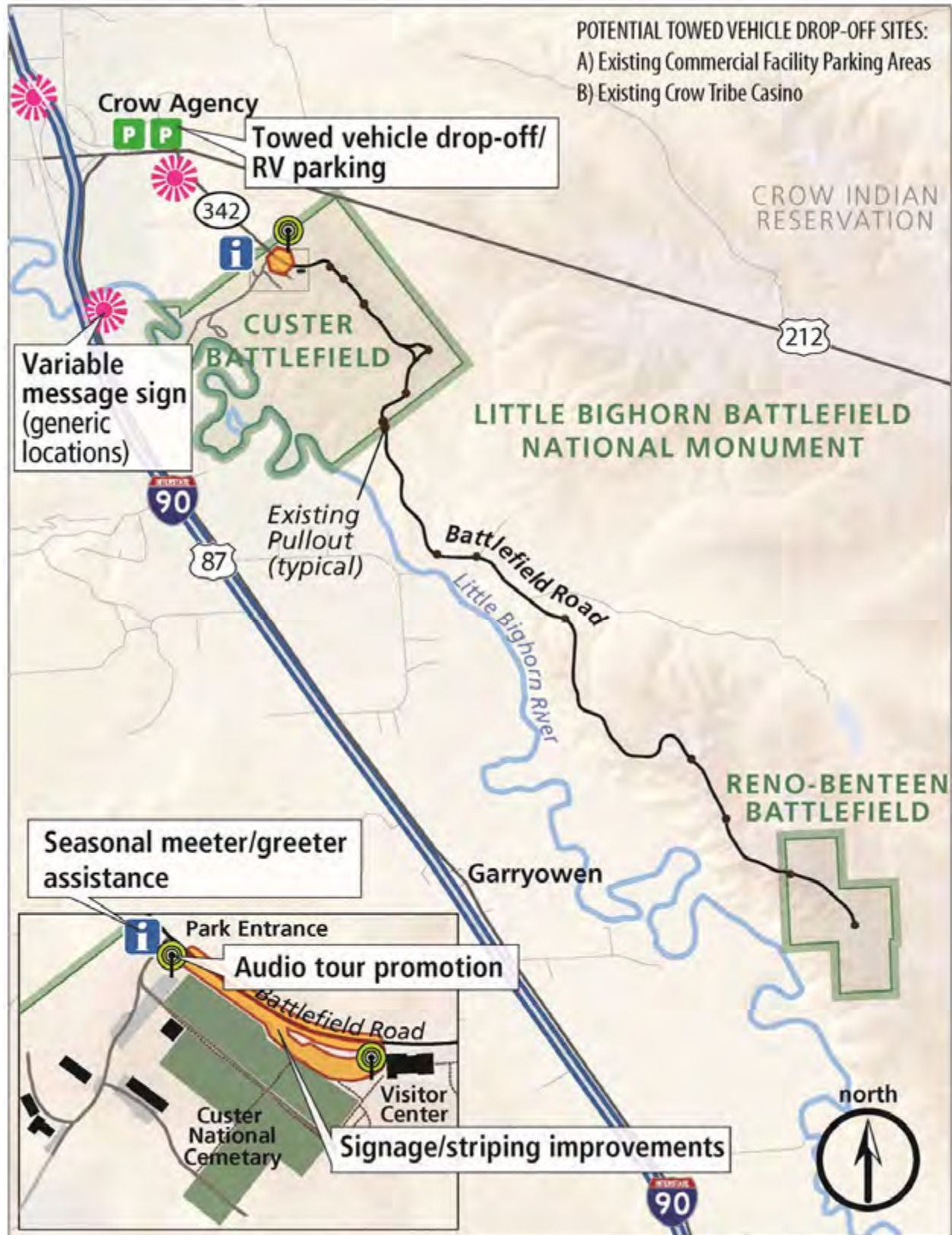


Figure 10. Option IV: Management Improvements



### **Option V) Transit from Offsite Staging/Parking to Visitor Center**

This option would provide a seasonal shuttle service for visitors to access the park.

#### Proposed Features:

- A shuttle service will be provided between an offsite staging/parking area and the visitor center during the summer season. No intermediate shuttle stops will be provided.
- The operating season/time would be Memorial Day to Labor Day (approximately 14 weeks), 9 a.m. to 5 p.m.
- Visitors can choose to take the shuttle or use their own vehicles, and they are allowed to use designated visitor parking inside the park, at the visitor center area, and at Reno-Benteen Battlefield.
- Deploy variable messaging signs, as well as traditional signs and pavement markings, to notify visitors of the available shuttle, parking locations and limitations, and options to access the park.
- Under this option, Option I – Repairing Tour Road and Reconfiguring Parking will be included as one element.

### **Option VI) Transit from Offsite Staging/Parking to Reno-Benteen Battlefield**

This option would provide a seasonal shuttle service for visitors to access the park and see sights along the tour road.

#### Proposed Features:

- A shuttle service will be provided between an offsite staging/parking area, the visitor center, and Reno-Benteen Battlefield.
- Three shuttle stops are recommended: visitor center, Last Stand Hill, and the Reno-Benteen parking lot. Each stop will have a bus pull-out, a bench, and a bus sign with a supplemental plaque of appropriate schedule information. Rest facilities will not be included at the remote sites due to significant visual impacts on the sensitive battlefield landscape.
- Shuttle stops outside of the park boundaries along the tour road are not recommended, since the Park discourages parking or walking outside of the park boundaries, which are mostly private properties.
- Visitors can choose to take the shuttle or use their own vehicles, and they are allowed to use designated visitor parking inside the park, at the visitor center area, and at Reno-Benteen Battlefield.
- The operating season/time would be Memorial Day to Labor Day (approximately 14 weeks), 9 a.m. to 5 p.m.
- Deploy variable messaging signs, as well as traditional signs and pavement markings, to notify visitors of the available shuttle, parking locations and limitations, and options to access the park.
- Under this option, Option I – Repairing Tour Road and Reconfiguring Parking will be included as one element.

Workshop participants discussed possible variations to these two transit options; in particular, restrictions to oversized vehicles. Under these restrictions, oversized vehicles would be prohibited



from parking at the visitor center area; however, oversized vehicles will be allowed to drive on the tour road, as well as use the parking lot at the Reno-Benteen Battlefield. The NPS staff directed that the study team should further analyze the viability of these restrictions on oversized vehicles under the transit options.

The study team recognizes that the proposed restrictions to oversized vehicles would help relieve parking shortage at the visitor center area and still allow oversized vehicles to be on the improved tour road, which would have a consistent pavement width (20-feet) and be capable of accommodating the load of oversized vehicles. However, the restrictions would also cause the following negative impacts on visitor experience and park management:

- For oversized vehicle users who want to visit both the visitor center and Reno-Benteen Battlefield, they would have to first take the shuttle to the visitor center, get back on the shuttle bus to get their vehicles from the offsite parking lot, and then drive into the park throughout the tour road. This seems to be a major inconvenience and could discourage these oversized vehicle users from visiting the park.
- These restrictions could shift parking congestion and shortage at the visitor center area to the tour road and Reno-Benteen parking lot.
- It would be difficult to clearly communicate the restrictions to visitors, especially oversized vehicle users, even with additional signage and staffed visitor use assistance.
- Many oversized vehicle users only intend to visit the visitor center area, including the Last Stand Hill, but not drive on the tour road. For them, riding a shuttle bus becomes the only way to fulfill their visit to the park.

Due to these negative impacts, the study team determined that such parking restrictions to oversized vehicles should not be imposed.

Both Options V and VI are illustrated in Figure 11.



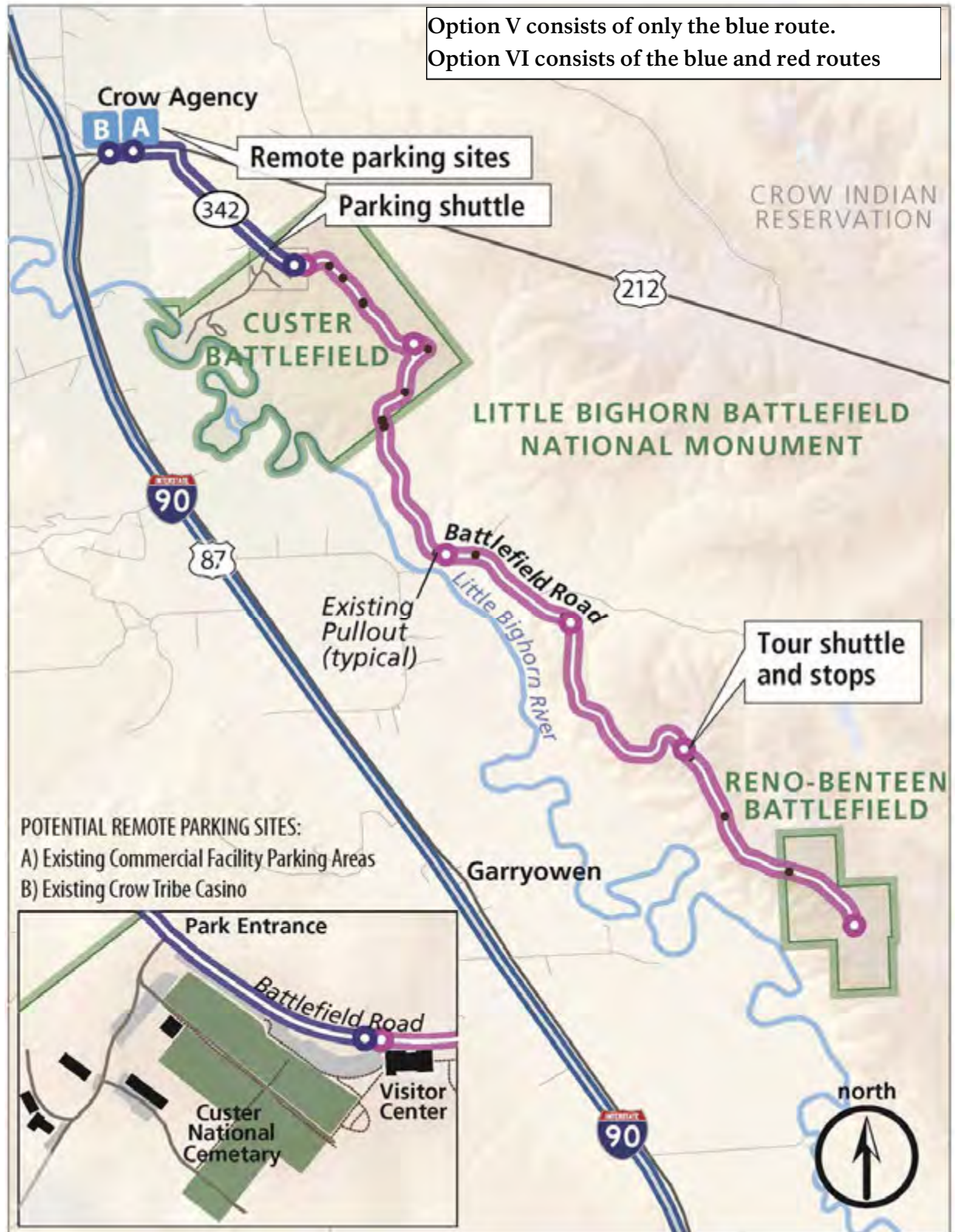


Figure 11. Options V and VI: Transit from Offsite Staging to the Park



## 4.0 REVIEW AND REFINEMENT OF DETAILED SCREENING CRITERIA

Participants of the workshop discussed the set of detailed screening criteria and their associated weighting factors. A consensus was reached to move forward with the criteria shown in Table 2 for detailed screening.

**Table 2. Detailed Screening Criteria**

Category	Criteria	Measure/Unit	Effects/ Impacts	Weighting Factor	Sub Total
General Impacts to Park Resources, Visitor Experience, and Management	Reduction in vehicle miles traveled	VMT	Direct	7%	60%
	Reduction in vehicle emissions	tons, cubic feet	Indirect and Cumulative	10%	
	Footprint for additional transportation infrastructure	square feet	Direct and Cumulative	10%	
	Changes in delay and congestion	0-10 with 10 being best		7%	
	Parking availability	0-10 with 10 being best		7%	
	Safety improvement	0-10 with 10 being best		7%	
	Convenience and comfort	0-10 with 10 being best		7%	
	Impacts to park staff and management	0-10 with 10 being best		5%	
Financial Analysis	Total Cost of Ownership	US Dollars		18%	40%
	Revenue	US Dollars		10%	
	Funding Sources and Cost Sharing	0-10 with 10 being best		12%	

Source: URS Corporation

Notes: Estimated values (measure/unit) of each criterion are converted proportionally to a rating score of 0-10 (0 = worst, 10 = best) before multiplying the assigned weighting factor.

The total of weighting factors of all criteria is 100%.

## 5.0 REVIEW AND REFINEMENT OF SCORE MATRIX

Participants of the workshop reviewed and discussed the preliminary results from detailed screening, in particular the score matrix, presented by URS. The refined detailed screening criteria were then used to score the modified set of six transportation options. Only the qualitative criterions, such as safety improvement and parking availability, were considered for scoring options during the workshop. After the workshop, the study team recalculated or estimated the quantitative criterions, such as vehicle emissions and total cost of ownership, and completed the score matrix as shown in Table 3.

**Table 3. Detailed Screening Score Matrix**

Criteria	Options						Weighting Factor
	I) Repair Existing Road	II) 4R Road Widening/ Parking Expansion	III) GMP One- Way Tour Loop	IV) Management Improvement	V) Transit Offsite to Visitor Center	VI) Transit Offsite to Reno- Benteen	
Vehicle miles traveled (VMT)	5	5	0	5	6	10	7%
Vehicle emissions	5	5	0	5	8	10	10%
Footprint	8	3	0	10	8	8	10%
Delay and congestion	0	7	10	4	8	9	7%
Parking availability	0	7	8	4	9	10	7%
Safety improvement	0	8	10	5	7	9	7%
Convenience and comfort	0	8	10	4	6	7	7%
General impacts to park staff/management	0	10	8	6	4	2	5%
Total Cost of Ownership	9	6	0	10	9	8	18%
Revenue	0	0	0	0	10	10	10%
Funding Sources and Cost Sharing	10	8	0	2	5	6	12%
<b>Weighted Score</b>	<b>4.5</b>	<b>5.8</b>	<b>3.1</b>	<b>5.4</b>	<b>7.5</b>	<b>8.2</b>	

Notes: Rows highlighted in light blue represent qualitative criterions, while others are quantitative.

This table presents preliminary screening results immediately following the Evaluation of Options Workshop, May 7<sup>th</sup>, 2012. The most updated screening results, which may vary substantially from this table, are recorded in the Options and Criteria for Evaluation Report



## 6.0 SUMMARY OF RESULTS AND NEXT STEPS

Results from the workshop are summarized as following:

1. The long-term plan is working toward the implementation of the GMP.
2. Any transit options will need to make efforts to work with the existing park and regional transit services, in particular the concession-operated Apsaalooke Tour and Crow Nation Transit.
3. A consensus was reached to move forward with six transportation options for detailed evaluation, including three construction options, one non-construction/management improvement, and two transit options.
4. Preliminary results from the scoring during the workshop (by all workshop participants) and immediately after the workshop (by the study team) indicated that the two transit options rank relatively high, while the GMP option (one-way tour loop via I-90 frontage road) scores the lowest among the six options.

Participants of the workshop agreed on the following next steps:

1. The study team will prepare a newsletter for the National Park Service to distribute to the public. This newsletter will inform stakeholders and the public of the study progress and transportation options that have been developed, and solicit public comments.
2. The study team will document the results from this workshop for the National Park Service to review.
3. The study team will address NPS comments on the second draft of the Options and Criteria Evaluation Report.
4. The study team will complete a draft feasibility study and recommendations report for NPS review.

## 7.0 ALTERNATIVES REFINEMENT

After the conclusion of the Evaluation of Options Workshop, the study team continued to refine the alternatives with clarifications, minor changes to components, more detailed quantitative and qualitative analysis, and more detailed cost estimates. The resulting set of final alternatives will remain substantially the same as previously evaluated, but will provide additional information for consideration. The scores for each alternative will be reevaluated and shown in the Options and Criteria for Evaluation Report.

**Table 4. Additional Considerations for Alternatives Refinement**

<b>Additional Considerations</b>	<b>Discussion</b>
Vehicle Miles Traveled (VMT)	Increases or decreases to VMT under the various options will be quantified
Cost Estimate Adjustments	Class C Construction Cost Estimates will be completed for the construction and included in the scoring of alternatives.
Special Event Shuttle	A special events shuttle will be added as a variation of Option 6.
Resource Impacts	Air Quality – Air quality impacts as a result of tailpipe emissions will be considered for each option. Cultural and Historic Impacts will be considered at a general level and included in the options and Criteria report.
Visitor Experience / Wayfinding	Potential impacts to the visitor experience and wayfinding will be considered at a general level.
Repair Tour Road as Element of GMP and Transit Options	Repairs for the existing tour road will be included as an element of the GMP and both transit options.

## **ATTACHMENT A**

### **Workshop Agenda**



## Evaluation of Options Workshop

### AGENDA

Revised 05.02.12

**Meeting Date:** **Monday, May 7, 2012**

### Meeting Purpose:

Conduct an evaluation of the five options that were carried forward from the previous initial screening process. Refine and use a set of detailed screening criteria for this evaluation. Gather input and viewpoints from a variety of NPS personnel and primary stakeholders.

### **SUNDAY, MAY 6**

NPS Staff and URS Staff from Denver arrive.

### **MONDAY, MAY 7**

8:30am – **URS setup**  
8:55am

9:00am – **Background overview**  
9:30am

- Project purpose and expected outcome (park)
- What we have accomplished (DSC/IMR)
  - Data collection & analysis
  - Review/synthesis of previous documents: GMP, Upchurch report, 2005 EA, etc.
  - Existing conditions
  - Kick-off workshop
  - Development and initial screening of options
  - Options and criteria for evaluation – 1<sup>st</sup> & 2<sup>nd</sup> draft
  - Newsletter #1
- What we are going to accomplish (DSC/IMR)
  - Evaluation of options using detailed screening criteria (this workshop)
  - Refine options/criteria and complete evaluation of options
  - Feasibility study and recommendations report – draft and final
  - Newsletters #2 and #3

9:30am – **Project status (URS - PowerPoint)**

- 10:15am
- Brief review of existing conditions
    - Major findings
    - Design day concept
  - Project goals and objectives
  - Options development process
  - Initial set of options



- Initial screening criteria
- Initial screening results: five options were moved forward for detailed screening
- Detailed screening process
- Detailed screening criteria (preliminary)
- Group discussion, Q&A

10:15am – **Break**  
10:30am

10:30am – **Refine the five options for detailed screening** (group activity)  
12:00pm

- Components to be added, deleted, or changed
- Did we miss any potentially feasible options?

12:00pm – **Break for Lunch**  
1:00pm

1:00pm – **Refine detailed screening criteria** (group activity):  
2:20pm

- Are the criteria necessary and sufficient?
- Weighting factors: do they need to be adjusted? How?

2:20pm – **Break**  
2:30pm

2:30pm – **Evaluate options using detailed screening criteria** (group activity)  
3:30pm

*(Note: with changes in options and criteria resulting from previous group activities, this evaluation will be mostly qualitative and no recommendations are expected from this exercise. URS will gather feedbacks and complete the evaluation)*

- Review the evaluation matrix
- Identify scores that need to be adjusted
- Discuss feasibility of increasing the entrance fee in order to add revenue for a possible transit option

3:30pm – **Debrief and next steps**  
4:00pm

- Review results from the workshop
- Identify action items
- Review schedule

## **TUESDAY, MAY 8**

NPS Staff and URS Staff travel back to Denver

## **ATTACHMENT B**

### **Sign-In Sheet**



Evaluation of Options Workshop. May 7, 2012.

SIGN IN SHEET

<u>NAME</u>	<u>ORGANIZATION</u>	<u>EMAIL ADDRESS</u>	<u>PHONE</u>
DEBRA FRYE	NPS-IMR	debra_frye@nps.gov	303-969-2626
F. Gus Sanchez	NPS - LIBI	gus-sanchez@nps.gov	406-638-3201
Rene' Laya	NPS - LIBI	rene-laya@nps.gov	406-638-3210
Ellen Waldhart	NPS - LIBI	Ellen-Waldhart@nps.gov	
Melana Stichman	NPS-LIBI	melana_stichman@nps.gov	406-638-3225
Jennifer Orozco	URS	jennifer.oro@urs.com <del>jennhale</del>	303-842-9789
FREDDY HE	URS	FREDDY.HE@URS.COM	303-927-8118
Patrick Shea	NPS. DSG.	patrick-shea@nps.gov	303-969-2347
Jerry Case	NPS-BICA	jerry-case@nps.gov	406-666-3300
JERRY JASMER	NPS. LIBI	jerry-jasmer@nps.gov	406-638-3214
Ken Woody	NPS-LIBI	Ken-woody@nps.gov	(406)-638-3216
Marvin Dawes Sr.	NPS-LIBI	marvin-dawes@nps.gov	638-3217
Michael Stops	NPS-LIBI	michael_stops@nps.gov	406-638-3215

