



# **Appendix D: Improvement Options Report**

January 2019

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## 1.0 Introduction

The Montana Department of Transportation (MDT) continually seeks to serve the public by providing a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality, and sensitivity to the environment. Guiding policy established in TranPlanMT focuses on safety and the need to continue improvements to the safety rest area program to provide safe stopping locations for the traveling public. The objective of this improvement options report is to consider opportunities for full-service, year-round safety rest areas along the US Highway 2 (US 2) corridor, including existing seasonal sites and new sites within six discrete study segments (Figure 1) as part of the US 2 Rest Area Siting Study.

For recommended sites advanced from this study, a Phase I feasibility study and an analysis for compliance with the National and Montana Environmental Policy Acts (NEPA and MEPA) and other applicable regulations may be completed as part of the Montana Department of Transportation (MDT) project development process.

### 1.1 Study Corridor and Study Segments

US 2 is the northernmost east-west route in the country traversing the northern continental United States. It is an important corridor in Montana, extending approximately 666 miles across the length of the state. Entering Montana at its western border with Idaho, US 2 runs adjacent to the southern border of Glacier National Park; traverses the region known as the Hi-Line which crosses through the Blackfeet, Fort Belknap, and Fort Peck Reservations; and continues to the North Dakota border east of Culbertson.

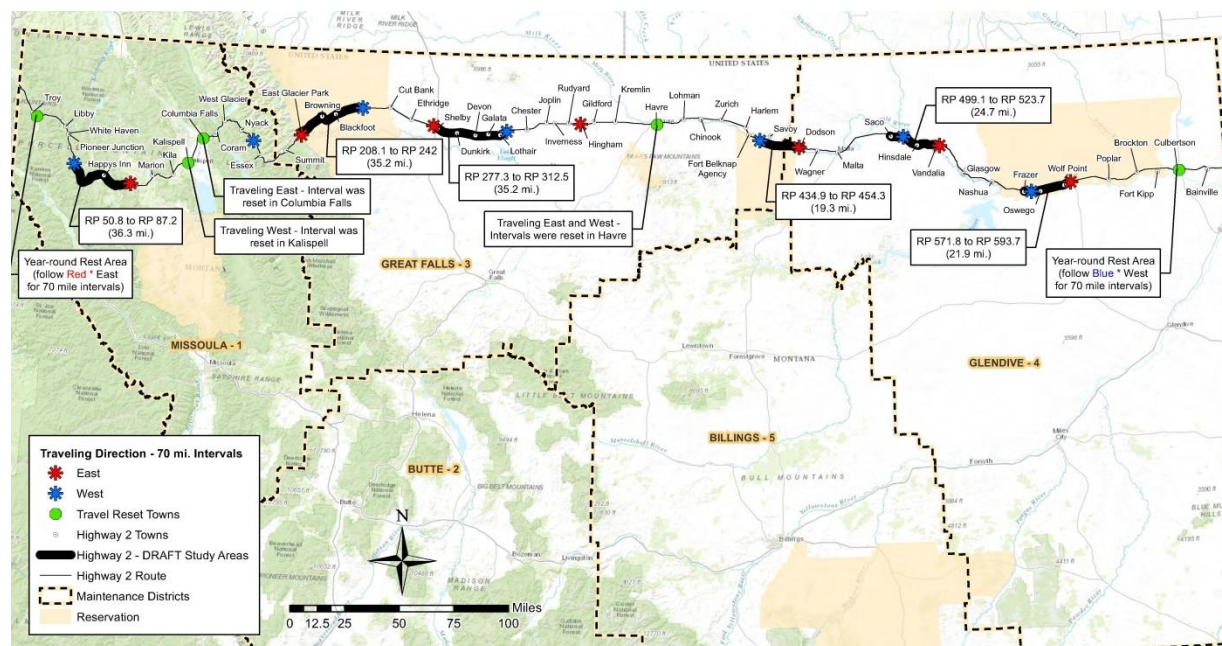
MDT has recognized a need to investigate this corridor and evaluate safety rest area spacing along US 2 as there are long stretches of US 2 that provide few safe stopping opportunities for the traveling public. As defined in the 2014 Montana Rest Area Plan, a network evaluation assesses rest area spacing and determines locations where additional sites might be needed. The process is typically used in conjunction with site evaluations to make decisions for major or minor rehabilitation projects, reduction of service, or construction of a new rest area.

According to the 2014 Montana Rest Area Plan, siting of new rest areas should be determined for “corridor segments exceeding approximately one hour of travel time between stopping opportunities, including rest areas, parking areas, and cities and towns with 24-hour services.” Consistent with the plan, this study used 70-mile intervals representing the posted speed limit on US 2 to determine the need for safe stopping opportunities.

The study corridor includes the length of US 2 extending from a western endpoint at the Troy Safety Rest Area (Reference Post [RP] 17.1) to an eastern endpoint at the Culbertson Safety Rest Area (RP 645.2). These two safety rest areas are year-round, 24-hour facilities in good working condition with no major maintenance expected within the next 10 years.

Intervals of approximately 70 miles were identified in both the eastbound and westbound directions beginning from the corridor endpoints. Eastbound intervals are marked with a red symbol and westbound intervals are marked with a blue symbol on the study area map (Figure 1).

Figure 1: Study Area and Study Segments



Source: MDT 2017.

In addition to the safety rest areas at Troy and Culbertson, reset points (i.e., locations where the 70-mile interval was reset to zero) included urban areas with populations exceeding 5,000 people (including Kalispell, Columbia Falls, and Havre) with three or more facilities providing 24-hour services. These locations are marked with a green symbol in Figure 1. Smaller communities with fewer than three locations providing 24-hour services (such as Browning, Cut Bank, Shelby, Chinook, Glasgow, and Wolf Point) were not designated as reset points for the segment identification portion of this study because individual commercial establishment(s) may not provide reliable service for stopping opportunities over the planning horizon. Additionally, the MDT-maintained safety rest area at Vandalia and City Park Rest Areas (CPRAs) at Cut Bank, Chester, and Malta were not designated as reset points because they are seasonal facilities (i.e., not open year-round) and would require upgrades to provide year-round service and fully address the stopping needs on US 2. This report considers the potential to rehabilitate or reconstruct the Vandalia Safety Rest Area and CPRAs in Chapter 2.

Study segments include an offset distance of 750 feet from the US 2 centerline (for a total distance of 1,500 feet) to accommodate the footprint of a new safety rest area. The following six study segments were identified between the eastbound and westbound 70-mile interval markers:

- Segment 1: RP 50.8 to RP 87.2 (36.3 miles)
- Segment 2: RP 208.1 to RP 242.0 (35.2 miles)
- Segment 3: RP 277.3 to RP 312.5 (35.2 miles)
- Segment 4: RP 434.9 to RP 454.3 (19.3 miles)
- Segment 5: RP 499.1 to RP 523.7 (24.7 miles)
- Segment 6: RP 571.8 to RP 593.7 (21.9 miles)

Ranging from approximately 20 to 35 miles each, these segments represent potential stretches of US 2 where a new safety rest area would generally meet the spacing guidelines outlined in the Montana Rest Area Plan. This study identifies specific locations within each segment that represent potentially favorable sites for safety rest area development. The resulting interval distances may vary from desired 70-mile spacing depending on the specific recommended locations, as identified in subsequent sections of this report.

## 1.2 Report Organization

Chapters 2 through 6 outline the evaluation process for potentially favorable sites, identify a single recommended site within each segment for advancement from the study, and prioritize implementation by segment.

- Chapter 2 summarizes analysis of existing rest area sites located directly along US 2, including the MDT Vandalia Safety Rest Area and three CPRAs located in Cut Bank, Chester, and Malta. The evaluation qualitatively considers multiple criteria including access from US 2, environmental features, land use and ownership, and existing site improvements.
- Chapter 3 summarizes analysis of new sites using a four-part process. Screening Element A addresses fatal flaws such as poor sight distance from the US 2 mainline highway, adverse site grading, and proximity to sensitive natural resources. Locations exhibiting these fatal flaws are eliminated from further consideration. Remaining portions of each study segment comprise the initial list of potentially favorable sites.

Screening Element B considers desirable site traits such as proximity to municipal services, utilities, and populated areas; public land ownership; and favorable conditions for water/wastewater systems.

Screening Element C considers planning-level costs for each site.

Screening Element D presents a spatial analysis for potentially favorable sites.

- Chapters 4, 5, and 6 synthesize screening information, identify a single recommended site within each segment, prioritize the order of recommended improvements based on relative need according to spacing considerations, and summarize report conclusions.

Sections summarizing seasonal facilities and Screening Element B outcomes are organized by site or by segment to assist MDT in considering investment decisions in specific geographic locations. While this organization increases repetition of common information, it provides a consolidated location containing all information relating to an individual site.

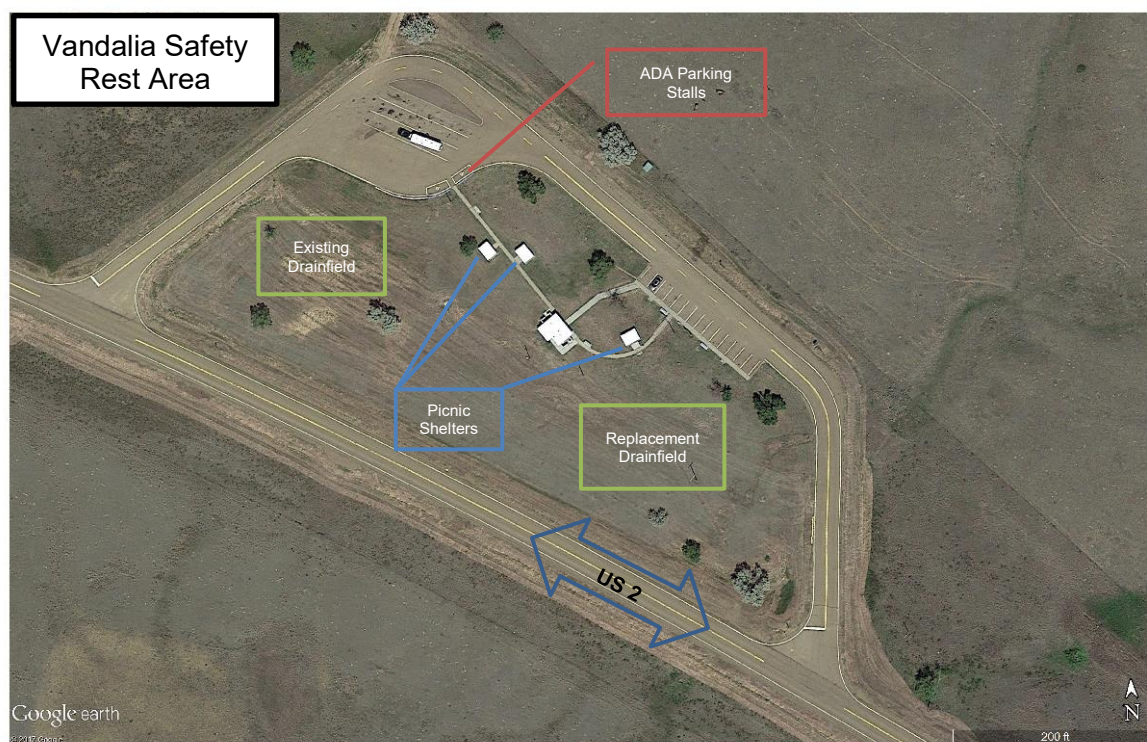
## 2.0 Existing Sites

### 2.1 Vandalia Safety Rest Area

In order to fulfill the needs for the corridor, this study assesses the only existing seasonal state-maintained rest area located on US 2 to determine favorability for conversion to a year-round, full-service safety rest area. The evaluation qualitatively considers location in relation to study segments and access from US 2; environmental features; land use and ownership; and existing site improvements. The analysis reflects review of observed existing conditions through an in-person site visit and aerial and street-view photography.

Built in 1967, the Vandalia Safety Rest Area has served the traveling public for over 50 years. Located on US 2 approximately 14 miles north of Glasgow, near RP 527.2 as shown in Figure 2, the state-maintained rest area offers services seasonally from May 15<sup>th</sup> through November 15<sup>th</sup>. The Vandalia Safety Rest Area has experienced considerable physical deterioration over the last several decades despite continual MDT maintenance efforts and currently is nearing the end of its life cycle. Given the site's current condition, some level of investment would be required to continue providing service as a safety rest area, reduce service to a truck parking area, or completely abandon the site.

**Figure 2: Vandalia Safety Rest Area**



Source: Google Earth imagery; DOWL 2018.

#### *Study Segment Proximity and Access from US 2*

The Vandalia Safety Rest Area is located 3.5 miles east of Segment 5 spanning from RP 499.1 to RP 523.7 (24.7 miles) and 44.6 miles west of Segment 6 spanning from RP 571.8 to RP 593.7. The Vandalia Safety Rest Area is not ideally situated to provide 70-mile stopping intervals along US 2.

An entrance/exit is located directly off US 2 on the eastern and western side of the Vandalia Safety Rest Area. The current access road and parking arrangement allows vehicles traveling in either direction to enter one side and exit the other without making significant interior turning movements once inside the rest area site. However, there are no deceleration or acceleration lanes located on US 2 to assist with safe movement entering or exiting the rest area.

The existing Vandalia Safety Rest Area is located on a vertical grade and a horizontal curve. Observations indicate existing sight distance may be a concern at the eastern access point due to the vertical curve east of the approach. No crash incidents have been recorded near either entrance; however, a wild animal collision was documented in January 2017 near the bridge spanning Unger Coulee near RP 527.

### *Environmental Considerations*

#### Surface Waters

Unger Coulee flows south near RP 527, 1000 feet west of the western end of the rest area boundary; however, it does not flow within the rest area boundary. The Unger Coulee drainage flows into the Milk River three miles south. No other surface waters were identified during the field review on May 29, 2018, or from a prior database search.

#### Floodplains

No designated flood zones exist within the Vandalia Safety Rest Area boundary. The closest 100-year floodplain (Zone A) is along Unger Creek, which crosses the highway near RP 527. This flood zone is outside the existing Rest Area ROW.

#### Threatened and Endangered Species, Bald and Golden Eagles, and Wetlands

Whooping crane, piping plover, and black-footed ferret have the potential to occur in the vicinity of the Vandalia Safety Rest Area due to potential suitable habitat in the area or the area being within the species known/historic range. Both bald eagles (a special status species) and golden eagles have been observed within the vicinity of the rest area; however, no known nests have been identified. The Vandalia Safety Rest Area is located within sage grouse general habitat.

The U.S. Fish and Wildlife Service National Wetland Inventory (NWI) database shows no mapped wetlands within the safety rest area boundary, and no wetlands were identified on the rest area property during the site visit on May 29, 2018. NWI mapping does show an emergent wetland within the channel of Unger Creek, located directly west of the rest area property.

#### Additional Environmental Considerations

No irrigation ditches, canals, or other infrastructure were identified within or adjacent to the safety rest area during the field review or database search. The Vandalia Safety Rest Area is ineligible for listing in the National Register of Historic Places.

#### *Land Use, Ownership, and Parcel Size*

The existing safety rest area is sited on approximately 10 acres of right-of-way easement near the center of a 133.6-acre parcel owned by the U.S. Department of the Interior Bureau of Land Management. Portions of the site are currently undeveloped, which would allow for future expansion of the building structure, parking, and wastewater system elements. The neighboring land use is primarily agricultural within several miles in all directions from the rest area.

#### *Existing Site Improvements*

##### Building Structure

The building was originally constructed in 1967 and rehabilitated in 1995. Currently, the building structure is showing signs of physical wear and disrepair. The exterior appears to be in good to fair condition; however, the interior floor, lighting, plumbing fixtures, and restroom stalls are in fair to poor condition. A recent rest area evaluation conducted in October 2017 rated the Vandalia Rest Area health index as 51 out of 100, with the structure rated 8.3 out of 19.



### Access Roads and Parking Areas

The access roads and parking area were constructed with the original building structure in 1967. The last known pavement treatment was applied in 1998. The access roads and parking area were rated to be in fair condition with some alligator cracking and localized areas where ponding occurs. Overall, the pavement is considered fair to poor and beyond its useful life. Parking for passenger and oversized vehicles is projected to meet demand through 2036 and is not a limiting factor for conversion to a year-round, full-service safety rest area.

### Site Amenities

The site has three picnic shelters, six picnic tables, bench seating, exterior lighting, waste receptacles, drinking fountains, and informational signage. Currently, all of the amenities are functional, however, they are in fair to poor condition.

### ADA Accessibility

Two ADA-accessible parking stalls are located on the western end of the parking area near the oversized parking stalls as shown in Figure 2. Access to the building structure from ADA parking stalls is connected by 160 feet of sidewalk. Both ADA parking stalls and the majority of sidewalk are currently non-compliant due to running slope issues and trip hazards.

Other ADA features inventoried during the October 2017 site visit are also non-compliant. These features include picnic tables, benches, doorways, drinking fountains, sinks, restroom stalls, and toilets. Rehabilitation, reconstruction, or replacement of these features would be needed to meet ADA requirements at the site.

### Water Rights & Water Systems

The Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC) shows two wells within the rest area. The first well has a depth of 72 feet, with a static water level of 37 feet and yields of 12 gpm. The second well has a depth of 195 feet, with a static water level of 54 feet and yields of 16 gpm. Water is not sufficient in late summer and is not used for irrigating purposes. The existing well casing is heavily rusted inside and out, and sand often plugs the pump meters. Drinking water is chlorinated and further purified with a reverse osmosis system.

### Public Wastewater Systems

The existing gravity dosed wastewater system at the Vandalia Safety Rest Area showed signs of problems during the October 2017 field review. Wastewater was present on the ground surface in the location of the septic tank; MDT was notified of this issue upon inspection. The septic tank is pumped once a year and currently not showing signs of leakage. Recently the line between the septic tank and lift station was replaced in the summer of 2017. Overall the wastewater system has most likely reached its design life and should be replaced. Figure 2 illustrates the approximate footprint for a replacement drain field, indicating the site can accommodate future replacement.

### Parking and Restroom Demand

Parking and restroom demand is a function of patron usage. Door counters are installed on the men's and women's restroom doors. Door count data from 2011 through 2017 determined that the maximum seasonal day use (May 15 – November 15) was 266 patrons in a 24-hour period.

Using the modified WTI methodology as outlined in the 2014 MDT Rest Area Plan for determining parking and restroom demand, the existing parking spaces and restroom stalls appear to be sufficient to accommodate current and 20-year projected demand based on current usage patterns. Table 1 compares the current parking and restroom stall totals to the current and projected demand. The analysis indicates no additional right-of-way would be required if MDT were to reconstruct/rehabilitate this site.

**Table 1: Parking and Restroom Demand**

Element	Current	Existing Demand	20-year Demand
Passenger Vehicle Parking Stalls	14	2	3
Oversized Vehicle Parking Stalls	3	3	4
Men's Restroom Stalls	2	1	1
Women's Restroom Stalls	2	1	1

Source: DOWL 2018.

#### Analysis and Recommendation

The existing Vandalia Rest Area is not ideally located on the US 2 corridor to satisfy MDT's desire to provide stopping opportunities for the traveling public every hour of travel time. It is located east of the end of Segment 5 and 44.6 miles west of Segment 6. Additionally, the site location on a vertical and horizontal curve on US 2 presents a safety concern for movements into and exiting the rest area. Land use, ownership, or parcel size do not present major concerns.

Reconstruction of the Vandalia Safety Rest Area would require improvements to the existing building facility, parking lot, water system, wastewater system, and potential access road improvements to allow safer movements onto and from US 2. The existing parcel is large enough to incorporate a reconstruction option and no additional right-of-way would likely be required. The reconstruction option for construction, engineering, and indirect cost is estimated to be approximately \$3,320,000 in 2018 dollars, which would result in upgrades and conversion from its current seasonal status to year-round service.

Reconstruction of the existing Vandalia Safety Rest Area would offer the benefit of an existing easement, which would potentially provide time and cost savings compared to the effort to secure an alternate site; however, it is not ideally situated. Its location outside of Segment 5 on a vertical and horizontal curve make this site unfavorable from a siting and safety perspective. Additionally, all of the existing site improvements would need to be reconstructed, rehabilitated, or replaced, negating the potential cost savings of repurposing an existing site.

Due to network spacing and location, safety concerns associated with sight distance, and the cost to reconstruct the existing site, this study does not recommend a complete reconstruction and conversion to a year-round, full-service safety rest area.

As an alternative option, MDT could reduce services and convert the existing site to a truck parking area. This option at a minimum would require a pavement preservation treatment of the access roads and parking area, removal and replacement of the majority of sidewalks, removal of the existing restroom building and replacement with vaulted toilets, and abandonment of the existing wastewater system. The conversion to a truck parking area construction, engineering, and indirect cost is estimated to be approximately \$490,000 in 2018 dollars.

Any construction activities at the Vandalia Safety Rest Area would need to further evaluate environmental factors, including threatened and endangered species, bald and golden eagles, and wetlands. Construction timing restrictions for species such as sage grouse or bald and golden eagles would need to be considered if present in the area.

## 2.2 US 2 City Park Rest Areas

The City Park Rest Area Program (CPRA) supports qualifying operations and maintenance activities at locally owned and administered CPRAs to supplement stopping opportunities on Montana's Primary and Non-Interstate National Highways. The program provides participating local governments with a limited funding opportunity to supplement certain costs at these existing facilities.

CPRAs must be open and maintained from April through November of each year. Limited funding assistance is available on a reimbursement basis for operational and maintenance costs including caretaker/janitorial services and basic repairs. Participating local governments must demonstrate that proposed improvements are needed to maintain or improve the facility and will directly benefit the traveling public. Currently, three communities that participate in the program are located along US 2: Chester, Cut Bank, and Malta.

This study assesses existing CPRAs to determine feasibility for conversion to year-round, full-service safety rest areas to fulfill the needs for the US 2 corridor in consideration of current CPRA functions and the surrounding built and natural environment. The evaluation qualitatively considers location in relation to study segments and access from US 2; environmental features; land use and ownership; and parcel size in relation to a minimum footprint accommodating safety, capacity, and traffic movement design features. Figures illustrate conceptual layouts for passenger/oversized vehicle parking and circulation. Impact analysis reflects review of aerial and street-view photography.

### Cut Bank CPRA

The Cut Bank CPRA is located on the southeast end of town between Railroad Street and US 2 at RP 255.65. The site hosts restrooms, green space, and picnic areas and operates from April through November through participation in the CPRA program. The lack of striping makes it difficult to count the number of vehicle parking spaces; however, from observation it may be possible to park up to 30 passenger vehicles and no oversized vehicles. However, on-street parking located on the southern and northwestern boundaries could accommodate additional passenger parking and some oversized vehicles. Municipal services are connected to the rest area providing water and wastewater service.

### *Study Segment Proximity and Access from US 2*

The CPRA is situated approximately 13.7 miles east of Segment 2, which ends at RP 242.0, and 21.7 miles west of Segment 3, which begins at RP 277.3. Direct access to the CPRA and off-street parking is available along US 2; however, a sidewalk break on the northwest end of the park does not provide a connected pedestrian access route to the restroom facilities. Perpendicular parking is also available directly adjacent to Railroad Street one block north of US 2. Vehicles traveling west can merge onto Railroad Street near the east end of town to gain access. Vehicles traveling east can merge onto Railroad Street near the intersection of US 2 and 5<sup>th</sup> Avenue SW or continue along US 2 and turn north on 6<sup>th</sup> Ave SE for one block to Railroad Street.

### *Environmental Features*

#### Hazardous Substances

MDT considers the presence of contaminated soils during the safety rest area siting process. Areas where pipelines, wells, or mines are located may require additional investigation and coordination during future project development activities for sites advanced from this study. Contaminated soils from nearby transportation and industrial land use may be present. BNSF rail, an industrial operation, and a petroleum cardlock fueling station are located across Railroad Street to the north.

#### Section 4(f) and Section 6(f) Resources

Publicly owned land serving public recreational purposes may be subject to requirements outlined in Section 4(f) of the Transportation Act of 1966, which require consideration of feasible and prudent alternatives and all possible planning to minimize harm from use of the property. MDT would be required to coordinate with jurisdictional officials to assess whether the Cut Bank CPRA property should be considered under Section 4(f). Additionally, a football field is located between US 2 and Railroad Street southeast of the rest area and may potentially be considered a Section 4(f) resource.

Properties acquired or developed with assistance from the Land and Water Conservation Fund Act (LWCF, or Section 6(f)) must remain in public recreation use unless the Department of Interior/National Park Service approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value after all practical alternatives to the proposed conversion have been evaluated. MFWP includes the Cut Bank City Park Addition in its list of LWCF sites by county.

#### Cultural Resources

A cultural resource survey may be necessary for any improvement project at the CPRA to determine the presence of historic-age buildings. An evaluation of environmental factors including but not limited to Section 106 of the National Historic Preservation Act would be conducted for any sites advanced from this study.

#### *Land Use, Ownership, and Parcel Size*

The CPRA parcel is approximately 4.4 acres and owned by the City of Cut Bank. In addition to the CPRA, the parcel contains additional structures including the Joe Meagher Memorial Civic Center and the Cut Bank Area Chamber of Commerce Visitor Center.

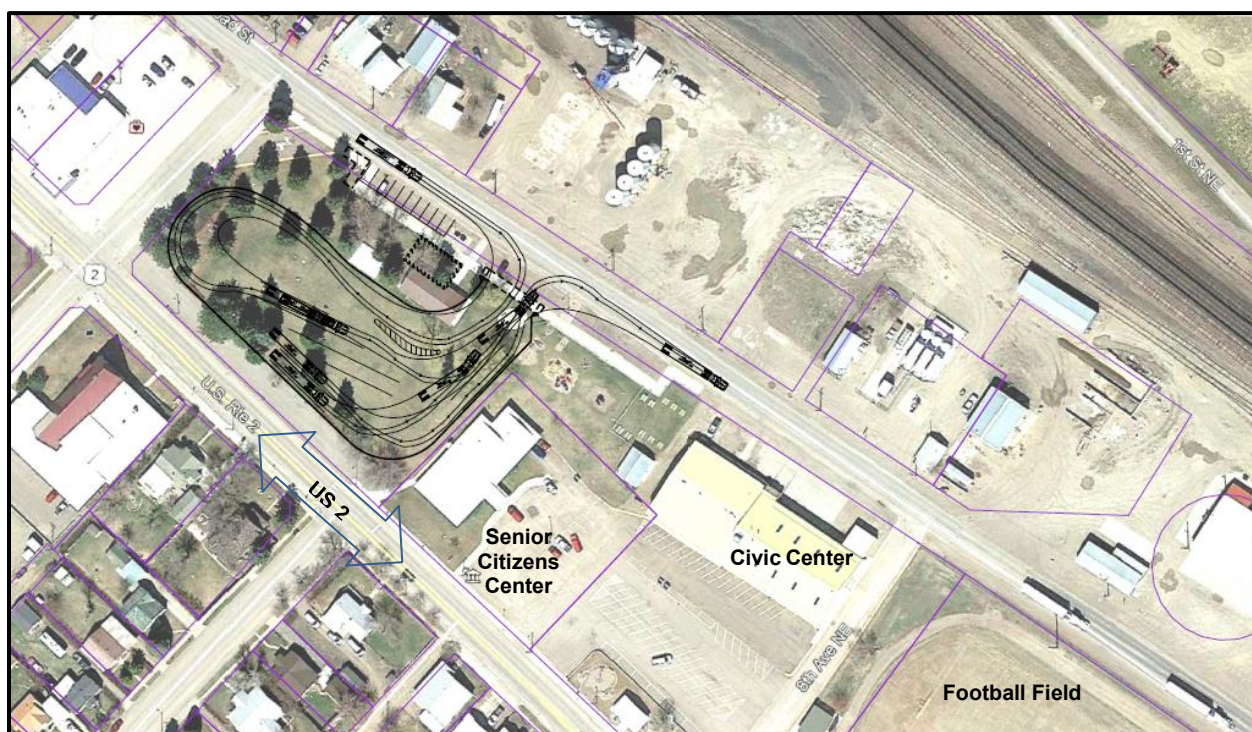
The neighboring land use is mixed urban development that includes residential, agricultural, commercial, and recreational use. Numerous residential homes and a church are located along US 2 (East Main Street). A grain elevator is located directly north of Railroad Street and adjacent to a commercial fleet petroleum fueling station. Also, to the north, the BNSF rail line runs east and west along Railroad Street. Several retail stores and the Glacier County Building are located to the northwest. The Cut Bank Senior Center, high school football field, and the civic center are just southeast of the CPRA.

### *Impact Analysis and Recommendation*

The MDT Rest Area Plan provides design guidelines for parking lots, access roads, buildings, sites, and water and wastewater systems that directly influence the footprint for a safety rest area. For the purposes of this evaluation it is assumed that the building facility size would need to be approximately 1,500 square feet and parking capacity would need to accommodate 10 passenger vehicles, 5 oversized vehicles, and allow for adequate and safe turning movements. Facility and parking assumptions are based on an average of state-maintained safety rest areas with similar traffic counts. Turning movements are modeled to allow for WB-67 trucks to enter, park, and exit the parking area. The footprint is reduced by eliminating the need for on-site wastewater treatment assuming that water and wastewater service would continue to be provided by the local municipal source.

The existing land parcel could potentially meet the minimum criteria described above to adequately accommodate the footprint of an MDT safety rest area as illustrated in Figure 3. However, the existing green space, children's playground, and several on-street passenger vehicle spaces would need to be removed to enable vehicle turning movements, provide sufficient parking, and address potential safety concerns. This impact would eliminate the site's current function as a city park.

**Figure 3: Cut Bank CPRA**



Source: Google Earth imagery; DOWL 2018.

Additionally, reconstruction within existing City of Cut Bank right-of-way could trigger Section 6(f) requirements, which apply to all sites receiving LWCF grants including acquisition of parkland, development, or rehabilitation of facilities. Even a relatively small LWCF grant (e.g., for development of a picnic shelter) may provide anti-conversion protection to the entire park site. Improvements required to update the CPRA to a year-round MDT safety rest area could result in conversion of a portion of a 6(f) property to a transportation use. Consequently, MDT would be required to obtain approval from the Department of Interior/National Park Service and to provide replacement lands of equal fair market value, location, and usefulness in terms of comparable recreation needs for the 6(f) lands to be converted.

To retain the existing green space and play areas and avoid conversion of Section 6(f) lands, acquisition of adjacent right-of-way would be required, potentially impacting the neighboring civic center, visitor center, and senior citizens center. A year-round, full-service MDT safety rest area would likely generate increased demand from passenger and oversized vehicles, potentially increasing noise and dust for nearby residential and commercial uses.

Due to the potential conversion of lands within a Section 6(f) property, the associated requirements regarding approval and replacement lands, and anticipated impacts to the existing city park and adjacent land uses, this study does not recommend advancing the site for consideration as a year-round, full-service MDT safety rest area.

#### Chester CPRA

The Chester CPRA is located on the west end of town directly adjacent to US 2 at RP 322.30. The site hosts restrooms, green space, and picnic areas and operates from April through November through participation in the CPRA program. The lack of striping makes it difficult to count the number of passenger and oversized vehicle parking spaces; however, from observation it may be possible to park one or two oversized vehicles or up to ten passenger vehicles with limited maneuverability. On-street parking located along US 2 could accommodate additional passenger parking and some oversized vehicles. Municipal services are connected to the rest area providing water and wastewater services.

#### *Study Segment Proximity and Access from US 2*

The CPRA is situated approximately 9.8 miles east of Segment 3, which ends at RP 312.5, and 112.6 miles west of Segment 4, which begins at RP 434.9. Two entrances are located directly off US 2 between the two intersecting roadways of 3<sup>rd</sup> Street and 5<sup>th</sup> Street. A small bridge spans approximately 80 feet across Cottonwood Creek near the eastern rest area entrance. Directional traffic enters the parking area from US 2 and exits on the opposite end creating oncoming traffic conflicts while entering and exiting the rest area.

#### *Environmental Features*

##### Surface Waters

MDT considers potential impacts to surface waters and the costs that may be associated with permitting and potential mitigation during the safety rest area siting process. Several water bodies are located in the immediate area. Cottonwood Creek is situated directly east of the rest area flowing from the Great Northern Reservoir located to the north. The Great Northern Reservoir is located roughly 200 feet north of the rest area.

### Hazardous Substances

MDT considers the presence of contaminated soils during the safety rest area siting process. Areas where pipelines, wells, or mines are located may require additional investigation and coordination during future project development activities for sites advanced from this study. Contaminated soils from nearby transportation and industrial land use may be present. BNSF rail is located directly adjacent to the north. An industrial operation is located directly adjacent to the west.

### Section 4(f) and Section 6(f) Resources

Publicly owned land serving public recreational purposes may be subject to requirements outlined in Section 4(f) of the Transportation Act of 1966, which require consideration of feasible and prudent alternatives and all possible planning to minimize harm from use of the property. MDT would be required to coordinate with jurisdictional officials to assess whether the Chester CPRA property should be considered under Section 4(f).

Properties acquired or developed with assistance from the Land and Water Conservation Fund Act (LWCF, or Section 6(f)) must remain in public recreation use unless the Department of Interior/National Park Service approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value after all practical alternatives to the proposed conversion have been evaluated. Montana Fish, Wildlife & Parks (MFWP) does not include the Chester CPRA in its list of LWCF sites by county.

### Cultural Resources

A cultural resource survey may be necessary for any improvement project at the CPRA to determine the presence of historic-age buildings. An evaluation of environmental factors including but not limited to Section 106 of the National Historic Preservation Act would be conducted for any sites advanced from this study.

### Land Use, Ownership, and Parcel Size

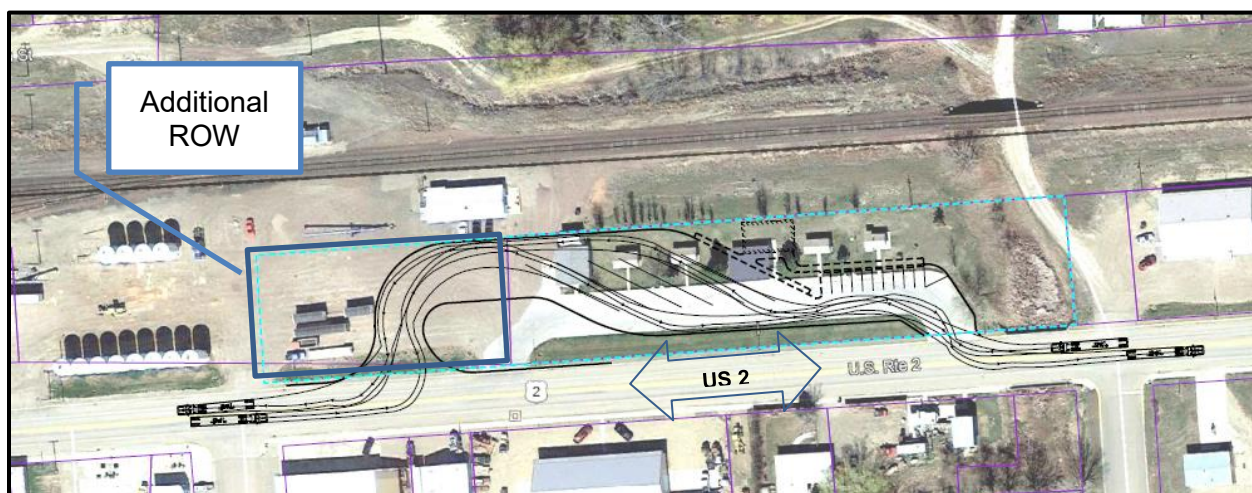
The existing CPRA parcel is approximately 1.4 acres and owned by the Town of Chester. The neighboring land use is mixed urban development that includes residential, agricultural, and commercial use. Located 80 feet directly north, the BNSF rail runs east and west through town. BNSF Railway operations and a grain elevator and seed sales facility are located directly to the west, and a retail pharmacy is located directly to the east. Several residential homes and various businesses are located south of the rest area on the opposite side of the roadway.

### Impact Analysis and Recommendation

The MDT Rest Area Plan provides design guidelines for parking lots, access roads, buildings, sites, and water and wastewater systems that directly influence the footprint for a safety rest area. For the purposes of this evaluation, it is assumed that the building facility size would need to be approximately 1,500 square feet, and parking capacity would need to accommodate 10 passenger vehicles, 5 oversized vehicles, and allow for adequate and safe turning movements. Facility and parking assumptions are based on an average of state-maintained safety rest areas with similar traffic counts. Turning movements are modeled to allow for WB-67 trucks to enter, park, and exit the parking area. The footprint is reduced by eliminating the need for on-site wastewater treatment assuming that water and wastewater service would continue to be provided by the local municipal source.

The existing land parcel is too small to meet the minimum criteria described above to adequately accommodate the footprint of an MDT safety rest area. Approximately 1 acre of additional land would be necessary to accommodate truck turning movements and parking. The resulting site would be an approximately 130 feet wide by 800 feet long, providing 2.4 acres of usable space. Improvements to the existing building facility and parking lot also would need to be addressed.

**Figure 4: Chester CPRA**



Source: Google Earth imagery; DOWL 2018.

If expansion of the Chester CPRA occurred to the west as depicted in Figure 4, acquisition of adjacent right-of-way would result in impacts to BNSF Railway right-of-way and grain elevator operations. Additionally, the visitor center, picnic shelters, and some landscaped areas would need to be removed. Expansion to the east would impact Cottonwood Creek, the 5<sup>th</sup> Street/Taylor Street connecting roadway, and the existing retail pharmacy. Expansion to the north is not feasible due to railroad proximity. A year-round, full-service MDT safety rest area would likely generate increased demand from passenger and oversized vehicles, potentially increasing noise and dust for nearby residential and commercial uses.

Due to the anticipated impacts to the existing city park and adjacent land uses, this study does not recommend advancing the site for consideration as a year-round, full-service MDT safety rest area.

### Malta CPRA

The Malta CPRA is located approximately one block north of US 2 at RP 471.81.

The site hosts restrooms, green space, picnic areas and operates from April through November through participation in the CPRA program. The lack of striping and designed parking spaces makes it difficult to count the number of vehicle parking spaces; however, from observation it may be possible to park up to 20 passenger vehicles and no oversized vehicles. Municipal services are connected to the rest area providing water and wastewater service.

### *Study Segment Proximity and Access from US 2*

The CPRA is situated approximately 17.5 miles east of the Segment 5, which ends at RP 454.3, and 27.3 miles west of Segment 5, which begins at RP 499.1. It is located approximately 400 feet north of US 2 along a roadway that provides access to the rest area and Trafton Park. Perpendicular passenger parking is available directly off this roadway.



## *Environmental Features*

### Surface Waters

MDT considers potential impacts to surface waters and the costs that may be associated with permitting and potential mitigation during the safety rest area siting process. The Milk River is situated approximately 450 feet northwest of the rest area.

### Hazardous Substances

MDT considers the presence of contaminated soils during the safety rest area siting process. Areas where pipelines, wells, or mines are located may require additional investigation and coordination during future project development activities for sites advanced from this study. Contaminated soils from nearby transportation and industrial land use may be present. A petroleum fueling station is located approximately 200 feet south of the rest area.

### Section 4(f) and Section 6(f) Resources

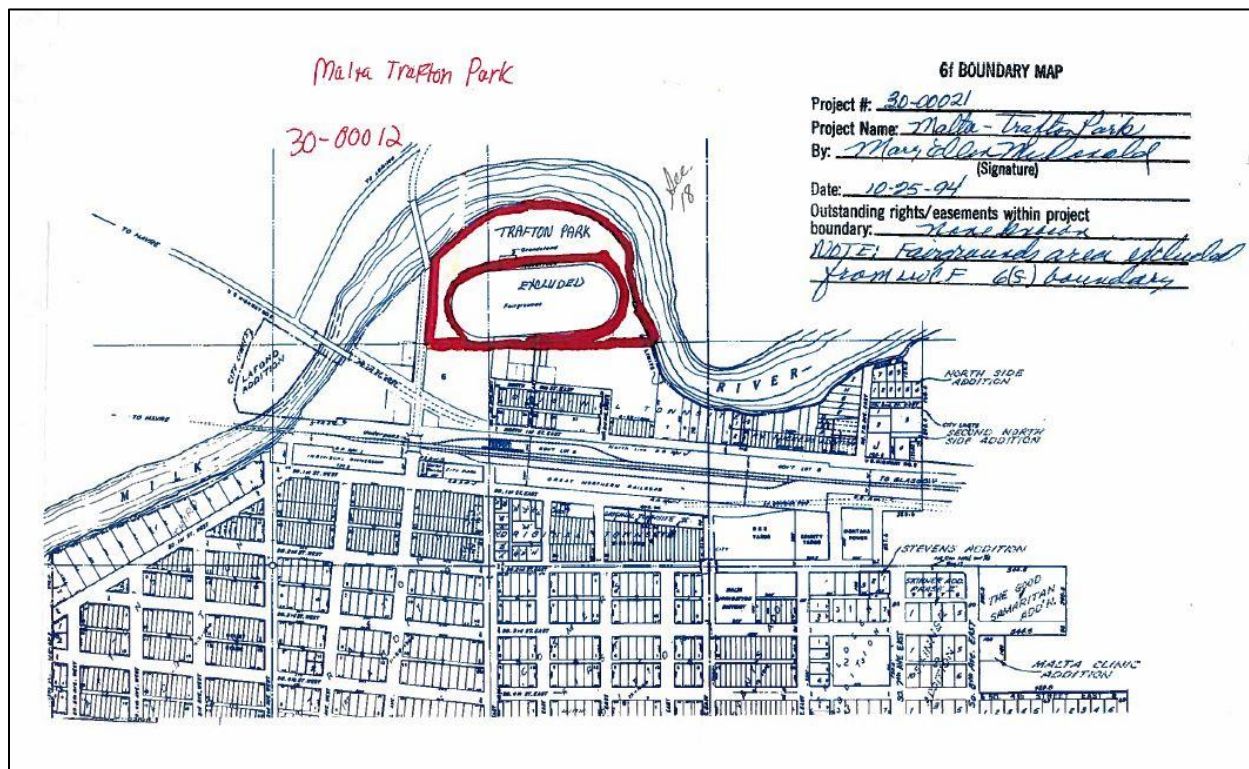
Publicly owned land serving public recreational purposes may be subject to requirements outlined in Section 4(f) of the Transportation Act of 1966, which require consideration of feasible and prudent alternatives and all possible planning to minimize harm from use of the property. MDT would be required to coordinate with jurisdictional officials to assess whether the Malta CPRA property should be considered under Section 4(f). Additionally, baseball fields are located directly adjacent to the rest area and may potentially be considered a Section 4(f) resource.

Properties acquired or developed with assistance from the Land and Water Conservation Fund Act (LWCF, or Section 6(f)) must remain in public recreation use unless the Department of Interior/National Park Service approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value after all practical alternatives to the proposed conversion have been evaluated. MFWP includes the Malta Trafton Park in its list of LWCF sites by county. A review of available mapping provided by MFWP shows the entire Malta City Rest Area within the Section 6(f) boundary for Trafton Park, as shown in Figure 5.

### Cultural Resources

A cultural resource survey may be necessary for any improvement project at the CPRA to determine the presence of historic-age buildings. An evaluation of environmental factors including but not limited to Section 106 of the National Historic Preservation Act would be conducted for any sites advanced from this study.

Figure 5: Trafton Park Section 6(f) Boundary



Source: MFWP 2018.

#### *Land Use, Ownership, and Parcel Size*

The CPRA parcel is approximately 2.0 acres and owned by the City of Malta. The neighboring land use is mixed urban development that includes recreational, commercial, residential, and agricultural use. Trafton Park and the county fairgrounds are located directly adjacent to the rest area on both the north and east property lines. A motel, privately operated recreational vehicle (RV) park, and commercial businesses are located to the west and south. Residential development and mixed commercial businesses are located southeast of Trafton Park, and scattered agricultural lands are located north of the Milk River.

#### *Impact Analysis and Recommendation*

The MDT Rest Area Plan provides design guidelines for parking lots, access roads, buildings, sites, and water and wastewater systems that directly influence the footprint for a safety rest area. For the purposes of this evaluation it is assumed that the building facility size would need to be approximately 1,500 square feet and parking capacity would need to accommodate 10 passenger vehicles, 5 oversized vehicles, and allow for adequate and safe turning movements. Facility and parking assumptions are based on an average of state-maintained safety rest areas with similar traffic counts. Turning movements are modeled to allow for WB-67 trucks to enter, park, and exit the parking area. The footprint is reduced by eliminating the need for on-site wastewater treatment assuming that water and wastewater service would continue to be provided by the local municipal source.

The existing land parcel is potentially large enough to meet the minimum criteria described above and adequately accommodate the footprint of an MDT safety rest area as illustrated in Figure 6.

Figure 6: Malta CPRA



Source: DOWL 2018.

Reconstruction of the Malta CPRA would require improvements to the existing building facility and parking lot. Very little to no additional right-of-way would be required to accommodate adequate turning movements and parking. Some irrigated/landscaped areas would need to be removed. A year-round, full-service MDT safety rest area would likely generate increased demand from passenger and oversized vehicles, potentially increasing noise and dust for nearby recreational, commercial, and residential uses.

Reconstruction of the Malta CPRA could potentially occur within existing City of Malta right-of-way; however, the entire Malta CPRA is within the Section 6(f) boundary for Trafton Park. Section 6(f) requirements apply to all sites receiving LWCF grants, including acquisition of parkland, development, or rehabilitation of facilities. Even a relatively small LWCF grant (e.g., for development of a picnic shelter) may provide anti-conversion protection to the entire park site. Improvements required to update the CPRA to a year-round MDT safety rest area could result in conversion of a portion of a 6(f) property to a transportation use. Consequently, MDT would be required to obtain approval from the Department of Interior/National Park Service and to provide replacement lands of equal fair market value, location, and usefulness in terms of comparable recreation needs for the 6(f) lands to be converted.

Due to the potential of conversion of lands within a Section 6(f) property, the associated requirements regarding approval and replacement lands, and anticipated impacts to the existing city park and adjacent land uses, this study does not recommend advancing the site for consideration as a year-round, full-service MDT safety rest area.

### 3.0 New Sites

#### 3.1 Screening Element A – Fatal Flaws

The intent of Element A is to eliminate unsuitable locations and identify potentially favorable safety rest area sites within the study segments.

Through discussions with the TOC for the study, MDT identified the following screening criteria to eliminate unfavorable siting locations within each study segment. Each of these elements represents a risk to MDT that could result in safety issues, excessive cost, constructability challenges, and permitting/coordination obstacles. The TOC agreed locations exhibiting these “fatal flaws” warranted elimination from further consideration in the study.

- A1. Avoid areas adjacent to horizontal and/or vertical curves that adversely impact sight distance on US 2.
- A2. Avoid areas with possible conflicting access points or traffic movements.
- A3. Avoid locations in proximity to railroad right-of-way.
- A4. Avoid areas with unfavorable topography requiring extensive cuts/fills or adverse grading for future site development.
- A5. Avoid areas directly adjacent to residential development.
- A6. Avoid areas located within or in proximity to surface water bodies, wetlands, floodplains, and other sensitive physical, biological, or social features.
- A7. Avoid areas typically closed for weather-related events.

The June 2017 field reviews provided initial information used in the Screen A evaluation. During a visual survey, field staff identified unsuitable locations based on observations of poor sight distance due to roadway curvature, multiple nearby driveways or access points, railroad proximity, areas with steep grades, developed areas, and proximity to sensitive resources. Field staff also flagged locations characterized by relatively flat grades, straight roadway stretches with good visibility, and absence of water bodies, railroads, or other sensitive features that appeared potentially suitable for safety rest area development.

Online data and mapping gathered during development of the Existing and Projected Conditions Report supported the Screen A evaluation by confirming avoidance areas based on the location of unfavorable features.

MDT District personnel supplied local knowledge and provided input on potentially favorable sites during a series of workshops held in February 2018. Through a discussion of site features, MDT confirmed avoidance areas including stretches of US 2 that are typically closed in winter months due to weather events. MDT also requested consideration of specific locations and recommended consolidating several adjacent sites exhibiting similar characteristics.

Based on this collective information, Table 2 lists locations defined as potentially favorable sites within Segments 1 through 6. All other portions of the study segments are excluded from further consideration.

**Table 2: Screen A Summary – Potentially Favorable Sites**

Segment	Site	Beginning RP	Ending RP
1	1a	55.7	56.2
	1b	58.3	58.6
	1c	63.1	63.7
	1d	66.4	66.6
	1e	72.9	75.6
2	2a	208.1	208.6
	2b	225.3	228.2
	2c	231.0	232.1
	2d	235.5	237.7
	2e	241.0	242.0
3	3a	281.8	282.6
	3b	285.0	296.6
	3c	300.8	301.3
	3d	309.3	312.5
4	4a	437.1	442.0
	4b	448.8	449.6
5	5a	503.0	503.5
	5b	505.0	505.9
	5c	507.0	508.0
	5d	511.6	512.0
	5e	515.8	517.1
	5f	518.7	519.9
	5g	522.6	523.3
6	6a	574.2	575.0
	6b	576.5	578.0
	6c	585.3	586.0
	6d	586.4	587.0
	6e	593.0	593.7

Attachment 1 provides figures showing the location of each site relative to available mapped resources, and Attachment 2 provides photographs illustrating representative views of potentially favorable sites. Digital mapping for floodplains was only available in some portions of the US 2 corridor. Information from field reviews supplemented assessments where digital mapping was not available.

### 3.2 Screening Element B – Desirable Site Characteristics

The intent of Screen B is to assess desirable characteristics for potentially favorable safety rest area sites within each study segment to assist in future project nomination and development decisions. The study evaluated each site and assigned positive (+), neutral (0), and negative (-) screening outcomes for each Screen B criterion. Screening outcomes reflect site performance against screening criteria definitions as opposed to relative ranking comparisons against other sites. Mapping to support Screen B3, B4, and B5 outcomes is provided in Attachment 3.

Segment 1 (RP 50.8 to RP 87.2)*B1. Consider locations in proximity to existing public water and wastewater services with potential capacity for expansion.*

Potential connection to existing municipal services could reduce risk and cost for MDT when siting a new safety rest area. Accordingly, sites within one mile of municipal services are assigned a positive (+) screening outcome, and sites greater than one mile from municipal services are assigned a negative (-) screening outcome.

Site 1a: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 1b: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 1c: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 1d: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 1e: Two small public water systems are within one mile of the western portion of Site 1e. Due to the limited size of the existing systems, a rest area connection would be unlikely, therefore, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

*B2. Consider proximity to existing natural gas, electrical power, and communication infrastructure.*

Proximity to utilities including but not limited to electrical power, communication infrastructure, and natural gas could be beneficial to MDT in developing a new safety rest area facility. For example, the ability to tie into an existing power network would reduce the cost of extending power to a site. Accordingly, sites within one mile of utility services are assigned a positive (+) screening outcome, and sites greater than one mile from utility services are assigned a negative (-) screening outcome.

Site 1a: An overhead power line is located on the east side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 1b: Overhead power, buried power, and communications infrastructure is located on the east side of US 2 within 50 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 1c: Buried power and communications infrastructure is located on the south side of US 2 within 50 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 1d: An overhead power line is located south of the MDT facility within 100 feet of US 2. A positive (+) outcome is assigned to this site.

Site 1e: An overhead power line and buried communications infrastructure are located on the south side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

### *B3. Consider parcels currently owned and maintained by MDT or other state entities.*

Right-of-way acquisition is a substantial cost associated with construction of new safety rest areas. In addition to cost considerations, MDT attempts to minimize impacts to private property owners. Siting a new safety rest area on a parcel already owned by MDT presents an opportunity to minimize right-of-way acquisition costs and impacts to private property. Siting on state-owned lands would result in similar benefits, although MDT would need to negotiate price and terms with the landowner. For this screen, sites owned by MDT are assigned a positive (+) screening outcome, sites owned by a state entity other than MDT are assigned a neutral (0) outcome, and sites under private ownership are assigned a negative (-) screening outcome.

Site 1a: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 1b: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 1c: Parcels are presently owned by the US Department of Agriculture. A neutral (0) outcome is assigned to this site.

Site 1d: Parcel is presently owned by MDT. A positive (+) outcome is assigned to this site.

Site 1e: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

### *B4. Consider proximity to populated areas offering maintenance staffing support for future upkeep and expected level of customer service.*

MDT strives to provide an appropriate level of service at safety rest area facilities. Part of this effort involves regular site maintenance and upkeep, including both year-round activities (such as cleaning and stocking paper goods) and seasonal activities (such as landscaping care). MDT typically contracts these services and must consider the availability and proximity of service personnel to reach each site. For this screen, locations within ten miles of a community with at least 1,000 residents are assigned a positive (+) screening outcome, locations within 11 to 20 miles are assigned a neutral (0) screening outcome, and locations greater than 20 miles are assigned a negative (-) screening outcome.

Site 1a: Libby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Libby. A negative (-) outcome is assigned to this site.

Site 1b: Libby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Libby. A negative (-) outcome is assigned to this site.

Site 1c: Libby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Libby. A negative (-) outcome is assigned to this site.

Site 1d: Libby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Libby. A negative (-) outcome is assigned to this site.

Site 1e: Libby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Libby. A negative (-) outcome is assigned to this site.

*B5. Consider topographical features, soils, and geological suitability for on-site water/wastewater system rehabilitation, reconstruction, or new construction.*

The ability to provide on-site water and wastewater treatment systems at the potential safety rest area sites may be limited or favorable based on existing topographic conditions, soils, and geology. Sites with limited topographical features, potential water-bearing geological conditions within 150 feet of the ground surface, and suitable soils for subsurface wastewater disposal are assigned a positive (+) screening outcome. Sites that present topographical variation and poor geological and soil conditions are assigned a negative (-) screening outcome.

Site 1a: The site has minor topographical variations. The underlying geology is a glacial lake deposit with groundwater within 10 feet of the surface. Soils at this site include silt loam and very fine sandy loam, which are typically slow absorbing having an approximate application rate of 0.4 gpd/ft<sup>2</sup>. The site proximity to the subsurface water level and surface water may be limiting factors. A negative (-) outcome is assigned to this site.

Site 1b: The site has moderate topographical variations. The underlying geology is a glacial lake deposit with groundwater at a reasonable depth. Soils at this site include gravelly silt loam, very gravelly sandy loam, and sand, which are typically moderate absorbing having an approximate application rate of 0.4-0.6 gpd/ft<sup>2</sup>. A positive (+) outcome is assigned to this site.

Site 1c: The site has moderate topographical variations. The underlying geology is an alluvium deposit with groundwater within 20 feet of the surface. Soils at this site include gravelly ashy silt loam and very gravelly loam, which are typically moderate absorbing having an approximate application rate of 0.4-0.6 gpd/ft<sup>2</sup>. A positive (+) outcome is assigned to this site.

Site 1d: The site has minor topographical variations. The underlying geology is an alluvium deposit with groundwater within 20 feet of the surface. Soils at this site include silty loam and very fine sandy loam, which are typically moderate absorbing having an approximate application rate of 0.4-0.8 gpd/ft<sup>2</sup>. A positive (+) outcome is assigned to this site.

Site 1e: The site has minor topographical variations. The underlying geology is an alluvium deposit with groundwater within 20 feet of the surface. Soils at this site include gravelly ashy silt loam and gravelly loamy sand, which are typically moderate absorbing having an approximate application rate of 0.4-0.6 gpd/ft<sup>2</sup>. A positive (+) outcome is assigned to this site.



*Screen B Summary – Segment 1*

Table 3 summarizes the positive (+), neutral (0), and negative (-) outcomes for each screening element for sites in Segment 1. A higher positive score indicates a more favorable site.

**Table 3: Screen B Summary – Segment 1**

Screen	Site1a	Site1b	Site 1c	Site 1d	Site 1e
B1. Proximity to existing public water and wastewater services with potential capacity for expansion	-	-	-	-	-
B2. Proximity to natural gas, electrical power, and communication infrastructure	+	+	+	+	+
B3. Parcel ownership	-	-	0	+	-
B4. Proximity to populated areas offering maintenance staffing support	-	-	-	-	-
B5. Topographical features, soils, and geological suitability for on-site water/wastewater systems	-	+	+	+	+
<b>Total</b>	<b>-3</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>-1</b>

Segment 2 (RP 208.1 to RP 242)

*B1. Consider locations in proximity to existing public water and wastewater services with potential capacity for expansion.*

Potential connection to existing municipal services could reduce risk and cost for MDT when siting a new safety rest area. Accordingly, sites within one mile of municipal services are assigned a positive (+) screening outcome, and sites greater than one mile from municipal services are assigned a negative (-) screening outcome.

Site 2a: The nearest available municipal services are located in East Glacier Park Village. East Glacier Park Village is within one mile of Site 2a. A positive (+) outcome is assigned to this site.

Site 2b: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 2c: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 2d: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 2e: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

*B2. Consider proximity to existing natural gas, electrical power, and communication infrastructure.*

Proximity to utilities including but not limited to electrical power, communication infrastructure, and natural gas could be beneficial to MDT in developing a new safety rest area facility. For example, the ability to tie into an existing power network would reduce the cost of extending power to a site. Accordingly, sites within one mile of utility services are assigned a positive (+) screening outcome, and sites greater than one mile from utility services are assigned a negative (-) screening outcome.

Site 2a: An overhead power line is located on the east side of US 2 within 200 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 2b: Overhead and buried power are located on the south side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 2c: Overhead and buried power are located on the south side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 2d: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 2e: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

*B3. Consider parcels currently owned and maintained by MDT or other state entities.*

Right-of-way acquisition is a substantial cost associated with construction of new safety rest areas. In addition to cost considerations, MDT attempts to minimize impacts to private property owners. Siting a new safety rest area on a parcel already owned by MDT presents an opportunity to minimize right-of-way acquisition costs and impacts to private property. Siting on state-owned lands would result in similar benefits, although MDT would need to negotiate price and terms with the landowner. For this screen, sites owned by MDT are assigned a positive (+) screening outcome, sites owned by a state entity other than MDT are assigned a neutral (0) outcome, and sites under private ownership are assigned a negative (-) screening outcome.

Site 2a: Parcels within the site are presently owned by private parties; however, DNRC owns a small parcel near RP 208.4. A neutral (0) outcome is assigned to this site.

Site 2b: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 2c: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 2d: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 2e: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

*B4. Consider proximity to populated areas offering maintenance staffing support for future upkeep and expected level of customer service.*

MDT strives to provide an appropriate level of service at safety rest area facilities. Part of this effort involves regular site maintenance and upkeep, including both year-round activities (such as cleaning and stocking paper goods) and seasonal activities (such as landscaping care). MDT typically contracts these services and must consider the availability and proximity of service personnel to reach each site. For this screen, locations within ten miles of a community with at least 1,000 residents are assigned a positive (+) screening outcome, locations within 11 to 20 miles are assigned a neutral (0) screening outcome, and locations greater than 20 miles are assigned a negative (-) screening outcome.

Site 2a: Browning is the closest community with 1,000 or more residents. The site is located between 11 and 20 miles from Browning. A neutral (0) outcome is assigned to this site.

Site 2b: Browning is the closest community with 1,000 or more residents. The site is located less than 10 miles from Browning. A positive (+) outcome is assigned to this site.

Site 2c: Browning is the closest community with 1,000 or more residents. The site is located less than 10 miles from Browning. A positive (+) outcome is assigned to this site.

Site 2d: Browning is the closest community with 1,000 or more residents. The site is located between 11 and 20 miles from Browning. A neutral (0) outcome is assigned to this site.

Site 2e: Browning is the closest community with 1,000 or more residents. The site is located between 11 and 20 miles from Browning. A neutral (0) outcome is assigned to this site.

*B5. Consider topographical features, soils, and geological suitability for on-site water/wastewater system rehabilitation, reconstruction, or new construction.*

The ability to provide on-site water and wastewater treatment systems at the potential safety rest area sites may be limited or favorable based on existing topographic conditions, soils, and geology. Sites with limited topographical features, potential water-bearing geological conditions within 150 feet of the ground surface, and suitable soils for subsurface wastewater disposal are assigned a positive (+) screening outcome. Sites that present topographical variation and poor geological and soil conditions are assigned a negative (-) screening outcome.

Site 2a: The site has minor topographical variations. The underlying geology is an alluvium and fractured shale deposit with a possible perched or confined aquifer, both of which could lead to water quality issues. Soils at this site include gravelly loam and extremely gravelly sand, which are typically moderate absorbing having an approximate application rate of 0.8 gpd/ft<sup>2</sup>. Due to the potential water quality issues, a negative (-) outcome is assigned to this site.

Site 2b: The site has minor topographical variations. The underlying geology is a glacial drift having a mixture of rock material with groundwater expected 60 feet or more below the surface in a sandstone layer. Soils at this site include cobbly loam, clay loam, and gravelly clay loam, which are typically moderate absorbing having an approximate application rate of 0.4-0.6 gpd/ft<sup>2</sup>. A positive (+) outcome is assigned to this site.

Site 2c: The site has minor topographical variations. The underlying geology is a glacial drift having a mixture of rock material with groundwater expected 60 feet or more below the surface in a sandstone layer. Soils at this site include cobbly loam, clay loam, and gravelly clay loam, which are typically moderate absorbing having an approximate application rate of 0.4-0.6 gpd/ft<sup>2</sup>. A positive (+) outcome is assigned to this site.

Site 2d: The site has minor topographical variations. The underlying geology is a glacial drift having a mixture of rock material and shale. Groundwater is expected 60 feet or more below the surface in a sandstone layer. Soils at this site include cobbly loam, clay loam, and gravelly loam, which are typically moderate absorbing having an approximate application rate of 0.4-0.6 gpd/ft<sup>2</sup>. Due to the presence of wetlands and surface water at this site, a negative (-) outcome is assigned to this site.

Site 2e: The site has minor topographical variations. The underlying geology is a mixture of transported rock and clay with groundwater expected 60 feet or more below the surface in a sandstone layer. Soils at this site include cobbly loam and clay loam, which are typically moderate to slow absorbing having an approximate application rate of 0.3-0.6 gpd/ft<sup>2</sup>. Due to the increase in clay content of the soil, a negative (-) outcome is assigned to this site.

### *Screen B Summary – Segment 2*

Table 4 summarizes the positive (+), neutral (0), and negative (-) outcomes for each screening element for sites in Segment 2. A higher positive score indicates a more favorable site.

**Table 4: Screen B Summary – Segment 2**

Screen	Site2a	Site2b	Site2c	Site 2d	Site 2e
B1. Proximity to existing public water and wastewater services with potential capacity for expansion	+	-	-	-	-
B2. Proximity to natural gas, electrical power, and communication infrastructure	+	+	+	+	+
B3. Parcel ownership	0	-	-	-	-
B4. Proximity to populated areas offering maintenance staffing support	0	+	+	0	0
B5. Topographical features, soils, and geological suitability for on-site water/wastewater systems	-	+	+	-	-
<b>Total</b>	<b>+1</b>	<b>+1</b>	<b>+1</b>	<b>-2</b>	<b>-2</b>

Segment 3 (RP 277.3 to RP 312.5)*B1. Consider locations in proximity to existing public water and wastewater services with potential capacity for expansion.*

Potential connection to existing municipal services could reduce risk and cost for MDT when siting a new safety rest area. Accordingly, sites within one mile of municipal services are assigned a positive (+) screening outcome, and sites greater than one mile from municipal services are assigned a negative (-) screening outcome.

Site 3a: The nearest available municipal services are located in Shelby. The Shelby city limits are approximately two miles from the proposed site, but municipal water and wastewater services may extend beyond the city limits to within one mile of Site 3a. A positive (+) outcome is assigned to this site.

Site 3b: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 3c: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 3d: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

*B2. Consider proximity to existing natural gas, electrical power, and communication infrastructure.*

Proximity to utilities including but not limited to electrical power, communication infrastructure, and natural gas could be beneficial to MDT in developing a new safety rest area facility. For example, the ability to tie into an existing power network would reduce the cost of extending power to a site. Accordingly, sites within one mile of utility services are assigned a positive (+) screening outcome, and sites greater than one mile from utility services are assigned a negative (-) screening outcome.

Site 3a: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 3b: An overhead power line is located on the south side of US 2 within 100 feet of the roadway. Communications infrastructure occurs at Dunkirk at RP 289. A positive (+) outcome is assigned to this site.

Site 3c: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 3d: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

*B3. Consider parcels currently owned and maintained by MDT or other state entities.*

Right-of-way acquisition is a substantial cost associated with construction of new safety rest areas. In addition to cost considerations, MDT attempts to minimize impacts to private property owners. Siting a new safety rest area on a parcel already owned by MDT presents an opportunity to minimize right-of-way acquisition costs and impacts to private property. Siting on state-owned lands would result in similar benefits, although MDT would need to negotiate price and terms with the landowner. For this screen, sites owned by MDT are assigned a positive (+) screening outcome, sites owned by a state entity other than MDT are assigned a neutral (0) outcome, and sites under private ownership are assigned a negative (-) screening outcome.

Site 3a: Parcels within the site are presently owned by DNRC. A neutral (0) outcome is assigned to this site.

Site 3b: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 3c: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 3d: Parcels within the site are presently owned by private parties, however DNRC owns a small parcel near RP 312.0. A neutral (0) outcome is assigned to this site.

*B4. Consider proximity to populated areas offering maintenance staffing support for future upkeep and expected level of customer service.*

MDT strives to provide an appropriate level of service at safety rest area facilities. Part of this effort involves regular site maintenance and upkeep, including both year-round activities (such as cleaning and stocking paper goods) and seasonal activities (such as landscaping care). MDT typically contracts these services and must consider the availability and proximity of service personnel to reach each site. For this screen, locations within ten miles of a community with at least 1,000 residents are assigned a positive (+) screening outcome, locations within 11 to 20 miles are assigned a neutral (0) screening outcome, and locations greater than 20 miles are assigned a negative (-) screening outcome.

Site 3a: Shelby is the closest community with 1,000 or more residents. The site is located less than 10 miles from Shelby. A positive (+) outcome is assigned to this site.

Site 3b: Shelby is the closest community with 1,000 or more residents. The site is located between 10 and 20 miles from Shelby. A neutral (0) outcome is assigned to this site.

Site 3c: Shelby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Shelby. A negative (-) outcome is assigned to this site.

Site 3d: Shelby is the closest community with 1,000 or more residents. The site is located more than 20 miles from Shelby. A negative (-) outcome is assigned to this site.

*B5. Consider topographical features, soils, and geological suitability for on-site water/wastewater system rehabilitation, reconstruction, or new construction.*

The ability to provide on-site water and wastewater treatment systems at the potential safety rest area sites may be limited or favorable based on existing topographic conditions, soils, and geology. Sites with limited topographical features, potential water-bearing geological conditions within 150 feet of the ground surface, and suitable soils for subsurface wastewater disposal are assigned a positive (+) screening outcome. Sites that present topographical variation and poor geological and soil conditions are assigned a negative (-) screening outcome.

Site 3a: The site is relatively flat with minor topographical variations. The underlying geology is a mixture of fine grained sedimentary rock with limited groundwater information. Soils at this site include clay loams, which are typically slow absorbing having an approximate application rate of 0.3 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 3b: The site is relatively flat with minor topographical variations consisting of bisecting drainage courses. The underlying geology is a mixture of fine grained sedimentary rock with limited groundwater information. Soils at this site include fine sand and clay loam, which are typically slow absorbing having an approximate application rate of 0.4 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 3c: The site is relatively flat with minor topographical variations. The underlying geology is a mixture of fine grained sedimentary rock with limited groundwater information. Soils at this site include loam and clay loam, which are typically slow absorbing having an approximate application rate of 0.3 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 3d: The site is relatively flat with minor topographical variations. The underlying geology is a layered sandstone and shale with limited groundwater information. Soils at this site include loam, clay loam, and clay, which are typically slow absorbing having an approximate application rate of 0.15-0.2 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

*Screen B Summary – Segment 3*

Table 5 summarizes the positive (+), neutral (0), and negative (-) outcomes for each screening element for sites in Segment 3. A higher positive score indicates a more favorable site.

**Table 5: Screen B Summary – Segment 3**

Screen	Site3a	Site3b	Site3c	Site 3d
B1. Proximity to existing public water and wastewater services with potential capacity for expansion	+	-	-	-
B2. Proximity to natural gas, electrical power, and communication infrastructure	+	+	+	+
B3. Parcel ownership	0	-	-	0
B4. Proximity to populated areas offering maintenance staffing support	+	0	-	-
B5. Topographical features, soils, and geological suitability for on-site water/wastewater systems	-	-	-	-
<b>Total</b>	<b>+2</b>	<b>-2</b>	<b>-3</b>	<b>-2</b>

Segment 4 (RP 434.9 to 454.3)

*B1. Consider locations in proximity to existing public water and wastewater services with potential capacity for expansion.*

Potential connection to existing municipal services could reduce risk and cost for MDT when siting a new safety rest area. Accordingly, sites within one mile of municipal services are assigned a positive (+) screening outcome, and sites greater than one mile from municipal services are assigned a negative (-) screening outcome.

Site 4a: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.



Site 4b: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

*B2. Consider proximity to existing natural gas, electrical power, and communication infrastructure.*

Proximity to utilities including but not limited to electrical power, communication infrastructure, and natural gas could be beneficial to MDT in developing a new safety rest area facility. For example, the ability to tie into an existing power network would reduce the cost of extending power to a site. Accordingly, sites within one mile of utility services are assigned a positive (+) screening outcome, and sites greater than one mile from utility services are assigned a negative (-) screening outcome.

Site 4a: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 4b: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

*B3. Consider parcels currently owned and maintained by MDT or other state entities.*

Right-of-way acquisition is a substantial cost associated with construction of new safety rest areas. In addition to cost considerations, MDT attempts to minimize impacts to private property owners. Siting a new safety rest area on a parcel already owned by MDT presents an opportunity to minimize right-of-way acquisition costs and impacts to private property. Siting on state-owned lands would result in similar benefits, although MDT would need to negotiate price and terms with the landowner. For this screen, sites owned by MDT are assigned a positive (+) screening outcome, sites owned by a state entity other than MDT are assigned a neutral (0) outcome, and sites under private ownership are assigned a negative (-) screening outcome.

Site 4a: Parcels within the site are presently owned by the Fort Belknap Indian Community. A negative (-) outcome is assigned to this site.

Site 4b: Parcels within the site are presently owned by the Fort Belknap Indian Community. A negative (-) outcome is assigned to this site.

*B4. Consider proximity to populated areas offering maintenance staffing support for future upkeep and expected level of customer service.*

MDT strives to provide an appropriate level of service at safety rest area facilities. Part of this effort involves regular site maintenance and upkeep, including both year-round activities (such as cleaning and stocking paper goods) and seasonal activities (such as landscaping care). MDT typically contracts these services and must consider the availability and proximity of service personnel to reach each site. For this screen, locations within ten miles of a community with at least 1,000 residents are assigned a positive (+) screening outcome, locations within 11 to 20 miles are assigned a neutral (0) screening outcome, and locations greater than 20 miles are assigned a negative (-) screening outcome.

Site 4a: Fort Belknap Agency is the closest community with 1,000 or more residents. The site is located less than 10 miles from Fort Belknap Agency. A positive (+) outcome is assigned to this site.

Site 4b: Malta is the closest community with 1,000 or more residents. The site is located more than 20 miles from Malta. A negative (-) outcome is assigned to this site.

*B5. Consider topographical features, soils, and geological suitability for on-site water/wastewater system rehabilitation, reconstruction, or new construction.*

The ability to provide on-site water and wastewater treatment systems at the potential safety rest area sites may be limited or favorable based on existing topographic conditions, soils, and geology. Sites with limited topographical features, potential water-bearing geological conditions within 150 feet of the ground surface, and suitable soils for subsurface wastewater disposal are assigned a positive (+) screening outcome. Sites that present topographical variation and poor geological and soil conditions are assigned a negative (-) screening outcome.

Site 4a: The site has minor topographical variations consisting of two drainage courses. Groundwater is expected to be shallow bearing in underlying alternating sandstone and shale layers. Soils at this site include loams and clay loams, which are typically slow absorbing having an approximate application rate of 0.3 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 4b: The site has minor topographical variations. Groundwater is expected to be shallow bearing in underlying alternating sandstone and shale layers. Soils at this site include fine sandy loams and loam, which are typically slow absorbing having an approximate application rate of 0.4 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

*Screen B Summary – Segment 4*

Table 6 summarizes the positive (+), neutral (0), and negative (-) outcomes for each screening element for sites in Segment 4. A higher positive score indicates a more favorable site.

**Table 6: Screen B Summary – Segment 4**

Screen	Site4a	Site4b
B1. Proximity to existing public water and wastewater services with potential capacity for expansion	-	-
B2. Proximity to natural gas, electrical power, and communication infrastructure	+	+
B3. Parcel ownership	-	-
B4. Proximity to populated areas offering maintenance staffing support	+	-
B5. Topographical features, soils, and geological suitability for on-site water/wastewater systems	-	-
<b>Total</b>	<b>-1</b>	<b>-3</b>

Segment 5 (RP 499.1 to RP 523.7)*B1. Consider locations in proximity to existing public water and wastewater services with potential capacity for expansion.*

Potential connection to existing municipal services could reduce risk and cost for MDT when siting a new safety rest area. Accordingly, sites within one mile of municipal services are assigned a positive (+) screening outcome, and sites greater than one mile from municipal services are assigned a negative (-) screening outcome.

Site 5a: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 5b: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 5c: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 5d: The nearest available municipal services are located in Hinsdale. The municipal services are owned and operated by the Hinsdale County Water and Sewer District. Hinsdale is located within one mile of site 5d. A positive (+) outcome is assigned to this site.

Site 5e: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 5f: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

Site 5g: The nearest available municipal services are more than one mile from the site. At this location, on-site water and wastewater facilities would be required. A negative (-) outcome is assigned to this site.

*B2. Consider proximity to existing natural gas, electrical power, and communication infrastructure.*

Proximity to utilities including but not limited to electrical power, communication infrastructure, and natural gas could be beneficial to MDT in developing a new safety rest area facility. For example, the ability to tie into an existing power network would reduce the cost of extending power to a site. Accordingly, sites within one mile of utility services are assigned a positive (+) screening outcome, and sites greater than one mile from utility services are assigned a negative (-) screening outcome.

Site 5a: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 5b: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 5c: An overhead power line is located on the north side of US 2 within 1 mile of the roadway. A positive (+) outcome is assigned to this site.

Site 5d: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 5e: An overhead power line is located on the south side of US 2 within 100 feet of the roadway to RP 516.3 and on north side of US 2 within 100 feet of the roadway for the remainder of the site. A positive (+) outcome is assigned to this site.

Site 5f: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 5g: An overhead power line crosses US 2 near RP 523.2. A positive (+) outcome is assigned to this site.

### *B3. Consider parcels currently owned and maintained by MDT or other state entities.*

Right-of-way acquisition is a substantial cost associated with construction of new safety rest areas. In addition to cost considerations, MDT attempts to minimize impacts to private property owners. Siting a new safety rest area on a parcel already owned by MDT presents an opportunity to minimize right-of-way acquisition costs and impacts to private property. Siting on state-owned lands would result in similar benefits, although MDT would need to negotiate price and terms with the landowner. For this screen, sites owned by MDT are assigned a positive (+) screening outcome, sites owned by a state entity other than MDT are assigned a neutral (0) outcome, and sites under private ownership are assigned a negative (-) screening outcome.

Site 5a: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 5b: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 5c: Parcels within the site are presently owned by the State of Montana and private parties. A neutral (0) outcome is assigned to this site.

Site 5d: Parcels within the site are presently owned by the State of Montana. A neutral (0) outcome is assigned to this site.

Site 5e: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 5f: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 5g: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

*B4. Consider proximity to populated areas offering maintenance staffing support for future upkeep and expected level of customer service.*

MDT strives to provide an appropriate level of service at safety rest area facilities. Part of this effort involves regular site maintenance and upkeep, including both year-round activities (such as cleaning and stocking paper goods) and seasonal activities (such as landscaping care). MDT typically contracts these services and must consider the availability and proximity of service personnel to reach each site. For this screen, locations within ten miles of a community with at least 1,000 residents are assigned a positive (+) screening outcome, locations within 11 to 20 miles are assigned a neutral (0) screening outcome, and locations greater than 20 miles are assigned a negative (-) screening outcome.

Site 5a: Glasgow is the closest community with 1,000 or more residents. The site is located more than 20 miles from Glasgow. A negative (-) outcome is assigned to this site.

Site 5b: Glasgow is the closest community with 1,000 or more residents. The site is located more than 20 miles from Glasgow. A negative (-) outcome is assigned to this site.

Site 5c: Glasgow is the closest community with 1,000 or more residents. The site is located more than 20 miles from Glasgow. A negative (-) outcome is assigned to this site.

Site 5d: Glasgow is the closest community with 1,000 or more residents. The site is located more than 20 miles from Glasgow. A negative (-) outcome is assigned to this site.

Site 5e: Glasgow is the closest community with 1,000 or more residents. The site is located more than 20 miles from Glasgow. A negative (-) outcome is assigned to this site.

Site 5f: Glasgow is the closest community with 1,000 or more residents. The site is located more than 20 miles from Glasgow. A negative (-) outcome is assigned to this site.

Site 5g: Glasgow is the closest community with 1,000 or more residents. The site is located between 11 and 20 miles from Glasgow. A neutral (0) outcome is assigned to this site.

*B5. Consider topographical features, soils, and geological suitability for on-site water/wastewater system rehabilitation, reconstruction, or new construction.*

The ability to provide on-site water and wastewater treatment systems at the potential safety rest area sites may be limited or favorable based on existing topographic conditions, soils, and geology. Sites with limited topographical features, potential water-bearing geological conditions within 150 feet of the ground surface, and suitable soils for subsurface wastewater disposal are assigned a positive (+) screening outcome. Sites that present topographical variation and poor geological and soil conditions are assigned a negative (-) screening outcome.

Site 5a: The site is relatively flat with minor topographical variations. Groundwater is expected to be at a depth of 40-80 feet below the surface in an alluvium sand/gravel layer. Soils at this site include clay, which are typically slow absorbing having an approximate application rate of 0.15 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 5b: The site is relatively flat with minor topographical variations. Groundwater is expected to be at a depth of 40-80 feet below the surface in an alluvium sand/gravel layer. Soils at this site include clay, which are typically slow absorbing having an approximate application rate of 0.15 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 5c: The site is relatively flat with minor topographical variations. Groundwater is expected to be at a depth of 40-80 feet below the surface in an alluvium sand/gravel layer. Soils at this site include silty clay loam, clay, and stratified clay and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.15-0.3 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 5d: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow with the primary water production layer at an approximate depth of 100 feet below the surface in an alluvium sandy layer. Soils at this site include silty loam and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.3 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 5e: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow with the primary water production layer at an approximate depth of 100 feet below the surface in an alluvium sandy layer. Soils at this site include silty clay, stratified clay, and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.15-0.3 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 5f: The site is relatively flat with minor topographical variations. Groundwater is expected to be approximate 20-40 feet below the surface in a lower producing sandstone formation. Soils at this site include clay, stratified clay, and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.15 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 5g: The site is relatively flat with minor topographical variations. Groundwater is expected to be approximate 40 feet below the surface with poor quality in shale layers. Soils at this site include loam and clay loam, which are typically slow absorbing having an approximate application rate of 0.2-0.5 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

### *Screen B Summary – Segment 5*

Table 7 summarizes the positive (+), neutral (0), and negative (-) outcomes for each screening element for sites in Segment 5. A higher positive score indicates a more favorable site.

**Table 7: Screen B Summary – Segment 5**

Screen	Site5a	Site5b	Site5c	Site 5d	Site 5e	Site 5f	Site 5g
B1. Proximity to existing public water and wastewater services with potential capacity for expansion	-	-	-	+	-	-	-
B2. Proximity to natural gas, electrical power, and communication infrastructure	+	+	+	+	+	+	+
B3. Parcel ownership	-	-	0	0	-	-	-
B4. Proximity to populated areas offering maintenance staffing support	-	-	-	-	-	-	0
B5. Topographical features, soils, and geological suitability for on-site water/wastewater systems	-	-	-	-	-	-	-
<b>Total</b>	<b>-3</b>	<b>-3</b>	<b>-2</b>	<b>0</b>	<b>-3</b>	<b>-3</b>	<b>-2</b>

#### Segment 6 (RP 571.8 to RP 593.7)

##### *B1. Consider locations in proximity to existing public water and wastewater services with potential capacity for expansion.*

Potential connection to existing municipal services could reduce risk and cost for MDT when siting a new safety rest area. Accordingly, sites within one mile of municipal services are assigned a positive (+) screening outcome, and sites greater than one mile from municipal services are assigned a negative (-) screening outcome.

Site 6a: The nearest available municipal services are located in the Town of Frazer. Frazer is approximately two miles from the proposed site. It is unknown if municipal services extend beyond the town limits. Additionally, the Dry Prairie Rural Water System parallels the highway along Segment 6 making public water available at site 6a. A positive (+) outcome is assigned to this site.

Site 6b: One small public water system is within one mile of the eastern portion of Site 6b. Due to the limited size of the existing system, a rest area connection would be unlikely. The Dry Prairie Rural Water System parallels the highway along Segment 6 making public water available at site 6b. An on-site wastewater treatment system would likely be necessary at this site. A positive (+) outcome is assigned to this site.

Site 6c: The Dry Prairie Rural Water System parallels the highway along Segment 6 making public water available at site 6c. An on-site wastewater treatment system would likely be necessary at this site. A positive (+) outcome is assigned to this site.

Site 6d: The Dry Prairie Rural Water System parallels the highway along Segment 6 making public water available at site 6d. An on-site wastewater treatment system would likely be necessary at this site. A positive (+) outcome is assigned to this site.

Site 6e: The Dry Prairie Rural Water System parallels the highway along Segment 6 making public water available at site 6e. An on-site wastewater treatment system would likely be necessary at this site. A positive (+) outcome is assigned to this site.

### *B2. Consider proximity to existing natural gas, electrical power, and communication infrastructure.*

Proximity to utilities including but not limited to electrical power, communication infrastructure, and natural gas could be beneficial to MDT in developing a new safety rest area facility. For example, the ability to tie into an existing power network would reduce the cost of extending power to a site. Accordingly, sites within one mile of utility services are assigned a positive (+) screening outcome, and sites greater than one mile from utility services are assigned a negative (-) screening outcome.

Site 6a: An overhead power line is located on the north side of US 2 within 150 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 6b: An overhead power line is located on the north side of US 2 within 150 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 6c: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 6d: An overhead power line is located on the north side of US 2 within 100 feet of the roadway. A positive (+) outcome is assigned to this site.

Site 6e: An overhead power line is located on the south side of US 2 within 100 to 500 feet of the roadway. A positive (+) outcome is assigned to this site.

### *B3. Consider parcels currently owned and maintained by MDT or other state entities.*

Right-of-way acquisition is a substantial cost associated with construction of new safety rest areas. In addition to cost considerations, MDT attempts to minimize impacts to private property owners. Siting a new safety rest area on a parcel already owned by MDT presents an opportunity to minimize right-of-way acquisition costs and impacts to private property. Siting on state-owned lands would result in similar benefits, although MDT would need to negotiate price and terms with the landowner. For this screen, sites owned by MDT are assigned a positive (+) screening outcome, sites owned by a state entity other than MDT are assigned a neutral (0) outcome, and sites under private ownership are assigned a negative (-) screening outcome.

Site 6a: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.



Site 6b: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 6b: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 6d: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

Site 6e: Parcels within the site are presently owned by private parties. A negative (-) outcome is assigned to this site.

*B4. Consider proximity to populated areas offering maintenance staffing support for future upkeep and expected level of customer service.*

MDT strives to provide an appropriate level of service at safety rest area facilities. Part of this effort involves regular site maintenance and upkeep, including both year-round activities (such as cleaning and stocking paper goods) and seasonal activities (such as landscaping care). MDT typically contracts these services and must consider the availability and proximity of service personnel to reach each site. For this screen, locations within ten miles of a community with at least 1,000 residents are assigned a positive (+) screening outcome, locations within 11 to 20 miles are assigned a neutral (0) screening outcome, and locations greater than 20 miles are assigned a negative (-) screening outcome.

Site 6a: Wolf Point is the closest community with 1,000 or more residents. The site is located within 11 to 20 miles from Wolf Point. A neutral (0) outcome is assigned to this site.

Site 6b: Wolf Point is the closest community with 1,000 or more residents. The site is located within 11 to 20 miles from Wolf Point. A neutral (0) outcome is assigned to this site.

Site 6c: Wolf Point is the closest community with 1,000 or more residents. The site is located less than 10 miles from Wolf Point. A positive (+) outcome is assigned to this site.

Site 6d: Wolf Point is the closest community with 1,000 or more residents. The site is located less than 10 miles from Wolf Point. A positive (+) outcome is assigned to this site.

Site 6e: Wolf Point is the closest community with 1,000 or more residents. The site is located less than 10 miles from Wolf Point. A positive (+) outcome is assigned to this site.

*B5. Consider topographical features, soils, and geological suitability for on-site water/wastewater system rehabilitation, reconstruction, or new construction.*

The ability to provide on-site water and wastewater treatment systems at the potential safety rest area sites may be limited or favorable based on existing topographic conditions, soils, and geology. Sites with limited topographical features, potential water-bearing geological conditions within 150 feet of the ground surface, and suitable soils for subsurface wastewater disposal are assigned a positive (+) screening outcome. Sites that present topographical variation and poor geological and soil conditions are assigned a negative (-) screening outcome.

Site 6a: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow at this site. Soils at this site include loam and clay loam, which are typically slow absorbing having an approximate application rate of 0.2 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 6b: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow at this site. Soils at this site include loam and clay loam, which are typically slow absorbing having an approximate application rate of 0.2 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 6c: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow at this site. Soils at this site include loam, clay loam, and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.2 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 6d: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow at this site. Soils at this site include loam, clay loam, and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.2 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

Site 6e: The site is relatively flat with minor topographical variations. Groundwater is expected to be shallow at this site. Soils at this site include loam, clay loam, and silty clay loam, which are typically slow absorbing having an approximate application rate of 0.2-0.4 gpd/ft<sup>2</sup>. A negative (-) outcome is assigned to this site.

*Screen B Summary – Segment 6*

Table 8 summarizes the positive (+), neutral (0), and negative (-) outcomes for each screening element for sites in Segment 6. A higher positive score indicates a more favorable site.

**Table 8: Screen B Summary – Segment 6**

Screen	Site 6a	Site 6b	Site 6c	Site 6d	Site 6e
B1. Proximity to existing public water and wastewater services with potential capacity for expansion	+	+	+	+	+
B2. Proximity to natural gas, electrical power, and communication infrastructure	+	+	+	+	+
B3. Parcel ownership	-	-	-	-	-
B4. Proximity to populated areas offering maintenance staffing support	0	0	+	+	+
B5. Topographical features, soils, and geological suitability for on-site water/wastewater systems	-	-	-	-	-
<b>Total</b>	<b>0</b>	<b>0</b>	<b>+1</b>	<b>+1</b>	<b>+1</b>

### Considerations Excluded From Screen B

#### *Security and Vandalism Concerns*

MDT strives to provide rest area facilities where patrons feel safe to stop and rest. Site safety is enhanced during project development through appropriate site layout, visibility from the highway, adequate site lighting, and installation of security cameras to monitor usage. MDT also considers security from the siting perspective, including whether location in a remote area or in proximity to a community enhances or detracts from actual and perceived security. MDT elected to exclude security issues and potential for vandalism from Screen B scoring as these considerations are best addressed on a case-by-case basis during the project development process.

#### *Emergency Parking*

The TOC discussed the potential need to provide emergency parking in locations where weather events may require road closures. MDT elected to exclude emergency parking from Screen B scoring because Screen A7 eliminates areas typically closed for weather-related events.

#### *Mobile Service*

MDT recognizes motorists' desire to use mobile devices while traveling. The TOC discussed the possibility of including a screening criterion for mobile service given that some portions of US 2 are locally known as "dead zones" where service is unavailable. MDT elected to exclude mobile service from Screen B scoring due to the difficulty in developing accurate mapping and the fluctuating nature of mobile service within the corridor.

#### *Agency Partnerships*

The TOC discussed the possibility of considering partnerships with other state agencies. MDT elected to exclude agency partnerships from Screen B scoring due to limited opportunities in the US 2 corridor.

Screen B Summary – All Segments

Table 9 presents a summary of Screen B scores for all potentially favorable sites in each segment using a green to red conditional formatting gradient. Green cells indicate sites that perform the best, and red cells indicate sites that perform the worst according to Screen B elements. Best performing sites in each segment include:

- Segment 1: Site 1d (score of +1)
- Segment 2: Sites 2a, 2b, 2c (tied score of +1)
- Segment 3: Site 3a (score of +2)
- Segment 4: Site 4a (score of -1)
- Segment 5: Site 5d (score of 0)
- Segment 6: Sites 6c, 6d, 6e (tied score of +1)

**Table 9 Screen B Summary – All Segments**

Segment	Site	Screen B Total	Screen B1	Screen B2	Screen B3	Screen B4	Screen B5
			Municipal W/WW	Other Utilities	RW Ownership	Proximity to Pop. Areas	Topo/Soils/Geology
1	1a	-3	-	+	-	-	-
	1b	-1	-	+	-	-	+
	1c	0	-	+	0	-	+
	1d	1	-	+	+	-	+
	1e	-1	-	+	-	-	+
2	2a	1	+	+	0	0	-
	2b	1	-	+	-	+	+
	2c	1	-	+	-	+	+
	2d	-2	-	+	-	0	-
	2e	-2	-	+	-	0	-
3	3a	2	+	+	0	+	-
	3b	-2	-	+	-	0	-
	3c	-3	-	+	-	-	-
	3d	-2	-	+	0	-	-
4	4a	-1	-	+	-	+	-
	4b	-3	-	+	-	-	-
5	5a	-3	-	+	-	-	-
	5b	-3	-	+	-	-	-
	5c	-2	-	+	0	-	-
	5d	0	+	+	0	-	-
	5e	-3	-	+	-	-	-
	5f	-3	-	+	-	-	-
	5g	-2	-	+	-	0	-
6	6a	0	+	+	-	0	-
	6b	0	+	+	-	0	-
	6c	1	+	+	-	+	-
	6d	1	+	+	-	+	-
	6e	1	+	+	-	+	-

<b>Screen B Scoring Gradient</b>	-3	-2	-1	0	1	2
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Source: DOWL 2018.

### 3.3 Screening Element C – Costs

The intent of Screening Element C is to assign planning-level costs for favorable safety rest area sites advanced after Screen A within each study segment. The study evaluated each favorable site and assigned a base cost of \$1,850,000 which does not include RW, source water, or wastewater. It is assumed that the configuration of each rest area would be roughly the same and change minimally from site to site. Right-of-way cost is based on a 15-acre plot at an assumed cost of \$2,000/acre for private land, \$1,500/acre for mix of state and private land, \$5,000 for state lands not owned by MDT, and \$0 is assumed if parcel is currently owned by MDT.

Source water is estimated to be \$45,000 for a new well and \$15,000 for a treatment system if required for water quality. Connection to municipal services was estimated to be approximately \$82,000 where available. Wastewater is based on an average Level II installation cost of \$250,000, or connection to municipal services at \$83,000. MDT may determine during project development that connection to municipal services is not feasible due to a variety of factors, in which case, on-site water and wastewater would be required.

A contingency of 30%, mobilization of 18%, PE of 10%, CE of 10%, and IDC of 10.96% were included in the planning estimate. These phases roughly double the construction cost. Accordingly, for planning purposes a 200% "All Other Phases" category was used. Additionally, Tribal Employment Rights Office (TERO) and Improvement of Services (IOS) fees were applied to sites located on the Blackfeet, Fort Belknap, and Fort Peck Reservations. Individual TERO and IOS fees were assessed using current Memorandums of Understanding (MOU) with individual tribes and MDT.

Sites located in Segment 5 were assessed an additional \$490,000 for abandonment or conversion of the Vandalia Safety Rest Area to truck parking. It is assumed that if any rest area site were developed in Segment 5 then the Vandalia Safety Rest Area would be redundant, and some level of investment would be required to reduce services or abandon the site.

Additionally, an annual operations and maintenance (O&M) cost was estimated by annualizing the average expenditures of existing year-round rest areas throughout the state over a twenty-year period. Expenditures for the O&M cost estimate include utilities, MDT staff time, contracted services, materials, and equipment use. An annualized average cost of \$75,000 was determined to represent single sites not expected to connect to municipal services; with \$80,000 for single sites connected to a municipal water source, and \$85,000 for single sites connected to both municipal source water and wastewater services.

All planning-level cost estimates are based on 2018 estimates with no inflation as presented in Table 10. Cost estimates range from a low of \$4,040,000 to a high of \$4,870,000. Within each segment, cost estimates varied by a maximum of \$350,000. Annual maintenance and operations varies from zero to \$10,000 per year.

**Table 10: Capital Cost Estimates & Annual Operations and Maintenance**

Site	Base Cost (MILLIONS)	RW Cost (THOUSANDS)	Source Water			Wastewater		Other (THOUSANDS)	All Other Phases	TERO and IOS Fees	Total Capital Cost (\$MILLIONS)	Annual Maintenance & Operations (THOUSANDS)
			Well (THOUSANDS)	Treatment (THOUSANDS)	Connect to Public Service (THOUSANDS)	On-site (THOUSANDS)	Connect to Public Service (THOUSANDS)					
1a	\$1.85	\$30	\$45	-	-	\$250	-	-	200%	-	\$4.35	\$75
1b	\$1.85	\$30	\$45	-	-	\$250	-	-	200%	-	\$4.35	\$75
1c	\$1.85	\$5	\$45	-	-	\$250	-	-	200%	-	\$4.30	\$75
1d	\$1.85	\$0	\$45	-	-	\$250	-	-	200%	-	\$4.29	\$75
1e	\$1.85	\$30	\$45	-	-	\$250	-	-	200%	-	\$4.35	\$75
2a	\$1.85	\$5	-	-	\$82	\$83	-	-	200%	✓	\$4.16	\$80
2b	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	✓	\$4.51	\$75
2c	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	✓	\$4.51	\$75
2d	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	✓	\$4.51	\$75
2e	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	✓	\$4.51	\$75
3a	\$1.85	\$5	-	-	\$82	\$83	-	-	200%	-	\$4.04	\$80
3b	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	-	\$4.38	\$75
3c	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	-	\$4.38	\$75
3d	\$1.85	\$15	\$45	\$15	-	\$250	-	-	200%	-	\$4.35	\$75
4a	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	✓	\$4.49	\$75
4b	\$1.85	\$30	\$45	\$15	-	\$250	-	-	200%	✓	\$4.49	\$75
5a	\$1.85	\$30	\$45	\$15	-	\$250	-	\$490	200%	-	\$4.87	\$75
5b	\$1.85	\$30	\$45	\$15	-	\$250	-	\$490	200%	-	\$4.87	\$75
5c	\$1.85	\$5	\$45	\$15	-	\$250	-	\$490	200%	-	\$4.82	\$75
5d	\$1.85	\$15	-	-	\$82	-	\$83	\$490	200%	-	\$4.55	\$85
5e	\$1.85	\$30	\$45	\$15	-	\$250	-	\$490	200%	-	\$4.87	\$75
5f	\$1.85	\$30	\$45	\$15	-	\$250	-	\$490	200%	-	\$4.87	\$75
5g	\$1.85	\$30	\$45	\$15	-	\$250	-	\$490	200%	-	\$4.87	\$75
6a	\$1.85	\$30	-	-	\$82	-	\$83	-	200%	✓	\$4.17	\$85
6b	\$1.85	\$30	-	-	\$82	-	\$83	-	200%	✓	\$4.17	\$85
6c	\$1.85	\$30	-	-	\$82	-	\$83	-	200%	✓	\$4.17	\$85
6d	\$1.85	\$30	-	-	\$82	-	\$83	-	200%	✓	\$4.17	\$85
6e	\$1.85	\$30	-	-	\$82	-	\$83	-	200%	✓	\$4.17	\$85

Source: DOWL 2018. Gradient: Green = lowest cost; yellow = mid-range cost, red = highest cost in segment.

### 3.4 Screening Element D – Spacing

The intent of Screen D is to assess spacing distances between reset points and potentially favorable safety rest area sites advanced from Screen A within each study segment. Table 11 lists distances in miles between existing reset points and potentially favorable sites. RP location for reset points was measured at the center of the city limits or at the access point for existing safety rest areas. Distances from reset points to favorable sites were measured to the nearest RP. While intervals greater than 70 miles provide a reduced level of service for travelers, intervals less than 70 miles represent a degree of redundancy and inefficient investment for MDT.



**Table 11: Spacing Distances**

Site	Troy	Kalispell						
1a	38.6	64.3						
1b	41.2	61.9						
1c	46.0	56.8						
1d	49.3	53.9						
1e	55.8	44.9						
Site	Col. Falls	3a	3b	3c	3d			
2a	72.1	73.2	76.4	92.2	100.7			
2b	89.3	53.6	56.8	72.6	81.1			
2c	95.0	49.7	52.9	68.7	77.2			
2d	99.5	44.1	47.3	63.1	71.6			
2e	105.0	39.8	43.0	58.8	67.3			
Site	2a	2b	2c	2d	2e	Havre		
3a	73.2	53.6	49.7	44.1	39.8	99.9		
3b	76.4	56.8	52.9	47.3	43.0	85.9		
3c	92.2	72.6	68.7	63.1	58.8	81.2		
3d	100.7	81.1	77.2	71.6	67.3	70.0		
Site	Havre	5a	5b	5c	5d	5e	5f	5g
4a	54.6	61.0	63.0	65.0	69.6	73.8	76.7	85.1
4b	66.3	53.4	55.4	57.4	62.0	66.2	69.1	77.5
Site	4a	4b	6a	6b	6c	6d	6e	
5a	61.0	53.4	70.7	73.0	81.8	82.9	89.5	
5b	63.0	55.4	68.3	70.6	79.4	80.5	87.1	
5c	65.0	57.4	66.2	68.5	77.3	78.4	85.0	
5d	69.6	62.0	62.2	64.5	73.3	74.4	81.0	
5e	73.8	66.2	57.1	59.4	68.2	69.3	75.9	
5f	76.7	69.1	54.3	56.6	65.4	66.5	73.1	
5g	80.6	73.0	50.9	53.2	62.0	63.1	69.7	
Site	5a	5b	5c	5d	5e	5f	5g	Culbertson
6a	70.7	68.3	66.2	62.2	57.1	54.3	50.9	70.2
6b	73.0	70.6	68.5	64.5	59.4	56.6	53.2	67.2
6c	81.8	79.4	77.3	73.3	68.2	65.4	62.0	59.2
6d	82.9	80.5	78.4	74.4	69.3	66.5	63.1	58.2
6e	89.5	87.1	85.0	81.0	75.9	73.1	69.7	51.5

Source: DOWL 2018.

Note: All distances listed in miles. RP location for reset points was measured at the center of the city limits or at the access point for existing safety rest areas. Distances from reset points to recommended sites were measured to the nearest RP. Sum of distances does not equal total length of study corridor.

Table 12 presents the absolute difference between the ideal 70-mile interval defined for this study and the actual distance between each site and adjacent sites/reset points. The gradient scale indicates green for differences of approximately 5 miles (65 to 75 miles from the nearest adjacent site/reset point), yellow for differences of approximately 10 miles (60 to 80 miles from the nearest adjacent site/reset point), and red for differences of approximately 15 miles or more ( $\leq 55$  miles to  $\geq 85$  miles).

Spacing performance for individual sites is dependent on the location of adjacent sites in relation to reset points. Additionally, in some cases, sites achieve better performance (lower absolute difference) in one direction and poorer performance (higher absolute difference) in the other. For this study, the best performing sites were determined based on their ability to balance distances in each direction and most closely approach the 70-mile ideal. Best performing combinations of sites include the following.

- Troy to Kalispell: Site 1d best balances the distances between Troy and Kalispell.
- Columbia Falls to Havre: 2b and 3c or 3d best balance the interval distances between Columbia Falls and Havre.
- Havre to Culbertson: 4b, 5d, and 6b best balance the interval distances between Havre and Culbertson

**Table 12: Spacing Comparison Against Ideal 70-mile Interval**

Site	Troy	Kalispell
1a	31.4	5.7
1b	28.8	8.1
1c	24	13.2
1d	20.7	16.1
1e	14.2	25.1

Site	Col. Falls	3a	3b	3c	3d
2a	2.1	3.2	6.4	22.2	30.7
2b	19.3	16.4	13.2	2.6	11.1
2c	25	20.3	17.1	1.3	7.2
2d	29.5	25.9	22.7	6.9	1.6
2e	35	30.2	27	11.2	2.7

Site	2a	2b	2c	2d	2e	Havre
3a	3.2	16.4	20.3	25.9	30.2	29.9
3b	6.4	13.2	17.1	22.7	27	15.9
3c	22.2	2.6	1.3	6.9	11.2	11.2
3d	30.7	11.1	7.2	1.6	2.7	0

Site	Havre	5a	5b	5c	5d	5e	5f	5g
4a	15.4	9	7	5	0.4	3.8	6.7	15.1
4b	3.7	16.6	14.6	12.6	8	3.8	0.9	7.5

Site	4a	4b	6a	6b	6c	6d	6e
5a	9	16.6	0.7	3	11.8	12.9	19.5
5b	7	14.6	1.7	0.6	9.4	10.5	17.1
5c	5	12.6	3.8	1.5	7.3	8.4	15
5d	0.4	8	7.8	5.5	3.3	4.4	11
5e	3.8	3.8	12.9	10.6	1.8	0.7	5.9
5f	6.7	0.9	15.7	13.4	4.6	3.5	3.1
5g	10.6	3	19.1	16.8	8	6.9	0.3

Site	5a	5b	5c	5d	5e	5f	5g	Culbertson
6a	0.7	1.7	3.8	7.8	12.9	15.7	19.1	0.2
6b	3	0.6	1.5	5.5	10.6	13.4	16.8	2.8
6c	11.8	9.4	7.3	3.3	1.8	4.6	8	10.8
6d	12.9	10.5	8.4	4.4	0.7	3.5	6.9	11.8
6e	19.5	17.1	15	11	5.9	3.1	0.3	18.5

Source: DOWL 2018. Values indicate absolute difference between ideal 70-mile interval and actual distances between adjacent sites/reset points. Gradient: Green = differences of approximately 5 miles (65 to 75 miles from the nearest adjacent site/reset point), yellow = differences of approximately 10 miles (60 to 80 miles from the nearest adjacent site/reset point), red = differences of approximately 15 miles or more (≤55 miles to ≥85 miles).

### 4.0 Recommended Sites

Table 13 synthesizes information on site characteristics (Screen B), cost (Screen C), and spacing (Screen D) for the best performing sites under each screening element. In some cases, a single site performs best (or equally well as other sites) under all three screening elements. In other cases, site performance varies by screening element. Rationale for recommended sites is provided below.

**Table 13: Best Performing Sites – Characteristics, Costs, Spacing**

Segment	Site	Screen B Total	Screen C Total (\$MILLIONS)	Screen D (Best Balance)	Recommended Site
1	1d	1	\$4.29	✓	1d
2	2a	1	\$4.16	x	2a
	2b	1	\$4.51	✓	
	2c	1	\$4.51	x	
3	3a	2	\$4.04	x	3a
	3c	-3	\$4.38	✓	
	3d	-2	\$4.35	✓	
4	4a	-1	\$4.49	x	4a
	4b	-3	\$4.49	✓	
5	5d	0	\$4.55	✓	5d
6	6b	0	\$4.17	✓	6c
	6c	1	\$4.17	x	
	6d	1	\$4.17	x	
	6e	1	\$4.17	x	

- Troy to Kalispell: Site 1d performs best in all scoring categories. It has the highest Screen B total, costs the least, and best balances distances between reset points. Site 1d is recommended for advancement from this study.
- Columbia Falls to Havre: Site performance varies by screening element. Two possible site combinations could be considered.
  - Combination 1: Sites 2a and 3a perform best (or equally well as other sites) in terms of Screen B characteristics and cost the least. Spacing would be unevenly distributed with intervals of 72.1, 73.2, and 99.9 miles traveling west to east between reset points. Two of the three intervals would nearly achieve the 70-mile ideal, while one interval would exceed 70 miles by nearly 30 miles.
  - Combination 2: Sites 2b and 3d best balance interval distances between Columbia Falls and Havre at 89.3, 81.1, and 70.0 miles. However, Site 2b costs approximately \$350,000 more than Site 2a, and Site 3d scores 4 points lower than Site 3a based on poor proximity to existing public water/wastewater services and poor proximity to populated areas offering maintenance staffing support.

- Recommendation: This study recommends advancing Sites 2a and 3a given superior site characteristics, lower costs, and ideal spacing for two of the three intervals between reset points.
- Havre to Culbertson: Site performance varies by screening element. Two possible site combinations could be considered.
  - Combination 1: Selecting Sites 4a, 5d, and 6c would result in the best site characteristics and one of the lowest cost combinations. Spacing intervals would be uneven at 54.6, 69.6, 73.3, and 59.2 miles traveling west to east from Havre to Culbertson. Two of the four intervals would nearly achieve the 70-mile ideal, while two shorter intervals would be less than 70 miles by approximately 10 to 15 miles.
  - Combination 2: Selecting Sites 4b, 5d, and 6b would best balance interval distances between reset points at 66.3, 62.0, 64.5, and 67.2 miles traveling west to east from Havre to Culbertson. Costs would be equal to Combination 1. However, Site 4b scores 2 points lower than Site 4a, and Site 6b scores 1 point lower than 6c based on poor proximity to populated areas.
  - Recommendation: This study recommends advancing Sites 4a, 5d, and 6c given superior site characteristics and ideal spacing for 2 of the 4 intervals between reset points.

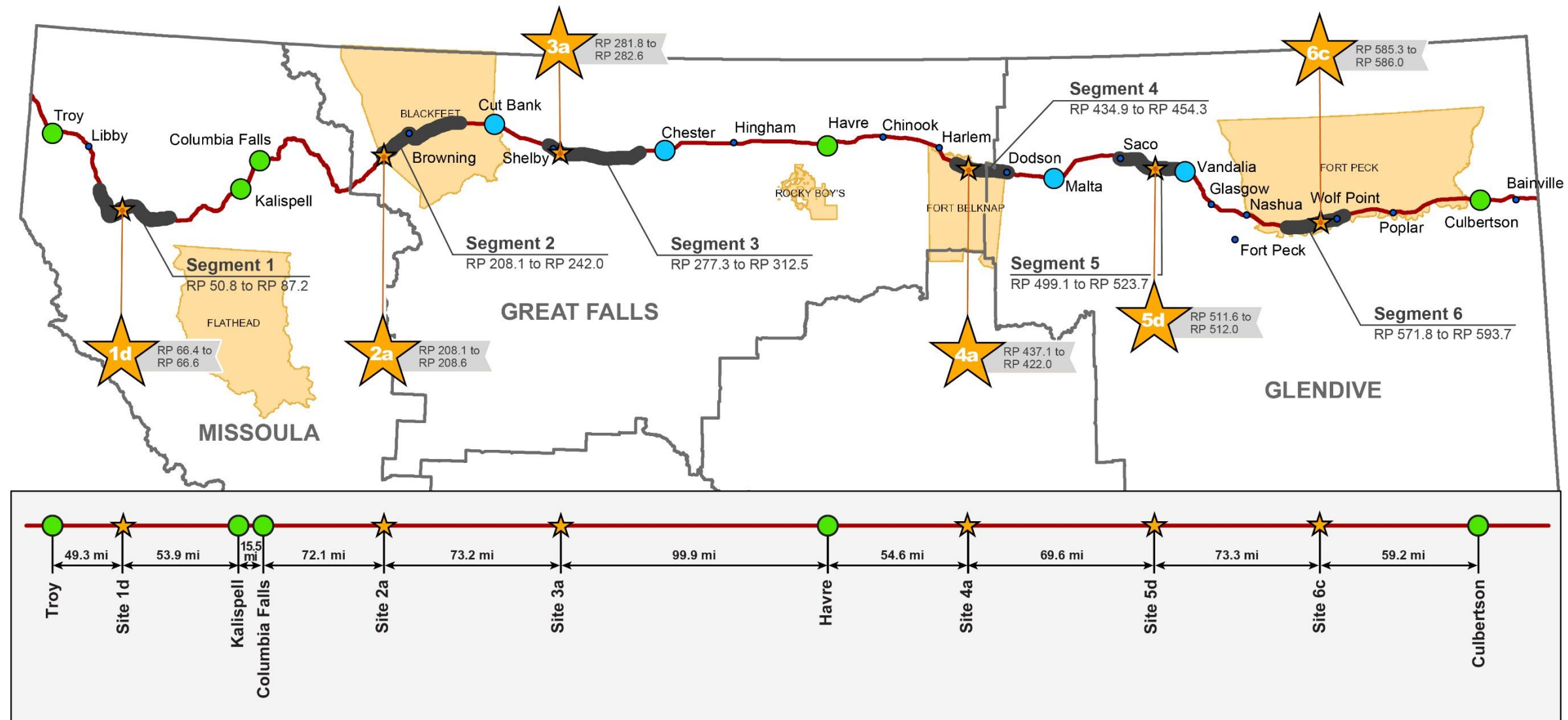
Figure 7 illustrates corridor-wide spacing with recommended safety rest area sites marked by a gold star, seasonal sites (including the Vandalia Safety Rest Area and CPRAs) marked by a blue circle, and reset points marked by a green circle. Based on the distances between reset points and recommended year-round safety rest area sites, five intervals are less than the desired 70-mile spacing, ranging from 49 to 59 miles. Four intervals between favorable sites and reset points are greater than the desired 70-mile spacing, ranging from 72 to 100 miles.

If recommended sites are determined in the future to be infeasible or less desirable due to issues such as right-of-way acquisition challenges or inability to connect to municipal water and wastewater services, MDT could consider advancing other potentially favorable sites within each study segment.

For those sites carried forward to construction, further evaluation of all environmental factors, including presence of federally listed threatened and endangered species and their habitat, bald and golden eagles and their nests, sage grouse habitat, and wetlands would need to be completed. Construction timing limits may need to be implemented at sites located in grizzly bear habitat (limited to no work at dawn, night, and dusk), at sites near bald or golden eagle nests during breeding season (February 15 to August 15), and potentially for sites located in sage grouse habitat.

A cultural resource survey may be necessary for any construction project resulting from this study. An evaluation of environmental factors including but not limited to Section 106 of the National Historic Preservation Act would be required.

Figure 7: Recommended Sites and Corridor Distances



**LEGEND**

- ★ Recommended Site
- Reset Point
- Seasonal Rest Areas
- US 2 Roadway
- MDT Maintenance District Boundaries

Note: RP location for reset points was measured at the center of the city limits or at the access point for existing safety rest areas. Distances from reset points to recommended sites were measured to the nearest RP. Sum of distances does not equal total length of study corridor.

### 5.0 Segment Prioritization

This study recommends prioritizing safety rest area investments based on current service gaps on US 2. Using a needs evaluation approach, MDT considered which site(s) would provide the greatest investment value based on a broader interpretation of available stopping opportunities compared to the initial segment and reset point identification process referenced in Section 1.1. Table 14 summarizes distances in the east and west directions from the midpoint of each recommended site to the nearest MDT Safety Rest Area, CPRA, or community with a population of at least 1,500 providing a minimum of one commercial establishment with 24-hour services.

**Table 14: Distance between Recommended Sites and Adjacent Services**

Site	Libby (RP 32)	Kalispell (RP 121)	Columbia Falls (RP 136.5)	Cut Bank (RP 255.5)	Shelby (RP 279.5)	Chester (RP 322)	Havre (RP 382.5)	Malta (RP 472)	Vandalia RA (RP 527)	Glasgow (RP 541.5)	Wolf Point (RP 590.5)	Culbertson RA (RP 645)
1d (RP 66.5)	34.5	54.5										
2a (RP 208.5)			72	47								
3a (RP 282)				26.5	2.5							
4a (RP 439.5)							57	32.5				
5d (RP 512)									15	29.5		
6c (RP 582.5)										41	8	

Approximate distances between recommended sites and adjacent services listed in miles.

Table 15 lists the priority of each recommended site based on the sum of distances to the closest stopping opportunities in descending order from greatest to smallest distance.

**Table 15: Priority Order According to Greatest Need**

Site	Closest Services (East)	Closest Services (West)	Distance (Miles)
2a	Columbia Falls	Cut Bank	119
4a	Havre	Malta	89.5
1d	Libby	Kalispell	89
6c	Glasgow	Wolf Point	49
5d	Vandalia SRA	Glasgow	44.5
3a	Cut Bank	Shelby	29

In addition to service gaps, MDT will consider other factors beyond the scope of this study, including funding and adjacent service availability at the time of project nomination, ease of right-of-way acquisition or easement, and feasibility/capacity to connect to municipal water and wastewater services. Challenges associated with these efforts may alter the priority order in which safety rest area improvements within each segment are addressed.

## 6.0 Conclusion

This Improvement Options Report considers opportunities for full-service, year-round safety rest areas along the US 2 corridor to address current gaps in service. Considered locations include existing seasonal sites and new sites within six discrete study segments.

Of the four seasonal sites at Vandalia, Cut Bank, Chester, and Malta, none are recommended for rehabilitation/reconstruction due to safety concerns, anticipated impacts to existing city parks and adjacent land uses, and potential Section 4(f) and 6(f) involvement.

The study considers new sites within each of the defined study segments. A fatal flaw analysis (Screen A) eliminates unfavorable locations. Remaining potentially favorable sites are assessed based on site characteristics (Screen B), cost (Screen C), and spacing (Screen D). Recommended sites best address these screening elements, with superior site characteristics outweighing more evenly spaced intervals. Recommended sites include 1d, 2a, 3a, 4a, 5d, and 6c.

The study recommends prioritizing safety rest area investments based on current service gaps on US 2, with initial investment in Segment 2 potentially followed by Segments 4 and 1. Other factors such as funding, right-of-way, municipal service connection, changes in corridor stopping opportunities in communities, and other MDT safety rest area needs throughout the state may alter the priority order in which MDT addresses improvements in these corridor segments.

In Segments 6, 5, and 3, current spacing between MDT Safety Rest Areas, CPRAs, and communities with a population of at least 1,500 providing at least one stopping opportunity at a commercial establishment with 24-hour services does not justify MDT investment in new year-round MDT facilities. Rest area development is not recommended in these locations.



