



THEODORE ROOSEVELT PRESIDENTIAL LIBRARY

DISTRIBUTED SITE PLANNING
FINAL REPORT | MARCH 2020

THEODORE ROOSEVELT
PRESIDENTIAL LIBRARY FOUNDATION

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A dark, blue-tinted photograph of a bison standing in a grassy field. In the background, there is a rocky hillside with some sparse vegetation. The overall mood is somber and naturalistic.

1.0 EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

A key component to developing a world class library and museum is finding a site that embodies a world class visitor experience. The Theodore Roosevelt Presidential Library Foundation (TRPLF) Board determined that the most appropriate site for that world class visitor experience is Medora, North Dakota. The Board clearly stated this in the Project Brief that can be found on the TRPLF website trlibrary.com. The next step for the board is to identify a specific site 'in' or 'immediately adjacent' to Medora, ND that best exemplifies that World Class Visitor Experience.

CEO, Ed O'Keefe assigned Ken Vein, Director of Design and Construction, the initial task of reviewing previously identified sites, identifying potential new sites, and performing an in-depth assessment with the goal of recommending a single site that met the vision of the TRPLF. The consultant team of JLG Architects, Coen + Partners Landscape Architects, AE2S Engineers and Mortenson Construction was engaged to provide expertise and experience in site assessment. The team spent considerable time visiting and walking the potential sites, analyzing maps and site data, as well as meeting with local officials resulting in the identification of 11 potential sites worthy of additional analysis

The Site Selection Matrix documents and summarizes the team's analysis. It included JLG and Coen + Partners team rating the location of each potential site based on criteria identified in the Project Brief, prepared by D. R. Horne for the Theodore Roosevelt Presidential Library Foundation. The AE2S team rated each site based on extensive objective engineering site development standards criteria. The Mortenson team performed the financial rating - assessing cost, constructability and construction schedule implications. The composite sum of all three ratings for each site led to individual site rankings that were compared to each other.

Next, a Risk Assessment was performed for each site. The risk assessment identifies risks involved to realistic develop each site, potential mitigation options and impacts on time and cost. I have assumed acquisition of land on any site currently owned by Forest Service can be accomplished in a 6 to 9 month period. It is important to note this is an estimate, as the process for purchasing Forest Service land and exact timeline is still being worked on.

Both reports are subjective, but are supported with facts and analysis, that lead to a measurable recommendation. But what makes this recommendation so strong is the recommended site also had unanimous support from the entire team, simply based on the feelings we each experienced the first-time we set foot on the site. This was the only site that supported the feeling 'we are not only looking at the Badlands, we are in the Badlands'.

The Team recommends the Maah Daah Hey Trail site as the best site to support a World Class Experience. The Team analysis identifies the benefits of this site. The Risk Assessment shows risks and identifies opportunities to mitigate those risks. Site photography is included to provide a "feel" for the site — but it must be experienced to fully grasp the beauty and total immersion experience of this site. The proposed site Boundary remains undefined and will require input from the Design Architect, as well as negotiation with the U.S. Forest Service and other concerned parties. The site intersects with the Maah Daah Hey Trail, as illustrated in the trail map. The dramatic topography is illustrated in the Site Contour Map. Adjacent land ownership can be seen in the Land Ownership map.

1.0 EXECUTIVE SUMMARY

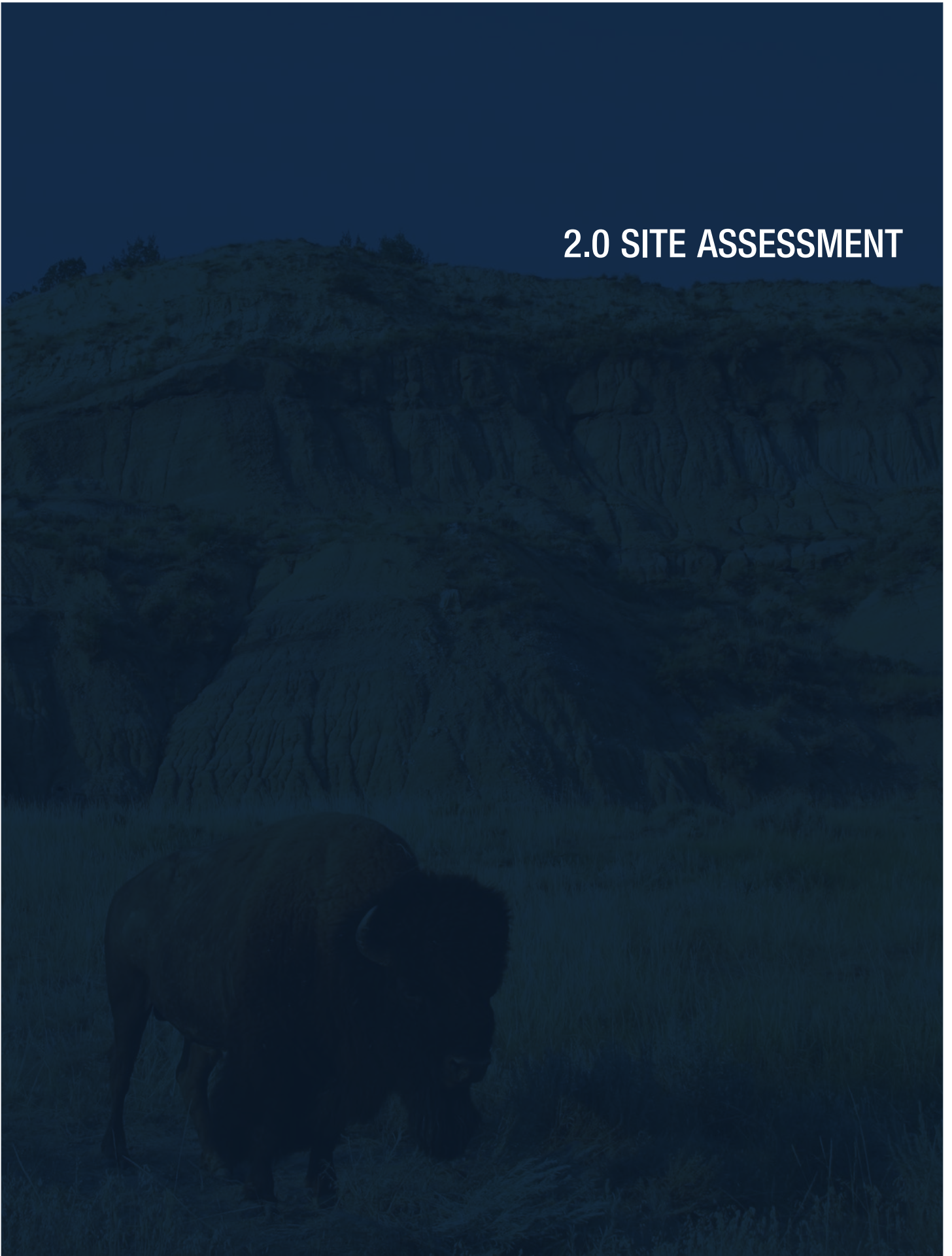
Early on in the site selection process it became clearly evident that selecting a site for the Library was much more than finding a single site. It clearly identified the need for distributed site planning. It wasn't just about selecting a site for the library but how the selected site would be a part of a network of sites that would partner with each other and make each other stronger. It was not a matter of one site 'or' another, but the selected site 'and' all the other sites. Those other sites included Downtown Medora, National Park Visitor Center, Painted Canyon, Medora Musical, Chateau de Mores, Chimney Park, etc. An initial map of this network of sites is shown in the Appendix.

The Team spent considerable time drilling down on the Theodore Roosevelt National Park site. This location within the National Park and adjacent to downtown Medora was a powerful location. This site supports Governor Burgum's highly successful 'Main Street Initiative' and was supported by many citizens that expressed opinions at an Open House held at Medora City Hall in March 2020. But there were offsetting issues that seriously impacted the location. First, it did not align with the location criteria in the Project Brief. Second, at approximately ten acres the size of the site was small, leading to uncertainty if there was enough area to accommodate the Presidential Library, required parking and room for future expansion. Third, the entire site is in the 100-year flood plain which would have to be mitigated to assure the long-term safety and security of the Presidential Library. Some ND Legislators have committed that the site would not be in the flood plain. Fourth, acquiring the site would entail considerable cost and time as the Department of Interior and National Park Service land acquisition process would take approximately two years, as well as all existing facilities would have to be relocated. This process would entail finding a new site, designing and rebuilding existing facilities and demolition of those facilities before the Presidential Library could begin construction.

There are three issues that will influence the final location of the Library on the selected site. First is geotechnical analysis of the soils at the precise building location. Second is compliance with Billings County 'Hillside and Ridgeline Overlay District' planning and zoning requirement for any site that is on or adjacent to a hillside. Third is specific to U.S. Forest Service Grasslands sites currently leased to Medora Grazing Association, where, by Federal Law, Medora Grazing Association has First Right of Refusal to purchase that site.

In summary, the Maah Daah Hey Trail site best aligns with the goals and aspirations of the TRPLF to create a memorable immersive Badlands experience that captures the spirit of the area and the restorative qualities of the raw environment that brought Theodore Roosevelt to North Dakota — in the process transforming him into the man who would become one of the most dynamic characters and influential presidents in the history of the United States.

2.0 SITE ASSESSMENT



SITE SELECTION SCORING MATRIX

Criteria		Medora							Badlands														
		TR National Park		Chimney Park		Campground		Mile Marker 903		Greater Stables		Cell Phone Tower		Airport		Amphitheater Zoo		Lower Draw		U.S. Forest Service Butte		Maah Dagh Hey Trail	
		Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF	Score	Score xWF
Weight Factor																							
Location																							
Breathtaking Setting	4	1	4	2	8	1	4	3	12	3	12	1	4	3	12	0	0	4	16	3	12	4	16
Amazing View Shed	4	1	4	1	4	2	8	3	12	2	8	3	12	3	12	0	0	3	12	3	12	4	16
Captures Spiritual and Physical Connection to the Badlands	5	2	10	1	5	1	5	3	15	3	15	1	5	3	15	1	5	3	15	3	15	4	20
Supports Partnerships	3	4	12	3	9	2	6	2	6	2	6	2	6	2	6	2	6	2	6	3	9	3	9
Subtotal			30		26		23		45		41		27		45		11		49		48		61
Site Development Standards																							
Land Acquisition	5	1	5	3	15	4	20	3	15	2	10	3	15	2	10	4	20	4	20	3	15	3	15
Regulatory Compliance	5	2	10	2	10	2	10	3	15	3	15	3	15	4	20	3	15	3	15	4	20	3	15
Support Infrastructure	3	4	12	4	12	3	9	1	3	1	3	1	3	1	3	3	9	2	6	3	9	3	9
Subtotal			27		37		39		33		28		33		33		44		41		44		39
Cost Awareness																							
Costs	2	2	4	3	6	2	4	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6
Realistic Timeline	4	1	4	3	12	3	12	3	12	3	12	3	12	3	12	4	16	4	16	3	12	3	12
Risk & Uncertainty	4	2	8	3	12	3	12	3	12	3	12	3	12	3	12	4	16	4	16	4	16	4	16
Subtotal			16		30		28		30		30		30		30		38		38		34		34
Grand Total			73		93		90		108		99		90		108		93		128		126		134

Weight Factor

- 1 - Not Very Important
- 2 - Somewhat Important
- 3 - Important
- 4 - Very Important
- 5 - Essential

Score

- 0 - Unacceptable (least desirable/least cost effective)
- 1 - Poor
- 2 - Fair
- 3 - Good
- 4 - Excellent (most desirable/most cost effective)

DEFINITION OF CRITERIA

Breathtaking Setting

- Immersed in the Badlands
- Representative of the Badlands Experience

Amazing View Shed

- Distant Views of the Badlands
- No, or Minimal, Inappropriate Adjacent Uses

Captures Spiritual and Physical Connection to the Badlands

- Celebrates Nature as a Restorative Force
- Encourages Engagement in Natural World/Badlands

Supports Partnerships

- Synergy with Adjacent Uses
- Walkability to Adjacent Uses

Land Acquisition

- Acreage Availability/Future Expansion
- Owner Willingness to Sell
- Acquisition Process/Timeline
- Ownership of Adjacent Properties
- Existing Facilities Demolition/Replacement

Regulatory Compliance

- Support of Local Officials
- City/County Planning, Zoning & Ordinance Compliance
- Floodplain Implications

Support Infrastructure

- Street & Highway
- Parking
- Stormwater
- Domestic Water
- Wastewater
- Electric/Gas
- Internet Service
- Soils/Geotech Implications

Costs

- Capital Construction Costs
- Cost Share from Other Sources

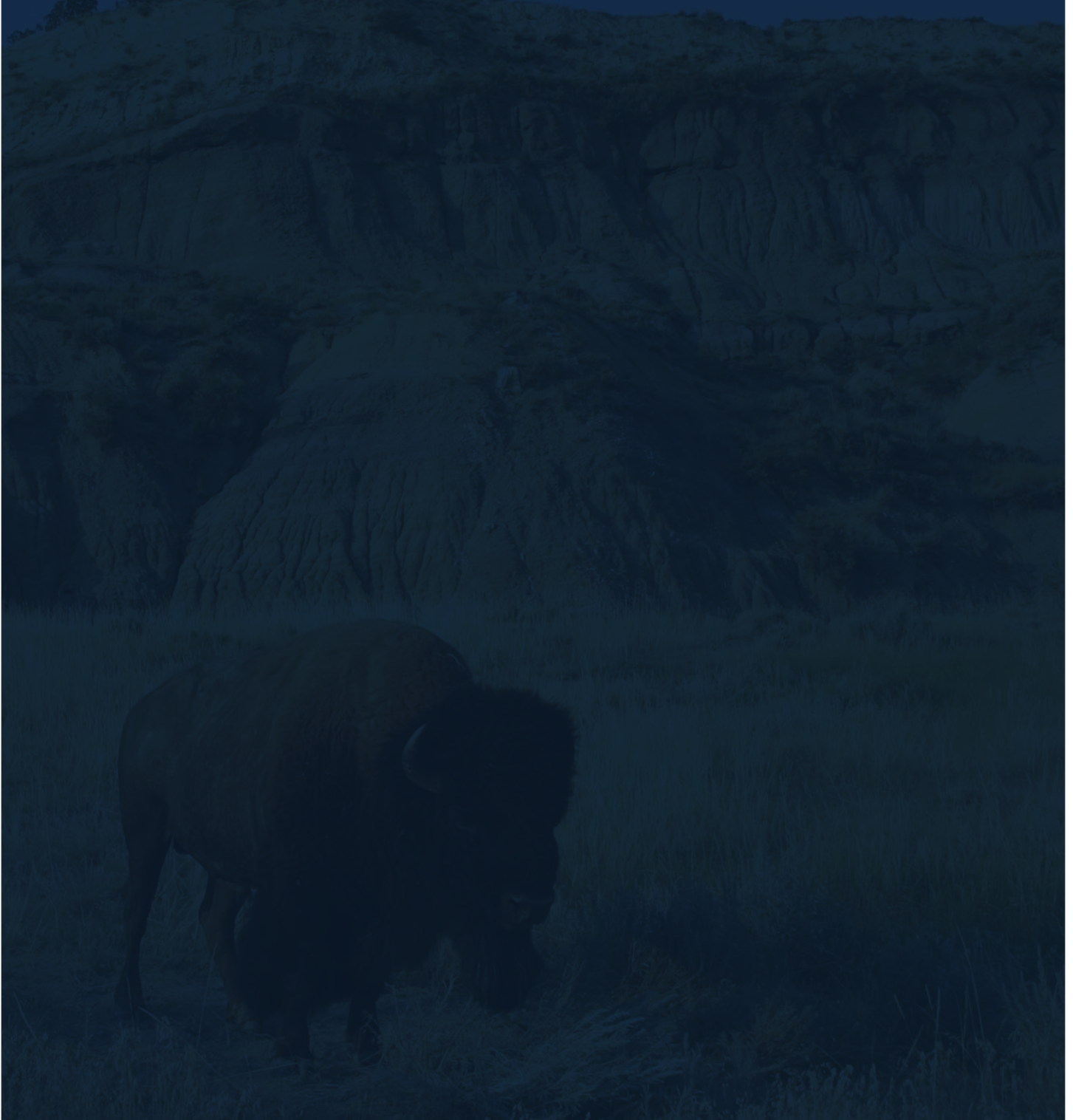
Realistic Timeline

- Site Acquisition
- Fundraising Momentum
- Escalation Costs

Risk & Uncertainty

- To Timeline Success
- To Acquisition Success

3.0 RECOMMENDED SITE – MAAH DAAH HEY TRAIL SITE



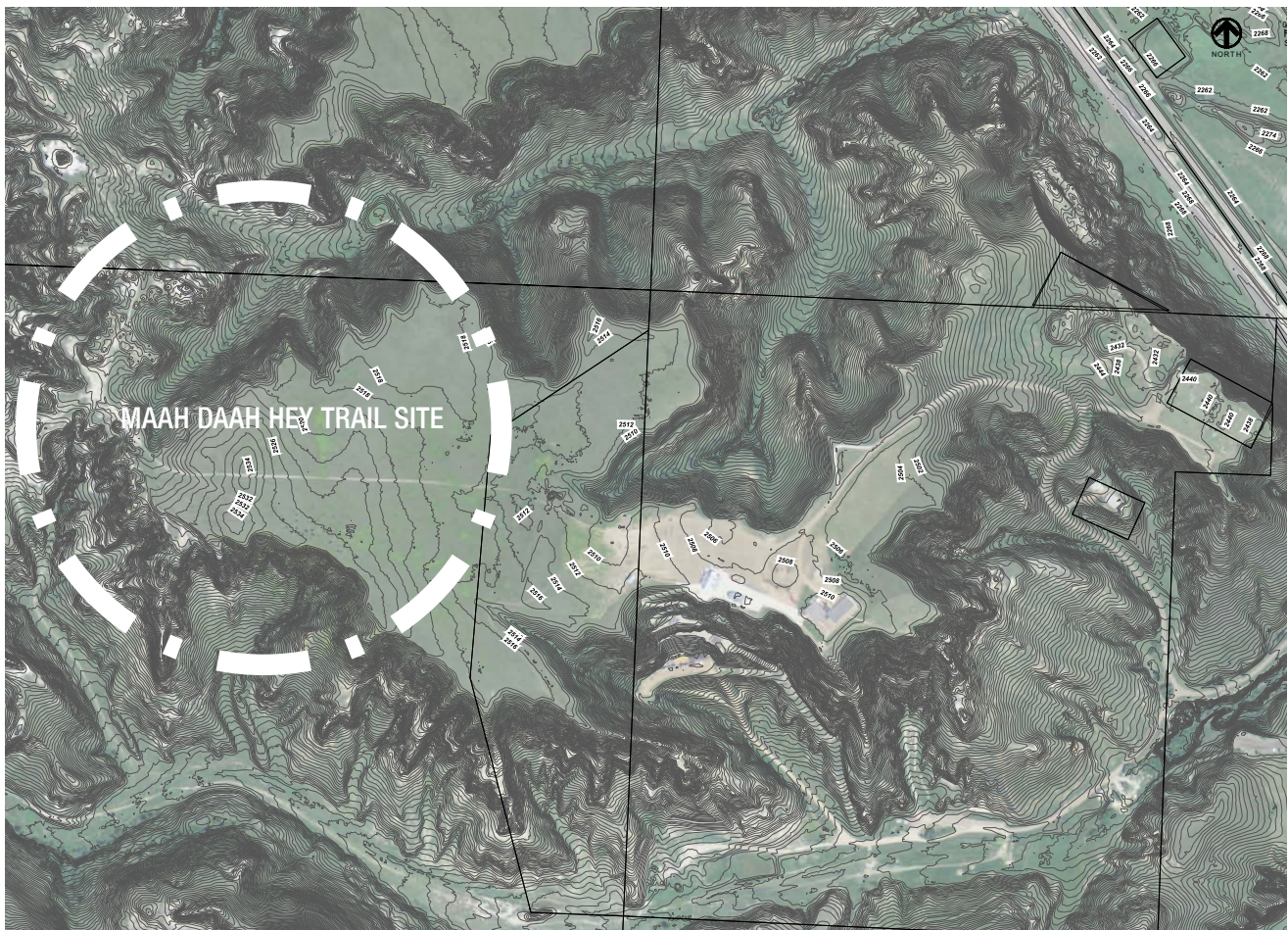
SITE BOUNDARY

The Maah Daah Hey Trail Site will consist of approximately 60 acres with the finally boundary to be determined. The landscape at the top of the Butte is a fairly homogenous grassland while the Badlands area is a jumbled mix of grasses, sage and small cedar trees amongst exposed rock and gravel.



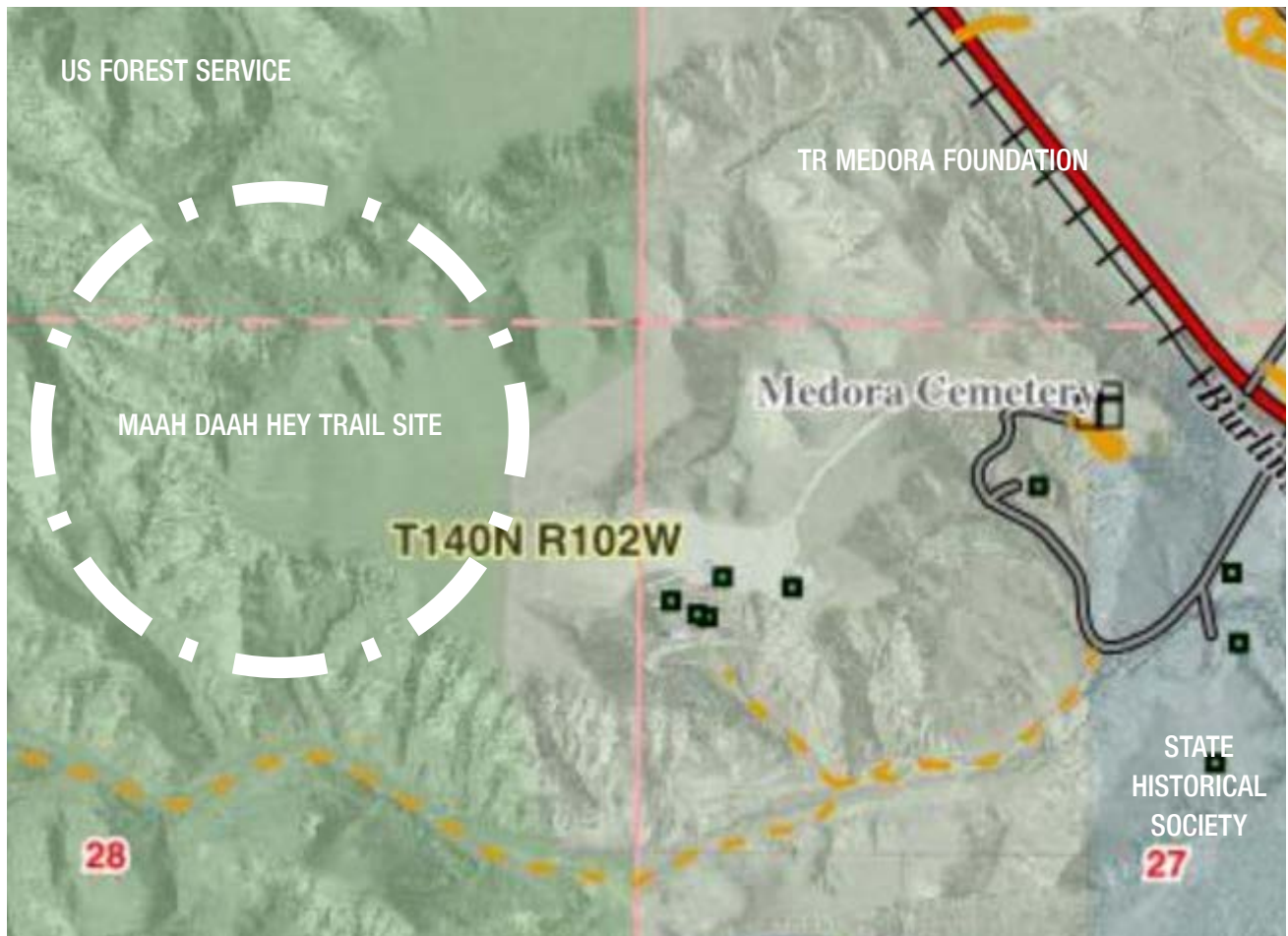
CONTOUR MAP

The Maah Daah Hey Trail Site encompasses both flat Butte top and rugged Badlands. The top of the Butte is fairly flat with a gentle slope that leads to a distinct edge in many places. The experience from along the edge ranges from a precipitous drop-off to a more gentle descent into the Badlands. There are 360 degree views from the top of the Butte and spectacular panoramic views of the Badlands and Little Missouri River plain from the edges of the Butte. Once descended into the Badlands there is a surrounded immersive experience highlighted by captured distant Badlands views down the “draws”.



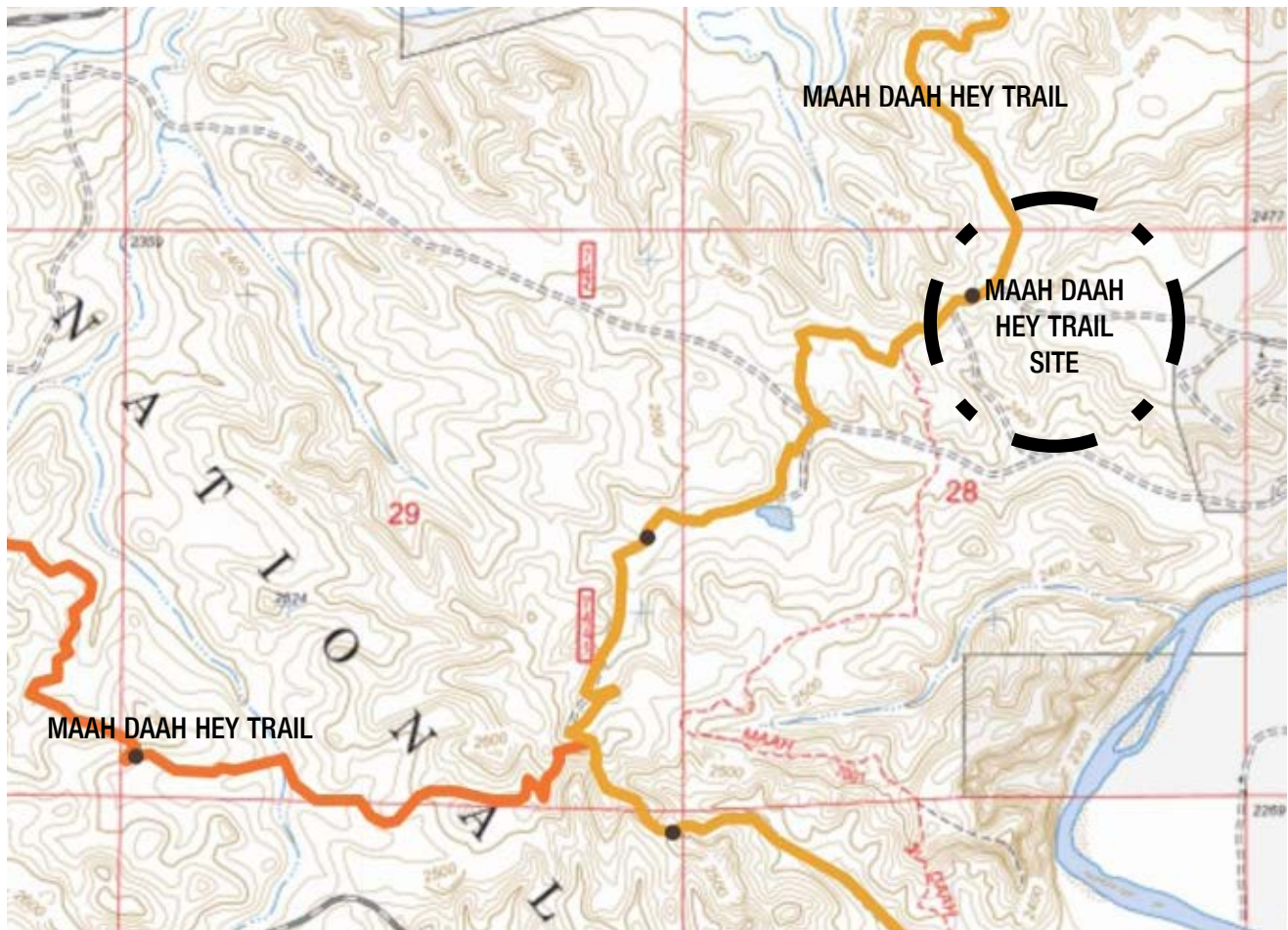
IMMEDIATE SURROUNDINGS LAND OWNERSHIP MAP

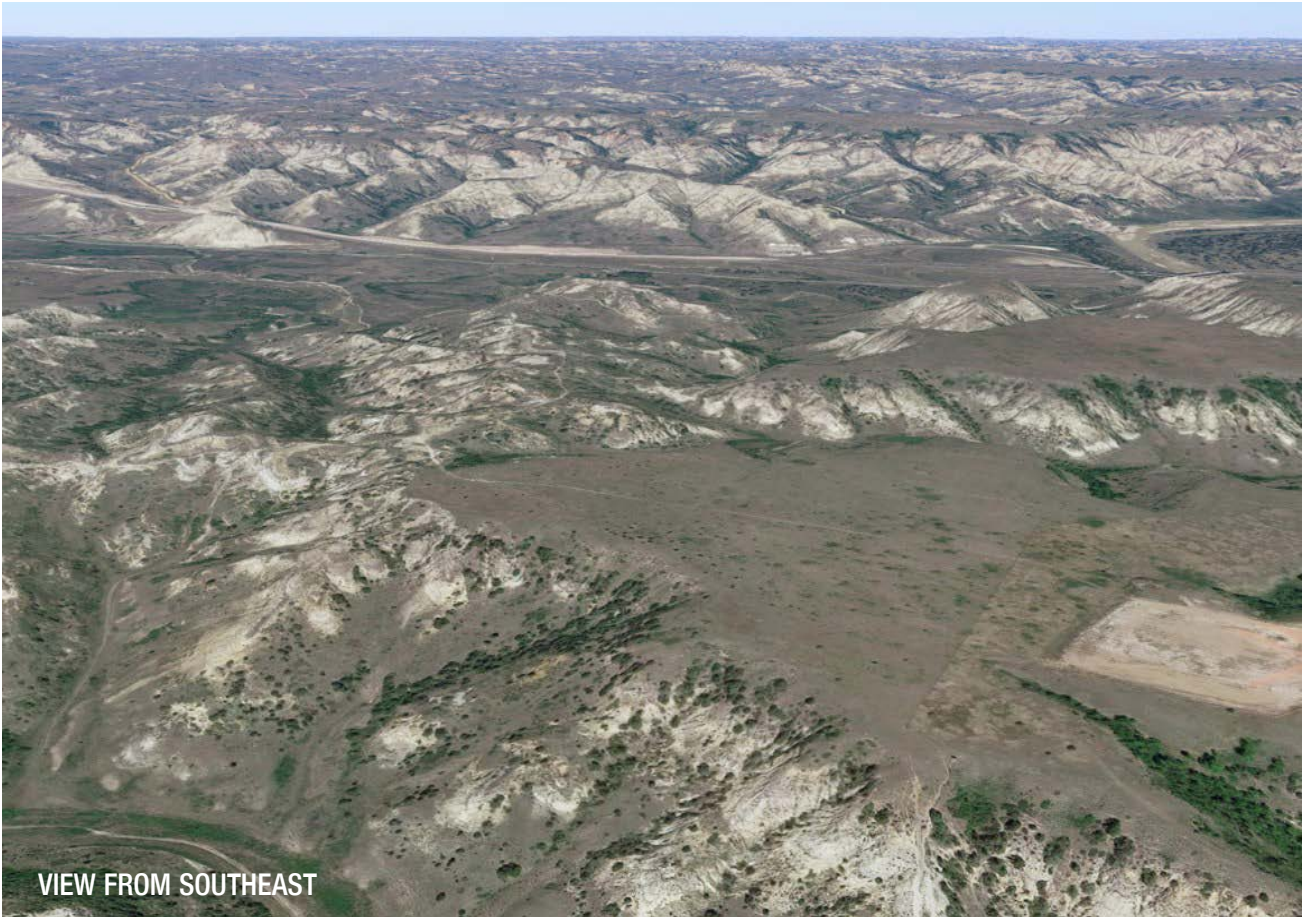
The Maah Daah Hey Trail Site is entirely within U. S. Forest Service land and is encircled by U. S. Forest Service land to the north, south and west. Much of this land is leased to the Medora Grazing Association and is currently used for cattle and horse grazing. Land immediately east of the site is owned by the Theodore Roosevelt Medora Foundation (TRMF). The major use is for activities associated with the Medora Musical, which includes the Burning Hills Amphitheater, support facilities, the Pitchfork Fondue pavilion, paved parking and gravel overflow parking. Additional TRMF land is used for horse grazing.



MAAH DAAH HEY TRAIL MAP

The Maah Daah Hey Trail Site intersects the 144-mile-long Maah Daah Hey Trail as it traverses roughly north to south through North Dakota. The Trail travels through some of the most spectacular areas of the Badlands and is considered one of the premier hiking, biking, backpacking, horseback riding and camping opportunities in the United States. It crosses the Little Missouri River twice, and covers high ridges to deep drainages and rough Badlands to rolling prairies.





MAAH DAAH HEY TRAIL SITE

OPPORTUNITIES:

- Encompasses Butte grasslands and rugged Badlands
- Portions are surrounded by the Badlands and “draws” creating an immersive experience
- Panoramic views from Butte top and long-range Badlands views along “draws”
- Large site that provides a range of outdoor experiences
- Large site that allows for future expansion
- Immediate connection to Maah Daah Hey Trail
- Immediate synergy with Medora Musical events
- 1 ½ miles from heart of Medora
- Easy access off Chateau Road and Burning Hills Amphitheater parking area
- Flat land of Butte top supports parking opportunities
- Nearby utilities

REMAINING CHALLENGES:

- Potential geotechnical/structural complications of an erosive environment
- Hillside and Ridgeline Overlay District impact
- Land acquisition timing and process with U. S. Forest Service



SITE PHOTOGRAPHY



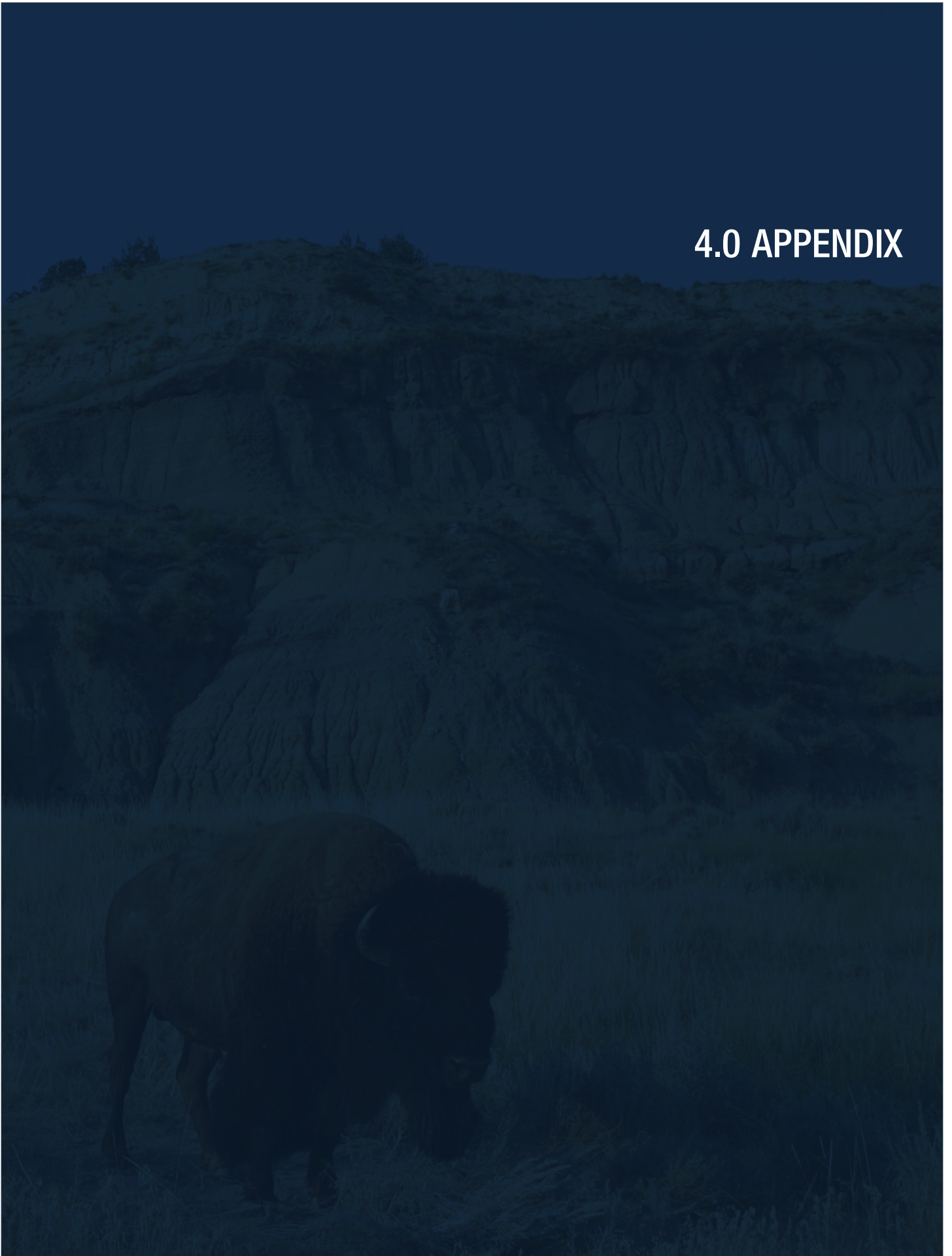
SITE PHOTOGRAPHY



SITE PHOTOGRAPHY



4.0 APPENDIX



SITE SELECTION PROCESS

SITE SELECTION GUIDING PRINCIPLES

- Site location aligns with the TRPL Project Brief
- Site aligns with TRPL Mission, Vision, and Values
- Site answers the question: 'Where would TR site this Library today?'

EVALUATION CATEGORIES

- Location
- Site Development Standards
- Cost Awareness

LOCATION CRITERIA

- Breathtaking Setting
- Amazing View Shed
- Spiritual and Physical Connection to the Badlands
- Support Partnerships

SITE DEVELOPMENT STANDARDS CRITERIA

- Land Acquisition
- Regulatory Compliance
- Support Infrastructure

COST AWARENESS CRITERIA

- Cost
- Realistic Timeline
- Risk & Uncertainty

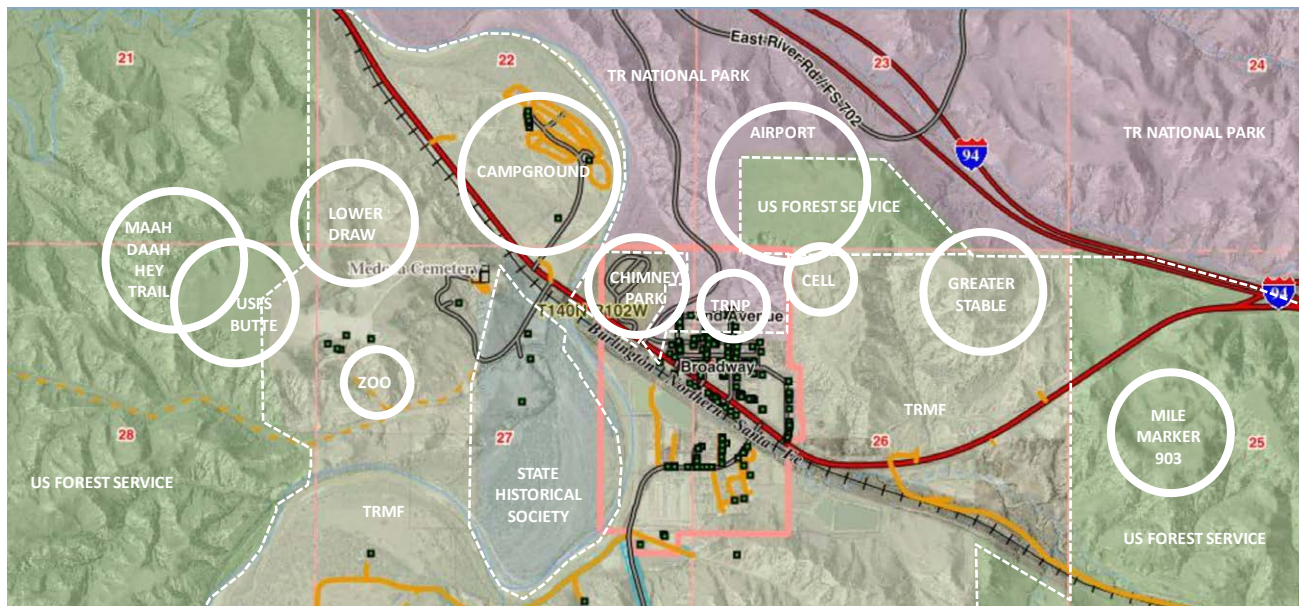
DISTRIBUTED SITE PLAN



POTENTIAL SITES



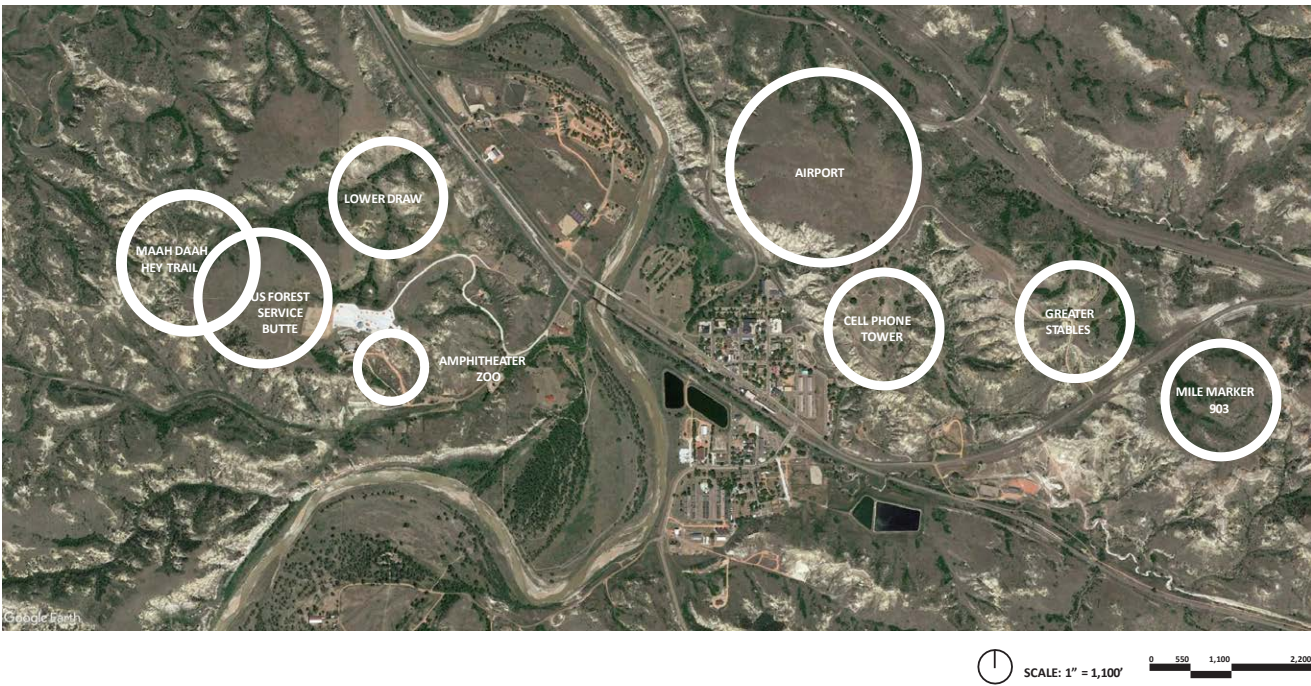
POTENTIAL SITES LAND OWNERSHIP



MEDORA SITES



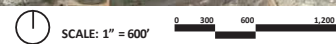
BADLANDS SITES



MEDORA SITE

THEODORE ROOSEVELT NATIONAL PARK

- **Pro:** Synergy with TRNP, NPF, NPS, Town of Medora, Partners
- **Con:** Tight site in the flood plain with no room for expansion
- **Con:** Significant schedule and risk impact on site acquisition from National Park Service



RISK ASSESSMENT

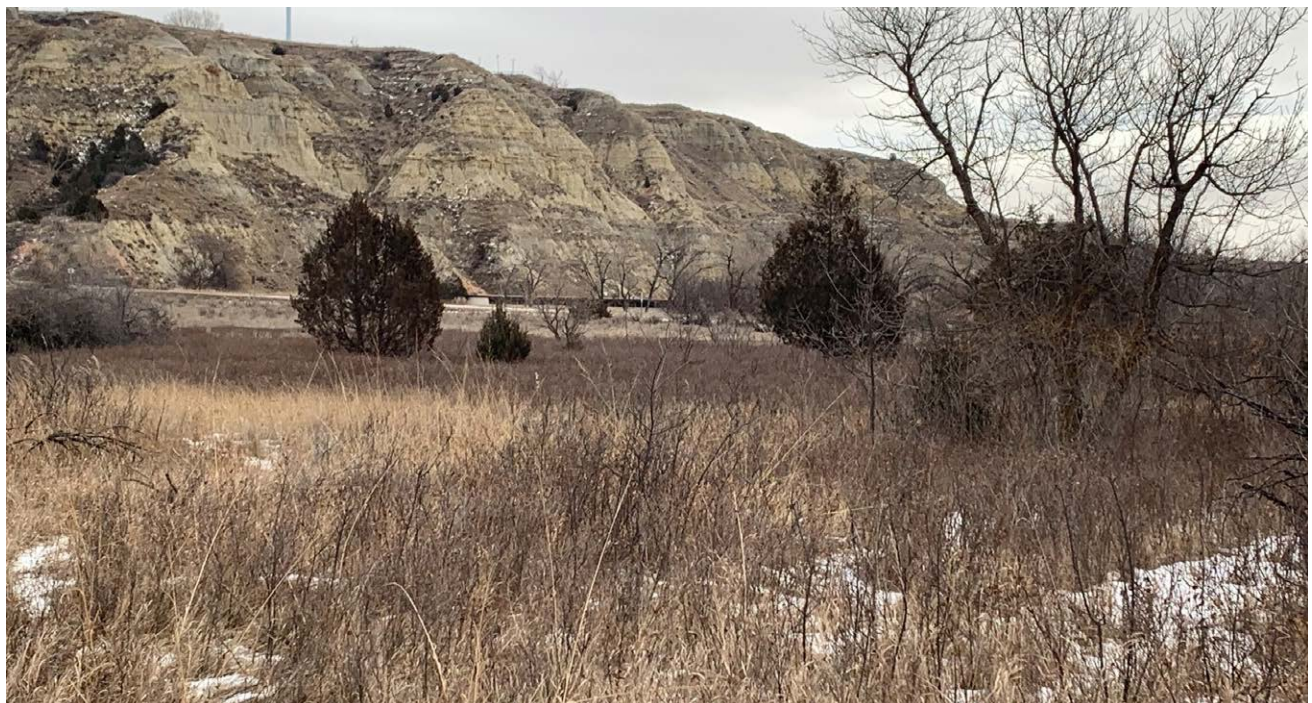
THEODORE ROOSEVELT NATIONAL PARK

3 - Highly Likely (60-100%)	3 - High Impact					3 - High Impact (> 1 year)	3 - High (>\$10M)
2 - Likely (30 - 59%)	2 - Medium Impact				High	2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
1 - Less Likely (10-29%)	1 - Low Impact				Moderate	1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
0 - Unlikely (0-10%)	0 - No Impact				Low	0 - No Impact	0 - No Impact

Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of National Park Service Land	2	3	6	Moderate	EA Needed - 1 year. Must relocate NPS Facilities to NPS owned land, likely within Park. Will require approx. 2 years time for design and construction before construction can commence on TRPL	3	3
	Owner willingness/ability to sell	2	3	6	Moderate		2	1
	Limited Availability of Land to Swap	3	3	9	High	Land is required to be located within the Park	3	2
	Site Size will be small for TRPL required Facilities	3	3	9	High	Limited space for future expansion, site density will be increased	1	1
	Existing Facilities Demolition/ Replacement	3	3	9	High		3	3
Regulatory Compliance								
Permits & Approvals	NPS approval required	3	3	9	High		3	1
Permits & Approvals	City and/or County Planning & Zoning Compliance	3	2	6	Moderate		1	0
Floodplain Implications	Requirements to provide 100-year flood protection	3	3	9	High	City-wide protection or elevate building. Legislature promised not to build in flood plain	3	3
Political Support	Support of local leaders/officials	1	1	1	Low		1	0
Support Infrastructure								
Access	Directly adjacent to City of Medora	2	2	4	Moderate	New Entrance to National Park, coordinate with Park Service	0	2
Utilities - Water	Water service available from adjacent City of Medora.	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary Sewer service available from adjacent City of Medora.	0	3	0	Low		1	1
Utilities - Stormwater	Storm water to be managed on-site.	3	2	6	Moderate	Requires underground storm retention for stormwater management	1	1
Traffic - Streets	Arterial Street Condition/Capacity	1	2	2	Low		1	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship will be limited based on site size	3	3	9	High	Will require remote parking.	2	2
Energy Service Availability	Availability of 240V or 480V Service	0	3	0	Low		1	0

MEDORA SITE CHIMNEY PARK

- **Pro:** Synergy with TRNP, NPF, NPS, Town of Medora, Partners
- **Pro:** Access to Little Missouri River
- **Con:** In the Flood plain, requires mitigation



RISK ASSESSMENT

CHIMNEY PARK

		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact		High		2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact		Moderate		1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact		Low		0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of ND State Historical Society Land	3	3	9	High	Process in unknown; may need Legislative approval	2	1
	Owner willingness/ability to sell	2	3	6	Moderate		2	1
	Site Size is adequate	2	3	6	Moderate	Must verify setback for flood protection allows adequate site size	2	1
Regulatory Compliance								
Permits & Approvals	State Historical Society Approval	3	3	9	High		2	0
Permits & Approvals	City Planning & Zoning Compliance	3	2	6	Moderate		2	0
Floodplain Implications	Requirement to provide 100 year flood protection	3	3	9	High	Citywide protection or elevate building. Legislature promised not to build in floodplain.	3	3
Political Support	Support of local leaders/officials	1	1	1	Low		1	0
Support Infrastructure								
Access	Directly adjacent to City of Medora	2	1	2	Low		0	0
Utilities - Water	Water service available from adjacent City of Medora.	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary Sewer service available from adjacent City of Medora.	0	3	0	Low		1	1
Utilities - Stormwater	Storm water to be managed on-site.	3	2	6	Moderate		1	1
Traffic - Streets	Arterial Street Condition/Capacity	2	1	2	Low	May require addition of turning lanes.	1	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	3	1	3	Low		1	2
Energy Service Availability	Availability of 240V or 480V Service	0	3	0	Low		1	1

MEDORA SITE CAMPGROUND

- **Pro:** Large site with room for expansion and outdoor experiences
- **Pro:** Rooseveltian relationship to Little Missouri River and Buttes
- **Con:** In the Flood plain, requires significant mitigation



RISK ASSESSMENT CAMPGROUND

		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact		High		2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact		Moderate		1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact		Low		0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of TR Medora Foundation Land	3	2	6	Moderate		1	1
	Owner willingness/ability to sell	2	3	6	Moderate		1	1
	Site Size is adequate.	2	3	6	Moderate	Must verify setback for flood protection allows adequate site size	2	1
Regulatory Compliance								
Permits & Approvals	City Planning & Zoning Compliance	3	2	6	Moderate		2	0
Floodplain Implications	Requirement to provide 100 year flood protection	3	3	9	High		3	3
Political Support	Support of local leaders/officials	1	1	1	Low		1	0
Support Infrastructure								
Access	Close to City of Medora, access directly from Pacific Ave.	2	1	2	Low		0	0
Utilities - Water	Water service available from SW Water.	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary Sewer service available from adjacent City of Medora, but will require construction.	3	1	3	Low	Sanitary sewer service will require lift station and pipeline crossing of river.	1	1
Utilities - Stormwater	Storm water to be managed on-site.	3	2	6	Moderate		1	1
Traffic - Streets	Arterial Street (Pacific Ave.) Condition/Capacity	2	1	2	Low	May require addition of turning lanes.	1	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	3	1	3	Low		1	2
Access - Pedestrian & Bicycle	Improved pedestrian & bicycle access would require crossing of Little Missouri River separate from vehicular bridge	3	2	6	Moderate		1	2
Energy Service Availability	Availability of 240V or 480V Service	0	3	0	Low		1	0

BADLANDS SITE MILE MARKER 903

- **Con:** Significant topography, challenging to develop/provide parking
- **Con:** Highly visible from Business I-94
- **Con:** Eastbound access is cumbersome



SCALE: 1" = 600' 0 300 600 1,200



RISK ASSESSMENT

MILE MARKER 903

		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact		High		2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact		Moderate		1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact		Low		0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of US Forest Service land	2	3	6	Moderate		2	1
	Owner willingness/ability to sell	2	3	6	Moderate		2	1
	Site Size is adequate	2	3	6	Moderate	Additional review of size & topo is required	1	0
Regulatory Compliance								
Permits & Approvals	Billings County P&Z approval, Ridgeline ordnance will be important	2	3	6	Moderate		2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	2	3	6	Moderate		1	0
Support Infrastructure								
Access	Will require new vehicular access from Business Loop I-94	3	3	9	High		3	2
Utilities - Water	Extensive pipeline and pressure booster station installation for water service from Medora.	3	2	6	Moderate	Sw Water is not available	3	2
Utilities - Wastewater	Sanitary sewer service by on-site facility or pump station and pipeline to Medora.	3	2	6	Moderate	Extensive pipeline construction needed	2	2
Utilities - Stormwater	Storm water to be managed on-site.	2	2	4	Moderate		1	1
Traffic - Streets	Arterial Street Condition/Capacity	2	1	2	Low	May require addition of turning lanes from I-94 business loop	2	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	3	1	3	Low		1	2
Access - Pedestrian & Bicycle	Pedestrian & Bicycle access from Medora	3	3	9	High	Access to Medora will require extensive construction of trails	2	2
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

BADLANDS SITE GREATER STABLES

- **Pro:** Immersive Badlands experience
- **Con:** Significant topography, challenging to develop/provide parking
- **Con:** Eastbound access is cumbersome



SCALE: 1" = 600' 0 300 600 1,200



RISK ASSESSMENT

GREATER STABLES

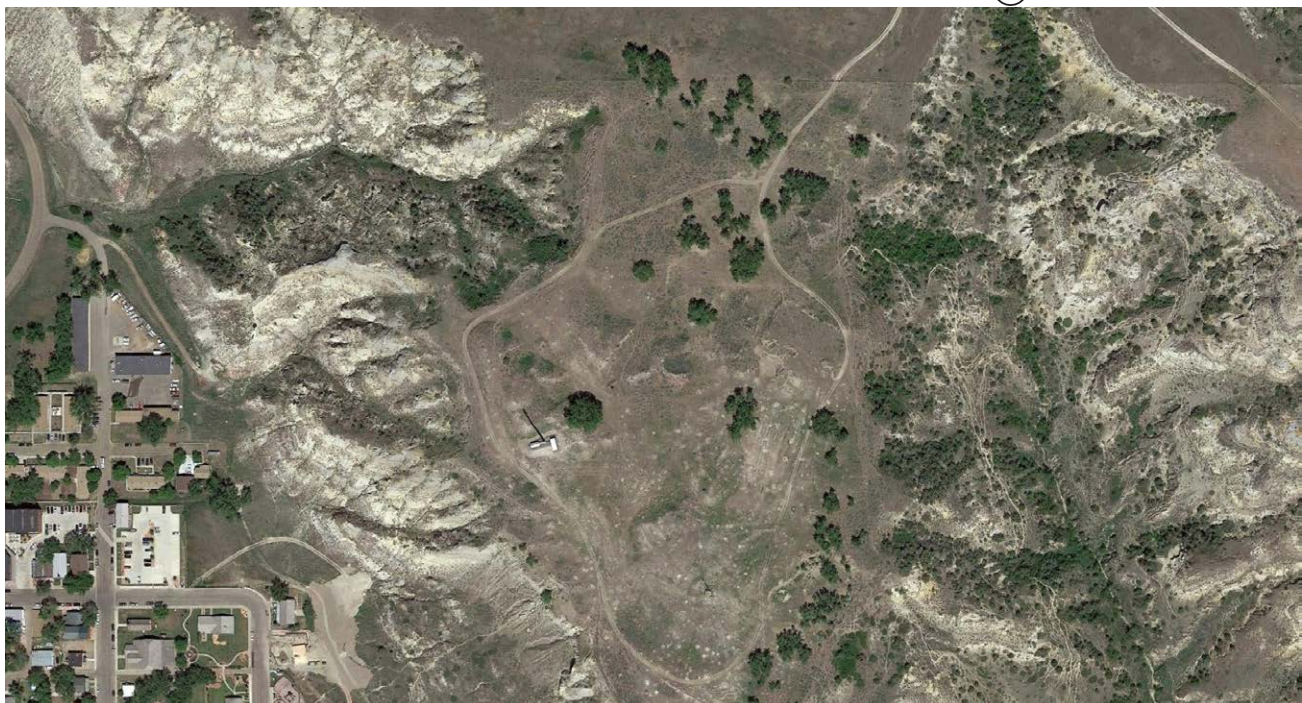
		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact	High			2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact	Moderate			1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact	Low			0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of TR Medora Foundation land	3	2	6	Moderate		1	1
	Owner willingness/ability to sell	2	3	6	Moderate		1	1
	Site Size: Buildable area of site may be a limitation	3	3	9	High		2	1
Regulatory Compliance								
Permits & Approvals	Billings County P&Z approval, Ridgeline ordinance will need to be considered	2	3	6	Moderate		2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	1	1	1	Low		1	0
Support Infrastructure								
Access	Will require new vehicular access from Business Loop of I-94	3	3	9	High		3	2
Utilities - Water	Extensive pipeline and pressure booster station installation for water service from Medora.	3	2	6	Moderate	SW Water is not available	3	2
Utilities - Wastewater	Sanitary sewer service by on-site facility or pump station and pipeline to Medora.	3	2	6	Moderate	Pipeline construction needed	2	2
Utilities - Stormwater	Storm water to be managed on-site.	2	2	4	Moderate		1	1
Traffic - Streets	Arterial Street Condition/Capacity	2	1	2	Low	May require addition of turning lanes from I-94 business loop	2	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	3	2	6	Moderate	Site size may limit parking	1	2
Access - Pedestrian & Bicycle	Pedestrian & Bicycle access from Medora	3	3	9	High	Access to Medora will require extensive construction of trails	2	2
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

BADLANDS SITE CELL PHONE TOWER

- **Con:** Significantly disturbed site
- **Con:** View-shed is unremarkable
- **Con:** Prominent Cell Phone tower



SCALE: 1" = 600'



RISK ASSESSMENT

CELL PHONE TOWER

		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact		High		2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact		Moderate		1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact		Low		0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of TR Medora Foundation land	3	2	6	Moderate		1	1
	Owner willingness/ability to sell	2	3	6	Moderate		1	1
	Site Size: Buildable area should be adequate	2	3	6	Moderate		1	0
Regulatory Compliance								
Permits & Approvals	Billings County and City of Medora P&Z approval, Ridgeline ordinance will need to be considered	2	3	6	Moderate	Much of site has already been disturbed, so environmental concerns should be minimized	2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	1	1	1	Low		1	0
Support Infrastructure								
Access	Will require very long vehicular access from Business Loop of I-94	3	3	9	High	Will require very long vehicular access from Business Loop of I-94	3	2
Utilities - Water	Extensive pipeline and pressure booster station installation for water service from Medora	3	2	6	Moderate	SW Water is not available	3	2
Utilities - Wastewater	Sanitary sewer service by on-site facility or pipeline to Medora.	3	2	6	Moderate	Pipeline construction needed	2	2
Utilities - Stormwater	Storm water to be managed on-site	2	2	4	Moderate		1	1
Traffic - Streets	Arterial Street Condition/Capacity	2	1	2	Low	May require addition of turning lanes from I-94 business loop	2	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	3	1	3	Low	Site size will be adequate for parking	1	2
Access - Pedestrian & Bicycle	Pedestrian & Bicycle access from Medora	3	3	9	High	Access to Medora will require extensive trail construction	2	2
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

BADLANDS SITE AIRPORT

- **Pro:** Sweeping plain and grasslands site
- **Pro:** Large site with opportunity for expansion
- **Con:** Complicated land acquisition with three land owners, including National Park Service



SCALE: 1" = 600'



RISK ASSESSMENT

AIRPORT

		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact			High	2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact			Moderate	1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact			Low	0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
NPS and Medora	Acquisition of US Forest Service, Fdn. land	3	3	9	High		2	1
	Owner willingness/ability to sell	3	3	9	High		2	1
	Site Size is adequate for proposed facilities and expansion	1	3	3	Low		1	0
Regulatory Compliance								
Permits & Approvals	Billings County & City of Medora P&Z approval, Ridgeline ordinance will need to be considered	2	3	6	Moderate		2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	2	3	6	Moderate		1	0
Support Infrastructure								
Access	Will require very long vehicular access from Business Loop of I-94.	3	3	9	High		3	2
Utilities - Water	Extensive pipeline and pressure booster station installation for water service from Medora.	3	2	6	Moderate	SW Water is not available	3	2
Utilities - Wastewater	Sanitary sewer service by on-site facility or pipeline to Medora.	3	2	6	Moderate		2	2
Utilities - Stormwater	Storm water to be managed on-site.	2	1	2	Low		1	1
Traffic - Streets	Arterial Street Condition/Capacity	2	1	2	Low	May require addition of turning lanes from I-94 business loop	2	1
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	3	0	0	Low	Site is large and will accommodate parking	1	2
Access - Pedestrian & Bicycle	Pedestrian & Bicycle access from Medora	3	3	9	High	Access to Medora will require extensive trail construction	2	2
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

BADLANDS SITE AMPHITHEATER ZOO

- **Pro:** Simple land acquisition from TRMF
- **Con:** Disturbed site at the back side of Medora Musical facilities
- **Con:** Tight site with no room for expansion



SCALE: 1" = 600'

0 300 600 1,200



RISK ASSESSMENT

AMPHITHEATER ZOO

		3 - Highly Likely (60-100%)	3 - High Impact		High		3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact				2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact				1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact				0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of TR Medora Foundation land	3	2	6	Moderate		1	1
	Owner willingness/ability to sell	2	3	6	Moderate		1	1
	Site Size: Buildable area may be a limitation	3	3	9	High		1	0
Regulatory Compliance								
Permits & Approvals	Billings County P&Z approval, Ridgeline ordinance will need to be considered	2	3	6	Moderate		2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	2	3	6	Moderate		1	0
Support Infrastructure								
Access	Vehicle Access will require relatively short road extension. Second egress is desirable	2	3	6	Moderate		1	1
Utilities - Water	Water Service from SW Water is readily available. Will require reservoir and pump for fire protection	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary sewer service by pipeline to Medora	1	3	3	Low		1	1
Utilities - Stormwater	Storm water to be managed on-site	3	2	6	Moderate	Small size of site may make underground storm water retention necessary	1	1
Traffic - Second Egress	Second egress is desirable	2	3	6	Moderate	Railroad crossing on Chateau Road is a concern for emergency access	3	2
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship will be limited based on site size	3	3	9	High	Will require remote parking	2	1
Access - Pedestrian & Bicycle	Pedestrian & Bicycle access from Medora will require trail of moderate length	2	2	4	Moderate	Railroad crossing on Chateau Road will require improvements to allow for pedestrian and bicycle access	2	1
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	0

BADLANDS SITE LOWER DRAW

- **Pro:** Large site with total immersive Badlands experience
- **Pro:** Simple land acquisition from TRMF
- **Con:** Significant topography, challenging to develop/provide parking



RISK ASSESSMENT

LOWER DRAW

		3 - Highly Likely (60-100%)	3 - High Impact		High		3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact				2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact				1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact				0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of TR Medora Foundation land	3	2	6	Moderate		1	1
	Owner willingness/ability to sell	2	3	6	Moderate		1	1
	Site Size: Buildable area may be a limitation	3	3	9	High		1	0
Regulatory Compliance								
Permits & Approvals	Billings County P&Z approval, Ridgeline ordnance will need to be considered	2	3	6	Moderate		2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	2	3	6	Moderate		1	0
Support Infrastructure								
Access	Vehicle Access from Amphitheater road/parking lot. Second egress is desirable	2	3	6	Moderate	If two vehicular routes are needed, access from south or Business Loop of I-94 will require new railroad crossing	3	2
Utilities - Water	Water Service from SW Water is readily available, Will require reservoir and pump for fire protection	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary sewer service by pump station and pipeline to Medora	1	3	3	Low		2	1
Utilities - Stormwater	Storm water to be managed on-site	3	2	6	Moderate	Small size of site may make underground storm water retention necessary	1	1
Traffic - Second Egress	Second egress is desirable	2	3	6	Moderate	Railroad crossing on Chateau Road is a concern for emergency access. Second railroad crossing is desirable	3	2
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship may be limited	3	3	9	High	Site topography may limit level area for parking	1	2
Access - Pedestrian & bicycle	Pedestrian & Bicycle access to be extended from Medora	2	3	6	Moderate	Access to Medora will require additional construction considerations including improved railroad crossing on Chateau Road	2	2
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

BADLANDS SITE US FOREST SERVICE BUTTE

- **Pro:** Large sweeping plain and grasslands site
- **Pro:** Dramatic distant views and opportunities for outdoor experiences
- **Con:** Adjacent to Amphitheater facilities



RISK ASSESSMENT

US FOREST SERVICE BUTTE

		3 - Highly Likely (60-100%)	3 - High Impact		High		3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact				2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact				1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact				0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of US Forest Service land	2	3	6	Moderate		2	1
	Owner willingness/ability to sell	2	3	6	Moderate		2	1
	Site Size is adequate	1	3	3	Low		1	0
Regulatory Compliance								
Permits & Approvals	Billings County P&Z approval, Ridgeline ordinance and second egress are important	3	3	9	High		2	0
Floodplain Implications	Not Applicable	0	0	0	Low		0	0
Political Support	Support of local leaders/officials	2	3	6	Moderate		1	0
Support Infrastructure								
Access	Vehicle Access from Amphitheater road/parking lot. Second egress is desirable	2	3	6	Moderate		3	2
Utilities - Water	Water Service is available from SW Water, Will require reservoir and pump for fire protection	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary sewer service by pipeline to Medora	1	3	3	Low		2	1
Utilities - Stormwater	Storm water to be managed on-site	2	3	4	Moderate		1	1
Traffic - Second Egress	Second egress desirable.	2	3	6	Moderate	Railroad crossing on Chateau Road is a concern for emergency access. Second railroad crossing is desirable	3	2
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	1	3	3	Low		1	2
Access - Pedestrian & Bicycle	Pedestrian & Bicycle route to be extended from Medora	2	3	6	Moderate	Access to Medora will require additional construction considerations including improved railroad crossing on Chateau Road	2	1
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

BADLANDS SITE MAAH DAAH HEY TRAIL

- **Pro:** Large site that encompasses both butte grasslands and rugged Badlands
- **Pro:** Room for expansion
- **Pro:** Connection to Maah Daah Hey trail, and regional outdoor experiences



SCALE: 1" = 600'

0 300 600 1,200



RISK ASSESSMENT

MAAH DAAH HEY TRAIL

		3 - Highly Likely (60-100%)	3 - High Impact				3 - High Impact (> 1 year)	3 - High (>\$10M)
		2 - Likely (30 - 59%)	2 - Medium Impact		High		2 - Medium Impact (6-12 mo)	2 - Medium (\$3M-\$10M)
		1 - Less Likely (10-29%)	1 - Low Impact		Moderate		1 - Low Impact (0-6 mo)	1 - Low (\$1M - \$3M)
		0 - Unlikely (0-10%)	0 - No Impact		Low		0 - No Impact	0 - No Impact
Risk Identification		Risk Assessment				Risk Mitigation		
Risk Criteria	Description	Probability of Being an Issue	Severity of Risk	Risk Weight	Overall Risk	Risk Mitigation Strategy	Mitigation	
							Schedule	Cost
Land Acquisition								
	Acquisition of US Forest Service land	2	3	6	Moderate		2	1
	Owner willingness/ability to sell	2	3	6	Moderate		2	1
	Site Size is adequate	1	3	3	Low		1	0
Regulatory Compliance								
Permits & Approvals	Billings County P&Z approval, Ridgeline ordinance and second egress are important.	3	3	9	High	Selection of building location on site is important.	2	0
Floodplain Implications	N/A	0	0	0	Low		0	0
Political Support	Strong support of local leaders/officials	2	3	6	Moderate		1	0
Support Infrastructure								
Primary Access	Access available from Amphitheater road/parking lot. Second egress is desirable.	2	3	6	Moderate		3	2
Utilities - Water	Water service is available from SW Water. Will require reservoir and pump for fire protection.	0	3	0	Low		1	1
Utilities - Wastewater	Sanitary sewer service by pipeline to Medora.	1	3	3	Low		2	2
Utilities - Stormwater	Storm water to be managed on-site.	2	2	4	Moderate		1	1
Traffic - Second Egress	Second egress desirable	2	3	6	Moderate	Railroad crossing on Chateau Road is a concern for emergency access. Second railroad crossing is desirable.	3	2
Traffic - Parking	Ability to provide on-site parking for anticipated visitorship	1	3	3	Low		1	2
Access - Pedestrian & Bicycle	Pedestrian & Bicycle route to be extended from Medora	2	3	6	Moderate	Access to Medora will require additional construction considerations including improved railroad crossing on Chateau Road.	2	1
Energy Service Availability	Availability of 240V or 480V Service	1	3	3	Low		1	1

ACKNOWLEDGMENTS

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