Paul S. Sarbanes Transit in Parks

Fiscal Year 2010 Application Example

Disclaimer:

This application is an example of a successful Transit in Parks application; however, it is **NOT** necessarily the best response to any given question, since the responses needs to be based on individual site conditions.

U.S. Department of Transportation
Federal Transit Administration

Paul S. Sarbanes Transit in Parks Program (Transit in the Parks Program)
Project Proposal for Fiscal Year 2010 Funds – Planning Project

BASIC PROJECT INFORMATION			
Project Name (Please provide a 1-2 sentence description of the project): **Red Hill Special Recreation Management Area Alternative Transportation Feasibility Study** Examine the opportunity for multi-modal transportation alternatives to allow visitors to better access the site, reduce the impact to the natural environment, and alleviate congestion. The study will focus on several alternatives for mode-shift, including transit and non-motorized transportation.			
Proposed Funding Recipient: **Town of Carbondale**			
Public land unit(s) involved: **Red Hill Special Recreation Management Area, the Bureau of Land Management**	Location of Project City: **Carbondale** County: **Garfield** State: **Colorado** Congressional District: **John Salazar (3)**		
Federal Land Management Agency managing the above unit(s): ☒ Bureau of Land Management ☐ Bureau of Reclamation ☐ Fish and Wildlife Service ☐ Forest Service ☐ National Park Service ☐ Other (e.g. Federal Trust) Describe:	Type of Planning Project: (Implementation projects, please use the alternate form) ☒ **Planning**		
☐ Proposal is to plan for a possible new alternative transportation system where none currently exists. ☒ Proposal is to plan for a possible expansion or enhancement of an existing alternative transportation system.			
Transit in Parks Program Funding Requested during FY 2010 $160,000	**Total** Cost of Planning Project at Completion (All sources) $160,000		
Were you awarded Transit in Parks Program funds for this project in the past? ☐ Yes ☒ No If answer "Yes," please provide amount awarded:			
Do you plan to request additional Transit in Parks Program funds in future years? ☒ Yes ☐ No **(Note: If you wish to compete for future Transit in Parks Program fiscal year funds you must reapply).** If answer "Yes," please specify Transit in Parks Program proposed funding levels for out years below: **Amount and year will be based on findings of the Alternative Transportation Feasibility Study.**			
FY 2011	FY 2012 $	FY 2013 $	
FY 2010 Funding Amounts from sources other than Transit in Parks Program funds? ☐ Yes ☒ **No** If answer "Yes," please specify funding levels per source below:			
State $	Local $	Federal (other than Transit in Parks Program) $	Private sources $

CONTACT PERSON	
Name: Jeff Jackel	Phone: 970-704-4114
Position: Recreation Director, Town of Carbondale	E-mail: jjackel@carbondaleco.net
Address: Carbondale Town Offices; 511 Colorado Avenue; Carbondale, CO 81623	

OTHER PROJECT SPONSORS (in addition to funding recipient)
Bureau of Land Management

REQUIREMENTS
☒ If a State, Tribal, or local government entity is proposing the project, the applicant has contacted the manager of the Federal land unit(s) and has the consent of the Federal land management agency or agencies affected. ☒ The project is consistent with the metropolitan and statewide planning process. ☒ The project is consistent with agency plans. ☒ The planning project will analyze all reasonable alternatives, including a non-construction option.

BASIC PROJECT DATA-	
Number of Visitors (Annual): **55,000**	Daily Number of Visitors (Peak season): **Approximately 300**
Average Number of Vehicles per Day at Peak Visitation: **Approximately 200**	
Current Road Level of Service at Peak Visitation: **Not calculated, but road is generally under capacity** (Please consult guidance where available on determining this variable. You may use observational accounts or pictures to provide an assessment of this datum for FY 2009 proposals).	
What time of the year does your land unit experience Peak Visitation? ☒ Spring ☒ Summer ☒ Fall ☐ Winter Mornings, evenings, and weekends from April - September	
Current Carrying Capacity of Existing Roads: **The capacities around the Highway 82/133 Intersection have not been officially calculated by CDOT. One CDOT official gave a rough estimate of a capacity of 8,000 vehicles per hour on Highway 82 and 4,500 vehicles per hour at the intersection.** **Average Daily Traffic Counts on at the Highway 82/133 intersection range from about 13,000 to 20,100 (with lower counts in the winter and higher counts in the summer). RFTA predicts that the Average Daily Traffic will reach 36,000 by 2035.**	
What percent of that capacity is the site operating at during peak periods? **Given the rough estimate of carrying capacity, it is likely that the intersection is usually**	

functioning below capacity but that peak periods may reach or exceed road capacity. These peak periods include afternoon rush hour, which coincides with Red Hill SRMA's heavy use period for post-work recreation.
Current parking shortages during peak visitation: **Estimate that an additional 20-30 spaces are needed during peak visitation (at current visitation levels, not accounting for future growth)**
Current Number of Persons who use the alternative transportation system (if one already exists) at peak visitation: **Trail counts for the Rio Grande Trail (non-motorized): 70,000 annually** **RFTA ridership to Carbondale Park & Ride lot: 95 parking spaces occupied in Park & Ride lot (though some are used by carpoolers) and about 90,000 bus riders on the Hwy. 82 route per month in 2009.**
Estimated Annual Number of Persons who will use the alternative transportation system at project completion: **Depends on alternative selected**
Average number of auto collisions with wildlife in the area: **Collisions not documented but some anecdotal concerns with wildlife crossings one mile east and west of the intersection.**

Executive Summary

Please provide an executive summary of your proposal that is no more than one page in length.

A safe, accessible off-highway connection to the Red Hill Special Recreation Management Area (SRMA) has been a long-term goal of the Red Hill Council (RHC), the Bureau of Land Management (BLM), and the Town of Carbondale. The Red Hill SRMA is a popular recreational trail system for mountain bikers and hikers, and it is located approximately 1.3 miles from downtown Carbondale, at the intersection of U.S. Highway 82 and Highway 133. Highway 82 runs the length of the Roaring Fork River Valley, spanning from Glenwood Springs to Aspen, and serving as the principal arterial route for the region. The intersection with Highway 133 is the gateway to Carbondale, and the community has a long history of interest and support of planning for activities in that area.

Red Hill SRMA is located within one-half mile of many local residences and business. Due to the close proximity between the Town of Carbondale and the SRMA, bicycle and pedestrian site access is highly needed. The Town of Carbondale has fairly extensive sidewalks and several bike trails, including the Crystal Valley Bike Trail along Highway 133 from Prince Creek Road to the Highway 82/133 intersection. This two mile trail connects to Red Hill and also to the Rio Grande Trail System a paved non-motorized trail that extends the entire length of the Highway 82 corridor (see Figure 1) from Glenwood Springs to Aspen However, pedestrians and bicyclists traveling to the site face a major accessibility and safety barrier at the busy Highway 82/133 intersection. The intersection provides for a multitude of vehicle turning movements and for high-speed through traffic. For non-motorized users, the intersection includes a striped pedestrian crossing with a highway crossing light.

With the creation of the Red Hill SRMA in 1996, the BLM and the Red Hill Council arranged with the Colorado Department of Transportation (CDOT) to utilize an existing parking lot on CDOT property for private vehicle access to Red Hill, but the lot is often congested due to use by commuters for carpool and ride-sharing. The Roaring Fork Transportation Authority (RFTA) opened a “Park & Ride” lot in 2007, located in the southwest quadrant of the Highway 82/133 intersection one-third of a mile from Red Hill, which has the potential to alleviate some of the CDOT lot congestion. RFTA provides regional commuter bus transit services along the Highway 82 corridor and along the I-70 corridor between Rifle and Glenwood Springs. RFTA is the second-largest transit system in Colorado (behind RTD in Denver) with ridership of approximately 4.3 million in 2009.

Recreation use on Red Hill has been increasing for 10 years, with peak recreation use occurring in the spring, summer and fall and some continued visitation through the winter months. Trail counter records at the entrance show approximately 55,000 user days annually. Most of the user population arrives by automobile because of the perceived and/or real concerns with crossing the Highway 82/133 intersection. Public input received during the 2009 BLM Resource Management Plan (RMP) Revision scoping indicated a very strong interest in recreation on public lands around Carbondale, a community noted for its strong history and culture of outdoor recreation, bicycling, running, and hiking. The RMP specifically identifies the Red Hill SRMA as a key recreation resource for Carbondale and the Roaring Fork Valley.

Given the availability of public transit access through RFTA, the proximity and availability of access on the Rio Grande and Crystal Valley Trails, and the proximity of an active population in Carbondale, potential access improvements to Red Hill could significantly reduce vehicle trips to the Red Hill parking lot. The proposed Alternative Transportation Feasibility Study will examine several multi-modal transportation alternatives to determine the most feasible method to address transportation needs on the site. Alternatives will be evaluated by a set of criteria designed to address project goals: explore opportunities for non-motorized and transit access, provide a safer and more satisfying visitor experience, reduce the number of vehicles needed to access Red Hill, and enhance shared use for commuter carpoolers and recreational users. A decrease in vehicle trips to Red Hill would lessen vehicle congestion at the Highway 82/133 intersection and in the Red Hill parking lot. Fewer vehicle trips results in reduced vehicle emissions, energy consumption, and an overall improvement to the outdoor recreation experience.

As the “Gateway” to the Carbondale area, the Highway 82/133 intersection has been the focus of local investment and beautification projects, including a proposed “Carbondale Gateway River Park.” The 2004 Carbondale Gateway Park Feasibility Study identified a pedestrian connection via a 5 ft by 7 ft box culvert under Highway 82 to the Red Hill parking lot. The culvert was built at the time of Highway 82 construction

for drainage and livestock movement but closed by CDOT during a highway construction project. While the re-opening of this underpass has been considered previously, the proposed Feasibility Study would provide a more comprehensive examination of several alternatives to address Red Hill's need for greater visitor mobility and safety through alternative transportation.

Figure 1: Red Hill Access Components

Project Description

What activities would be funded by the requested Transit in Parks Program financial assistance?

The Red Hill SRMA Alternative Transportation Feasibility Study will determine the feasibility of an alternative transportation connection between the Town of Carbondale Trail System and the BLM Red Hill Recreation Area, which will provide a convenient, safe, and accessible route across Highway 82 for hikers, pedestrians, and mountain bikers. A non-motorized connection is needed to address:

1. Parking at capacity
2. Safety concerns at intersection and highway, especially for pedestrians and bicyclists
3. Congestion at intersection, roadway and parking area
4. Connection to transit for accessing public lands
5. Trail connections to local and regional trails and residential neighborhoods

The Study is a collaboration between the Town of Carbondale and the BLM, with partner stakeholder assistance from the RHC, CDOT, and RFTA. The proposed Feasibility Study will address the parking, safety, congestion, and access needs of the site. Additional goals include:

1. Explore opportunities to bring people to Red Hill from Carbondale, and from around the region by non-motorized and transit modes
2. Provide a safer and more satisfying visitor recreational experience
3. Reduce the number of vehicles needed to access Red Hill to relieve congestion and reduce environmental impacts
4. Enhance shared use for commuter carpoolers, and recreational users

The Feasibility Study will evaluate six alternatives, including one no-action alternative, to assess impacts of future visitation growth with no additional transportation action. The study will evaluate a pedestrian underpass and overpass; minor improvements to the Highway 82/133 intersection, such as signalization or raised pedestrian crosswalk; transit alternatives, which may include a shuttle system operating seasonally or a feeder system in conjunction with RFTA service; and accommodation of future improvements, such as more capital-intensive intersection improvements that include a roundabout or grade separation. The latter option incorporates projects proposed by CDOT, though these are to be evaluated only briefly in the Feasibility Study as CDOT has determined that these improvements are unlikely to be feasible in the near future. Finally, each alternative will include the provision of an off-road connection between the CDOT parking lot and the Red Hill trailhead (along County Road 107) to accommodate the continuation of safe, non-motorized access.

Each of the six transportation alternatives will be evaluated by a set of criteria established to address Feasibility Study goals. These criteria include the following:

1. Congestion reduction (reduction of vehicles used to access site)
2. Increased visitor mobility, accessibility, and safety (including barriers to use)
3. Visual resource and environmental impacts (wildlife impacts, fuel use, and emissions)
4. Management feasibility
5. Cost
6. Compatibility with local, regional, and state plans and regulations

In addition to the evaluation of alternatives, the Feasibility Study will include a public feedback element and illustrative preliminary steps for implementation plans. The Study team will present the evaluation of alternatives, including strengths and weaknesses of each alternative and elements common to each, to stakeholder partners through a public forum. Stakeholders and members of the general public shall help the study team and project sponsors assess the merits of each alternative.

The Study team, incorporating public feedback, may select one or more alternatives for illustrative purposes to create preliminary implementation steps. These steps will provide a more detailed picture of how alternatives may move into implementation. Potential implementation steps to be considered include:

- Estimated cost of alternative, including both capital costs, operations and maintenance costs, and cost effectiveness measures.
- Management and operations plan with agency roles and a project timeline.

- Environmental compliance strategy or process
- Annexation, acquisition, and easements (consistency with local and regional planning)
- Design and locational guidelines and criteria

Alternative Transportation in the Parks and Public Lands <u>Planning</u> Evaluation Criteria

(There are separate evaluation factors for implementation projects. Use the implementation project proposal template for implementation projects.)

Criteria	Points	Weight
1. Demonstration of Need		50%
a. Visitor mobility & experience	(1-5)	
b. Environmental condition as result of existing transportation system	(1-5)	
2. Methodology for Assessing: Visitor Mobility & Experience Benefits of Project		15%
a. Reduced traffic congestion	(1-5)	
b. Enhanced visitor mobility, accessibility, and safety	(1-5)	
c. Improved visitor education, recreation, and health benefits	(1-5)	
3. Methodology for Assessing: Environmental Benefits of Project		15%
a. Protection of sensitive natural, cultural, and historical resources	(1-5)	
b. Reduced pollution	(1-5)	
4. Methodology for Assessing: Operational Efficiency and Financial Sustainability of Alternatives		20%
a. Effectiveness in meeting management goals	(1-5)	
b. Financial plan and cost effectiveness	(1-5)	
c. Cost effectiveness	(1-5)	
d. Partnerships and funding from other sources	(1-5)	

Planning Justification
Your responses to these questions must total no more than eight pages.

1. Demonstration of Need

a. Visitor mobility and experience: Describe the site's current and/or anticipated transportation problem or opportunity for improvement. You should include information on issues such as traffic congestion, traffic delays, parking shortages, difficulty in accessing destinations, safety issues, lack of access for persons with disabilities, lack of access for individuals with lower incomes or without cars, and visitor frustration. Please cite reports, plans, studies, and other documentation to support your description.

Safe and convenient multi-modal site access has long been acknowledged as a critical need at Red Hill. The 1998 Red Hill Project Final Report lists several objectives including the provision of safe and accessible trailhead areas and parking. In particular, the Report lists objectives to "identify opportunities and obstacles to access across Highway 82 and identify linkage" and to "identify potential trail links to a valley-wide system." These management objectives echo the growing need for transportation improvements to improve safe non-motorized visitor access to Red Hill, as demonstrated by observed infrastructure and travel patterns around the Red Hill area.

Current Conditions

U.S. Highway 82 is a four-lane, major regional arterial, forming the only east/west route through the Roaring Fork Valley between Aspen and Glenwood Springs. Based on 2008 CDOT traffic data, approximately 20,100 vehicles drive on U.S. Highway 82 each day. Speed limits on Highway 82 are typically 65 miles per hour (mph) but reduce to 55 mph at the intersection; the speed limit on Highway 133 at the intersection is 35 mph. U.S. Highway 133 also receives heavy traffic as its the main highway entrance into Carbondale and also because of its state-designated status as the "West Elk Scenic Byway". Both Highway 82 and Highway 133 have been identified by CDOT, Garfield and Pitkin Counties, and the Town of Carbondale as presenting safety hazards for bicycle and pedestrian traffic, due in part to the narrow traffic lanes along Highway 133, poor visibility around curves, and no highway shoulders for bicyclists. These agencies have collaborated with RFTA and the state lottery-funded Great Outdoors Colorado (GOCO) to finance and construct the paved Rio Grande Bike Trail, which runs 45 miles along U.S. Highway 82 between Aspen and Glenwood Springs, and the north/south Crystal Valley Bike Trail, which runs along U.S. Highway 133. These two trails merge and intersect in Carbondale at the RFTA commuter Park & Ride lot. These trails are popular transportation and recreational amenities in the Valley; the Rio Grande Trail near the intersection with the Crystal Valley Trail received 77,000 riders in 2008.[1] (See Figure 1 for Red Hill Access Components and Photo 1 for an aerial view of the Highway 82/133 intersection).

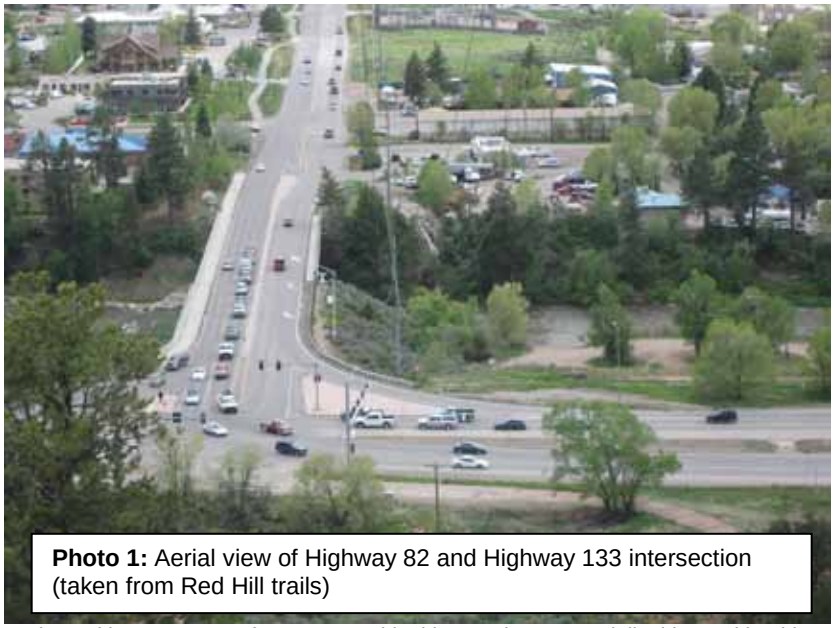


Photo 1: Aerial view of Highway 82 and Highway 133 intersection (taken from Red Hill trails)

The paved non-motorized trails are just two of the many trail amenities

[1] Peak trail use months were May through September, with an average of 11,200 monthly riders and over 200 daily riders. Ridership dropped to about 72,000 annual users in 2009.

in the Carbondale area. The region also hosts an extensive network of paved and unpaved recreational trails, connected by sidewalks, bike lanes, and other non-motorized transportation infrastructure. A large proportion of Carbondale residents are avid cyclists, runners, hikers, and outdoor enthusiasts that regularly use and support the many area trails. Red Hill Council members approximate that over half of all Red Hill visitors would choose to cycle, walk, or run to the Red Hill trailhead if non-motorized access were safer and more convenient. If such non-motorized access to the Red Hill trails were to be achieved, the linkage between the Red Hill trails and other key trails in the Roaring Fork Valley would fulfill the Red Hill Mission Statement objective to link Red Hill SRMA to a "valley-wide system."

While no bicyclist or pedestrian fatalities have occurred at the Highway 82/133 intersection, the current infrastructure poses both safety and mobility barriers to non-motorized users. During peak spring, summer, and fall weekends, the volume and types of motorized traffic create particularly unsafe conditions for non-motorized users. Anecdotally, Carbondale residents and Red Hill Council members perceive that the intersection is unsafe for pedestrian access and that safety concerns form the biggest barrier for visitors who would otherwise choose non-motorized modes of access.

As the CDOT parking lot designated for Red Hill users is frequently filled by ridesharing commuters, parking spaces are often not available for recreational users and illegal parking sometimes occurs along County Road 107, which is used to access the trailhead. The parking lot holds approximately 45 vehicles. There is no designated parking for handicapped users or larger vehicles (buses or vans), though the lot could accommodate them assuming space was available. The peak congestion times at this lot are morning and afternoon commuting periods, around noon on weekdays, and all day during weekends in the spring, summer and fall. It is estimated that over 300 vehicles demand parking at this lot during peak weekends (See Photos 2 and 3 of the CDOT parking lot).

Photo 2: Access to CDOT parking lot from intersection.

Photo 3: CDOT parking lot (approximately 4 p.m. on a Monday in May).

While most demand for alternative access to the SRMA will likely come from Carbondale area residents and employees who walk or bicycle from in-town destinations, RFTA also provides regional transit connections to Red Hill that may be enhanced by alternative access improvements. Currently, the RFTA Carbondale Park & Ride lot contains approximately 95 spaces, which are almost always filled to capacity during the day, and the transit agency is planning service increases through their new Bus Rapid Transit System, which will stop at the Park & Ride facility. Visitors can currently take the bus to this facility to access the Red Hill area, though no data is available on the number of riders who take advantage of this service. Anecdotally, Red Hill Council volunteers and BLM staff believe that perceived safety barriers and lack of direct pedestrian connections between the Park & Ride facility and the trailhead deter visitors from using transit to access the site.

A final barrier to non-motorized site access, and a major issue for local residents, is the one-quarter mile of County Road 107 between the CDOT-owned parking lot and the Red Hill trailhead. County Road 107 is a winding dirt road that offers access to the trailhead and several private homes in the Red Hill area. The road has no designated facilities or shoulder for pedestrians or cyclists. The sharp turns and limited visibility on the road present safety hazards to Red Hill visitors and vehicles who share the road (See Photo 4 of the County Road access). The Red Hill Access Study of May 2009 considered alternate

trailhead access via an existing roadbed from the 1970s that begins just west of the existing CDOT parking lot; this option may be explored further as a means of removing pedestrian traffic from C.R. 107 (see Figure 2 of the proposed alternate trailhead access). The planning study will examine mechanisms to address this final barrier as part of an overall streamlined system to improve non-motorized access.

Photo 4: C.R. 107 (between CDOT lot and trailhead)

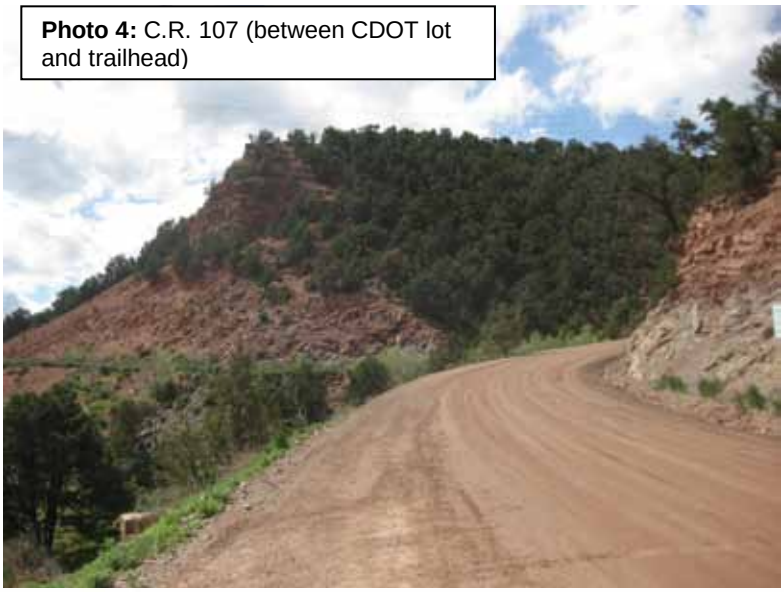
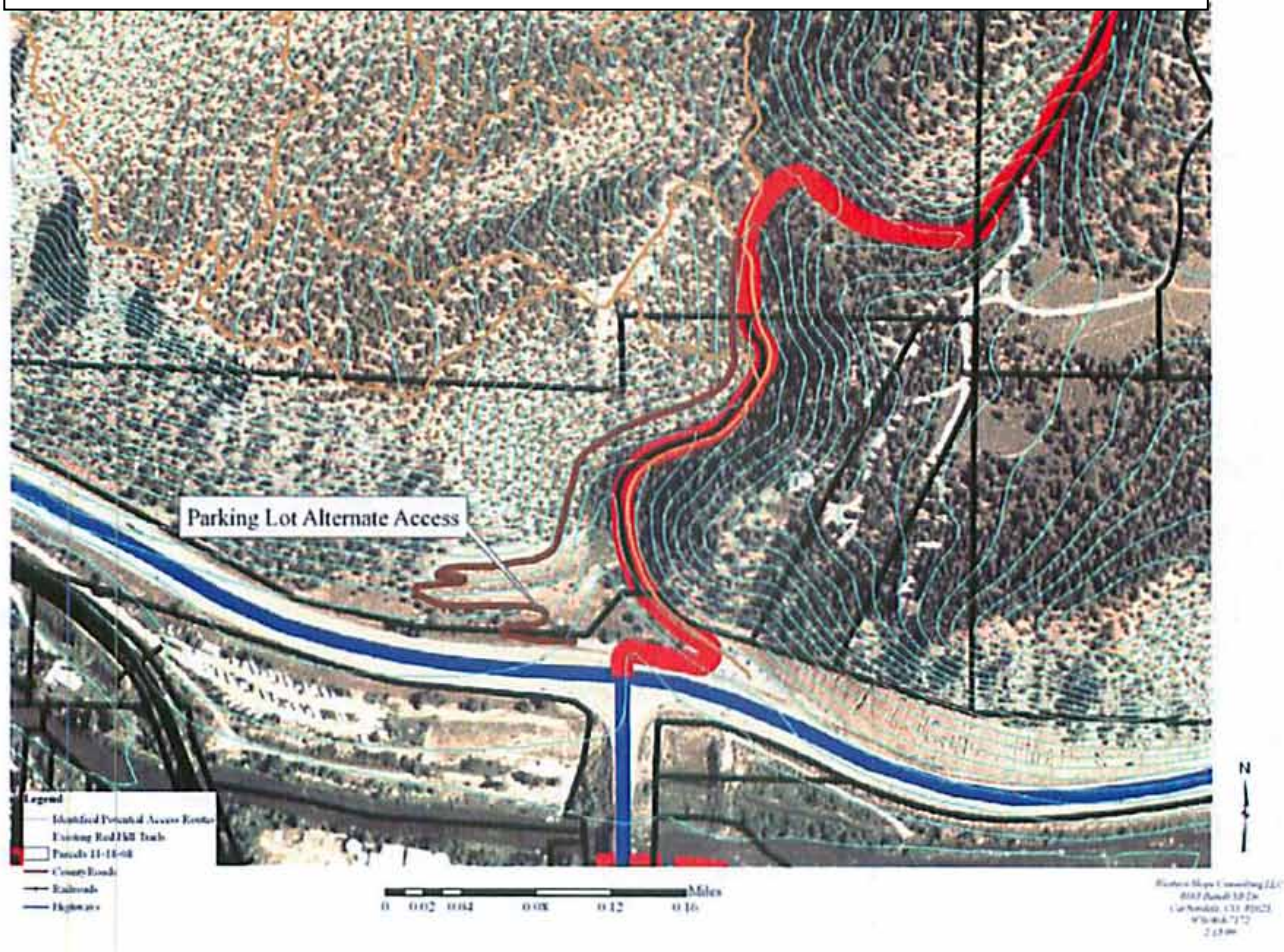


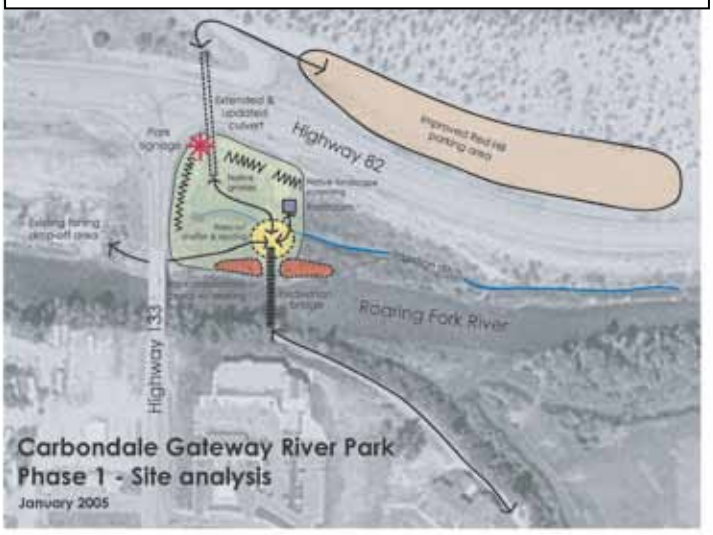
Figure 2: Alternate access to Red Hill trailhead. Graphic courtesy of Western Slope Consulting LLC.



Future Conditions

While the current conditions present a significant need for improved visitor mobility, accessibility, and safety, several future conditions may further aggravate existing conditions. First, visitation to Red Hill SRMA is expected to grow. The Red Hill Council, who keeps trail user counts of the hikers and mountain bikers using the area, recorded that approximately 55,000 hikers and cyclists annually visit the Red Hill trails, with most use concentrated between April and October. Average use during spring and fall months is approximately 300 visitors per day. This is an increase from an average of 50-60 visitors per day during peak season in 2002, according to trail counters run by the Red Hill Council. Growth projections are based on a steady increase in trail users over the past eight years as well as increased use and congestion in the CDOT-owned parking lot. CDOT estimates that the average daily traffic count will increase to 36,381 in 2035 (up from 20,100 in 2008), a further sign of growth in this area of the Valley. Second, the Town of Carbondale has proposed the creation of "Gateway River Park," a linear river corridor park located directly south and across Highway 82 from the CDOT parking lot (See Figure 3 of proposed Gateway River Park). This new park amenity would provide a key link in the non-motorized infrastructure and outdoor recreation spaces between Red Hill and the Town of Carbondale.

Figure 3
Graphic courtesy of the Town of Carbondale



In 2003 the Town of Carbondale conducted a feasibility study associated with development of the Carbondale Gateway River Park, and considered access between the proposed park and the Red Hill SRMA. The study examined the feasibility of using an existing 5 ft. wide x 7 ft. high concrete livestock culvert that was placed under Highway 82 during original road construction (see Photo 5). The box culvert was used, albeit infrequently, for pedestrian/bicycle access to Red Hill until reconstruction of the right turn lane by CDOT in 2002 closed the south culvert opening, which was replaced by a 30-inch culvert pipe. In 2003, CDOT made a preliminary decision that this existing culvert was not a safe or acceptable means for pedestrians to cross Highway 82 and directed the Town to consider an engineered plan and design for the culvert that would allow CDOT to make a final determination about its safety as a pedestrian crossing. Since that time, the culvert on the south side of the highway was filled in by CDOT when constructing a second directional east-hand turn lane from Highway 133 onto Highway 82.

Photo 5: Existing (closed) livestock underpass.

No comprehensive transportation study has ever been completed for this intersection to consider alternatives for safe pedestrian access, and the proposed planning study would fulfill this unmet need while considering a range of options to ensure that the selected alternative best meets the needs and constraints of this unique situation.

b. Environmental condition as a result of the existing transportation system: Describe the site's current or anticipated problem or opportunity for improvement of the environment in this area. You should include information on current or anticipated problems such as air pollution, noise pollution, run-off, water quality, harm to vegetation and wildlife, and other impacts or stressors on natural, scenic, cultural and/or historic resources caused by the existing transportation system. Please cite documentation in agency plans, studies, reports and other documentation that will help to support your description.

The current and anticipated access patterns to the Red Hill SRMA threaten the site's natural and aesthetic resources, particularly in the case of access via personal motorized vehicles. The Red Hill Mission Statement objectives emphasize the protection of natural resources by planning and maintaining trails for non-motorized use, eliminating motorized use, locating new trails away from sensitive areas, considering seasonal closures for resource protection (specifically soils, wildlife, vegetation, and sensitive values), and minimizing trash and damage. The site's management interest in resource protection is well-aligned with strategies to explore new, lower-impact transportation alternatives to access Red Hill.

An Environmental Assessment, completed in 2004, found that Red Hill is characterized by old-growth pinyon-juniper woodlands and a mature sagebrush shrub land, with an understory of native grasses and fobs. The area includes five soil types with slopes ranging from 2% to 50%; the soil types include Earsman-Rock complex, Empedrado Loam, Showalter-Morval complex, and Tridell-Brownsto sandy loam. A range of big and small game and nongame mammals and birds inhabit the area, including the pinyon jay, black-throated gray warbler, black-chinned hummingbird, gray flycatcher, juniper titmouse, sage sparrow, Brewer's sparrow, golden eagles, red-tailed hawks, and great-horned owl. While no federal or state listed species or habitat is found in Red Hill, the area and its immediate surroundings contain an active bald eagle nest and roost sites and habitat for cutthroat trout and Harrington's penstemon. Vegetation and soils, which affect species habitat, have been directly impacted by construction activities or undesignated recreational use and indirectly impacted by air pollution or runoff associated with surrounding traffic and development.

The 1998 *Red Hill Project Final Report* includes the management objective of enabling visitors to enjoy the area's natural resources, specifically including wildlife, scenery, and aesthetics, and gain greater environmental awareness. The BLM values the environmental resources on site, which may be impaired as visitation (and resulting traffic) to the site increases.

Carbondale's significant residential and commercial growth in the past 10 years has created undesirable impacts associated with severe automobile congestion and pollution. The natural and scenic resources of the Red Hill SRMA is heavily impacted by congestion at the Highway 82/133 intersection. According to the 2003 West Glenwood Springs to Aspen Corridor Investment Study, undertaken in cooperation with FTA, the Federal Highway Administration, and CDOT, "Highway 82 is the state's most congested rural highway, with a summer average daily traffic (ADT) volume of over 28,000 vehicles in some locations. Highway congestion within the Project Corridor threatens the economic vitality, environmental health, and character of the larger region."

Air quality is negatively affected by automobiles and bus emissions, and noise from automobiles, trucks, and buses negatively affects humans and wildlife in the Valley. Automobiles and their related parking areas also impact water quality and runoff, and these impacts can be particularly harmful given the proximity of the site to the Roaring Fork River (see Figure 1). High traffic volume on Highway 82 has raised concern for wildlife safety, as wildlife cross the roadway approximately one mile west and one mile east of the Highway 133 intersection (steep slopes near the intersection deter most wildlife crossing activity in that area).

As the existing transportation conditions are inhospitable to pedestrian and bicycle access to Red Hill, the majority of users drive personal vehicles and park at the CDOT-owned parking lot. The principal environmental conditions resulting from vehicular site access are air and noise pollution associated with vehicle use and vegetation, soil, and watershed impacts associated with the vehicle footprint of the parking area. Red Hill Council members have observed that, during peak periods when the CDOT lot is at

capacity, recreational users or carpoolers park in undesignated areas or along County Road 107, increasing the developed footprint of these areas and impacting surrounding vegetation and soils.

The proposed transportation study has a goal of reducing the number of vehicles used to access Red Hill SRMA, which will reduce the negative environmental impacts associated with vehicle use. The study proposes several transportation alternatives that aim to decrease vehicle mode share and increase transit and non-motorized mode share of visitor access. For example, visitors can currently use RFTA transit to access Red Hill from the nearby Park & Ride lot, and mechanisms to streamline the pedestrian connection between transit and Red Hill will further bring reductions in air pollution, noise pollution, and fuel use. Increased utilization of bus transit will help to maintain, if not improve, air quality, conserve energy, reduce automobile congestion, and reduce demand for limited on-site parking at this BLM Recreation Area.

Scope of Work and Methodology
The planning project's scope of work and methodology should include tasks that will assess the areas below in a thorough and professional manner. The planning project should have a scope of work and methodology at this proposal phase, although it may be refined later.

2. Methodology for Assessing - Visitor Mobility & Experience Benefits of Project
Please address how the planning project's scope and methodology will assess the visitor mobility & experience benefits of a potential alternative transportation system improvement in the following areas:

a. Reduced traffic congestion: This criterion includes: reduced average number of daily motorized vehicle trips during peak visitation, time lost to traffic delays, visitor frustration, and the area's current capacity of the existing transportation system.

The Feasibility Study goal to reduce the number of vehicles needed to bring visitors to Red Hill demonstrates the intention to relieve traffic congestion in the CDOT parking lot and at the Highway 82/133 intersection adjacent to the site. The current situation of Red Hill allows visitors to access the site via transit or non-motorized modes, but the barriers for non-motorized users (including transit riders who would then walk or bike to the trailhead) are significant. Non-motorized users must work through an indirect system of sidewalks and crossings to access the site, and encounter perceived safety threats due to the high-traffic and high-speed intersection.

The general methodology of the Alternative Transportation Feasibility Study is to examine each of the six transportation alternatives using six categories of criteria, which were crafted to align with project goals. The alternatives can then be compared equally based on the same criteria. The first of these criteria categories is congestion reduction, referring to parking lot and road congestion caused by vehicles accessing the site.

The specific criteria for congestion reduction will measure the ability of an alternative to reduce the number of vehicles used to bring visitors to Red Hill. Specifically, for each alternative, the Study will estimate the number of cars replaced from the parking lot and the intersection during peak periods and the vehicle miles traveled (VMT) reduced by visitors using transit or non-motorized modes for site access. The Study will also evaluate alternatives by ability to increase visitor mobility, accessibility, and safety. This criteria will include the ease of use and potential visitor barriers to each alternative, demonstrating how potential alternatives would address congestion-related impacts to visitor experience.

b. **Enhanced visitor mobility, accessibility, and safety:** This criterion includes enhanced intermodal interconnectivity, improved public access to resources, improved access for those with disabilities and low incomes, traffic safety, pedestrian/cycling safety, and safety in the case of catastrophic events (i.e., forest fires or security threats).

User counts, visitor surveys, and observed visitation patterns indicate the popularity and increasing demand for non-motorized recreation at Red Hill, but impediments in visitor mobility, accessibility, and

safety are the key threats to the continued enjoyment of the SRMA. The focus for any alternative should be to streamline safe, non-motorized access to Red Hill, which will improve safety and mobility for all visitors. Safe and streamlined access will also increase the use of the site by groups that are currently underserved or not using the site due to current constraints. The transportation alternatives include several that would enhance intermodal access to the site, including connections between the RFTA bus system, a potential Carbondale feeder system, and the existing and extensive bicycle and pedestrian infrastructure in Carbondale. Multi-modal alternatives and intermodal connections are further emphasized through the composition of the stakeholder team that developed the Feasibility Study proposal; the team includes representatives from various modal groups (including CDOT, RFTA, and RHC).

The Feasibility Study criteria to evaluate the impacts to pedestrian safety and accessibility will incorporate estimates of the number of users served by transit, non-motorized, and personal vehicular modes under each transportation alternative scenario. For each alternative, the Feasibility Study will estimate the number of pedestrians and cyclists served, including the ability to capture new visitors to site based on new, safe access routes and the ability to serve targeted user groups. Using these figures, the Study team will estimate the ability of each alternative to induce mode shift.

As safety is a major concern for Red Hill users, the Study criteria will also estimate the ability of each alternative to enhance pedestrian and cyclist safety, either by reducing speeds or congestion at the intersection or avoiding at-grade crossing. The removal or reduction of safety threats will be a key consideration in measuring how many pedestrians or cyclists will elect to utilize a non-motorized transportation alternative. For example, several public and private schools and youth groups located within walking distance from Red Hill have expressed interest in traveling to the site for educational or recreational trips but do not do so due to perceived safety and accessibility barriers. One school administrator noted that her school would walk to the site instead of taking buses if a safe, off-road walking path were available. The Feasibility Study would also examine the number of transit riders served and anticipated reduced impacts in traffic violations at the Highway 82/133 intersection.

c. Improved visitor education, recreation, and health benefits: Describe how the project's scope and methodology will assess improved visitor education, recreation and health benefits?

Red Hill SRMA is currently a popular recreational amenity, frequently used by many Carbondale residents and increasingly serving as a destination for other Roaring Fork Valley residents and visitors. The BLM Glenwood Springs Field Office Report of 2008 noted that the Red Hill area received disproportionately high visitation relative to other recreation sites in the field office. In focus groups related to Red Hill use, visitors expressed that they highly valued the site for opportunities to frequently access outdoor physical activity and engage in activities that involve challenge or sport. Visitors also reported mental well being and improved physical fitness as personal benefits of site use. Most current users are individuals using the site for hiking, jogging, mountain biking, and sightseeing, and due to the trails' close proximity to Carbondale, many people use the site regularly for physical fitness purposes. Red Hill serves as an outdoor classroom for several area schools. Bus trips to Red Hill in vehicles from Colorado Rocky Mountain School, Carbondale Community School and other area schools would be reduced or eliminated (to be replaced by walking or bicycling) if an off-highway connection were available to Red Hill.

Visitors recreating at Red Hill already enjoy health benefits from active outdoor exercise, but their recreation and health benefits would be further improved by streamlined, safe access to the trailheads. If non-motorized transportation alternatives, such as those considered in the Feasibility Study, were realized, visitors could gain additional exercise benefits from walking, running, or bicycling to the site. The Feasibility Study will consider increases in site access by non-motorized modes, and reduction in access by personal vehicles, (as measured in criteria outlined previously) to be proxy measures for the health and recreation benefits that accompany additional mode shift.

3. Methodology for Assessing - Environmental Benefits of Project

Please address how the planning project's scope and methodology will assess the environmental benefits of a potential alternative transportation system improvement in the following areas:

a. Protection of sensitive natural, cultural, and historical resources: This criterion includes energy conservation, energy efficiency, ecosystem sustainability, preservation of archeological and/or historical resources, viewshed and watershed preservation, reduction in auto-wildlife collision rates, improved habitat connectivity, ensuring that visitation does not exceed an area's ability to handle increased levels of visitation or the "carrying capacity" of the land unit, and other protection benefits where applicable.

Red Hill is located in the heart of the Roaring Fork Valley, situated in close proximity to the Roaring Fork River with sweeping views of the Valley and surrounding mountain vistas, including the unique and imposing Mount Sopris. The trails run through the rock and sandy loam soils on Red Hill's steep terrain and are flanked by sagebrush and pinyon-juniper woodlands, which are home to many birds and mammals (listed in the Environmental Conditions section of this application). The scenery, topography, and natural resources are highly valued by visitors and by the Red Hill Council, who helps manage the site. For these reasons, stewards and visitors alike have an interest in protecting the natural and aesthetic resources as a means to maintain the integrity of Red Hill.

The impacts to the scenery and natural resources are primarily a result of vehicular congestion. Vehicles, both in designated and undesignated areas, interrupt the area's natural scenery and may affect sensitive vegetation or soils near the site. Vehicles traveling to and from Red Hill also have incremental negative impacts upon the Roaring Fork watershed.

Most significantly, increased vehicle use (as anticipated through increased visitation) would increase the developed footprint of the site by expanding the parking area, either through formal expansion or the "creep" of undesignated parking. The transportation alternatives to be considered in the Feasibility Study may be able to reduce vehicle trips to Red Hill, which would prevent the need for new parking as visitation increases. Some transportation alternatives may even result in an overall reduction in parking need, potentially allowing part of the CDOT parking lot to be re-vegetated for increased environmental benefits.

The Study will evaluate each alternative for potential visual resource and environmental impacts. The BLM has designated the SRMA as a Visual Resource Management Class II area, with the objective of retaining the existing characteristic landscape. Any change to the basic landscape element (form, line, color, or texture) due to management activities must be low and not evident. Given the sensitivity to visual resources, the Feasibility Study will specifically include an estimate of the amount of parking or developed footprint for each alternative (including new developed areas needed or potential to reduce existing footprint), impacts to the watershed, and impacts to aesthetic resources or views. Some of this evaluation will be a qualitative estimate based on the alternative's abilities to reduce motor vehicle site access.

Alternatives will be evaluated based on their impact to wildlife crossings, and impacts will be judged to facilitate, inhibit, or have no impact upon wildlife crossings around the Red Hill area. Red Hill Council members also note potential impacts by improper site use by non-motorized users, generally caused by failure to follow management guidelines. Potential natural resource impacts by non-motorized users will be considered for each alternative.

b. Reduced pollution: This criterion includes air pollution, water pollution, noise pollution, and visual pollution.

The vehicles that carry users to the Red Hill parking lot are sources of carbon dioxide (CO_2) emissions, noise pollution, and potential water pollution from incremental roadway runoff. The overall Feasibility Study goal to reduce vehicle use and increase non-motorized access to Red Hill would indirectly achieve reductions in pollution associated with motor vehicle site access. Several of the transportation alternatives (pedestrian underpass, pedestrian overpass, and intersection improvements) are designed to replace pollution-producing vehicle trips with non-motorized trips, which are free of air and noise pollution. The

transit alternative included in the Study may also consider alternative-fueled vehicles that would reduce noise and CO_2 emissions; even conventionally-fueled transit vehicles may result in an overall reduction in air pollution as one bus or shuttle replaces several personal vehicles.

The Feasibility Study criteria to consider the number of vehicles reduced by each of the alternatives would serve as a proxy measure for pollution reduction. Proxy measures will include reduction in car trips and parking on site and measurement of VMT reduced. Using these proxy measure estimates, the Study team could also estimate total fuel use and total CO_2 emissions for each alternative. This would illustrate the ability of each alternative to reduce pollution. Motor vehicle impacts from transit vehicles, as included in the transit alternative, will also be included in this criteria.

In addition to air and noise pollution from motor vehicles, several alternatives proposed in the Feasibility Study may induce visual pollution, as defined by noticeable changes to the visual landscape that interrupt the current viewshed. Specifically, these include a pedestrian underpass and major physical changes to the intersection (such as a grade separation), though other alternatives may also include visual pollution. These effects shall be qualitatively evaluated and included in the Study.

4. Methodology for Assessing - Operational Efficiency and Financial Sustainability

Please address how the planning project's scope and methodology will assess the operational efficiency and the financial sustainability of a potential alternative transportation system improvement in the following areas:

a. Operational efficiency: This criterion includes considerations of how a potential alternative system may/may not meet identified management goals and objectives for this site, including consideration of multiple alternatives.

The management objectives of Red Hill, as captured in the *Red Hill Project Final Report*, include creating a site where visitors can enjoy frequent access to outdoor physical activity, enjoy the area's natural resources (including wildlife, scenery, and aesthetics), improve their physical fitness and health, gain greater environmental awareness and stewardship, and have greater aesthetic appreciation. The criteria proposed in the Study are closely aligned with the management objectives, with the intention that alternatives will be evaluated to measure their ability to achieve the primary goals of the site. On a foundational level, any transportation alternative that increases non-motorized access to the site (either a direct pedestrian or bicycle link or a secondary link from a transit system) will contribute to the management objectives by streamlining visitor access to the site and decreasing negative environmental impacts in the process.

A critical aspect of the Feasibility Study is to ensure that each alternative is clearly evaluated to indicate its ability to achieve the Study goals and to enhance the management objectives of the site. The Study criteria were developed to reflect both the Study goals (outline in the Project Description section) and align with management objectives. Additionally, the Study will evaluate multiple alternatives, covering non-motorized, transit, intermodal, and no-action modes, which will ensure that a full range of options are evaluated to find the most appropriate and effective transportation solution for the site.

As established previously, the congestion and safety issues with the Highway 82/133 intersection and the CDOT parking lot lead to negative resource impacts and reduced mobility, accessibility, and safety for visitors. Alternative transportation systems, such as the alternatives considered in the Feasibility Study, will be evaluated based on their ability to alleviate congestion and parking issues and thereby meet site management goals.

The analysis will specifically consider the operational feasibility of each alternative to meet the Site's management objectives and the Study goals by examining several implementation and usability factors. These factors include cost, ease of visitor use, and management feasibility. The latter criteria will assess the management capacities and resources needed to implement and operate each alternative, as compared to the current and potential resources available.

b. Financial feasibility: This criterion includes the development of a financial plan that will incorporate a potential alternative transportation system, including the evaluation of multiple alternatives.

Red Hill SRMA offers many benefits to the Roaring Fork Valley, and consequently many local and regional agencies are supporting the Alternative Transportation Feasibility Study as a means to maintain the site as a public amenity into the future. However, each stakeholder groups realizes the constraints posed by limited funding and recognizes a secondary Study goal to identify a transportation alternative that is financially feasible for Red Hill. Each alternative will include basic financial attributes to be incorporated into overall rankings and comparisons. Financial attributes will include planning costs, implementation and capital costs, and management and operations costs. The Feasibility Study will also consider potential short-term and long-term funding sources that may be applied to some or all of the alternatives. Finally, the Study will note whether total costs of an alternative appear to exceed potential revenue sources.

c. Cost effectiveness: This criterion includes the development of an analysis of cost effectiveness considerations that includes multiple alternatives.

While financial feasibility is a critical component and cost is a key criteria in the evaluation of the Transportation Alternatives, the cost factors must be measured against their ability to meet site management objectives and Study goals to ensure that the alternative addresses Red Hill's problems and needs. For example, a low operating cost per visitor that does not actually result in increased non-motorized site access does not meet project goals.

For each alternative, the Study team will assess the total cost (using financial attributes described above) against other evaluation criteria (congestion relief, visitor mobility, safety benefits, resource impacts, feasibility, etc.) to produce cost effectiveness measures. The evaluation criteria are directly related to Study goals; therefore this assessment will demonstrate the ability of each alternative to meet Study goals and the cost required to implement and operate each alternative. As the Study aims to increase safe and streamlined non-motorized access to Red Hill, one measure of cost effectiveness may be the cost per visitor mode shift (as measured by the total number of visitors estimated to shift to non-motorized or transit access from motor vehicle access divided by the total capital and operations cost). Cost effectiveness will be a key factor used to illustrate the relative benefits and costs of each alternative to the public and stakeholder groups.

d. Partnerships and funding from other sources: This criterion includes planning projects that would be carried out or funded in partnership with other entities in addition to the sponsor and will receive points depending on the level of partnership. Documentation (e.g., partnership agreements, letters of partnership support, letters of confirmation of financial contribution, letters of in-kind contributions, etc.) that supports and verifies involvement of partners and level of partnership *must* accompany this proposal.

The Red Hill SRMA is unique in having a strong partnership and stakeholder network, given the relatively small size and scope of the site and the Feasibility Study. A Stakeholder Team composed of governmental, quasi-governmental, non-profit, and public agencies and organizations has been working collaboratively to define the transportation need for Red Hill, gather supporting evidence, and identify Study components. Organizations represented in the Stakeholder Team include the Bureau of Land Management, Town of Carbondale, the Red Hill Council, CDOT, and RFTA.

Letters of support from the following organizations are included in this application:

- Bureau of Land Management
- Colorado Department of Transportation
- Roaring Fork Transit Authority
- Garfield County
- Mayor of Carbondale
- Carbondale Chamber of Commerce
- Garfield County Sheriff
- Colorado Rocky Mountain School

- Carbondale Community School
- Colorado Division of Wildlife
- Roaring Fork Mountain Bike Association
- Red Hill Council