

**U.S. Department of the Interior
Bureau of Land Management**

**Environmental Assessment
Salida Trails-New Trail Construction**

July 2016

PREPARING OFFICE

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Bureau of Land Management
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Environmental Assessment

Salida Trails-New Trail Construction

DOI-BLM-CO-F02-2015-0017 EA

Prepared by
U.S. Department of the Interior
Bureau of Land Management
Royal Gorge Field Office
Canon City, CO

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1.1. Identifying Information:

1.1.1. Title, EA number, and type of project:

Salida Trails-New Trail Construction, DOI-BLM-CO-F02-2015-0017 EA, Recreation Trails

1.1.2. Location of Alternative 1:

New Mexico P.M., Chaffee County, Colorado

T. 49 N., R., 8 E.,

secs. 12 and 13;

T. 49 N., R. 9 E.,

secs. 4, 7, 8 and 15 thru 18;

T. 50 N., R. 9 E.,

secs. 28, 32 and 33.

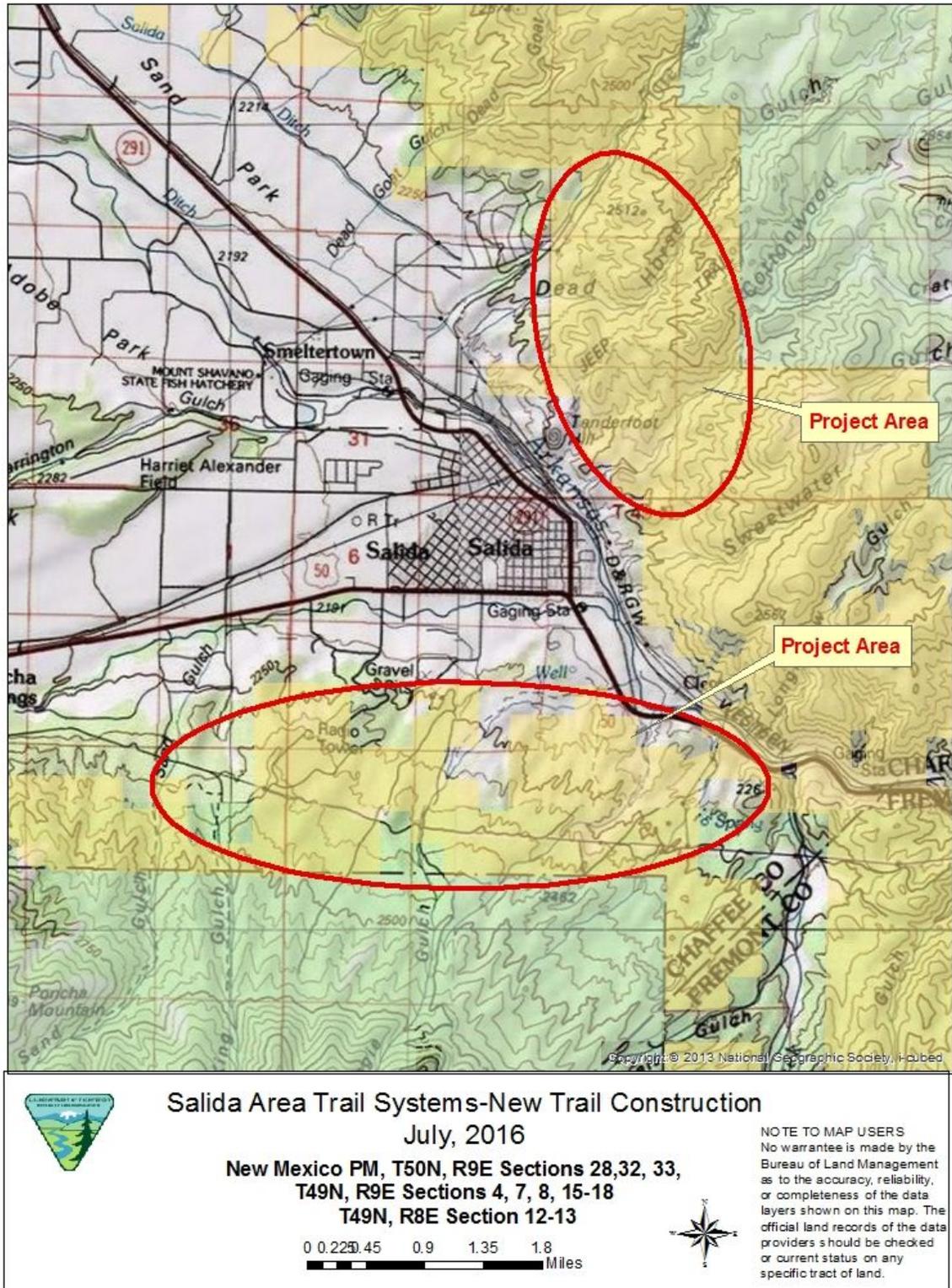


Figure 1.1. Overview Map

1.1.3. Name and Location of Preparing Office:

Royal Gorge Field Office 3028 E Main Street Canon City, Colorado (719) 269–8500

1.1.4. Identify the Subject Function Code, Lease, Serial, or Case File Number:

N/A

1.1.5. Applicant Name:

Salida Mountain Trails, Bureau of Land Management

1.2. Introduction and Background

BACKGROUND:

The BLM is preparing an Environmental Assessment (EA) to analyze the impacts of adding new non-motorized trails to the Arkansas Hills Trail System and the Methodist Mountain Trail System. Both areas are in the Salida subunit as defined by the Arkansas River Travel Management Plan (2006) and are adjacent to the city of Salida.

The 2006 TMP recognized that unlike other subunits studied, “the largest demand in the Salida area is for more hiking and bicycle trails, which is largely an effect of demographic make-up of the town's population.” The demand has continued to grow as the number of miles of new sustainably built trails has increased. In 2010 BLM devices counted over 10,000 users passing a single trail junction; by 2013 that number had grown to 17,286. Prior to the 2006 TMP mountain bikes were allowed to ride off of existing travel routes. The approval of the TMP restricted mountain bikes to approved roads and trails only while outlining conditions for the approval of new trails.

Below are the recommended conditions for guiding future management and development in the Salida area.

1. The proposal would further the following desired future conditions:

Watershed conditions are improving throughout the sub-unit; rates of soil erosion are decreasing and water quality and fish habitat in the Arkansas River are improving.

Available areas of wildlife habitat are expanding and improving throughout the sub-unit, supporting sustainable numbers of deer, elk, bighorn sheep, and black bear.

Occurrences of Brandagee wild buckwheat and rock-loving neoparrya are stable or increasing. The population of Townsend’s big-eared bat is stable or increasing.

Previous impacts to unique geologic features from off-trail recreation uses are no longer evident in Castle Gardens and King Gulch.

Impacts from dumping trash, target shooting, off-road vehicle play, unauthorized trail construction, and other illegal uses are no longer evident in areas where these activities had previously occurred.

Visitor travel via a well-managed system of designated roads and trails that serve a variety of motorized, mechanized, and non-motorized travel uses that are being maintained to limit adverse impacts to vegetation, soils, and water.

Designated travel routes between BLM and National Forest lands are cooperatively established to accommodate the same types of uses.

2. The proposal is sponsored under a partnership agreement that includes a plan for securing the necessary funds and/or volunteer commitments to construct and maintain the trail to accepted standards. For trails involving non-BLM lands, the proponent must also acquire the necessary rights-of-ways from the affected landowners.
3. The specific location of the proposed trails have been flagged on the ground and mapped using GPS.
4. The decision to approve the trails have been authorized under a site specific EA that analyzes the environmental effect of the proposal.

For the Salida subunit the TMP DFCs included a desire to see visitors travel via a well-managed system of designated trails that are being maintained to limit adverse impacts to vegetation, soils, and water. This outcome is being fostered through a long term partnership with Salida Mountain Trails (SMT) a 501c3 all volunteer organization whose mission is to design, build and maintain non-motorized, multi-user trails on the public lands near the city of Salida. To date, SMT has created a 23 mile system of new sustainably built trails (using IMBA standards), while rehabilitating some of pre-existing social trails, and closing those that were beyond repair. In fiscal year October, 2013 through September, 2014 SMT volunteers contributed over 2,700 hours to trail building and maintenance and the organization spent in excess of 20,000 dollars on professional trail building services. SMT has over 160 dues paying members and receives additional financial support from Salida, Chaffee County, and local businesses.

In December, 2013 the city of Salida purchased 80 acres adjoining BLM land. This purchase provided a legal egress for a trail originally approved in the 2006 TMP. This purchase also provides an opportunity to create new trails connecting city and BLM land.

1.3. Purpose and Need

The community of Salida's primary recreation management goal for the trail network is to enhance the economy of the Arkansas River Valley by creating a destination non-motorized trail system connected directly with the community. A subsequent goal is to enhance the quality of life for local residents by providing close to town recreation that offers opportunities for the whole family with opportunities for skill progression. In order to meet these goals this network should provide mileage sufficient for diversity in difficulty, length, and while at the same time mitigating impacts to other resources. The network must be logical, easy to navigate, provide loops, and provide a high quality experience. The purpose of the action is to better meet the trail network goal by improving trail connections, adding mileage to the system without significantly enlarging the current footprint, and enhancing the trail users' overall experience by offering a full range of trails for beginner to expert cyclists and hikers.

Due to its proximity to downtown the Arkansas Hills area trails gets heavy use from hikers, dog walkers, trail runners, and mountain bikers. In addition, it is utilized for running and mountain bike races associated with the FIBARK festival and the Run Through Time marathon. While this

stacked-loop system currently offers trails of a great variety and range of difficulty, it could be vastly improved through the judicious addition of several connectors and short new trails that would greatly enhance the user experience without significantly enlarging the foot print of the current system.

The Methodist Mountain trail system currently consists of the Little Rainbow Trail, the Double Rainbow trail as well as feeder trails on the east end (Lost, Dead Bird, and Race Track). This system has excellent county road access via the 110 trail head or an intersection with CR 108. While some riders create a loop by riding from town, the majority of riders and almost all hikers drive to either starting point and use the trail as an out and back. While this trail is the area's best beginner riding and great contour hiking, it is limited due to its linear nature. The trail user experience could be vastly improved with limited increased land use by building several loop trails in the area that could be used as stand-alone trails or serve as connectors to these existing trails. These additions would create a true stacked loop system with opportunities for hikers, runners, and riders of all abilities to have an enjoyable and safe adventure.

The Methodist Mountain area is also home to the iconic Rainbow Trail. The Rainbow Trail is one mile south and 1500 feet higher in altitude than the Little Rainbow and contained within the National Forest. The US Forest Service (USFS) with the support of Salida Mountain Trails recently completed the Columbine trail to the east of the Methodist Mountain area and has expressed an interest in constructing a connection between the Rainbow and Little Rainbow in the Sand Gulch area. A trail of this nature would be almost completely on land managed by the US Forest Service and would require their approval through a separate process. The following proposed trails would greatly expand and enhance the stacked loop system and provide all day or multi-day hiking and riding opportunities.

The need for the action stems from compliance with Royal Gorge RMP (1996) regarding recreation management, to ensure the continued availability of BLM administered lands for a diversity of resource-dependent, outdoor recreation opportunities and the multiple use and sustained yield mandate of Section 302a of the Federal Land Policy and Management Act.

1.4. Decision to be Made

The BLM will decide whether to approve the proposed Salida Trails-New Trail Construction project based on the analysis contained in this Environmental Assessment (EA). The BLM may choose to: a) implement the project as proposed, b) implement the project with modifications/mitigation, c) implement an alternative to the proposed action, or d) not implement the project at this time.

1.5. Plan Conformance Review

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Royal Gorge Resource Management Plan

Date Approved: 5/13/1996

Decision Number/Page: 1-82

Decision Language: Recreation will be managed to provide for a variety of recreational opportunities and settings; facility development will be accomplished to reduce user conflicts and to improve visitor health and safety.

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands.

Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.

Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

Because standards exist for each of these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in Chapter 3 of this document.

1.6. Scoping, Public Involvement and Issues

NEPA regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

Persons/Public/Agencies Consulted: Public scoping was the primary mechanism used by the BLM to initially identify issues. Public notification of the January 2015 public scoping period was conducted through a press release to local and regional news outlets as well as letters and emails to known interested parties. Several local and regional news outlets carried the story. Through public scoping over 300 comments were received with the majority in support of the project. Several issues were also identified through this public input process.

Issues Identified:

- Impacts to soils, noxious and invasive weeds, vegetation, rare/imperiled plants, migratory birds and wildlife
- Impacts to users not traveling via bicycle
- Shared maintenance responsibility of access roads

- Lack of motorized recreation opportunities
- Adding additional trails
- Impacts and conflicts with grazing uses
- Need to provide opportunities for hikers and horseback riders
- Impacts from off-trail/non—designated bicycle use
- Trails accommodate mobility devices
- Increase in use on non-designated trails on FS managed lands
- Ability to maintain the network in the long term
- Impacts to adjacent private land

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2.1. Description of the Proposed Action

2.2. Alternatives Analyzed in Detail

2.2.1. No Action Alternative

Under this alternative the BLM would not add additional trails to the existing trail network. Partnerships would still be utilized to assist in system maintenance and management. Creation of new trails would be discouraged through signing, education and enforcement.

2.2.2. Alternatives

Alternative 1: Under this alternative the BLM in cooperation with Salida Mountain Trails propose to add additional trails to the Arkansas Hills Area and the Methodist Mountain System to better meet the communities desired goal of creating a destination trail system that is connected directly with the town of Salida. While concepts for specific trails have been identified, this document is also intended to be somewhat programmatic allowing for future connections both within the trail system itself and connections from adjacent land managers. Once specific on the ground locations are identified for trails or other features, site specific resource inventories would be conducted. Concepts for identified trails are outlined below along with criteria for adding additional trails to the system.

Methodist Mountain Area Proposed Trails

Spartan Trail: The Spartan Trail's objective is to create beginner/intermediate loops connecting the existing Little Rainbow, Skull, and Double Rainbow trails to extend saddle time while avoiding the need for out and back riding thereby improving the rider or hiker's experience and reducing the number of contacts with other groups. Additionally, while one section of this trail will maintain the wide 36" track of the existing Little Rainbow trail allowing all rider levels a loop option, the other side of the circuit will be narrower single track but will maintain the "low exposure", safe riding environment of the Little Rainbow. This section will allow the beginner rider an opportunity to safely build confidence and act as a bridge to the more challenging Double Rainbow trail which has narrower tread as well as more exposed terrain. This trail will also offer alternative lines where a rider can attempt some rock obstacles in a low exposure setting building confidence and skill. The 36" wide portion of the trail will be able to accommodate mobility devices such as wheel-chairs and hand cycles.

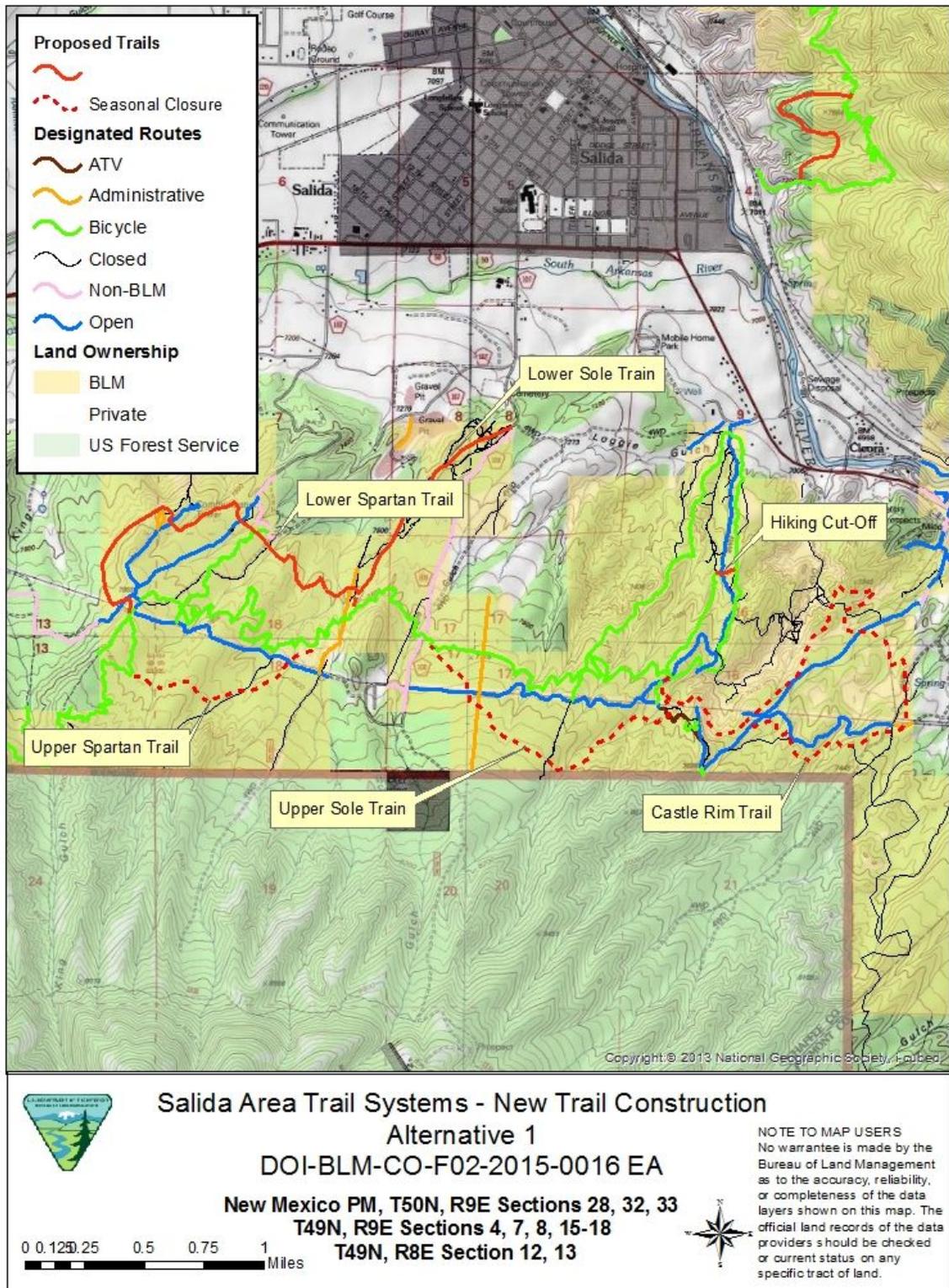


Figure 2.1. Alternative 1, Methodist Mountain Area

As reflected in its' name (Salida High Spartans) this trail will provide an excellent training venue for the high school mountain bike team which currently does all their riding in the Arkansas Hill trails due to the greater trail connectivity in that area. This intermediate loop is proximate to the school and would offer an excellent training alternative. State and National Youth Racing Organizations will be consulted with the planning of this trail in order to better meet the intended goal.

As a beginner/intermediate trail appropriate for families and inexperienced riders, hikers trail runners, and casual walkers this trail will be maintained to avoid large loose rocks and other obstructions with a firm tread surface. All intersections shall be signed. This trail will be approximately 2.6 miles.

The portion of this trail located above (south) of the powerline road would be subjected to a seasonal closure from December 15th to March 15th of each year to protect wildlife winter range from human disturbance.

Sole Train: The Sole Train trail's objective is to provide the intermediate/advanced and expert rider a downhill, flow trail that will offer higher speed riding, providing tabletops, berms and possibly wood constructed jumps depending on soil conditions. Alternative lines will be provided to allow the user to avoid these features if they desire, thus allowing riders of differing skill levels to enjoy the excitement provided by the fast, smooth downhill tread. This trail will have a required direction of travel (downhill). This trail will be approximately three feet wide and have average grades of 6% but be considerably steeper in appropriate sections. The intention is to design this trail to generally follow IMBA's flow trail standards. Please see the following link: <https://www.imba.com/flow-country/trail-characteristics> .

Sole Train will not only provide an exciting, downhill, feature filled experience but will also terminate close to or at the Opal and Harold Trail that is planned for the Vandaveer Property owned by the city of Salida. The Opal and Harold Trail will follow the existing irrigation ditch line back to the Burmac Trail head and/or a safe crossing of Highway 50 allowing for loop rides or direct from town riding. Sole Train will be used both by down-hill thrill seeking riders but also by riders, runners, and hikers looking for a challenging and extended loop close to the city limits.

As designed, Sole Train will incorporate a short portion of the Little Rainbow trail. To avoid user conflicts, signs warning of two-way/slower traffic will be posted. Foreseeing that some trail users may opt to shuttle the lower portion of Sole Train to maximize their downhill riding time, a small parking area off County Road 108 may be required. The specific location and design of the trailhead would be coordinated with Chaffee County.

The social trail known as 'Guts' originates on the US Forest Service managed Rainbow Trail. The majority of the trail is located on US Forest Service lands with only a short portion located on BLM lands. The BLM will coordinate with the US Forest Service to determine the best course of action to address use on this social trail. The BLM's management actions will mirror that of the US Forest Service on this trail including timing of implementation, seasonal closures (if applicable), and trail management objectives.

As a flow trail, Sole Train will be maintained to keep a smooth tread and features will be groomed to keep them in their designed condition. Total mileage will be approximately 2.7 miles.

Castle Rim Trail: The Castle Rim Trail will offer additional beginner/intermediate, loop riding and hiking from the Burmac Trail head area. More importantly the objective is to provide views

of the unique geologic features of Castle Gardens while avoiding disturbance of the rare flora and fragile soils found in the canyon itself. This trail will stay on the east rim of Castle gardens and then loop back to the intersections of Little Rainbow, Sole Train, Deadbird, and Race Track through an area that already contains a motorized BLM road as well as the power line access road. The unique flora, fauna, and geology would be interpreted through a variety of mediums ranging from kiosks, web, maps, and possibly signing along the trail. If legal access is obtained this trail may also access Highway 50 near Salida East to provide access from that area and creating an additional large loop option. An additional spur may also connect with the adjacent sub-division if desired. The trail will provide either a stand-alone loop or may be combined with any of the aforementioned trails to create an extended, more challenging ride/run/hike. Once constructed all other social trails in the area would be closed and re-habilitated and hiking use would be encouraged to use only the designated trails.

As a beginner/intermediate trail, the tread will be machine or hand built to a width of 18 to 24 inches. Most exposure will be minimal. Some natural obstacles such as rocks or roots may be left to challenge riders. Interpretive signs will be constructed of high quality, long lived, and tamper resistant materials. The trail will be maintained to keep those features as designed. All weather and user wear damage will be repaired. Total mileage will be approximately 3 miles.

This trail would be subjected to a seasonal closure from December 15th to March 15th of each year to protect wildlife winter range from human disturbance.

Race Track Future Re-Route: Race Track is a long existing trail that was integrated into the current trail system during the Travel Management planning process. The overall trail management goal is to be an easier/more challenging trail that is enjoyable climb and descent when connecting with the Little Rainbow Trail. The current route of this trail lends itself to continue weather related erosion and the trail which was originally conceived as the easiest route up or down to or from the Burmac trail head has become more challenging for riders and less pleasant for hikers over time. While it may be possible through frequent maintenance to keep the current alignment, re-routing large portions of the trail may be deemed the best management option.

Hiking Loop Cut-Off: Public scoping revealed the desire that the trail system also provide outstanding opportunities for people looking for hiking opportunities. While the existing and proposed trails are designed and managed for multiple use, including hiking, they tend to accommodate bicycle travel better due to the gentle grades and longer loops. This trail would provide a connection between the existing Dead Bird Trail and Race-Track (existing and/or re-routed) to provide a shorter opportunity that aligns better with average hiking distances. This approximately .10 mile connector would then provide a 1.5 mile hiking loop originating from the Burmac Trailhead. The trail would also be open to bicycles providing a short opportunity for beginners or youth.

Burmac Trailhead Access Road: The BLM would consider re-locating the access road to the Burmac Trailhead to the south side of the active wash to reduce maintenance needs and better accommodate the types of vehicles typically used by visitors. The required permits and easements would need to be in place prior to moving forward on this aspect of the project.

Arkansas Hill Area Proposed Trails

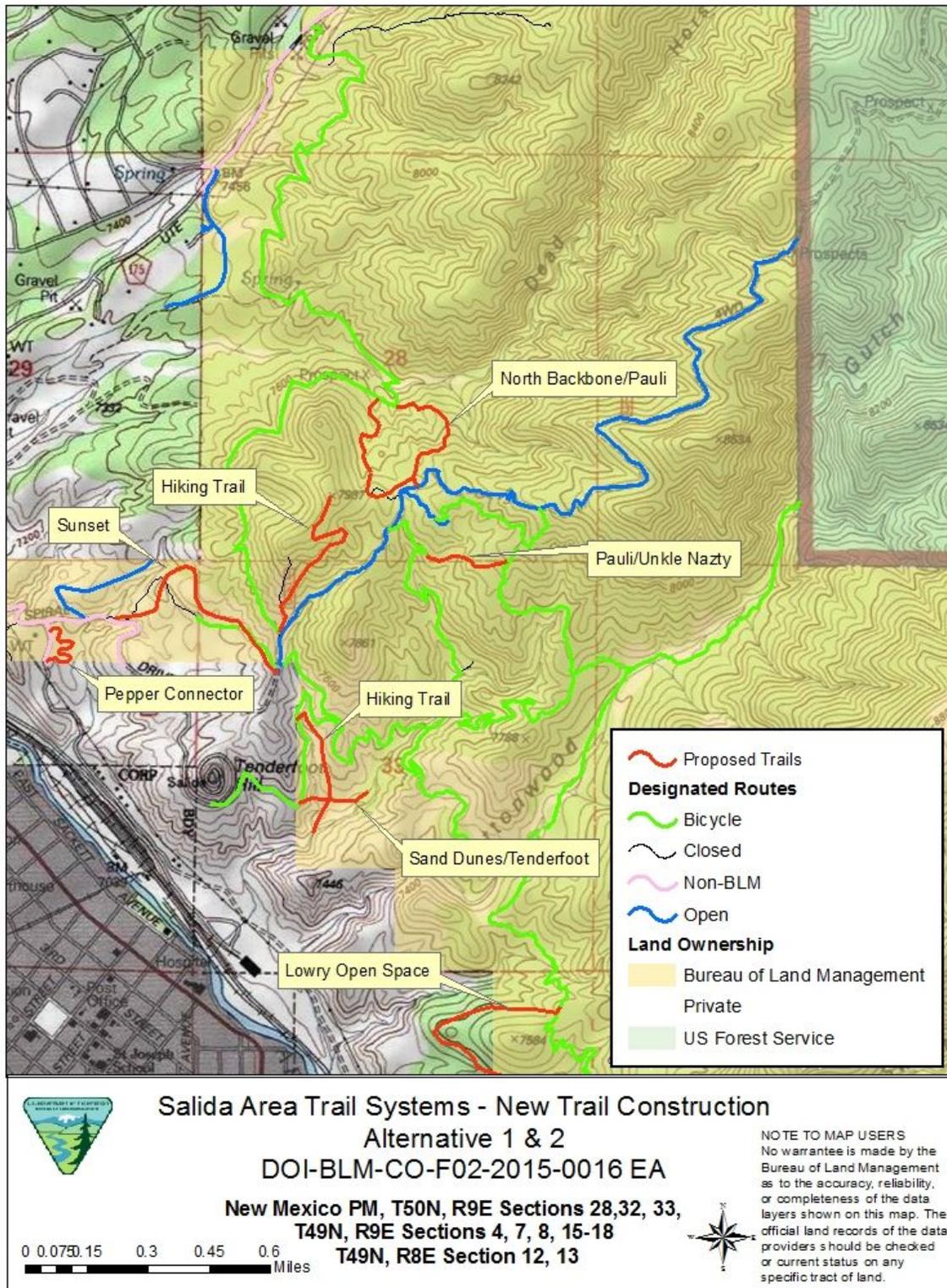


Figure 2.2. Alternative 1 & 2, Arkansas Hills Area

Sand Dunes/Unkle Nazty: Unkle Nasty was designed as an advanced trail with formidable rock drops and steep technical riding. Sand Dunes is also a challenging trail but is suitable for the intrepid intermediate rider. This trail also provides excellent views of Methodist Mountain and the peaks south of Salida. The vast majority of mountain bikers use these as downhill trails. These trails currently are under-utilized because access requires an arduous climb up CR 173, as well as the high difficulty found on sections of Unkle Nasty. A trail connection between the upper ends of these two trails, and the addition of the North Backbone/Pauli Connector Loop (see following item), will greatly increase riding and hiking options in this area. Rather than a long ride up followed by a relatively quick descent, trail users will be able to make a loop of Sand Dunes/Unkle Nasty/Pauli or use Sand Dunes and the new connector to avoid some of the most difficult terrain on Unkle Nasty. This link should attract more users to existing trails and improve the trail experience for both riders and hikers.

This connector will maintain a similar level of difficulty found on Sand Dunes and Unkle Nasty and be maintained commensurately. Significant obstacles, loose surfaces, steeper grades, and large drops will be present. However, the trail will contour between the existing trails so grades will not be steep on average. Mileage will be approximately .25 miles.

North Backbone/Pauli Connector Loop: The North Backbone trail is an intermediate trail that provides for longer excursions for mountain bikers who ride CR 175 from Salida but is also used as an out and back trail for hikers who generally drive to the trail head. The proposed loop trail will provide new options for both user groups. Hikers will be able to use the loop to vary their experience while cyclists will have improved access to Sand Dunes, Pauli, and Unkle Nasty. (see above item) as well as a challenging stand-alone trail.

This trail will be upper intermediate to advanced and travel through dramatic terrain. Steep grades, travel over rock out crops, and significant exposure will be present. This trail will appeal to the ambitious mountain biker or hiker looking for new challenges. This trail will be maintained to keep its' advanced features and will be approximately .77 miles long.

Sunset Trail: This is a social trail of long standing which intersects CR 173 at the junction of Lil' Rattler and Backbone about one hundred yards south of the North Backbone intersection. It is located perfectly to provide access from all of these trails to Spiral Drive, Front Side and the Chili Pepper trails.

As a non-system trail, Sunset has not been maintained and is currently used infrequently by hikers and mountain bikers. The objective is to create a valuable connector to trails leading back to town and provide an alternative easiest/more difficult trail option to riding Spiral Drive road to connect with the network from town. In its unmaintained state and current alignment, this trail is upper intermediate to advanced in nature and generally only desirable for downhill traffic. Options would be explored to re-align the trail to better fit the trail management objectives of easiest/more difficult trail that connects with the greater system. This could include city owned land as well as BLM managed lands. It is understood that due to steep side slopes in the area this management objective may be hard to meet and it would end up as more difficult.

Lower Sand Dunes/Tenderfoot Connector: The objective of this trail is to allow hikers and bikers using Sand Dunes to return to town without trespassing on Union Pacific property and will additionally allow trail users to link to many of the Arkansas Hills trails (Tenderfoot, Backbone, Frontside, etc...) without having to descend to the base of the system. This area is used by the Salida High School mountain bike team and this trail will create an excellent loop option for their training rides.

This trail will be a beginner/intermediate trail. It will generally follow a single contour and therefore will not have extended steep grades. This trail will be maintained so that the tread is free of large obstructions, excessive loose material. The tread will be sufficiently wide to allow the beginner rider a secure ride in exposed areas. This trail will be approximately .26 miles long.

South Backbone/Lowry Open Space Loops: The objective is to create two easiest/more difficult trails to provide access to city property (formerly Lowry) that was recently acquired with the express purposes of providing legal egress for South Backbone and creating additional recreational opportunities. Without these trails, South Backbone must be used as a one-way terminating in an advanced ride out through Sweetwater Gulch or an out and back experience. These loops will allow for extended saddle time and provide excellent views of the Arkansas River and city of Salida.

These trails will be on both city and BLM land. Approximate mileage: .82 miles on BLM.

Pepper Connector: This short trail would be part of the 'Pepper' trail system primarily located on City owned land. As part of the City's trail system the city would determine the trail management objectives for this trail.

Hiking Trail: Public scoping revealed the desire that the trail system also provide outstanding opportunities for people looking for a strenuous hike. While the existing and proposed trails are designed and managed for multiple use, including hiking, they tend to accommodate bicycle travel better due to the gentle grades and longer loops. In order to provide a more direct strenuous hiking route it is proposed to designate social trails that were closed in the Arkansas River TMP. These trails were originally closed due to the steep grade and potential for erosion as well as the desire that they accommodate mountain bikes. Since the trails would only be open to foot travel, steps, short switchbacks, and other trail hardening techniques would be employed to reduce erosion and increase sustainability.

These trails would be located on both city and BLM land. Approximate mileage: 1 mile on BLM.

General Project Management

Additional Trail Criteria: As identified in the purpose and need, the community of Salida desires the trail systems to become a regional destination to assist with economic development. In order to do this the trail system must provide a variety of logical loops that are easy to navigate and appeal to a wide range of users. With this being said, it is understood that as trails are added to the system through this proposed action unforeseen opportunities for short connections may present themselves. Below are criteria that would be used to evaluate if a connector trail is appropriate to incorporate into the system through this proposed action or if additional analysis and public input is warranted.

- It is within the general foot print of the existing trail systems.
- It meets the overall goal of the trail system.
- It has a clear and demonstrated need within the context of the overall goals.
- It does not drastically alter the overall setting (physical and social) of the area.
- It is considered a relatively short connection, not a new stand-alone trail.
- There are not highly controversial concerns with impacts to other resources, including wildlife.

Trail Construction and Management Guidelines: All trail construction will generally follow industry accepted trail guidelines and standards to provide sustainable high quality trails and experiences. These include but are not limited to:

1. A trail's grade should not exceed half the grade of the hillside or side slope where it is located unless located on a suitable surface (i.e. bedrock);
2. An average trail grade of 10 percent or less is most sustainable;
3. Maximum trail grade should not exceed 10-20 percent and should be based on considerations such as soil type, number and type of users, and annual rainfall;
4. Frequent grade reversals (such as rolling dips, drainage dips, etc.) should be used to promote drainage of water; and
5. Trail tread should be out sloped (5 percent recommended) where appropriate to encourage water to sheet across and off the trail.
6. Trails will contour and will not be built that travel directly up hill (fall-line)
7. Accessibility Standards will be followed

While mountain bikes are the designed use for all of the trails proposed in the system, with the exception of Sole Train, they will all be designed to accommodate and provide exceptional experiences for hikers, trail runners, equestrian riders, and bicyclists. This includes understanding all user groups' needs and desires and also maintaining adequate clearing distances to accommodate horseback use. Minimal sustained grades, turns, chokepoints and obstacles will be utilized to keep bicycle speed low and reduce conflicts with other user types.

Trail width will vary from 18 inches to over 3 feet and will be built either with hand tools or machines depending on the trail objectives and design requirements. If gasoline powered equipment is used for construction, an adequate spill kit and shovels would be on-site during project implementation.

All trail mileages and representation on maps are conceptual at this time. Final design will deviate from the identified distances and map representation.

Trails will be well signed to aid way finding for visitors as well as indicate non-motorized use only. To minimize user conflict trail heads will display "yield to" signage. Trail closure/area restoration signage will be used to close non-system trails and short cutting. Trails that are not part of the system will be rehabilitated, signed accordingly and monitored. Trail head signs will encourage all users to stay on designated trails only.

A trail stewardship/adoption program will insure that appropriate maintenance is carried out and any trail short cutting or non-permitted trail building is reported. Noxious weeds, if detected, will be removed by volunteer crews at 'shindig' events. Additional treatment measures may also be warranted.

In coordination with partner organizations a messaging/education campaign will be developed to inform visitors about grazing use and recommended behaviors to minimize conflicts. This will include respecting grazing uses, impacts of dogs off leash, and what to do when you come across cows or ranchers moving cows. This messaging will also speak to the important legacy of grazing

in the valley. If needed, cattleguards, fencing, and signing would be installed to help reduce conflicts between recreation and grazing use.

Where practical the trail corridor will be cut to permit open sight lines to reduce user conflict.

Where armoring is used to stabilize tread, horse and foot traffic will be taken into consideration. Alternative (man-made) products may be used or secondary lines provided where natural rock might be inappropriate.

Construction activities requiring vegetation disturbance would be avoided from May 15 through July 15. This is the breeding and brood rearing season for most Colorado migratory birds.

Monitoring will be conducted to determine if the applicable seasonal closures are being violated. If monitoring identifies more than 2 people per week violate the seasonal closure on a consistent basis (i.e. monthly and/or yearly) then adaptive management actions will be applied. This may include additional on the ground controls such as signing and barriers as well as enforcement and education. If these additional controls are not effective then BLM may consider permanent closure and rehabilitation of the trails. The monitoring threshold of 2 people per week may be updated if future research suggests different thresholds may be more effective in reducing impacts to wildlife.

Alternative 2: This alternative would include the same elements as Alternative 1 except for the following differences. No trails would be constructed above the powerline in the Methodist Mountain trail area, to minimize habitat fragmentation and impacts to wildlife including the Castle Rim trail.

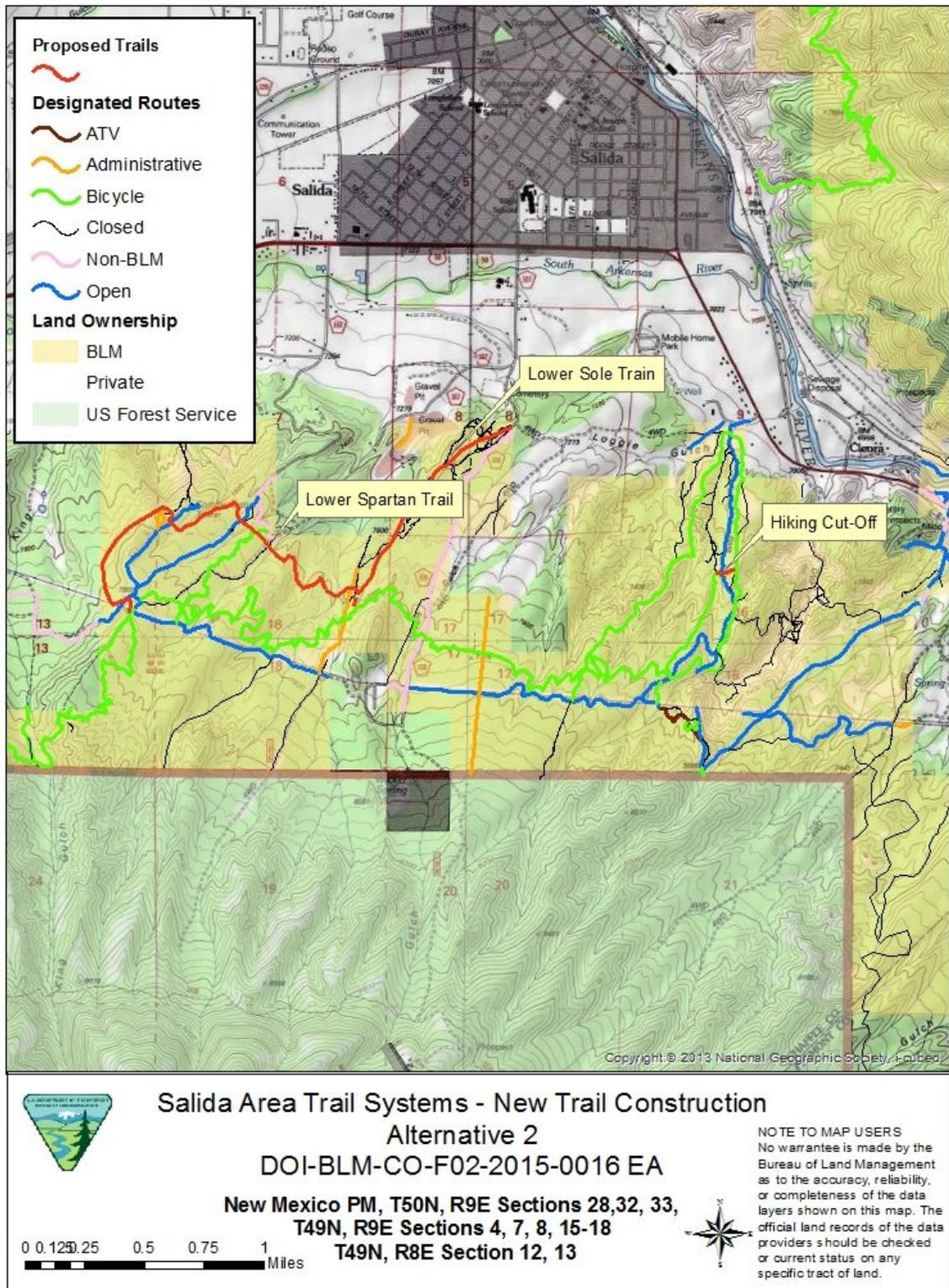


Figure 2.3. Alternative 2, Methodist Mountain Area

2.3. Alternatives Considered

2.3.1. Alternatives Considered, but not Analyzed in Detail

In addition to the proposed actions multiple suggestions were provided for additional trails. This includes trails connecting to the Pinon Hills Subdivision as well as a trail near Dead Goat Gulch and a connection to the trails in Bear Creek off of County Road 102. These were not carried forward for a number of reasons. The lands above the Pinon Hills subdivision, including Dead Goat Gulch, currently do not have any designated trails making it highly valued for crucial winter wildlife habitat. It is also valued for grazing resources where conflicts between private land owners and grazing are already occurring. Considering trails in this area would extend trail development beyond the current footprint and outside of the scope of the proposed actions. A trail extending above Dead Goat would also likely need to occur on Forest Service managed lands which is also outside the scope of this action. Easements or actions on Forest Service managed land would be required to construct a trail that connects to Bear Creek. Constructing trails on lands other than BLM is also outside of the scope of this document. If other entities wish to pursue these types of connections the BLM would coordinate with these efforts and additional NEPA analysis would be warranted. It was also suggested that new trails be open to motorized use. The purpose and need of the document is to expand the non-motorized trail network. Allowing motorized use would not meet the purpose and need and was not considered further.

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3.1. Introduction

3.1.1. Interdisciplinary Team Review

The following table is provided as a mechanism for resource staff review, to identify those resource values with issues or potential impacts from the proposed action and/or alternatives. Those resources identified in the table as impacted or potentially impacted will be brought forward for analysis.

Resource	Initial and date	Comment or Reason for Dismissal from Analysis
<u>Air Quality</u> Ty Webb, Chad Meister, Forrest Cook	TW, 2/26/ 2016	While the construction of the trail systems will produce a small amount of particulates to the surrounding air shed, the amounts will be at such minimal levels that there will be no impact to air quality.
<u>Geology/Minerals</u> Stephanie Carter, Melissa Smeins	MJS, 2/22/ 2016	See affected environment
<u>Soils</u> Negussie Tedela	NT, 6/16/2016	See affected environment
<u>Water Quality Surface and Ground</u> Negussie Tedela	NT, 6/16/2016	See affected environment
<u>Invasive Plants</u> John Lamman	JL, 04/08/ 2015	See affected environment
<u>T&E and Sensitive Species</u> Matt Rustand	MR, 8/3/2016	See affected environment
<u>Vegetation</u> Jeff Williams, Chris Cloninger, John Lamman	JW, 04/26/16	See affected environment
<u>Wetlands and Riparian</u> Dave Gilbert	DG 1/11/16	These trail layouts under any alternatives do not go through wetland or riparian areas directly and are separated by distance from these resources. Some trails do cross ephemeral washes of varying drainage area, but there are no wetlands present. Trail design and maintenance to not channel precipitation from storm events or snow melt as planned keeps silts from off site floodplain resources.
<u>Wildlife Aquatic</u> Dave Gilbert	DG 1/11/16	The trail system under the alternatives discussed does not overlap directly with aquatic habitat as the trails are in upland settings. Trail design and maintenance to not channel precipitation from storm events or snow melt as planned keeps silts from entering off site aquatic environments.
<u>Wildlife Terrestrial</u> Matt Rustand	MR, 6/20/ 2016	See affected environment
<u>Migratory Birds</u> Matt Rustand	MR, 2/12/ 2016	See affected environment

Resource	Initial and date	Comment or Reason for Dismissal from Analysis
<u>Cultural Resources</u> Monica Weimer, Michael Troyer	MT 1/19/2016	See affected environment
<u>Native American Religious Concerns</u> Monica Weimer, Michael Troyer	MT 1/19/16	See affected environment
<u>Economics</u>	mw, 6/22/16	This action will not result in significant impacts to the socioeconomics of individuals or of the region.
<u>Paleontology</u> Melissa Smeins,	MJS, 2/22/2016	See affected environment
<u>Visual Resources</u> Kalem Lenard	KL, 4/2/2016	The project would introduce modifications to the landscape. Given that it's a narrow disturbance in a wooded environment in an area with other similar modifications this project would not have impacts to visual resources.
<u>Environmental Justice</u> Martin Weimer	mw, 6/22/16	The proposal is considered not to have a disproportionately high or adverse environmental effect on minority or low-income populations.
<u>Wastes Hazardous or Solid</u> Stephanie Carter	MJS, 2/22/2016	See affected environment
<u>Recreation</u> Kalem Lenard	KL, 4/2/2016	See affected environment.
<u>Farmlands Prime and Unique</u> Jeff Williams, Chris Cloninger, John Lamman	JW 4/26/16	Not present
<u>Lands and Realty</u> Greg Valladares	GDV, 04/18/2016	See Affected Environment.
<u>Wilderness, WSAs, ACECs, Wild & Scenic Rivers</u> Kalem Lenard	KL, 4/2/2016	Not present.
<u>Wilderness Characteristics</u> Kalem Lenard	KL, 4/2/2016	Not present.
<u>Range Management</u> Jeff Williams, Chris Cloninger, John Lamman	JW 4/26/16	See affected environment
<u>Forest Management</u> Jeremiah Moore	JLM, 4/22/2016	See Affected Environment
<u>Cadastral Survey</u> Sean Hines	SJH, 04/29/2016	Cadastral Survey resources will not be affected by this action.
<u>Noise</u> Martin Weimer	mw, 6/22/16	This action will not result in any significant impacts due to noise or result in any increased noise levels.

Resource	Initial and date	Comment or Reason for Dismissal from Analysis
<u>Fire</u> Ty Webb	TW, 2/26/ 2016	The trail system will have limited to no positive or negative effects on fire management activities.
<u>Law Enforcement</u> Steve Cunningham	SC, 4/18/2016	The trail system will have limited effects to law enforcement resources.

The affected resources brought forward for analysis include:

- Geologic and Mineral Resources
- Soils
- Water Quality
- Invasive Plants
- T&E and Sensitive Species
- Vegetation
- Wildlife Terrestrial
- Migratory Birds
- Cultural Resources
- Native American Religious Concerns
- Paleontology
- Wastes Hazardous or Solid
- Recreation
- Lands and Realty
- Range Management
- Forest Management

3.2. Physical Resources

3.2.1. Geologic and Mineral Resources

Affected Environment: The proposed project area near Salida is located within the Upper Arkansas River Valley, a broad down dropped valley between high mountain ranges. The Sawatch Range on the west, the Mosquito Range on the east, and the Sangre de Cristo Mountains to the south are the uplifted blocks . The major structural features are Precambrian folds and Tertiary faults. Geologic units underlying the Arkansas Hills area are primarily precambrian metamorphic rocks and tertiary basalts and tuffs. The Methodist Mountain area primarily contains tertiary Dry Union Formation.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: There are geologic and mineral resources present, however, this project will not have direct adverse impact to the resource.

Protective/Mitigation Measures: The federal minerals in the proposed project area are open to mineral location, therefore requiring coordination between surface uses as applicable. If there are unpatented mining claims that are active in the proposed project location, any associated claim markers encountered during project implementation cannot be disturbed (reference CO-2012-013). However, as of February 2016 there are no active claims in these areas. The Hardrock Paving and Redi-mix quarry is located in the Methodist Mountain Area in the vicinity of the proposed trails. Caution should be used when locating the trail in this area so that the trail stays outside of the permitted area (T49W, 09E, Section 8 SE).

Cumulative Impacts: The mineral resources throughout Front Range are slowly being encumbered by various surface uses and designations that may not be compatible with future mineral extraction efforts needed to meet the public and market demands.

Alternative 2:

Direct and Indirect Impacts: There are geologic and mineral resources present, however, this project will not have direct adverse impact to the resource.

Protective/Mitigation Measures: The federal minerals in the proposed project area are open to mineral location, therefore requiring coordination between surface uses as applicable. If there are unpatented mining claims that are active in the proposed project location, any associated claim markers encountered during project implementation cannot be disturbed (reference CO-2012-013). However, as of February 2016 there are no active claims in these areas. The Hardrock Paving and Redi-mix quarry is located in the Methodist Mountain Area in the vicinity of the proposed trails. Caution should be used when locating the trail in this area so that the trail stays outside of the permitted area (T49W, 09E, Section 8 SE).

Cumulative Impacts: The mineral resources throughout Front Range are slowly being encumbered by various surface uses and designations that may not be compatible with future mineral extraction efforts needed to meet the public and market demands.

No Action Alternative:

Direct and Indirect Impacts: none

Protective/Mitigation Measures: none

3.2.2. Soils

Affected Environment:

The soil within the analysis area is described in the BLM GIS Soil Survey Geographic (SSURGO) Data Base. The proposed new Salida trail construction is located on the Methodist Mountain and the Arkansas Hills areas. Methodist Mountain area is located on Rough broken land and Tigiwon-Turret cobbly sandy loams soil types on moderate to somewhat steep gradient (3 to 25 percent slopes). Most of trail construction activity is located on Rough broken land soil type. Based on erosion factor - K, these soils have moderate susceptibility to sheet and rill erosion by water. However, due to slope gradient, Rough broken land soil type has a high potential for erosion hazard. For roads and trails, that indicates significant erosion is expected and the roads/trail would require frequent maintenance and erosion-control measures. The parent material consists of highly stratified sandy and gravelly alluvium and moderately coarse-textured, calcareous gravelly alluvium and/or moderately coarse-textured, calcareous gravelly outwash. The soils have high permeability and no restrictive layer is described for these soils. The natural drainage class of these soils is well drained. Wind Erodibility Group (WEG) consists of soils that have similar properties in relation to their susceptibility to wind erosion and the two soils within the proposed Sand Gulch Campground expansion area are classified as Group 8 for Rough broken land soil type and Group 5 for Tigiwon-Turret cobbly sandy loams soil type. The soils within group 1 are the most susceptible to wind erosion and group 8 are the least susceptible. Hydrologic Soil Group is B for the two soil type that indicates the soil has a moderate infiltration rate when thoroughly wet (moderate runoff potential). Group B type soils consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture.

The Proposed trails on the Arkansas Hills area is located on Rock outcrop and Rockland soil type on moderate to very steep gradient (15 to 60 percent slopes) with no erosion factor-K, Erosion Hazard (Road, Trail), and Parent material rating. The soils have no soil depth to restrictive feature and no natural drainage class rating because of rock outcrop surface. Wind Erodibility Group (WEG) consists of soils that have similar properties in relation to their susceptibility to wind erosion and the soils in the Arkansas Hills area are classified as Group 8. The soils within group 1 are the most susceptible to wind erosion and group 8 are the least susceptible. Hydrologic Soil Group for the two soil types is D, having a very slow infiltration rate (high runoff potential) due to the surface is nearly impervious material or the site is mainly rock outcrop surface.

The existing condition of upland soil resources results from natural and anthropogenic impacts. Past actions include activities that have influenced and affected the current condition of the environment around the project area. The Salida area trails system has been established and intensively used in the past. The existing environment was modified by original trail system and road construction. Currently, the trail system is intensively used from hikers, dog walkers, trail runners, and mountain bikers. In addition, it is utilized for running and mountain bike races associated with the FIBARK festival. The analysis area is most influenced by grazing, road and historical trails network, and OHV use. High level of uses the area has reduced vegetation cover and led to soil compaction and erosion. Roads, trails, and compacted soils have created an impervious surface that has reduced the infiltration rate and contributes to surface runoff and soil erosion, which is often deposited along roads and depressions. The analysis area is managed for multiple uses and ground disturbing activities and associated impacts to soil resources are generally unavoidable. As a result, some alteration to the natural soil condition, including productivity, erosion, and other disturbances occurred. Erosion potential is higher on steep slopes and adjacent to less permeable surfaces such as rock outcrops or compacted areas, such as roads.

The condition of soil resources is determined by the degree and extent of impacts such as erosion, compaction, soil vegetation cover, and soil productivity. Soil features such as rills, active gullies,

pedestals, surface litter and plant cover are important indicators of Standard 1. In general, most areas of upland soils exhibit infiltration, vegetation cover and permeability rates that are appropriate to soil type, climate, landform, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor and minimizes surface runoff.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: The BLM proposes to add additional trails to the Arkansas Hills Area and the Methodist Mountain Area to create a trail system that is connected directly with the town of Salida. Assuming a disturbance width of three feet, the total disturbance due to the new Salida trail construction proposed under this alternative would be about 4.5 acres. The proposed action under Alternative-1 would involve grading, vegetation removal/ground clearing, and additional exposure of soil material that would temporarily increase the potential for erosion until the drainage system and revegetation work are finished. Steeper slopes would have a greater potential for erosion problems and soil disturbance would be most pronounced in the winter months when soils are wet. Soil contamination would also occur if small machinery used for trail construction activities that may deposit small amounts of petro-hydrocarbons onto soils through equipment failure or normal operations. Exposed soil material during construction would be subject to erosion until stabilized. Soil erosion-control measures would be implemented to contain sediment and minimize erosion. These temporary erosion-control measures would reduce the potential for short-term erosion and soil loss during construction. Other mitigation measures will be used where possible to ensure drainage of the trail without impacting the historic integrity of watersheds.

No measurable effects on soil resource would occur with the use of sediment- and erosion-control measures. Any sediment contribution to the drainage during trail construction would be minor in relation to the supply of sediment and erosion that naturally occurs in this watershed. The impact on soils would be local, short-term, moderate, and adverse from construction disturbances. Proper techniques that would be used in construction will reduce overall erosion along the trail and are considered to be beneficial. There would be long-term minor adverse impact due to trail use and maintenance after completion of trail construction.

Protective/Mitigation Measures: To reduce the amount of disturbances to the soil resources, avoid using machines whenever possible. Based on trail type, recommended grades should be used to design recreational trails. Install necessary measures to minimize and prevent erosion before beginning any trail construction. Keep erosion control measures (usually consisting of hay, straw bales, silt fencing, geotextile materials berms, check dams, or temporary sediment basins) in place and maintained during construction and remove them after the site has been stabilized. Stabilizing slopes, creating natural vegetation buffers, diverting runoff from exposed trail sites, controlling the quantity and speed of runoff, and conveying runoff away from the construction area all would serve to reduce erosion. Establish vegetation (by sowing seed and other plants and/or mulching) on highly erodible or disturbed areas would be essential.

Cumulative Impacts: Past actions, such as grazing, construction of the existing trail system, visitor use, OHV use, and roads, have impacted soils resources as a result of soil grading, compaction, erosion, and runoff. Future recreational activities, maintenance work, grazing, and other past activities would continue to impact soil resources in the watersheds. The proposed new trail construction may result in temporary soil disturbance, but would result in long-term benefits by reducing erosion due to proper trail design, drainage improvement, and soil erosion control. The proposed trail building under Alternative 1 and 2 would contribute a minor increment to the total past, present and reasonably foreseeable future actions affecting soil resources. The combined adverse effects of past, present, and reasonably foreseeable actions on soils resources would be moderate, local, and long-term. The overall cumulative effects on soils resources from the no action alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, moderate, and adverse, with a minor contribution from the no action alternative.

Alternative 2:

Direct and Indirect Impacts: All of the potential direct impacts described under Alternative 1 would be applicable for Alternative 2. However, the impacts under Alternative 2 are minimal compared to Alternative 1 because no trails would be constructed above the powerline that would minimize the total area of disturbance on the project site.

Protective/Mitigation Measures: All Protective/Mitigation Measures described under Alternative 1 would be applicable for Alternative 2.

Cumulative Impacts: Same as Alternative 1.

No Action Alternative:

Direct and Indirect Impacts: Under the No Action Alternative, there will be no impacts from trail construction. There will be continued erosion occurring on areas along the existing Salida trail system, particularly where the trails crosses drainages. These crossings are all of ephemeral streams. Generally, impacts to soil resources under this alternative are adverse and long-term in duration, and minor in intensity for the existing trails.

Protective/Mitigation Measures: No protective/Mitigation measures are required except the ongoing activities that require maintenance of existing trail system and operations, which reduce impacts and protect soil resources from erosion.

Finding on the Public Land Health Standard for Upland Soils: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, landform, and geologic processes. There are small areas with bare soils and inadequate grass cover, but in general, standard 1 is being achieved and there would be no anticipated impacts due to the proposed action alternatives.

3.2.3. Hydrology/Water Quality

Surface, Groundwater, Floodplains

Affected Environment:

The analysis area is located within three, sixth level (HUC-12) watersheds (Ute Creek-Arkansas River, King Gulch-South Arkansas River, and Maverick Gulch-Arkansas River watersheds). The entire Arkansas Hills trail site is located within the Ute Creek-Arkansas River watershed, while the Methodist Mountain trail site is located within the other two watersheds. Elevation within these watersheds ranges from approximately 7,000 feet along the outlet of Arkansas River to over 11,000 feet in southwest part of the watersheds. Precipitation varies with elevation. Lower areas of the watersheds receive about nine inches and higher mountain areas receive about 17 inches of annual precipitation, with most of the rainfall events occurring in July and August (Figure 1). Within the watersheds, there are several perennial/intermittent streams and few Lakes/ponds (Figure 1).

Major streams located within the watersheds are South Arkansas River, Arkansas River, and Ute Creek. All Perennial/intermittent streams originating from these watersheds drain into the Arkansas River. None of the perennial streams cross the proposed trails. However, the proposed trails cross small intermittent/ephemeral drainages through a total of 52 points (Table 1). Alluvial aquifer is located on south-central part of the watersheds (Figure 3.1). Some of the proposed trail sites are located over this alluvial aquifer. No principal bedrock aquifer is located within the watersheds.

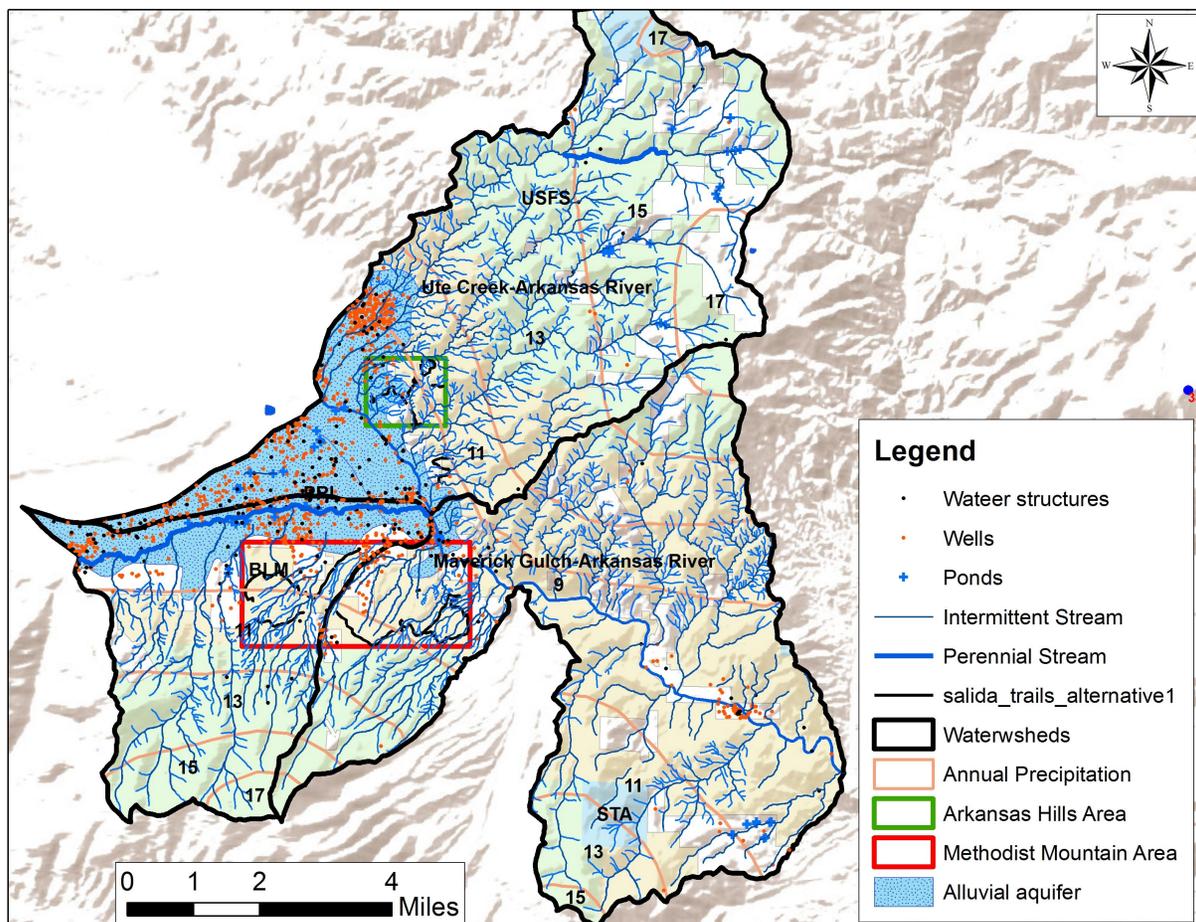


Figure 3.1. Water resources map within the three watersheds

The hydrology of the analysis area is modified by construction of roads, surface- and ground-water use. There are several wells, ponds, and water diversions structures located in the watershed to pump and divert surface water and groundwater for domestic and agricultural activities. The Clean Water Act (CWA) requires that chemical, physical, and biological integrity of all waters, stream channels, and wetlands be protected. All streams and tributaries within the three watersheds are not listed within the watersheds are not currently in the 303(d) listing.

Table 3.1. Streams within the analysis area

Watershed Name	HUC number	Perennial stream length (miles)	Perennial Stream Name	Intermittent stream length	Number of perennial stream crossings	Number of ephemeral/intermittent drainage stream crossings
King Gulch-South Arkansas River	110200010 610	6.2	South Arkansas River	39.7	0	14
Maverick Gulch-Arkansas River	110200010 902	9.6	Arkansas River	99.9	0	22
Ute Creek-Arkansas River	110200010 710	4.7	Arkansas River and Ute Creek	82.8	0	16
Total		20.5		222.4	0	52

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: The new Salida trails proposed under Alternative-1 would involve grading, ground clearing, and additional exposure of soil material that would temporarily increase the potential for erosion until the drainage system, detention basin, road paving, and revegetation work are finished. In addition, construction of new trail segments and paving of trails would create a direct impact by increasing the amount and location of impermeable surfaces that would increase runoff in some areas. Local short-term minor adverse effects on water quality and hydrology are possible during construction of trails. Soil erosion-control measures would be implemented to contain sediment and minimize these effects. In addition, the effects would be reduced upon completion of trail construction. Any sediment contribution to the drainage during project construction would be minor in relation to the supply of sediment and erosion that naturally occurs in this watershed.

Protective/Mitigation Measures: During trail construction, minimize the amount of soil disturbance at stream/drainage crossings. When possible, construct trails during the dry months when soil saturation and water levels are at their lowest. Surface runoff which is intercepted by erosion-control measures must be collected by drainage ways and discharged in stabilized areas. Cross-drainage techniques (swales, culverts, and water bar) should be utilized to divert water from trails. Whenever possible, no intermittent or perennial streams should cross over the trail. Sediments which are transported by runoff should be trapped before they reach

streams. In addition, mitigation measures indicated in the soils section would also be applied to protect water resources.

Cumulative Impacts: Cumulative effects on water resources and hydrologic functioning are primarily discussed at the 6th field (HUC-12) watersheds in order to capture the effects on streams and soils without focusing too specifically or too broadly as to overemphasize the impacts or miss them entirely as they are overwhelmed by baseline effects. The cumulative effects are the sum of existing impacts, project related impacts and foreseeable future impacts. The watersheds within the analysis area have been altered by past and present uses. Past measurable detrimental impacts to water quality, floodplain and hydrologic functioning are associated with camping and campground maintenance, roads and road maintenance, OHV use, livestock grazing, fire, fuels reduction projects, and water supply infrastructure (wells, diversions, etc.), which would still exist on the watershed. Roads are probably the largest contributor of sediment to ephemeral/intermittent streams on BLM administered lands. The proposed action alternatives are not expected to have a measurable cumulative effect when added to the other stressors in these watersheds. With the no action alternative, new trail construction that involves grading and ground clearing would no longer be included in the cumulative effects and the effects should lessen, compared to other alternatives. Mitigation measures would be used to further reduce cumulative impacts on the watersheds.

Alternative 2:

Direct and Indirect Impacts: All of the potential direct impacts described under Alternative 1 would be applicable for Alternative 2. However, the impacts under Alternative 2 are minimal compared to Alternative 1 because no trails would be constructed above the powerline that would minimize the extent of disturbance on the site.

Protective/Mitigation Measures: All Protective/Mitigation Measures described under Alternative 1 would be applicable for Alternative 2.

Cumulative Impacts: Same as Alternative 1.

No Action Alternative:

Direct and Indirect Impacts: Under the No Action alternative, the present environmental conditions and trends will continue. This would include trail use or deterioration; continued or increasing rates of erosion; and various unregulated uses.

Protective/Mitigation Measures: No protective/Mitigation measures are required except the ongoing activities that require maintain existing trail system and operations and reduce impacts to protect water resources.

Finding on the Public Land Health Standard for Water Quality: The water quality of all water bodies, including ground water, located on or influenced by BLM lands, will achieve or exceed the Water Quality Standards established by the State of Colorado. As indicated above, there are no impaired streams indicated under 303 (d) listing within the three watersheds. A

change to surface or ground water quality or quantity is minimal due to the proposed alternatives and the water bodies are meeting Standard 5.

3.3. Biological Resources

3.3.1. Invasive Plants*

Affected Environment: Invasive plants are common in the area due to historical agricultural practices. The native plant community has been altered due to the historical practices in the area. The ecological sites that make up the project site are prone to a variety of weed infestations if soil surface disturbance occurs. Invasive plants within 7 miles of the project area include but are not limited to: hoary cress, elongated mustard, dalmation toadflax, yellow toadflax, Russian knapweed, difuse knapweed, spotted knapweed, perennial peperweed, salt cedar, white top, Russian olive, and Canada thistle, scentless chamomile.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: Due to the long-term exposure of the project area to historical practices, expected impacts are thought to be minor.

Protective/Mitigation Measures: Equipment used to implement the proposed action should be washed prior to entering the project area to remove any plant materials, soil, or grease. Areas disturbed by project implementation will be monitored for the presence of weeds on the Colorado State Noxious Weed list. Monitoring is required for the life of the project and for three years following project completion. Identified noxious weeds in disturbed areas will be treated.

Cumulative Impacts: None.

Alternative 2:

Direct and Indirect Impacts: Similar to Alternative 1.

Protective/Mitigation Measures: Similar to Alternative 1.

Cumulative Impacts: None.

*Invasive plants are plants that are not part of (if exotic), or are a minor component of (if native), the original plant community or communities that have the potential to become a dominant or co-dominant species on the site if their future establishment and growth are not actively controlled by management interventions, or are classified as exotic or noxious plants under state or federal law. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants.

No Action Alternative:

Direct and Indirect Impacts: None

Protective/Mitigation Measures: None

3.3.2. Threatened, Endangered and Sensitive Species

Affected Environment:

This assessment area is occupied by a habitat type that consists primarily of piñon pine and juniper. Open areas of mountain grassland and shrubs such as currant and mountain mahogany are abundant. The higher elevations and some north slopes do contain a mix of ponderosa pine and mixed conifer forest.

Three Bureau sensitive plant species may be affected by this project. The Brandegee wild buckwheat (*Eriogonum brandegei*) is found in the valley of the upper Arkansas River in Chaffee and Fremont Counties, Colorado. This species occurs in open pinon-juniper stand on exposed soil associated with Dry Union and Morrison Formation. Several thousand individual plants are found in several sites within the project boundary.

Rock-loving aletes (*Neoparrya lithophila*) grows on volcanic substrates in cracks and shelves usually with minimal talus. It is seen in moderate to steep rock outcrops. The surrounding habitat is typically grasslands or pinon-juniper woodlands. There are known populations of this species within the action area.

Royal Gorge blazingstar (*Mentzelia densa*) typically grows in naturally disturbed areas such as washes and rocky slopes. It can be found on dry, open sites often with pinon-juniper or mountain mahogany. This species is known to occur throughout the Arkansas River canyon.

A sensitive plant inventory was conducted along the Lower Sole Train and Sunset trails in July of 2016. The proposed trails were flagged by a design crew and then surveyed for sensitive plants by BLM technicians. No detection of sensitive plants occurred along the flagged routes of the two trails.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: Due to the lack of presence and habitat, there will be no impact to sensitive plants along the Lower Sole Train and Sunset trails.

All other proposed trails are not currently flagged on the ground; therefore, specific impacts to sensitive plant species along the trails are unknown. However, the construction of trails will create permanent surface disturbance and it is possible these trails could harm Bureau sensitive plants and or their habitat.

Protective/Mitigation Measures: It is recommended that prior to trail construction, a survey for Bureau sensitive plants will occur. A 100-foot buffer will be placed around all Bureau sensitive plants and plant populations located. It is recommended that a trail be re-routed if the design is planned to be constructed through a Bureau sensitive plant buffered area to protect these species.

Cumulative Impacts: The existing trail network and the addition of the proposed trails create a dense system of trails in the action area. While direct impacts could occur, flora, unlike fauna, is not negatively impacted by the simple presence of people. Creating a dense trail network will have no impact on sensitive plant species as long as existing population areas are avoided.

Alternative 2:

Direct and Indirect Impacts: Similar to Alternative 1.

Protective/Mitigation Measures: Same as Alternative 1.

Cumulative Impacts: Similar to Alternative 1.

No Action Alternative:

Direct and Indirect Impacts: No new impacts

Protective/Mitigation Measures: None.

Finding on the Public Land Health Standard for Threatened & Endangered species:

If Bureau sensitive plants are avoided during trail layout and construction, the project will not result in impacts or changes to public land health standards for Threatened & Endangered species.

3.3.3. Vegetation

Affected Environment: The climate of the analysis area averages 11 to 16 inches of precipitation annually, while July and August produce the highest amount of rainfall. The mean annual temperature for the area is 40 degrees farenheight with a frost free period of 60 to 100 days. The optimal growing season for native plants in the area is April 1 through August 20 (NRCS, 1995).

The proposed area is predominantly associated with a pinyon-juniper woodland range site. According to the Natural Resource Conservation Service (1995), a range site is an area of rangeland where climate, soil, and topography are sufficiently uniform to produce a distinct natural plant community. The Pinyon-Juniper range site for this area is an association of species including pinyon pine as the dominant woodland type and juniper as a secondary woodland type. In addition, Ponderosa Pine and Douglas-fir could occur as an isolated component. The mid and under-story levels consist primarily of shrubs and grasses. Shrubs that may occur in the area include Mountain Mahogany, Wax Current, Fringed Sagebrush, Rabbit brush, Prickly Pear Cactus and Yucca. Primary grasses include Blue Grama, Mountain Muhly, Sand Dropseed, Pine Dropseed, Needle and Thread, Western Wheatgrass and Indian Rice grass. Historically, pinyon trees were exploited for fence posts, railroad ties and smelter fuel. Through succession, most of the area has evolved into a dominant pinyon stand. As this evolved the under story is demonstrating a lack of species diversity, lower amounts of herbaceous plant cover and relatively high amounts of bare ground. These areas are generally correlated with higher density or a closed canopy pinyon-juniper over-story and associated on the flat to gently sloping soils with some degree of soil depth.

Environmental Effects**Alternative 1:**

Direct and Indirect Impacts: The proposal is to create new trails in the Arkansas Hills and Methodist Mountain areas. At this time the proposal is somewhat conceptual and may be modified in the future. The impacts associated to vegetation through trail construction are direct and permanent. Based on the proposal as written there would be approximately 3 acres of vegetation permanently removed

in the Arkansas Hills area and approximately 1 acre of vegetation removed in the Methodist Mountain area. However these figures may increase or decrease depending on the final outcome.

Even though there are negative impacts to the vegetation resource, the proposal includes protective measures against illegal user created short cuts and parallel trails through signage and monitoring. All existing illegal trails would be rehabilitated and allowed to naturally re-vegetate.

Protective/Mitigation Measures: Addressed in proposal.

Cumulative Impacts: The proposed trails and the existing trail network would create a dense system of trails in the proposed area. While direct impacts to vegetation would occur, these impacts could be minimal through proper trail maintenance and monitoring.

Alternative 2:

Direct and Indirect Impacts: Eliminates trail construction above the existing power line in the Methodist Mountain area. Under this alternative, the impacts to vegetation are less due to less trail mileage.

Protective/Mitigation Measures: Addressed in proposal.

Cumulative Impacts: Same as Alternative 1.

No Action Alternative:

Direct and Indirect Impacts: No new impacts to vegetation.

Protective/Mitigation Measures: None

Finding on the Public Land Health Standard for Plant and Animal Communities: There are portions of this analysis area where land health standards would probably not meet due to the encroachment of pinyon-juniper into open grassland parks. In these areas there is a lack in species diversity and productivity of the herbaceous vegetation and soil movement is occurring at a rapid rate. Outside of those areas land health standards are currently being met. It is not expected that either alternative would change that assessment.

3.3.4. Wildlife Terrestrial

Affected Environment:

The assessment area is occupied by a habitat type that consists primarily of piñon pine and juniper, open areas of mountain grassland and shrubs such as currant and mountain mahogany are abundant, and the higher elevations and some north slopes do contain a mix of ponderosa pine and mixed conifer forest.

The Methodist Mountain action area is within an elk winter concentration area, while the Arkansas Hills action area is within mule deer severe winter range. This habitat type is crucial for wildlife survival in the winter when forage resource are lowest. In comparison with other habitat types in the Upper Arkansas River Valley, critical winter range is extremely limited due to terrain, exposure, snow load, and encroachment.

In big game winter ranges, various studies have shown that most native forages available in winter are too low in nutritional value to meet maintenance needs of wild ungulates. Mackie et al. (1998:30) observed that deer survive primarily by supplementing energy reserves accumulated prior to winter with energy intake from sub-maintenance winter diets. This requires behavior that emphasizes energy conservation. Skovlin (1982:379) credits Beall (1974) with the observation that cold-climate ungulates seek habitats with micro-climates that furnish the greatest comfort with the least expenditure of energy. Wood (1988 in Mackie et al. 1998:58) reported that foraging was energetically inefficient for mule deer during severe winter weather conditions. Bedding in protected sites was the favored strategy because it conserved energy. In general, most ungulates demonstrate behavioral adaptations related to energy conservation when winter survival is at stake.

The Methodist Mountain action area does not have a formally acknowledged trail system where the Upper Sole Train, Upper Spartan, and Castle Rim trails are proposed on BLM managed lands, creating a space of contiguous, undeveloped wildlife habitat. Wildlife will use this area for rest and forage, and they will use this section to migrate east and west between the Bear Creek and Poncha Mountain area.

Due to the climate in the Salida area, it is likely trail use will continue through the winter months when these ranges are normally occupied by wintering deer and elk.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: Outdoor recreation has the potential to disturb wildlife, resulting in energetic impact to animal's behavior and fitness, and avoidance of other wise suitable habitat. Naylor et al. (2009) found that in the presence of mountain bikers, elk will spend more time moving and less time foraging and resting versus a control. Taylor and Knight (2003) indicate that mule deer exhibited a 70% probability of flushing from on-trail recreationists within 100–meters from trails. Mule deer showed a 96% probability within 100–meters of recreationists located off trails; their probability of flushing did not drop to 70% until perpendicular distance reached 390–meters. In the winter months, additional time spent moving will increase energy expenditure when forage quantity and quality are minimal, reducing wildlife fitness and reproductive potential.

Additionally, constant harassment of wildlife may cause shifts in time and/or location of use. Yarmoloy et al. (1988) were able to demonstrate how little disturbance was required to produce such modified behavior. They reported a study in which intentional harassment of three mule deer does for 9 minutes/day for 15 days in October caused the deer to begin feeding at night and using cover more frequently. They also suggested a secondary effect through reduced reproduction. Rogala et al. (2011) indicates that elk will avoid high use trails at distances over 400–meters. Another potential result of disturbance or harassment of wintering animals can be movement from historical and accepted winter ranges (usually on public land) to private lands where haystacks and forage for domestic livestock are at risk.

The expansion of the trail network and anticipated increased use will decrease the probability of survival and reduce fecundity of big game that continue to use the area, or displace animals to less desirable areas of use. However, much

of the proposed trail construction is within the boundaries of an existing trail network. Therefore, wildlife occupying the area are accustomed to the type of use. While increasing the density of the network will further harass and displace animals within the perimeter of existing trail network, it will also consolidate use, minimizing the impact on a landscape scale.

The construction of the Upper Sole Train, Upper Spartan, and Castle Rim trails will expand use into areas without a previous designated trail. Although the trail will be designated as seasonally restricted, it is reasonable to assume that some use will continue during the winter months, negatively impacting wintering big game. The construction and subsequent use of these trails will reduce the value of approximately 1,100 acres of big game wintering habitat, a limited resource in the Upper Arkansas River Valley. Additionally, the BLM managed lands south or up-slope of the power lines will no longer be a contiguous, undeveloped tract of wildlife habitat. The fragmentation of the landscape due to use will negatively affect the ability of wildlife to migrate, rest, and forage in the area.

Protective/Mitigation Measures: Avoid trail layout and construction activities from December 1 to April 15 in elk winter concentration areas and mule deer severe winter range.

Cumulative Impacts: This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trail system, but it is introducing a new human presence to a portion of the action area (Upper Sole Train, Upper Spartan, and Castle Rim trails). The proposed expansion of the current trail system will cause an additive negative impact to wildlife.

Alternative 2:

Direct and Indirect Impacts: Similar to Alternative 1, except the Upper Sole Train, Upper Spartan, and Castle Rim trails will not be constructed. The value of approximately 1,100 acres of big game winter range, a limited resource in the Upper Arkansas Valley, will be retained. Additionally, the BLM managed lands south or up-slope of the power lines will remain a contiguous, undeveloped tract of wildlife habitat. Wildlife will continue to use the land to migrate, rest, and forage unmolested.

Protective/Mitigation Measures: Avoid trail layout and construction activities from December 1 to April 15 in elk winter concentration areas and mule deer severe winter range.

Cumulative Impacts: This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trails. Because the action area is within the boundary of an existing trail network, this alternative is not anticipated to result in an additive negative cumulative impact to wildlife.

No Action Alternative:

Direct and Indirect Impacts: New trails will not be constructed. No new impacts to wildlife are expected to occur.

Protective/Mitigation Measures: None.

Finding on the Public Land Health Standard for Plant and Animal Communities: Authorizing this project will not affect the health standard for plant and animal communities.

3.3.5. Migratory Birds

Affected Environment:

The assessment area is occupied by a habitat type that consists primarily of pinyon-juniper. Open areas of mountain grassland and shrubs such as currant and mountain mahogany are abundant. The higher elevations and some north slopes do contain a mix of ponderosa pine and mixed conifer forest.

Mountain shrubland habitat provides valuable food and cover for many wildlife species. Many shrub species produce edible fruits, and they provide a large selection of forage types. Often the soil moisture is enough for shrubs to grow densely. Gambel oak acorns are an important mast crop in many areas. Birds such as band-tailed pigeon, wild turkey, Lewis's woodpecker, Steller's jay, western scrub-jay, and green-tailed towhee feed on the acorns. Other birds such as the Virginia's warbler utilize mountain shrub habitat for resting, feeding, and nesting. Dusky flycatcher, Virginia's warbler, and green-tailed towhee are associated with Gambel oak and other shrub habitat.

Pinyon-juniper habitat supports the largest nesting bird species list of any upland vegetation type in the West. The richness of the pinyon-juniper vegetation type is important due to its middle elevation. Several species are found in the pinyon-juniper habitat and include: black-chinned hummingbird, gray flycatcher, Cassin's kingbird, gray vireo, pinyon jay, juniper titmouse, black-throated gray warbler, Scott's oriole, ash-throated flycatcher, Bewick's wren, mountain chickadee, white-breasted nuthatch, and chipping sparrow.

The following birds are listed on the U.S. Fish and Wildlife Service Birds of Conservation Concern – 2008 List for BCR 16-Southern Rockies/Colorado Plateau. These species have been identified as species that may be found in the project area, have declining populations and should be protected from habitat alterations.

The golden eagle is a bird of grasslands, shrublands, pinyon-juniper woodlands, and ponderosa pine forests, but may occur in most other habitats occasionally, especially in winter. Nests are placed on cliffs and sometimes in trees in rugged areas, and breeding birds range widely over surrounding habitats.

Peregrine falcons in Colorado breed on cliffs and rock outcrops from 4,500-9000 ft in elevation. They most commonly choose cliffs located within pinyon-juniper and ponderosa pine zones. These falcons feed on smaller birds almost exclusively, with White-throated swifts and rock doves being among their favored prey.

Prairie falcons nest in scattered locations throughout the state where they inhabit the grassland and cliff/rock habitat types. These falcons breed on cliffs and rock outcrops, and their diet during the breeding season is a mix of passerines and small mammals.

Gray Vireos are pinyon-juniper woodland obligates. Gray Vireos usually inhabit stands dominated by juniper or thin stands of pure juniper. They construct nests of dry grasses, plant fibers, stems, and hair, often camouflaging them with sagebrush leaves.

Piñon jays range the semiarid lands of the West. The Colorado Breeding Bird Atlas map shows them south of a diagonal line drawn from the northwest corner to the southeast corner of the state. Piñon jays are pinyon-juniper obligates in Colorado and nest commonly at the lower elevations of pinyon-juniper woodlands, often where junipers dominate. A few nest in ponderosa pine. They prefer extensive stands far from high human activity.

Black-throated gray warblers are fairly common summer residents in pinyon-juniper woodlands across the southwestern half of Colorado. Some surveys show these warblers to be the most frequently encountered birds in the piñon-juniper woodland. Black-throated gray warblers, in Colorado, are pinyon-juniper obligates, preferring tall, dense piñon-juniper woodlands. Virginia's warblers in Colorado nest between 5,000-9,000 feet in elevation. They breed most abundantly in the western quarter of the state, along the eastern slope foothills, and in the upper Arkansas River drainage.

Virginia's warblers nest in dense shrublands and on scrub-adorned slopes of mesas, foothills, open ravines, and mountain valleys in semiarid country. They use scrubby brush, pinyon-juniper woodland with a well-developed shrubby understory, ravines covered with scrub oak and dense shrublands, especially gambel oak. They also breed in open ponderosa pine savannahs that have a dense understory of tall shrubs.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: Impacts to migratory birds from trails are variable depending on a number of factors. Typically, impacts to birds from trails are not as great as those from intensive development where large areas of habitat are altered. However, impacts do occur and even passive recreation such as hiking, horseback riding, running, jogging and biking can affect birds and bird habitat in a variety of ways, both short and long term.

Disturbance to migratory birds that result from close encounters with humans and cause a flight reaction can cause nest abandonment, decline in parental care, increased stress, shortened feeding times, and potentially lower reproductive success. The reaction is a function of the species, closeness, type and intensity of the encounter, time of day, time of year, type of habitat, vegetation screening, trail location, surrounding land use, and many other variables. Therefore, the frequency and intensity of disturbance is variable depending upon the situation.

The construction of a trail results in a loss of habitat. Vegetation removed in the process of building a trail is no longer available for use by birds. Indirect impacts will also occur as birds avoid habitat along trails to reduce their exposure to negative stimulus associated with human uses. While the habitat may provide for the needs of the species, it may not be utilized because of its proximity to a trail. Impacts due to habitat fragmentation will increase as the density of trails increases because wildlife species prefer larger blocks of undisturbed habitat rather than smaller fragmented chunks.

Protective/Mitigation Measures: To be in compliance with the Migratory Bird Treaty Act and the Memorandum of Understanding between BLM and USFWS required by Executive Order 13186, BLM must avoid actions, where possible, that result in a “take” of migratory birds. Pursuant to BLM Instruction Memorandum 2008-050, to reduce impacts to Birds of Conservation Concern, no habitat disturbance (removal of vegetation such as timber, brush, or grass) is allowed during the periods of May 15 - July 15, the breeding and brood rearing season for most Colorado migratory birds. The provision will not apply to completion activities in disturbed areas that were initiated prior to May 15 and continue into the 60-day period.

An exception to this timing limitation will be granted if nesting surveys conducted no more than one week prior to vegetation-disturbing activities indicate no nesting within 30 meters (100 feet) of the area to be disturbed. Surveys shall be conducted by a qualified breeding bird surveyor between sunrise and 10:00 a.m. under favorable conditions.

Cumulative Impacts: This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trail system, but it is introducing a new human presence a portion of the action area (Upper Sole Train, Upper Spartan, and Castle Rim trails). The proposed expansion of the current trail system will cause an additive negative impact to migratory birds.

Alternative 2:

Direct and Indirect Impacts: Similar to Alternative 1.

Protective/Mitigation Measures: Similar to Alternative 1.

Cumulative Impacts: This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trails. Because the action area is within the boundary of an existing trail network, this alternative is not anticipated to result in an additive negative cumulative impact to migratory birds.

No Action Alternative:

Direct and Indirect Impacts: New trails will not be constructed. No new impacts to wildlife is expected to occur.

Protective/Mitigation Measures: None.

3.4. Heritage Resources and Human Environment

3.4.1. Cultural resources

Affected Environment: Given that the trail additions described herein are still conceptual in nature and specific trail locations have not yet been identified (only general corridors subject to change), a cultural resources inventory specific to the project has not yet been conducted. When the trails are designed and specific trail locations are identified, the BLM will require a Class III inventory for cultural resources in all previously un-inventoried areas prior to trail

construction. The BLM will then follow standard National Historic Preservation Act Section 106 procedures for identification, evaluation, consultation, and resolution of adverse effects (if any). Should historic properties be identified within the project APE, avoidance will be the preferred mitigation alternative.

Environmental Effects

Alternative 1

Direct and Indirect Impacts: None presently identified

Protective/Mitigation Measures: None presently identified

Cumulative Impacts: None presently identified

Alternative 2:

Direct and Indirect Impacts: None presently identified

Protective/Mitigation Measures: None presently identified

Cumulative Impacts: None presently identified

No Action Alternative:

Direct and Indirect Impacts: None presently identified

Protective/Mitigation Measures: None presently identified

3.4.2. Native American Religious Concerns

Affected Environment: Consultation with the following Native American tribes is in process: Apache Tribe of Oklahoma, Cheyenne and Arapaho Tribes of Oklahoma, Cheyenne River Lakota Tribe, Comanche Tribe of Oklahoma, Crow Creek Sioux, Kiowa Tribe of Oklahoma, Northern Arapaho Tribe, Northern Cheyenne Tribe, Northern Ute Tribe, Oglala Lakota Tribe, Rosebud Sioux Tribe, Shoshone Tribe, Southern Ute Tribe, Standing Rock Lakota Tribe, and the Ute Mountain Ute Tribe. Because the trail additions are still conceptual in nature, specific impacts cannot be identified at present, but tribal comments and concerns will be taken into account as the project develops. A Class III cultural resources inventory will be required prior to trail construction and if adverse effects sites of concern to Native Americans cannot be avoided, the BLM will consult with the above-mentioned tribes in order to develop a plan to mitigate the adverse effects.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: None presently identified

Protective/Mitigation Measures: None presently identified

Cumulative Impacts: None presently identified

Alternative 2:

Direct and Indirect Impacts: None presently identified

Protective/Mitigation Measures: None presently identified

Cumulative Impacts: None presently identified

No Action Alternative:

Direct and Indirect Impacts: None presently identified

Protective/Mitigation Measures: None presently identified

3.4.3. Paleontological Resources

Affected Environment: The proposed trails are located in two areas, Methodist Mountain and Arkansas Hills. The Arkansas Hills area contains primarily metamorphic rocks that are not likely to contain paleontologic resources. The Methodist Mountain area contains the Tertiary Dry Union Formation that is exposed as bad lands in the project area. This formation has a high potential to contain significant paleontological resources and therefore is a Class 5 paleontological resource. The Dry Union Formation locally contains vertebrate, invertebrate, and plant fossils. Vertebrate fossils include several genera of horses, mastodon, and camel. Management concern for Class 5 paleontological resources is high. A field survey by a qualified paleontologist will be required prior to ground disturbing activities in the Methodist Mountain area, mitigation may be necessary.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: Direct impacts to or destruction of fossils would occur from unmitigated activities conducted on formations with high potential for important scientific fossil resources. Indirect impacts would involve damage or loss of fossil resources due to the unauthorized collection of scientifically important fossils by workers or the public due to increased access to fossil localities in the Project Area. Adverse impacts to important fossil resources would be long-term and significant since fossils removed or destroyed would be lost to science. Adverse significant impacts to paleontological resources can be reduced to a negligible level through mitigation of ground disturbing activities. It is possible that the proposed project would have the beneficial impact that ground disturbance activities might result in the discovery of important fossil resources.

Protective/Mitigation Measures: The proposed trail corridor will need to be inventoried by a qualified paleontologist prior to any ground disturbing activities. The resulting survey will indicate whether any further mitigation such as having a paleontologist present during any trail construction is necessary.

Cumulative Impacts: Adverse significant impacts to paleontological resources can be reduced to a negligible level through mitigation of ground disturbing activities. It is possible that the proposed project would have the beneficial impact that ground disturbance activities might result in the discovery of important fossil resources.

Alternative 2:

Direct and Indirect Impacts: Direct impacts to or destruction of fossils would occur from unmitigated activities conducted on formations with high potential for important scientific fossil resources. Indirect impacts would involve damage or loss of fossil resources due to the unauthorized collection of scientifically important fossils by workers or the public due to increased access to fossil localities in the Project Area. Adverse impacts to important fossil resources would be long-term and significant since fossils removed or destroyed would be lost to science. Adverse significant impacts to paleontological resources can be reduced to a negligible level through mitigation of ground disturbing activities. It is possible that the proposed project would have the beneficial impact that ground disturbance activities might result in the discovery of important fossil resources.

Protective/Mitigation Measures: The proposed trail corridor will need to be inventoried by a qualified paleontologist prior to any ground disturbing activities. The resulting survey will indicate whether any further mitigation such as having a paleontologist present during any trail construction is necessary.

Cumulative Impacts: Adverse significant impacts to paleontological resources can be reduced to a negligible level through mitigation of ground disturbing activities. It is possible that the proposed project would have the beneficial impact that ground disturbance activities might result in the discovery of important fossil resources.

No Action Alternative:

Direct and Indirect Impacts: none

Protective/Mitigation Measures: none

Cumulative Impacts: none

3.4.5. Wastes, Hazardous or Solid

Affected Environment: It is assumed that conditions associated with the proposed project site are currently clean and that no contamination is evident. No hazardous material, as defined by 42 U.S.C. 9601 (which includes materials regulated under CERCLA, RCRA and the Atomic Energy Act, but does not include petroleum or natural gas), will be used, produced, transported or stored during project implementation.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: none

Protective/Mitigation Measures: Since this project involves some type of oil or fuel use, transfer and/or storage, an adequate spill kit is required to be onsite. The project proponent will be responsible for adhering to all applicable local, State and Federal regulations in the event of a spill, which includes following the proper notification procedures in BLM's Spill Contingency Plan.

Nothing in the analysis or approval of this action by BLM authorizes or in any way permits a release or threat of a release of hazardous materials (as defined under

the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations) into the environment that will require a response action or result in the incurrence of response costs.

Cumulative Impacts: none

Alternative 2:

Direct and Indirect Impacts: none

Protective/Mitigation Measures: Since this project involves some type of oil or fuel use, transfer and/or storage, an adequate spill kit is required to be onsite. The project proponent will be responsible for adhering to all applicable local, State and Federal regulations in the event of a spill, which includes following the proper notification procedures in BLM's Spill Contingency Plan.

Nothing in the analysis or approval of this action by BLM authorizes or in any way permits a release or threat of a release of hazardous materials (as defined under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations) into the environment that will require a response action or result in the incurrence of response costs.

Cumulative Impacts: none

No Action Alternative:

Direct and Indirect Impacts: none

Protective/Mitigation Measures: none

3.5. Land Resources

3.5.1. Forest Management

Affected Environment: Primary forest types found within the project area are low-productivity pinyon pine and rocky mountain juniper woodlands. At higher elevations and northern facing slopes, ponderosa pine and Douglas-fir are also present. Old growth Douglas-fir stands have been identified within the Mount Ouray and Poncha Springs drainages to the west of the project area (not within the project area). These stands have been publicly and internally nominated as having relevance and importance criteria for designation as an Area of Critical Environmental Concern.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: The removal of pinyon pine and rocky mountain juniper at lower elevations within the project area will effectively work toward forest health goals such as thinning dense stands to increase the vigor of residual trees. However, the removal of ponderosa pine, Douglas fir, or other healthy, productive, mixed-conifer species would not accomplish forest health goals. Currently, ponderosa pine, Douglas-fir, and other higher elevation mixed-conifer

species are the focus of restoration and stewardship projects aimed at retaining healthy candidates of these species whenever and wherever possible.

Protective/Mitigation Measures: At higher elevations and northern facing slopes where ponderosa pine, Douglas-fir and higher-productivity mixed-conifer species are found, avoidance should be the primary goal. Furthermore, due to the proximity to identified old growth Douglas-fir stands to the west of the project area, any Douglas-fir should be retained and protected from disturbance. Trees removed from the project that are larger than 6” in diameter and within 100 yards of a road open to the public will be bucked and stacked near the road and available for public use.

Cumulative Impacts: None

Alternative 2:

Direct and Indirect Impacts: See Alternative 1.

Protective/Mitigation Measures: See Alternative 1.

Cumulative Impacts: None.

No Action Alternative:

Direct and Indirect Impacts: None

Protective/Mitigation Measures: None

3.5.2. Recreation

Affected Environment:

The project area and its trail system is highly valued by residents of Salida for the outdoor setting close to town making it perfect for exercise or relieving stress after work. It's also valued for the economic development it has provided attracting tourists from throughout the region and state. People participate in a number of trail based activities including walking dogs, hiking, trail running and bicycle riding. The area has seen a steady increase in use as trail development, maps, and promotion has occurred over the past several years. Despite the increase in use, anecdotally it appears that people still have positive outdoor recreation experiences in the area. Staff conversations with the public and scoping comments do suggest that conflict does occur, mostly between different user types, and it is assumed that various coping strategies are being utilized to deal with this conflict. This includes acceptance of conditions, changing of behaviors, and avoidance. This is likely truer for those whose preferred method of travel is by foot and horse.

The overall area would not be considered 'natural' with roads, mining disturbances and developed trails but people still value it for the outdoor setting and the natural feel that the area provides for their recreation.

Currently management largely consists of directional and regulatory signing including kiosks at various trailheads. While BLM staff does patrol the area it is not on a regular basis and visitors are not likely to encounter BLM staff. Maintenance of the trail network is largely performed by volunteers from partner trails groups. While some social trails are known to occur in the area,

recent efforts have been made to better delineate the designated trail network to prevent off-trail use and trespassing on private land.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: By constructing additional trails in the area the proposed actions would result in changes in the area affecting recreation both positively and negatively. The new trails would likely attract additional users, particularly those traveling via bicycle, contributing to the already steady increase in the number of visitors. This is likely to result in an increase in the number of encounters with other users. However, the additional trails could also spread out use offsetting the increase in use. The exact increase in number of encounters anticipated from this action is not possible to determine. Any increase in use may result in an increase in the number of conflicts which past researchers have defined as ‘goal interference attributed to other’s behavior’ (Federal Highways Administration FHWA, 1994).

Research that has been conducted on the subject of conflicts between users reveals multiple reasons for the conflict. Two sources of conflict are most applicable for this project and project area. The first relates to differences in use of technology, which is often one-way, where people dislike uses that are faster and more mechanized than their own. This is already likely occurring in this area due to high volume of bicycle use. This trend is anticipated to continue. The second is an increase in crowding which researchers define as a negative evaluation of a particular density of people in an area. While this conflict likely occurs already for some individuals it has the potential to increase. The level of increase is dependent on a number of factors that cannot be determined at this time including the level of increase in use and travel patterns.

The FHWA report suggests people use three types of coping strategies, all of which changed the character of the experience for the user forced to cope: users adapt and accept the conditions they find; users change their behavior (e.g. use the area less frequently, use at off-peak times, etc...) or are displaced altogether and either stop the activity or stop visiting the area. This of course is largely dependent upon the individual’s attitude. Coping strategies will vary but all of these will likely occur due to the proposed actions at various levels.

The summary of research conducted by FHWA suggests multiple strategies to reduce and address these conflicts several of which are incorporated into the proposed actions. By offering adequate trail mileage opportunities for a variety of trail experiences congestion will be reduced and allow users to choose the conditions that are best suited to the experiences they desire. Alternative 1 includes trails that are both open to bicycle use and some that are closed to bicycles allowing users to choose their desired experience. It is anticipated that conflicts will be lessened by designating hiking only trails somewhat separating uses and providing more alternatives. Multiple trailheads and trails leading out of these will assist in reducing the number of contacts and potential for conflicts. Trail etiquette and responsible trail behavior will also be promoted to help reduce conflicts. Trail standards were incorporated into the proposed actions to accommodate bicycle,

hiker, and horseback traffic as determined by the individual trail management objectives.

Positive outcomes are also anticipated from the project. This includes improving user experiences by diversifying and expanding upon the opportunities currently available. Several of the trails in the proposed actions target youth and families. By providing positive experiences for this set of users there will likely be positive outcomes in terms of family togetherness, individual health and a greater appreciation for nature. Other project components are intended to provide education and quiet contemplative opportunities that will likely result in improved appreciation for the environment and a connection with nature as well as relieve stress. Research suggests that by improving recreation opportunities near where people live and work individuals will have improved mental and physical health and also be more productive at their employment.

It is also anticipated that the project will result in positive economic contributions to the local economy. Past trail developments in this same area have resulted in documented increases in tourism and sales tax revenue. This trend is anticipated to continue as the trail system expands and diversifies.

Protective/Mitigation Measures: Ensure that trails not open to bicycle use are designed and constructed for hiking use and not conducive to bicycle use and sign accordingly. Promote trail etiquette and responsible trail behavior.

Cumulative Impacts: With the development of trails in this area along with other nearby areas there are general cumulative impacts to users who desire more primitive experiences with fewer contacts with others. These users will have a harder time finding opportunities for solitude close to their home and will have to travel further to find these opportunities. In general, trail development near homes has been found to increase property values and improve the health and fitness of individuals.

Alternative 2:

Direct and Indirect Impacts: The impacts from Alternative 2 would be similar to Alternative 1. Visitor experiences would be improved and positive individual and family outcomes would likely still be realized but at a lesser degree. Some of the loop options provided through Alternative 1 would not be constructed under this Alternative providing fewer options and less diverse experiences. The Castle Rim trail would also not be constructed through this Alternative. This trail was intended to provide scenic views along with interpretation of the unique Castle Gardens area increasing appreciation for the natural environment. This type of education could still occur under this alternative but it would be less impactful. Positive economic impacts are also anticipated under this alternative but to a lesser degree than Alternative 1 since fewer miles of new trails would be constructed providing less diversity of opportunities.

Negative outcomes associated with an increase in recreation use are still likely to occur through this alternative. A variety of factors would play into determining if this would be less or more than Alternative 1. Use of this trail system is anticipated to increase through all alternatives, including this alternative. The hiking only

trails would still be built providing opportunities for those who have conflicts with bicycle use. However, this alternative would result in fewer trail options than alternative 2 providing fewer options to spread use out throughout the system.

Protective/Mitigation Measures: Same as Alternative 1.

Cumulative Impacts: Same as Alternative 1.

No Action Alternative:

Direct and Indirect Impacts: Impacts from the no action alternative would be similar to the action alternatives. It is anticipated that use will continue to increase along with the potential for conflicts if the No Action Alternative is selected. Through the no action however, trails designated exclusively for hiking use would not be constructed or designated. This aspect of the proposed actions was intended to diversify the experiences offered and reduce conflicts. High demand for additional bicycle trails in this area would continue. This would likely result in an increase in off-trail use and/or the construction of unauthorized trails leading to an increase in environmental impacts.

The positive outcomes of the proposed actions would likely occur as well but to a lesser degree. The existing network has proven to be popular and sufficient enough to attract visitors to the community. This is likely to continue but to a lesser degree. Potential visitors interested in experiencing the new recreation attractions would be less likely to make repeat visits. Positive outcomes for individuals and families would also occur but to a lesser degree. The existing network does not accommodate families or youth as well as the proposed actions so these types of outcomes would be less through the No Action Alternative. Visitors will still likely see improved outcomes to mental health and physical fitness.

Protective/Mitigation Measures: Work with partner organizations to deter the construction of unauthorized routes.

3.5.3. Range Management

Affected Environment: The analysis area is encompassed by grazing allotments as approved in the Royal Gorge RMP. The Arkansas Hills proposal occurs within the Wellsville allotment. Grazing use, even though authorized, is limited in the area of the trail proposal due to lack in boundary fencing along the west side and density of existing recreation already occurring in the area. If grazing use does occur it is related to short term trailing across the area. Most grazing use on this allotment occurs further east and some isolated areas along the BLM/Forest boundary. There are no range improvements within the proposal area. The Methodist Mountain proposal is encompassed by the Methodist Mountain allotment. The allotment has been in non-use for at least 15 years or since the base property was acquired and now developed for housing. To date there has been no interest grazing this allotment probably due to the lack of boundary fencing, road network and existing recreation density. There are no range improvements within the Methodist Mountain allotment. The eastern portion of the Methodist Mountain proposed trail system contains one trail (Castle Rim Trail) that will extend into the Bear Creek allotment. The Bear Creek allotment is actively grazed during the fall and winter. There is a boundary fence that keeps livestock from entering the Castle Gardens area and it appears the Castle Rim Trail will intersect this fence at least twice.

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: Since grazing use is already limited in the area of the Arkansas Hills and west portion of the Methodist Mountain area, impacts would be minimal. There would probably be more indirect impacts to the adjacent areas that currently experience grazing use as the area becomes more popular and use expands outside the focal area. There could be negative impacts associated with the Castle Rim trail. The Castle Rim trail enters the Bear Creek allotment on the eastern side of the Methodist Mt. area where users may encounter livestock grazing during the fall and/or winter months. The trail also appears to intersect an allotment boundary fence where walk-thru gates and signs would need to be installed. The proposal includes interpretation and education signing of the area that makes grazing use known as a legitimate use of public lands and promotes respect to the ranching operation and culture. This will help to avoid future conflicts and mitigate any negative impacts.

Protective/Mitigation Measures: Addressed in the Proposal

Cumulative Impacts: Recreation and development is growing rapidly in the Upper Arkansas Valley playing a part in the decline to the ranching community. Over time many ranches have sold and evolved into housing development. Those ranches that still exist are experiencing the pressures of growth and change. Operators are trying to evolve with the change and understand the popular demand, but keeping up with the pace has challenged both the ranchers and land managers. As developed recreation continues to expand there will be further conflict challenges, but these may be mitigated through education and adjustments to management in hopes of reducing those impacts.

Alternative 2:

Direct and Indirect Impacts: Same as Alternative 1

Protective/Mitigation Measures: Same as Alternative 1

Cumulative Impacts: Same as Alternative 1

No Action Alternative:

Direct and Indirect Impacts: No impacts

Protective/Mitigation Measures: None

3.5.4. Lands and Realty

Affected Environment: There are numerous rights-of-way (ROW) within the proposed project area:

- COC-18025 — transmission powerline
- COC-0-22171 — transmission powerline

- COC-75933 — water tank site
- COC-61239 — road ROW with buried power and phone/cable lines
- COC-0-40083 — water pipeline
- COC-0-128242 — transmission powerline and access road
- COC-35555 — transmission powerline
- COC-35555A — transmission powerline
- COC-31548 — road ROW
- COC-38702 — telephone line ROW
- COC-55799 — transmission powerline
- COC-68237 — communications site
- COC-0-18213 — communications site
- COC-55159 — communications site
- COC-55841 — telephone line ROW

Environmental Effects

Alternative 1:

Direct and Indirect Impacts: The area is currently used and developed for recreation purposes. There is a potential for increased recreation traffic along access road ROWs in the area due to the proposed trails. No other impacts are anticipated from the proposed project.

Protective/Mitigation Measures: None.

Cumulative Impacts: None.

Alternative 2:

Direct and Indirect Impacts: Similar to Alternative 1.

Protective/Mitigation Measures: None.

Cumulative Impacts: None.

No Action Alternative:

Direct and Indirect Impacts: None.

Protective/Mitigation Measures: None.

3.6. Cumulative Impact Summary

This section describes past, present, and future actions and identifies the impact that the action alternatives will have when looking cumulatively at the area. Past actions within the project area include grazing, forestry management, recreation uses, rights-of-ways, and mineral exploration. Presently, recreation is the predominant use along with grazing and limited mineral extraction. Much of the project area is in close proximity to a community and residential areas. It is anticipated that recreation will continue to be the predominant use in the area along with other current uses such as grazing, rights-of-ways, and limited mineral extraction.

Alternative 1:

Below are the cumulative impacts of Alternative 1 identified earlier in the document.

The mineral resources throughout Front Range are slowly being encumbered by various surface uses and designations that may not be compatible with future mineral extraction efforts needed to meet the public and market demands.

Past actions, such as grazing, construction of the existing trail system, visitor use, OHV use, and roads, have impacted soils resources as a result of soil grading, compaction, erosion, and runoff. Future recreational activities, maintenance work, grazing, and other past activities would continue to impact soil resources in the watersheds. The proposed new trail construction may result in temporary soil disturbance, but would result in long-term benefits by reducing erosion due to proper trail design, drainage improvement, and soil erosion control. The proposed trail building under Alternative 1 and 2 would contribute a minor increment to the total past, present and reasonably foreseeable future actions affecting soil resources. The combined adverse effects of past, present, and reasonably foreseeable actions on soils resources would be moderate, local, and long-term. The overall cumulative effects on soils resources from the no action alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, moderate, and adverse, with a minor contribution from the no action alternative.

Cumulative effects on water resources and hydrologic functioning are primarily discussed at the 6th field (HUC-12) watersheds in order to capture the effects on streams and soils without focusing too specifically or too broadly as to overemphasize the impacts or miss them entirely as they are overwhelmed by baseline effects. The watersheds within the analysis area have been altered by past and present uses. Past measurable detrimental impacts to water quality, floodplain and hydrologic functioning are associated with camping and campground maintenance, roads and road maintenance, OHV use, livestock grazing, fire, fuels reduction projects, and water supply infrastructure (wells, diversions, etc.), which would still exist on the watershed. Roads are probably the largest contributor of sediment to ephemeral/intermittent streams on BLM administered lands. The proposed action alternatives are not expected to have a measurable cumulative effect when added to the other stressors in these watersheds. With the no action alternative, new trail construction that involves grading and ground clearing would no longer be included in the cumulative effects and the effects should lessen, compared to other alternatives. Mitigation measures would be used to further reduce cumulative impacts on the watersheds.

The existing trail network and the addition of the proposed trails create a dense system of trails in the action area. While direct impacts could occur, flora, unlike fauna, is not negatively impacted by the simple presence of people. Creating a dense trail network will have no impact on sensitive plant species as long as existing population areas are avoided.

The proposed trails and the existing trail network would create a dense system of trails in the proposed area. While direct impacts to vegetation would occur, these impacts could be minimal through proper trail maintenance and monitoring.

This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trail system, but it is introducing a new human presence to a portion of the action area (Upper Sole Train, Upper Spartan, and Castle Rim trails). The proposed expansion of the current trail system will cause an additive negative impact to wildlife.

This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trail system, but it is introducing a new human presence a portion of the action area (Upper Sole Train, Upper Spartan, and Castle Rim trails). The proposed expansion of the current trail system will cause an additive negative impact to migratory birds.

Adverse significant impacts to paleontological resources can be reduced to a negligible level through mitigation of ground disturbing activities. It is possible that the proposed project would have the beneficial impact that ground disturbance activities might result in the discovery of important fossil resources.

With the development of trails in this area along with other nearby areas there are general cumulative impacts to users who desire more primitive experiences with fewer contacts with others. These users will have a harder time finding opportunities for solitude close to their home and will have to travel further to find these opportunities. In general, trail development near homes has been found to increase property values and improve the health and fitness of individuals.

Recreation and development is growing rapidly in the Upper Arkansas Valley playing a part in the decline to the ranching community. Over time many ranches have sold and evolved into housing development. Those ranches that still exist are experiencing the pressures of growth and change. Operators are trying to evolve with the change and understand the popular demand, but keeping up with the pace has challenged both the ranchers and land managers. As developed recreation continues to expand there will be further conflict challenges, but these may be mitigated through education and adjustments to management in hopes of reducing those impacts.

Alternative 2:

Cumulative impacts from Alternative 2 are anticipated to be similar to Alternative except for the following resources.

This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trails. Because the action area is within the boundary of an existing trail network, this alternative is not anticipated to result in an additive negative cumulative impact to wildlife.

This project would result in a long-term, moderate intensity disturbance. The proposed trail construction is in addition to current existing trails. Because the action area is within the boundary of an existing trail network, this alternative is not anticipated to result in an additive negative cumulative impact to migratory birds.

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4.1. List of Preparers and Participants

Table 4.1. List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
US Forest Service, Salida Ranger District	Coordination of trails and recreation use that crosses jurisdictional boundaries.	Concern with specific trails that would encourage unauthorized use Forest Service managed lands. Action alternatives were modified to reflect this concern and defers to the Forest Service for providing desired direction on these specific trails.
Colorado Parks and Wildlife	Coordination of the proposed action and conflicts with wildlife population management goals.	Identified concern about impacts that trails in certain areas would have on wildlife populations. Mitigation was incorporated into on of the action alternatives and the other alternative considered removing the trails of concern from being considered.
City of Salida and Chaffee County	Coordinate Road Maintenance Concerns	Scoping revealed concerns about long term maintenance related to an increase in use on the roads that access the proposed trails. Consulting parties agreed to work together to address road maintenance issues.

Table 4.2. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
See ID team review sheet earlier in the document.	See ID team review sheet earlier in the document.	See ID team review sheet earlier in the document.

4.2. Tribes, Individuals, Organizations or Agencies Consulted

- US Forest Service, Salida Ranger District
- Colorado Parks and Wildlife
- City of Salida
- Chaffee County, Road and Bridge
- Salida Mountain Trails
- Quiet Use Coalition
- Tribes: See Native American Religious Concerns

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