

**United States Department of the Interior  
Bureau of Land Management**

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**Environmental Assessment  
DOI-BLM-CO-N05-2014-0116**

**Meeker Trails Master Plan**

**January 2015**



U.S. Department of the Interior  
Bureau of Land Management  
Northwest District  
White River Field Office  
220 East Market St  
Meeker, CO 81641



BLM

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# 1. INTRODUCTION

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## 1.1. Identifying Information

**Project Title:** Meeker Trails Master Plan

**Legal Description:** T1N, R94W Sections 9, 10, 15, 16, 21, 22, and 28

**Applicant:** Eastern Rio Blanco Metropolitan Recreation and Park District (ERBM) and Bureau of Land Management-White River Field Office (BLM)

**NEPA Document Number:** DOI-BLM-CO-N05-2014-0116-EA

## 1.2. Background

A master plan for the Phillip and Dorcas Jensen Memorial Park (Jensen Park) was approved by the ERBM Board of Directors on August 9, 2011. In order to implement this master plan and achieve ERBM's goals for providing more system-wide connectivity to park and open space properties in the community, it was determined that providing trail access to a high point on BLM lands above the Jensen Park and then connecting this trail to the Town of Meeker-owned Ute Park was a priority. During the summer of 2012, the ERBM constructed a hiking and bicycle trail from Jensen Park approximately 1 mile across BLM lands to the top of China Wall (Phase 1). During the summer of 2013 this trail was extended from the top of China Wall, down into Anderson Gulch, and into Ute Park fulfilling the goal of connecting the two parks (Phase 2). This trail was named the China Wall Trail and is part of a 6 mile trail system that connects Jensen Park, Ute Park, and BLM lands.

General public access to the 2,000 acre parcel of BLM lands known as the China Wall/Lion Canyon/Lobo Mountain area is through Ute Park and Jensen Park only (Figure 1). While there are approximately 4.5 miles of existing two-track and gravel roads within this parcel, approximately 2.53 miles of which are proposed to be incorporated into this trail system, these roads can only be accessed by traveling through private property which is not open to the general public. Jensen Park, managed by ERBM, allows for pedestrian and bicycle use only and contains just over 2.5 miles of trails. This park includes a walk-in only trail head located at the northern terminus of 7<sup>th</sup> Street. Sanderson Hills Park, also managed by ERBM, is adjacent to a portion of Jensen Park and provides a trail head with 15-20 vehicle parking spaces to access trails within Jensen Park. Ute Park hosts the other trail head which is located at the western terminus of Hill Street and includes 8-10 vehicle parking spaces, an overflow parking area for large events, and 0.25 miles of trail. Ute Park is managed by the Town of Meeker and is open to pedestrian and bicycle use only. Because the only developed public access to this parcel of BLM lands is through trail heads managed to only allow pedestrian and bicycle use, all proposed trails are designed for, and would be managed for, pedestrian and bicycle use as well.

Now that the initial ERBM goals of constructing a trail to the top of China Wall, connecting this trail to Ute Park, and constructing a network of trails in Jenson Park have all been completed, the most strategic and efficient method of planning any future trails in this area is to take a comprehensive planning approach to this 2,000 acre parcel of BLM lands. Therefore this master planning project considers any and all new potential trails on this parcel of BLM lands. This strategy provides for a more efficient planning process than completing a separate environmental analysis for each new trail over several years. This strategy also provides the BLM and ERBM the flexibility to plan the construction of any new proposed trails over one or more years as needs, demands, management, and budgets allow. This trails master planning process is intended to benefit trails users, trail managers, and community service providers by providing an overall vision for this trail system, setting trail construction and maintenance goals and priorities, and attaining desired recreational and socioeconomic benefits and outcomes.

### **1.3. Purpose and Need for Action**

The purpose of the action is to establish a sustainable, pedestrian and bicycle trail network to places of interest within the China Wall/Lion Canyon/Lobo Mountain area which provide recreational opportunities and experiences that meet the expectations of present and future hikers, runners, mountain bikers, and other non-motorized trail users.

The need for the action is that the 1997 White River Record of Decision and Approved Resource Management Plan (White River ROD/RMP) directs the development of non-motorized trails as demand/needs dictate and specifically lists the China Wall/Lion Canyon/Lobo Mountain area as a location for these types of projects. A demand from the community for this type of trail development was identified in ERBM's 2011 Master Plan in which local respondents identified additional trails as the highest priority for outdoor facilities or amenities to be added, expanded, or improved. This project is also in alignment with the 2014-2019 BLM National Recreation Strategy which states that the BLM will reposition the resources of the Recreation & Visitor Services Program to achieve social, economic, and environmental goals of local communities and provide more benefits for mutually shared customers. The vision for this strategy is that by increasing and improving collaboration with community networks of service providers, the BLM would help communities produce greater well-being and socioeconomic health, and would deliver outstanding recreation experiences to visitors while sustaining the distinctive character of public lands recreation settings.

### **1.4. Decision to be Made**

Based on the analysis contained in this EA, the BLM will decide whether to approve or deny the proposed Meeker Master Trails Plan, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA), the BLM must determine if there are any significant environmental impacts associated with the Proposed Action warranting further analysis in an Environmental Impact Statement (EIS). The BLM Colorado Northwest District Manager is the responsible officer who will decide one of the following:

- To approve the entire Meeker Trails Master Plan with design features;
- To approve specific trails within the Meeker Trails Master Plan with design features;
- To analyze the effects of the Proposed Action in an EIS; or
- To deny the Meeker Trails Master Plan.

## 1.5. Conformance with the Land Use Plan

The Proposed Action is subject to and is in conformance (43 CFR 1610.5) with the following land use plan:

**Land Use Plan:** White River Record of Decision and Approved Resource Management Plan (ROD/RMP)

**Date Approved:** July 1997

**Decision Language:** “Develop motorized and non-motorized trails (e.g. mountain bike, hiking, horseback, ATV, 4-wheel drive, snowmobile, etc.) as demand/needs dictate. Trails may include but are not limited to: Rangely Loop, Dinosaur, Ute, Dominguez-Escalante, Scenery Gulch, Cathedral Bluffs, and China Wall/Lion Canyon/Lobo Mountain Trails.” (page 2-44)

## 2. PUBLIC INVOLVEMENT

### 2.1. Scoping

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 identify issues, concerns, and potential impacts that require detailed analysis. Scoping is both an internal and external process.

Internal scoping was initiated when the project was presented to the WRFO interdisciplinary team on August 19, 2014. An internal BLM interdisciplinary team meeting was held on September 2, 2014 to identify any issues or concerns from BLM staff. External scoping was conducted by posting this project on the WRFO’s on-line National Environmental Policy Act (NEPA) register. A press release was sent out the week of September 8, 2014 and an article was published in the September 11, 2014 edition of the Herald Times newspaper asking for public input and comment about the project to be received by October 7, 2014. Two maps were also distributed for scoping, Alternative A (Figure 4) and Alternative B (Figure 5). A public scoping meeting was held September 18, 2014 and was attended by two ERBM Board of Directors members, two BLM staff members, and three members of the public. There were ten scoping comment letters received. Six letters were received from members of the public and all of these letters supported some form of implementation of the project. Four letters were received from agencies or organized groups. Colorado Parks and Wildlife’s (CPW) comment letter recommended that dogs be required to be leashed and large special events not take place from January 1-April 15 of each year to minimize impacts on mule deer when using critical winter

range. CPW also felt that Alternative B was the better of the two alternatives and recommended that only one trail be constructed each year to minimize the amount of trail building equipment in the area. The Meeker Chamber of Commerce and Town of Meeker both fully supported the expansion of the existing trail system welcoming this potential opportunity to bring new visitors to the area, benefit local residents, and enhance the Meeker area economy. The Wilderness Society's comment letter supported the overall project so long as impacts to all other resource values are mitigated or avoided.

**Issues:** There are soils mapped as fragile or having landslide potential throughout the area where the Proposed Action is located. Approximately 3 miles of existing trails, most of Trail 7, and a small portion Trail 9 are located in mule deer severe winter range and the entire Proposed Action is located in a mule deer winter concentration area. There is potential for raptor nests to be impacted by trails and surveys may be needed. Livestock use of trails when saturated could result in severe trail damage. Weeds will need to be continued to be managed in formerly disturbed areas adjacent to existing trails and in newly disturbed areas adjacent to newly constructed trails. Based on both internal and external input during scoping, the Proposed Action has been revised; see Section 3.3 for a discussion of alternatives considered but eliminated from detailed analysis.

## 2.2. Public Comment

The EA and the unsigned Finding of No Significant Impact (FONSI) will be available for a 15-day public review and comment period beginning January 20, 2015 and ending February 3, 2015.

# 3. PROPOSED ACTION AND ALTERNATIVES

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## 3.1. Proposed Action

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### 3.1.1. Project Components and General Schedule

#### *Trail Connectivity & Length*

The BLM and ERBM propose to construct up to a total of 6 new trails for a total 11.77 miles of new pedestrian and bicycle trails on the China Wall/Lion Canyon/Lobo Mountain BLM parcel (Figure 1). This proposal includes incorporating an existing 0.32 mile trail (Trail 4) into the trail system. These trails would be designed to connect with the existing 6.08 mile pedestrian and bicycle trail system and with 2.53 miles of existing two-track or gravel roads to create a 20.26 mile trail system. During trail construction activities ground disturbance may be up to 8 feet in width to be reclaimed back to a 2 foot wide trail corridor. This would result in maximum initial construction ground disturbance of 11.18 acres and be reclaimed back to 2.8 acres for the final trail tread to be maintained.

### *Trail Construction Timeframes*

This master trail plan is intended to provide flexibility as to when and which trails are constructed. This phasing of trail construction over the years is intended to reflect public needs and demands, increased trails as use of the trail system increases, meet ERBM and BLM workload priorities and budget changes, meet maintenance capacities, and address overall community socioeconomic desired benefits. Some priority trails may be constructed one year and then it may be several years later until more trails are constructed. Before additional trails are constructed, existing trails should: have enough use that the trail tread is not being overgrown with vegetation from lack of use or maintenance, weeds are being managed in accordance to the Meeker Trail System Integrated Weed Management Plan, ground disturbance created by construction outside of the tread is trending towards and/or meeting reclamation standards, user created trails are closed and rehabilitated as needed, vegetation is being brushed or cleared to maintain the trail corridors, and appropriate measures are being taken when needed to prevent soil erosion. Trails 1, 9, 2, and 7 should be considered higher priority trails for construction. Trails 8 and 5 should be considered lower priority trails for construction. A list of the proposed trails in order of priority from high to low should be considered as such: 1, 9, 2, 7, 8, 5. Detailed descriptions for each proposed trail are listed below with rationale for the construction priority.

Trail 4 is an existing user trail that connects with Mountain View Road and provides access to the Sage Hills neighborhood and Sulphur Creek Road. It is proposed to be formally incorporated into the trail system by adding a small information kiosk with a map of the trail system and use guidelines and by including this trail in the overall maintenance program. Signage and maintenance activities for this trail and the trail head would be expected to be started in early spring 2015.

### *Trail Difficulty*

The International Mountain Biking Association (IMBA) has developed a Trail Difficulty Rating System to categorize the relative technical difficulty of mountain biking trails. This difficulty rating system is intended to help trail users make informed decisions, improve the experience of trail users, and aid in the planning of trail systems. This system rates the technical challenge for bicyclists only and not the physical exertion. A diverse network of trails that varies in recreational experiences and technical challenges is the best solution to providing a trail system that meets the interests and needs of trail users. Criteria considered when placing a trail or trail design into a rating category includes: tread width, tread surface, trail grade, and natural obstacles and technical features. A table of the criteria and the trail ratings used in the IMBA Trail Rating System is attached as Figure 12. The descriptions of each proposed trail includes placing the trail into one of the five levels of difficulty: easiest, easy, more difficult, very difficult, or extremely difficult with a brief description of why this rating has been selected. This is intended to inform the public as well as trail planners, designers, constructors, and managers about the diversity of difficulty levels planned for this trail system and ensure a variety of recreational opportunities are provided. As each trail is designed and constructed, some trails may vary from the intended or selected difficulty rating due to terrain encountered during

construction or other unforeseen circumstances. These ratings are intended as guidelines and informational and not necessarily prescriptive decisions for each trail.

*Trail 1 (East Ridge Trail): Construction Priority 1*

This trail is designed to connect the existing trails with the existing roads and provide an outstanding recreational experience of traveling along the eastern ridge above Anderson Gulch which has exceptional views of the surrounding landscape to the east and west and down into Anderson Gulch. This trail is planned to be an Easy rated trail with an average overall trail grade of approximately 5 percent, good visibility, no exposure, and no technical trail features. This trail is intended to flow along the ridgeline and has one short climb with one switchback or climbing turn planned. This trail is approximately 1.56 miles long and connects with approximately 4.5 miles of existing roads. These roads can currently only be accessed by traveling on roads through private property in Lion Canyon which are not open to the general public. The existing roads on BLM lands receive very low use, primarily by employees and contractors of the Federal Aviation Administration (FAA) site and other telecommunications companies in order to access their developed sites along the ridge tops. The FAA site is located on the northern summit of this BLM parcel and is an area that the public is discouraged from being near to prevent the site from malfunctioning. In order to reduce the likelihood that trail users go into this site, the trail has been located in a manner that circumnavigates this area, yet gains the elevation needed to reach the roads system and where the FAA site remains out of view from trail users. Because constructing this 1.56 mile trail adds a total of 5.5 miles of routes to the trail system (Trail 1 plus roads) and it provides an outstanding recreational opportunity, this trail is the top priority for trail construction in this proposal.

*Trail 2 (Hidden Valley Trail): Construction Priority 3*

This 2.46 mile trail provides a side loop to the east of Trail 1 and accesses a large area of undeveloped BLM lands with several unique places along the trail. This trail leaves the east ridge of Anderson Gulch approximately 0.5 miles north of the existing trail system and descends and traverses through an unnamed gulch for 0.75 mile and leads to an over look point with excellent views of the White River Valley. This view point area also provides a small level area suitable for a lunch stop and has unique rock formations in the area for further exploring. The trail then travels north on the east side of a side slope and into “hidden valley”. This valley is largely topographically screened from being viewed from any area outside of this BLM parcel and has a higher elevation sage brush flat in the bottom instead of the typical v-shaped valley bottoms found throughout the rest of the parcel. The trail descends into this valley but skirts the edges of this valley and climbs the eastern ridge. In the final dry drainage crossing there is a unique rock arch formation. On the ascent of the eastern ridge there is another over look area with a level lunch stop area with views of Sulphur Creek and areas to the east. The trail then climbs the eastern ridge and makes its way across the open slope to join Trail 1 just below the FAA site or ridge summit. This trail is planned to be an Easy or More Difficult rated trail with average grade of approximately 10 percent or less and some sections may have perceived exposure and narrow winding tread of less than 24 inches. This trail must be constructed after Trail 1 has been constructed. This trail is considered the third trail for construction priorities.

*Trail 4 (Sage Hills Access Trail): Maintenance Planned for 2015*

This trail is an existing user created trail that has existed for at least two years if not longer. This 0.3 mile trail connects the existing trail system with the Sage Hills neighborhood. This trail is located on 0.2 mile of BLM lands and 0.1 mile of ERBM lands. Two sections of this trail use portions of existing two-track roads that are closed to public motorized use and two sections are primitive single track trails. It is proposed that this trail be incorporated into the existing trail system because it provides the only trail connection with the Sage Hills community, has been in good condition with no formal maintenance for a few years, and provides a unique primitive single track experience for trail users. This trail is planned to be managed as a Very Difficult rated trail largely because of the narrow trail tread and trail corridor. This trail consists of tread that is mostly 8-16 inches wide and a trail corridor that is 2-4 feet wide. It is proposed that this trail not be built or constructed any wider than it currently is, but that light trail maintenance techniques be used to maintain its existing condition. This trail needs light tread work on one 20 foot section, a few branches limbed from trees, and a couple drainage features installed to maintain its current condition and sustain future use. It is also proposed that where the trail terminates at Mountain View Road that this becomes a walk-in trail head with a sign installed that includes trail use guide lines and a map. It is also proposed that three small way finding signs be installed, two where this trail leaves the existing two-track roads and one at the trail intersection, in order to orientate trail users.

*Trail 5 (Anderson Gulch Trail): Construction Priority 6*

The intent of this trail is to provide trail users the experience of traveling through Anderson Gulch which is an incised landscape or in a drainage instead of on a side slope or ridge line. The original intent was to provide trail users a less steep trail to access the east ridge of Anderson Gulch and to provide another loop option in the trail system. Due to topography and steep slopes, this trail as currently designed does not provide a less steep trail to the east ridge of Anderson Gulch but has grades similar to existing trails that access the top of China Wall. This trail leaves the north side of the existing trail in Anderson Gulch at the first switchback and travels north into Anderson Gulch. Near a steep incised drainage with an old bull dozed route in the bottom the trail switch backs up to the head of this drainage. From here the trail traverses across the open slopes to join Trail 1 at the east ridge of Anderson Gulch. Depending on construction techniques and the number of technical features incorporated into this trail, the rating could be either More Difficult or Very Difficult. This trail must be constructed after Trail 1, provides another loop option in the trail system, and is considered the sixth trail for construction priorities because it parallels an existing trail.

*Trail 7 (Backside Loop Trail): Construction Priority 4*

This 2.17 mile trail connects with a graveled two-track road south of the FAA site and a graveled route that travels from private property in Lion Canyon up to the west ridge of Anderson Gulch to provide another loop option in the trail system. This trail also connects with Trail 8 for another option along this trail. This area known as the backside of this BLM parcel has less steep open slopes of grasses and shrubs with sparse scattered stands of pinyon and juniper. This area appears

different than the other areas where trails are proposed and has continuous views into Lion Canyon. This trail is planned for an Easy rated trail to encourage more users to experience this unique area of the BLM parcel and because topography in this area provides an area to provide a trail with a 24 inch tread with a grade of approximately 5 percent or less. This trail may also include technical features that can be bypassed or experienced (multiple lines) as a way to provide a diversity of trail experiences on the same trail. Since this trail must be reached by traveling approximately 4 miles of existing and proposed trails, but offers a loop with unique experiences and continuous views, it is considered the fourth priority for trail construction.

#### *Trail 8 (Lion Canyon Trail) Construction Priority 5*

The intent of this 2.08 mile trail is to provide a single track trail experience that travels mid-slope above Lion Canyon from the end of Trail 7 to the top of Lobo Mountain and connects with Trail 9. This trail is somewhat a rolling trail that weaves through stands of pinyon and juniper and small grassy and brushy openings while traversing several dry drainages. This trail climbs at the southern end to join Trail 9 near the existing road. This trail is planned as a More Difficult rated trail with an average grade of 10 percent or less with some areas of perceived exposure. If Trails 1, 7, and 9 are constructed, then by constructing this trail, trail users could create an approximately 10 mile single track loop by connecting these trails with existing trails. This trail is considered the fifth priority for trail construction.

#### *Trail 9 (Lobo Mountain Trail) Construction Priority 2*

This 1.8 mile trail connects the existing trail in the bottom mouth of Anderson Gulch to the top of Lobo Mountain and the existing roads on the west ridge of Anderson Gulch. This trail switch backs steeply up an oak brush covered north facing slope to reach a bench where the existing overhead utility lines come down into Anderson Gulch. Along this section of trail each of the three eastern switchbacks provides outstanding views of Meeker and the White River Valley to the east. After crossing the bench area, the trail traverses a south facing slope and switch backs up to the top of Lobo Mountain. This trail is planned to be an Extremely Difficult rated trail because of the topography, cliff bands, and location of private property results in steep, narrow trail. In order to reduce ground disturbance on this steep trail with an overall grade of approximately 11 percent, the tread is planned to be maintained at 8-12 inches wide with a 4-6 foot wide trail corridor. This trail is planned to have some very steep sections with several switchbacks. It will be important to consider construction sections with rougher tread, narrow tread, choke points, and/or winding and undulating sections in order to control downhill speeds, maintain the trail, and provide an enjoyable trail experience. Because Lobo Mountain has over eight different communication sites scattered along the summit area, the trail is proposed to be located where it circumnavigates around these sites to reach the western ridge of Anderson Gulch and the existing roads system. This trail is an essential link to providing connectivity for the trail system by allowing trail users to connect various trail along the way and then make an approximately 7 mile loop instead of an 11 mile out and back trip; as such. It is considered the second priority for trail construction.

## *Trail Design & Construction Technique*

The trails are proposed to be built mostly by professional trail contractors or professionally trained volunteer trail crews. The professional contractor or trail crews will follow the guidelines and techniques for sustainable trail construction set forth in two publications: *USDA Forest Service Trail Construction and Maintenance Notebook, 2007 Edition*, and the *International Mountain Bicycling Association (IMBA) Trail Solutions: IMBA's Guide to Building Sweet Singletrack, June 2004*. The construction technique utilized will be the full bench method. Other construction methods and design techniques that should be considered for all trails include sustainable trail concepts such as: The Half Rule, Ten Percent Average Guideline, Maximum Sustainable Grade, Grade Reversals, and Outslope. The final established and maintained trail tread for most trails will be approximately 24 inches wide with the existing ground surface and vegetation to be cut back to a maximum width of up to 8 feet and a height of 10-12 feet depending on hill side slope and terrain features. The total trail corridor analyzed for this proposal will be a width of 100 feet (50 feet on either side of the centerline). This total corridor width allows for potential variance in trail siting during construction due to unforeseen obstacles; through areas that may require switchbacks; and areas where there may be a need for other minor realignments due to resource considerations. The 100 foot trail corridor width also allows for the use of available natural features ideal for sustainable trail construction (i.e., benches, boulders, etc.). The height of the corridor will be 10-12 feet to allow for mountain biking, cross country skiing, and snowshoeing use. Equestrian use is not permitted within Jensen Park or Ute Park. As such, equestrian use on the BLM portion of this trail is expected to be minimal, therefore specific techniques for equestrian trail construction will not be employed.

Initial trail construction will likely be completed with the use of mechanical trail building equipment including a small trail dozer (Figure 8) and mini-excavator (Figure 7), along with traditional hand tools for finishing and construction of small trail features (i.e., water bars, dips, etc.). Short segments of the trail on more level ground or extremely steep terrain, may be constructed entirely by hand. Vegetation may be cut using chainsaws or hand saws. These trails are proposed to be constructed by mobilizing trail construction equipment (small trail dozer, mini-excavator, and off-highway vehicles (OHVs), when needed, up to the top of the China Wall Trail on the existing trails or roads depending on the location of the new construction. During the expected half day of mobilizing equipment up the trails, the public may be asked not to use this portion of the trail system to protect public health and safety; signs stating this will be installed on both sides of the project. Also, during construction of the proposed trails, the contractor will be using OHVs on the existing trails to access the work sites at the beginning and end of their work shift. This is estimated to be 2-6 trips per day depending on crew size and any unplanned trips. Signs will be posted at the trailheads to notify trail users, but use of the trail will not be restricted. Upon completion of the proposed trails, the contractor will then demobilize all equipment and complete any needed work to rehabilitate the existing trails to their former condition or better and complete any annual maintenance to this section of trail. During the one day of completing this work the public may again be asked not use this portion of the trail system to protect public health and safety; signs stating this will be installed on both sides of the project.

The proposed trail alignment prioritizes areas that require the least amount of disturbance to existing vegetation and natural features while maximizing the user recreation experience. The construction goal is to maximize long-term trail sustainability and minimize maintenance through proper trail design. Between September 1 and March 15 all areas of disturbance, except the tread portion of the trail, will be seeded with the following seed mix:

<b>Cultivar</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Application Rate (lbs. PLS/acre)*</b>
Rosana	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp. inermis</i>	3.5
Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3
Sherman	Big Bluegrass	<i>Poa secunda ssp. ampla</i>	1
Bromar	Mountain Brome	<i>Brumus marginatus</i>	2
Maple Grove	Lewis Flax	<i>Linum lewisii</i>	1
Bandera	Rocky Mountain Penstemon	<i>Penstemon strictus</i>	0.5

### *Trail Signage*

Signage for this trail system is a key component to visitor satisfaction and proposed trail signage locations are shown on the Meeker Trail System signage map (Figure 3). Trails signs are proposed to be located within 2-8 feet of the trail intersections and always within the 100 foot analyzed trail construction corridor. These trail signs will be made of wood or similar durable material with routed wording or painted a color to blend with the surrounding landscape. Signs will be only large enough and installed high enough for trail users to read and understand when viewed in close proximity (within 2-10 feet). Existing kiosks at the trail heads will provide overview type maps of the trail system and include guidelines and rules for trail users.

### *Maintenance*

Assumptions regarding future trail use and maintenance needs are discussed in Section 5.2.

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### **3.1.2. Design Features**

1. Upon completion of the trail, ERBM and/or BLM will re-seed all disturbed areas used for staging and construction, as well as disturbed areas along the edges of the trail beyond the 24 inch tread width with the BLM specified seed mix. ERBM will also implement an integrated weed management plan similar to the BLM Manual 9015-Integrated Weed Management (BLM 1992) in cooperation with the BLM to address any potential invasive species issues. An annual meeting will be held with BLM and ERBM staff to discuss specific weed species of concern, planned control measures, and plan annual cooperative weed spraying days.

2. Install, maintain, and remove signs at least two days before and the day after construction operations at the trail heads asking the public not to use the trails where construction equipment is mobilized and during the full day of demobilizing and maintaining the trail. Install, maintain, and remove signs at least two days before and the day after at trail heads during the entire trail construction period warning the public that OHVs will be used at the beginning and end of each day's shift as well as occasionally during the work shift to access the work site and transport materials to and from the work site. This sign will also include that no other motorized use of this trail is authorized.
3. Slash generated from vegetation removal for trail construction or future maintenance will be lopped and scattered to a depth no greater than 18 inches for wildfire mitigation and visual aesthetics. Stumps will be cut to a height no greater than four inches. Branches that are removed will be cut flush with tree trunks (no branch stubs will be left).
4. BLM Cadastral Survey must complete a survey for and mark the boundary of the BLM/private property line where Trail 9 is proposed, before Trail 9 can be constructed.
5. In order to protect public land health standards for soils and due to the steep slopes along the trails, erosion features such as rutting and pooling on the trail surface or rilling, gullyng, piping and mass wasting adjacent to the trail as a result of this action will be addressed immediately after observation by developing a plan to assure successful soil stabilization with Best Management Practices (BMPs), or additional trail maintenance to keep the integrity of erosion control measures that disperse flow and allow the normal movement of surface runoff and infiltration.
6. In order to prevent impacts to the existing trails and roads and to prevent impacts to fragile soils, mechanical trail construction activities shall cease when soils, trails, or roads surfaces become saturated to a depth of three inches unless approved by the Authorized Officer.
7. If damage to existing roads and trails is created by mechanical trail construction equipment or off-highway vehicles used during the construction time period, the contractor or equipment operators may be asked to perform maintenance to return the routes to their former condition after the new trail construction has been completed.
8. If at any time in the future, livestock that are grazing in the associated allotment begin traveling the trails resulting in unintended drift of livestock out of appropriate forage areas, walk-through drift fences will be installed cooperatively by ERBM and BLM at identified key points to prevent unintended livestock drift.
9. All activities would be required to comply with all applicable local, state, and federal laws, statutes, regulations, standards, and implementation plans. This would include acquiring all required State and Rio Blanco County permits, implementing all applicable mitigation measures required by each permit, and effectively coordinating with existing facility ROW holders and grazing permittees.

10. The applicant will have absorbent spill/drip rags at the time that any refueling of equipment is completed in association with the proposed project.
11. The applicant shall be required to collect and properly dispose of any solid wastes generated by the Proposed Action. If any hazardous chemicals, fuels, oils, lubricants, and/or noxious fluids are spilled during field activities, they shall be cleaned up immediately and disposed of at an approved waste disposal facility.
12. A release of any chemical, oil, petroleum product, or sewage, etc., (regardless of quantity) must be reported to the Bureau of Land Management – WRFO Hazardous Materials Coordinator at (970) 878-3800. The Colorado Department of Public Health and Environment (CDPHE) should also be notified, if applicable, through the 24-hour spill reporting line at 1 (877) 518-5608.
13. The applicant is requested to notify the BLM of any historical or recent trash dumping sites identified during construction, so that BLM can identify, prioritize, and perform cleanup activities at these locations.
14. When working on lands administered by the BLM WRFO, notify Craig Interagency Dispatch (979-826-5037) in the event of any fire. The reporting party will inform the dispatch center of fire location, size, status, smoke color, aspect, fuel type, and provide their contact information. The reporting party, or a representative of, should remain nearby, in a safe location, in order to make contact with incoming fire resources to expedite actions taken toward an appropriate management response. If chemical fire extinguishers are used the reporting party must notify incoming fire resources on extinguisher type and location of the use. Natural ignitions caused by lightning will be managed by Federal fire personnel. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.

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### ***3.1.3. BLM Required Conditions of Approval to Mitigate Impacts to Cultural and Paleontological Resources***

1. The applicant is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
2. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. The applicant will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously

determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The applicant, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.

3. Pursuant to 43 CFR 10.4(g), the applicant must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the operator must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.
4. The applicant is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate or other scientifically-important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
5. If any paleontological resources are discovered as a result of operations under this authorization, the applicant or any of his agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

### **3.2. No Action Alternative**

The No Action Alternative constitutes denial of the Meeker Trails Master Plan. Under the No Action Alternative, none of the proposed project components described in the Proposed Action would be constructed. The existing user trail (Trail 4) would not be signed or maintained.

### 3.3. Alternatives Considered but Eliminated from Detailed Analysis

#### *Contractor's Proposed Trail System*

A contractor proposed a trail system on this BLM parcel that was submitted to ERBM in late 2013 (see Figure 6). This proposal was forwarded to the BLM for consideration and includes 21 miles of proposed trails for construction; 0.6 miles in Jensen Park and 20.4 miles on BLM lands in addition to the 6 miles of existing trails. This proposal was considered but eliminated from detailed analysis for a variety of resource and management concerns. Several trails were considered redundant or duplicative and not needed. Trails were proposed on either side of an existing road that already provides acceptable access for that area. There were management and maintenance concerns about the density of trail development on this 2,000 acre parcel, the ability to maintain the amount of proposed trail mileage, and the ability to mitigate invasive weeds and properly reclaim disturbed areas along the trail corridors. Also impacts to mule deer, steep slopes, and soil erosion were concerns.

#### *Trail 3*

During scoping, Trail 3 was presented as part of Alternatives A and B (see Figures 4 and 5). The intent of this trail was to provide a lower-graded or less steep trail to allow less strenuous access to additional proposed trails. After other proposed trails were laid out on-the ground and mapped with GPS units, this trail was considered unneeded and redundant. A portion of Trail 2 has been expanded and incorporates some of what would have been Trail 3, which is therefore no longer needed.

#### *Trail 6*

During scoping, Trail 6 was presented as part of Alternatives A and B (see Figures 4 and 5). The intent of this trail was to provide a single track trail that connects with Trail 7. However, after more extensive field work in this area, Trail 7 was realigned to provide a less steep trail resulting in the Trail 6 not being needed any more.

## 4. ISSUES

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The CEQ Regulations state that NEPA documents “must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. The following sections list the resources considered and the determination as to whether they require additional analysis.

## 4.1. Issues Analyzed

The following issues were identified during internal scoping as potential issues of concern for the Proposed Action. These issues will be addressed in this EA.

- **Geology and Minerals**: Portions of all proposed trails transect areas identified in the White River ROD/RMP as No Surface Occupancy (NSO-01) landslide areas.
- **Soil Resources**: Portions of all proposed trails transect areas identified in the White River ROD/RMP as No Surface Occupancy (NSO-01) as landslide prone areas.
- **Vegetation**: Construction and maintenance of the proposed trails will result in a minor loss of vegetation as trails are constructed. After construction and follow-up seeding has occurred vegetation loss will be reduced to the actual trail tread and the cut-slopes on the upper side of trails. This loss of vegetation will remain for the life of the trails. The larger concern related to vegetation is the risk of increased spread of undesirable vegetation as addressed in the Invasive, Non-Native Species section.
- **Invasive, Non-Native Species**: Expansion of the trail system by constructing the proposed trails would increase the risk, likelihood, and opportunity for the spread of invasive, non-native, and noxious plant species.
- **Migratory Birds**: Trail construction and subsequent recreational use may result in behavioral and physiological impacts to migratory birds.
- **Terrestrial Wildlife**: Trail construction and subsequent recreational use may result in behavioral and physiological impacts to terrestrial wildlife species.
- **Special Status Animal Species**: Construction of Trail 9 and subsequent recreational use may result in behavioral and physiological impacts to special status animal species.
- **Special Status Plant Species**: Trails 7 and 8 have some identified potential habitat for the BLM sensitive species Debris milkvetch. Construction of Trails 7 and 8 would potentially result in the removal of BLM sensitive species on the trail surface.
- **Cultural Resources**: Trail construction and subsequent recreational use could have the potential to damage known and undiscovered cultural resource in the project area. Trails 1, 2, 4, 5, 7, and 8 were surveyed for cultural resources at the Class III, 100 percent pedestrian level, which includes a 15 meter-wide area of potential effect buffer on either side of the proposed trail. Trail 9 was exempt from archaeological survey due to the steep rugged and heavily vegetated condition of the trail location. Currently, no register eligible cultural resources are known to be situated in the project area. Based on available data few or limited resources are expected to be located in the project area because of the lack of findings by other surveys in the immediate vicinity, and the steep, rough, and heavily vegetated topography of the project area.

- **Visual Resources:** Trails are proposed in Visual Resource Management Objective Class II areas. The objective for these areas is to retain the existing character of the landscape with the level of change to the characteristic landscape should be low and where management activities may be seen, but should not attract attention of the casual observer. There is potential for the linear ground disturbance created by constructing new trails to be noticeable and attract attention depending on the location of the proposed trails.
- **Livestock Grazing:** The proposed trail construction projects occur in the Lion Canyon pasture of the Smith Crawford Allotment (#06625). The main effect of the proposed trails to livestock grazing use would be some disturbance to livestock as trail users pass by. There is potential for cow/dog encounters if mother cows felt threatened, either themselves or their calves, by dogs. Livestock may occasionally access the trails and travel out of the intended use area where there are no fences to stop them on the southeastern portion of the trails closest to Meeker.
- **Forestry and Woodland Products:** Trail construction will primarily occur in pinyon juniper woodlands in the project area; however surveys in the area did show the presence of some ponderosa pine along Trail 2. Impacts to forestry and woodland products include the removal and trimming of trees for trail construction and maintenance.
- **Recreation:** There is potential for the Proposed Action to provide positive effects and benefits directly to recreational users and indirectly community service providers.
- **Access and Transportation:** The Proposed Action is likely to create new access to BLM lands and add routes to the BLM transportation system.
- **Social and Economic Conditions:** The Proposed Action is likely to create beneficial economic effects in the community of Meeker that will vary in degree depending on the number and mileage of trails constructed.

## 4.2. Issues Considered but not Analyzed

- **Air Quality:** Work on the trail would be of limited duration and predominantly completed by light construction equipment in conjunction with hand work. Using light construction equipment would result in emissions similar to other casual uses common in rural areas and will not impact local or regional air quality. Increased non-motorized use of the trail is not likely to increase dust emissions above current use of the area due to trail improvement.
- **Surface and Ground Water Quality:** The Proposed Action will result in minimal impacts on surface and ground water processes. Work on the trail will predominantly be completed by light construction equipment in conjunction with hand work and should not result in any decline in surface and/or ground water quality from water driven non-point source pollutants created by surface erosion processes.

- **Floodplains, Hydrology, and Water Rights:** The Proposed Action is not located in a Federal Emergency Management Agency (FEMA) floodplain or encumbered by water rights associated with springs or the ephemeral streams located within Anderson Gulch and Sulfur Creek drainages. With proper trail construction and maintenance, minimal to no changes are expected in hydrologic processes within the Proposed Action and surrounding drainages.
- **Hazardous or Solid Wastes:** There are no known hazardous or solid wastes within the area of analysis for the Proposed Action. No hazardous materials or solid wastes are known to have been used, stored, or disposed of within the vicinity of the proposed trail. However, the use of mechanized equipment in association with the project indicates that fuels and lubricants will be brought to the site and may result in small leaks and spills of these chemicals. Design features are included in the Proposed Action that should result in no solid or hazardous waste being disposed of on public lands, controlling any minor spills, and the appropriate reporting of any spills.
- **Areas of Critical Environmental Concern:** There are no Areas of Critical Environmental Concern in the project area.
- **Native American Religious Concerns:** No Native American religious concerns are known in the area, and none have been noted by tribal authorities. Should recommended inventories or future consultations with Tribal authorities reveal the existence of such sensitive properties, appropriate mitigation and/or protection measures may be undertaken.
- **Environmental Justice:** According to the most recent Census Bureau statistics (2010) and guidelines provided in WO-IM-2002-164, there are no minority or low income populations within the WRFO.
- **Lands with Wilderness Characteristics:** There are no lands with wilderness characteristics identified within or near the Proposed Action.
- **Prime and Unique Farmlands:** There are no prime and unique farmlands within the project area.
- **Paleontological Resources:** Construction and maintenance of the proposed recreational trail would have minimal effect on geologic resources located in the area. No exposed fossils were located during the current cultural resource survey.
- **Realty Authorizations:** There are several communications sites and associated access roads on Lobo Mountain, the FAA site, an aerial telephone line to the FAA site, and overhead power lines near the Proposed Action; however these rights-of-way were considered and the trail routes have been designed to avoid the facilities. No right-of-way for the trail is required because there will be a MOU between ERBM and BLM WRFO.

- **Wilderness:** There are no designated Wilderness areas or Wilderness Study Areas located near the Proposed Action.
- **Wild and Scenic Rivers:** There are no Wild and Scenic Rivers within the WRFO.
- **Scenic Byways:** There are no Scenic Byways within the project area.
- **Wetlands and Riparian Zones:** There are no wetlands or riparian areas that are known to occur within the project area. The nearest BLM administered lands that support riparian communities are located on an adjacent ridge, approximately 1.5 miles away. Development of these trails would have no conceivable impact on these wetland/riparian communities.
- **Aquatic Wildlife:** There are no aquatic systems that support higher order vertebrate aquatic populations within the project area. The nearest system that supports aquatic wildlife and habitat are privately-owned portions of the White River, which is located approximately 0.75 miles from the project area. Implementation of the Proposed Action will have no conceivable influence on the aquatic species or the condition of habitats that support them.
- **Wild Horses:** The proposed trail construction projects more than sixteen miles from the Piceance-East Douglas Herd Management Area (PEDHMA). There are numerous barriers (allotment boundary fences, highway frontage fences, and State Highway 64) between the project area and the PEDHMA. There would be no related impacts to the wild horses in the PEDHMA from this project.
- **Fire Management:** The proposed trail construction project will not impact the implementation of the Northwest Colorado Fire Program Area Fire Management Plan. The proposed trail system would enhance firefighter's ability to manage wildfires within the project area.

## 5. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

### 5.1. General Setting & Access to the Project Area

The Proposed Action is located adjacent to the north and east sides of Meeker, CO on an approximately 2,000 acre BLM parcel known as the China Wall/Anderson Gulch/Lobo Mountain area. The small overview map in Figure 1 shows the approximate location of the Proposed Action in reference to the entire WRFO. Topography in this area consists of steep incised drainages with valley bottom elevations from 6,400-6,800 feet and ridge top elevations of 7,000-7,500 feet. Vegetation consists of sagebrush and grasses with areas of dense mountain shrubs mixed with stands of pinyon-juniper.

## 5.2. Assumptions for Analysis

### *Trail Use*

The Meeker Trail System opened to the public in September 2012 with a total of 3.51 miles of trails. The total amount of use of trail system since September 2012 has been estimated based on data obtained from a TrailMaster TM 1550 Active Infrared Trail Monitor that was installed on July 31, 2013 along the China Wall Trail. Based on trail monitor data the amount of use of these trails over the past few years has included approximately 300-500 user trips (one person/one visit) per month during the primary use season of May-October. Also according to trail monitor data, there have been approximately 20-50 trail user trips per month occur during the other months (November-April) depending on trail conditions. To develop an annual average use of the trail system it was assumed that there are 400 user trips for six months each year and 35 user trips for the other six months of the year. This results in 2,610 user trips of the trail system per year. Using the same assumptions from September 2012 through December 2014, there would have been 5,690 total user trips of the existing trail system. However, actual trail use is likely greater than these estimates because trail counter data systematically undercounts usage in a variety of recreation settings (Gasvoda 1999, Yang, Ozbay, and Bartin 2010).

The type of trail use was determined from trail register with sign-in sheets that were installed at the high point of the China Wall Trail on May 14, 2013. The type of trail use based on this trail register information includes hiking, mountain biking, trail running, dog walking, and wildlife viewing during the primary use season with use during the winter months including snowshoeing, cross country skiing, dog walking, and hiking. Based on trail register data the China Wall Trail is used approximately 80 percent by pedestrian traffic and 20 percent by bicycle traffic. Two competitive trail running races and two non-competitive trail running races have been held on these trails, as well as several educational and interpretive hikes for local youth. It is assumed that the level and type of use on the existing trail system would be similar for the new trail system and may slowly increase over time.

### *Maintenance*

The BLM and ERBM signed a Memorandum of Understanding (MOU) in August 2013 and agreed to assist each other with the planning, design, construction, maintenance, and/or reconstruction of BLM recreation projects, trails, and trail systems that are within the Meeker Recreation District. The MOU also states that BLM and ERBM will manage and maintain all portions of trails and trail systems that are on BLM lands to standards identified in USDA Forest Service Trail Construction and Maintenance Notebook, 2007 Edition. Based on the annual maintenance needed for the existing approximately 6 miles of trails over the past two years, some assumptions for future trail maintenance on the existing and proposed trails can be made. In the past two years trail maintenance activities have included the bucking of 1-2 down trees 2-3 times per years, minor vegetation trimming and brushing 1-2 times per year, and one volunteer trail maintenance day per year to seed the disturbed areas adjacent to the trail tread with a BLM approved seed mix, remove flagging, and repair small portions of tread. This trail maintenance work has therefore averaged 4-6 days of effort per year by 2-6 people. ERBM has contributed

approximately 4-6 days of trail maintenance per year which included seeding the trail corridors, weed spraying, and brushing back vegetation along the trails. If the actual trails are expanded to include 15-20.26 miles (does not include the 2.53 miles of roads) then trail maintenance activities are expected to increase from 4-6 days to 10-18 days of effort by 2-8 people. With this amount of annual maintenance assumed, BLM and ERBM will need to increase their efforts, increase the number of volunteer work days, or host a volunteer trail crew, or pay a contractor for this work. BLM and ERBM staffs may currently be near the maximum of their capabilities to contribute to any more trail maintenance. There are currently several low costs options to meet assumed future trail maintenance requirements. These options include hosting a Volunteer for Outdoor Colorado (VOC) work crew, hosting a Rocky Mountain Youth Corp crew, hosting an AmeriCorps crew, contracting the work to professional trail maintainers, increasing the frequency of local volunteer trail work days, and/or forming a local volunteer trail crew. It is also expected that every 3-5 years some trails will need deferred maintenance or heavy tread maintenance which may require the use of a trail dozer or mini-excavator. This may need to be accomplished by using the above mentioned crews or by contracting the work to professional trail builders.

## 5.3. Cumulative Impacts Analysis

### 5.3.1. Analysis Areas

The geographic extent of cumulative impacts varies by the type of resource and impact. The timeframes, or temporal boundaries, for those impacts may also vary by resource. Different spatial and temporal cumulative impact analysis areas (CIAAs) have been developed and are listed with their total acreage in

**Table 1. Cumulative Impact Analysis Areas by Resource**

Resource	CIAA	Total CIAA Acreage	Temporal Boundary
Geology and Minerals	Township 1 North, Range 94, West, 6 <sup>th</sup> P.M.	22,940 acres	Effects to these resources will generally remain through the timeframe that the trails are used and several years beyond.
Recreation, Visual Resources, Access and Transportation, Social and Economic Conditions, Livestock Grazing, Vegetation, Noxious,	The isolated parcel of BLM where the trails are proposed as shown on Appendix A, Figure 1.	~2,000 acres	Effects to these resources will generally remain through the timeframe that the trails are used and several years beyond.

Invasive, Non-native species, and Cultural and Paleontological Resources, Special Status Animal Species, Migratory Birds, Terrestrial Wildlife.			
Soils, Surface and Groundwater Quality, Flood Plain-Hydrology-Water Rights	Anderson Gulch, Sulfur Creek, Lion Canyon, and Fairfield Gulch watersheds.	13,845 acres	Effects to these resources will generally remain through the timeframe that the trails are used and several years beyond.

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### **5.3.2. Past, Present, and Reasonably Foreseeable Future Actions**

Cumulative effects are defined in the CEQ regulations (40 CFR 1508.7) as “...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

This project is located outside of the Mesa Verde Play Area (MPA). The BLM assumed that only 5 percent of oil and gas development would occur outside of the MPA and that it would be primarily limited to single-well pads.

Other past, present, and reasonably foreseeable actions in the project area include potential livestock grazing and associated range improvement projects, vegetation treatments, and both wildfires and prescribed burns. Maintenance of the existing telecommunications sites, utility power lines, and the Federal Aviation Agency’s site are likely to continue in the same manner in the future. There is potential for some of these sites to be decommissioned and new sites added in the future. Recreation use is characterized by use of the existing and potentially the proposed trails by pedestrians and bicyclists with a low amount of cross-country skiing, snowshoeing, and dispersed off-trail pedestrian use.

## **5.4. Geology and Minerals**

### **5.4.1. Affected Environment**

All of the proposed trails transect areas identified in the White River ROD/RMP as No Surface Occupancy landslide areas (NSO-01). Overall, 35 percent of the proposed trails are located within an identified NSO-01 area. Individual percentage of the trails in NSO-01 areas varies from 11 percent of Trail 1 to 84 percent of Trail 7. Percentage of each trail within NSO-01 is listed in Table 2.

**Table 2. Percentage of Trail within Landslide Areas**

Trail Number	Length of Trail (feet) <sup>1</sup>	Within NSO-1 (feet) <sup>1</sup>	Percent of Trail
Trail 1	6,600	1,590	24%
Trail 2	12,920	2,810	22%
Trail 4	1,520	180	12%
Trail 5	9,050	1,030	11%
Trail 7	11,350	9,480	84%
Trail 8	10,840	2,260	21%
Trail 9	10,040	4,630	46%
Total	62,320	21,980	35%

<sup>1</sup> Based on GIS data in CARAT

The majority of the NSO-01 sections in Trails 1, 4, 5, and 7 are on slopes less than 25 percent and the majority of the sections of Trail 8 in NSO-01 are on 35 to 50 percent slopes near the ridgeline.

Approximately 70 percent and 40 percent of portions of Trail 9 and Trail 2, respectively, within NSO-01 are located on slopes greater than 50 percent. These areas of greater than 50 percent have a northern aspect for Trail 9 and an eastern aspect for Trail 2.

The proposed trails are located in an area identified in White River ROD/RMP as having recoverable coal reserves and high potential for oil and gas. Within the township there are four drilled and abandoned, two producing, and one permitted location (COGCC). The nearest federal oil and gas lease (COC59673) is approximately 0.5 miles from the northern end of Trail 7 and the nearest oil and gas well is over 0.6 miles of the eastern leg of Trail 2. There are no federal coal leases within the Township; however there is a historic coal mine and burning coal seam approximately 0.25 miles west of Trail 5 on private land. There are no active mining claims within the project area.

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#### **5.4.2. Environmental Consequences – Proposed Action**

##### **Direct and Indirect Impacts**

Construction, maintenance and use of the trails outside NSO-01 areas, 65 percent of the Proposed Action, would have minimal to no potential to adversely impact the geologic resources.

NSO-01 areas of Trails 1, 4, 5, and 7 (20 percent of the Proposed Action) are on slopes of less than 25 percent. Following the guidelines and techniques from the “USDA Forest Service Trail Construction and Maintenance Notebook, 2007”, and the “International Mountain Bicycling Association (IMBA) Trail Solutions: IMBA’s Guide to Building Sweet Singletrack” for the construction, maintenance and use of Trails 1, 4, 5, and 7 would limit impacts to these areas of NSO-01 and meet the modification requirements for the NSO-01 stipulation.

Trail 8 contains 4 percent of the Proposed Action in NSO-01 areas with slopes from 25 to 35 percent. The majority of the trail in this area occurs near the ridgeline. Using the proposed guidelines for maintenance, use, and construction would limit the potential for adverse impacts in these areas.

The sections of Trail 2 (2 percent of the Proposed Action) on slopes of greater than 50 percent have a similar aspect as 3,000 feet of trail constructed in 2013. To date the portion of the constructed trail does not show indication of slope movement attributable to the trail construction or use. It is likely the same effects would be observed on these similar sections of Trail 2.

Trail 9 has the greatest potential to impact landside areas due to slopes of greater than 50 percent (7 percent of the Proposed Action) and a northern aspect which has a high potential for retaining snow accumulation and moisture. Narrowing the trail, hand building sections, and proper maintenance could help reduce the potential of slope movement and allow for an exception to the NSO-01 stipulation. If slope movement in this area were to occur it would be limited to a side drainage of Anderson Gulch that does not contain any man made features.

The Proposed Action would have no known impacts to the minerals resources within the project area.

### **Cumulative Impacts**

This project is located outside of the MPA. The BLM assumed that only 5 percent of oil and gas development would occur outside of the MPA and that it would be primarily limited to single-well pads. Most recent wells drilled in the CIAA were drilled in 2003 and 2012 (Colorado Oil and Gas Conservation Commission (COGCC) data). It is reasonable to assume one additional well would be drilled in the foreseeable future.

Other past, present, and reasonably foreseeable actions in the project area include continued livestock grazing and associated range improvement projects, vegetation treatments, wildfires and recreation use (e.g., hunting, mountain biking, hiking).

These activities would result in little to no additional impacts on the geologic and mineral resources than the direct and indirect impacts of the Proposed Action.

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### **5.4.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

There would be no direct or indirect impacts to the geologic or mineral resources from not constructing the proposed trail system.

#### **Cumulative Impacts**

The No Action Alternative would not affect the geologic and mineral resource within the CIAA and therefore would have no cumulative effects.

## **5.5. Soil Resources**

### **5.5.1. Affected Environment**

The Proposed Action affects Blazon, moist-Rentsac complex, Jerry–Thornburgh–Rhone complex, and Rock Outcrop soils. The Blazon and Jerry-Thornburgh-Rhone soils have weathered predominantly from shale and are composed of channery loam and clay resulting in low-moderate permeability and slow-high runoff with slight-high erosion characteristics.

The Jerry-Thornburgh-Rhone complex soil is classified as a landslide soil (NSO-1). Approximately 8 miles of the Proposed Action is located on NSO-1 classified soils (Figure 13). NSO-1 soils are considered unstable and subject to slumping and mass movement. Surface occupancy will not be allowed in such areas delineated by USDA SCS soil survey for Rio Blanco County. Sections of the proposed trails being constructed on soils classified as NSO-1 are illustrated in Figure 13. Soil characteristics of the Jerry-Thornburgh-Rhone complex soils are shallow loams with rock fragments derived from shale typically having high clay content and a propensity for shrinking and swelling leading to soil instability.

Field surveys found evidence of isolated slumping along the proposed Trail 9. This slumping is most likely due to a shallow soil profile being perched on bedrock. The rest of proposed Trail 9 is on Blazon, moist-Rentsac complex soils that do not have the properties that make soils susceptible to landslides. No field survey was conducted for the remaining trails. Refer to section 5.4.1 for a detailed breakdown of trail segments and length proposed for construction on NSO-1 classified soils.

Approximately 14 miles of the Proposed Action are located on soils classified as CSU-1. CSU-1 soils are defined as fragile soils on slopes > 35 percent and saline soils derived from Mancos shale. Surface disturbing activities will be allowed in these areas only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. Sections of the proposed trail being constructed on CSU-1 soils are illustrated in Figure 14.

### **5.5.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

Impacts to soils from the Proposed Action include removal of vegetation, mixing of soil horizons, soil compaction, increased susceptibility to erosion, and loss of topsoil productivity. The primary effect of surface disturbances on soil resources is in increased erosion. Soil impacts would generally be limited to the trail disturbance and would depend on the amount of use the trail received. Bike and foot travel on the trail would result in compaction of soils along the trail and depending on soil moisture would cause noticeable damage to soils in some locations. If reclamation efforts, trail construction methods, and maintenance plans are successful, impacts from this project will be minor and localized to disturbed areas.

The trail tread will impact approximately 5 acres of NSO-1 soils. As described earlier, these soils have been identified in the USDA soil survey for Rio Blanco County as having the potential for landslides and for instability. Following the guidelines and techniques from the “USDA Forest Service Trail Construction and Maintenance Notebook, 2007”, and the “International Mountain Bicycling Association (IMBA) Trail Solutions: IMBA’s Guide to Building Sweet Singletrack” for the construction, maintenance and use would limit impacts to these areas of NSO-01, and meet the modification requirements for the NSO-01 stipulation.

When feasible, areas with shallow NSO-1 soils located in or around rock outcrops or areas with visible slumping trail construction should be completed by hand and tread width limited to minimize the cut slope. Rock armoring should be considered to build up the trail tread in-lieu of deeper cuts into the side slope. Cut slopes interrupt subsurface preferential flow paths and result in localized saturated soil profiles upslope of the trail tread which promotes slope destabilization.

### **Cumulative Impacts**

Livestock grazing and oil and gas development have the potential to impact the project area. The trail is located in the Lion Canyon pasture of the Smith Crawford allotment (#06625) and leased for cattle grazing in the spring and fall during alternating years. There is no evidence of cattle grazing on the steep hill slopes where most of the trails are located, but there is past evidence of grazing on some of the main ridgelines. There is potential that some of the trails would be used by cattle, but this is unlikely due to the distance from water sources (see the Range Management section). Oil and gas development has occurred within five miles of the area with older producing wells and one exploratory well drilled in the general area within the last year or two. There is no proposed oil and gas development within the immediate project area.

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### **5.5.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

Unimproved trails would continue to be used to access the China Wall area by foot. Use of the area is likely to be less than under the Proposed Action, since mountain bikes would still not be able to access much of the area and foot traffic would be limited by the steep terrain. Existing unimproved routes are generally outside the Jerry-Thornburgh-Rhone complex soils so it is likely these soils would not be impacted by public use of the area under the No Action Alternative. Impacts to soils outside the Jerry-Thornburgh-Rhone, particularly in the Blazon, moist-Rentsac complex soils to the south of the project area, would continue to occur due to the use of social trails and erosion is likely to be proportionally greater for the amount of use due to a lack of formal trail construction.

#### **Cumulative Impacts**

No changes would occur that would have any cumulative impact to soils in the project area. There would be no changes to the limited livestock grazing in the project area that might occur if the trails were constructed. Oil and gas development could potentially occur due to producing and exploratory wells nearby, however there are no proposals for oil and gas drilling in the immediate project area.

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#### **5.5.4. Mitigation Measures and Residual Impacts**

1. During trail construction, surface disturbance in the Jerry-Thornburgh-Rhone complex soils will be minimized and reduced by selection of routes within the tolerance of trail route moves to avoid hazards (Figure 13). To the maximum extent possible, the trail will utilize benches and bedrock controlled routes as described in the Forest Service trail construction manual to avoid direct cuts into Jerry-Thornburgh-Rhone complex soils. Vegetation removal will be minimized as much as possible in these soils.
2. Trails will be monitored by the BLM at least every two years to assess stability of soils in this area and the success of trail construction techniques. If active erosion is occurring outside of the tread of the trail, maintenance actions will be promptly implemented to improve trail drainage. If maintenance actions needed to address identified soil erosion exceed the capacity of techniques, personal and/or funding sources, the trail will be closed to public use until maintenance actions occur to avoid further soil resource impacts.
3. When feasible, areas with shallow NSO-1 soils located in or around rock outcrops or areas with visible slumping trail construction should be completed by hand and tread width limited to minimize the cut slope. Rock armoring should be considered to build up the trail tread in-lieu of deeper cuts into the side slope.

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### **5.6. Vegetation**

#### **5.6.1. Affected Environment**

The proposed trail projects are located in vegetation communities predominately composed of brushy loam and mixed age classes of pinyon/juniper (PJ) woodlands. On top of China Wall, portions of the PJ plant community burned in 2001 and are currently dominated by dense grass and shrub cover. Species seeded after this fire include thickspike wheatgrass (*Elymus lanceolatus*), beardless wheatgrass (*Pseudoroegneria spicata*), mountain brome (*Bromus marginatus*), Sandberg bluegrass (*Poa secunda*), basin wildrye (*Leymus cinereus*), and fourwing saltbush (*Atriplex canescens*). The remaining PJ and brushy loam sites include an understory of sagebrush (*Artemisia tridentata*), mountain mahogany (*Cercocarpus montanus*), Utah serviceberry (*Amelanchier alnifolia*), antelope bitterbrush (*Purshia tridentate*), Indian ricegrass (*Achnatherum hymenoides*), beardless wheatgrass. The majority of the brushy loam sites are dominated by big sagebrush (*Artemisia tridentata* spp.), Indian ricegrass, squirreltail (*Elymus elymoides*), Junegrass (*Koeleria macrantha*), beardless wheatgrass, needle and thread (*Spicata comate*), and western wheatgrass.

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#### **5.6.2. Environmental Consequences – Proposed Action**

##### **Direct and Indirect Impacts**

The proposed trails would cross through PJ woodlands and brushy loam sites and some small portions would traverse rolling loam sites and small areas of rock outcrop. On public land

approximately just over 11 acres of these plant communities would be removed as a result of these trails being constructed. After successful establishment of seeded species only about three acres including the tread portion of the trail and cut slopes would remain devoid of vegetation for the life of the trails.

Direct impacts of vegetation removal include short-term loss of vegetation and the modification of plant community structure, species composition, and a short-term reduction of basal and aerial vegetative cover. Removal of vegetation also results in increased soil exposure, reduced plant diversity, and loss of forage for wildlife and livestock. Indirect impacts include the increased potential for non-native/noxious plant establishment and introduction, accelerated wind and water erosion, changes in water runoff due to trail construction, soil impacts that affect plant growth (soil erosion or siltation), shifts in species composition and/or changes in vegetative density away from desirable conditions. Environmental conditions could prevent initial reseeding efforts from being successful, resulting in an extended recovery period for native plant communities.

### Cumulative Impacts

The proposed projects, when added to other projects and developments, in and near the project area, would result in an increase in short-term removal of existing vegetation on public land. Long-term changes in plant community composition and structure would also occur on the project site and on a broader scale from activities such as livestock grazing. Of the total potential vegetation removal near the project area, the proposed project would not result in a noteworthy increase in vegetation disturbance or long-term changes in plant community.

## 5.6.3. Environmental Consequences – No Action Alternative

### Direct and Indirect Impacts

Under this alternative there would be no new trails constructed and no associated removal of vegetation would occur.

### Cumulative Impacts

Not constructing the proposed trails would have very little impact to vegetation communities in the China Wall area.

## 5.6.4. Mitigation Measures and Residual Impacts

1. Consistent with the Proposed Action, ERBM committed to using a BLM recommended seed mix. Between September 1 and March 15 all areas of disturbance, except the tread portion of the trail, will be seeded with the following seed mix:

Cultivar	Common Name	Scientific Name	Application Rate (lbs. PLS/acre)*
Rosana	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp. inermis</i>	3.5

Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3
Sherman	Big Bluegrass	<i>Poa secunda</i> ssp. <i>ampla</i>	1
Bromar	Mountain Brome	<i>Brumus marginatus</i>	2
Maple Grove	Lewis Flax	<i>Linum lewisii</i>	1
Bandera	Rocky Mountain Penstemon	<i>Penstemon strictus</i>	0.5

2. A reclamation success rate equal to a minimum cover and composition of 80 percent of the Desired Plant Community (as defined by the ecological site, in an early seral state) or in relation to the seed mix applied within three growing seasons after the application of seed will be achieved on the downslope portions of the trails. Cut slopes are too steep to expect this level of success. This community must be capable of persisting on the site without intervention and allow for successional processes consistent with achieving the seral stage on the site prior to surface disturbance.

3. Reclamation achievement will be evaluated using the Public Land Health Standards that include Indicators of Rangeland Health. If BLM determines that reclamation success is below an acceptable level, reclamation efforts must be repeated at ERBM's expense until vegetation is successfully established.

## 5.7. Invasive, Non-Native Species

### 5.7.1. Affected Environment

Colorado State listed weeds found or known to occur within the general project area include: leafy spurge (*Euphorbia esula*), bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*), spotted knapweed (*Centaurea maculosa*), diffuse knapweed (*Centaurea diffusa*), houndstongue (*Cynoglossum officianale*), common mullein (*Verbascum thapsus*), and cheatgrass (*Bromus tectorum*). Of these state listed weeds, leafy spurge, bull thistle, musk thistle, spotted knapweed, diffuse knapweed, and houndstongue are on the Rio Blanco County weed list. Other common weeds known to occur in the general area of the project include kochia (*Kochia scoparia*), cutleaf nightshade (*Solanum triflorum*), white horehound (*Marrubium vulgare*), and Russian thistle (*Salsola australis*). Since construction of earlier phases of the trail system, cheatgrass and other weed species have established in disturbed areas adjacent to those trails and will readily establish in any new sites of soil disturbance.

### 5.7.2. Environmental Consequences – Proposed Action

#### Direct and Indirect Impacts

The disturbance associated with the proposed trails could create or intensify a noxious weed problem by importing weed seed on equipment, humans, or by creating suitable conditions in the form of non-vegetated disturbed areas. Construction activities associated with all phases of the project could spread noxious weed species to other areas of the project, some of which have no

invasive or noxious weeds at this time, by carrying seeds or plant parts (rhizomes) on construction equipment. Trail users may inadvertently spread weed seeds via clothing or pets. Cheatgrass occurrences are scattered throughout the understory of the much of the proposed trail routes and cheatgrass invasion adjacent to the trails is very likely if those surfaces are not re-vegetated following construction.

### **Cumulative Impacts**

The proposed trails could contribute to the noxious and invasive plant species present in the surrounding areas. However, existing roads through the general area are common sources of invasive and noxious weeds, so elimination of these species from the general area is unlikely.

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### **5.7.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

Noxious and invasive plants would continue to be present within the vicinity of the project area and, depending on the aggressiveness of weed treatment activities, may continue to spread.

#### **Cumulative Impacts**

Noxious and invasive plants would continue to be present within the vicinity of the project area and, depending on the aggressiveness of weed treatment activities, may continue to spread.

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### **5.7.4. Mitigation Measures and Residual Impacts**

1. ERBM will continue with their Meeker Trail Integrated Weed Management Plan as established with the earlier phases of trail construction in close coordination with the BLM. The ERBM should have employees trained for appropriate timing of weed treatment and certified for the use of appropriate herbicides for control/eradication of the known and possible noxious and invasive nonnative species along the proposed trail.
2. Any noxious plants will be eliminated before seed production has occurred. The BLM recommends that treatment of noxious and nonnative species on adjacent private lands be performed in a manner similar to procedures described in BLM Manual 9015.
3. Contractors will clean all off-road and trail construction equipment to remove seed and soil prior to entering public lands within the project area to commence construction.

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## **5.8. Migratory Birds**

### **5.8.1. Affected Environment**

The project area encompasses a wide array of vegetation types including woodland, grassland and shrubland communities. Vegetative communities for individual trails are discussed below.

Trail 1: This 1.56 mile trail runs along the ridgeline and connects with an existing road at the northern terminus. The southern two-thirds of this trail pass through a burn scar (2001) which is largely dominated by wheatgrass with a heavy forb component (arrowleaf balsamroot, lupine, Indian paintbrush), interspersed with Wyoming big sagebrush and Gambel oak. The northern third passes through mixed-aged pinyon and juniper woodlands with a well intact perennial understory (Junegrass, bluebunch wheatgrass). Japanese brome and cheatgrass are present, but generally occur in small, isolated patches. Total disturbance associated with trail construction would be 1.5 acres

Trail 2: This 2.46 mile trail is largely encompassed within a burn area. Gambel oak, Wyoming big sagebrush and mixed mountain shrub comprise much of the northern and eastern portions. The southern portion of this trail passes through mid-aged to mature pinyon and juniper woodlands. The understory is well developed and comprised largely of native perennial grasses and forbs. Cheatgrass is scattered along the trail and at times occurs in heavy inclusions. Total disturbance associated with trail construction would be 2.4 acres

Trail 4: This existing trail traverses through more mature pinyon-juniper woodlands for the majority of the trail. The understory is sparsely vegetated with a mix of perennial grasses, forbs and mixed mountain shrub species (serviceberry, snowberry).

Trail 5: This 1.72 mile trail passes through more mature pinyon and juniper woodlands interspersed with Gambel oak, Wyoming big sagebrush and mixed mountain shrub openings. The northern portion passes through an old burn scar dominated by wheatgrass with a heavy forb component (arrowleaf balsamroot, lupine). Total disturbance associated with trail construction would be 1.7 acres.

Trail 7: This 2.17 mile trail traverses an open grassland slope comprised of Junegrass, wheatgrass and Kentucky bluegrass. Rabbitbrush and arrowleaf balsamroot are common throughout. Pinyon and juniper are sparsely scattered throughout. Mountain shrub (serviceberry and snowberry) and Gambel oak are also present but at extremely low densities. Total disturbance associated with trail construction would be 2.6 acres.

Trail 8: This 2.08 mile trail traverses a series of mature pinyon-juniper dominated ridges and drainages interspersed with small openings comprised largely of perennial grasses and forbs. Mixed mountain shrub is scattered throughout the area. Total disturbance associated with trail construction would be 2.0 acres.

Trail 9: This 1.7 mile trail switchbacks down a rugged, steep (average 60 percent) slope largely dominated by younger pinyon-juniper near the ridge and transitioning into a Gambel oak-mixed mountain shrub-sagebrush, pinyon-juniper complex near the bottom of the trail. Douglas fir and Rocky Mountain juniper, indicative of moister soils are scattered throughout the slope at low densities. Total disturbance associated with trail construction would be 1.9 acres.

Dozens of bird species use these woodland, grassland and shrubland communities during the breeding season (generally May 15 – July 15). The existing trail system, whose community types are largely representative of the proposed trail system, was surveyed on June 20, 2014 with 42

bird species documented including: black-throated gray warbler, black-chinned hummingbird, lark sparrow, MacGillivray's warbler, house wren, lazuli bunting, plumbeous vireo, ash-throated flycatcher and canyon wren. Birds of conservation concern that were documented in the area include peregrine falcon, pinyon jay, and juniper titmouse.

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## **5.8.2. Environmental Consequences – Proposed Action**

### **Direct and Indirect Impacts**

#### Trail Construction

The Proposed Action would directly remove approximately 11.7 acres of woodland, grassland and mountain shrub habitats (see Affected Environment for habitat descriptions for individual trails). With proper and effective reclamation, this disturbance could be reduced to roughly 2.8 acres. The direct loss of roughly 11.7 acres would not be expected to have any substantial influence on migratory bird populations. Noise and human presence associated with trail construction would be expected to result in displacement of adults, and may even lead to complete nest abandonment and mortality of nestlings. Indirectly, construction activities (noise, human presence) during the breeding season could influence functional nesting habitat up to 100 meters off the trail, as birds would tend to avoid these areas. These impacts would be localized as likely only one trail (not multiple trails) would be constructed at a given time. Impacts from construction activities could be minimized or eliminated if trail construction were to occur outside of the breeding season of May 15 to July 15. Of concern is the potential for the spread of non-native, invasive species. In general, annual dominated communities provide suboptimal forage and cover resources for most nesting birds.

#### Recreational Use

Recreational use has been shown to cause behavioral and physiological impacts to wildlife, including many bird species. Physiological impacts can include changes in heart rate and body temperature, while behavioral responses can include changes in movement patterns, vigilance, and foraging. In a review of impacts from nature based recreation (running, walking, cycling, hiking etc.), Steven et al. (2011) found that 61 of the 69 studies (88 percent) showed some type of negative effect (either behaviorally, reproductively or physiologically) on birds. Only one paper (1 percent) showed a positive effect, with the remaining seven (10 percent) showing no effect. Use of the proposed trails would be expected to result in some degree of behavioral and physiological changes to area birds and may influence reproductive success; although it would be difficult to measure those impacts at this time. Impacts would depend on many factors including but not limited to frequency of use, time of year, visual buffers, species tolerance, and nesting/foraging activity height (ground/understory vs. tree). Certain species may be more tolerant to human intrusion resulting in fewer negative effects, while those that are more intolerant to intrusion may exhibit reduced reproduction and survival. Use of trails with few visual buffers (e.g., more open communities like those along Trail 7) may result in greater impacts to birds than those that provide visual buffers (heavy shrub or woodlands). Frequency of use will likely be a major factor as repetitive disturbances over the long term are more likely to influence reproductive success. Although there would likely be a reduction in nest densities in

close proximity to trails (within 50 meters), use of these trails would not be expected to have a substantial influence on migratory bird populations at the landscape level.

### **Cumulative Impacts**

Construction of these trails in their entirety would allow for more dispersed recreational use into areas that currently experience little human intrusion. Impacts regarding construction of Trails 5 and 8 under *Terrestrial Wildlife – Cumulative Impacts* would be directly applicable to pinyon-juniper obligate bird species as well. Similar impacts could be anticipated in the vicinity of Trail 7 due to the close proximity of trails in addition to an existing road system. Birds may tend to avoid these otherwise functional habitats if recreational use is frequent and extended. Impacts would vary, but overall increased and more dispersed human use would be expected to result in behavioral and physiological impacts to local bird species across a broader area. This would not be expected to influence regional populations of any one migratory bird species.

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### **5.8.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

There would be no physical or behavioral impacts to migratory birds nor would there be any loss/modification of habitats that support reproductive functions under the No Action Alternative.

#### **Cumulative Impacts**

There would be no contribution to previous or existing disturbances under the No Action Alternative. Impacts (behavioral and physiological) to migratory bird species would be greatly reduced and confined to a smaller area under the No Action Alternative.

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### **5.8.4. Mitigation Measures and Residual Impacts**

Vegetation clearing associated with trail construction will be completed prior to May 15 or after July 15 to avoid the migratory bird nesting period.

See mitigation in Invasive, Non-native Species section regarding control of invasive species.

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## **5.9. Terrestrial Wildlife**

### **5.9.1. Affected Environment**

The mountain shrub, grassland, and pinyon-juniper woodlands that encompass the entire project area are classified by Colorado Parks and Wildlife (CPW) as mule deer severe winter range, a specialized component of winter range that virtually supports an entire herd during the most extreme conditions (snow depth, temperature, etc.). These ranges are most heavily used from December through April.

Mature components of pinyon-juniper woodlands particularly along Trail 5, Trail 8 and portions of Trail 2 may provide suitable nesting substrate for woodland raptors such as sharp-shinned hawk, Cooper's hawk, red-tailed hawk, long-eared owl and saw-whet owl. Rock outcrops along

the lower portions of Anderson Gulch may provide suitable nesting substrate for red-tailed hawks and great-horned owls.

The distribution and abundance of small mammal populations are poorly documented within the Resource Area. Recent trapping efforts undertaken throughout Piceance Basin indicate a high tendency in both sagebrush and pinyon-juniper communities for more generalized species such as deer mouse and least chipmunk and it is suspected that these species would be relatively abundant in the project area. Non-game populations associated with these upland communities, particularly dense mountain shrub basins that retain more fully developed understories, likely occur at densities that approach habitat potential. There are no small mammal species that are narrowly endemic or highly specialized species known to inhabit the project area.

Dusky grouse are found in the mixed mountain shrub and grassland communities throughout the project area. Additionally, larger carnivore species including black bear and mountain lion are also found in the project area.

See Migratory Bird section for description of habitat characteristics specific to individual trails.

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## **5.9.2. Environmental Consequences – Proposed Action**

### **Direct and Indirect Impacts**

#### **Raptors**

Impacts to nesting raptors can vary depending on species, time of year, type of activity, proximity to nest and tolerance of individual birds. Impacts can include physically harming or direct mortality of eggs, young or adults, alterations or modification in habitat, prevention of access to resources or behavioral impacts (repeated flushing off nests, etc.). Impacts are most pronounced during the breeding season where even short term absences can lead to chilling/overheating/desiccation of eggs, predation of eggs/young, complete nest abandonment (for a season or long term), or reductions in food delivery to young (Call 1979, Suter and Jones 1981).

#### Trail Construction

Construction of these trails in their entirety would directly remove approximately 11.7 acres of woodland, grassland and mountain shrub habitats. Following proper and effective reclamation, direct habitat loss could be reduced approximately 2.5 acres. Of those 11.7 acres, roughly three to five acres of woodland habitat capable of supporting raptor nesting functions would be directly removed. The long term loss of three to five acres would likely not have any substantial influence on local raptor populations. Indirectly, noise and human activity associated with trail construction may result in displacement of adults, abandonment of nest stands and possible mortality of eggs and nestlings. Impacts from construction activities could be minimized or eliminated if trail construction were to occur outside of the breeding season. A raptor survey will be conducted by the WRFO wildlife staff the breeding season prior to construction. If an active

nest is located, the appropriate timing stipulations will be applied. Trees capable of supporting nest structures, generally those that are  $\geq 8$  inches dbh should be avoided (i.e., not removed).

### Recreational Use

Impacts discussed in the Special Status Animal Species section would be directly applicable to woodland raptors as well. Recreational use including hiking, mountain biking, dog walking etc. can affect avian survival, reproductive activities and habitat use, however, this would depend on several factors including frequency of use, distance to nest, and tolerance of species/individuals. Trails not only alter habitats, but also provide humans greater access to intact/contiguous habitats. Additionally, trails may also influence movement patterns of predators. Without surveys it would be difficult to determine to what degree the proposed trail system may influence woodland raptor breeding activities. It is unlikely there would be a high density of raptor nests in the project area due to the small acreage of woodland habitats involved. However, some degree of behavioral and reproductive impacts would be expected if nesting were to occur in the vicinity of the project area. Indirectly, there is potential for the Proposed Action to cause long term avoidance of otherwise suitable woodland stands due to increased activity and use of the area by recreationalists (see discussion in Cumulative Impacts below).

### **Big Game**

#### Trail Construction

The Proposed Action would result in the loss of 11.7 acres of forage and cover resources in mule deer severe winter ranges. Following prompt and effective reclamation, this could be reduced to approximately 2.5 acres. Although mule deer are present throughout the year, it is unlikely the project area experiences considerable big game use during the summer months due to the limited amount of water in the area. Most use is concentrated during the late-fall and winter/spring months. Construction activities during the winter months would be expected to result in behavioral and physiological impacts (temporary avoidance of area, increased energy demands etc.) to local big game species. Trail construction during the summer or fall months would greatly reduce impacts to big game. Trail construction and subsequent use can also lead to the spread of invasive, non-native species. In general, annual dominated communities detract from the quality of forage and cover resources available for big game and nongame species.

#### Recreational Use

Several studies have shown that pedestrian use (hiking, biking, skiing etc.) often results in behavioral and physiological impacts to big game. Freddy et al. (1986) showed that approach of persons on foot elicited more intense reactions from mule deer than did snowmobiles. Response by mule deer to pedestrian disturbances involved more running and for a longer duration which lead to greater energy expenditures. This study corroborated several other studies (Schultz and Bailey 1978, MacArthur et al. 1982). Additionally, dog walking may result in increased harassment of wildlife if dogs are not under verbal or physical controlled. Impacts to big game

would likely be most pronounced during the winter months as there is limited use by big game during the summer. Although the proposed trails would provide recreationalists easier and more expansive access during the winter months, use on the proposed trail system (upper trails) is expected to be relatively infrequent and would not be expected to result in substantial impacts to mule deer.

Increased human intrusion and expansion into otherwise inaccessible areas has the potential to lead to an increase in human-wildlife encounters. Black bear and mountain lion are not uncommon in the area and increased and more expansive recreational use may result in an increase in human-wildlife conflicts. Impacts to dusky grouse would be similar to those discussed in the Migratory Bird section.

### **Cumulative Impacts**

Construction of these trails in their entirety would expand access into areas which currently experience very little human intrusion. Behavioral (displacement, avoidance) and physiological impacts would be expected across a larger area, particularly if use of these trails is relatively frequent. Impacts would vary depending on species tolerance, time of year, type of use, etc. Of importance are Trails 5 and 8, which bisect the majority of the woodland habitats in the project area. Currently the existing trail (Ute Park Connector Trail) runs along the edge and, to a certain degree, through the southern portion of the woodlands habitats that are in the project area. If constructed Trail 5 (which largely parallels the Ute connector trail and Trail 1 to the top of China Wall) would bisect the remainder of the stand and would likely compromise the utility to support raptor and passerine breeding functions on roughly 70 acres of woodland habitat. Without the trail, only about 17 acres would be impacted. Similarly, Trail 8 bisects three wooded ridges. This trail largely parallels an existing road running along the ridgeline to Lobo Mountain.

Construction of this trail has the potential to influence nesting functions for nongame birds (raptors and passerines) on approximately 35 acres of woodland habitat. In all, an expansion in the trail system and potential increase in recreational use throughout the area would be expected to result in some degree of behavioral and physiological impacts to local wildlife and over time could affect reproduction and survival of some wildlife species. These impacts would be localized and would not be expected to impact wildlife populations at a landscape regional scale.

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### **5.9.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

There would be no physical or behavioral impacts to big game and nongame species, nor would there be direct loss/modification of habitats that provide cover and forage resources or support reproductive functions of terrestrial wildlife species under the No Action Alternative.

## **Cumulative Impacts**

There would be no contribution to previous or existing disturbances under the No Action Alternative. Impacts (behavioral and physiological) to terrestrial wildlife species would be greatly reduced and confined to a smaller area und the No Action Alternative.

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### **5.9.4. Mitigation Measures and Residual Impacts**

1. Construction activities will not be allowed from December 1 – April 30 to avoid disturbance to big game during the critical winter use period.
2. A raptor survey will be conducted by WRFO wildlife staff the breeding season prior to trail construction. If an active nest is located, no construction activities will be permitted within 0.25 miles (400 meters) of the nest from February 1 – August 15 or until young have fledged. Construction activities will be allowed from August 16 – January 31. Should a nest be located along or in close proximity (50 meters) to the proposed trail, a re-route of the trail may be necessary.

See mitigation in Invasive, Non-native Species section regarding control of invasive species.

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## **5.10. Special Status Animal Species**

### **5.10.1. Affected Environment**

There are no threatened or endangered animal species that are known to inhabit or derive important use from the project area. BLM sensitive species which may inhabit or are known to inhabit the project area include Brewer's sparrow and peregrine falcon.

Brewer's sparrows are common and widely distributed in virtually all big sagebrush, greasewood, saltbush, and mixed brush communities throughout the Resource Area. These birds are typically one of the most common members of these avian communities and breeding densities generally range between 10-40 pairs per 100 acres. Although most abundant in extensive stands of sagebrush, the birds appear regularly in small (one to two acre) sagebrush parks scattered among area woodlands. Typical of most migratory passerines in this area, nesting activities normally take place between mid-May and mid-July. Although this species was not documented along the existing routes during surveys (likely due to the more dominant mountain shrub and pinyon-juniper habitat types), the more expansive sagebrush and mixed shrub communities, particularly encompassing Trail 7 and portions of Trails 2 and 8 likely provide habitat for this species.

The peregrine falcon is an uncommon resident in the Resource Area. The cliff faces of China Wall/Anderson Gulch represent one of probably three or fewer peregrine nest territories in the WRFO. Although removed from Endangered Spices List in 1999, peregrine falcons are considered and remain on the BLM sensitive species list, leaving management emphasis, by policy, on par with Endangered Species Act candidates. Peregrine falcons have specific nesting

requirements, typically nesting in a scraped out depression along the ledge of a cliff face (4,000 ft. – 9,000 ft). Breeding takes place between March and July, with most young fledged by mid-August. Breeding pairs generally return to the same area annually. Peregrine falcons (both adults and juveniles) have been documented along a 130-meter long cliff face of China Wall or a 110-meter long outcrop near the mouth of Anderson Gulch since 2008. There is strong evidence suggesting that both cliff faces have served as nest sites over the years. This pair was not monitored in 2013, however in June 2014; a bird demonstrating classic nesting behavior and vocalizations was documented entering a fissure along the rock face at the more secluded Anderson Gulch site. In July, a WRFO staff biologist observed what was thought to be food begging by a juvenile bird along the Anderson Gulch cliff face. In December, wildlife staff visited the cliff face and found evidence of use (distinctive falcon whitewash) from the 2014 breeding season. Based on behavior, vocalization, time of year the observation occurred, and historic use of the area, it was apparent that nesting activities were taking place along the cliff face at the lower portion of Anderson Gulch.

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### **5.10.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

The discussion under migratory birds would be directly applicable to Brewer's sparrow.

Impacts to nesting raptors can vary depending on species, time of year, type of activity, proximity to nest and tolerance of individual birds. Impacts can include physically harming or direct mortality of eggs, young or adults, alterations or modification in habitat, prevention of access to resources or behavioral impacts (repeated flushing off nests, etc.). Impacts are most pronounced during the breeding season where even short term absences can lead to chilling/overheating/desiccation of eggs, predation of eggs/young, complete nest abandonment (for a season or long term), or reductions in food delivery to young (Call 1979, Suter and Jones 1981). Suter and Jones (1981) found that not only a clear line of sight, but also elevation of disturbance relative to the nest were important factors in determining a raptor's response to a particular disturbance. Impacts to wildlife can be reduced if animals are visually shielded (e.g., forested area, ridge lines, etc.) from activities (Postovit and Postovit 1987).

#### Trail Construction

Construction of Trail 9 would directly remove approximately 1.7 acres of predominately oak brush habitat and to a lesser extent basin big sagebrush and pinyon-juniper woodlands. With effective reclamation, this would be reduced to about 0.5 acres. Removal of these shrubland/woodland habitats would not be expected to have substantial influence on peregrines as this species nest almost exclusively on cliff faces/rock outcrops. Of greater consequence would be the indirect impacts associated with construction activities during the nesting season. The peregrine falcon nest site is within 200 to 400 meters (closest and furthest points) from the north facing switchback complex climbing out of Anderson Gulch. This falls within the WRFO's 0.25 mile (400 meter) NSO buffer (WRFO ROD NSO-02). The entire switchback complex would be in direct line of sight and at roughly the same elevation or higher than the nest outcrop. Noise from mechanized equipment and human presence associated with trail construction would be expected to result in, at a minimum, repeated or extended displacement of adults which could

lead to nest abandonment and mortality of eggs/young. Because construction activities would be a daily occurrence lasting for several weeks, breeding activities would likely be compromised with the strong likelihood of nest abandonment and failure. Additionally, disruptive activity occurring early in the nesting sequence (i.e., spring arrival and nest site selection in March) may deter subsequent use of the outcrop for nesting (i.e., site abandonment). Impacts from construction activities could be minimized or eliminated if trail construction were to occur outside of the breeding season (prior to March or after August 15).

#### Recreational Use

Of more long term concern is repeated human intrusion by recreationalists. Boyle and Samson (1985) found that even the most casual intrusion by a person on foot can influence avian fitness, resulting in reduced fecundity and survival. Pedestrian use (both hiking and biking) have the potential to behaviorally influence nesting raptors, and impacts would greatly depend on frequency of use, noise levels, proximity to nest site, topographical buffers (visually shielded) and tolerance of individual birds. Holmes et al. (1993) found more raptor species were likely to flush when approached by humans on foot than vehicles. About 45 percent of Trail 9 (1,300 meters) is within 200 to 400 meters and in direct line of sight of the cliff complex in Anderson Gulch. Because of this, there is an inherent risk that trail use would prompt agitated or defensive response in nesting and birds may be displaced or experience higher levels of reproductive failure when subjected to repeated use of this trail. Again, frequency/levels of use would likely be a factor in determining nesting outcomes. Based on estimates from ERBM and WRFO recreational staff, the current trail system receives approximately 300-500 visitors per month (roughly 10 -16 people per day), with most use occurring during the summer months. It would be difficult to predict if Trail 9 would receive the same levels of use, however if use were similar, there would be potential for multiple daily disruptions. Furthermore, because the entire portion of the trail is in direct view of the cliff face, it is possible that birds will remain off the nest for extended periods of time as recreationalist traverse up and down this slope. Although birds might be expected to habituate to repeated non-threatening human activity (resulting in diminished alarm response), increasing frequency of encounters, especially in more remote locations, can as often result in sensitization which elevates both the intensity and duration of alarm responses.

It is suspected that 1) because of the proximity of Trail 9 to the cliff face and, 2) the fact that the cliff face is at approximately the same elevation and in direct line of sight of Trail 9, there would be an increased risk of nest failure and possible abandonment of the site altogether if use were to occur during the breeding season. Although in selecting this area in 2008 the pair demonstrated a degree of tolerance to low intensity livestock management activity and urban housing within 400 meters of the China Wall site, relocation to the Anderson Gulch site in the wake of increased levels of recreational activity above and below the cliff face suggests that further disturbance during the nesting season may be capable of compromising continued occupation of the site.

Seasonal closures have been shown to be successful in other communities (Richardson and Miller 1997). Both Colorado Parks and Wildlife (CPW) and the U.S. Fish and Wildlife Service (FWS) recommend temporal and spatial buffers for nesting raptors, similar to those of the WRFO's (no development activities within 0.5 mile (800 meter) of nest site from February 1 -

August 15 [WRFO ROD TL-01]). The FWS recommends a seasonal restriction for peregrine falcons from February 1 – August 30 (U.S. Fish and Wildlife Service 1984). CPW recommends that no surface occupancy (beyond that which historically occurred in the area) take place within 0.5 mile radius of an active nest and/or cliff complex. They also recommend a seasonal restriction to human encroachment within 0.5 mile of the nest cliff(s) from March 15 to July 31 (Colorado Division of Wildlife 1995). Imposing a seasonal closure would allow breeding functions to occur in a relatively undisturbed environment. Extensive public education would be necessary including closure signs at all trailheads (Ute Park, 7<sup>th</sup> Street, and Sanderson Hills entrances) in addition to the upper and lower ends of Trail 9. This closure may not be fully effective as there would be no guarantee that these closures would be adhered to by all recreationalists.

### **Cumulative Impacts**

Currently trails are located above and below the China Wall cliff face. The existing Ute connector trail on top of China Wall is, at the closest point, 40 meters from the cliff face and 300 meters at the furthest point. The lower trail is about 150 meters below the China Wall cliff face. The existing Ute connector trail, which runs along the bottom (east side) of Anderson Gulch is roughly 400 meters from the Anderson Gulch cliff face (most recent nest site) and is, for the most part, largely shielded from view by the adjacent ridge. Trail 9 would be in the direct line of sight (200 to 400 meters) and at roughly the same elevation the Anderson Gulch cliff complex. It is unknown at this time whether this trail would receive use at similar levels as the existing trail system however; construction of new trails would provide and encourage access to areas in and around the Anderson Gulch cliff complex that currently experience little to no human disruption. This may result in seasonal nest failure or long term abandonment of the site.

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### **5.10.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

There would be no physical or behavioral impacts to special status species nor would there be any direct loss/modification of habitats that provide forage/cover resources or support special status species reproductive functions under the No Action Alternative.

#### **Cumulative Impacts**

There would be no contribution to previous or existing disturbances under the No Action Alternative. Impacts (behavioral and physiological) to special status species would be greatly reduced and confined to a smaller area under the No Action Alternative.

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### **5.10.4. Mitigation Measures and Residual Impacts**

Due to consistent use by falcons in the area over the past six years, it is recommended that, at this time, Trail 9 not be constructed to avoid seasonal disruption and possible long term abandonment of the nest area. The proposed trail lies within the WRFO's 0.25 mi (400 meter) NSO (WRFO ROD NSO-02).

The nest site will continue to be monitored by WRFO wildlife staff to determine activity status. If the nest site is not occupied for five consecutive years, then the site will be deemed inactive, although still capable of supporting future nesting functions. Trail construction may be considered after this period of time, however, a seasonal closure may be required should peregrine falcons reestablish a nesting territory. The seasonal closure would restrict recreational use during the peregrine falcon nesting season of March 15 – August 15 (or until young have fledged). Use would be permitted from August 16 – March 14. Closure signs will be posted at the three major trailheads (Ute Park, 7<sup>th</sup> Street, and Sanderson Hills entrances) in addition to the upper and lower ends of Trail 9. The site will continue to be monitored annually by WRFO wildlife staff. If the site is determined to be inactive for a particular season, then seasonal closures may be modified for that specific season.

Construction of Trail 9 and any subsequent trail maintenance will not take place during the peregrine falcon breeding season of March 15 – August 15. Construction and maintenance work would be allowed outside of these time frames (August 16 – March 14).

## **5.11. Special Status Plant Species**

### **5.11.1. Affected Environment**

Portions of Trails 7 and 8 are identified as potential habitat for the BLM sensitive species Debris milkvetch. Debris milkvetch occurs on the Colorado Plateau pinyon/juniper sites intermixed with low sagebrush shrubland, mixed desert shrubland, often on rocky soils ranging from on silty or sandy clay to sandy loams, and on alluvial terraces with cobbles, at elevations that range from 5,400 to 7,200 feet. It blooms in late April through May. Trails 7 and 8 have not yet been surveyed to determine if the habitat is occupied.

### **5.11.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

Since surveys have not yet been completed, it is not known if there will be impacts to Debris milkvetch. Trails 7 and 8 are fourth and fifth priority trails identified for construction several years into the future. Prior to construction if surveys show that Debris milkvetch is present, impacts could include the potential removal of plants on an 8 foot wide corridor during trail construction. Once trail construction is completed, a 24 inch trail would remain devoid of vegetation for the life of the trail. The remaining 72 inches would be reclaimed and there would be potential for plants to re-establish on this area once construction is complete. There is potential for plants to be impacted by trampling from trail users if they leave the trail.

#### **Cumulative Impacts**

To date, no known populations are known to occur within the project area. The closest known occupied habitat for Debris milkvetch is approximately 2.5 miles west of the proposed project area on private lands. If surveys do indicate the presence of Debris milkvetch in the project area,

the mitigation applied will prevent the removal of any plants, and no cumulative impacts will occur to Debris milkvetch as a result of the project.

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### **5.11.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

The No Action Alternative will result in any impacts to BLM sensitive species.

#### **Cumulative Impacts**

Past and present uses in the area have currently resulted in no cumulative impacts to special status plants since there are no known special status plants in the analysis area. The No Action Alternative would result in any additional cumulative impacts if the trails are not constructed.

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### **5.11.4. Mitigation Measures and Residual Impacts**

1. Prior to trail construction, surveys will be conducted to determine if Debris milkvetch is present along the trail corridor. If surveys show the presence of BLM sensitive species, the trail will be aligned to prevent any removal of plants during trail construction.

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## **5.12. Cultural Resources**

### **5.12.1. Affected Environment**

Trails 1, 2, 4, 5, 7, and 8 were surveyed for cultural resources, which included a 15 meter-wide area of potential effect buffer on either side of the proposed trail. Trail 9 was exempt from archaeological survey due to the trails location in a landslide area with steep rugged and heavily vegetated terrain. The cultural resource survey was carried out between the months of October and November 2014, with the goal of locating and recording prehistoric and historic resources. No significant evidence of prehistoric or historic activities within the proposed trail alignments and area of potential effect were found. However, the Proposed Action could adversely affect known and undiscovered cultural resources within the project area.

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### **5.12.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

No historic properties were identified in the proposed trail system and area of potential effect. Given that the Proposed Action requires activity be halted if any cultural resources are found during the course of construction, it is anticipated that the Proposed Action would have no direct effect on cultural resources. Indirect effects of trail construction would open up an area that has previously had limited access and may influence the proliferation of off-trail hiking which could inadvertently or intentionally damage cultural resources.

## **Cumulative Impacts**

In addition to direct and indirect effects, cumulative actions that could incrementally affect cultural resources in this project area include, vandalism to unknown cultural resources, hiking and other recreational activities of the public; and future trail maintenance and repairs.

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### **5.12.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

Under the no action alternative, the proposed trail system would not be constructed. No direct impact to undiscovered cultural resources would occur within the proposed trail alignment and area of potential effect. Existing trails in area would continue to be used.

#### **Cumulative Impacts**

Cumulative impacts to cultural resources could still occur due to increased recreation pressures along the Meeker urban interface and from previously constructed recreational trails in the area. Without additional managed hiking trails, the no action alternative could lead to the creation of “social trails” resulting in increased disturbance to unknown archaeological or historical sites outside of surveyed areas.

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## **5.13. Visual Resources**

### **5.13.1. Affected Environment**

The Proposed Action is located in a BLM-designated Visual Resource Management (VRM) Class II area. The objective of VRM Class II lands is to retain the existing character of the landscape and the level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Changes in VRM Class II areas should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Most BLM lands within the view shed of the town of Meeker fall within the VRM Class II category. The visual resource inventory (VRI) process described in BLM Manual H-8410-1 establishes VRI classes, which are used to assess visual values for areas of the landscape and are used to analyze impacts or changes from this baseline assessment. The Proposed Action is located in VRI Class II area, which means this area is a moderate to higher valued scenic landscape with few visible management activities in the area.

The approximately 2,000 acre BLM parcel where the proposed trails are located rises from valley floors on three sides from 6,300-7,000 feet in elevation to ridges with elevations of 7,100-7,400 feet. The Sulphur Creek valley is located on the east side with Lion Canyon valley on the west side and the White River Valley and the Town of Meeker on the south side. The topography consists of steep v-shaped drainages with rocky buff colored slopes that typically have one or more red or white horizontal cliff bands located mid-slope. When viewed from a distance, pinyon-juniper trees provide dark green color contrast with the buff colored soils and rocks.

Grasses, mountain shrubs, and oak brush along with the pinyon-juniper trees provide texture to the landscape. Management activities on this parcel include: eight communication sites located on a high point near the end of the prominent west ridge known as Lobo Mountain, a Federal Aviation Agency (FAA) air traffic control site on the highest point of this parcel, four miles of two-track roads, four miles of pedestrian and hiking trails, several overhead utility power lines, and some fences and livestock tanks.

The proposed trails will most likely be viewed by trail users from other existing trails. Other places where small portions of the proposed trails can be viewed from a distance include Rio Blanco County (RBC) Road 11 (Sulphur Creek Road), RBC Road 7 (Strawberry Creek Road), and State Highway (SH) 13. Because SH 13 travels through the Town of Meeker and has the highest traffic volume, two Key Observation Points (KOPs) have been established at places where some of the proposed trails may be viewed (Figures 9). KOP 1 is located on the west side of Meeker at the junction of SH 13 and Main Street and is looking north across Ute Park to BLM lands (Figure 10). KOP 2 is located on the east side of Meeker on SH 13 near the Ace Hardware store (Figure 11).

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### **5.13.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

The Proposed Action includes constructing up to 6 trails for a total of 11.77 miles of pedestrian and bicycle trails on a variety of slopes and aspects. The trails are proposed to be constructed on similar slopes and with similar methods as the two previous trail projects on this parcel. Based on monitoring and observations of these existing trails, casual observers that have a direct view of the existing trail corridors from optimal viewing distance of 0.25 to 0.75 mile typically do not notice the trail corridors at all. In areas that do not have trees or only sparse, scattered trees, there is potential for the constructed trail corridor to be noticeable especially on steep slopes that require more cutting into the hillside. These areas will likely become less noticeable as vegetation reestablishes on the disturbed ground adjacent to the trail tread over two to three growing seasons. There was initial concern that the portion of Trail 9 located on south facing slopes would create a noticeable linear contrast when viewed from State Highway (SH) 13. However, KOP 1 provides evidence that the steepness of the lower slopes topographically screen this portion of trail from being viewed by those traveling along SH 13. There was also concern that certain portions of Trails 1 and 2 may create noticeable linear contrast when viewed from the east side of Meeker. KOP 2 provides one of the best views of this BLM parcel from the east side of Meeker. Certain portions of Trails 1 and 2 may be viewed from KOP 2 at a distance of approximately 2.3 miles. Because of this distance it is likely that these trails will not be noticeable to the casual observer from KOP 2. Ridges on the west side of Lion Canyon topographically screen Trails 7 and 8 from being viewed from RBC Road 7. Small portions of Trail 2 may be viewed by those traveling the low volume graveled RBC Road 11, but are likely to not be noticed by casual observers. Trail 5 would only be viewed by trail users on existing trails. Overall the Proposed Action meets the objective of VRM Class II and does not change the VRI class.

## **Cumulative Impacts**

This parcel has a variety of management activities that are seen by casual observers but do not necessarily attract attention. These include eight communication sites, a FAA air traffic control site, fences, stock ponds, and four miles of two-track road and four miles of trails. The proposed 11.77 miles of trails would incrementally increase the amount of management activities that may be viewed by casual observers in this area. However, these trails would largely blend with the existing character of the landscape and will likely not be perceived as noticeable in the context of this landscape.

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### ***5.13.3. Environmental Consequences – No Action Alternative***

#### **Direct and Indirect Impacts**

By not constructing any new trails on this parcel, there would be no new noticeable management activities in this area. Therefore, as a result of this alternative, VRM Class II objectives would be met and the VRI class would not change.

#### **Cumulative Impacts**

There are no cumulative impacts to visual resources identified as a result of this alternative.

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## **5.14. Livestock Grazing**

### ***5.14.1. Affected Environment***

The proposed trails are on public land in the Lion Canyon pasture of the Smith Crawford allotment (#06625). This pasture is permitted for use in the spring (5/15-6/30) one year and in the fall (10/1-10/31) the other year. Permitted use in the Lion Canyon pasture (4,503 acres) is 126 Animal Unit Months (AUMs). An AUM is the amount of forage required by one mature cow and one calf for one month. The total permitted livestock use of the 23,178 acre Smith Crawford allotment is 1,681 AUMs. There are no rangeland improvement projects that would be affected by this project. Most livestock grazing in this part of the Lion Canyon pasture is associated with the bottom of Lion Canyon and northward toward Three-mile Gulch. Only Trail 7 and to a minor extent Trail 8 would be in areas where livestock are known to graze. Due to distance to water livestock generally do not graze the areas around Trails 1, 2, and 4. Due to topography and distance to water livestock don't access the areas associated with Trail 5 and the majority of Trail 9. Livestock could feasibly travel on the lower portion of Trail 9 where it traverses the sagebrush dominated bottom of Anderson Gulch but for at least the last ten years the livestock operator has not grazed cattle in this area.

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### ***5.14.2. Environmental Consequences – Proposed Action***

#### **Direct and Indirect Impacts**

Livestock use in this portion of the Lion Canyon pasture is currently limited due to the distance to water. The main effect of the proposed trails to livestock grazing use would be some

disturbance to livestock as trail users pass by, especially in the very bottom of Anderson Gulch on the Ute Park property. Potential for conflicts between cows and dogs is greatest in this area. In the future if Trial 7 is built there would be potential for some livestock disturbance and potential cow/dog conflicts in that area as well. In the future some livestock may discover the trails and due to ease of travel use them to access forage in the area. Generally cattle would tend to trail back up to known water sources but it is possible that some cattle may trail down into the outskirts of town where there are no fences to stop them on the southeastern portion of the trails closest to Meeker. If this occurs, implementation of design features identified as part of the Proposed Action to construct drift fences at key points would likely solve this issue.

### **Cumulative Impacts**

Agriculture, road development, and oil and gas development in the county which have the potential to impact rangeland management would continue to occur. The Proposed Action would remove forage temporarily in the Lion Canyon pasture of the Smith Crawford allotment. After trail construction has been completed and seeded grass/forb communities would return to most of the disturbed soils.

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#### **5.14.3. Environmental Consequences – No Action Alternative**

### **Direct and Indirect Impacts**

By not constructing additional new trails in this area there would be no direct and/or indirect effects to rangeland management under the No Action Alternative.

### **Cumulative Impacts**

Activities associated with agriculture, road development, and oil and gas development would continue to occur in the county, which has the potential to impact rangeland management by removal of forage, impacts to range improvements, etc.

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#### **5.14.4. Mitigation Measures and Residual Impacts**

Ensure that signs are installed at trailheads to recommend that dogs are leashed or under verbal control of their owners at all times to minimize disturbance to wildlife, livestock, and other trail users.

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## **5.15. Forestry and Woodland Products**

### **5.15.1. Affected Environment**

Of the 11.77 miles of new trail to be constructed, approximately 10 miles is going through ecological sites classified as pinyon-juniper woodland. There is one large burn scar running through the proposed trail system that has not grown back in as pinyon-juniper, so there is only approximately 6 miles of trails that will require the removal of live pinyon-juniper woodland. Trail 2 runs adjacent to a small stand of ponderosa pine on the SENE ¼ of section 15, and this is the only other known forest type in the project area.

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### **5.15.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

The project will require the removal of all trees along the 8 foot wide construction corridor and de-limbing of trees up to 10-12 feet over the trail based on topography and trail structure. Construction of the trail on steep slopes could also result in the damage of tree root structures that can injure trees adjacent to the trail. All of the tree removal will generally be on pinyon-juniper, but there is not a complete survey of the project area, and there are known ponderosa pine south of Trail 2 that are not expected to be impacted. Ponderosa pine are limited in distribution in the project area, and preferably there will be no removal or de-limbing of ponderosa pine in the project area.

#### **Cumulative Impacts**

Past and present land use activities in the area are limited in the area, and there has been little to no removal of trees in the analysis area. Pinyon-juniper is the dominate forest in the analysis area, and the limited removal of these trees is not expected to create any cumulative impacts to forests in the area. As a result of mitigation, no ponderosa pine trees will be removed or de-limbed in the project area, so there will be no additional impacts to ponderosa pine.

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### **5.15.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

There will be no impacts to forests or woodland resources as a result of the No Action Alternative.

#### **Cumulative Impacts**

Past and present land use activities in the area are limited in the area, and there has been little to no removal of trees in the analysis area. The No Action Alternative will result in no additional cumulative impacts

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### **5.15.4. Mitigation Measures and Residual Impacts**

During trail construction, any ponderosa pine trees that are found will be flagged and not removed during construction. Trails will be aligned within the 100 foot survey corridor to prevent removal or damage to trees and root structures during trail construction.

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## **5.16. Recreation**

### **5.16.1. Affected Environment**

The Recreation Opportunity Spectrum (ROS) is the BLM's framework to inventory, plan, and manage recreational opportunities. The ROS is divided into six classes, ranging from essentially natural, low-use areas (resource-dependent recreational opportunities) to highly developed, intensive use areas (facility/vehicle-dependent recreational opportunities). The ROS class where

the Proposed Action is located has been partially identified as Semi-Primitive Motorized (SPM) on the west and no ROS identification on the east side. However, there is no motorized public access to the existing two-track roads. These roads travel through private property in Lion Canyon to reach this BLM parcel and can only be accessed by the adjacent private property owners and communication and FAA employees to maintain existing infrastructure. Therefore the ROS setting this parcel most closely resembles is Semi-Primitive Non-motorized (SPNM). The SPNM setting typically consists of a predominantly a natural landscape. Where there is evidence of others, interaction is low, and few management controls exist. Activities may include backpack camping, mountain biking, hiking, and cross-county skiing. The experiences provide for minimal contact with others, a high degree of interaction with nature, and a great deal of personal risk and challenge.

The parcel where the Proposed Action is located consists of approximately four miles of mountain biking and hiking trails on BLM lands known as the China Wall Trail. The China Wall Trail connects to trails within ERBM-managed Jensen Park and Sanderson Hill Parks and Town of Meeker-managed Ute Park. This trail system consists of approximately 6.08 miles of trails managed for hiking and mountain biking use with are a variety of trail loop options that vary in length and difficulty. Recent use of the China Wall Trail has consisted of 300-500 trail users per month from May-October and 10-50 trail users per month during the other months. There appears to be minimal off-trail recreational use within this parcel, but a faint user trail/game trail exists from the east ridge to near the FAA site. This route is similar to Trail 1 and connects into the existing road system. Nearly all trail use has been day use with very little evidence found of overnight camping on this parcel.

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### **5.16.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

The intent of the prioritization of the proposed trails is to provide trail managers the ability to: construct trails to reflect public needs and demands, increase trail construction efforts as use of the trail system increases, meet ERBM and BLM workload priorities and budget changes, meet maintenance and trail management capacities, and address overall community socioeconomic desired benefits. The trail system is designed to provide a variety of recreational experiences and benefits once all trails are fully constructed. Recreational benefits of this trail system would only reach full potential once all trails have been constructed. By constructing all trails, the trails system would provide trail users the greatest diversity of recreational experiences and range of benefits possible. This diversity of experience includes providing a full a range of trail difficulty levels, providing dozens of travel route options and loops, the ability to travel through different vegetation communities and natural settings, and improves access to portions of BLM that previously had no developed access. Also the fully constructed trail system is designed to showcase the natural beauty of the White River Valley and the community of Meeker with each trail providing unique views of the landscape. There are other benefits that would likely realized by constructing the entire trail system that otherwise would be less likely to be realized. By providing a trail system with numerous loop options and more mileage, trail users are likely to stay interested in the trail system, return for additional visits, and bring new trail users to enjoy

the trail system. This may benefit local service providers by encouraging out of town trail users to stay more than one day in Meeker. By fully constructing the trail system, it is more likely that competitive trail event organizers will be interested in using the trail system for future events. Typically well planned competitive trails events introduce new trail users to the trail system and bring more out of town visitors in to the community (Richman 2011). More trail use helps maintain trail tread to some degree and increases the number of people from which support and volunteer labor can be gained to help maintain the trail system. In Appendix 2 of the BLM H-8320-1 Handbook- Planning for Recreation and Visitor Service there is checklist that lists a full spectrum of potentially desirable experiences and benefits, many of which may be gained by individuals as a result of implementing the Proposed Action and developing the trail system. Instead of listing the numerous benefits that may be realized a result of implementing the Proposed Action, this list of benefits has been included as part of this document as Appendix B.

Incorporating the existing user-created trail known as Trail 4 (Sage Hills Connector Trail) into the existing trail system improves the overall connectivity of the trail system. This trail connects the neighborhood of Sage Hills to the trail system adding another trailhead and access point to the trail system. This BLM parcel is located adjacent to this neighborhood and is literally in the backyard of a several residents. This trail also provides access through the Sage Hills neighborhood to RBC Road 11 (Sulphur Creek Road). This low traffic volume graveled road is used by recreationalist to add up to ten out-and-back miles to their exercise routine or recreational experience. This road can also be traveled approximately one mile south to access all other Meeker neighborhoods. This trail has been in existence for several years. The trail overall is in good condition, but has not received any formal construction or maintenance over the years.

The construction of Trail 1 (East Ridge Trail) is the highest priority because the 1.54 mile trail connects to approximately four miles of two-track roads that are not open to the public. The construction of Trail 1 essentially adds 5.5 miles of routes to the trail system although only 2.09 miles of existing two-track roads in intended for long term use as part of this trail system once all trails are constructed. This trail also provides users with outstanding extensive views to the south, east, and west.

The construction of Trail 9 (Lobo Mountain Trail) is the second priority because of the connectivity it provides to the trail system. If Trail 1 is constructed, trail users will likely travel the west ridge road to near the western terminus of Trail 9 and the eight communication sites. If Trail 9 is not constructed, trail users must then return the same way they came in. This results in an 11.2 mile out-and-back type experience. This is likely not a highly desired recreational experience by trail users because of the distance required to reach this area as well as returning on the same trails used to reach this area. If Trail 9 is constructed this would create a 7.4 mile loop trip from the Ute Park-Hill Street trailhead. This trail provides a variety of loop options if combined with Trails 1, 2, 5, 7, 8, and existing roads. This trail also provides increased value to the Ute Park-Hill Street trailhead by providing another option for trail users of this trailhead. This trailhead is the only trailhead with parking for more than 20 vehicles in an overflow parking area (Meeker snow removal lot). This large parking area has been discussed with the Town of Meeker and ERBM as the best location to host competitive or large trail use events during the

summer months. This parking area served as the starting area for an annual competitive trail run the past two years with future plans to continue this event. By constructing Trail 9, this parking area and trailhead can serve as both the starting area and finishing area for any future competitive or large trail events. This trail improves the safety of the trail system by providing trail users or search and rescue crews the option for a quick downhill exit from an area that otherwise would require almost 5.5 miles to reach. Trail 9 is therefore considered an essential link to the connectivity of the Meeker Trail System.

Trail 2 (Hidden Valley Trail) provides trail access into an unnamed drainage located on the east side this BLM parcel that cannot be viewed from anywhere outside of this parcel. This drainage is screened by topography on all sides. This results in a more isolated, backcountry type experience for trail users when traveling through this drainage. The slopes where this trail is proposed are largely free of the typical bedrock cliff bands which enable the trail to be designed with a fairly consistent trail grade. This intended to provide a less strenuous trail experience. Overall the construction of Trail 2 results in more diversity of trail experience for the trail system, provides access to some unique natural features, and expands the mileage of the trail system.

Trail 7 (Backside Loop) and Trail 8 (Lion Canyon Trail) are located on the north and west side of this BLM parcel. The west and north aspect of this parcel is unique in that it does not largely consist of steep rocky slopes with cliff bands and v-shaped incised drainages. This area consists of open gentle grassy slopes covered with grasses, sagebrush, mountain shrubs, and sparse or scattered pinyon or juniper trees. These trails overall increase the diversity of experience for the trail system, provide additional loop options, and extend the mileage of the trail system.

Trail 5 (Anderson Gulch Trail) is listed as the last priority for construction because it is considered to be somewhat redundant in accessing some areas with existing or higher priority trails. However, this trail would provide the closest loop option to trailheads on BLM lands for trails users. This trail also contributes to the overall trail system benefits of constructing all trails as mentioned above.

The increase in trail users could have an effect on wildlife and other trail users in the area. Trail users that have unleashed dogs which are not under verbal control during the winter could have an impact on mule deer. The Proposed Action is located within mule deer critical winter range. See the Wildlife section for additional information. Also, unrestrained dogs have the potential to negatively affect other trails users experience. It is therefore recommended that trail users have their dogs under physical or verbal control at all times when using this trail system.

## **Cumulative Impacts**

Fully constructing all of the trails cumulatively provides greater recreational benefits and more recreational experiences than just constructing a few of these trails. By constructing all trails, the trails system would provide trail users the greatest diversity of recreational experiences and range of benefits possible. This diversity of experience includes providing a full a range of trail difficulty levels, providing dozens of travel route options and loops, the ability to travel through different vegetation communities and natural settings, and improves access to portions of BLM

that previously had no developed access. Also the fully constructed trail system is designed to showcase the natural beauty of the White River Valley and the community of Meeker with each trail providing unique views of the landscape. There are other benefits that would likely be realized by constructing the entire trail system that otherwise would be less likely to be realized. By providing a trail system with numerous loop options and more mileage, trail users are likely to stay interested in the trail system, return for additional visits, and bring new trail users to enjoy the trail system. This may benefit local service providers by encouraging out of town trail users to stay more than one day in Meeker. By fully constructing the trail system, it is more likely that competitive trail event organizers would be interested in using the trail system for future events. Typically well planned competitive trails events introduce new trail users to the trail system and bring more out of town visitors in to the community (Richman 2011). More trail use helps maintain trail tread to some degree and increases the number of trail users from which trail system support and volunteer labor can be gained to help maintain the trail system.

This BLM parcel is identified as part of a cattle grazing allotment but has not been grazed for several years. There is potential for livestock grazing on this BLM parcel to impact trail users and the trails. Should cattle grazing return to this allotment, the cattle may use some trails as travel routes. This could severely damage the trail tread and significantly increase the maintenance cost for the trail system if trails are traveled by cattle when saturated. There is also potential for negative trail user experiences if cattle are using the trails when trail users are on them. Also mountain bikers may spook cattle when passing them resulting in stress for both the bikers and cattle. In order to prevent damage to trails and reduce trail user/livestock conflicts it is recommended that drift fences and pass-through style gates be installed at strategic locations.

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### **5.16.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

By not constructing any of these trails the above mentioned recreational benefits and experiences would not be realized. There would also not be a formal trailhead for the Sage Hills neighborhood and less connectivity for the existing trail system. This would force the closure of Trail 4 or result in a separate planning effort to incorporate this trail and trailhead into the existing trail system. There may even be a slight decrease in use of the existing trails over time as local trail users become less interested in using the same trails over and over. There is potential for user trails to be created in order to satisfy demand for more trails. This is especially true for the east ridge where Trail 1 is proposed where a user trail is evident.

#### **Cumulative Impacts**

No cumulative impacts have been identified as result of this alternative.

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### **5.16.4. Mitigation Measures and Residual Impacts**

Special Status Animal Species section 5.10 recommends Trail 9 not be constructed at this time. Trail 9 is a key component of the overall designed trail system that provides connectivity to the trail system, increases the number trail user options and experiences, decreases use pressure on Trail 1, and is planned to increase the diversity of challenge to the trail system. Without Trail 9,

the trail system will have less user options and trail experiences, no trails planned with an Extremely Difficult rating, and more use of Trail 1. Without Trail 9, all use of Trails 2, 5, 7, and 8 will require out-and-back use of Trail 1. Overall, by not constructing Trail 9 the trail system is less efficient for trail users, has less mileage, and lacks an Extremely Difficult rated trail.

Ensure that signs are installed at trailheads to recommend that dogs are leashed or under verbal control of their owners at all times to minimize disturbance to wildlife, livestock, and other trail users.

## **5.17. Access and Transportation**

### ***5.17.1. Affected Environment***

The existing BLM transportation system on this parcel includes approximately 4 miles of roads and 4 miles of hiking and bicycling trails. BLM Road 1603 is a graveled low traffic volume road that travels from private property in Lion Canyon up to the west ridge where it intersects with BLM Road 1603. BLM Road 1603 is a spot graveled two-track road located along the west ridge of this parcel and terminates on the north at the FAA air traffic control site and on the south at the cluster of communication sites. BLM Road 1602B is a primitive two-track road showing very little use from private property in Lion Canyon up to where it intersects with BLM Road 1603 about 1 mile south of the BLM Road 1602A and BLM Road 1603 intersection. Road use is not available to the public because all access comes from private property onto BLM lands. Road use consists of communication site and FAA site employees using the roads infrequently only to access and maintain infrastructure. The China Wall Trail is approximately 4 miles on BLM lands, 0.25 miles in Ute Park, and 0.1 miles in Jensen Park. Trail use consists of 300-500 trail user days per month from May-October with much less in during the other months.

### ***5.17.2. Environmental Consequences – Proposed Action***

#### **Direct and Indirect Impacts**

The Proposed Action does provide new access to BLM lands with each new trail constructed. All proposed trails would become part of the BLM transportation system. Approximately 2.09 miles of BLM Roads 1603 and 1602A are proposed to be used as part of this trail system. Conflicts between motorized vehicle traffic and trail user traffic are anticipated to be very minimal because of the low volume of traffic on these roads. Trail users will likely be able to hear and see low speed motorized vehicles well before they are approached. During the construction of Trails 2, 7, 8, and 9, the existing roads may be used to access the new trail locations. Because this travel would consist of a few trips to mobilize equipment and one daily trip during the construction period, this additional travel should not impact existing travel of these roads by trail users or motorized users. During the construction phase of Trails 1 and 5 the China Wall Trail may be used by trail construction contractor employees to access the new trail being constructed. This use may include having a trail dozer (Figure 8) and a mini-excavator (Figure 7) travel over this trail once to reach the new trail and once on the way out. All-terrain vehicles (ATVs) and dirt bikes may be used by employees each day during the construction project to access the new trail

site. This ATV and dirt bike travel will likely include 2-8 trips per day depending on the number of employees and trips needed and to bring up fuel and supplies. If damage by this equipment and amount of travel results in any existing roads or trails needing maintenance to be returned to the former condition, the contractor may be asked to perform this maintenance after the new trail construction has been completed. In order to prevent impacts to the existing trails and roads and to prevent impacts to fragile soils a design feature specifies that mechanical trail construction activities shall cease when soils, trails, or roads surfaces become saturated to a depth of three inches unless approved by the Authorized Officer. Depending on when and which trails are constructed the China Wall Trail will likely varying degrees of increased use. However, based on the management and amount of use of this trail over the past two years, conflicts between trail users as a result of constructing new trails are not anticipated.

### **Cumulative Impacts**

Combined with the existing use of the roads and trails on this parcel, the construction of new trails will likely create an opportunity for an incremental increase of use of these existing routes depending which trails are constructed and when. However, the construction of all trails may reduce use of existing roads and trails and disperse trail use across more trails resulting in overall less impact to the existing trail and roads.

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### **5.17.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

By not constructing any new trails there would be no new access created on this BLM parcel and no new routes added to the transportation system. Also, the existing roads and trails would receive no new or additional impacts and these routes would likely see the same if not slightly less use as time goes on. There would essentially be no new impacts or changes to public access and the existing transportation system as a result of implementing this alternative.

#### **Cumulative Impacts**

No cumulative impacts have been identified as a result of this alternative.

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## **5.18. Social and Economic Conditions**

### **5.18.1. Affected Environment**

The Proposed Action is within Rio Blanco County and includes the BLM administered lands known as the China Wall/Lion Canyon/Lobo Mountain area adjacent to the Town of Meeker. Rio Blanco County is the socioeconomic study area for this project. In 2012, the population of Rio Blanco County was 6,857 and per capita income was \$40,976 (Bureau of Economic Analysis Rio Blanco County CA1-3 2012), and the State of Colorado had a population of 5,189,458 and per capita income of \$46,315 (Bureau of Economic Analysis Colorado SA1-3 2012).

Based on information provided under Section 5.2 (Assumptions for Analysis-Trail Use), the existing trail system received approximately 5,690 user trips (one person/one visit) since it opened to the public in September 2012 with approximately 2,610 user trips per year. However, actual trail use is likely greater because trail counter data systematically undercounts usage in a variety of recreation settings (Gasvoda 1999, Yang, Ozbay, and Bartin 2010).

The Meeker Chamber of Commerce stated in a support letter for the project that the chamber currently receives many inquires about the existing trail system and that the new trail system could bring new visitors to the study area resulting in an increase in economic activity. Both the chamber and the Town of Meeker provided comment letters that support the implementation of the Proposed Action and welcome these opportunities to enhance the local economy. Over the past decade communities across the U.S. have used trail systems as a means to improve socioeconomic conditions and quality of life.

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### **5.18.2. Environmental Consequences – Proposed Action**

#### **Direct and Indirect Impacts**

The direct and indirect socioeconomic impacts of implementing the Proposed Action and developing this trail system includes: the amenity value of recreation increases the value of nearby property (NPS Real Property Values <http://www.nps.gov/pwro/rtca/econ1.pdf>). Trails induce spending at local businesses. Communities along trails, often called trail towns, benefit from the influx of visitors going to restaurants, snack shops and other retail establishments. On longer trail systems, hotels, bed and breakfasts, and outdoor outfitters benefit. Trails make communities more attractive places to live. Trails influence business location and relocation decisions. Companies often choose to locate in communities that offer a high level of amenities to employees as a means of attracting and retaining top-level workers. Trails can make communities attractive to businesses looking to expand or relocate both because of the amenities they offer to employees and the opportunities they offer to cater to trail visitors. Trails can revitalize economically depressed areas, creating a demand for space in what were once vacant buildings. Trails increase tax revenues in the communities in which they are located due to multiplier effects of both local and non-local visitor recreation. (Richman 2011)

The direct economic impact of the Proposed Action is a function of several factors that include but are not limited to: how many trails are constructed and when, community support and marketing, and competition with other communities in the region for tourists and events. Most importantly, the Proposed Action will increase the Town of Meeker's ability to compete in Colorado's \$34.5 billion outdoor recreation sector (Colorado Parks and Wildlife, 2014 <http://cpw.state.co.us/Documents/Trails/SCORP/SCORPOnlineReport.pdf>). For example, the community of Steamboat Springs, Colorado has come together to develop the vision, strategy, and community plan to become a premier trail network and top summer destination. The Steamboat Springs project will construct a trail network that leverages existing attractions and tourist infrastructure to develop Steamboat Springs as a premier biking and hiking destination. Upon completion an additional 180,000 tourists will visit Steamboat Springs, contributing an estimated \$81million to the local community (Davis 2013). Over ten years ago, Fruita, Colorado earned a reputation as a world-class mountain biking destination, and from the tourism attributed

to this reputation that contributes over \$1.5 million a year into the local economy and it has increased sales tax revenue approximately 51% from 1999 to 2004, including an 80% increase in sales tax revenues from restaurants. (Bureau of Land Management North Fruita Desert Management Plan, 2004).

The Proposed Action also responds to community desires. In the ERBM Recreation, Trails, and Parks Master Plan 2012 a community survey indicated that additional trails were the highest priority for outdoor facilities and amenities to be added, expanded, or improved. This plan also states that there is a growing trend in the United States in which public leaders recognize that public recreation facilities and related “quality of life” amenities are not secondary services provided by governmental agencies, but are in fact integral to creating communities where people want to live and visit. These services should be seen as investments in the long-term vitality and economic sustainability of any vibrant and attractive community. There is a wide spectrum of specific social benefits and experiences desired by each individual when recreating on trails. These direct and indirect social benefits and experiences are some of the most meaningful in improving community social conditions and individual quality of life. In BLM H-8320-1 Handbook- Planning for Recreation and Visitor Service, Appendix 2 there is checklist that lists a full spectrum of potentially desirable experiences and benefits, many of which may be gained by individuals as a result of implementing the Proposed Action and developing the trail system (Appendix B).

Overall the direct economic impact of the Proposed Action is not known at this time and it may take several years for trail construction to be fully realized and market at that time will dictate the direct economic impacts. However, implementing the Proposed Action is inline with community desires and will improve social conditions for the community as trails impact numerous direct and indirect socioeconomic factors and improve quality of life, community marketability, and increase local economic activity and property values.

### **Cumulative Impacts**

The expansion of trails within Rio Blanco County and the Town of Meeker increases recreation opportunities and the overall amenity value of recreation within the region.

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### **5.18.3. Environmental Consequences – No Action Alternative**

#### **Direct and Indirect Impacts**

By not implementing the Proposed Action there would likely be no impact to the local economy or social conditions within the study area as a result of this alternative.

#### **Cumulative Impacts**

No cumulative impacts have been identified as a result of this alternative.

### **5.19. Colorado Standards for Public Land Health**

In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, special status

species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. If there is the potential to impact these resources, the BLM will note whether or not the project area currently meets the standards and whether or not implementation of the Proposed Action would impair the standards.

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#### **5.19.1. Standard 1 – Upland Soils**

Localized reductions in soil surface infiltration characteristics will result from trail user compaction and subsequent increased overland flow. The impacts to surface infiltration should be mitigated with proper trail construction and annual maintenance. The Proposed Action is not expected to impact the public land health standards for upland soils. With mitigation the Proposed Action is unlikely to impact the productivity of soils.

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#### **5.19.2. Standard 2 – Riparian Systems**

There are no riparian communities within the project area, thus the land health standards would not apply.

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#### **5.19.3. Standard 3 – Plant and Animal Communities**

With the exception of small, annual dominated inclusions scattered throughout the project area, vegetation communities within the project area are presently adequate in meeting the land health standard for terrestrial animal communities. As mitigated (annual trail maintenance and weed management), the Proposed Action would not be expected to detract from the continued meeting of the land health standard. With implementation of proposed design features, listed mitigation measures, successful re-vegetation, and effective weed control the Proposed Action would have no effect on the status of Land Health Standard 3 for plant communities in the project area or at a landscape scale.

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#### **5.19.4. Standard 4 – Special Status Species**

The project area is currently meeting the land health standards for special status species. The project, as proposed would be expected to detract from the continued meeting of Standard 4 as construction and subsequent recreational use on Trail 9 may result in the displacement of nesting falcons which could lead to nest failure and possible long term abandonment of the cliff complex. Construction of the remaining trails (1-8) would not be expected to detract from the continued meeting of Standard 4.

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#### **5.19.5. Standard 5 – Water Quality**

No perennial water sources are located within the project area. Any short-term increases in surface erosion and subsequent deposition in ephemeral drainage features would be minimized with proper trail construction techniques. Construction of the trail system is not expected to impact the land health standard for water quality.

## 6. SUPPORTING INFORMATION

### 6.1. Interdisciplinary Review

Table 3. List of Preparers

Name	Title	Area of Responsibility	Date Signed
Keith Sauter	Hydrologist	Surface and Ground Water Quality; Floodplains, Hydrology, Soil Resources, and Water Rights; Prime and Unique Farmlands	11/18/2014
Lisa Belmonte	Wildlife Biologist	Special Status Animal Species, Migratory Birds, and Aquatic and Terrestrial Wildlife	12/7/2014
Mary Taylor	Rangeland Management Specialist	Vegetation, Invasive, Non-Native Species, Wild Horses, Livestock Grazing, Wetlands and Riparian Zones	11/18/2014
Matthew Dupire	Ecologist	Special Status Plant Species, Forestry and Woodland Products, Areas of Critical Environmental Concern	11/26/2014
Brian Yaquinto	Archaeologist	Cultural Resources, Paleontological Resources, Native American Religious Concerns	11/20/2014
Aaron Grimes	Project Lead, Outdoor Recreation Planner	Visual Resources, Lands with Wilderness Characteristics, Recreation, Access and Transportation, Wilderness, Scenic Byways, Hazardous or Solid Wastes	11/05/2014
Martin Hensley Aaron Grimes	Economist Outdoor Recreation Planner	Social and Economic Conditions	11/05/2014
Paul Daggett	Mining Engineer	Air Quality; Geology and Minerals	11/24/2014
Kyle Frary	Fire Management Specialist	Fire Management	11/24/2014
Stacey Burke	Realty Specialist	Realty Authorizations	11/21/2014
Heather Sauls	Planning & Environmental Coordinator	NEPA Compliance	1/5/2015

### 6.2. Tribes, Individuals, Organizations, or Agencies Consulted

The Proposed Action was discussed with local Colorado Parks and Wildlife employees, Jeff Goncalves and Brian Holmes, and a comment letter was received during the initial scoping period. Private property owners were contacted that reside near the Proposed Trail 4 trailhead in the Sage Hills neighborhood. These individuals included: Jim and Debra Cook, Dave Morlan,

and Chris and Peggy Strate. Owners of private property located near any other proposed trails were contacted as well. These individuals included: Kelly Sheridan, Melinda Parker, and Perry French. There were no issues or concerns identified by any of these individuals.

No Native American religious concerns are known in the area, and none have been noted by Tribal authorities. Should recommended inventories or future consultations with Tribal authorities reveal the existence of such sensitive properties, appropriate mitigation and/or protection measures may be undertaken.

### 6.3. References

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# APPENDIX A. FIGURES

Figure 1-Proposed Action

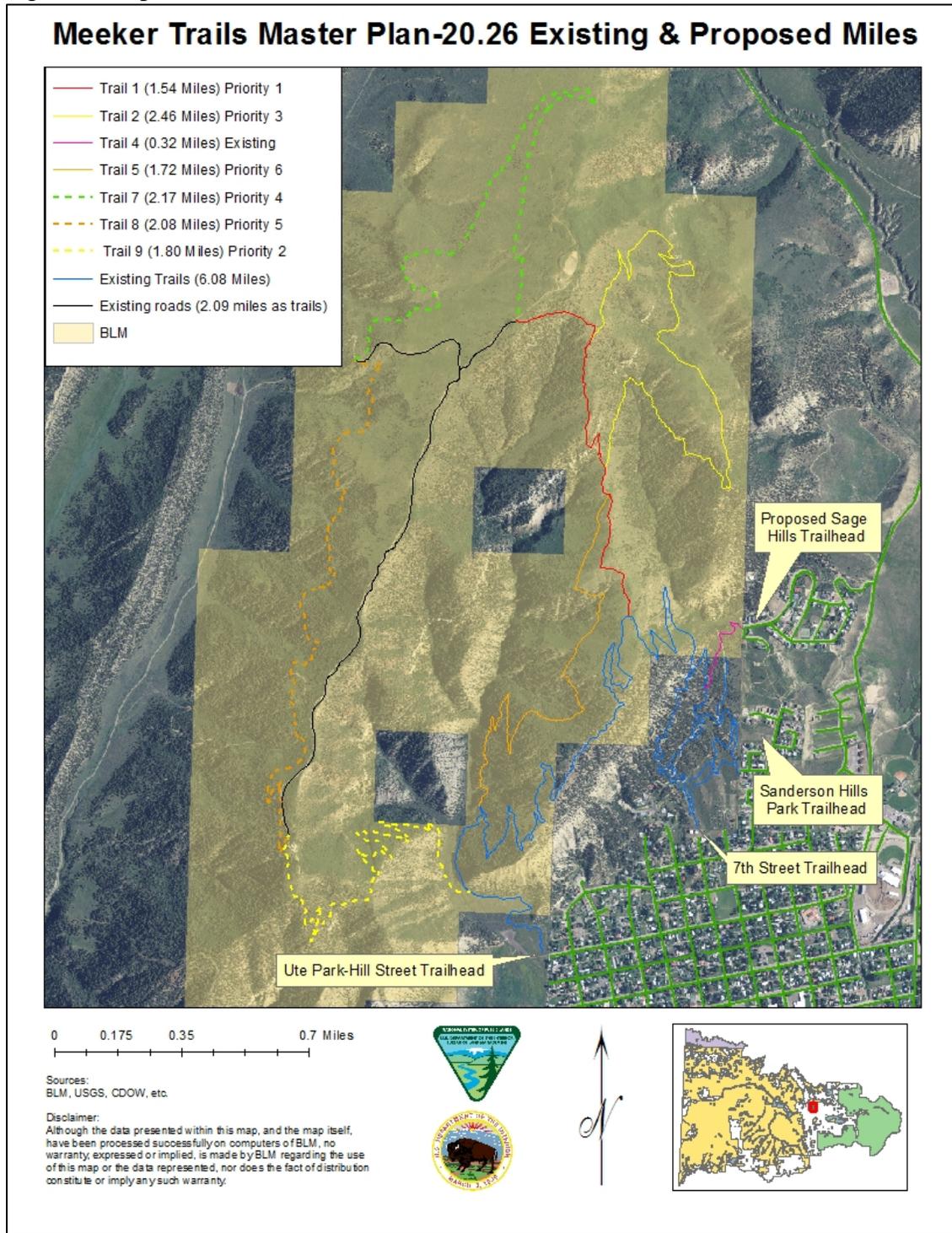


Figure 2-Proposed Trails with 50 foot trail corridor buffers

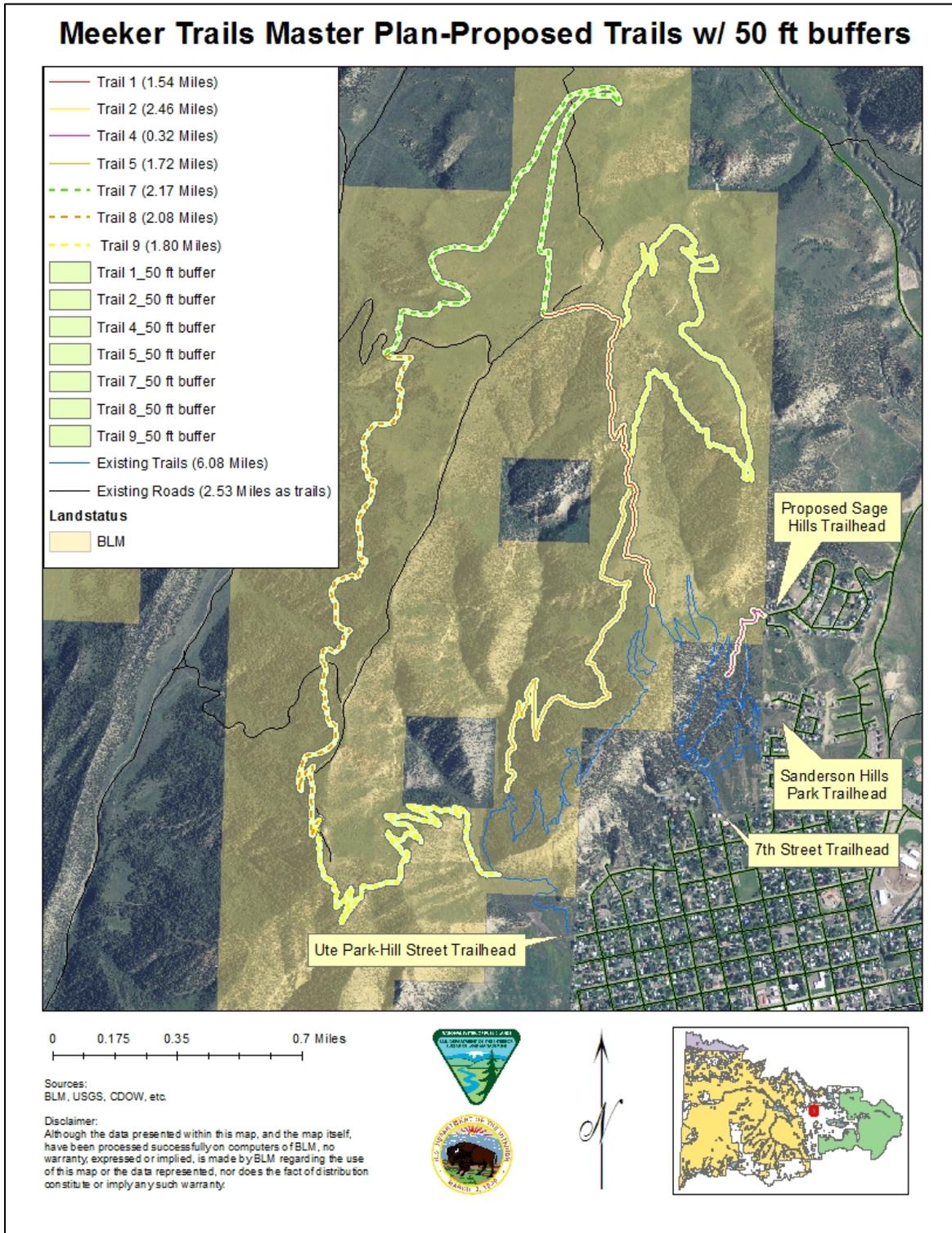


Figure 3-Trail Sign Map

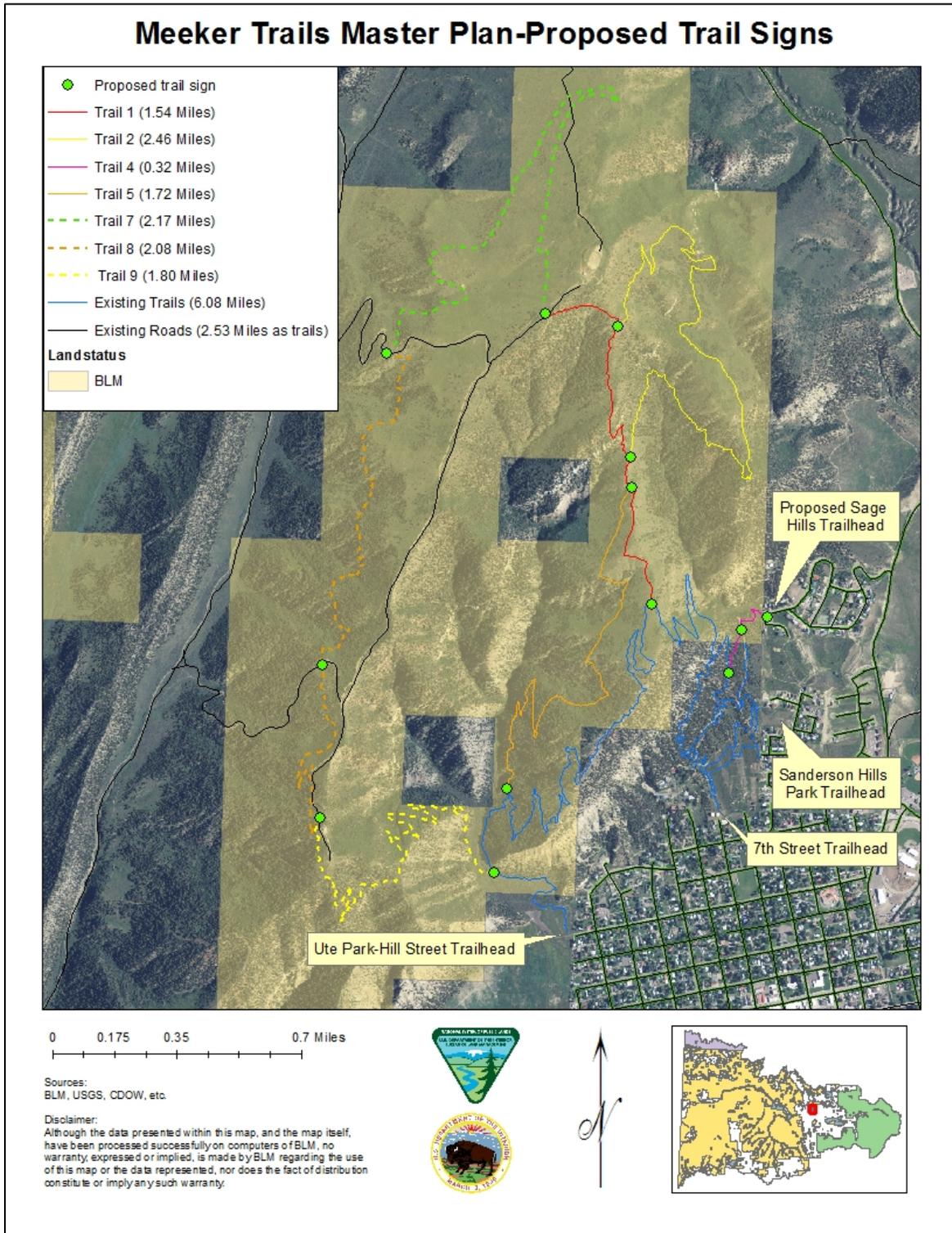


Figure 4-Scoping Map Alternative A

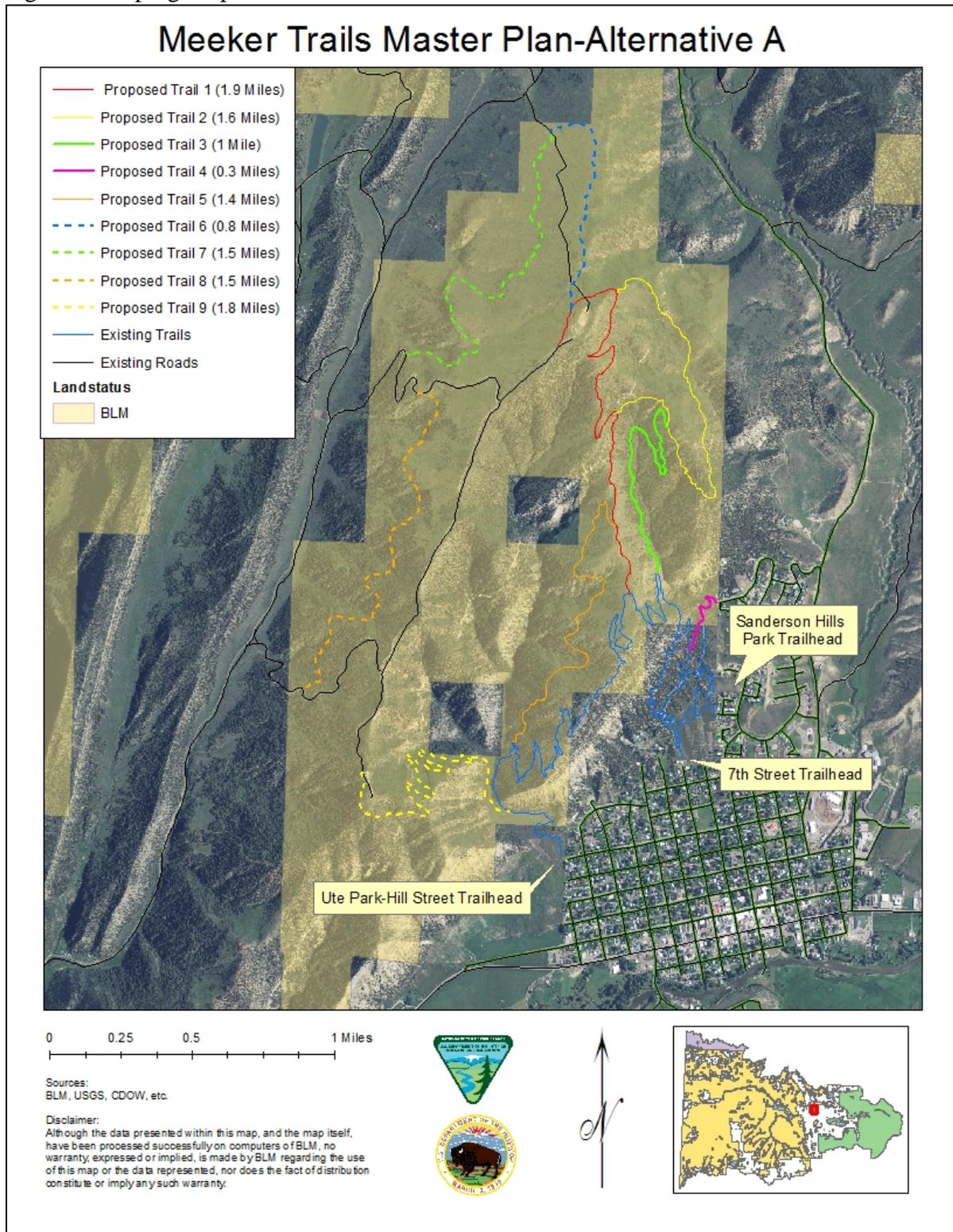


Figure 5-Scoping Map Alternative B

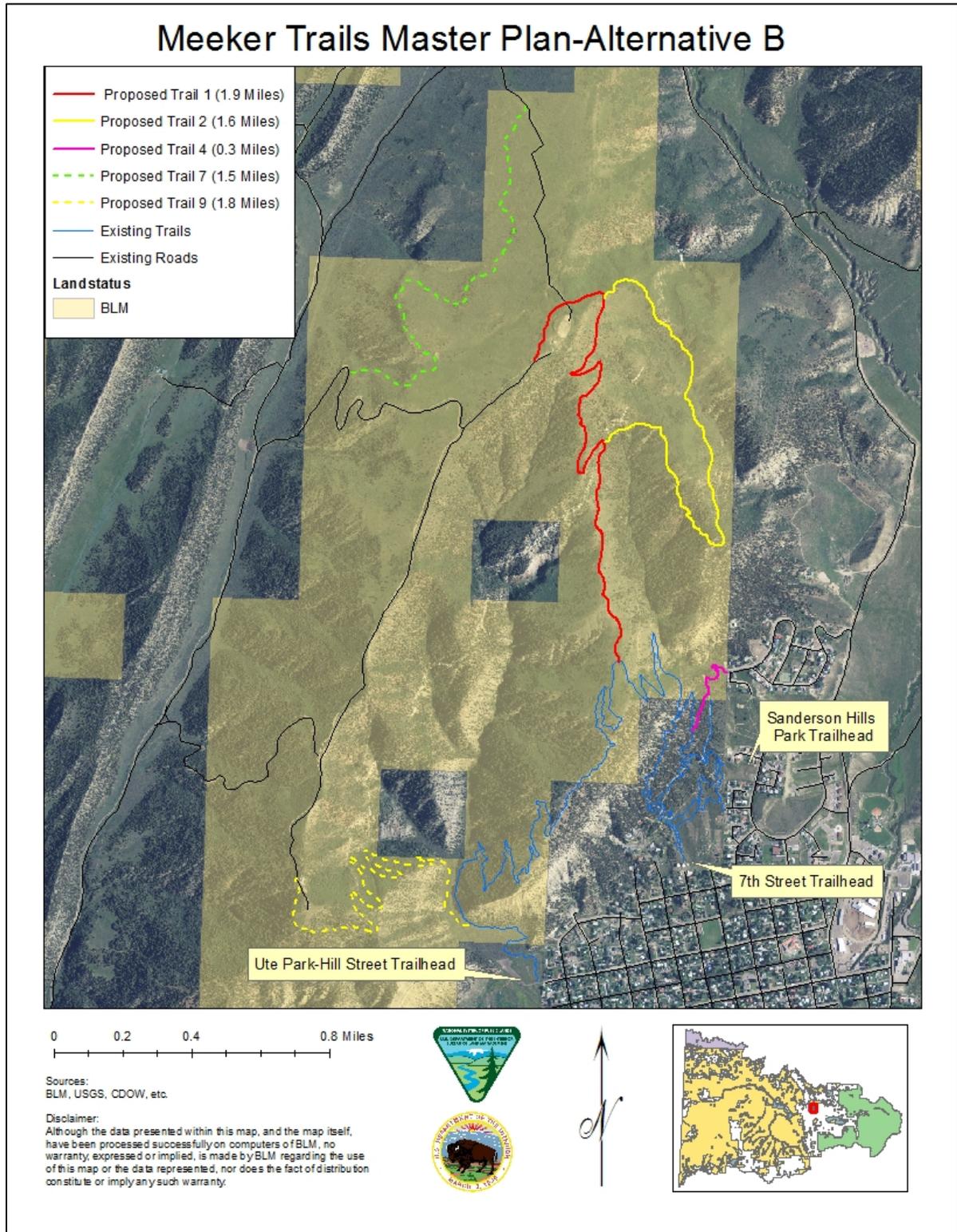


Figure 6-Contractor Master Plan Map

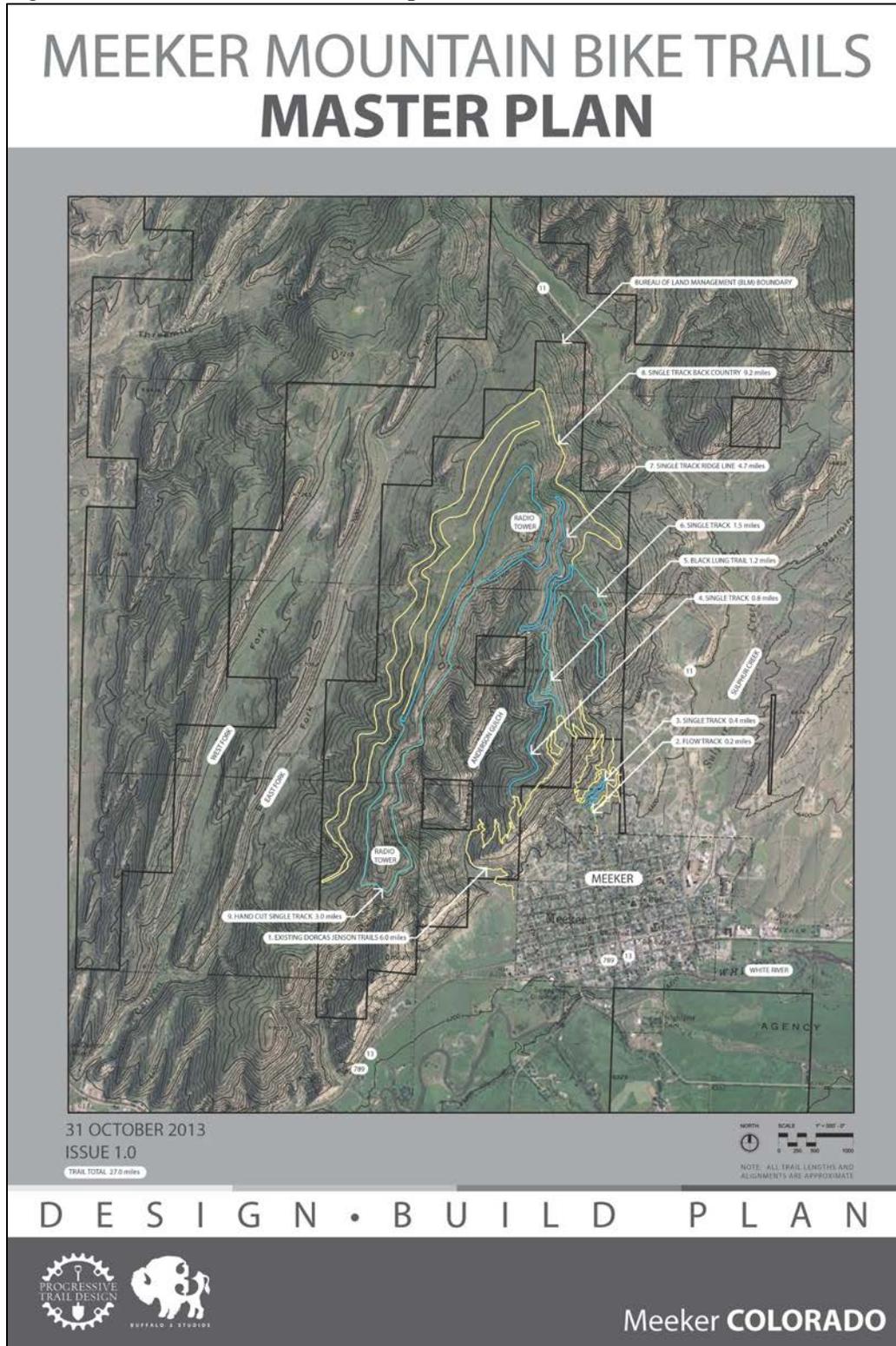


Figure 7-Example of a mini-excavator



Figure 8-Example of trail dozer



Figure 9-Location of Key Observation Points



Figure 10-Key Observation Point 1

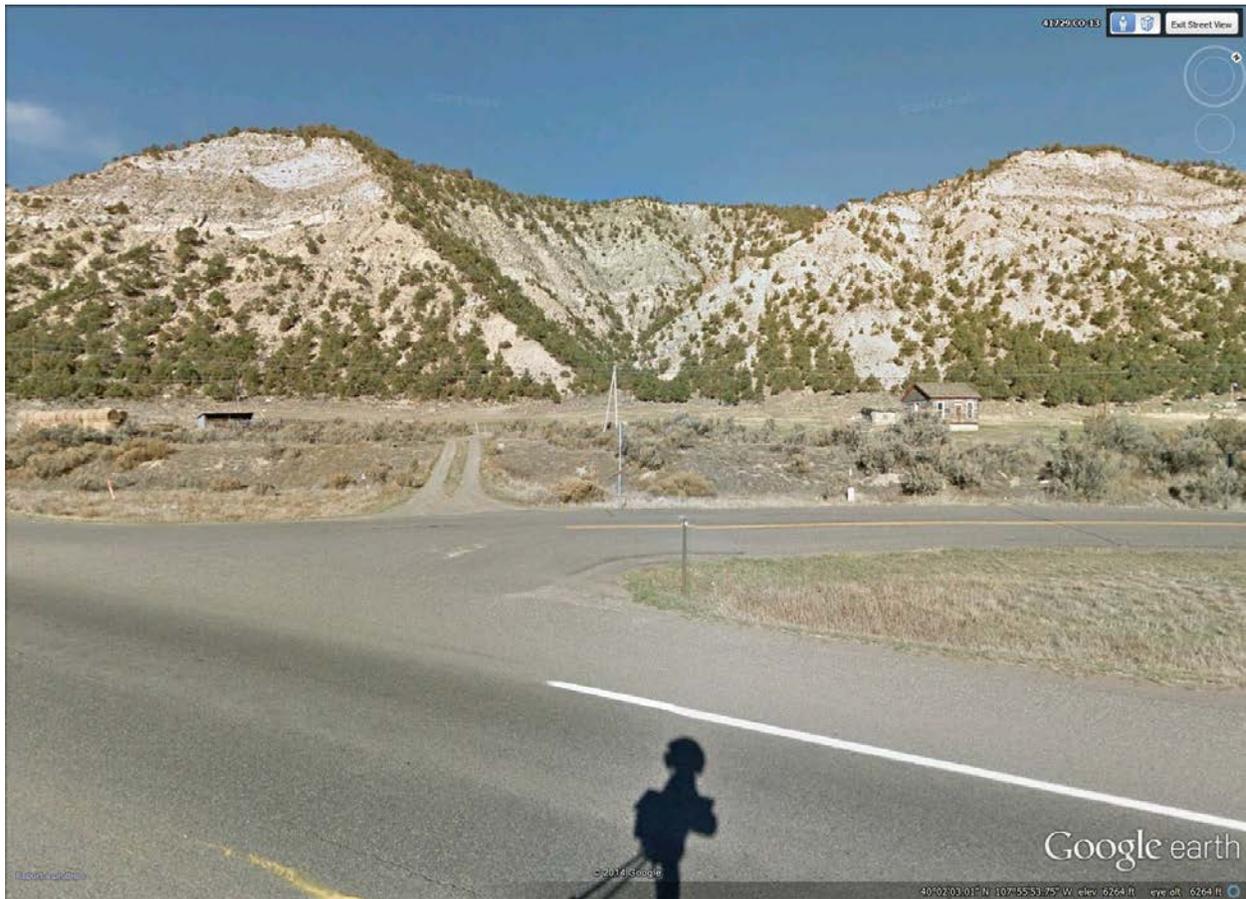


Figure 11-Key Observation Point 2



Figure 12-IMBA Trail Rating System

Trail Difficulty Rating System					
	Easiest White Circle 	Easy Green Circle 	More Difficult Blue Square 	Very Difficult Black Diamond 	Extremely Difficult Dbl. Black Diamond 
Trail Width	72" or more	36" or more	24" or more	12" or more	6" or more
Tread Surface	Hardened or surfaced	Firm and stable	Mostly stable with some variability	Widely variable	Widely variable and unpredictable
Average Trail Grade	Less than 5%	5% or less	10% or less	15% or less	20% or more
Maximum Trail Grade	Max 10%	Max 15%	Max 15% or greater	Max 15% or greater	Max 15% or greater
Natural Obstacles and Technical Trail Features (TTF)	None	Unavoidable obstacles 2" tall or less  Avoidable obstacles may be present  Unavoidable bridges 36" or wider	Unavoidable obstacles 8" tall or less  Avoidable obstacles may be present  Unavoidable bridges 24" or wider  TTF's 2' high or less, width of deck is greater than 1/2 the height	Unavoidable obstacles 15" tall or less  Avoidable obstacles may be present  May include loose rocks  Unavoidable bridges 24" or wider  TTF's 4' high or less, width of deck is less than 1/2 the height  Short sections may exceed criteria	Unavoidable obstacles 15" tall or greater  Avoidable obstacles may be present  May include loose rocks  Unavoidable bridges 24" or narrower  TTF's 4' high or greater, width of deck is unpredictable  Many sections may exceed criteria

Figure 13-Trail Segments located in NSO-1 Landslide soils

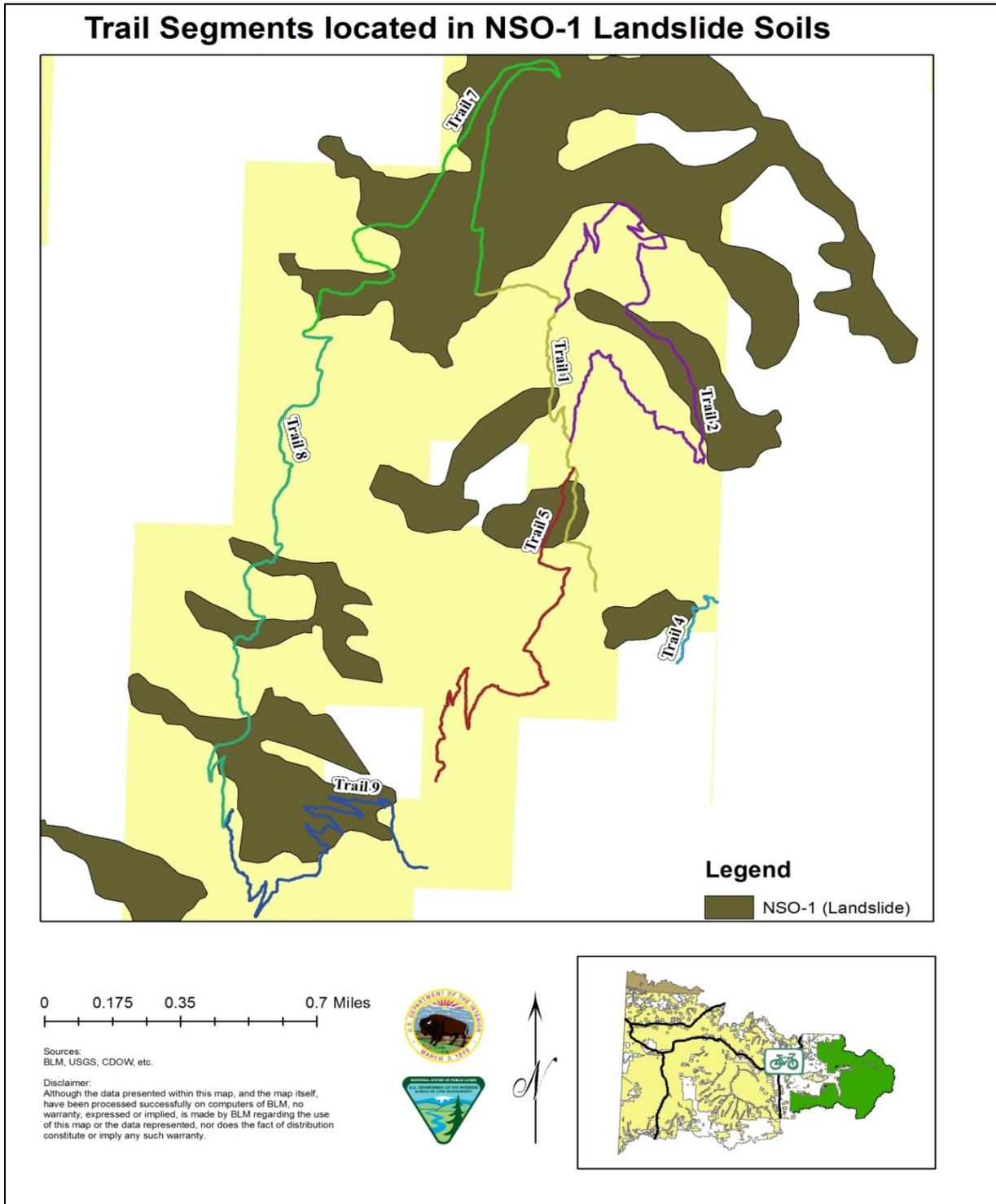
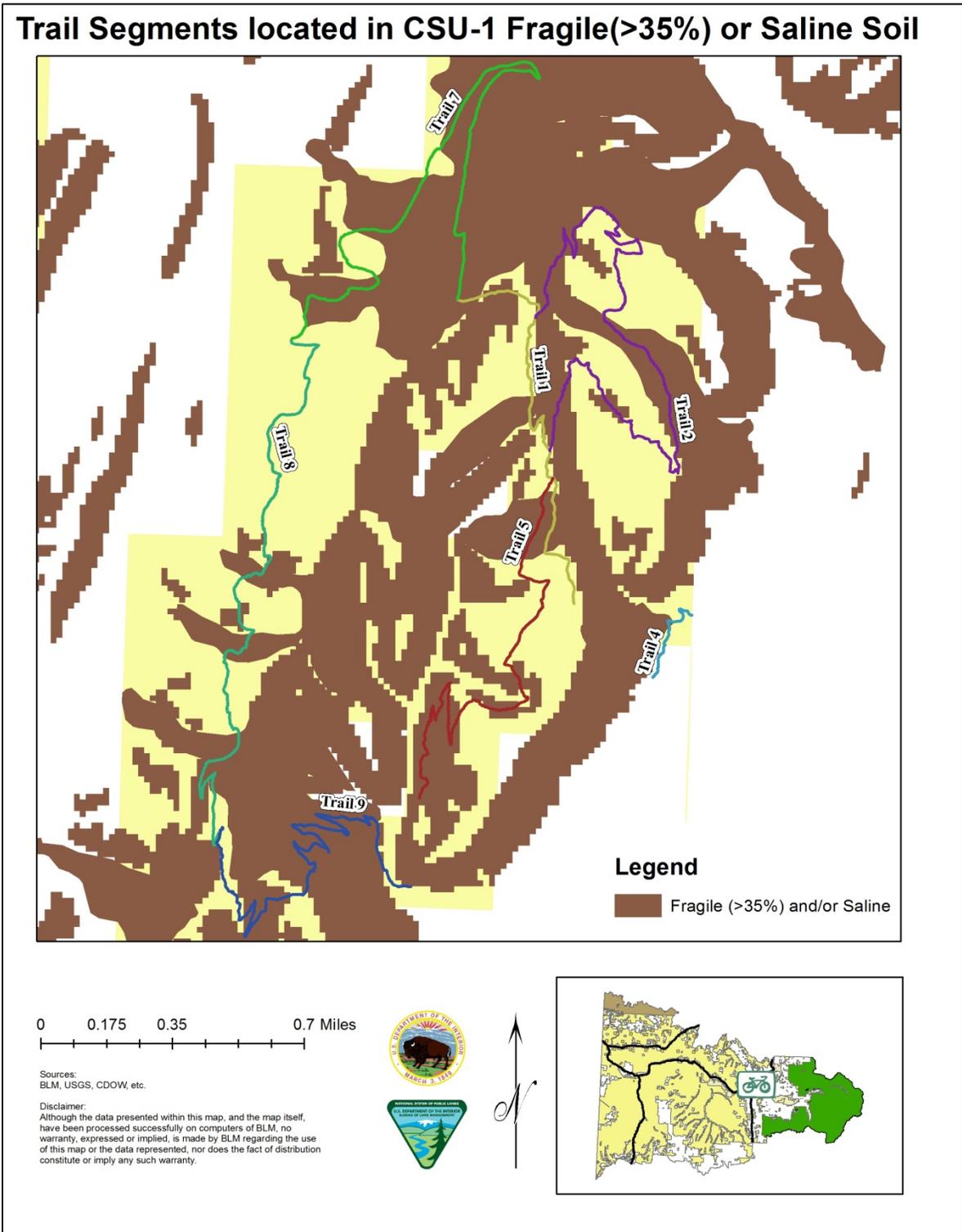


Figure 14-Trail Segments located in CSU-1 fragile and/or saline soils



# APPENDIX B. EXPERIENCE AND BENEFIT CHECKLIST

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## H-8320-1 – PLANNING FOR RECREATION AND VISITOR SERVICES (Public) A2-1 BLM HANDBOOK Rel. 8-85 08/22/2014

### Visitor Experiences

#### A. Achievement/Stimulation

- ✓ Developing skills and abilities
- ✓ Gaining recognition from others for doing this
- ✓ Testing endurance
- ✓ Gaining a greater sense of self-confidence
- ✓ Being able to tell others about the trip

#### B. Autonomy/Leadership

- ✓ Experiencing a greater sense of independence
- ✓ Enjoying exploring on own
- ✓ Being in control of things that happen

#### C. Risk-Taking

- ✓ Enjoying risk-taking adventure

#### D. Equipment

- ✓ Talking to others about equipment

#### E./F./G. Family Togetherness/Similar People/New People

- ✓ Enjoying the closeness of friends and family
- ✓ Relishing group affiliation and togetherness
- ✓ Enjoying meeting new people with similar interests
- ✓ Enjoying participation in group outdoor events

#### H. Learn

- ✓ Learning more about this specific area
- ✓ Enjoying access to hands-on environmental learning
- ✓ Enjoying learning outdoor social skills

#### I. Enjoy nature

- ✓ Savoring the total sensory (sight, sound, and smell) experience of a natural landscape
- ✓ Enjoying easy access to natural landscapes

#### J. Introspection

- ✓ Enj Reflecting on own character and personal values
- ✓ Thinking about and shaping own spiritual values
- ✓ Contemplating human's relationship with the land

K. Creativity

- ✓ Doing something creative
- ✓ Enjoying artistic expression of nature

L. Nostalgia

- ✓ Bringing back pleasant memories

M. Exercise/Physical Fitness

- ✓ Enjoying needed physical exercise
- ✓ Enjoying strenuous physical exercise
- ✓ Enjoying a wide variety of environments within a single park or recreation area
- ✓ Enjoying access to close-to-home outdoor amenities
- ✓ Enjoying ability to frequently participate in desired activities in preferred settings

N. Physical Rest

- ✓ Enjoying needed physical rest

O. Escape Personal/Social Pressures

- ✓ Releasing or reducing stress
- ✓ Escaping everyday responsibilities

P. Escape Physical Pressure

- ✓ Feeling good about solitude, isolation, and independence
- ✓ Enjoying an escape from crowds of people

Q. Social Security

- ✓ Enjoying ability to be more contemplative
- ✓ Being near more considerate people

R. Escape Family

- ✓ Getting away from family for awhile

S. Teach/Lead Others

- ✓ Enjoying teaching others about the outdoors

T. Risk Reduction

- ✓ Having others nearby who could help if needed
- ✓ Having a greater understanding about what will happen while here

## **Community Resident Experiences**

### **A. Lifestyle**

- ✓ Enjoying the hustle and bustle of new people in town
- ✓ Enjoying the peace and quiet of this small-town community
- ✓ Enjoying maintaining out-of-town country solitude
- ✓ Living a slower pace of life
- ✓ Avoiding compromising the quality of life here

### **B. Sense of Place**

- ✓ Feeling like I belong to this community and liking it
- ✓ Avoiding outsiders making me feel alienated from my own community
- ✓ Observing visitors treating our community with respect
- ✓ Feeling that this community is a special place to live
- ✓ Just knowing this attraction is here, in or near my community

### **C. Personal/Character**

- ✓ Nurturing my own spiritual values and growth
- ✓ Developing a greater understanding of outsiders

### **D. Interacting with People**

- ✓ Appreciating personal interaction with visitors
- ✓ Enjoying telling visitors what makes this community
- ✓ Encouraging visitors to help safeguard our lifestyle and quality of life
- ✓ Sharing our cultural heritage with new people
- ✓ Seeing visitors get excited about this area
- ✓ Communicating our cultural heritage with those already living here

### **E. Change**

- ✓ Liking change and new growth here
- ✓ Knowing that things are not going to change too much

### **F. Stewardship and Hospitality**

- ✓ Feeling good about the way our cultural heritage is being protected
- ✓ Feeling good about how visitors are being managed
- ✓ Feeling good about how natural resources and facilities are being managed
- ✓ Feeling good about how this attraction is being used and enjoyed

## **Personal Benefits**

### **A. Psychological**

#### **1. Better mental health and health maintenance**

- ✓ A more holistic sense of wellness
- ✓ Restored mind from unwanted stress

- ✓ Diminished mental anxiety
  - ✓ Improved mental well-being
2. Personal development and growth
- ✓ Greater self-reliance
  - ✓ Confirmation/development of own values
  - ✓ Improved academic and cognitive performance
  - ✓ Improved sense of control over one's life
  - ✓ Improved skills for outdoor enjoyment
  - ✓ Improved skills for enjoying the outdoors alone
  - ✓ Improved skills for outdoor enjoyment with others
  - ✓ Improved leadership abilities
  - ✓ Improved teamwork and cooperation
  - ✓ Improved outdoor knowledge and self-confidence
  - ✓ Improved outdoor recreation skills
  - ✓ Deeper sense of personal humility
  - ✓ More balanced competitive spirit
  - ✓ Greater sensitivity to/awareness of outdoor aesthetics, nature's art, and its elegance
  - ✓ Greater spiritual growth
  - ✓ Increased capacity for artistic expression
  - ✓ Improved ability to think things through and solve problems
  - ✓ Increased adaptability
  - ✓ Stronger ties with family and friends
  - ✓ Greater sensitivity to/respect for other visitors
  - ✓ Increased understanding and tolerance of others
  - ✓ Greater respect for my cultural heritage
  - ✓ Enhanced awareness and understanding of nature
  - ✓ Greater environmental awareness and sensitivity
  - ✓ Greater understanding of the importance of recreation and tourism in our community
  - ✓ Better sense of my place within my community
  - ✓ Improved ability to relate to local cultures
  - ✓ More well-informed and responsible visitor
  - ✓ Greater sense of responsibility for own quality of life
  - ✓ Enlarged sense of personal accountability for acting responsibly on public lands
  - ✓ Enlarged understanding of personal responsibility to help care for community and keep it clean