United States Department of the Interior
Bureau of Land Management

Preliminary Environmental Assessment
DOI-BLM-CO-N05-2015-0031

Bull Canyon Rim Trail

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

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1. INTRODUCTION

1.1. Identifying Information

Project Title: Bull Canyon Rim Trail

Legal Description: T4N, R103W Sections 20, 21, and 28

Lead Agency: Bureau of Land Management, White River Field Office

Cooperating Agency: National Park Service, Dinosaur National Monument

NEPA Document Number: DOI-BLM-CO-N05-2014-0031-EA

1.2. Background

Dinosaur National Monument (DNM) currently manages a developed picnic area with entrance signs, asphalt parking to accommodate 10-15 vehicles, asphalt trails to picnic tables, a viewpoint with interpretive signs, and a double vault restroom adjacent to the Bull Canyon Wilderness Study Area (WSA). This site is receiving moderate use during the summer and fall months and is surrounded by BLM lands on three sides to the west, north, and east. The cliff rim where the proposed trail is located can be seen from the developed viewpoint and visitors are seeking the experience of traveling along this rim. This has created various parallel, braided, and undefined user trails in the project area, some of which travel dangerously close to the cliff rim. A need was identified by WRFO staff to designate and define one trail that is a safe distance from cliff drop offs, concentrates use on one path in this particular area, and provides visitors the views, access, and experiences they are seeking.

On October 30, 2012 BLM employees Ted Tedford, Park Ranger, and Aaron Grimes, Outdoor Recreation Planner, did a preliminary survey of the project area to determine a route for the proposed Bull Canyon Rim Trail. Many existing user trails were identified that intersected and braided across the terrain near the edge of the cliff rim in the area. Several routes were traveled and mapped, with the proposed trail providing the best overall grade for sustainable trail management and affording the most numerous views of the canyon, while accounting for visitor safety near the edge of the cliffs.

After introducing the project to the WRFO interdisciplinary team on March 12, 2013, it was decided to defer the project until the WRFO could complete the necessary cultural surveys. Due to workload priorities, staff turnover, and limited budgets, the cultural survey was not able to be completed until November 21, 2014. During the cultural survey work, it was noticed what appeared to be a constructed trail and cut vegetation in nearly the same area where the proposed trail was to be constructed. The WRFO had no knowledge of any work taking place at this location. DNM staff was also contacted about this, but had no knowledge of any trail construction activities by their staff at this location.

1.3. Purpose and Need for Action

The purpose of the action is to provide a trail within the Bull Canyon WSA that accommodates increased recreation use of the area while protecting public safety, enhancing the naturalness of this area and restoring sections of braided user-created trails. This action will define a trail that is a safe distance from cliff drop offs, concentrate use on a formal trail instead of multiple braided user trails, and provide sustainable access to viewpoint destinations where visitors are currently traveling to on foot.

The need for the action is that this area is receiving a moderate level of use from visitors using the Plug Hat Butte Picnic Area in DNM. The cliff rim where the proposed trail is located can be seen from the developed viewpoint and visitors are seeking the experience of traveling along this rim. This has created various parallel, braided and undefined user trails in the project area, some of which travel dangerously close to the cliff rim. Therefore the need for this action is to accommodate this increased, unmanaged recreational use and provide safe, sustainable access on public lands.

1.4. Decision to be Made

Based on the analysis contained in this EA, the BLM and National Park Service (NPS) would decide whether to approve or deny the proposed Bull Canyon Rim Trail, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA), the BLM and NPS 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 and NPS would decide one of the following:

- To approve the Bull Canyon Rim Trail with design features as submitted;
- To analyze the effects of the Proposed Action in an EIS; or
- To deny the Bull Canyon Rim Trail.

1.5. Conformance with the Land Use Plan (BLM)

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. Develop links to other trails: Yampa Valley Trail, Kokopelli's Trail, Uinta Railroad into Utah, etc.* (Page 2-44)

2. PUBLIC INVOLVEMENT

2.1. Scoping

NEPA regulations (40 CFR 1500-1508) require that the BLM and NPS 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 BLM's White River Field Office (WRFO) interdisciplinary team on March 12, 2013 and again on January 20, 2015. A briefing and field visit to the proposed trail was conducted on April 29, 2013 with WRFO staff and DNM staff.

External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register (ePlanning) on January 23, 2015.

2.2. Public Comment

The preliminary EA and both the BLM's and NPS's unsigned Findings of No Significant Impact (FONSIs) were made available for public review and comment from June 1 to June 30, 2015. One comment letter was received from Conservation Colorado recommending that the BLM adopt the no action alternative and then decommission and rehabilitate all trails in the area.

3. PROPOSED ACTION AND ALTERNATIVES

3.1. Proposed Action

3.1.1. Project Components and General Schedule

The BLM proposes to construct an approximately 1.3 mile Bull Canyon Rim Trail sometime from mid-summer to early fall. The project is expected to take no more than two weeks to complete. This trail is proposed to be constructed starting from the Plug Hat Butte Picnic Area and traveling northwest in Bull Canyon WSA (Figure 1). The BLM would partner with DNM to install signing at the trailhead, construct the first 550 feet of trail, and install a pass-through style gate where a fence line runs perpendicular to the proposed trail. DNM will be provided an opportunity to review and provide input on the content and materials for any signage and the ability to review the final product before installation. The trailhead signage is the only proposed signage for this trail in order to not install signs in the WSA. This signage would need to include a map of the trail route and a prominent safety message about the trail's proximity to the cliff drop offs. This sign will specifically provide a strong warning to visitors to be aware of extreme cliff drop offs along the entire trail, ensure that children always remain a safe distance from the cliff edge, and to be aware of immediate surroundings at all times, especially at the viewpoints.

The proposed trail primarily consists of an evident user trail with recent use that parallels 10-20 feet away from the abrupt edge of a bedrock rim cliff drop off to Viewpoint 1 (Figure 1). The trail corridor would be analyzed 50 feet either side of this line to provide on-the-ground flexibility when the trail is being constructed (Figure 2). This allows the trail to be located in the most sustainable areas and to be located around any obstacles as needed. There are numerous views down into the dramatic Bull Canyon along the way to the western most point of the proposed trail. From Viewpoint 1 a large portion of the Bull Canyon WSA can be viewed, along with portions of Dinosaur National Monument, and sweeping panoramic views of a largely natural and primitive landscape all the way into Utah. From Viewpoint1 the proposed trail turns north and then back east following the rim of a peninsula-like outcropping of cliffs exposing views to the north and into Buckwater Canyon. The final portion of the proposed trail travels north to Viewpoint 2 (Figure 1) just above a unique rock tower with views up and down Buckwater Canyon. When returning to the trailhead it is proposed to construct a 400 feet "cut off" trail that reduces the return trip distance, shortens return trip travel time, and eliminates some duplication of travel.

This trail is planned for pedestrian use only. No public motorized or mechanized use is appropriate in the WSA. Hands tools such as rakes, shovels, McLeods, hand saws, and loppers would be used for any construction needed to create this trail. The trail is located on relatively level terrain in an area with pinyon-juniper trees with sandy soils and exposed bedrock. The trail is planned to have approximately two foot wide tread with vegetation removed along the trail corridor up to four to six feet wide and seven to eight feet high. Therefore the maximum amount of ground disturbance to create this trail would be 0.32 acres, most of which is existing user created tread. Also, based on an average five foot wide vegetation-free trail corridor the maximum amount of vegetation removal would be up to 0.79 acres, but due to the sparse vegetation and the flexibility in locating the trail, it is likely that total vegetation removal will be much less than this. There would be no entire trees cut down during construction activities, but some tree branches may be cut flush with the tree's trunk to define the trail corridor. There would be minimal soil disturbance to create the trail tread. Soil would only be disturbed to define the trail tread or in areas that may need to be graded to improve trail drainage. Rock cairns may be placed in two to three open areas of exposed rock and without vegetation to assist visitors in navigating the trail. The intent of the trail construction is to provide a sustainable yet primitive trail to access areas that are currently receiving increased foot travel. In areas where the proposed trail is located within 50 feet of the primary existing trail, the existing trail would likely be used for the proposed trail alignment (Figure 1). In areas where the primary existing trail is located more than 50 from the proposed trail, it is proposed that the existing trail be reclaimed and closed to use. This reclamation would consist of raking any soils back to re-contour the area to its original natural contour. Also, native seed would be applied to any disturbed areas both in reclamation areas and adjacent to the proposed trail. Lastly, large woody debris would be placed in these reclamation areas in a manner to both blend the prior disturbed areas with the surrounding landscape and to prevent any further foot travel in these areas.

The trail is proposed to be built through a combination of work by BLM employees, NPS employees, and volunteers. The BLM would serve as the project lead for the construction of this

trail. Everyone involved in the construction of the trail would follow the guidelines and techniques for sustainable trail construction set forth in: *USDA Forest Service Trail Construction and Maintenance Notebook, 2007 Edition.* 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 goal is to maximize long-term trail sustainability and minimize maintenance. Typical long term maintenance of the proposed trail would include using hand tools to remove any encroaching vegetation in the trail corridor and maintaining the trail tread and any drainage structures as needed as well as monitoring use of the trail and inspecting trail signage. This work is expected to take one to two days each year, but will likely vary from year to year.

3.1.2. Design Features

1. Any branches cut would be discussed with the Project Lead or flagged by the Project Lead before they are cut. Consideration will be given to if the entire branch needs removed or only a portion of it. The decision to cut any branch will be based on whether it is determined to be within the four to six feet wide and eight feet high trail corridor or not, and if those traveling this portion of the trail will come in contact with the branch while naturally walking on the trail. The intent is to retain as much vegetation along the trail corridor as possible in order to retain the naturalness of the area and not attract attention of those traveling along the trail. All cut branches would be cut flush with the tree's trunk or branch with no stabs remaining.

2. Native Seed Mix: # 3

Variety	Common Name	Scientific Name	Rate (lbs PLS/Ac)
Rosanna	Western wheatgrass	*Pascopyrum smithii*	4
Whitmar	Bluebunch wheatgrass	*Pseudoroegneria spicata*	3.5
Rimrock	Indian ricegrass	*Achnatherum hymenoides*	3
	Needle and Thread	*Hesperostipa comata*	2.5
	Sulphur Flower Buckwheat	*Eriogonum umbellatum*	1
	Scarlet Globemallow	*Sphaeralcea coccinea*	0.5

3. Any areas where soil must be disturbed greater than a depth of four inches would be discussed with the Project Lead or marked on the ground by the Project Lead before the ground is disturbed. This decision will be based on limiting the amount of ground disturbance while also creating the most level, sustainable tread and with appropriate drainage.

4. All persons who are associated with implementing the project will be informed that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.

5. 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.

6. 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.

7. 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.

8. 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.

9. During trail construction, no Curl-Leaf Mountain Mahogany will be cut/removed. Trail alignment will be done in a way to avoid Curl-Leaf Mountain Mahogony.

10. BLM will be responsible for surveying the trail twice a year and treating any noxious or invasive weeds by methods outlined in the Integrated Weed Management Plan for WRFO.

3.2. No Action Alternative

The No Action Alternative constitutes denial of the Bull Canyon Rim Trail. Under the No Action Alternative, none of the proposed project components described in the Proposed Action would take place. The user trails would remain and no reclamation of the braided social trails would take place.

3.3. Alternatives Considered but Eliminated from Detailed Analysis

An alternative considered but eliminated from detailed analysis included all of the same components as the Proposed Action with the addition of some fencing along the cliff edge. This was considered as a means to improve visitor safety along the trail. However, it was eliminated from detailed analysis because it was determined that the fencing would impact the wilderness characteristic of naturalness in this area, diminish the views that visitor are seeking down into Bull Canyon, require additional maintenance, and may lead to a false sense of security if people lean on it while taking pictures, etc. In order to reduce extreme cliff drop off as a safety hazard, it was determined that signage at the beginning of the trail would have a prominent safety message about this hazard in the Proposed Action. Also, the Proposed Action includes locating the trail a safe distance away from the cliff edge to reduce the likelihood of someone falling off the cliff edge if they tripped and fell while hiking.

3.4. Environmentally Preferred Alternative

According to the Council on Environmental Quality (CEQ) regulations implementing NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative "that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative."

Overall the Proposed Action is the environmentally preferable alternative because the multiple user-created braided trails would be restored and a formal trail identified to concentrate moderate trail use, thereby reducing/mitigating impacts to soils over a larger area. The Proposed Action also benefits the wilderness naturalness character of the area by restoring human-caused impacts from unmanaged travel and facilitates current and expected increased future use of the area.

The No Action alternative is not the environmentally preferable alternative because, although no additional ground disturbance would occur, it would not address the unmanaged use of the area and is likely to result in the expansion of user-created braided trails. The degradation of existing

user trails and the creation of new ones may cause impacts to vegetation and soils in the area. These unmanaged/unmaintained trails could also impact the wilderness character of the area by degrading the naturalness of the area.

3.5. Consistency with Sections 101 and 102(1) of NEPA

Table 1. Summary of Alternatives and How Each Alternative Meets Project Objectives

Alternative Elements	No Action	Proposed Action
Single pedestrian trail development and reclamation of braided trail system	Existing braided social trails remain. No active reclamation of disturbed areas would occur.	Development of a single, designated trail would focus use that would benefit soils and plants.
New sign at designated trailhead	New trailhead with designated access from parking lot would not be created. Coordinated interpretive or safety messaging would not be created.	An official trailhead with a pass-through style gate would be installed to provide non-motorized trail users safe access to the trail. Coordinated messaging and signing will enhance user safety and enjoyment of the trail.
Trail surveys and noxious weed treatment	No trail condition surveys and invasive weed treatment would occur.	Bi-annual trail surveys and invasive weed treatment would occur.
Project Objectives	**Meets Project Objectives?**	**Meets Project Objectives?**
Accommodates increased recreation while protecting public safety.	No. The existing system of trails travels dangerously close to the cliff edge.	Yes. The proposed single trail is a distance from the rim edge but provides safe access to sweeping views from designated viewpoints.
Enhance the naturalness of the area while restoring sections of braided user-created trails.	No. The moderate level of dispersed use on social trails is creating unmanaged impacts to soils and vegetation.	Yes. Use will be focused on a single designated trail that will allow natural and some active restoration of soils and vegetation.

4. ISSUES

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 would 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 would be addressed in this EA.

- **Vegetation**: Trail construction would require the removal of understory vegetation and potential cutting and removal of big sagebrush.

- **Invasive, Non-Native Species**: Removal of vegetation from the trail would provide a potential gateway for invasive/noxious weed establishment. Increased levels of use by creating a trail also increases the likelihood of noxious/invasive weeds to be transported into the area on user clothes and shoes.

- **Migratory Birds**: Recreational day-use has the potential to disrupt nesting activities of migratory birds and raptors on a localized basis from mid-April through mid-August.

- **Terrestrial Wildlife**: Recreational activity that coincides with big game seasonal use would prompt avoidance and habitat disuse on a localized scale.

- **Visual Resources**: The Proposed Action is located in a Visual Resource Inventory Class I area with a Visual Resource Management Class I Objective. The Proposed Action is located in Bull Canyon Wilderness Study Area (WSA) and is part of the most highly valued visual landscapes in the WRFO.

- **Wilderness**: The Proposed Action is located in Bull Canyon WSA and must meet the BLM Manual 6330 non-impairment standard or an exception to the non-impairment standard.

- **Recreation:** The Proposed Action is likely to result in overall beneficial effects to most of those recreating in the immediate area of the Proposed Action.

- **Access and Transportation**: The Proposed Action would likely result in improving access to public lands in Bull Canyon WSA.

- **Human Health and Safety**: There are extreme cliff drop offs associated with the project area which necessitates consideration of potential impacts to human health and safety.

4.2. Issues Considered but not Analyzed

- **Air Quality**: Trail construction would be of limited duration and predominantly completed by hand work. The non-motorized users are not expected to result in noticeable increases in fugitive dust emissions above current levels.

- **Geology and Minerals**: The Proposed construction of 1.3 miles of trail with a 2 foot tread would have no feasible impacts to the geologic and mineral resources within the project area.

- **Soil Resources**: Soils were evaluated using the Natural Resources Conservation Service (NRCS) soil survey of Rio Blanco County Area, Colorado (Soil Conservation Service - SCS, 1982) and web-based data (NRCS 2012). No sensitive (fragile soil > 35 percent slope, saline, or landslide) soils would be directly impacted by the proposed trail route. Sensitive soils do exist on the downslope side of the trail but impacts should be inhibited due to the steep nature and the unsuitability of this terrain for social trailing by hikers and/or wildlife.

- **Surface and Ground Water Quality**: The topography of the proposed trail route is relatively flat (slope < 5 percent). As such, soil erosion resulting from runoff during storm events would be minimal and subsequent transport and/or deposition of soil sediments in ephemeral drainages in or around the proposed trail route would be limited. Work on the trail would predominantly be completed by hand work further minimizing the potential for the degradation of water quality from water driven non-point source pollutants created by surface erosion processes.

- **Floodplains, Hydrology, and Water Rights**: Based on U.S. Army Corps of Engineers 2007 data, the Proposed Action is not located within a mapped 100 year flood plain. Based on BLM WRFO springs/wells 2015 GIS database, no springs or wells nor associated water rights are located in or around the Proposed Action. With proper trail construction techniques and maintenance, minimal to no changes are expected in hydrologic processes within the Proposed Action or surrounding ephemeral drainages.

- **Cultural Resources**: The proposed Bull Canyon Rim trail was surveyed for cultural resources at the Class III intensity level by the WRFO archaeologist, which included a 15 meter-wide area of potential effect (APE) buffer on either side of the proposed trail. The survey yielded no National Register or otherwise eligible historic properties in the APE that would be impacted by trail construction activities.

- **Paleontological Resources**: The proposed trail system is located in an area generally mapped as the Morrison, Curtis, and Entrada Formations (Tweto 1979) which the BLM WRFO has classified as a PFYC 4/5 formation, meaning it is known to produce scientifically noteworthy fossil resources (c.f., Armstrong and Wolny 1989). Because the trail would be constructed using basic hand tools with minimal ground disturbance and no excavation into the bedrock, the proposed action would not affect any paleontological resources.

- **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.

- **Realty Authorizations:** There are no rights-of-way within the project area.

- **Social and Economic Conditions**: There would not be any substantial changes to local social or economic conditions.

- **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.

- **Prime and Unique Farmlands**: There are no prime and unique farmlands within the project area.

- **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.

- **Fire Management**: The construction of the proposed trail would not impact the Northwest Colorado Fire Management Plan.

- **Special Status Plant Species**: There is no Specials Status Plants or plant habitat located in the vicinity of the Proposed Action.

- **Areas of Critical Environmental Concern:** There is not an ACEC in the vicinity of the Proposed Action.

- **Livestock Grazing:** The trail is located in the Buckwater Pasture of the K-Ranch allotment. This pasture is used from 5/1 to 5/30 with 300 cattle. Trail construction would have no impacts to livestock grazing due to the overall size of the pasture. High numbers of trail users could potentially alter livestock use patterns in the pasture, but anticipated use levels are not generally expected to impact livestock grazing in the Buckwater Pasture.

- **Wild Horses:** This project is not located within the Piceance-East Douglas Herd Management Area.

- **Forestry and Woodland Products:** There are pinyon-juniper woodlands present along the proposed trail; however no trees would be cut or removed for trail construction. Some branches would be trimmed flush to the trunk to aid in trail development, but impacts to forestry and woodland products is expected to be nominal.

- **Wetlands and Riparian Zones**: A short (~0.35 mile) reach of Lower Buckwater Draw (beneath proposed viewpoint 2) supports a very steep (10-12 percent percent overall grade), strongly confined, rock-controlled step-pool channel (Rosgen Type A) that supports a narrow and discontinuous gallery of mature and regenerating Douglas-fir, box elder, and narrowleaf cottonwood. Stable channel and bank positions in the reach's lower half are colonized by stands of intermixed willow and rush, but in general, herbaceous obligate expression (rush-dominated) in the channel is relegated to sporadic points of minor proportion and function. An off-channel spring supports several hundred square

feet of dense *Equisetum*. Although riparian vegetation and the sound of running water directly below the viewpoints may occasionally attract off-trail excursions, the canyon and channel pose substantial impediments to recreational hiking and the canyon is not expected to sustain regular use. Although occasional entry by hikers may dislodge and redistribute unconsolidated sediment and bank material, by its nature, this rock-controlled channel is considered essentially impervious to user-caused damage.

- **Aquatic Wildlife:** The Cliff Creek watershed, which includes K Creek and Buckwater Draw, is not known to support higher order (i.e., vertebrate) aquatic communities. The aquatic habitat nearest the project proposal is the Green River in Utah, which is separated from the river by about 23 valley miles of intermittent and ephemeral channel. The proposed action would not be expected to generate measurable increases in sediment contributed to the Cliff Creek system or have any foreseeable potential to influence downstream channel conditions or function.

- **Special Status Animal Species**: The rock outcrops and intervening canyons supporting riparian and mesic coniferous woodlands associated with WRFO's WSA north of U.S. Highway 40 have marginal potential to support the threatened Mexican spotted owl (MSO). The WRFO is aware of 2 records of MSO in northwest Colorado representing an unpaired male in the canyons along the Yampa River in DNM during the summers of 1996 and 1997.

  The headwater basin of Bull Canyon is composed of barren, steeply sloped, open-canopied pinyon-juniper woodland and exposed rock faces that are directly beneath a National Park Service-maintained promontory and picnic area that receives regular visitor use spring through fall. The short canyon reach associated with Lower Buckwater Draw (below the proposed "viewpoints") supports a short (~ 0.25 mile) discontinuous gallery of mature and regenerating douglas fir, narrow-leaf cottonwood, and box elder bisected by a high-gradient channel that carries low volume base flows. Although massive rock outcrops form the southern rim of this canyon, its opposing south-facing slope is a xeric, largely barren and gravelly slope supporting a stunted, open-canopied stand of pinyon-juniper woodland. This small (~2 acres) isolated thread of relatively dry forest and cliff habitat is not considered appropriate for the sustained support of MSO and does not contribute to a cohesive complex of suitable habitat. This project would not be expected to have any effective influence on MSO or their habitat (i.e., a "no-effect" determination).

- **Lands with Wilderness Characteristics:** There are areas identified adjacent to Bull Canyon WSA having wilderness characteristics. However, there would be no known direct or indirect impacts to these areas and the associated wilderness characteristics as a result of implementing the Proposed Action.

5. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

5.1. General Setting & Access to the Project Area

The Proposed Action is located in the northwest portion of the WRFO along Harpers Corner Road. The overview map in Figure 1 displays the location of the Proposed Action in relation to the WRFO boundaries. The proposed trail starts at Dinosaur National Monument's Plug Hat Butte Picnic Area. This area is approximately 7,000 feet in elevation with relatively level topography where the trail is proposed. This surrounding area has exposed orange and gold bedrock, cliff drop offs over 200 feet and rugged drainages. Vegetation largely consists of pinyon-juniper trees with some sage brush and grasses in the under story.

5.2. Cumulative Impacts Analysis

5.2.1. 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 2.

Table 2. Cumulative Impact Analysis Areas by Resource

Resource	CIAA	Total CIAA Acreage	Temporal Boundary
Recreation, Access and Transportation, Visual Resources	The area within the 50 wide buffer either side of the proposed trail.	16.36 acres	From when the trail construction activities begin to when the trail is no longer used.
Wilderness Study Areas	Bull Canyon WSA	12,297 acres	From when the trail construction activities begin to when the trail is no longer used.
Terrestrial wildlife, migratory birds	Lower elevation woodland benches in GMU 10 below Skull Creek Rim, Moosehead Mountain, and Buckwater Ridge.	37,000 acres	Ongoing influences attributable to Viewpoint 1. Influences associated with Viewpoint 2 would begin with construction of trail extension; persisting until trail abandonment and cessation of public

			use.
Vegetation	Buckwater Pasture of the K Ranch allotment	12,942 acres	From when the trail construction activities begin to when the trail is no longer used.

5.2.2. 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."

Management activities that have occurred in this area in the past include: the development of DNM's Plug Hat Butte Picnic Area and Escalante Overlook Site, grazing of cattle on BLM lands, fencing and stock pond construction, intermittent permitted motorized vehicle use on two-track routes by rangeland permittees to administer their grazing permit, vegetation treatment of pinyon-juniper stands to improvement sage-grouse habitat, recreational hiking in Bull Canyon WSA, and big game hunting, especially trophy bull elk hunting, throughout the landscape. There is a variety of Special Recreation Permits (SRPs) that are authorized to operate in this as well as other areas in the WRFO. There are currently three commercial SRPs issued for big game outfitting and guiding for CPW Game Management Unit 10 area within the WRFO, thirteen SRPs for commercial mountain lion outfitting and guiding issued for the entire WRFO, and one SRP for a recreational skills backpacking and training course in Bull Canyon and Willow Creek WSA.

Present and reasonably foreseeable actions in the project area include: maintenance of Plug Hat Butte Picnic Area and Escalante Overlook, continued grazing of cattle on BLM lands, the continued intermittent use of permitted motorized vehicles by rangeland permittees, recreational hiking, and big game hunting. There is a low potential for additional vegetation treatments in the area but this activity could be foreseeable in several years from now. It is likely that SRPs would continue to be authorized, for similar activities in similar quantities that currently exist, in the future.

While oil and gas leasing and subsequent lease development is prevalent throughout the WRFO, the Bull Canyon WSA and Harpers Corner Road areas are closed to oil and gas leasing. Therefore is it is unlikely that oil and gas related activities would have any direct cumulative impacts to the project area over time.

5.3. Vegetation

5.3.1. Affected Environment

The proposed trail is located with rock outcrops and Sandy Juniper ecological sites. Vegetation in this area is primarily made up of an overstory of two-needle pinyon and Utah Juniper with an

understory of Indian ricegrass, bluebunch wheatgrass, antelope bitterbrush, big sagebrush, bottlebrush squirreltail, and needle and thread. Vegetation composition in the area is in good condition, but there are trace amounts of cheatgrass in areas along the proposed trail.

5.3.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

A maximum of 0.79 acres of vegetation would be cleared to create the hiking trail; however there is an already existing user created trail that would be used in areas so there would likely be much less than 0.79 acres of new disturbance. Removal of vegetation can lead to decreased soil stability and increase erosion/runoff, but due small nature of the project and the relatively flat terrain, soil movement is expected to be limited. There is also an increased risk of invasive/noxious weeds establishing by removing vegetation that competes with invasive species (See Invasive, Non-native species section).

Cumulative Impacts

Past and present impacts to vegetation in the area are primarily limited to livestock grazing and user created trails in the area. Cumulative impacts from the development of the 0.79 acres of trail development in the future are expected to be nominal for vegetation due the small size of the project compared to the size of the analysis area.

5.3.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

The No Action Alternative would result in no new disturbance to vegetation in the project area. The existing user created trails would experience the same impacts as those in the Proposed Action if no reclamation is completed from the No Action Alternative.

Cumulative Impacts

Past and present impacts in the analysis area are the same as the proposed action. Cumulative impacts from the No Action Alternative would result in 0.79 acres of vegetation no being disturbed in the analysis area.

5.4. Invasive, Non-Native Species

5.4.1. Affected Environment

Noxious weeds in the state of are classified into List A, List B, and List C species. List A species are those identified for eradication in the state. List B species are species that would have a noxious weed management plant developed to stop their spread. List C species are those who would have management plans developed to aid in management for jurisdictions that choose to require management of those species.

There is no List A or List B noxious weeds known to occur in the immediate project area. There is known to be diffuse and spotted knapweed north of the project area on Moffat County Road

16, and tamarisk is known to occur in riparian areas near the project area. There are trace amounts of the List C species cheatgrass in the project area, but abundance is very limited.

5.4.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

Removing vegetation for trail construction can provide a pathway for noxious and invasive weed establishment by removing plants that compete with weeds. There is also potential for weed seeds and propagules to be transported onto the site on visitor's clothes and shoes. Introduction of noxious and invasive weeds along the trail could lead to populations of weeds moving into the adjacent plant community degrading the overall rangeland health.

Cumulative Impacts

Past and present activities in the analysis area have only led to trace amounts of cheatgrass being in the project area. There is potential for increased weed establishment through construction and use of the trail by members of the public, but with the outlined mitigation, these impacts are expected to be nominal.

5.4.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

The No Action Alternative impacts are expected to be similar to those of the proposed action. Existing user created trails have already disturbed vegetation and soils in the project area, and users are already using these trails and potentially introducing new weeds seeds and propagules that are attached to clothing.

Cumulative Impacts

Cumulative impacts are the same as those analyzed in the proposed action.

5.5. Migratory Birds

5.5.1. Affected Environment

Pinyon-juniper woodland, rock outcrop, and woody riparian habitats associated with the Proposed Action support a number of U.S. Fish and Wildlife Service (FWS) Birds of Conservation Concern, including juniper titmouse and to a lesser extent, pinyon jay and Cassin's finch. These woodlands were found to be structurally variable, but were predominantly composed of younger age class trees and possessed depauperate understories. Mature trees tended to appear at low density and were generally stunted. In the experience of WRFO, habitat of this nature tend to support lower nest densities (i.e., half or less of well-developed woodlands) and species that are more generalized in habitat preference and/or regionally common (e.g., chipping sparrow, spotted towhee, blue-gray gnatcatcher, house finch). Additional birds identified for conservation priority (Rocky Mountain Bird Observatory) are associated with pinyon-juniper woodlands and interspersed mountain shrub communities and would appear at

relatively low densities (e.g., black-chinned hummingbird, gray flycatcher, black-throated gray warbler, common poorwill, and Virginia's warbler).

5.5.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

Recreational day-use has the potential to disrupt nesting activities of migratory birds and raptors on a localized basis from mid-April through mid-August. Avoidance behaviors that cause inopportune absences of adult birds from incubation, brooding, or feeding activity elevates the risk of mortality or reduced fitness of eggs and nestlings.

Ongoing hiking use of the general trail route to Viewpoint 1 represents an existing form and pattern of disturbance that spans the entire nesting season, although the extent of woodland nesting habitat influenced by this activity is relatively small (15-20 acres). Creating a trail extension to Viewpoint 2 would expand this effect in terms of acreage (e.g., 10 additional acres) and the frequency of trail use. Although Viewpoint 2 overlooks the forested riparian canyon and spring site in Lower Buckwater Draw, the nature of this canyon is not expected to draw increasing numbers of hikers to the canyon floor and its narrow corridor of Douglas-fir, cottonwood, and box elder. This small riparian community lacks a well-developed shrub understory and most tree-nesting species associated with these woodlands would not be particularly susceptible to nest disruption attributable to recreation-related disturbances.

Cumulative Impacts

Increasing disruptive influences on migratory bird nest habitat at the scale of this project (25-30 acres) would be cumulatively minor. Sources of disturbance during the migratory bird nesting season on these lower elevation woodlands are sharply limited owing in large part to its complement of Wilderness Study Areas (about 50 percent) and their lack of developed recreation infrastructure and serviced recreation.

Nesting attempts that may be subject to disruption or habitat whose capacity to support nesting activity is reduced due to avoidance of trail-related activity would be limited to a discountable long and short term scales relative to the availability of full capacity like-habitat in the project vicinity.

5.5.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

Ongoing hiking use of the general trail route to Viewpoint 1 represents an existing form and pattern of disturbance that spans the entire nesting season, although the extent of woodland nesting habitat influenced by this activity is relatively small (15-20 acres).

Cumulative Impacts

Increasing disruptive influences on migratory bird nest habitat at the scale of this project (15-20 acres) would be cumulatively minor. Sources of disturbance during the migratory bird nesting

season on these lower elevation woodlands are sharply limited owing in large part to its complement of Wilderness Study Areas (about 50 percent) and their lack of developed recreation infrastructure and serviced recreation.

5.6. Terrestrial Wildlife

5.6.1. Affected Environment

The project area is encompassed by a contiguous stand of pinyon-juniper of moderate canopy density that parallels steep rims near the headwaters of Lower Buckwater Draw and Bull Canyon. Understory vegetation in these woodlands is typically spare with a considerable bare ground component. Small stands of true mountain mahogany and curl-leaf mahogany are scattered along the canyon rims and slopes. Sandstone rock outcrops are nearly continuous along the canyon rims. The area is classified as general big game (deer and elk) winter range and is generally occupied from late September through early May. A short reach (~0.35 mile) of Lower Buckwater Draw below Viewpoint 2 provides a source of persistent water that receives regular use by big game during the spring and fall months and holds a limited amount of big game use (e.g., deer and elk) through the summer months.

Rock outcrops on the canyon rims provide potential nest substrate for cliff nesting raptors, notably red-tailed hawk, golden eagle, and prairie or peregrine falcons. Woodlands bisected by the various trails, heavier-canopied pinyon-juniper woodland in northerly exposed basins below the rims, and a Douglas-fir/narrowleaf cottonwood/box elder riparian woodland in Lower Buckwater Draw below Viewpoint 2 provide potential nest habitat for a number of woodland-nesting raptors, including red-tailed hawk, great horned owl, Cooper's hawk, sharp-shinned hawk, long-eared owl, and northern pygmy owl.

Surveys conducted by WRFO biologists in March and April 2015 revealed only one potential cliff nest site in the upper portion of the Lower Buckwater canyon. A number of perches indicated by whitewash and a rock cleft with concentrated whitewash stains were indicative of previous nesting by one of the larger falcons (e.g., prairie falcon). This site is located about 0.2 mile (~325 meters) from proposed Viewpoint 2 and along an off-trail route required to access the canyon bottom.

5.6.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

A single well-defined and recently maintained (i.e., trail dragged and tree foliage limbed, spring 2015) trail presently accesses the Viewpoint 1 site. This trail bears evidence of frequent public hiking use and represents an existing form and pattern of wildlife disturbance. Evidence of recent public use of game trails that parallel the canyon rim wanes 150 meters east of this promontory. The extent of big game habitat influenced (e.g., avoidance-related reduction in use) by current use of the hiking trail is largely truncated to the west by cliff bands and involves about 30 total woodland acres. Because seasonal hiking activity has relatively little overlap with big game use, this effect is considered minor.

Big game appear to make consistent use of game trails paralleling the canyon rim between Viewpoints 1 and 2. Trail extension to Viewpoint 2 would effectively extend hiking-related avoidance response along an additional 1,000 feet (~0.2 mile) of canyon rim (e.g., additional 10-20 acres) and, in overlooking the lower third of flows in Lower Buckwater Draw, would be expected to intermittently impede access to that water source and its frequency of use. Further eastward extensions of off-trail hiking use along the canyon rim would be expected. Although big game effects would remain topographically confined and of minor proportion, this project feature would roughly double the current extent of wildlife-related disturbance and may deter consistent use of this water source by big game during the spring through fall months.

Most susceptible to nest failure from recreation-related disturbances are raptors that may nest in pinyon-juniper woodlands adjoining the trails and cliff-nesting species that may nest along the rim. There were no cliff sites that appeared to have supported recent raptor nesting activity within areas susceptible to structured recreation use of the proposed trail system, and there was no indication of recent or past nesting use by woodland associates within 350 feet of the proposed trail routes.

Woodland raptors and most cliff-nesting species (e.g., prairie falcon) that generally establish nests later in the spring (April-May) would be expected to respond to hiking use patterns and distance nest sites from trail-related disturbance commensurate with their individual tolerance. Species that begin nesting in advance of annual trail use, such as golden eagle, may establish nests that are later subject to disruption, however, these sites are typically traditional and there is no current evidence of golden eagle nesting in the project area. Nesting attempts in areas subject to adverse levels of disturbance would be expected to fail, since there would little practical recourse in modifying trail use to accommodate these circumstances.

Cumulative Impacts

Increasing disruptive influences on big game seasonal ranges at the scale of this project (40-50 acres) would be cumulatively minor. Outside of the fall hunting seasons, sources of disturbance on these particular big game ranges are sharply limited owing in large part to its complement of WSAs (about 50 percent) and their lack of developed recreation infrastructure and serviced recreation.

Changes in wildlife distribution and use attributable to recreational hiking are long term, but considered relatively minor in either alternative.

5.6.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

Wildlife avoidance-effects would largely be limited to those associated with ongoing use of the user-maintained trail to the Viewpoint 1 site (see previous section). Absent the proposed trail extension to Viewpoint 2, recreational hiking use along the rim of Lower Buckwater Draw's canyon would probably remain less frequent and disruptive to seasonal big game use, including access to its water. Efforts to develop herbaceous ground cover on short lengths of residual trails

that occur beneath these sand-dominated, droughty woodland understories are unlikely to influence site stability or add substantially to wildlife-related forage or cover resources.

Cumulative Impacts

Current effects of recreational hiking are considered cumulatively minor. Confining use to the current user-made trail would tend to limit the extent of wildlife-related impacts, including recreation-caused avoidance of limited canyon riparian habitats and water sources on the south-facing slopes of Blue Mountain.

5.7. Visual Resources

5.7.1. Affected Environment

Visual resources are the visible physical features of a landscape that convey scenic value. The visual resource inventory (VRI) process described in BLM Manual H-8410-1 establishes VRI class's I-IV from highest value (I) to lowest (IV), which are used to assess visual values for areas of the landscape. The Proposed Action is located in Visual Resource Inventory Class I, which means this area is the highest valued scenic landscape. The area of the landscape was placed into VRI Class I as a result of being rated as having a Scenic Quality scoring of B (A, B, and C type rating), the Sensitivity Level rating as moderate value to the public, and in a Distance Zone of Foreground-Middleground. Scenic values in the BLM White River Resource Area have been classified according to the Visual Resource Management (VRM) system into four Visual Resource Management Classes (I-IV), and corresponding VRM objectives were established in the 1997 White River ROD/RMP. The Proposed Action is located within a VRM Class I area. Wilderness Study Areas are placed into the class by policy in the BLM Manual 6330-Management of BLM Wilderness Study Areas. The Proposed Action is located within the Bull Canyon WSA. The objective of the VRM I classification is to preserve the existing character of the landscape. This does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and must not attract attention.

The Proposed Action is located just off of Harpers Corner Road and starts at DNM's Plug Hat Butte Picnic Area. The area where the trail is proposed to be located is a relatively flat rim with steep cliff drop offs to the west, south, and north along the proposed trail. This area has sparse understory vegetation with exposed bluff colored bedrock and soils and pinyon-juniper trees scattered throughout. The proposed trail does not gain any noticeable elevation. This trail would likely only be viewed from any location by those traveling along the trail. Other management activities in this area include a low density fences and stock pond for livestock grazing, Plug Hat Butte Picnic Area, and the paved Harpers Corner Road and associated signage.

5.7.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

The construction of the proposed trail would require the removal of vegetation approximately four to six feet wide and seven to eight feet high with a linear ground disturbance of two foot wide trail tread. These are long term disturbances that are proposed to be maintained as such

over time to permit pedestrian travel year round. Because the terrain is relatively flat where the trail is proposed and winds through stand of pinyon-juniper, the trail is not likely to be viewed from any location except from those traveling on the trail. The existing cut branches would be flush cut to the tree's trunk so as to not be noticeable by casual observers and the edges of the existing user trail would be blended with the surrounding vegetation to reduce contrast between the trail edge and the vegetation. Some areas of the existing user trails would be reclaimed to blend with the surrounding landscape. The intent of constructing this trail is to reduce the number of user created trails in this area and provide one route to view and experience this landscape. Therefore the Proposed Action should also reduce any noticeable user trails in this area. Overall the Proposed Action meets the VRM Class I objective and does not change the VRI Class I rating.

Cumulative Impacts

Combined with other existing, ongoing, and foreseeable management actions, the Proposed Action is likely to not contribute to any impacts to the visual landscape.

5.7.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

By not constructing the proposed trail there would not be any formally constructed trail in this area, but there is likely to be continued and future foot travel in this area. This may result in additional user trails being created in this area. Over time these braided user-created trails may attract the attention of the casual observer and not blend with the surrounding landscape.

Cumulative Impacts

Combined with other existing, ongoing, and foreseeable management actions, this alternative could result in more braided user-created trails in this area. Over time these braided user-created trails may attract the attention of the casual observer and not blend with the surrounding landscape.

5.8. Wilderness

5.8.1. Affected Environment

The Bull Canyon WSA was initially inventoried, studied, and reported to Congress for wilderness characteristics in 1979 as a result of direction in the Federal Lands Policy and Management Act of 1976 (FLPMA). Based on these efforts, the approximately 13,900 acre area was found to possess wilderness characteristics and designated a WSA in 1981 and with boundaries that were amended in 1991. The 1997 White River ROD/RMP recommends to Congress that the Bull Canyon WSA be designated wilderness. Based on annual monitoring efforts this WSA has not been impaired and is still suitable for wilderness designation.

The area where the Proposed Action is located is the southeast portion of this WSA at the headwaters of Bull Canyon. The proposed 1.3 mile trail starts at the DNM's Plug Hat Butte Picnic Area. From this site, the proposed trail travels a safe distance along the edge of a dramatic

cliff drop off to a peninsula-like mesa with spectacular views down into Bull Canyon in the foreground with views into Utah in the background. The proposed trail then travels to another view point and then loops back to return visitors to the picnic area. The area where the proposed trail is located has sparse understory vegetation and scattered pinyon-juniper trees and is nearly level throughout. All signage and gates are proposed to be installed outside of the WSA boundaries. Over the past several years hiking levels have increased in this area. There are currently several braided parallel user-created trails that are evident in the area of the proposed trail as a result of visitors seeking the experience of traveling through this area to experience this setting, the scenery, and expansive views. Some user trails are faint and others are readily noticeable. Some of the user trails are located on the edge of a dangerous cliff drop off.

Direction for managing WSAs comes from BLM Manual 6330-Management of BLM Wilderness Study Areas. This manual states that the BLM would review all proposals for uses and/or facilities within WSAs to ascertain whether the proposal would impair the suitability of the WSA for preservation as wilderness. All proposals must meet the "non-impairment standard" (i.e. must be both temporary and not create surface disturbance) or must meet defined exceptions to the non-impairment standards. One exception to the non-impairment standard is Public Safety (2.b.). This section states "In addition to correcting the public safety issue, the impacts of the hazard should be mitigated and the area restored, to the extent possible, as part of the authorized action." Another exception to the non-impairment standard is restoration of impacts from violations and emergencies (2.c.). This section states that "Human caused impacts from violations and emergencies would be restored as soon as possible after they occur." Another exception to the non-impairment standard is protect or enhance wilderness characteristics or values (2.f.). This section states that "Actions that clearly benefit a WSA by protecting or enhancing these characteristics are allowable even if they are impairing, though they must still be carried out in the manner that is least disturbing to the site."

The Recreation section of Manual 6330 has direction for trails in WSAs (6. Recreation c. i. ii.). This section states that "As surface disturbing developments, no new trails or related structures or installations would be allowed, unless they meet an exception to the non-impairment standard. Where trails are allowed under an exception, no motorized or mechanical transport would be allowed on such trails." If found to meet the non-impairment standard or one of the exceptions, new trail sections, trail structures, or installations may be provided under the following conditions:

> i. Hiking or horseback riding use levels have increased, or are expected to increase, to the extent that resource impacts are or are likely to become present (e.g. braided or duplicate trails, impacts to cultural sites or other sensitive resources, or accelerated soil erosion). In these cases, to minimize recreational use impacts to wilderness characteristics a single, properly located, sustainable trail may be provided for under the "restoration of impacts from violations emergencies" or "protect or enhance wilderness characteristics or values" exceptions to the non-impairment criteria (see sections 1.6.C.2.c and 1.6.C.2.f.)

ii. Hiking or horseback riding use levels have increased so that a defined route is present, and the route leads visitors to a hazard (e.g. along a precipitous ledge or to an abandoned mine). In these cases, a trail may be relocated to a more appropriate location."

5.8.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

The Proposed Action is designed to restore human-caused impacts from unmanaged travel in this area and facilitate current and expected increased future use of this area. By creating one formal trail that provides the experience being sought in this area, the Proposed Action is likely to reduce the amount of off-trail travel in this area and facilitate the current and expected increased future use of this area without additional unmanaged impacts to resources. The Proposed Action also would restore all user created trails that are not planned to be incorporated into the one formal trail. While most visitors in this area unknowingly contributed to the creation of these unauthorized user-created trails just by traveling on them, these user-trails are causing impacts from unmanaged foot travel in this area. Therefore, the Proposed Action has been found to meet an exception to the non-impairment standard: restoration of impacts from violations and emergencies (2.c.)

The Proposed Action is also a result of addressing public safety by planning one sustainable trail a safe distance from the cliff edge drop off. The proposed trail is planned to provide those traveling the trail the ability to see the expansive views down into Bull Canyon and into Utah while affording an improved degree of safety by locating the trail approximately ten to twenty feet from the cliff edge drop off. Current existing impacts from travel along the edge of the cliff drop are planned to be restored as part of the Proposed Action. Therefore, the Proposed Action has been found to meet another exception to the non-impairment standard for public Safety (2.b.)

The Proposed Action is designed to restore user-created impacts while accommodating current and potential future increases in use of this area. The restoration of many user trails and the creation of one formal trail is likely to protect the wilderness characteristic of naturalness in this area. This would depend on how severe future impacts would be in this area and the increased future level of use in this area, which is difficult to predict. Currently the area is perceived as natural and non-impaired. However, if the density of user trails increases in the future to the point where this area no longer appears natural, then the Proposed Action would have served to protect wilderness characteristics.

The Proposed Action also meets direction for trails in WSAs in the Recreation section of Manual 6330. Hiking use levels in this area have increased and are expected to increase, to the extent that resource impacts have become present with evident braided or duplicate user-created trails. In order to minimize recreational use impacts to wilderness characteristics a single, properly located, sustainable trail is proposed to be provided for under the "restoration of impacts from violations emergencies" or "protect or enhance wilderness characteristics or values" exceptions to the non-impairment criteria. Hiking use levels have increased so that a defined route is present and the route leads visitors to a hazard along a precipitous cliff ledge. Therefore, a trail is proposed to be relocated to a more appropriate location.

Overall, the proposed action has been found to meet exceptions to the non-impairment standard and direction for trails in WSAs according to BLM Manual 6330. Indirectly the Proposed Action is likely to facilitate increased use and enjoyment of these public lands, which could lead to improved public appreciation and understanding of WSAs. This could also indirectly lead to improved public stewardship of these unique public lands.

Cumulative Impacts

Combined with the existing and expected increased future use of this area, the Proposed Action is likely to result in decreased impacts to resources in this area by concentrating foot travel on one formal trail and restoring all other evident user-created trails in this area.

5.8.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

By not constructing any hiking trail in this area, it is likely that continued unmanaged use of this area would result in the existing braided user trails persisting and likely expanding over the next several years. This means that some user trails may exist dangerously close to cliff drops off and may not be sustainable over time. This degradation of user trails and creation of new user trails may cause impacts to vegetation and soils in this area. This may eventually impact the naturalness of this area and would not improve public safety in this area.

Cumulative Impacts

Combined with the existing foot travel in this area and not constructing any designated trail in this area, it is likely that continued unmanaged use of this area would result in the existing braided user trails persisting and expanding over the next several years.

5.9. Recreation

5.9.1. Affected Environment

Recreational activities in the area where the Proposed Action is located primarily consist of day users of the adjacent Plug Hat Butte Picnic Area. This use includes a moderate amount of spring through fall use of the picnic tables, viewing and photographing the viewpoint scenery, and hiking. There is a low amount of dispersed big game hunting in this area in the fall. This area comprises a minute portion of the approximately 524,000 acre Colorado Parks and Wildlife (CPW) Game Management Unit (GMU) 10. This unit is managed by CPW as a trophy elk unit. There are currently three commercial Special Recreation Permits authorized to operate in all of GMU 10 for outfitting and guiding clients for big game hunting.

5.9.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

Because there are existing braided user trails where the Proposed Action is located, it is evident that users of the Plug Hat Butte Picnic Area are seeking the recreational experience of traveling along the cliff rim and viewing the scenery in Bull Canyon WSA. The Proposed Action better

facilitates this use of the area and provides visitors a safer and more sustainable method for traveling in the area than what exists. By establishing formal trail signage for this trail, visitors can also gain a clear expectation of the distance needed to travel to reach their viewpoint destinations and know where the trail would take them. This ensures that visitors are better prepared for the trail and understand that the trail would meet their desired experience.

There is potential for big game hunters to have their big game experience impacted during the construction of the proposed trail. The trail is proposed to be constructed in late summer or early fall. There is potential that trail construction would take place during the archery season and/or muzzle loading seasons. However, this activity is likely to only take a few days to complete and there is no motorized equipment proposed to be used during construction. Also, this area comprises a very minute portion of GMU 10 and there is extensive opportunity to gain a primitive hunting experience on the vast surrounding public lands both inside and outside of a WSA. Overall, the Proposed Action is expected to provide long term desired positive benefits of safely traveling along a cliff rim with extensive views of the surrounding wild landscape.

Cumulative Impacts

Combined with the existing recreational use of this area, the Proposed Action should result in another visitor amenity available to those from the Plug Hat Butte Picnic Area. This should serve to enhance the recreational opportunities available from this location. The proposed trail may also result in a variety indirect benefits for trail users such a gaining a better appreciation of the landscape and nature, understanding what a WSA is, sharing a unique experience with others, and improved physical health.

5.9.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

By not constructing the proposed trail, it is likely that visitors to the Plug Hat Butte Picnic Area would continue to seek the experience of traveling along this cliff rim. This likely to result in continued use of the un-managed user trails and potentially the creation of more user-trails in this area. Therefore visitor expectations would still not be clear and a safe, sustainable trail would not be available for use. Overall, the variety of benefits described in the Proposed Action alternative would not be able to be fully realized under this alternative.

Cumulative Impacts

Combined with other existing, ongoing, and foreseeable management actions, this alternative could result in more braided user-created trails in this area. Overall, the variety of benefits described in the Proposed Action alternative would not be able to be fully realized under this alternative.

5.10. Access and Transportation

5.10.1. Affected Environment

To reach the Proposed Action from Town of Dinosaur, CO travel approximately two miles east on US Highway 40 and then five miles north on Harpers Corner Road. The Proposed Action starts at the Plug Hat Butte Picnic Area. The Proposed Action is located within the 13,900 acre Bull Canyon WSA. All WSAs are closed to motorized vehicle travel. There is a low density of primitive two track routes within the WSA that are only open to permitted uses such as administering livestock grazing operations and range improvements in this area. There are no other travel routes within the WSA.

5.10.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

The Proposed Action would result in the creation of a new travel route (a non-motorized hiking trail) and provide improved access to BLM public lands in the Bull Canyon WSA. This new trail would provide improved and safer access than what currently exists while reducing the number of user created trails in this area. The Proposed Action is designed to create one designated hiking trail and reclaim area user created disturbances in this area. This trail would also facilitate addition use of this area for those that would otherwise not travel in this area. This is likely to result in increased use of this area as a result of the Proposed Action. This trail would be maintained by the BLM to provide long term hiking access to this area.

Cumulative Impacts

Combined with the existing foot travel in the area of the Proposed Action is likely to facilitate an increase in foot travel in this area. The Proposed Action is also designed to reduce the number of existing user created trails in this area and result in one safe and sustainable hiking trail in this area. The Proposed Action is also likely to result in an incremental increase in use of the Plug Hat Picnic Area and combined with other existing recreational amenities at this site is likely to result in an improved recreational experience for those at this site.

5.10.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

By not constructing any hiking trail in this area, it is likely that continued unmanaged use of this area would result in the existing braided user trails persisting and expanding over the next several years. This means that some user trails may exist dangerously close to cliff drops off and may not be sustainable over time. This degradation of user trails and creation of new user trails may cause impacts to vegetation and soils in this area.

Cumulative Impacts

Combined with the existing foot travel in this area and not constructing any designated trail in this area, it is likely that continued unmanaged use of this area would result in the existing braided user trails persisting and expanding over the next several years.

5.11. Human Health and Safety

5.11.1. Affected Environment

The Proposed Action is located adjacent to the DNM Plug Hat Butte Picnic Area. This developed recreation site includes an overlook of Bull Canyon with interpretive panels and fencing along a steep cliff drop off to provide for visitor safety. The proposed trail travels north from this overlook and largely follows the edge of a steep extreme cliff drop off (Figures 3 and 6). There are currently several braided parallel user-created trails that travel parallel to the cliff edge and vary from one to twenty feet from the cliff edge. The Proposed Action includes locating the trail 10-20 feet from the edge of the cliff drop off and installing a sign at the beginning of the trail with a safety message about the trails proximity to the edge of the cliff drop off.

5.11.2. Environmental Consequences – Proposed Action

Direct and Indirect Impacts

The Proposed Action is likely to result in an increase of visitor use of and travel in the area where the trail is proposed to be located. There is a potential human health and safety issue of visitors traveling in an area with extreme cliff drop offs and potentially falling off the edge. In order to address this safety issue and retain the wilderness characteristics found in this area, various design features have been incorporated into the Proposed Action. One design feature is to establish one sustainable formal trail that is located 10-20 feet from the cliff edge. This is intended to provide trail users the desired experience of obtaining views into Bull Canyon and traveling near the cliff edge while reducing the likelihood that an accidental trip or fall while traveling on the trail would result in someone falling off the cliff. A sign at the beginning of the trail would provide a strong warning to visitors to be aware of extreme cliff drop offs along the entire trail, ensure that children always remain a safe distance from the cliff edge, and to be aware of immediate surroundings at all times, especially at the viewpoints. Also, the trail is proposed to be located in such a manner that the steep cliff drop offs are readily visible to those traveling on this trail at the beginning of the trail. This should raise the awareness of those traveling on the trail to seriousness of traveling in this type of terrain. These combined design features improve the safety for those traveling on this trail, but are not intended to completely make the trail experience safe. Changing natural conditions and variable human behavior and decision making would always factor into the safety of those traveling in this area.

Cumulative Impacts

Combined with the existing condition of user-created trails being located dangerously close to the edge of the cliff drops, the Proposed Action is designed to facilitate a safer experience for those seeking the experience of traveling in this area.

5.11.3. Environmental Consequences – No Action Alternative

Direct and Indirect Impacts

By not constructing a formal, sustainable trail as planned and designed in the Proposed Action, visitors to this area would be left to select their own travel route along the cliff edge. As

evidenced by the user-created trails located very close to the cliff edge drop offs, some visitors are choosing to travel dangerously close to the edge of the cliff. By not constructing the trail planned and designed under proposed Action, it is likely that some visitors would continue to choose to hike dangerously close to the cliff edge drop offs. Also, this alternative results in unmanaged concentrated hiking use in this area. Multiple-braided user trails can lead to visitors becoming disoriented and having difficulties in navigating to their destination and back to the trail head without a formal trail. Therefore this alternative would not improve visitor health and safety in this area.

Cumulative Impacts

By not constructing the trail planned and designed under proposed Action, this area would likely continue to be used by hikers in an unmanaged manner. This is likely to result in not improving visitor safety and may lead visitors being disoriented and having a difficult time navigating without a trail.

5.12. 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 would note whether or not the project area currently meets the standards and whether or not implementation of the Proposed Action would impair the standards.

5.12.1. Standard 1 – Upland Soils

Localized reductions in soil surface infiltration characteristics would result from trail user compaction and subsequent increased overland flow. The impacts to surface infiltration would 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.

5.12.2. Standard 2 – Riparian Systems

The small woody riparian system in the Lower Buckwater Draw canyon is in proper functioning condition and is relatively impervious to user-related impacts. The proposed action would have no influence on continued meeting of this system’s land health status.

5.12.3. Standard 3 – Plant and Animal Communities

On a landscape scale, the project area fully meets the land health standard and supports a complete complement of woodland-associated species at appropriate abundance. Encouraging increased recreation use of the area would compromise the utility of adjacent habitat for seasonal use by big game and migratory birds, but not at a scale that would contradict continued meeting of the standard at the landscape level.

5.12.4. Standard 4 – Special Status Species

The proposed action would have no influence on special status species or their habitat and would, therefore, no bearing on the land health standard for special status species.

5.12.5. 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	Agency	Area of Responsibility	Date Signed
Keith Sauter	Hydrologist	BLM	Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Prime and Unique Farmlands	4/7/2015
Ed Hollowed	Wildlife Biologist	BLM	Wetlands and Riparian Zones, Special Status Animal Species, Migratory Birds, and Aquatic and Terrestrial Wildlife	4/2/2015
Matt Dupire	Rangeland Management Specialist	BLM	Vegetation, Invasive, Non-Native Species, Livestock Grazing, Soil Resources, Hazardous or Solid Wastes, Social and Economic Conditions,	4/21/2015
Matt Dupire	Ecologist	BLM	Special Status Plant Species, Forestry and Woodland Products, Areas of Critical Environmental Concern	4/21/2015
Brian Yaquinto	Archaeologist	BLM	Cultural Resources, Paleontological Resources, Native American Religious Concerns	4/2/2015
Aaron Grimes	Outdoor Recreation Planner (Overall Project Lead)	BLM	Project Lead, Visual Resources, Lands with Wilderness Characteristics, Recreation, Access and Transportation, Wilderness, Scenic Byways	4/6/2015
Paul Daggett	Mining Engineer	BLM	Air Quality; Geology and	4/15/2015

Name	Title	Agency	Area of Responsibility	Date Signed
			Minerals	
Melissa J. Kindall	Range Technician	BLM	Wild Horse Management	4/17/2015
Keesha Cary	Realty Specialist	BLM	Realty Authorizations	4/10/2015
Kyle Frary	Fire Management Specialist	BLM	Fire Management	4/14/2015
Heather Sauls	Planning & Environmental Coordinator	BLM	NEPA Compliance	4/28/2015
Emily Spencer	Natural Resource Specialist (NPS Project Lead)	NPS	Review EA	5/20/2015
Tamara Naumann	Botanist	NPS	Review EA	5/20/2015
Dan Johnson	Chief of Interpretation	NPS	Review EA	5/20/2015
Michael Hodgkinson	Facilities Manager	NPS	Review EA	5/20/2015
Lee Buschkowsky	Chief Ranger	NPS	Review EA	5/20/2015
Anita Dore	Administrative Officer	NPS	Review EA	5/20/2015

6.2. Tribes, Individuals, Organizations, or Agencies Consulted

Consultation with the Colorado State Historic Preservation Officer (SHPO) was completed for the Proposed Undertaking on January 13, 2015. Letters to initiate tribal consultation were sent to the Eastern Shoshone Tribe, Northern Ute Tribe, Southern Ute Tribe, and Ute Mountain Ute Tribe on November 25, 2015.

Dinosaur National Monument (DNM) staff have been contacted several times throughout the planning and designing of this project. Emily Spencer, Natural Resource Specialist, has served as the primary contact for this project.

Soren Jesperson with The Wilderness Society discussed this project with Aaron Grimes, Project Lead, and had no immediate concerns with the project as planned, but is interested in the implementation of this project.

6.3. References

Armstrong, Harley J., and David G. Wolny, 1989 Paleontological Resources of Northwest Colorado: A Regional Analysis. Museum of Western Colorado. Grand Junction, Colorado.

Bureau of land Management (BLM). 2012. BLM Manual 6330-Management of Wilderness Study Areas. Rel. 6-134. July 13, 2012. Pages 1-10, 1-11, 1-12, 1-13, 1-29.

Tweto, Ogden, 1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia

APPENDIX A. FIGURES

Figure 1-Map of the Bull Canyon Rim Trail

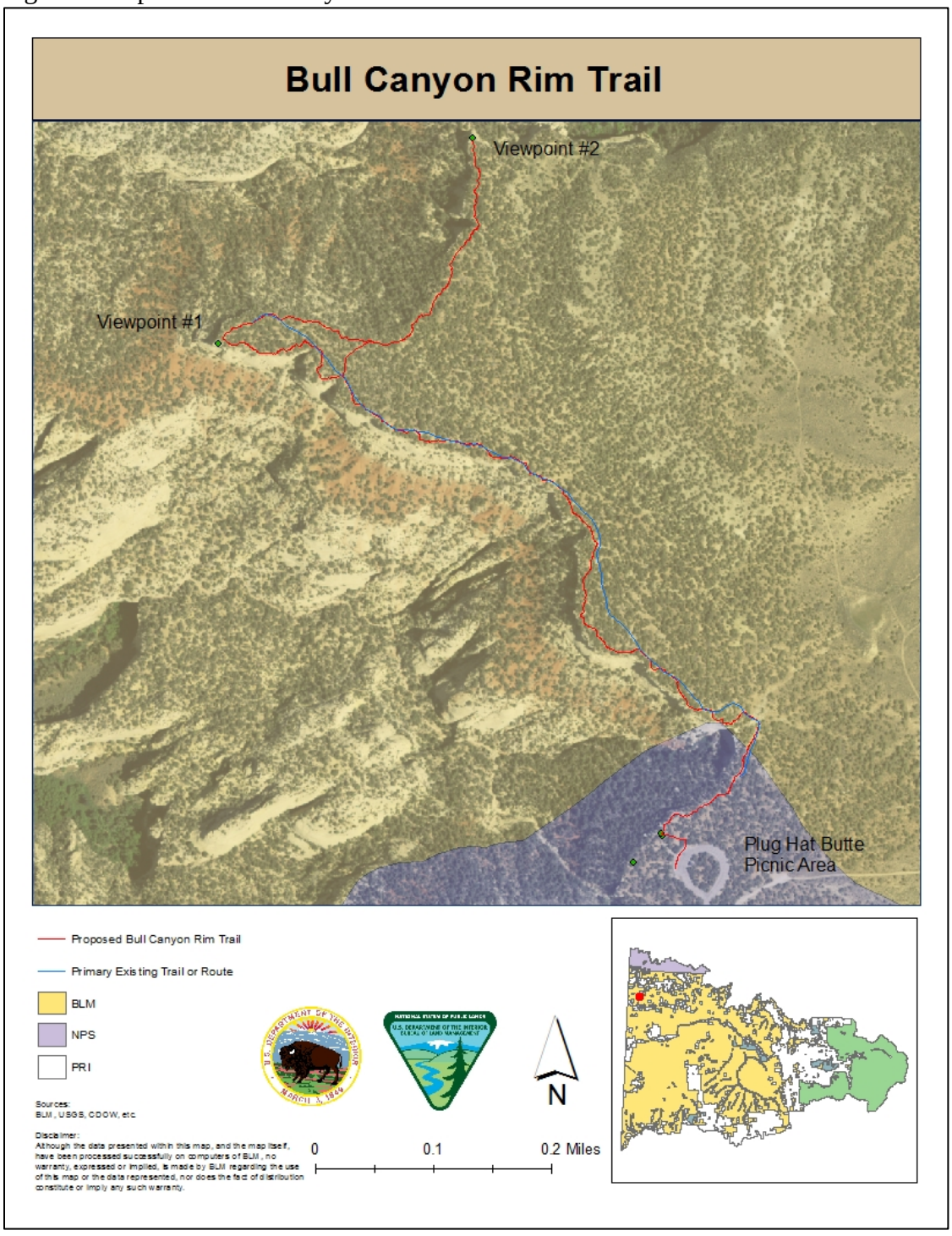

Figure 2-Map of Bull Canyon Rim Trail with 50 foot buffer

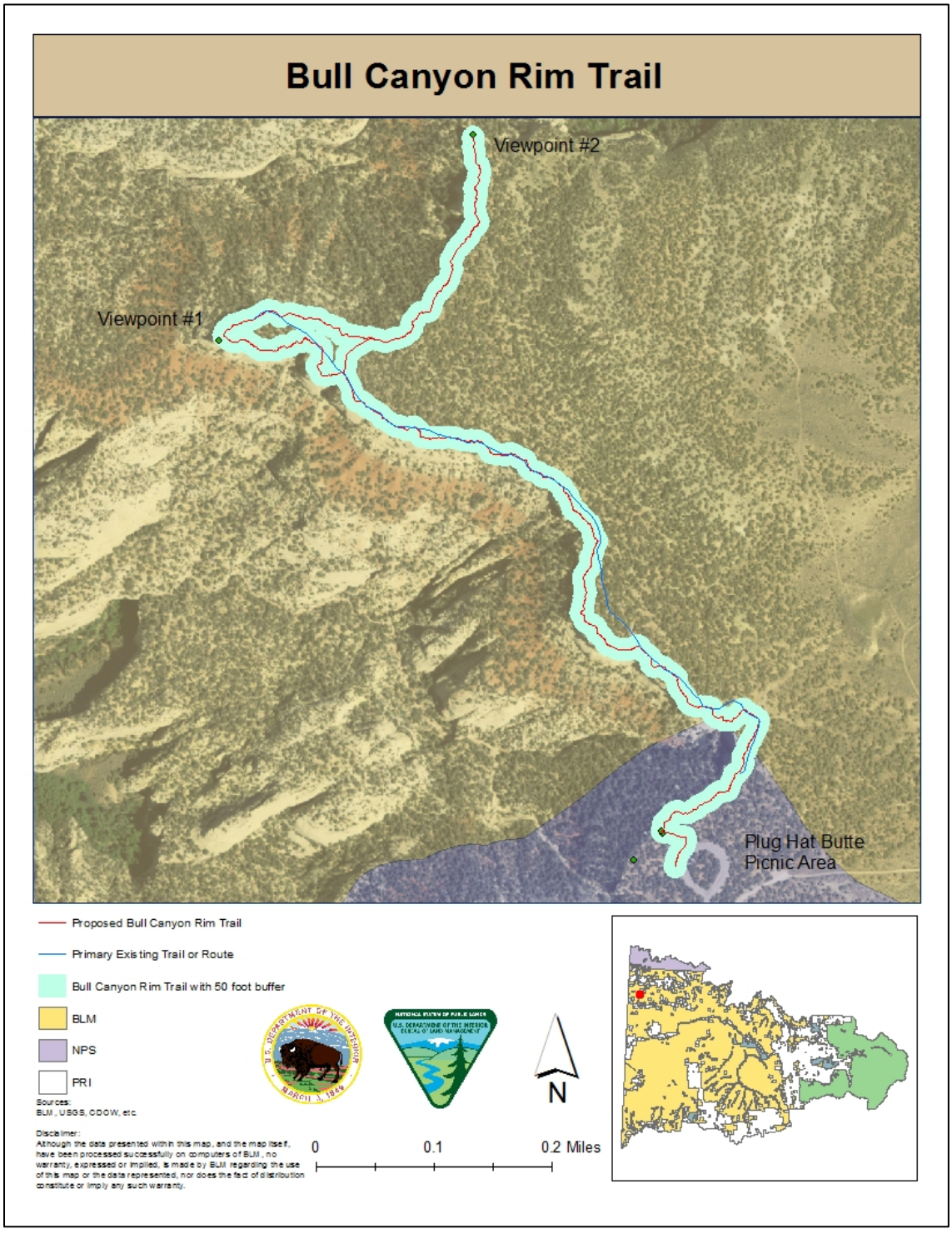

Figure 3-Google Earth image of Proposed Bull Canyon Rim Trail

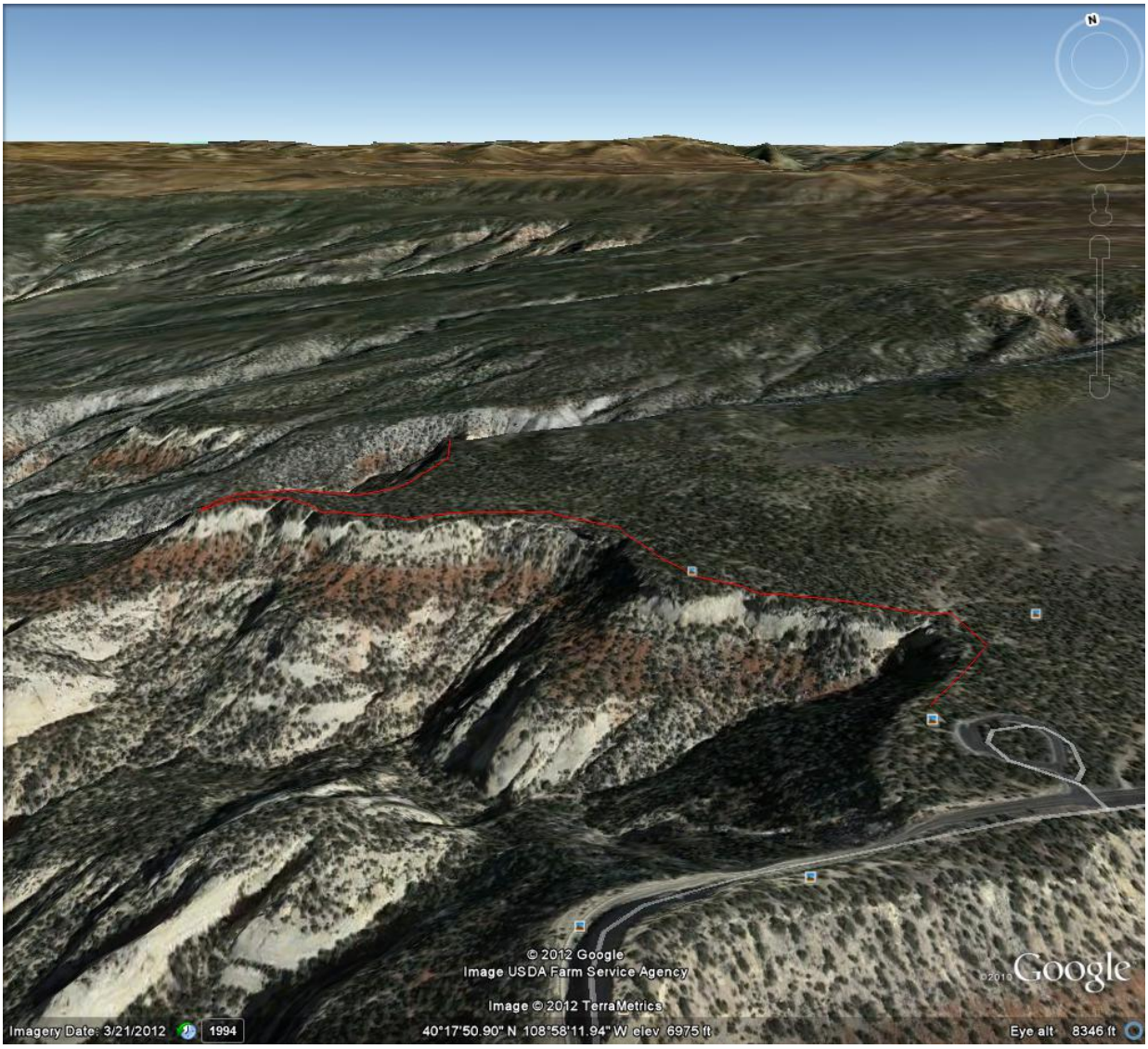

Figure 4-Viewpoint 1

Figure 5- Viewpoint 2 area

Figure 6-view from beginning of proposed trail