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Final Environmental Impact Statement

Indian Springs Road Realignment

Heber-Kamas Ranger District, Uinta-Wasatch-Cache National Forest
Wasatch County, Utah

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Final Environmental Impact Statement
Wasatch County, Utah

Lead Agency:	**USDA Forest Service**
Cooperating Agencies:	**Wasatch County**
Responsible Official:	**Julie K. King, District Ranger** **2460 South Highway 40** **Heber City, UT 84032**
For Information Contact:	**http://www.fs.fed.us/r4/uinta/projects/nepa**
	Jim Percy **2460 South Highway 40** **Heber City, UT 84032** **(435) 654-0470**

Abstract: The Final Environmental Impact Statement (FEIS) has been prepared pursuant to the National Environmental Policy Act of 1969, as amended (NEPA). It provides a detailed analysis of the environmental impacts of implementing alternatives.

The Heber-Kamas District of the Uinta-Wasatch-Cache National Forest proposes to realign the Indian Springs Road. The purpose and need of this action is to reduce adverse impacts to watershed and fisheries impacted by the existing road, provide safer driving conditions and maintain access to Strawberry Ridge from the south.

Based on comments, issues and concerns received during scoping, the Forest interdisciplinary team (IDT) identified the following issues: soils, watershed resources, aquatic species, recreation, health, safety and transportation, inventoried roadless area, livestock management, terrestrial wildlife, vegetation, visual quality, and hertitage. The Forest Service developed four alternatives for detailed analysis, including the No Action, Proposed Action, and two alternatives that would leave a portion of the existing alignment in place.

Under the Proposed Action, the Indian Springs Road would be reconstructed on a new alignment and the existing road, in its current location, would be obliterated and restored.

This report summarizes the physical, biological, social and economical environments of the project area and the effects of implementing each alternative on that environment. It presents the scientific and analytical basis for the comparison of alternatives. Also included are mitigation measures to avoid, reduce or offset impacts.

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SUMMARY

The Heber-Kamas Ranger District of the Uinta-Wasatch-Cache National Forest proposes to realign the Indian Springs Road, located southwest of Strawberry Reservoir. This action is needed to reduce adverse impacts to watershed and fisheries impacted by the existing road, provide safer driving conditions and maintain access to Strawberry Ridge from the south. This action is needed, because the existing road is a single lane, native surface primarily occupying the valley/drainage bottom and has been identified as a chronic source of sediment to Indian Creek. Resource impacts created by the existing road cannot be corrected by maintenance. During inclement (wet) weather conditions the road surface is readily saturated and becomes slick making travel difficult and at times impassable. This local Forest road has been in existence for many years and provides motorized (4WD and ATV) access to Strawberry Ridge from the south. It provides historic access, recreation opportunities, and serves as administrative access for the management of natural resource programs.

These issues led the agency to develop alternatives including:

No Action- The existing native surface, single lane road remains at its present location, which is mostly within a riparian zone.

Proposed Action – Realignment and Road Closure: Reconstruct a single lane road (1.9 miles) with turnouts along a new alignment. Existing road alignment (1.6 miles) would be converted to a single-track motorized trail (0.2 miles) and obliterated and restored to natural condition (1.4 miles).

Alternative A - Realignment and Partial Closure - Reconstruct a single lane road (1.9 miles) with turnouts along a new alignment. Existing road alignment (1.6 miles) would be converted to a single track motorcycle trail (0.2 miles), obliterated and restored to natural condition (0.9 miles), and 0.5 miles of a dead end road from Indian Creek Road would remain.

Alternative B - Realignment and ATV Route – Reconstruct a single lane road (1.9 miles) with turnouts along a new alignment. Existing road alignment (1.6 miles) would be converted to an ATV trail (1.1 miles) and 0.5 miles of a dead end road from Indian Creek Road would remain.

The Forest Service identifies the Proposed Action as the Preferred Alternative because it best meets the purpose and need for the project.

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CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

Introduction

The National Forest System Road Management Policy is to provide a road system that is safe, responsive to public needs, environmentally sound, affordable and efficient to manage. The Uinta National Forest (UNF) proposes to realign the Indian Springs Road (National Forest System Road #70501), to comply with agency policy. This road is an existing local route located on the Heber-Kamas Ranger District approximately 35 miles south of Heber City, Utah, and 25 miles east of Spanish Fork, Utah.

The Forest Service has prepared this Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Impact Statement discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four chapters:

- *Chapter 1. Purpose and Need for Action:* The chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Chapter 2. Alternatives, including the Proposed Action:* This chapter provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This section also provides a summary table of the environmental consequences associated with each alternative and a list of mitigation measures.
- *Chapter 3. Affected Environment and Environmental Consequences*: This chapter describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area.

- *Chapter 4. Consultation and Coordination:* This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement.
- *Index:* The index provides page numbers by document topic.
- *References:* This section provides a detailed list of source documentation as noted and referred to throughout this analysis.
- *Response to Comments:* This section provides direct responses to solicited public comments received during review period of the draft environmental impact statement.

Purpose and Need for Action

The purpose of this action is to reduce adverse impacts to watershed and fisheries impacted by the existing road, provide safer driving conditions and maintain access to Strawberry Ridge from the south. This action is needed, because the existing road is a single lane, native surface road primarily occupying valley/drainage bottom or adjacent to Indian Creek. The road has been identified as a chronic source of sediment to Indian Creek (USDA 2004). Indian Creek is a major contributor and spawning stream for fish from the Strawberry Reservoir. The reservoir is one of Utah's premiere freshwater fisheries. Resource impacts created by the existing road cannot be corrected by maintenance. During inclement (wet) weather conditions the road surface is readily saturated and becomes slick making travel difficult and at times impassable. This local Forest road has been in existence for many years and provides motorized (4WD and ATV) access to Strawberry Ridge from the south. It provides historic access and recreation opportunities for viewing wildlife and scenery, driving for pleasure, dispersed camping, horseback riders, mountain bikes, hikers, snowmobiles, and all-terrain vehicle (ATV) users. Further, it serves as administrative access for the management of fire, range, and other natural resource programs.

This action responds to the goals and objectives outlined in the *Uinta National Forest Land and Resource Management Plan* (Forest Plan), and helps move the project area towards desired conditions described in that plan.

Management Guidance and Direction

This analysis incorporates management direction as provided in the *Uinta National Forest Land and Resource Management Plan*; *Strawberry Watershed Restoration Plan*; and the *Uinta National Forest Roads Analysis*. These documents establish goals and objectives, standards and guidelines, and direction for the management of National Forest System lands administered by the Uinta National Forest.

Land and Resource Management Plan for the Uinta National Forest

This analysis is tiered to the Uinta National Forest Land and Resource Management Plan (USDA 2003a; USDA 2003b). The Revised Forest Plan guides natural resource management activities on lands administered by the Uinta National Forest and describes management goals and objectives, resource protection methods, and desired resource conditions. The Forest Plan divides National Forest System lands into management areas based on resource needs and opportunities. The Indian Springs Road Relocation Project

lies within the Strawberry Management Area and is within Management Prescription 4.4 Dispersed Recreation and 5.2 Forested Ecosystems.

Roadless Area Conservation Rule

The 2001 Rule establishes prohibitions to road construction/reconstruction and timber harvest in areas identified in the 2000 Roadless Area Conservation Final Environmental Impact Statement. However, exceptions to these prohibitions (such as road construction/ reconstruction) are allowed in certain situations, including "where needed to prevent irreparable resource damage that arises from design, location, use, or deterioration of a classified road that cannot be mitigated by road maintenance…only if the road is deemed essential for public or private access, natural resource management, or public health and safety" (§ 294.12(4) Prohibition on road construction and road reconstruction in inventoried roadless areas). The project takes place within and adjacent to the Strawberry Ridge Inventoried Roadless Area (SRIRA).

Roads Analysis for the Uinta National Forest

The Uinta National Forest Road System is essential in providing access to and through National Forest System Lands. The roads analysis provides direction and consistency in the evaluation of the road system. The Indian Springs road was evaluated and the analysis identified a risk to watershed health, riparian function and aquatic species in terms of loss of recruitment, sediment delivery, and loss of connectivity and habitat for aquatic species. In addition, benefits of the road included primary route designation for public and administrative access. The Indian Springs road combined cost/risk and benefit rating meets the criteria to retain the road. Retain, as defined in this analysis, means the "road is essential for Forest access and management" (USDA 2002).

Strawberry Watershed Restoration Plan

The Strawberry Watershed Restoration Plan addressed the need for restoration of the Strawberry Valley to a properly functioning condition that emphasized ecological integrity, resilience, and sustainable land management uses (USDA 2004).

Proposed Action

Under the Proposed Action, the Forest Service will reconstruct the Indian Springs Road on a new alignment. The majority of the existing road alignment would be obliterated and restored to natural condition. Approximately 0.2 miles of a single-track motorcycle trail from Strawberry Ridge would remain. (See Proposed Action map, p. 2-7).

The new road will be 1.9 miles long with an alignment placed in an upland location just to the east of Strawberry Ridge. It will be a single lane (14 feet wide running surface) with 10 foot wide turnouts. The road grades would be significantly reduced. The entire road will be surfaced with crushed aggregate base. The average imprint on the ground will be approximately 65 feet wide (15.0 acres).

The majority of the existing Indian Spring Road would be obliterated and restored to natural condition. The restoration of 1.4 miles (7.5 acres) will include road prism obliteration, shaping and contouring to match adjacent slopes, seeding with native

species, treatment of noxious weeds, and protected from access until new vegetation is established.

Access to the Great Western Trail (GWT), a single-track (18”-24” wide) trail open to motorcycles, will be maintained along a 0.2 mile segment from Strawberry Ridge within the existing road alignment. The conversion of 0.2 miles will include reducing template width from 10-14 feet to 2 feet and constructing adequate drainage. Area outside of reconstructed trail will be fully obliterated including shaping and contouring to match adjacent slopes, seeding with native species, and treatment of noxious weeds (1.1 acres).

Under this alternative the 1.9 mile new road alignment would be open to ATV travel. The obliterated Indian Springs road (1.6 miles) and a portion of the Indian Creek road (1.8 miles) would no longer be designated open for ATV travel. The portion of the Indian Creek road is from the old intersection of the Indian Spring road (FSR#70501) in the NE1/4 NW1/4 of Section 10, T5S, R12W, USM to the intersection of the Bald Mountain road (FSR#70043) and the Indian Creek road (FSR#70042) in the NE1/4 SE1/4 section 15, Township 5 South, Range 12 West, USM.

The Proposed Action would also include mitigation measures outlined in Table 2-2.

Decision To Be Made

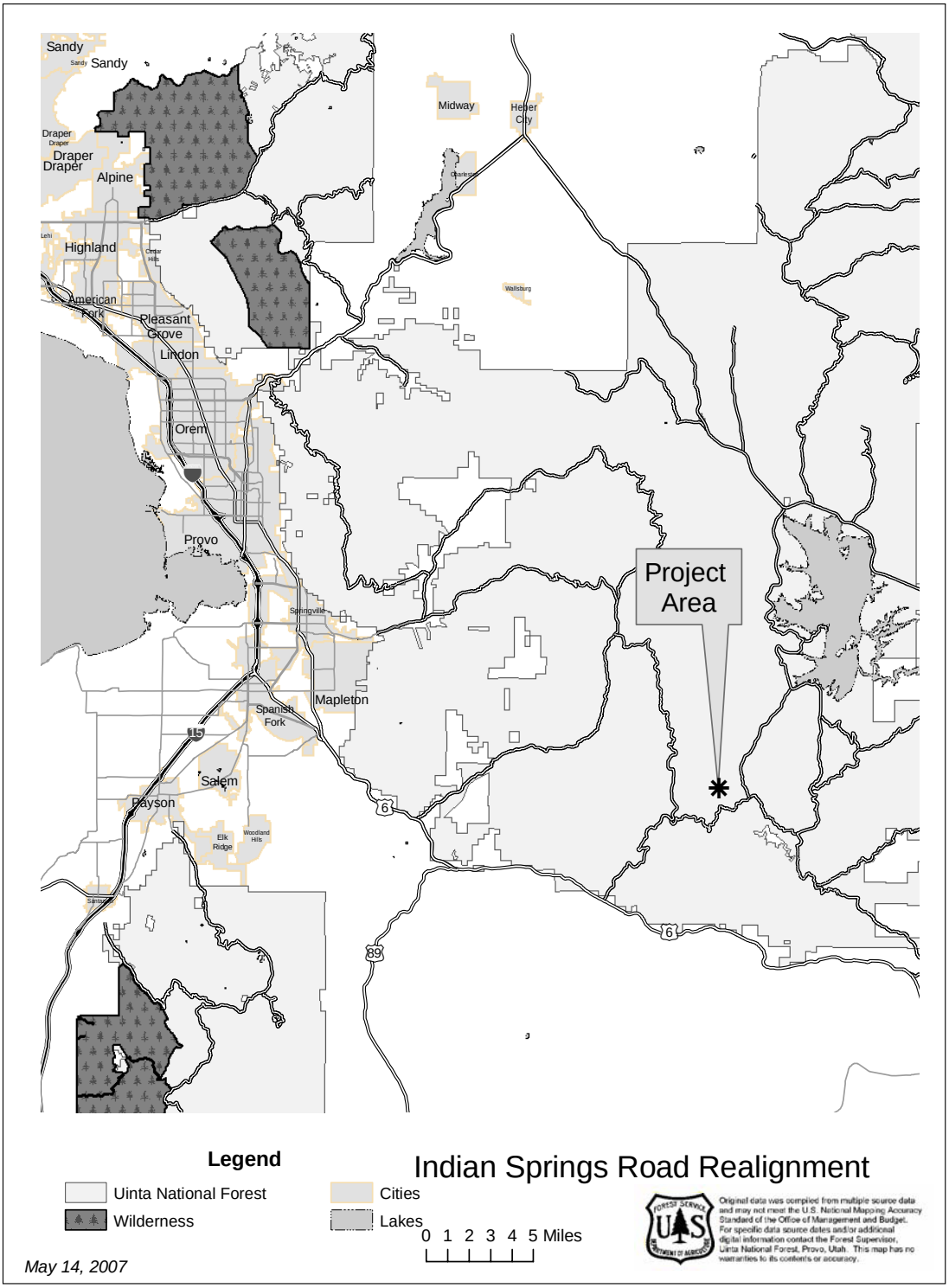
The Responsible Official will decide whether or not to authorize construction of the Indian Springs Road realignment and to determine the disposition of the existing alignment.

Location

The project area is 35 miles south of Heber City, Utah and 25 miles east of Spanish Fork, Utah (see Map 1-1 - Vicinity Map, p.1-5). The project can be accessed from the north via State Route 40, West Side Strawberry Road (FSR#70131) and Indian Creek Road (FSR #70042) and from the south via State Route 6, Sheep Creek Road (FSR#70051) and Indian Creek Road (FSR#70042). The project area extends from the ridgeline on the Indian Creek Road (FSR#042) in the SE1/4SW1/4 of Section 16, T5S, R12W, USM north along Strawberry Ridge to the intersection of the Indian Springs Road (FSR#70501) and the Strawberry Ridge Road (FSR#70518) in SW1/4NW1/4of Section 9, T5S, R12W,USM and to the east along the existing Indian Springs Roads to the intersection of the Indian Creek Road (FSR#70042) in NE1/4NW1/4 of Section 10, T5S, R12W,USM.

Public Involvement

The Notice of Intent (NOI) was published in the Federal Register on May 22, 2007. The NOI asked for public comment on the proposal within 30 days from the date of publication. In addition, as part of the public involvement process, the agency sent a letter informing interested parties that the Forest was initiating preparation of an Environmental Impact Statement to relocate the Indian Springs Road. On May 18, 2007, comments were solicited through a legal notice in the Provo *Daily Herald*.



Map 1-1. Vicinity Map

Public response included five comments. Comments were received via hard copy letters and one verbal response. Most comments were positive and supported the Forest Service proposal to realign the road. One comment suggested that the road be closed and rehabilitated. Public safety and adverse stream impacts were the primary issues raised in supporting road reconstruction. Protection and restoration of the ecosystem were the primary issues identified in supporting road closure.

A Notice of Availability for the Draft Environmental Impact Statement was published in the Federal Register on October 26, 2007. The Draft Environmental Impact Statement was mailed to and/or made available electronically, to all parties on the project's mailing list. The mailing list included federal, state and local agencies, and interested individuals and organizations (FEIS, Chapter 4). On November 1, 2007, comments were solicited through a legal notice in the Provo *Daily Herald*.

Public responses included 3 written comments. Many comments were positive and supported the purpose and need for action alternatives with minor edits. Others had specific concerns regarding adequate references, additional information on why a road could not be constructed outside an inventoried roadless area, necessity to realign road, detrimental impacts from roads and ATV use, damage to inventoried roadless area, and necessity to look closer at the effects of ATV use.

Using the comments from the public, other Federal, State and local agencies, and tribes (see *Issues* section), the interdisciplinary team developed a list of issues to address.

Issues

Based on comments and identified issues and concerns received during scoping, an interdisciplinary team (IDT) reviewed, analyzed, and summarized issues to be addressed in this EIS. This process identified significant issues pertinent to the purpose and need, and mandatory issues set by law and policy. It also identified those outside the scope of this decision as non-significant issues.

Significant Issues

Soils

Although no direct comments on soil resources were received, the interdisciplinary team determined that the analysis of soils was necessary to analyze affected environment and environmental effects of other driving issues. Analysis included soil erosion hazard, sediment production from roadway prism, and sediment reaching stream.

Watershed Resources

Indian Springs Road has been identified as a chronic source of sediment to Indian Creek (USDA 2004). Analysis of impacts to Riparian Habitat Conservation Areas (RHCAs), wetlands, floodplains, water quality, and drinking water source protection are issued addressed in this analysis. The measurement of these impacts is erosion rates and sediment delivery from road and trail prisms, and miles of road and trail in riparian areas and in and adjacent to drainage bottom.

Aquatic Species
Strawberry Reservoir is one of Utah's premiere freshwater fisheries. Indian Creek is a major contributor and spawning stream for fish from the reservoir. Through law and agency policy the agency is required to ensure actions are not likely to jeopardize the continued existence of any threatened or endangered species and review actions for possible effects on endangered, threatened, proposed, or sensitive species. Fish populations, amphibians, rare aquatic invertebrates, TES species and aquatic habit are analyzed in this report. Measurement of impacts to aquatic species is road and/or trail produced sedimentation to streams and associated effects to habit.

Recreation
The extent of and impact to recreation opportunities, as a result of this action, was raised during public scoping. Specific issues raised and analyzed include opportunities for ATVs, unauthorized routes, and dispersed recreation sites. The measurement of these impacts is miles of roads and trails designated for ATVs, number of dispersed sites, and existing and potential unauthorized routes.

Health, Safety and Transportation
The Forest Service needs to provide a safe transportation system. Access needs to be maintained between the Strawberry Ridge area and the southern part of the Heber-Kamas and northern portion of the Spanish Fork ranger districts for high clearance vehicles and ATVs for recreation, permitted uses and fire management. The assessment of road management objectives (RMO), which contain existing and planned transportation facility design, operation, and maintenance criteria, is analyzed in this report. The measurement of impacts include safety related RMO, accident potential, and level of access to Strawberry Ridge from the south.

Inventoried Roadless Areas
Alternatives that include relocation of the Indian Springs Road would construct a 1.9 mile road in the Strawberry Ridge Roadless Area (SRIRA) #418015. The measurement of impacts to SRIRA includes effects of alternatives on wilderness attributes, roadless area characteristics and change in acreage of roadless area.

Livestock Management
The livestock permittee utilizes the current Indian Springs Road to access campsite and haul water for herder and livestock. Water is hauled up the existing Indian Springs road to portable troughs for sheep. Realignment of the road could impact livestock management and is measured in terms of water haul distance and herder camp site availability.

Terrestrial Wildlife
There were comments regarding the effects of roads on wildlife. Through law and agency policy the agency is required to ensure actions are not likely to jeopardize the continued existence of any threatened or endangered species and review actions for possible effects on endangered, threatened, proposed, or sensitive species. Measurement of impacts to terrestrial wildlife includes effects of alternatives to individuals, habitat and viability of population.

Vegetation

There was a comment regarding the poaching of rare plants and roads facilitating the spread of non-native plants. Through law and agency policy the agency is required to ensure actions are not likely to jeopardize the continued existence of any threatened or endangered species and review actions for possible effects on endangered, threatened, proposed, or sensitive species. Federal executive orders, agency policy, and the Forest Plan require actions to ensure federal activities mitigate against the spread of noxious weeds. Measurement of impacts to vegetation include effects of alternatives to threatened, endangered, and sensitive species; acres impacted; net loss or gain of vegetation; and existing, potential and treatment of noxious weeds.

Visual Quality

The agency is directed to analyze the preservation of aesthetic values at all planning levels. The geographic features that define the boundaries of the viewsheds within the analysis area are Strawberry Ridge to the west, US Highway 40 to the east, and National Forest System roads on the north and south. Measurement of impact to visual quality includes effect of alternatives to Visual Quality Objectives including immediate foreground, foreground, middle, and background views.

Heritage

The agency is required to take into account the effect of management activities on heritage resources, consultation with tribes, the State Historic Preservation Office, and communities. Measurement of impacts to heritage resources includes effects of alternatives to cultural properties, prehistoric or historic sites, artifacts, or plant gathering.

Non significant issues and issues out side the scope of this analysis

The National Environmental Policy Act (NEPA) of 1969 provides for the IDT to identify other non-significant issues, non-driving issues or issues covered by prior environmental review. These issues are discussed briefly with an explanation of why they would have a minor effect on the human environment. These concerns are important but they are beyond the scope of this project level analysis; currently mitigated; unaffected by the proposed action; or mitigated below significance through alternative design. Issues identified during scoping, the rationale for their limited analysis is as follows:

Closure of Indian Springs Road – There was a comment requesting the modification and/or addition of an alternative to close and obliterate the Indian Springs Road. Closure of the road would create a dead end road on Strawberry Ridge. The Indian Springs Road provides continuous access from the southeast portion of the Forest (northeast portion of Spanish Fork Ranger District) to the middle (west and southwest portion of Heber-Kamas Ranger District). This issue is addressed under Alternatives Considered, but Eliminated from Detailed Study section on page 2-2.

Fire – There was a comment that roads lead to increased numbers of large human-caused fires in roaded areas and disrupt the natural fire regime of the area. Historically and over the last 10 years in the project area, more human-caused fires occur in non-IRA or roaded areas and lightning-caused fires burned more acres than human-caused. Additionally, no large fires (>10 acres) have occurred in the Strawberry Ridge Roadless Area, adjacent roaded areas, or Strawberry Reservoir Management area. Under all action alternatives, there is potential for an increase in human-caused fires and a slight disruption of the

natural fire regime. However, improved access for suppression action response will mitigate below significance any potential increase in human-caused fire occurrences and the cumulative negative effect to the natural fire regime of the area is insignificant since human-caused fires will continue to be aggressively suppressed in the project area. (Flanagan, Miller 2008).

Permits and Authorizations

The implementation of the proposed action or alternatives would require a decision by the Forest Service with consultation and coordination with other federal, state, and local agencies. Table 1-1 identifies agencies, types of actions, and descriptions of permits or actions that may be required. This list is not all inclusive and other permits or approvals may be required depending on decisions made and which regulatory processes are in effect at the time of construction. The Forest Service will ensure compliance, but assumes no responsibility for enforcing laws or regulations under the jurisdiction of other governmental agencies.

Availability of Project Records

The Indian Springs Road Realignment project record is located at the Heber Ranger District of the Uinta National Forest at 2460 South Highway 40, Heber City, Utah.

Best Available Science

The techniques and methodologies used in this analysis consider the best available science. The analysis includes a summary of the credible scientific evidence which is relevant to evaluating reasonably foreseeable impacts. The analysis also identifies methods used and references scientific sources relied on. During the scoping process, scientific reports were referenced. Information was reviewed, considered and incorporated where relevant (see Response to Comments).

Table 1-1 Permits, Approvals, And Consultations That May Be Required For Implementation

Agency	Type of Action	Description of Permit or Action
Federal		
Forest Service	Forest Service Decision	The Forest Service decision regarding this proposal would authorize the Proposed Action, the No Action Alternative, or another alternative. Acceptance of an updated road management objective would be based on this decision.
	Preparation of Biological Assessment Preparation of Biological Evaluation	In accordance with the Endangered Species Act, the Forest Service must complete a Biological Assessment assessing the impact of the Proposed Action on federally listed threatened and endangered species. In compliance with agency policy, a Biological Evaluation must be prepared, assessing potential impacts to Forest Service sensitive plant and animal species.
U.S. Army Corps of Engineers	Issuance of Clean Water Act, Section 404 Permit	The COE issues permits required for the discharge of dredged or fill materials into waters of the U.S., including wetlands. Nationwide or individual permits may be involved.

Table 1-1 Permits, Approvals, And Consultations That May Be Required For Implementation		
Agency	**Type of Action**	**Description of Permit or Action**
Environmental Protection Agency (EPA)	Review and comment regarding: Clean Air Act, as amended, 42 U.S.C.A. Section 7410-762 (PL 95-604, PL 95-95) Federal Water Pollution Control Act, as amended by the Clean Water Act, 33 U.S.C.A. Section 1251-1376 (PL 92-500, PL 95-217) Safe Drinking Water Act, 452 U.S.C.A. Section 300F-300J-10 (PL 93-523) Clean Water Act, Section 404 Permit	Under NEPA, the Environmental Protection Agency is required to review and comment on "major federal actions that have a substantial impact on the human environment." The EPA's responsibility and role is to provide scoping comments, review EISs, and provide information and appropriate technical assistance during and following the environmental analysis process. Specific environmental legislation for which the EPA is responsible and which may be applicable to the proposal is shown to the left. Administrative and enforcement responsibilities have been delegated to the State of Utah for all three acts. The EPA may be involved in 404 permitting in association with the COE.
Fish and Wildlife Service (FWS)	Endangered Species Act, Section 7 Consultation Fish and Wildlife Coordination Act consultation Section 404 Permit consultation	If impacts to federally listed species are possible, the FWS will consult with the Forest Service and issue a Biological Opinion. The FWS also coordinates with the Forest Service in accordance with the Fish and Wildlife Coordination Act and reviews Section 404 permit applications to avoid adverse impacts to federally listed species.
State Of Utah		
Department of Environmental Quality:		
Air Quality Division	Review and comment Issuance of Approval Orders	The Division's review ensures that state and federal air quality standards are not exceeded. Approval Orders are required for certain stationary emissions sources.
Water Quality Division	Review and comment Section 401 certification Section 303(d) compliance	The Division's review ensures that state and federal water quality standards are not exceeded. Section 401 certification would be required for any point-source discharge and is obtained in conjunction with a Section 404 permit. Review water quality impacts on impaired water bodies as listed under Section 303(d).
Department of Natural Resources:		
Wildlife Resources Division	Review and comment	The Division is responsible for management and protection of state wildlife and fish resources.
Water Resources Division	Review and comment	The Division is responsible for determining adequacy of water supply and cumulative impacts on water supply.
Water Rights Division "State Engineer"	Issuance of Stream Alteration Permit	The State Engineer reviews plans and issues permits for projects which alter streams and/or streambeds.
State Historic Preservation Office	Consultation on National Historic Preservation Act, Section 106 compliance process	Responsible for making sure that Federal Agencies carry out their responsibilities under Section 106 of the National Historic Preservation Act.
Tribal Consultation		
Northern Ute Tribe	Review and comment	The Tribe identifies any concerns with ways in which the project may affect the social and/or economic well-being of the Tribe, or affect sacred sites or other areas of concern.

CHAPTER 2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Introduction

This chapter describes and compares the alternatives considered for the Indian Springs Road Realignment. This chapter has five sections describing the alternative formulation process, alternatives considered but eliminated from detailed study, alternatives considered in detail, comparison of alternatives, and identification of the preferred alternative.

NEPA requires the identification of a reasonable range of alternatives to the proposed action. All alternatives should address the purpose and need, should address issues raised during scoping, and avoid or mitigate adverse environmental impacts associated with the proposed action. Alternatives that are not reasonable based on inconsistency with purpose and need do not need to be analyzed in detail. An EIS must also address the No Action alternative, disclosing the effects of not undertaking a federal action.

The process of formulating alternatives began during the public involvement process (scoping) and included the public, other government agencies as described in Chapter 1, and an Interdisciplinary Team (IDT). Comments and concerns were identified and relevant issues are addressed in this EIS.

Significant issues outlined in Chapter 1 include the following resource areas: soils, watershed resources; aquatic species; recreation; health, safety, and transportation; inventoried roadless areas; livestock management; terrestrial wildlife; vegetation, visual quality, and heritage.

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of decision framework, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, three alternatives were considered, but dismissed from detailed consideration:

Reconstruct the Indian Springs Road in its Current Location

The existing 1.6 miles of road has a native surface with narrow, 10-14 feet wide travel way. The road has steep grades in excess of 10 percent. The horizontal and vertical alignments do not adequately provide safe sight distances. The clay loam native surface material has high surface runoff and has a severe soil erosion hazard (Davidson, 2007). The road is primarily occupying the valley/drainage bottom or located adjacent to Indian Springs and the unnamed tributary of Indian Creek. During inclement (wet) weather conditions the road surface is readily saturated and becomes slick.

The surface water from storm events flows across the road surface creating ruts. These ruts concentrate the flow of water and soil; erode the road and associated slopes; and expose and plug existing culverts. Sections of the road have become narrowed with deep ditches eliminated the shoulders for possible travel. The narrowed travel way is contributing to inadequate stopping site distances. During the above conditions the road is extremely hazardous, making travel difficult and at times impassible.

One element of the purpose and need, as discussed in Chapter 1, is to provide safer driving conditions. Impacts from the existing road can not be corrected by maintenance or upgraded in its current location because of existing topography and geologic features. An improved and maintainable road on this alignment would require excessive cut slopes, embankment fills, switchbacks, drainage crossings, and steep grades.

Closure of the Indian Springs Road

Another element of the purpose and need for this action is to maintain access to Strawberry Ridge from the south. The Indian Springs Road is essential for Forest access and management (USDA 2002). This road provides administrative (recreation, fire, wildlife, range, and vegetation management) and public (driving for pleasure, dispersed camping, viewing wildlife and scenery, ATV, hiking, mountain biking, hunting and snowmobiling) access to Strawberry Ridge. It is the only available ATV connector between northeast portion of the Spanish Fork Ranger District (Halls Fork, Dip Vat, and Strawberry Ridge) to the southwest portion of the Heber-Kamas Ranger District (Trail Hollow, Willow Creek, and White River). Closure of the road would split vehicle and ATV access across this portion of the Forest and may encourage inappropriate and unsafe ATV use on arterial roads, not

designated as open to ATVs. Closure of the Indian Springs Road does not meet the purpose and need to maintain access to Strawberry Ridge from the south.

Road relocation outside of designated Inventoried Roadless Areas

The existing Indian Springs Road provides a northern boundary of the Strawberry Ridge Roadless Area (see Proposed Action Map, p.2-7). Road relocation to the north from Strawberry Ridge to Indian Creek Road was considered. The area directly north of the existing alignment has steep terrain and topography. Road development in this area would require a significantly longer road with larger cuts, fills, switch backs, and drainage crossings to connect to the Indian Creek Road. The further north you consider road construction the less extreme the terrain (eventually reaching a parallel road system with the Squaw Creek Road, FSR #70110). Construction to the north would leave a dead-end road on Strawberry Ridge encouraging the creation of user created roads (USDA 2007c). In order to provide ATV access across this portion of the Forest an increase in miles of arterial roads open to ATVs would have to be designated, increasing user conflicts and accident potential. This conflicts with the need to provide safer driving conditions. This alternative would not meet components of the purpose and need was eliminated from detailed study.

Alternatives Considered in Detail

The Forest Service developed four alternatives, including the No Action and Proposed Action alternatives, in response to issues raised by the Forest Service, Wasatch County, and the public. Below is a summary, detailed description, and map of each alternative analyzed in detail.

No Action- The existing native surface, single lane road remains at its present location, which is mostly within a riparian zone.

Proposed Action – Realignment and Road Closure: Reconstruct a single lane road (1.9 miles) with turnouts along a new alignment. Existing road alignment (1.6 miles) would be converted to a single-track motorized trail (0.2 miles) and obliterated and restored to natural condition (1.4 miles).

Alternative A - Realignment and Partial Closure - Reconstruct a single lane road (1.9 miles) with turnouts along a new alignment. Existing road alignment (1.6 miles) would be converted to a single track motorcycle trail (0.2 miles), obliterated and restored to natural condition (0.9 miles), and 0.5 miles of a dead end road from Indian Creek Road would remain.

Alternative B - Realignment and ATV Route – Reconstruct a single lane road (1.9 miles) with turnouts along a new alignment. Existing road alignment (1.6 miles) would be converted to an ATV trail (1.1 miles) and 0.5 miles of a dead end road from Indian Creek Road would remain.

No Action Alternative

Under the No Action alternative, the forest would leave the road in its current location and current management plans would continue to guide management of the project area (see No Action map, p.2-5). No road realignment to an upland location or obliteration and restoration of the existing alignment would be implemented to accomplish project goals.

The existing road is 1.6 miles in length from Strawberry Ridge past Indian Creek to the intersection on Indian Creek Road. The road is a single-lane (10-14 feet surface width), has a native surface (clay loam), with steep grades (in excess of 10%). The estimated average width of the road corridor is 45 feet for a total of 8.7 existing disturbed acres. No new acres would be disturbed.

Indian Springs Road Relocation

No Action Alternative

Forest Roads

- Highway
- Paved Road
- Improved Road - Gravel
- Improved Road - Native Surface
- Unimproved Road - Not Suitable for Passanger Cars
- Road - ATV
- Trail - NonMotorized
- Trail - Motorcycle
- ATM - Trail - ATV
- StrawberryRidgeRoadlessArea

N W E S

0 0.5 1 2 3 Miles

Proposed Action Alternative - Realignment and Road Closure

Under the Proposed Action, the Forest Service will reconstruct the Indian Springs Road on a new alignment. The majority of the existing road alignment would be obliterated and restored to natural condition. Approximately 0.2 miles of a single-track motorcycle trail from Strawberry Ridge would remain. (See Proposed Action map, p. 2-7).

The new road will be 1.9 miles long with an alignment placed in an upland location just to the east of Strawberry Ridge. It will be a single lane (14 feet wide running surface) with 10 foot wide turnouts. The road grades would be significantly reduced. The entire road will be surfaced with crushed aggregate base. The average imprint on the ground will be approximately 65 feet wide (15.0 acres).

The majority of the existing Indian Spring Road would be obliterated and restored to natural condition. The full restoration of 1.4 miles (7.5 acres) will include road prism obliteration, shaping and contouring to match adjacent slopes, seeding with native species, treatment of noxious weeds, and protected from access until new vegetation is established.

Access to the Great Western Trail (GWT), a single-track (18”-24” wide) trail open to motorcycles, will be maintained along a 0.2 mile segment from Strawberry Ridge within the existing road alignment. The conversion of 0.2 miles will include reducing surface width from 10-14 feet to 2 feet and constructing adequate drainage. Area outside of reconstructed trail will be fully obliterated including shaping and contouring to match adjacent slopes, seeding with native species, and treatment of noxious weeds (1.1 acres).

Under this alternative the 1.9 mile new road alignment would be open to ATV travel. The obliterated Indian Springs road (1.6 miles) and a portion of the Indian Creek road (1.8 miles) would no longer be designated open for ATV travel. The portion of the Indian Creek road is from the old intersection of the Indian Spring road (FSR#70501) in the NE1/4 NW1/4 of Section 10, T5S, R12W, USM to the intersection of the Bald Mountain road (FSR#70043) and the Indian Creek road (FSR#70042) in the NE1/4 SE1/4 section 15, Township 5 South, Range 12 West, USM.

The Proposed Action would also include mitigation measures outlined in Table 2-2.

T
5
S
Indian Creek Cr
70518
Crooked Cr
70042
Fourth Water Ridge
Fifth Water Ridge
Rays Valley
Fifth Water Cr
Fourth Water Cr
Third Water Ridge
Third Water Cr
Second Water Ridge
Streeper Cr
Indian Cr
Chipman Cr
Trail Spring
70501
Indian Spring
Second Water Cr
First Water Ridge
First Water Cr
Great Western Trail
Baldy Mtn 9420
70043
Little Baldy Mtn
Oak Spring Can
First Water Spring
Miller Ridge
Buffalo
The Fork
Right Fork Timber Can
Chicken Hol
Partridge Ridge
Racetrack
Mogbeck Spring
Corral Can
Partridge Can
Indian Springs Road Relocation
Proposed Action
Proposed Road - 1.9 miles
Obliteration of Existing Road - 1.6 miles
Forest Roads
Highway
Paved Road
Improved Road - Gravel
Improved Road - Native Surface
Unimproved Road - Not Suitable for Passanger Cars
Proposed Road Alignment - Open to ATV
Obliteration of Existing Alignment
Trail - NonMotorized
Trail - Motorcycle
Road - ATV
StrawberryRidgeRoadlessArea
N
W
E
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0
0.5
1
2
3 Miles

Alternative A - Realignment and Partial Closure

Under this alternative, the Forest Service will reconstruct the Indian Springs Road on a new alignment. A large portion of the existing road will be and obliterate and restored to natural condition. Approximately 0.2 miles of a single-track motorcycle trail and 0.5 miles of the existing road would remain. (See Alternative A map, p. 2-9).

The new road will be 1.9 miles long with an alignment placed in an upland location just to the east of Strawberry Ridge. It would be a single lane (14 feet wide running surface) with 10 foot wide turnouts. The road grades would be significantly reduced. The entire road will be surfaced with crushed aggregate base. The average imprint on the ground will be approximately 65 feet wide (15.0 acres).

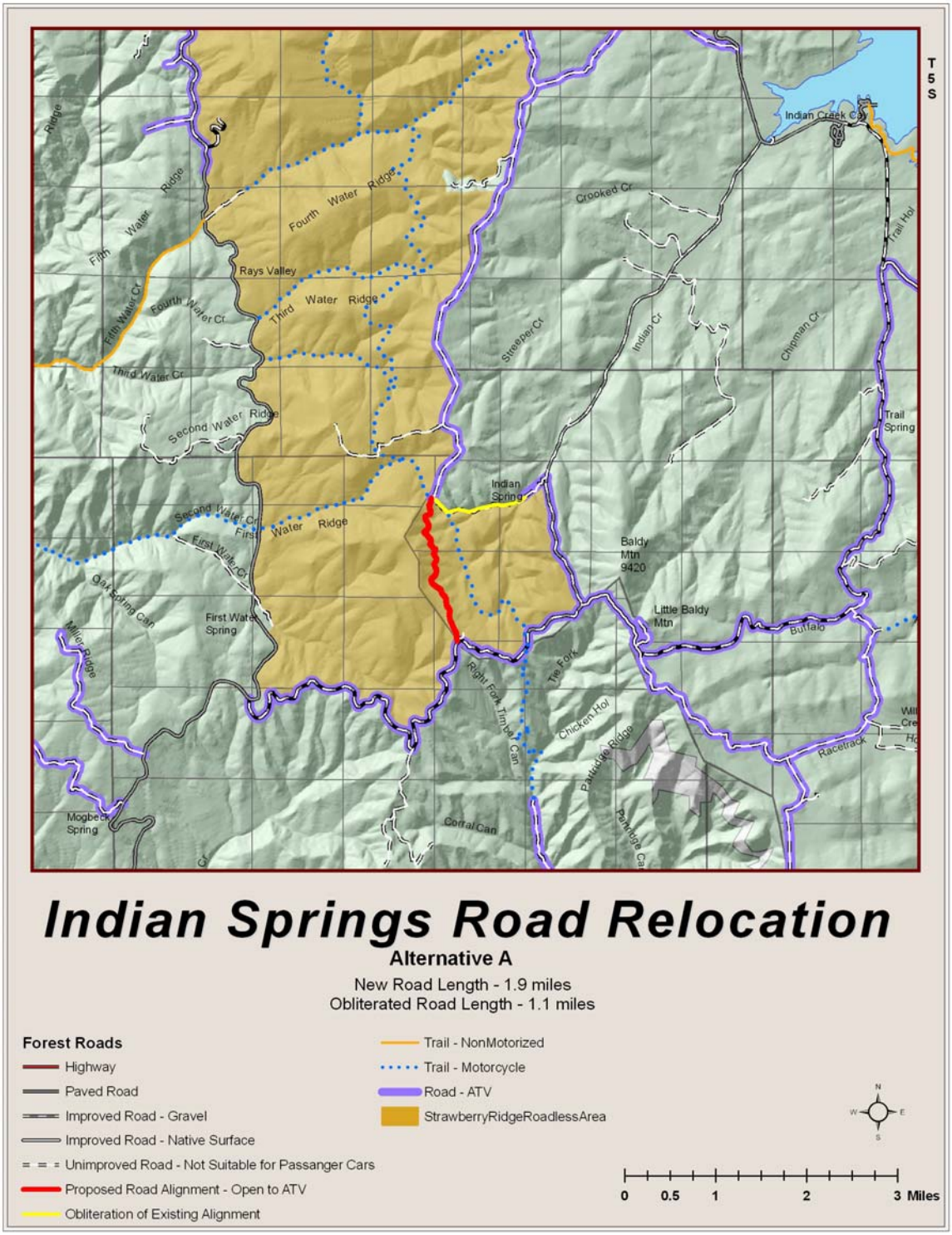
A large portion of the existing Indian Creek Road at its current location will be obliterated and restored to natural condition. The full restoration of 0.9 miles (4.5 acres) will include road prism obliteration, shaping and contouring to match adjacent slopes, seeding with native species, treatment of noxious weeds, and protected from access until new vegetation is established.

Access to the Great Western Trail (GWT), a single-track (18”-24” wide) trail open to motorcycles, will be maintained along a 0.2 mile segment from Strawberry Ridge within the existing road alignment. The conversion of 0.2 miles will include reducing surface width from 10-14 feet to 2 feet and constructing adequate drainage. Area outside of reconstructed trail will be fully obliterated including shaping and contouring to match adjacent slopes, seeding with native species, and treatment of noxious weeds (1.1 acres).

Approximately 0.5 miles of a dead end road from the intersection with Indian Creek Road to Indian Springs would remain to allow access for dispersed camping and for access to water for the livestock permittee.

The 1.9 mile new road alignment and 0.5 miles of the existing Indian Springs Road alignment would be designated open for ATV travel. The 1.1 mile obliterated and restored to natural condition section of the existing road alignment would be converted to a trail (0.2 miles) and removed from the transportation system and no longer designated for vehicle or ATV travel (0.9 miles).

Alternative A would also include mitigation measures outlined in Table 2-2.



Indian Springs Road Relocation

Alternative A

New Road Length - 1.9 miles
Obliterated Road Length - 1.1 miles

Forest Roads

- Highway
- Paved Road
- Improved Road - Gravel
- Improved Road - Native Surface
- Unimproved Road - Not Suitable for Passanger Cars
- Proposed Road Alignment - Open to ATV
- Obliteration of Existing Alignment
- Trail - NonMotorized
- Trail - Motorcycle
- Road - ATV
- StrawberryRidgeRoadlessArea

0 0.5 1 2 3 Miles

Alternative B - Realignment and ATV Route

Under this alternative, the Forest Service will reconstruct the Indian Springs Road on a new alignment (1.9 miles) and convert a large portion (1.1 miles) of the existing road at its current location to an ATV trail. Approximately 0.5 miles of a dead end road would remain. (See Alternative B map, p.2-11)

The new road will be 1.9 miles long with an alignment placed at in an upland location just to the east of Strawberry Ridge. It would be a single lane (14 feet wide running surface) with 10 foot wide turnouts. The road grades would be significantly reduced. The entire road will be surfaced with crushed aggregate base. The average imprint on the ground will be approximately 65 feet wide (15.0 acres).

A large potion (1.1 miles) of the existing Indian Creek Road at its current location will be converted to an ATV trail. The trail will be barricaded at Strawberry Ridge and Indian Springs to prevent full sized vehicles from traveling on trail. The road to trail conversion of 1.1 miles will include reducing surface width from 10-14 feet to 6 feet and constructing adequate drainage. Area outside of reconstructed trail will be fully obliterated including shaping and contouring to match adjacent slopes, seeding with native species, and treatment of noxious weeds (approximately 5 acres).

Approximately 0.5 miles of a dead end road from the intersection with Indian Creek Road to Indian Springs would remain to allow access for dispersed camping and for access to water for the livestock permittee.

The 1.9 mile new road alignment and 0.5 miles of existing road alignment would be designated open for ATV travel. The 1.1 mile section of the existing road alignment would be removed from the road system and added to the trail system as an ATV route.

Alternative B would also include mitigation measures outlined in Table 2-2.

Indian Springs Road Relocation

Alternative B

New Road Length - 1.9 miles
Converted Road to ATV trail - 1.1 miles

Forest Roads

- Highway
- Paved Road
- Improved Road - Gravel
- Improved Road - Native Surface
- Unimproved Road - Not Suitable for Passanger Cars
- Proposed Road Alignment - Open to ATV
- Proposed ATV Trail
- Trail - NonMotorized
- Trail - Motorcycle
- Road - ATV
- StrawberryRidgeRoadlessArea

N W E S

0 0.5 1 2 3 Miles

Comparison of Alternatives

This section provides a comparative summary of the effects of implementing each alternative, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Mitigation measures to avoid, reduce or offset identified impacts for issues is summarized in Table 2-2, as well as, under which alternative(s) they would be implemented. A more detailed description of affected environment, environmental effects analysis, and comparison of alternatives for each issue are provided in Chapter 3.

Table 2-1: Comparison of Alternatives

Issues	No Action	Proposed Action – Realignment and Road Closure	Alternative A - Realignment and Partial Closure	Alternative B - Realignment and ATV Route
Soils				
Erosion from road & trail prisms	226 tons / year	9 tons / year	90 tons / year	205 tons / year
Sediment into streams from road & trail prisms	36 tons / year	1 tons / year	13 tons / year	32 tons / year
Watershed Resources				
Road/Trail Prism Erosion/ Sedimentation impacts on Water Quality	FSR 501 would continue to generate 226 tons/year, with 36 tons/year delivered to Indian Creek	Reduce sedimentation to Indian Creek up to 97% from No Action Alternative	Reduce sedimentation to Indian Creek up to 64% from No Action Alternative	Reduce sedimentation to Indian Creek up to 11% from No Action Alternative
Function of stream, wetlands, and floodplains	1.0 mile of road located in RHCA and in/adjacent to drainage bottom 0.0 mile of road located in RHCA obliterated and drainage bottom restored. 0.6 miles of native surface road located outside RHCA contributing to impact to stream, floodplains & wetlands	0 miles of road located in RHCA and in/adjacent to drainage bottom. 1.0 mile of road located in RHCA obliterated and drainage bottom restored. 1.9 miles of surfaced road located outside RHCA for minimal impact to stream, floodplains & wetlands	0.3 miles of road located in RHCA and in/adjacent to drainage bottom. 0.7 miles of road located in RHCA obliterated and drainage bottom restored. 1.9 miles of surfaced road located outside RHCA for minimal impact to stream, floodplains & wetlands	0.3 miles of road and 0.7 miles of ATV trail located in RHCA and in/adjacent to drainage bottom. 0.0 miles of road located in RHCA obliterated and drainage bottom restored. 1.9 miles of road located out of RHCA and surfaced for minimal impact to stream, floodplains & wetlands

Table 2-1: Comparison of Alternatives (continued)				
Issues	**No Action**	**Proposed Action – Realignment and Road Closure**	**Alternative A - Realignment and Partial Closure**	**Alternative B - Realignment and ATV Route**
Aquatic Resources				
Sediment into streams from road & trail prisms Fish and other aquatic species habitat	36 tons / year Continued negative impact	1 tons / year (up to 97% reduction) Significantly improve habitat	13 tons / year (up to 64% reduction) Slightly improved habitat	32 tons / year (up to 11% reduction) No significant improvement
Recreation				
Dispersed camping	4 existing sites would continue to be available for use.	Opportunities would be of same level and setting type as no action.	Opportunities would be of same level and setting type as no action.	Opportunities would be of same level and setting type as no action.
ATV Access	Road open to ATVs is 3.4 miles Trails open to ATVs is 0 miles Unauthorized access may continue	Road open to ATVs is 1.9 miles (-1.5 mi) Trails open to ATVs is 0 miles Unauthorized access could be reduced	Road open to ATVs is 4.2 miles (+0.8 mi) Trails open to ATVs is 0 miles Unauthorized access may continue to increase	Road open to ATVs is 4.2 miles (+0.8 mi) Trails open to ATVs is 1.1 miles (+1.1 mi) Unauthorized access may continue to increase
Health, safety and transportation				
Safety & transportation system	Narrow, winding, 10-14 wide travel way, & inadequate stopping sight distances. When wet, high accident potential and at times impassible	14 wide travel way with turnouts, aggregate surface & adequate stopping sight distances. Low accident potential and passable when wet	14 wide travel way with turnouts, aggregate surface & adequate stopping sight distances. Low accident potential and passable when wet	14 wide travel way with turnouts, aggregate surface & adequate stopping sight distances. Low accident potential and passable when wet
Access to and from Strawberry Ridge from the south	Maintained, except during inclement weather	Maintained and improved	Maintained and improved	Maintained and improved
Inventoried Roadless Areas				
Wilderness Attributes of the Strawberry Ridge Roadless Area, SRIRA (#418015)	Wilderness Attributes would be unchanged	Natural processes affected on 15 acres (short term) and 4 acres (long term)	Natural processes affected on 15 acres (short term) and 4 acres (long term)	Natural processes affected on 15 acres (short term) and 4 acres (long term)

Table 2-1: Comparison of Alternatives (continued)				
Issues	**No Action**	**Proposed Action – Realignment and Road Closure**	**Alternative A - Realignment and Partial Closure**	**Alternative B - Realignment and ATV Route**
Wilderness Attributes of the SRIRA (#418015) – continued from previous page	Wilderness Attributes would be unchanged	On eastern slopes short term sounds of construction equipment and reduced naturalness until vegetation is established Slight reduction in Primitive Recreation due to longer road on west side verses existing north side	On eastern slopes short term sounds of construction equipment and reduced naturalness until vegetation is established Slight reduction in Primitive Recreation due to longer road on west side and remaining road segment on north side	On eastern slopes short term sounds of construction equipment and reduced naturalness until vegetation is established Reduction in Primitive Recreation due to road and motorized trails on all four sides of 1.5 mile wide section of SRIRA.
Roadless Area Characteristics, SRIRA #418015	No change in roadless area characteristics	Slight impact to Soil Water and Air and Diversity of Plant and Animal Communities, but no change in Resource Finding or Ranking	Slight impact to Soil Water and Air and Diversity of Plant and Animal Communities, but no change in Resource Finding or Ranking	Slight impact to Soil Water and Air and Diversity of Plant and Animal Communities, but no change in Resource Finding or Ranking
Loss or gain of Roadless acres, SRIRA #418015	No loss or gain of acres	No change in to IRA boundaries or management If IRA inventory is updated 1300 of 16,000 acres may not qualify since < 5000 acres	No change in to IRA boundaries or management If IRA inventory is updated 1300 of 16,000 acres may not qualify since < 5000 acres	No change in to IRA boundaries or management If IRA inventory is updated 1300 of 16,000 acres may not qualify since < 5000 acres
Livestock Management				
Livestock management	Water hauled up Indian Springs road to troughs Herder camp sites at Indian Springs	Water haul distance increase. More watering sites available Better distribution of livestock, Herder camp site relocated	Water haul distance increase. More watering sites available Better distribution of livestock, Herder camp sites at Indian Springs	Water haul distance increase. More watering sites available Better distribution of livestock, Herder camp sites at Indian Springs
Terrestrial Wildlife				
Threatened and Endangered Species	No Effect	No Effect	No Effect	No Effect

Table 2-1: Comparison of Alternatives (continued)

Issues	No Action	Proposed Action – Realignment and Road Closure	Alternative A - Realignment and Partial Closure	Alternative B - Realignment and ATV Route
Forest Service Sensitive Species	(1) (2)	(1) (3)	(1) (3)	(1) (3)
(1) No Impact to Bald Eagle, Columbia spotted frog, Greater sage-grouse, and Fisher (2) No Impact to Flammulated owl, Spotted bat and Townsend's big-eared bat. (3) May impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause loss of viability to the population or species. Species include Flammulated owl, Spotted bat and Townsend's big-eared bat				
Vegetation				
Threatened, Endangered and Sensitive Species	No suitable habitat, no impact	No suitable habitat, no impact	No suitable habitat, no impact	No suitable habitat, no impact
Acres of vegetation impacted, long-term	8.7	14.8	17.8	18.5
Net loss/gain (-/+) of vegetation	0	-6.1	-9.1	-9.8
Miles of open road and trail	1.6	2.1	2.6	3.5
Visual Quality				
Visual Quality Objective (VQO) *Modification:* Immediate Foreground Views	Modification and Partial Retention Natural appearing landscape	Modification and Partial Retention Short-term new alignment may be dominate, but repeat the form of the landscape. Long-term roadway will become subordinate	Modification and Partial Retention Short-term new alignment may be dominate, but repeat the form of the landscape Long-term roadway will become subordinate	Modification and Partial Retention Short-term new alignment may be dominate, but repeat the form of the landscape. Long-term roadway will become subordinate
Foreground through Background Views	Screened by landform	Screened by landform	Screened by landform	Screened by landform
Partial Retention: Immediate Foreground Views	User created tracks dominate along existing 1.6 mile Indian Springs Road	Natural appearing landscape	User created tracks may dominate along 0.5 mile road to remain	User created tracks may dominate along 0.5 mile road and 1.1 mile trail
Heritage Resources				
Cultural properties, prehistoric or historic sites, artifacts, or plant gathering	None found in project area	No direct or indirect impacts	No direct or indirect impacts	No direct or indirect impacts

Table 2-2: Mitigation Measures **Mitigation Measures for Action Alternatives.** **Under the No Action, continued maintenance would occur.**
GEO 1: Silt fencing and other engineering best management practices should be utilized to reduce soil erosion by overland flow and capture any sediment production from construction activites. **GEO 2**: If subsurface flows are encountered, subsurface drains will be employed where necessary to improve drainage of these areas. **GEO 3**: All available topsoil should be stripped, stockpiled, protected, and placed on cut and fill slopes for the new road alignment. Topsoil salvage and placement should be timed to avoid long-term storage of salvaged topsoil stockpiles. **GEO 4**: Soil and Water Conservation Practices (SWCP's) for the construction of road drainage structures will be used. These include a combination of relief culverts, surface cross drains, and holding ponds that capture water and release it back into the subsurface flow. **GEO 5**: Lay back cut slopes as far as possible. Cut and fill material for the new alignment should balance. No further borrow areas have been identified. **GEO 6**: Cut and fill slopes will be revegetated after construction where applicable. Topsoil replacement, erosion blankets, and heavier seeding will be used when necessary to promote revegetation success. **GEO 7:** Out slope and/or crown the road prism. **GEO 8**: Recontour the existing road prism as close to the pre-road contour as possible. It may be necessary to lay the recontoured slopes back further than natural to promote revegetation success and promote slope stability. **GEO 9**: Blockades will be installed or constructed around the obliterated road sections (where needed) to exclude livestock and off highway vehicles until revegetation is established.
WAT 1: Implement all applicable BMP's and SWCP's needed to support UNF LMP Management Practices and Standards and Guidelines relative to soils, watershed, flood plains, wetlands, and riparian habitat. **WAT 2:** Silt fence and/or applicable collection devices will be installed along Indian Creek during construction activities to capture disturbed mobile sediment where appropriate. **WAT 3:** Soil and Water Conservation Practices (SWCP's) for the construction of road drainage structures will be used. These include a combination of relief culverts, surface cross drains, and holding ponds that capture water and release it back into the subsurface flow. **WAT 4:** Disturbed areas will be seeded and mulched (where needed) after construction. **WAT 5:** Blockades will be installed or constructed around the obliterated road sections (where needed) to exclude livestock and off highway vehicles until revegetation is established.
AQU 1: Implement all applicable BMP's and SWCP's needed to support UNF LMP Management Practices and Standards and Guidelines relative to soils, riparian habitat, wildlife and fish. **AQU 2:** Water quality will be monitored pre and post construction **AQU 3**: All instream work will be conducted after July 1 to allow Bonneville cutthroat trout to spawn undisturbed. **AQU 4**: Prohibit storage of fuels and other toxicants within Riparian Habit Conservation Areas (RHCAs). Do not fuel or service equipment in RHCAs unless there are no other alternatives. **AQU 5**: Locate water drafting sites to avoid significant adverse effects to native aquatic organisms and instream flows. **AQU 6:** Sheep will excluded from all disturbed areas associated with construction activities to allow adequate vegetation recovery.
REC 1: Post and maintain signs and provide public notices during project implementation informing the public of the closure of the existing Indian Spring road alignment and alternative routes.

Table 2-2: Mitigation Measures Mitigation Measures for Action Alternatives. Under the No Action, continued maintenance would occur.
REC 2: Install travel management signing "Motorized Travel on designated routes only" in conjunction with travel route markers on affected roads and trails. **REC 3:** Design roads to terrain with adequate cut and vegetated fill slopes (see VIS 6) to discourage illegal ATV use. **REC 4:** Dispersed camping sites will be at the same level and setting type as existing condition. Relocate and harden displaced dispersed camping sites along existing alignment to areas along new alignment. **REC 5:** Dispersed recreation sites will be located in areas designated to minimize impacts, discourage illegal ATV use, and signed to inform the public of travel management regulations. **REC 6:** Within site distance of existing and proposed Indian Springs road alignments rip, re-contour and seed existing unauthorized trails/roads. Where applicable (not in RHCAs), fell some adjacent trees or branches onto the unauthorized trails/roads to create micro climates and to appear natural.
HST 1: Post and maintain signs and provide public notices during project implementation informing the public of the closure of the existing Indian Spring road alignment and alternative routes. **HST 2**: Maintain and replace infrastructure (roadbase and cross drainage structures) as needed to maintain capital investment and meet acceptable health and safety standards. **HST 3:** Design roads to Forest Service standards including Road Management Objective design criteria and associated design elements; cut and fill slope ratios for appropriate soil type and material depth; cross drainage structures; and signing. **HST 4:** Realign road to applicable Forest Service standards as outlined in *Standard Specifications for Highway Projects, FP-03* and associated Forest Service Special Project Specifications. **HST 5:** Seasonally close road when access and weather conditions warrant protection of infrastructure - investment.
IRA 1: Road obliteration and restoration will include recontouring cut and embankment slopes to match existing undisturbed slopes where possible. **IRA 2:** Along existing and proposed Indian Springs road alignments rip, re-contour and seed existing unauthorized trails/roads within sight distance of designated routes. Where applicable, fell some adjacent trees or branches onto the unauthorized trails/roads to create micro climates and to appear natural.
LM 1: Develop water sites within turnouts along new alignments to replace displaced sites adjacent to existing road alignment. **LM 2:** Blockades or herd management will be utilized around the obliterated road sections (where needed) to exclude livestock until revegetation is established.
WLF 1: Protect known three-toed woodpecker nesting sites by prohibiting vegetative management activities from April 15 – September 1 annually in a 30-acre nest area. **WLF 2:** Prohibit forest vegetation manipulation (timber harvest, prescribed burning, fuelwood, thinnings, etc.) within active northern goshawk nest areas during the active nesting season (normally from March 1 to September 30). **WLF 3:** Prohibit management activities around active raptor nest sites (for species other than northern goshawk) from nest site selection to fledgling. **WLF 4:** No activities will occur during the primary nesting season of April 1 – June 30 for migratory birds.
VEG 1: Select weed-free locations for project staging areas. **VEG 2**: Pressure wash all heavy equipment prior to entering National Forest lands **VEG 3**: If subsurface flows are encountered, subsurface drains will be employed where necessary to improve drainage of these areas. **VEG 4**: Revegetate all disturbed areas with native plant species. All seed will be free from weeds (see current Utah Noxious Weed List) and meet all applicable standards set in the Utah Noxious Weed Act.

Table 2-2: Mitigation Measures Mitigation Measures for Action Alternatives. Under the No Action, continued maintenance would occur.
VEG 5: Cut and fill slopes will be revegetated after construction where applicable. Topsoil replacement, erosion blankets, and heavier seeding will be used when necessary to promote revegetation success. Cut slopes in excess of 30 feet will be treated with jute netting or similar material if surface erosion is evident. **VEG 6**: Blockades will be installed or constructed around the obliterated road sections (where needed) to exclude livestock and off highway vehicles until revegetation is established. **VEG 7:** Intensively treat for noxious weeds sites to be disturbed prior to beginning ground disturbing activities, stockpiles of topsoil, and revegetated areas for 3 years following construction and obliteration
VIS 1: The existing road will be obliterated by deep ripping, recontouring where appropriate, and seeding with approved native species consistent with surrounding vegetation. **VIS 2:** Where practical, road obliteration and closure activities will use natural materials in lieu of steel gates, wire fences and other man-made structures. Broken sections of logs, etc., will be scattered randomly on obliterated sections of the existing road. **VIS 3:** Cut and fill slopes will be seeded with native seed after construction to encourage re-vegetation to occur as soon as possible. **VIS 4:** Road width, curve widening, and associated cuts/fills will be constructed to mimic the existing landforms in the adjacent landscape. Where excess material is available fill slopes should be layed back to reflect the side slope of the mountain. Any silhouetting of the road or cuts will be avoided. **VIS 5:** Signage associated with the road will be kept to an appropriate minimum. **VIS 6:** Place downed large woody material along and at the base of fill slopes to help create micro-climates to encourage re-vegetation. Disperse woody material as natural appearing as possible along these slopes. At a minimum of 150 foot spacing to provide wildlife passage through downed material. **VIS 7:** Where stumps are removed in the road prism use in the construction of tree wells to protect remaining overstory.

Identification of the Preferred Alternative

The Proposed Action to realign the Indian Springs road on a new alignment and obliterate and restore to natural condition the majority of the existing road alignment is the Forest Service's preferred alternative. (See Proposed Action description and map, p. 2-6,7).

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Introduction

This Chapter summarizes the physical, biological, social, and economic environments of the project area and the effects of implementing each alternative on that environment. It also presents the scientific and analytical basis for the comparison of alternatives presented in the alternatives chapter.

3.1 Soils

Affected Environment

In 2005, the NRCS (Natural Resource Conservation Service) published the Soil Survey of Strawberry Valley Area, Utah (NRCS 2005). The soil survey includes map unit descriptions, taxonomic unit descriptions, legend, classification of soils and tables for recreation, wildlife habitat, engineering, forestland management, and various soil property tables. The Indian Springs Road Realignment project analysis area affects four soil map units YMF, YND, YOE. and YPE. The majority of the existing Indian Spring road segment is located in soil map unit YMF. A small lower section is located in Soil map unit YND and a large upper section is located in soil map YOE. Both the Allencreek and squaretop components of the YMF map unit are classified as having very high surface runoff and a having severe soil erosion hazard.

The Strawberry Watershed Restoration Report (USDA 2004) road analysis section identifies several road segments having high road-surface erosion occurring on the road prism. The report identifies two road segments within the Indian Creek drainage that have high road surface erosion and contribute high sediment loads to streams. Of these two, the main contributor is the Indian Springs road #70501. The Indian Springs road has a native surface

of clay loam. The predicted prism erosion for this road alone is 226 tons/yr (99 tons/acre) with 36 tons/yr (16 tons/acre) of sediment delivered to streams.

Environmental Consequences

No Action: The existing native surface, single lane road remains at its present location; which is within a riparian zone. Based on Forest Service WEPP model, the predicted prism erosion for this road is approximately 226 tons/year with 36 tons/year of sediment being delivered into the streams. With this no action alternative, the road will continue to contribute large amount of sediment into Indian Creek.

Proposed Action – Realignment and Road Closure: The new road alignment is contained within soil map units YOE and YPE, with the majority of the road contained within the YOE soil map unit. The YOE is rated as having a moderate soil erosion hazard, while the YPE is rated as a severe soil erosion hazard. Both these map unit have a severe road-soil erosion hazard for native surfaces. However, the proposed 1.9 mile of realignment will be located in an upland drier location and will be designed with drainage structures and have a gravel surface. The existing 1.6 miles of the Indian Springs road is to be converted to trail and obliterated and restored to natural condition. Based on Forest Service WEPP model, the predicted prism erosion for this alternative is approximately 9 tons/year with 1 tons/year of sediment being delivered into the streams. Therefore, the proposed action would substantially reduce soil erosion for the long term while improve water quality through an overall reduction of sediment production, short term impacts are likely to occur until disturbed construction areas rehabilitated.

This alternative would not result in a negative impact to soil resources over current conditions and will improve the overall long-term impacts to the watershed. Therefore, it is anticipated that the overall impact of this action will not result in any long-term negative effects to existing soil resources beyond current conditions.

Alternative A– Realignment and Partial Closure: The new road alignment is contained within soil map units YOE and YPE, with the majority of the road contained within the YOE soil map unit. The YOE is rated as having a moderate soil erosion hazard, while the YPE is rated as a severe soil erosion hazard. Both these map unit have a severe road-soil erosion hazard for native surfaces. However, the proposed action plan states that the proposed 1.9 mile of realignment will be located in an upland drier location and will be designed with drainage structures and have a gravel surface. Only a portion of the existing 1.6 miles of the Indian Springs road will be obliterated and restored (0.9 miles) to natural condition with 0.2 miles of single-track motorcycle and 0.5 miles of road to be retained for livestock and dispersed camping access.

This alternative would not reduce sediment production to the same extent the proposed action. Based on the Forest Service WEPP mode, the retained 0.5 mile portion of the Indian Springs road and 0.2 mile road to trail conversion would continue to erode (approximately 88 tons/yr) and contribute a significant sediment load (approximately 13 tons/yr) to streams within the watershed. Total sediment production (approximately 90 tons/yr) and loading to streams (approximately 13 tons/yr) for this alternative would include new alignment in proposed action, 0.2 mile road to trail conversion, and 0.5 mile road portion to remain.

Alternative B - Realignment and ATV Route: Reconstruct a single lane road with turnouts along the new alignment and convert a large portion of the existing alignment into an ATV trail. Approximately 0.5 miles of a dead end road would remain. This alternative action would not reduce sediment production to the same extent as the proposed action since a potion of the existing road would remain as an ATV trail. Based on the Forest Service WEPP model the portion of the existing road to remain and the converted portion to an ATV trail would continue to erode (81tons/yr and 122 tons/yr, respectively, for approximately 203 tons/yr) and contribute a significant sediment load (12 tons/yr and 20 tons/yr, respectively, for approximately 32 tons/yr) to streams within the watershed. Total sediment production (approximately 205 tons/yr) and loading to streams (approximately 32 tons/yr) for this alternative includes new alignment, 0.5 mile road to remain, and 1.1 mile road to ATV trail conversion.

3.2 Watershed Resources

Affected Environment

The canyon in which the Indian Springs road is located is identified as the headwaters of Indian Creek (6th Level HUC #140600040104), a tributary to Strawberry Reservoir. The Strawberry Watershed Restoration Report identified this segment as a chronic source of sediment to Indian Creek (USDA 2004).

The project lies within Strawberry Reservoir Management Area. Within this management area, the proposed activities fall within Management Prescriptions 4.4 –Dispersed Recreation and 5.2 Forested Ecosystems – Vegetation Management (USDA 2003a).

Elevations in the project analysis area range from 9,420 feet at Baldy Mountain to approximately 7,680 at the Indian-Streeper Creeks confluence. Precipitation in the project analysis area ranges from 22 to 28 inches per year. Approximately 70% of annual precipitation falls as snow between October and April, with the remainder occurring as rain from May to September (USDA 2004). Vegetation in the project analysis area consists primarily of aspen covered slopes, mixed conifer on northern slopes, and mountain sagebrush or riparian meadows occupying the valley floor.

Surface water captured by the Strawberry River and Tributaries within the project analysis area flow into the Strawberry Reservoir. The Strawberry Reservoir is approximately 17,160 surface acres at full capacity and serves as the principal irrigation water collection and distribution facilities for the Central Utah Water Conservancy District. Water is delivered to and from the reservoir via a system of aqueducts, tunnels, ditches, and stream augmentations for use in the Uinta Basin and Wasatch Front. Further discussion of the Strawberry Reservoir and Central Utah Project is contained in the Strawberry River Watershed Restoration Report (USDA 2004), The Strawberry Management Area Assessment (USDA 1997), and the Strawberry Reservoir TMDL Report. (UDEQ-DWQ, 2005)

Prior to 1938, Indian Creek was heavily grazed and the stream channel was incised. Aerial spraying of herbicides from 1965 through 1971 resulted in near elimination of willow

communities from the Project Lands in Indian Creek. These land management activities, combined with sedimentation from roads, further impacted stream channel and water quality conditions in Indian Creek and Strawberry Reservoir (USDA 2004).

Indian Creek contributes approximately 18% of the streamflow input to Strawberry Reservoir. However, the majority of this flow originates in Streeper Creek, immediately below the project analysis area. The stream segment immediately below the project analysis area (from Streeper Creek to Strawberry Reservoir) includes some of the best and most productive salmonid spawning habitat in the Strawberry Valley (UDEQ-DWQ, 2005). There is approximately 3.5 miles of perennial Indian Creek beginning at Indian Springs and extending to Streeper Creek Confluence. This reach is primarily snowmelt driven with low baseflows. As a result, the associated riparian zone of this stream reach is relatively narrow and consists primarily of willow and riparian grass/forbe community. A large beaver complex is located on Indian Creek, approximately1.1 miles below the Indian Springs drainage. Successful bank stabilization and intact beaver dams have helped lower erosion rates on Indian Creek above Streeper Creek (UDEQ-DWQ, 2005).

Indian Springs Canyon above Indian Springs is classified as an intermittent drainage, with runoff occurring during in the late fall through spring snowmelt. The Indian Springs road is located in or adjacent to the drainage bottom, resulting in stream capture and road prism erosion for much of its length. The 2004 Strawberry Watershed Restoration Report (USDA 2004) road analysis section identifies several road segments in the Indian Creek watershed as having high road-surface/prism erosion rates and sediment delivery to streams. The Indian Springs Road (FR #70501) has a native surface of clay loam and is located entirely in severely erosive soils (Davidson, 2008). As a result, modeled annual road prism erosion for this segment is 226 tons/yr (99 tons/acre) with 36 tons/yr (16 tons/acre) of sediment delivered to streams (USDA 2004). The entire existing road segment is located in the drainage.

3.21 Riparian Habitat Conservation Areas (RHCAs), Wetlands, and Floodplains

Affected Environment

RHCAs are areas within watersheds where riparian-dependent resources receive primary emphasis and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent streams, and other areas that help maintain the integrity of aquatic ecosystems. Each perennial stream and waterbody within the project analysis area of analysis is in one of three RHCA classes. Class I receives the highest level of protection (300 foot buffer). Class II receives a high level of protection (200 foot buffer). Class III receives a moderate level of protection (100 foot buffer).

Indian Creek and its tributaries above Indian Springs are classified as Class III RHCA. The existing Indian Springs Road alignment is located entirely within this RHCA. A Class II RHCA extends from Indian Springs for approximately 2.4 miles. The remaining 1.1 miles of Indian Creek is classified as Class III RHCA. A number of intermittent tributaries with associated Class III RHCAs are also located within the project analysis area.

No floodplains are currently inventoried in the project analysis area. Three emergent springs and associated small wetland and stringer meadow complexes were identified during Forest water rights field verification efforts within the project analysis area. The only spring potentially affected by any of the alternatives is Indian Spring. This spring is located near the mouth of Indian Springs Canyon and adjacent to the proposed road relocation. This source serves as the beginning point for the perennial reach of Indian Creek.

Environmental Consequences

No Action: Indian Springs Canyon above Indian Springs is classified as an intermittent drainage, with runoff occurring during in the late fall through spring snowmelt. Indian Springs Road (FR #70501) is located in moderate to severely erosive soils is identified in the Strawberry Watershed Restoration Report as having high road-surface/prism erosion rates and sediment delivery to streams. This road alignment is also located in or adjacent to the drainage bottom, resulting in stream capture and road prism erosion for much of its length. Approximately 1.0 miles of the current road alignment is within a Class III RHCA and is either occupying the valley/drainage bottom or located adjacent to the stream. Under this alternative, the road in its current state would continue to be located within the RHCA.

Proposed Action – Realignment and Road Closure: The proposed new 1.9 mile road alignment would be located mid-slope to avoid any identified RHCAs, wetlands, or floodplains and will result in minimal impact to these resources. However, this mid-slope alignment can affect the existing drainage network by concentrating road runoff channeled in roadside ditches, extend the channel network by eroding gullies or intermittent channels on hillslopes, and link road segments to small tributary streams initiating new channels or extending the existing drainage network. Proper road design, gradient, surfacing, and drainage frequency will minimize these potential impacts (USDA 2000, Swift 1984). Incorporating these features and considering the overall distance of the alignment from any developed stream channel, the new road segment will dramatically reduce stream sedimentation (USDA 2000). The new 1.9 mile road alignment will be located outside of any identified RHCAs, wetlands, or floodplains and will result in minimal impact to these resources.

This alternative also includes road to trail conversion (0.2 mile) and obliteration (1.4 miles) of the existing Indian Springs Road. This road alignment is located in moderate to severely erosive soils is identified in the Strawberry Watershed Restoration Report as having high road-surface/prism erosion rates and sediment delivery to streams (USDA 2004). Obliteration and re-establishment of more natural drainage in Indian Springs Canyon will restore more natural drainage and reduce the amount of erosion by and sedimentation from road prisms to the stream from 36 tons/year to 1 ton/year (up to 96%) in the long term (Davidson, 2008).

Alternative A - Realignment and Partial Closure: Construction of the 1.9 mile road on the new alignment under this alternative would have the same impact to RHCAs, Wetlands, and Floodplains as discussed in the Proposed Action. The existing road alignment includes 0.2 mile road to trail conversion, 0.5 mile road retained, and 0.9 miles of road obliterated and restored to natural condition. Approximately 0.7 miles of the 0.9 miles to be obliterated and restored is located in the drainage-bottom and in moderate to severely erosive soils. These

actions will restore more natural drainage for Indian Springs Canyon and reduce predicted road prism erosion related sedimentation to Indian Creek from 36 tons/year to 13 tons/year (up to 64%) below existing conditions (Davidson, 2008).

Alternative B - Realignment and ATV Route: Construction of the road in the new alignment under this alternative would have the same impact to RHCAs, Wetlands, and Floodplains as discussed in the Proposed Action and Alternative A. The majority (0.7 miles) of the Indian Springs Road to be converted to an ATV trail (1.1 miles) is located in moderate to severely erosive soils and in or adjacent to the drainage bottom of Indian Springs Canyon. Approximately 1.0 mile of road and trail will be located within identified RHCAs. Road prism erosion related sedimentation to Indian Creek will be reduced from 36 tons/year to 32 tons/year (up to 11%) below existing conditions (Davidson, 2008).

3.22 Water Quality

Affected Environment

All waters within the project analysis area are tributaries to Strawberry Reservoir. The State of Utah classified these waters to support beneficial uses 1C, 2B, 3B, and 4[1]. In addition to the state designated beneficial uses, Strawberry River and Tributaries within the project analysis area of analysis are considered "High Quality Waters – Category 1" and are subject to the State of Utah's Anti-Degradation Policy. The policy requires that existing high water quality be maintained and that new point-source discharges are prohibited. Control of non-point sources of pollution is required to the extent feasible through implementation of best management practices (USDA 2004, UDEQ-DWQ 2007).

Waters in Utah that do not meet the water quality standards for their assigned beneficial uses are the focus of the Clean Water Act's (CWA) Section 303 (d), which requires states to identify, develop, and implement plans to improve remaining impaired waters. The Total Maximum Daily Load (TMDL) process, which identifies pollution sources and allocates maximum pollution loadings where water quality goals are not being met, is the required methodology for addressing these listed waters.

The TMDL approach targets watersheds, addressing water quality in a site-specific way tailored to local conditions and objectives. It specifies the increment of water quality improvement required, allocates responsibility for this improvement incrementally among pollution sources, and provides a framework for remedial action. The TMDL process is coordinated with other CWA programs.

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[1] State of Utah Beneficial Use Classifications
Class 1C – Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water
Class 2B – Protected for secondary contact recreation such as boating, wading, or similar uses.
Class 3A – Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.
Class 3B – Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.
Class 4 – Protected for agricultural uses including irrigation of crops and stock watering.

Strawberry Reservoir is included on the 2004 State of Utah 303(d) List of Impaired Waters for Total Phosphorous and Dissolved Oxygen. Water quality in the reservoir is currently partially supporting its coldwater fishery and improving, but not at a rate that would allow it to be removed from the 303 (d) List. As a result, Strawberry Reservoir Total Maximum Daily Load (TMDL) Study was developed by the Utah Department of Environmental Quality (UDEQ) – Division of Water Quality. The report was finalized in July 2005. Current conditions and recent trends of the reservoir's water quality indicate that continuation of current and planned management practices will continue to improve quality and sustainability of the Strawberry Reservoir's Fishery.

Environmental Consequences

No Action - The 2004 Strawberry Watershed Restoration Report (USDA 2004) road analysis section identifies several road segments in the Indian Creek watershed as having high road-surface/prism erosion rates and sediment delivery to streams. Due to its location in or adjacent to the drainage bottom, this road is a chronic and long-term contributor of fine sediment to Indian Creek during precipitation events and spring runoff. The Indian Springs road is a native surface of clay loam with modeled annual road prism erosion of 226 tons/yr (99 tons/acre). Of this road prism erosion, approximately 36 tons/yr (16 tons/acre) of sediment delivered to streams (USDA 2004). Road prism erosion and stream sedimentation would continue at current rates, resulting in continuation of stream, floodplain, and water quality impairment.

Proposed Action – Realignment and Road Closure: The road realignment, road to trail conversion, and obliteration and restoration to natural condition the existing road alignment will reduce road prism erosion related sedimentation to Indian Creek by approximately 35 tons/year (up to 97%) in the long term. An unquantifiable amount of sediment may be generated during construction and continue for up 1-2 years until the rehabilitated canyon bottom is adequately re-vegetated. This erosion and sedimentation can be dramatically reduced by incorporation of Best Management Practices into the construction process. Reclamation of the road will restore natural drainage in terms of stream/floodplain function in Indian Springs Canyon. In the long term, the proposed action would substantially reduce sediment production and delivery to the stream, thus improving water quality.

Alternative A - Realignment and Partial Closure: The road realignment, road to trail conversion and obliteration and restoration to natural conditions the existing road will reduce road prism erosion sedimentation to Indian Creek by 64% in the long term. The remaining road segment, trail and new alignment will still produce approximately 90 tons/year of road prism erosion and 13 tons/year of sediment to Indian Creek (Davidson, 2008). The majority of sediment production (81 tons/year) and sedimentation to Indian Creek (12 tons/year) is generated from the 0.5 mile road segment to remain. An unquantifiable amount of sediment may be generated during construction and continue for up 1-2 years until the rehabilitated canyon bottom is adequately re-vegetated. This erosion and sedimentation can be dramatically reduced by incorporation of Best Management Practices into the construction process. Rehabilitation of the road will restore natural drainage in terms of stream/ floodplain function in Indian Springs Canyon. In the long term, this alternative will reduce sediment production and delivery to streams, but not to the same extent as the proposed action.

Alternative B - Realignment and ATV Route: The road realignment and road to ATV trail conversion will reduce road prism erosion sedimentation to Indian Creek by 11% in the long term, as compared to the No Action Alternative. The remaining road segment, ATV trail and new alignment will still produce approximately 205 tons/year of road prism erosion and 32 tons/year of sediment to Indian Creek (Davidson, 2008). The majority of sediment production (203 tons/year) and sedimentation to Indian Creek (32 tons/year) is generated from the 0.5 mile road segment to remain and the road to ATV trail conversion. An unquantifiable amount of sediment may be generated during construction of ATV trail and continue for up 1-2 years until the rehabilitated canyon bottom is adequately re-vegetated. This erosion and sedimentation can be reduced by incorporation of Best Management Practices into the construction process. In the long term, this alternative will reduce sediment production and delivery to streams, but not to the same extent as the proposed action or Alternative A.

3.23 Drinking Water Source Protection

Affected Environment

The Utah Safe Drinking Water Act empowers the Utah Drinking Water Board to enact rules pertaining to public water systems. By agreement with the EPA, Utah administers the federal act within the state. Thus, Utah's laws and rules regarding public drinking systems are in conformity with federal rules. Utah Rules governing drinking water systems are listed in R309-100 through R309-705.

Groundwater
No underground municipal, community, or non-community underground Drinking Water Sources are present within the Project analysis area.

Surface Water
As mentioned above, surface waters within Strawberry River are classified by Utah Department of Environmental Quality – Division of Drinking Water to supply water to Public Water Systems (PWS). Surface waters protected for domestic purposes must be treated as required by the Utah Division of Drinking Water before distribution in PWS. Protection Zones for these waters are established in *Utah Administrative Code - Rule R309-605 - Source Protection: Drinking Water Source Protection for Surface Water Sources*. The nearest municipal withdrawal of surface water is the Starvation Reservoir, approximately 50 miles downstream of the project analysis area.

Environmental Consequences

Selection of any of the alternatives would have no impact on surface water supply for public water systems, as the nearest domestic intake is located 50 miles downstream of the project analysis area. Similarly, no underground municipal, community, or non-community underground drinking water sources are present within the Project analysis area or Cumulative Effects area. Therefore, no further analysis of impact to this these resources will be completed.

3.3 Aquatic Species

Affected Environment

Bonneville cutthroat trout (*Oncorhynchus clarki utah*) and Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) are identified as aquatic Management Indicator Species (MIS) for the Uinta National Forest (USDA 2003a) and listed as a United States Forest Service (USFS) Region 4 (USDA 2003) and State of Utah sensitive species.

As aquatic MIS for the Uinta National Forest, populations of Bonneville cutthroat trout (BCT) and Colorado River cutthroat trout (CRCT) and their habitat are monitored to identify trends and changes in the status of these populations and their habitat relative to land management actions on the Forest. Population data are collected for each of the streams containing either conservation or persistence populations of BCT and/or CRCT as identified in the *Conservation Agreement and Strategy for BCT in the State of Utah* (UDNR 1997a); the *Conservation Agreement and Strategy for CRCT in the State of Utah* (UDNR 1997b); and the *Land and Resource Management Plan for the Uinta National Forest* (USDA 2003a). These data include information that can be used to determine the distribution, abundance, and condition of BCT and CRCT populations on the Forest.

The analysis area is located within the Northeastern Geographic Management Unit (GMU) for CRCT and streams in the watershed were historically inhabited by CRCT. The construction of Strawberry Reservoir fragmented and isolated headwater populations of CRCT, and subsequent fisheries enhancement activities during the 1990s and the introduction of non-native fish species has eliminated any genetically pure CRCT populations within the analysis area. Consequently, no conservation or persistence populations for CRCT have been identified within Indian Creek. However, the Bear Lake strain of BCT has been introduced into the Northeastern GMU and naturalized populations occur in the Indian Creek drainage. In order to fully assess potential impacts of the proposed project on fisheries and aquatic resources within the analysis area, these non-native BCT populations will be used as the focus of this analysis.

Because native populations of aquatic MIS for the Uinta National Forest no longer occur within the Indian Creek drainage, the USFS does not conduct fish population surveys in this drainage as part of the Forest wide MIS monitoring program (Smith and Lyman 2004a). However, the USFS does conduct fish habitat and population monitoring surveys for watersheds on the Forest in which significant land management activities and/or projects have been identified and this information is available for the Indian Creek drainage.

Fish Populations

The Bear Lake strain of BCT has been introduced into the Strawberry River drainage and populations occur within a number of the stream systems including Indian Creek. Bonneville cutthroat trout are a USFS Region 4 and State of Utah listed sensitive species and conservation agreements between the USFS and the UDWR have been developed for this species; however, no conservation or persistence populations for BCT have been identified in Indian Creek.

Other native fish species believed to be present in Indian Creek include mottled sculpin (*Cottus bairdi*), mountain sucker (*Catostomus platyrhynchus*), Utah sucker (*Catostomus ardens*), redside shiner (*Richardsonius balteatus*), speckled dace (*Rinichthys osculus yarrowi*), and Utah chub (*Gila atraria*) (Smith 2005a). Although thought to be present in Indian Creek prior to the 1990 Rotenone treatment of the Strawberry River drainage, leatherside chub (*Gila copei*) are no longer found in the drainage (Sigler and Sigler 1996). Snorkel counts were conducted in the drainage in 2004, 2005, 2006 but these counts did not identify fish species seen but merely total fish seen. The fish report identifies these as cutthroat trout.

In addition to BCT, rainbow trout (*Oncorhynchus mykiss*) are present in Indian Creek. Other non-native fish species that occur within the drainage include Kokanee salmon (*Oncorhynchus nerka*). Sterile rainbow trout are currently stocked by the UDWR to supplement popular recreational fisheries in some locations within the Strawberry River drainage, while hatchery operations by the UDWR on the Strawberry River support popular recreational fisheries for both cutthroat trout and Kokanee in Strawberry Reservoir.

Amphibians

The distribution of amphibian species within the Indian Creek drainage has been documented through surveys conducted by the USFS and UDWR. Boreal toad (*Bufo boreas boreas*) and tiger salamander (*Ambystoma tigrinum*) have been documented to occur within the management area. Results from the Utah GAP Analysis (Edwards et al., 1985) indicate that the management area contains critical value habitat for boreal chorus frog (*Pseudacris maculate*), boreal toad, Great Basin spadefoot toad (*Spea intermontana*), Great Plains toad (Bufo cognatus), northern leopard frog (*Rana pipiens brachycephala*), tiger salamander, and Woodhouse's toad (*Bufo woodhousii*). Additional information relative to the life history and distribution of amphibian populations on the Uinta National Forest is contained in *Native Amphibians of the Uinta National Forest* (Smith 2005b).

Rare Aquatic Invertebrates

No observations of State or Federally listed rare or imperiled aquatic macro-invertebrates have been reported for the Indian Creek drainage (NatureServe 2005). Although one species of rare aquatic snail, the glossy valvata (*Valvata humeralis*), has been documented to occur within the management area there are no records of this species being observed within the drainage. Additional information relative to aquatic invertebrates on the Uinta National Forest is presented in *Aquatic Invertebrate Report for Samples Collected by the Uinta National Forest 2002* (Vinson 2005).

Threatened, Endangered, and Sensitive (TES) Species

The Bear Lake strain of BCT is the only TES aquatic species believed to inhabit the Indian Creek drainage (USDA 2003). Although the drainage is within the historic range of Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*), this species has been removed from the system and replaced with BCT following the Rotenone treatments during the 1990s. The drainage is outside the range of June sucker (*Chasmistes liorus*) and this species is currently not found in the area (Smith 2004).

Fish population data for Indian Creek include information collected during fish population surveys conducted by the USFS during 2003, 2004, 2005, and 2006. Population data, using

the abundance of BCT within the Indian Creek drainage, indicate a relatively stable population with higher than normal recruitment for 2004. Estimates of cutthroat trout densities in the drainage average 2.13 ± 0.37 fish/m and range from 1.90 ± 0.53 fish/m during 2005 to 2.70 ± 0.77 fish/m during 2004. (Smith 2007a)

Aquatic Habitat

Aquatic habitat was measured at 484437 meters east 4439698 meters north Z 12 N NAD83, which is approximately 3 ½ miles downstream of the project area. R1/R4 and HSI, habitat surveys have been conducted for a 100 meter segment and indicate that the habitat suitability for cutthroat trout in Indian Creek is relatively poor with a combined HSI (Uinta modified) score of 0.67 in 2005 and 0.65 in 2007. Habitat conditions in Indian Creek are most restrictive for the fry life stage of cutthroat trout with an HSI score of 0.42. Overall, the most limiting habitat factors identified for Indian Creek during the HSI analysis was percent substrate 10 – 40 cm with an HSI score of 0.10 and spawning gravel percent fines < 3.00 mm with an HSI score of 0.14 (Smith 2007a).

Aquatic habitat in the 100 meter survey section of Indian Creek consists of run (48%), glide (27%) and pool (25%) habitat types with stable (97%) but few undercut banks (24%). Pools are typically small and/or shallow but are sufficient to provide a low velocity resting area for one to very few adult trout. Pool cover, if present, is in the form of shade, surface turbulence, and/or very limited structure. Available concealment cover is 89 percent for adult and 95 percent for juvenile salmonids. Available winter habitat is approximately one percent. Riparian vegetation consists primarily of grass/forbs (75%) and sedge/rush (15%). Amounts of large woody debris are low with an estimated density of 0.12 pieces/m, 0.00 aggregates/m and 0.00 root wads/m being observed within the sample reaches. Channel substrate consists of rubble, gravel, boulders, and fines in approximately equal amounts. In spawning gravels, percent fines < 6.35 mm and > 3.00 mm are high at 58 and 54 percent respectively (Smith 2007a). These numbers are an average of four samples which were taken at one site that is approximately 3 ½ miles downstream of the project area and may or may not reflect what is happening throughout the drainage.

Because of the proximity of the first sediment samples to the project area, two additional sample locations were selected. The second group of four sediment samples was taken just below the road location where the road and the stream diverge south of Indian Springs (UTM 0400656 E 4434411 N Zone 12 Nad 83) (Figure 3.3-1). The third group of four sediment samples was taken from an unroaded side channel within 100 meters from the second group.

At sample site 2, the spawning gravels percent fines < 6.35 mm averaged 64% and ranged from 51 to 73% fines. These numbers are an average of four samples which were taken on site within the project area. Survival of cutthroat trout embryo to fry is calculated to average 0.6% and would range from a high of 2.6% to a low of 0.2% survival as calculated from Irving and Bjornn (1984).

At sample site 3, the spawning gravels percent fines < 6.35 mm averaged 53 and ranged from 51 to 73% fines. These numbers are an average of four samples which were taken at on site within the project area. Survival of cutthroat trout embryo to fry is calculated to average

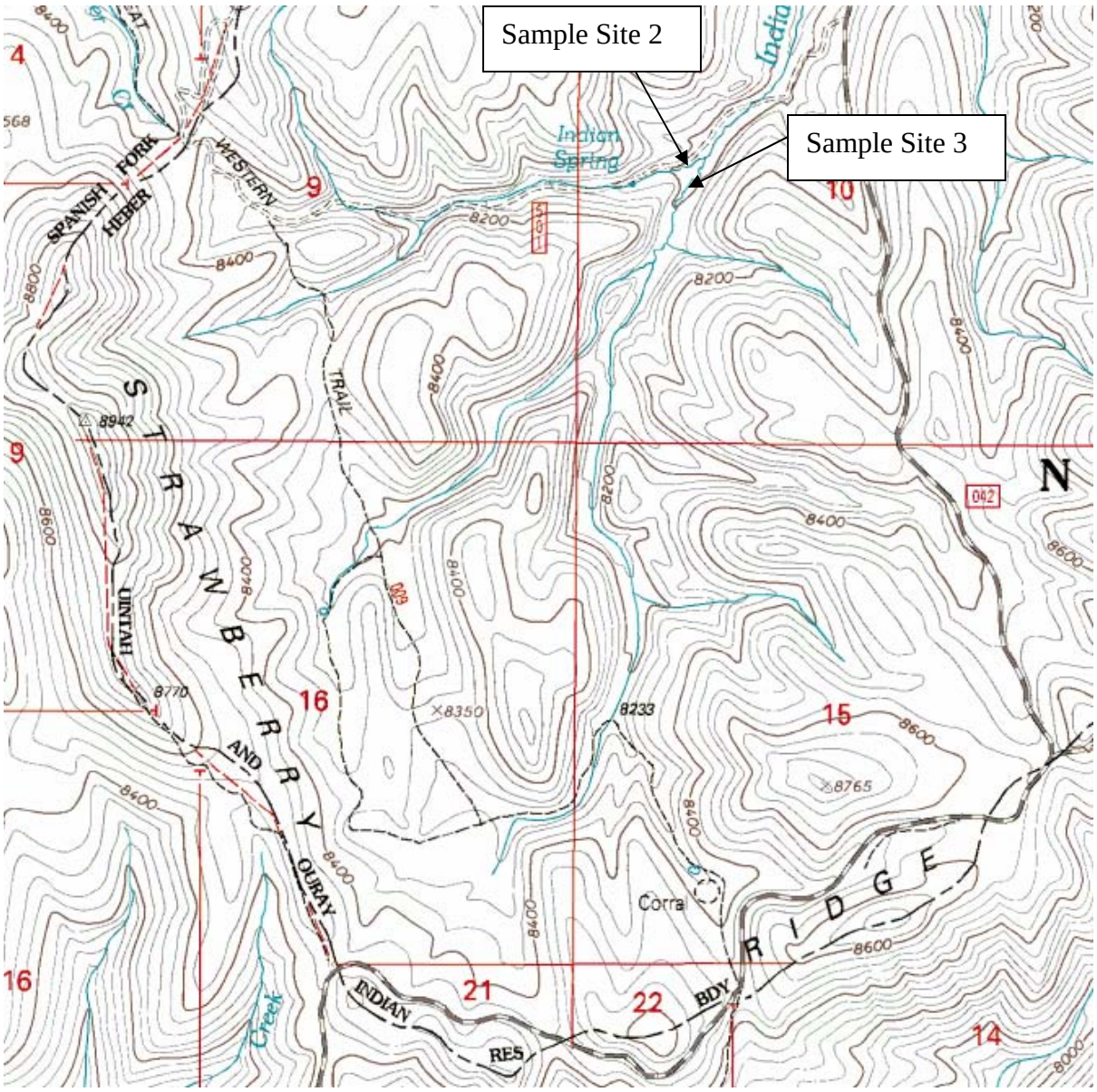

Figure 3.3-1. Map of the project area identifying the 2008 sediment sample location sites in the Indian Creek drainage, Uinta-Wasatch-Cache National Forest.

0.6% and would range from a high of 4.8% to a low of 1.5% survival as calculated from Irving and Bjornn (1984). Given the poorer projected survival of cutthroat trout embryos at sample site 2 in comparison to sample site 3, this poorer survival appears to be directly related to the Indian Spring Road.

After review of the available habitat survey information, it is concluded that aquatic habitat in the surveyed 100 meters of Indian Creek although relatively poor, is sufficient to support a limited population of fish and other aquatic species. It is however clear that the Indian Springs Road is directly impacting aquatic life in Indian Creek and is limiting productivity of Indian Creek in its headwaters.

Environmental Consequences

No Action: Under this alternative, no action would occur; the existing native surface, single lane road would remain at its present location, part of which is in the stream channel and most of which is within riparian zone. The predicted prism erosion for this road is approximately 226 tons/yr (99 tons/acre) with 36 tons/yr (16 tons/acre) of sediment delivered to streams (Davidson 2008). With the No Action alternative, the road will continue to contribute large amounts of sediment to Indian Creek. High sediment loads would continue to negatively impact fish and other aquatic species in Indian Creek. (see Sections 3.1 and 3.2 for additional discussion regarding sedimentation)

Proposed Action – Realignment and Road Closure: The new alignment, road to trail conversion, and road obliteration would have a predicted road and trail prism erosion of 9 tons/year with 1 ton/year of sediment delivered to streams (Davidson 2008). The new alignment, road to trail conversion, and road obliteration would substantially improve water quality through reduction of sediment production (up to 96%) and sediment delivery to streams (up to 97%) enhancing habitat for faunal and floral species. This is the only alternative which would, overtime, reduce fine sediment in Indian Creek significantly improve habitat for fish and other aquatic species.

Alternative A - Realignment and Partial Closure: This alternative action would not reduce sediment production to the same extent as the proposed action. The retained 0.5 portion of the Indian Springs road, 0.2 mile road to trail conversion, and the new alignment would continue to erode (approximately 90 tons/yr) and contribute a significant sediment load (approximately 13 tons/yr) to streams within the watershed (Davidson 2008). The road to trail conversion is estimated to erode 7 tons of sediment per year with 1 ton/year delivered to the stream. The new alignment, road to trail conversion, and remaining road section with the existing high levels of sediment in the headwaters of Indian Creek it is expected that there will only be a slight improvement to habitat for fish and other aquatic. Leaving the most downstream 0.5 miles of the road open will continue to encourage dispersed camping along the stream, the use of the existing fords and prevent the restoration of riparian habitat in this area.

Alternative B - Realignment and ATV Route: It is anticipated that this alternative would not reduce sediment production to the same extent as the proposed action. The new alignment, retained 0.5 mile road, and 1.1 mile road to trail conversion trail would erode (approximately 205 tons/yr) and contribute a significant sediment load (approximately 32 tons/yr) to streams within the watershed (Davidson 2008). The continued unnatural loading of the stream with sediment from the ATV trail prism will continue. The trail prism would directly overlays the stream channel. The valley bottom is too narrow to accommodate and separate the stream from the trail prism. With the continued use of the old road as an ATV trail and with the existing high levels of sediment in the headwaters of Indian Creek no significant improvement habitat for fish and other aquatic species would be expected. Leaving the most downstream 0.5 miles of the road open will continue to encourage dispersed camping along the stream, the use of the existing fords and prevent the restoration of riparian habitat in this area.

3.4 Recreation

Affected Environment

The project area falls within two Recreation Opportunity Spectrum (ROS) settings, Roaded Natural and Roaded Modified. Both of these ROS settings provide recreation opportunities that provide a natural appearing environment with moderate evidence of human activity and management.

There are no developed recreation facilities in the project area. The Great Western Trail (Trail #009) is located in the project area. This trail is open to non-motorized use and single track (dirt bike) motorized use. Trail access from Strawberry Ridge Road (FR #518) is via primitive trailheads and delineated with minimal signing.

There is a series of dispersed campsites in the project area and adjacent road corridors. The primary uses in this area camping, OHV riding, hunting, and other dispersed recreation activities. The highest use of this area is during hunting season in the fall.

Unauthorized trails/roads exist within the analysis area. Approximately 9 miles of linear features have been identified (Hatch 2008). These unauthorized routes are being used and potentially additional ones created as analyzed as depicted on 2006 NAIP 2 meter imagery and Google earth images. A number of the unauthorized trails/roads appear to be following old road alignments or administrative routes that go into and through the area (Hatch 2008). It is assumed that these old routes were closed at some point in the past, but closure methods were ineffective. Some appear to directly connect to dispersed car camping locations that in some cases extend beyond 150 feet from the designated travel routes. The Forest Plan limits motorized vehicles to within 150 feet of designated routes. The District is currently managing the analysis area as directed by the Forest Plan, Motor Vehicle Use Map (MVUM) and travel management direction. When new unauthorized trails/roads are found, if the forest manager has the resources they will install a carsonite closure sign within 150 feet of the intersection with a designated route. If the resources are not available they will turn the location information into the District Recreation Staff and they will determine a schedule for closure around available resources and budget (Campbell 2008). Forest managers are as vigilant as possible in maintaining closures as resources and budget allow.

Environmental Consequences

No Action - No action would result in the existing recreation management situation as described in the affected environment. There will be no change from current management of unauthorized roads/trails and existing impacts will more than likely remain the same. According to a discussion held at the 2006 IMBA Summit/World Mountain Bike Conference "constructed barricades - …seldom work and often inspire graffiti" (IMBA 2006). As indicated under current management direction installing closure signs may have limited effectiveness and continued draw on Forest resources and budget. Unauthorized trails/roads that are found in the analysis area will be managed as stated in the Affected Environment.

Proposed Action – Realignment and Road Closure: Implementation of the road realignment project would have a minimal effect on the recreating public in the immediate area. The Great Western Trail is open to non-motorized use and single track (dirt bike) motorized use and access will be maintained. The road realignment would be open to ATVs (1.9 miles). The existing Indian Springs would be converted to a single-track motorcycle trail (0.2 miles) and obliterated and restored to natural condition (1.4 miles). Vehicle and ATV access to the southeastern portion of the Forest would be rerouted along new alignment. A portion of the Indian Creek Road (1.8 miles) would no longer be designated as open to ATVs to better manage traffic and delineate open routes. Total ATV opportunities along roads would decrease by 1.5 miles (Table 3.4-1).

Dispersed recreation opportunities would remain at the same level and setting type, with the exception of the new sites along the new road. These sites will offer a different experience due to proximity to the road and smaller size of the sites. Historical users of the Indian Springs road corridor will be affected because the new sites will provide a different experience due to more traffic and less solitude. Outside of the Indian Springs road corridor in adjacent general forest areas numerous primitive dispersed campsites exist that would primarily meet the need of the displaced historical users.

Based on past experience, an indirect effect of this alternative is the potential for creating of unauthorized routes. The proposed road realignment would traverse the easterly side of Strawberry Ridge on cross slopes between 0-45 percent. More than half the area is open landscape or one with sparse vegetation where some users may leave the designated route and travel in authorized areas. Other parts of the landscape have moderate to dense vegetation where traveling off route will be unlikely. There may be some interest to access the ridgeline for views of the surrounding landscape although slope, vegetation, and a fence line along the ridge could deter a casual rider to travel cross country if they are trying to access a point of interest on the ridge line. The precise location and intensity of this unauthorized use cannot be quantified for further site specific disclosure.

A mitigation measure for this alternative (REC-6) is to close and restore unauthorized trails/roads within site distance from the existing and proposed Indian Springs Road alignments. Closing these unauthorized routes, utilizing natural barriers and vegetation (IMBA 2006), could potentially eliminate the re-opening of the unauthorized trails/roads. By closing the access along the existing fence on the Strawberry Ridge line and providing an alternative route with the proposed re-alignment could reduce the possibility of the unauthorized use of the maintenance access route along the fence (IMBA 2006). Additional unauthorized trails/roads that are found in the analysis area will be managed as stated in the Affected Environment.

Alternative A - Realignment and Partial Closure- Implementation of this alternative would have a minimal effect on the recreating public in the immediate area. The Great Western Trail is open to non-motorized use and single track (dirt bike) motorized use and access will be maintained via 0.2 mile road to trail conversion on the existing road alignment from Strawberry Ridge. Vehicular access to and from all locations would be maintained with the exception of 1.1 miles of the Indian Springs road which will be obliterated and restored to natural condition and converted to single-track motorcycle trail. Total ATV opportunities along roads would increase by 0.8 miles (see table 3.4-1).

Dispersed recreation opportunities would remain at the same level and setting type, with the exception of the new sites along the new road. These sites will offer a different experience due to proximity to the road and smaller size of the sites. Historical users of the Indian Springs road corridor will be affected because the new sites will offer a different experience due to more traffic and less solitude. Outside of the Indian Springs road corridor in adjacent general forest areas numerous primitive dispersed campsites exist that would primarily meet the need of the displaced historical users.

Effects would be similar to the Proposed Action along the realigned road and for mitigation of existing unauthorized trails/roads. But there could be an increased potential of the creation of unauthorized trails and roads as a result of leaving a one half mile dead end segment of the existing Indian Springs road. Because the route is a dead end the casual or higher risk rider may explore alternative routes to get them to another designated route without backtracking on the half mile segment. "If user needs are satisfied, there is less likelihood of off-road vehicle use…" (USDA 2003b). Unauthorized trails/roads that are found in the analysis area will be managed as stated in the Affected Environment.

Alternative B - Realignment and ATV Route- Implementation of this alternative would have a minimal effect on the recreating public in the immediate area. The Great Western Trail is open to non-motorized use and single track (dirt bike) motorized use and access will be maintained. Vehicular access to and from all locations would be maintained with the exception of 1.1 miles of the existing Indian Springs road which will be made into an ATV trail. Total ATV opportunities would increase on roads by 0.8 miles and ATV trail mileage would increase by 1.1 miles (see table 3.4-1).

Dispersed recreation opportunities would remain at the same level and setting type, with the exception of the new sites along the new road. These sites will offer a different experience due to proximity to the road and smaller size of the sites. Historical users of the Indian Springs road corridor will be affected because the new sites will offer a different experience due to more traffic and less solitude. Outside of the Indian Springs road corridor in adjacent general forest areas numerous primitive dispersed campsites exist that would primarily meet the need of the displaced historical users.

Effects would be similar to the Proposed Action along the realigned road and for mitigation of existing unauthorized trails/roads. There could be a lower potential of unauthorized trails because of the extra road and trail mileage left open for ATV use on the existing Indian Springs road alignment because of dense vegetation and steeper side slopes. Unauthorized trails/roads that are found in the analysis area will be managed as stated in the Affected Environment.

Table 3.4-1. Changes to Roads/Trails Designated Open to ATVs

	Road mileage change for ATV opportunities	Trail mileage change for ATV opportunities	Total road mileage open to ATV	Total trail mileage open to ATV
No Action	0	0	3.4	0
Alternative A	0.8	0	4.2	0
Alternative B	0.8	1.1	4.2	1.1
Proposed Action	-1.5	0	1.9	0

3.5 Health, Safety and Transportation

Affected Environment

The analysis area includes classified National Forest System Roads (FSR) that directly connect to the Indian Springs Road. This includes Indian Springs, Indian Creek, and Strawberry Ridge roads that influence health, safety, and transportation management under the action alternatives. These roads are on National Forest System lands and are defined as classified National Forest System Roads. The Forest Service currently maintains this infrastructure. In addition, where applicable, discussions on converting roads to trails in included.

Data used for this analysis includes Road Management Objectives (RMO's), the *Roads Analysis for the Uinta National Forest* (Roads Analysis), road condition surveys, accident history and potential, Forest Transportation Atlas (GIS base transportation layer), and INFRA route database.

The intended purpose of an individual National Forest System road is established through Road Management Objectives (RMO's) and is based on management area direction and access management objectives. Each road within the system has RMO's, which contain existing and planned transportation facility design, operation, and maintenance criteria. Also included can be pertinent health and safety, historic, and natural resource information. The operational management of a road describes the existing condition in terms of design standards. The objective (planned) management of a road is intended to be safe and responsive to public needs and desires, have minimal adverse effects on ecological processes and ecological health, diversity and productivity, and in balance with needed management actions (USDA 2003a).

The road transportation system within the analysis area includes arterial and local roads. The arterial road within the analysis area is the Indian Creek Road. This is a primary route through the Forest to travel from State Route 6 and State Route 40, Strawberry Reservoir, and other portions of the Uinta National Forest. This route is a double lane, hardened surfaced road that provide a moderate to high degree of user comfort and convenience.

Local roads connect terminal facilities to forest arterial or collector roads or public highways. The local roads within the analysis area that affect the project area are the Indian Springs and Strawberry Ridge roads. These are single lane or two-track native surface roads and are recommended for travel by high clearance vehicles only.

Forest Service personal accounts of accident history and experience were used for this analysis. There are currently no physical records of property or personal injury accidents available for the Indian Springs Road. Accident history is based on Forest Service personal accounts and experience.

There is very little data available on the amount of traffic that travels classified FSR's and no current data on the amount of traffic on the FSR's within the analysis and project area. All roads in the project area are designed for low volume. The design criteria for low-volume roads does not emphasize the amount of traffic as significant in comparison to vehicle

characteristics, such as design and critical vehicles, traffic service level, road users and economics. Traffic service levels reflect factors such as speed, travel time, traffic interruptions, freedom to maneuver, safety, driver comfort, convenience and operating costs. These factors affect design elements such as number of lanes, turnout spacing, lane widths, driving surface material, sight distance, design speeds, clearance, horizontal and vertical alignment, curve widening and turnarounds (USDA 1987, USDA 2005). Meeting design criteria best addresses safety. Health and safety related RMO's and associated road template data are summarized below for each road.

Indian Springs Road, FSR #70501. The Indian Springs Road is within the project area starts at intersection with Strawberry Ridge, FSR#70518, in the northwest ¼ of Section 9 of T.5S R.12W, USM. and heads east for 1.6 miles to the Indian Creek Road, FSR #042, in the northwest ¼ of Section 10 of T.5S R.12W, USM This road is a classified FSR and is maintained by the Forest Service.

The existing condition of the Indian Springs Road can best be addressed by showing the design and management standards in terms of existing condition, operational, and objective levels (Table 3.5-1). The existing conditions do not meet the operational or objective standards.

The existing 1.6 miles of road has a native surface with a narrow, 10-14 feet wide travel way. The road has steep grades in excess of 10 percent. The horizontal and vertical alignments do not adequately provide safe sight distances. The clay loam native surface material has high surface runoff and has a severe soil erosion hazard (Davidson, 2007). The road is primarily occupying the valley/drainage bottom or located adjacent to Indian Springs and the unnamed tributary of Indian Ceek. During inclement (wet) weather conditions the road surface is readily saturated and becomes slick.

The surface water from storm events flows across the road surface creating ruts. These ruts concentrate the flow of water and soil; erode the road, shoulders, ditches, and associated slopes; and expose and plug existing culverts. Sections of the road have been narrow with deep ditches eliminating the shoulders for possible travel. The narrowed travel way is contributing to inadequate stopping sight distances. During the above conditions the road is extremely hazardous, making travel difficult and at times impassible.

Table 3.5-1: Road Management Objectives – FSR #70501

Design Standard	Existing Condition	Operational Level	Objective Level (planned)
Lane width	10-14 feet	14 feet	14 feet
Number of lanes	1	1	1
Surface Type	Native	Native	Crushed aggregate
Maintenance level	Does not meet (2) High Clearance Vehicle	(2) High Clearance Vehicle	(2) High Clearance Vehicle
Traffic Service Level	(D) Slow Flow or May be Blocked	(D) Slow Flow or May be Blocked	(C) Flow Interrupted – Use Limited
Drainage Structures	Undersized or non-existent and difficult to maintain	Adequately sized	Adequately sized with minimal maintenance

Ref: INFRA database, 2007

The road is currently the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Uinta National Forest. The road serves as administrative access for the management of fire, range, and natural resource programs. It provides historic access and recreation opportunities for viewing wildlife and scenery, driving for pleasure (passable by high clearance vehicle when dry and maintained), dispersed camping, horseback riding, mountain biking, hiking, hunting, snowmobile and ATV users.

Maintenance of this road occurs every 2-3 years, but is not frequent enough to provide reliable access or safe travel. During storm events ruts in the native surface are reintroduced negating maintenance activities. The Forest Service cannot efficiently and economically maintain the road after each wet weather event. As a result, the road becomes more hazardous and less reliable access as the year progresses.

The Forest Service accounts of accidents on this road primarily occur during wet weather. Traction and control are lost and vehicles slide into ditches, cut slopes, and get lodged on ruts within the road surface. Accounts of disabled vehicles vary in type from passenger cars to high clearance vehicles. The vehicle operators typically have to walk out and vehicles can't be retrieved until the surface dries (Percy 2006). The existing conditions of the road create a high degree of accident potential.

Strawberry Ridge Road, FSR #70518. The road starts at the west intersection of Indian Springs Road on Strawberry Ridge and heads north for 4.8 miles along the ridge to its termini with the intersection of FSR#70652. The road is a classified local FSR that is under the jurisdiction of, and maintained by, the Forest Service.

The existing physical condition of this road has a native surface. The road currently meets planned RMO's for maintenance level, surface and lane width. This road provides recreation opportunities for viewing wildlife and scenery, driving for pleasure, horseback riders, mountain bikes, hikers, snowmobile and ATV users and administrative access for range, natural resource, and fire management. Maintenance occurs approximately every three years.

Indian Creek Road, FSR #70042. The road starts at the Intersection of the West Side Strawberry Road (FSR #131) and heads south 12.5 miles to the intersection of the Sheep Creek-Rays Valley Road (FSR 051). The Indian Springs Road intersects at milepost 4.6. This road is under the jurisdiction of, and maintained by, the Forest Service.

The road has been reconstructed to a standard double lane with an aggregate surface in sections over the last 20 years. The maintenance level is suitable for passenger vehicles. There is one portion of the road (to the north of the Indian Springs Road intersection) that was impassible in the spring due to snow accumulation on a north facing slope. Since the printing of the DEIS, this 3.6 mile section of the road has been reconstruction to meet RMO's. Currently we have no reported accident data.

The arterial road accesses National Forest System lands from State Highway 40 to State Route 6 via the West Side Strawberry and Sheep Creek-Rays Valley roads. Forest users utilize this road to access developed recreation sites on the east and south sides of Strawberry Reservoir and undeveloped recreation opportunities such as dispersed camping, driving for

pleasure, horseback riders, mountain bikers, ATVs and snowmobiles. ATV opportunities are available from the intersection with Indian Springs and Sheep Creek roads. In addition, the road provides administrative access for the management of fire, range, and natural resource programs.

Environmental Consequences

No Action

Indian Springs Road. The road will continue to not meet operational or objective maintenance levels. Portions of the 1.6 miles of road will continue to have a prism that is narrow and winding. The horizontal and vertical alignments do not meet current design standards for safe sight distances. The road width ranges from 10 to 14 feet and have a clay loam native surface. The road is located in soils subject to high surface runoff and severe erosion hazards. During inclement (wet) weather the road surface will continue to be readily saturated and become slick. The surface water from storm events will continue to flow across road surface creating ruts. These ruts concentrate the flow of water and soil; erode the road, shoulders, ditches, and associated slopes; and expose and plug existing culverts. Additional sections of the road will become narrow with deep ditches eliminating the shoulders for possible travel. The increasingly narrowed travel way will continue to contribute to inadequate stopping sight distances increasing accident potential. During the above conditions the road would remain extremely hazardous, making travel difficult and at times impassible.

It is anticipated that accident frequency will increase based on increase in population. During wet weather wheels of vehicles will continue to get covered with native clay surface, traction and control will be lost and some vehicles will slide into ditches and cut slopes.

Maintenance of this road will continue to be performed every 2-3 years, but will not be frequent enough to provide safe and reliable travel. During storm events, ruts in the native surface will be reintroduced negating maintenance activities. The Forest Service will not have the personnel or financial means to grade the road after each wet weather event. As a result, the road will become more hazardous and less reliable as the year progressed. To properly maintain this road in its current condition, it is estimated that annual costs would be $96,000.

The road will remain as the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Uinta National Forest. The road will serve as administrative access for the management of fire, range, and natural resource programs. It will provide historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure (passable by high clearance vehicle when dry and maintained), horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

Strawberry Ridge Road, FSR #518. The Road Management Objectives will remain as the existing condition describes. Road users wanting to travel through the Forest to reach Strawberry Ridge may have to access from the north instead of the Indian Springs Road during inclement weather. The amount of vehicles traveling Strawberry Ridge Road may increase as the population increases. During inclement weather, users may have to back track instead of having a loop to the Indian Creek Road. Increases in traffic on this road may also increase accident potential and needed maintenance.

Indian Creek Road, FSR #042. The Road Management Objectives will remain as the existing condition describes. The amount of vehicles traveling the road may increase as the population increases. Increases in traffic may also increase accident potential and needed maintenance.

Summary: The Indian Springs Road will continue to be narrow, winding, with steep grades in excess of 10 percent. Native surface will continue to be slick during wet weather. There will continue to be high accident potential on Indian Springs Road. The road will not meet operational or planned Road Management Objectives (RMO's) and access will be limited during wet weather. The Strawberry Ridge and Indian Creek roads may see an increase in traffic as the population increases, which may increase accident potential and maintenance needs.

Proposed Action – Realignment and Road Closure

Indian Springs Road. The 1.9 miles of road reconstruction on a new alignment will meet RMO's including number of lanes, lane width, surface type, maintenance level, traffic level, and drainage structures. The upland location of the new alignment will allow more flexible geometric road design, including flatter grades, since the alignment will not be constrained by existing riparian corridors. A crushed aggregate road surface and properly sized and located drainage structures will allow proper drainage of the road surface. The surface water from storm events will freely flow across the road surface into ditches and through drainage structures. The amount of storm runoff and sediment directly distributed to creeks and streams will be minimized due to hardened surface, flatter grades and upland location, which will allow flows to dissipate (USDA 1999b). Road relocation will provide the safest and most reliable access during wet weather conditions.

It is assumed that accident potential will decrease as compared to the no action alternative due to new road location, geometric road design, and placement of hardened surface, despite increased use and population growth.

It is estimated that $300,000 in capital improvements of the road prism and cross drainage and obliteration of the existing road will have to be implemented to meet RMO's. Annual maintenance (2-3 year frequency) and seasonal closure of this road will be adequate to protect and extend surface and drainage life and is estimated at $21,900 per year.

The proposed new road will be the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Uinta National Forest. It will serve as administrative access for the management of fire, range, and natural resource programs. It will provide historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure (passable by high clearance vehicle when dry and maintained), horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

Trail. A portion, 0.2 miles, of the existing road would be converted to a single-track trail open to motorcycles. The trail will be designated as the Great Western Trail, to replace existing access along the Indian Springs road. This would require reconstruction to provide adequate drainage and restoration of cut/fill slopes of the existing road. This would be an addition to the Forests' trail system and maintain access along the Great Western Trail. The trail would have adequate width (18-24 inches) and acceptable grades for a challenging recreation experience. The trail will have a clay loam native surface. The trail will be located

in soils subject to high surface runoff and severe erosion hazards. During inclement (wet) weather the trail will be readily saturated and become slick. During the above conditions the trail may not be passable. Accident potential would be similar to other single-track trails on the Forest.

Strawberry Ridge Road, FSR #518. The Road Management Objectives will remain as the existing condition describes. Road users wanting to travel through the Forest to reach Strawberry Ridge will have access during inclement weather and may access from the north or south. The amount of vehicles traveling Strawberry Ridge Road will likely remain unchanged since users will not have to back track to and from the north and an increase may be experienced from the south with improved access allowing for a safe loop route. Accident potential and needed maintenance on this road will remain unchanged.

Indian Creek Road, FSR #042. The Road Management Objectives will remain as the existing condition describes. The amount of traffic on this road will remain consistent with the expected increase in populations. Maintenance activities will remain unchanged. ATV route designation on this road would decrease by 1.8 miles from the intersection of the existing Indian Springs Road south to Bald Mountain (FSR #043) Road. ATV use will be rerouted on the new Indian Springs Road alignment and maintained on the Indian Creek Road between the new Indian Springs and Bald Mountain road intersections. Reduced miles of ATV designation on this arterial road will reduce accident potential.

Summary: The 1.9 mile road reconstruction on a new alignment will meet all RMO's including number of lanes, lane width, surface type, maintenance level, traffic service level, and drainage structures for the Indian Springs Road. Road relocation will provide safe and reliable access during wet weather conditions. Accident potential will be less than the no action alternative. The proposed new road will be the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Forest. It will serve as administrative access for the management of fire, range, and natural resource programs as well as historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure, horseback riders, mountain bikes, hikers, and snowmobile and ATV users. The 0.2 mile road to trail conversion will maintain access to the Great Western Trail.

Alternative A - Realignment and Partial Closure

Indian Springs Road. The 1.9 miles of road reconstruction will meet all RMO's including number of lanes, lane width, surface type, maintenance level, traffic service level, and drainage structures. The upland location of the new alignment will allow more flexible geometric road design, including flatter grades, since the alignment will not be constrained by existing riparian corridors. A crushed aggregate road surface and properly sized and located drainage structures will allow proper drainage of the road surface. The surface water from storm events will freely flow across the road surface into ditches and through drainage structures.

The 0.5 mile portion of the road that would remain from the existing Indian Creek Road intersection will continue to not meet operational or objective maintenance levels. The road will have a prism that is narrow with portions of steep grades. The road width will range from 10 to 14 feet and have a clay loam native surface. The road will be located in soils subject to surface runoff and erosion hazards. During inclement (wet) weather the road surface will be readily saturated and become slick. During the above conditions the road may

be hazardous, making travel difficult and at times impassible. This portion of the road would continue to have some accident potential.

Accident potential will be less than the no action alternative and slightly higher then the proposed action. This is based on the fact that there will be 0.5 miles of additional road system as compared to the Proposed Action. It is assumed that accident frequency will decrease due to new road location, geometric road design, and placement of hardened surface, despite increased use and population growth.

It is estimated that $285,000 in capital improvements and road obliteration of the road prism and cross drainage will have to be implemented to meet RMO's. Annual maintenance (2-3 year frequency) and seasonal closure of this road will be adequate to protect and extend surface and drainage life and is estimated at $27,700 per year.

The proposed new road will be the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Uinta National Forest. The road will serve as administrative access for the management of fire, range, and natural resource programs. It will provide historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure (passable by high clearance vehicle when dry and maintained), horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

Trail. A portion, 0.2 miles, of the existing road would be converted to a single-track trail open to motorcycles. The trail will be designated as the Great Western Trail, to replace existing access along the Indian Springs road. This would require reconstruction to provide adequate drainage and restoration of cut/fill slopes of the existing road. This would be an addition to the Forests' trail system and maintain access along the Great Western Trail. The trail would have adequate width (18-24 inches) and acceptable grades for a challenging recreation experience. The trail will have a clay loam native surface. The trail will be located in soils subject to high surface runoff and severe erosion hazards. During inclement (wet) weather the trail will be readily saturated and become slick. During the above conditions the trail may not be passable. Accident potential would be similar to other single-track trails on the Forest.

Strawberry Ridge Road, FSR #518. The Road Management Objectives will remain as the existing condition describes. Road users wanting to travel through the Forest to reach Strawberry Ridge will have access during inclement weather and may access from the north or south. The amount of vehicles traveling Strawberry Ridge Road will likely remain unchanged since users will not have to back track from the north and an increase may be experienced from the south with improved access allowing for a safe loop route. Accident potential and needed maintenance on this road will be similar to the proposed action.

Indian Creek Road, FSR #042. The Road Management Objectives will remain as the existing condition describes. The use of this road will remain consistent with the expected increase in populations. Maintenance activities will remain unchanged.

Summary: The 1.9 miles of road reconstruction will meet all RMO's including number of lanes, lane width, surface type, maintenance level, traffic level, and drainage structures. The 0.5 mile portion of the road that would remain will continue to not meet operational or objective maintenance levels. The 0.2 mile road to trail conversion will maintain access to the Great Western Trail. Accident potential will be less than the no action alternative and slightly higher then the proposed action. The proposed new road will be the only FSR that

connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Forest. The roads will serve as administrative access for the management of fire, range, and natural resource programs as well as historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure, horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

Alternative B - Realignment and ATV Route

Indian Springs Road. The 1.9 mile road reconstruction will meet all RMO's including number of lanes, lane width, surface type, maintenance level, traffic service level, and drainage structures. The upland location of the new alignment will allow more flexible geometric road design, including flatter grades, since the alignment will not be constrained by existing riparian corridors. A crushed aggregate road surface and properly sized and located drainage structures will allow proper drainage of the road surface. The surface water from storm events will freely flow across the road surface into ditches and through drainage structures.

The 0.5 mile portion of the road that would remain from the existing Indian Creek Road intersection will continue to not meet operational or objective maintenance levels. The road will have a prism that is narrow with portions of steep grades. The road width will range from 10 to 14 feet and have a clay loam native surface. The road will be located in soils subject to surface runoff and erosion hazards. During inclement (wet) weather the road surface will be readily saturated and become slick. During the above conditions the road may be hazardous, making travel difficult and at times impassible. This portion of the road would continue to have some accident potential.

Accident potential will be less than the no action alternative, slightly higher then the proposed action, and the same as Alternative A. This is based on the fact that there will be 0.5 miles of additional road system. It is assumed that accident frequency will decrease due to proper geometric road design and location and placement of hardened surface, despite increased use and population growth.

It is estimated that $366,000 in capital improvements of the road prism and cross drainage will have to be implemented to meet RMO's. Annual maintenance (2-3 year frequency) and seasonal closure of this road will be adequate to protect and extend surface and drainage life and is estimated at $27,700 per year.

The proposed new road will be the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Forest. It will serve as administrative access for the management of fire, range, and natural resource programs as well as historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure (passable by high clearance vehicle when dry and maintained), horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

Trail. A portion, 1.1 miles, of the existing road would be converted to a trail open to ATVs. The upper (from Strawberry Ridge) 0.2 miles will be designated as the Great Western Trail, to replace existing access along the Indian Springs road. This would require reconstruction to provide adequate drainage and restoration of cut/fill slopes of the existing road. This would be an addition to the Forests' trail system and provide multiple loops for ATV users. The trail would have adequate width and acceptable grades for a challenging recreation experience. The trail will have a clay loam native surface. The trail will be located in soils subject to high

surface runoff and severe erosion hazards. During inclement (wet) weather the trail will be readily saturated and become slick. During the above conditions the trail may not be passable. Accident potential would be similar to other ATV trails on the Forest. Annual maintenance is estimated at $11,000.

Strawberry Ridge Road, FSR #518. The Road Management Objectives will remain as the existing condition describes. Road users wanting to travel through the Forest to reach Strawberry Ridge will have access during inclement weather and may access from the north or south. The amount of vehicles traveling Strawberry Ridge Road will likely remain unchanged since users will not have to back track from the north and an increase may be experienced from the south with improved access allowing for a safe loop route. Accident potential and needed maintenance on this road will remain unchanged.

Indian Creek Road, FSR #042. The Road Management Objectives will remain as the existing condition describes. The use of this road will remain consistent with the expected increase in populations. Maintenance activities will remain unchanged.

Summary: The 1.9 miles of road reconstruction will meet all RMO's including number of lanes, lane width, surface type, maintenance level, traffic service level, and drainage structures. The 0.5 mile portion of the road that would remain will continue to not meet operational or objective maintenance levels. Accident potential will be less than the no action alternative, slightly higher then the proposed action, and the same as Alternative A. The 1.1 mile portion of the road that will be converted to a trail will be added to the Forest's trail system. The proposed new road will be the only FSR that connects the southern portion of Strawberry Ridge to Indian Creek Road and southern portions of Forest. The roads and trail will serve as administrative access for the management of fire, range, and natural resource programs as well as historic access and recreation opportunities for dispersed camping, viewing wildlife and scenery, driving for pleasure, horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

3.6 Inventoried Roadless Areas

Affected Environment

Roadless Areas refer to areas that are without constructed and maintained roads and are substantially natural. Some types of improvements and past activities are acceptable to be included in roadless areas. The Uinta National Forest has 35 inventoried Roadless areas totaling 554,880 acres. Part of the action alternatives are within the Strawberry Ridge Inventoried Roadless Area (SRIRA) (#418015) which consists of approximately 17,230 acres (USDA 2003b).

Strawberry Ridge inventoried roadless area runs south to north and lies just under Strawberry Ridge in the Diamond Fork and Sheep Creek drainages with a small portion (approximately 1300 acres) that extends east over Strawberry Ridge near the head of Indian Creek. The topography varies from relatively steep terrain under Strawberry Ridge to areas of rolling hills cut by streams and creeks creating V-shaped canyons. Oak and maple dominate much of the area. Aspen communities and some patches of conifer can be found at higher elevations and on north facing slopes of some of the canyons.

Recreation use consists primarily during the elk and deer hunt in the fall. Other activities include snowmobiling, hiking, biking, and camping. A portion of the Great Western Trail traverses the unit which allows motorcycles, equestrian, hiking and biking uses. Surrounding the 2 to 3 mile wide by 9 mile long western slope and 1.5 miles wide by 1.3 miles long eastern slope dog leg inventoried roadless area are Dip Vat, Sheep Creek – Ray Valley, Indian Creek, Strawberry Ridge and Indian Springs motorized roads.

Because of the variety of landforms and vegetation cover, this area provides a diversity of habitats supporting many species. It has good summer range for deer and elk and provides a habitat corridor for large mammals. Portion of the area have establish allotments and associated range improvements, including fences and troughs. The area also has European-American livestock herding sites and American Indian camps. (USDA 2003a)

The Forest Service's Roadless Area Conservation Rule (RACR), Special Areas; Roadless Area Conservation; Final Rule, as published in the Federal Register: January 12, 2001 Vol. 66 No. 9 (Federal Register, 2001) prohibits road construction and reconstruction in inventoried roadless areas with certain exemptions. Since its publication, The Final rule and record of decision were placed under a presidential moratorium with a delayed effective date of May 13, 2001. Although the decision was announced on May 4, 2001 to continue with implementation of the final rule, on May 10, 2001 the U.S. District Court for the District of Idaho (USDC-Idaho) preliminarily enjoined the USDA from implementing the Roadless Area Conservation Rule (Case No. CV01-10-N-EJL). The Ninth U.S. Circuit Court of Appeals overruled the District Court decision on December 12, 2001. The District Court in Wyoming enjoined the Rule nationwide on May 14, 2003 but this decision was ruled moot by the Tenth U.S. Circuit Court of Appeals on July 11, 2005, when the State Petition Rule was published. This Rule was published in the Federal Register on May 13, 2005. The State of Utah had not filed a petition. On September 20, 2006, the United States District Court for the Northern District of California issued a decision in the consolidated cases California v. USDA and Wilderness Society v. USFS enjoining the 2005 State Petitions Rule and reinstating the 2001 Roadless Rule.

Roadless areas are currently managed according to the 2001 RACR which prohibits road construction and reconstruction and timber harvest with some exceptions. Other activities are subject to the management direction in forest plan.

During the Forest Plan revision inventoried roadless areas were evaluated for wilderness suitability. As part of that process wilderness attributes were identified (USDA 2003b) Roadless areas and their characteristics were also evaluated at that time. Both are summarized below.

Wilderness Attributes

The area has a high degree of natural integrity, being bounded by on the top by the ridgeline and the bottom by the base of the slopes. It has a high natural appearance with some fencelines and watering troughs associated with livestock grazing. Opportunities for solitude are few due to the narrow configuration of the area and proximity to roads Opportunities for primitive recreation are primarily confined to hiking, hunting, backpacking and horseback riding in the canyon bottoms. The area offers few if any challenging experiences/. The area has limited ecological, geologic, scenic, historic or cultural significance values. The boundary of the roadless area is recognizable as it conforms to terrain and constructed roads.

Roadless Area Characteristics

Most of the roadless area characteristics in the Strawberry Ridge IRA are medium. Fish metapopulations and heritage resources have high values.

Availability Determination (USDA 2003b)

1. Is the area vitally needed for increased water protection and storage?	No
2. Would wilderness designations seriously restrict important wildlife management measures?	No
3. Does the area have high strategic or economic mineral development potential?	No
4. Are there unique or outstanding natural phenomena that require public access and development that would be inconsistent with wilderness designation?	No
5. Is the land needed to meet clearly documented resource demands such as for timber, minerals, or developed recreation sites, including winter sports?	No
6. Are there any existing contractual or other significant obligations on the area not in concert with wilderness designation?	No

Capability Assessment (All ratings are high, moderate, low, or N/A.) (USDA 2003b)

Environment		
	Opportunity for solitude	Low
	Natural and free from disturbance	Moderate
	Scientific, educational, or historical values	Low
Challenge		
	Opportunity for challenge and adventure	Moderate
Degree of primitive and unconfined recreation opportunities		
Summer:	Camping	Moderate
	Hunting	High
	Fishing	Low
	Backpacking	Moderate
	Hiking	High
Winter:	Skiing	Low
	Mountain climbing	Low
	Hiking	Low
Special Features		
	Special ecological, geological, or scenic features	Low
	Abundance and variety of wildlife	High
Manageability – the extent that boundaries:		
	Are recognizable	High
	Conform to terrain	High
	Are manageable	Low
	Constitute a barrier to prohibited use	Moderate

Note: All ratings of high, moderate, low, or N/A are based on the professional judgments of local district staff employees and specialists and display the perceived capability of the area to exhibit the above outlined wilderness characteristics.

Roadless Area Characteristics Reevaluation (USDA 2003b)

Characteristic	Resource Finding	Ranking
Soil, air, and water	*Soil:* 7 percent of area lies in landslide prone soils *Air:* Class II airshed, primarily in Utah County (non-attainment zone), sensitive receptor (Salem area) 15 miles away *Water:* 278 acres of riparian vegetation This area contains Sixth Water Creek, a 303(d) listed stream, and also contains several tributaries to Diamond Fork Creek and Strawberry Reservoir, both of which are listed as 303(d) as well.	2
Sources for public drinking water	3 points of water diversion for domestic purposes 3 points of water diversion for irrigation purposes	3
Diversity of plant and animal communities *TESCP = threatened, endangered, sensitive, candidate, proposed* *PIF priority = Partners in Flight priority species*	**a. Properly Functioning Condition (PFC) Situation:** Oakbrush, maple, aspen, and conifer communities (Wasatch Mountains Study Area): overall risk of loss is moderate **b. Invasive Plant Species:** Mainly musk thistle, Canada thistle, and hoary cress (whitetop); acreage unknown **c. TESCP Species and Species Evaluated for Viability (SE):** *i) Animals:* This area contains known nests and provides foraging habitat for the northern goshawk (FS sensitive/SE). The broad-tailed hummingbird, Virginia's warbler, black-throated gray warbler, and Brewer's sparrow (all state sensitive/PIF priority/SE) are known to inhabit the area, and the area contains known Bonneville cutthroat trout (FS sensitive/SE) populations. It also provides habitat for the bald eagle (threatened/SE), the flammulated owl (FS sensitive/ SE), the Lewis' woodpecker (state sensitive/PIF priority/SE), and the rubber boa and Utah milk snake (both state sensitive/SE). This area also contains potential secondary habitat for the Canada lynx (threatened/SE). *ii) Plants:* There are no known TESCP or other SE plants in this area. **d. Fish Metapopulations:** Sixth Water Creek, a tributary to Diamond Fork Creek, runs through the northern end of this area. Diamond Fork Creek contains a portion of a Bonneville Cutthroat Trout (FS sensitive/SE) metapopulation. The metapopulation may extend into Sixth Water.	a. 3 b. 3 c(*i*). 4 c(*ii*). 1 d. 5
P, SPNM, SPM ROS	SPM: 14,775 acres	3
Reference Landscape	No	N/A
Landscape character and scenic integrity	Partial retention: 13,464 acres Retention: 567 acres	3
Heritage resources	Known European-American livestock herding sites and American Indian camps	5
Other unique characteristics	None	1
Size and Context	*Size and Shape:* 15-20,000 acres (3). *Cherry Stems:* 3 or 4 and/or short and mildly intrusive (3). *Adjacency:* surrounded by or adjacent to major paved highways or roads that separate the area from other undeveloped areas (3).	3

Summary Statement: Most values are medium. Fish metapopulations and heritage resources have high values.
Note: 1 = Low, 2 = Low-Medium, 3 = Medium, 4 = Medium-High, 5 = High. A lower value indicates that the area has either less sensitive conditions, is in a more disturbed state, or lacks the criteria in question. A higher value indicates that the area has either more sensitive conditions, is in a more intact, natural state, or has the criteria in question.

Environmental Consequences

No Action Alternative

There would be no change to the roadless values or roadless area because no roads would be decommissioned or relocated.

Common to all Alternatives
The proposed alignment would divide the roadless area into two portions with the larger portion being about 16,000 acres and a smaller portion of about 1,300 acres. The next time roadless areas are inventoried, any changes resulting from implementation of any one of the action alternatives would be noted as part of that inventory. The smaller portion may not qualify as a roadless area because it is less than 5,000 acres. At this time however, there would be no change to inventoried roadless area boundaries or management under any of the alternatives. The SRIRA would continue to be protected as a roadless area. The direction at 36 CFR 294.13 (b)(4) is not applicable to the smaller portion. Prohibitions would remain in place.

If the situation changes and RACR is no longer in effect, then all inventoried roadless areas would be managed in accordance with the 2003 LRMP. The 2003 LRMP allocated Roaded Natural and Roaded Modified ROS, and primarily 5.1, 5.2, 4.4 and 6.1 management prescriptions to the area. Under the ROD for the LRMP, if RACR is not in effect the affected area could be developed and may no longer be suited for roadless area designation or consideration as wilderness in the future. (Pope, 2008)

The direct and indirect effects below are described relative to the effect of road construction in the inventoried roadless area within which the activity would occur. The current alignment of the Indian Springs Road and any effect of its closure and obliteration are outside the Inventoried Roadless Area

Wilderness Attributes - Proposed Action, Alternatives A and B

The Proposed Action would re-align the Indian Springs road through the southeasterly approximately 1300 acre dog leg portion of Strawberry Ridge inventoried roadless area. At the new location the Forest would construct approximately 1.9 miles of single-lane (14 feet wide) road with turn outs, obliterate, re-contour and re-vegetate with native seed the old Indian Springs alignment except for a ¼ mile segment on the western end that will be modified to the width of the existing Center Great Western trail (18-24 inches).

Natural Integrity - Within the proposed realignment approximately 15 acres of the SRIRA would no longer be intact and operating under natural processes in the short term until the vegetative understory is establish in the cut and fill slopes. In the long term the road prism and turnouts affecting natural processes would be reduced to approximately 4 acres of maintained road surfaces and pullouts through the southern portion of the SRIRA.

Apparent Naturalness, Remoteness and Solitude - The SRIRA is surrounded on all sides by roads thus creating an island with a moderate naturalness and low remoteness and solitude (USDA Forest Service, 2003a). The sights, sounds and smells of these motorized travelways could affect the casual visitor seeking a natural experience away from the sights and sounds of civilization within the SRIRA. The proposed alignment could intentsify this effect.

The effect to the apparent naturalness, remoteness and solitude of the SRIRA will mainly occur on the eastern slope of Strawberry Ridge. Because of landform, in the long term, the western slope of the SRIRA should not be affected by the realignment of the Indian Springs

road other than potential sounds created by motorized traffic when in proximity to the realigned road For the short term a visitor may hear the sounds of construction equipment until the project is completed.

The proposed alignment meanders along and bisects a mainly aspen and conifer- covered 0-45% cross slope in the eastern dog leg of the SRIRA. The sight of the road should be filtered or fully screened by the tree canopy from the casual visitor for a majority of the length of the proposed road for a person that is hiking along the ridgeline or looking up from the Center Great Western Trail. Looking from the ridgeline towards the south the intersection of the proposed road with Indian Creek road may be apparent and the naturalness could be reduced until the road is screened from sight by vegetation.

Opportunities for Primitive Recreation **-** Because Strawberry Ridge's eastern slope of the SRIRA is approximately 1300 acres in size there is little if any opportunity for a primitive recreation experience even when hunting or hiking in the canyons found is this portion of the SRIRA. The location of the proposed road will place roads on three sides of the 1.5 mile wide section of the SRIRA further reducing the opportunity for a primitive recreation experience.

Special Features **-** There is no effect to the special, ecological, geological, or scenic features since few are present in the area. There is an abundance of wildlife in the area. See section 3.8 Wildlife for impacts to a variety to wildlife. In summary the effects of the proposed alignment to special features will be minor.

Roadless Area Characteristics - Proposed Action, Alternatives A and B

Soil Water and Air **-** The proposed new alignment will have minor effects to these characteristics as described in Sections 3.1 and 3.2. There will be no effect to existing characteristic throughout the remainder of the SRIRA.

Sources for Public Drinking Water **-** The proposed alignment will have no effect on public drinking water because there are no water diversions for domestic purposes in the eastern slope watershed portion of the SRIRA or domestic intakes within 50 miles of the project area.

Diversity of Plant and Animal Communities **-** The proposed new alignment will have minor effects to these characteristics as described in Sections 3.3 for Aquatic species, 3.8 for Terrestrial Species and 3.9 for Vegetation. Further there are so few acres affected compared to the total acres within the SRIRA, there will be a negligible effect to properly functioning condition. Outside of the project area the roadless area characteristics will not be affected.

Primitive, Semi-primitive non-motorized, and Semi-primitive motorized Opportunities **-** The proposed new alignment will change some of the opportunities that are currently present in the SRIRA as described in Section 3.4. There will be no effect to this characteristic throughout the remainder of the SRIRA.

Landscape Character and Scenic Integrity - The proposed new alignment will change some of the character currently present in the SRIRA as described in Sections 3.10, Visual Quality. There will be no effect to this characteristic throughout the remainder of the SRIRA.

Reference Landscape and Unique Characteristics - There are none present in the SRIRA therefore there will be no effect.

Traditional Cultural Properties and Sacred Sites - There are known European-American livestock herding sites and American Indian camps present in the SRIRA; however, none are present within the project area as explained in Section 3.11. There will be no effect to this roadless characteristic.

3.7 Livestock Management

Affected Environment

The proposed project is with in the South Steeper Sheep and Goat Allotment. There are 1200 ewes with lambs permitted to graze this allotment from 26 June to 30 September each year. The management system for this allotment is an intensive rest system. The road to be obliterated is with in the West Indian Creek pasture and the proposed road realignment is primarily within the South Indian Creek pasture with a short section in the West Indian Creek pasture.

Water is limited in this area. Indian Springs runs year round and a herder uses this area as one of his main campsites. The spring provides water for the herder and the stream is used by his horses and the sheep when in the area. For the West Indian Creek pasture, water from the spring is hauled approximately 1 mile up the Indian Springs road to the west and dumped into a set of portable troughs for the sheep. There is a pond approximately 100 feet to the north of the road proposed to be closed in the bottom of an adjoining drainage. There is another pond in the bottom of the drainage approximately 500 yards to the south east of Indian Springs. Both of these ponds are dry by late summer. By mid summer Indian Creek is dry about a mile to the north of Indian Springs

The South Indian Creek pasture has 4 ponds with a couple of them holding water into late summer (Percy 2007).

Environmental Consequences

No Action: This alternative would have little impact on the grazing management. The herder could continue to stay by the spring and have access to the spring for water. Water would continue to be hauled up the road about a mile to the portable trough sites until the road became impassable because of rutting and erosion at which time the sheep would need to come back to Indian Creek for water. Water in the South Indian Creek pasture would continue to rely on the catch ponds as the main source of water and would often be dry in the late summer. Good distribution of sheep use would be hard to accomplish due to the lack of water.

Proposed Action – Realignment and Road Closure: This alternative would eliminate the herders camp site and the herder would need to rely on water being hauled to him at an alternative site. The site of the portable trough would remain as a water site but the water would need to be hauled to the top of the ridge along the new road and piped down to the site. As part of this alternative 4 watering sites would be developed along the new road alignment, so the permittee could haul water along the new road and pipe water down hill to the new sites. With this alternative the distance to haul water would increase and the time spent hauling water would increase. The hauling of water along the new road alignment would put water where there is no water at present and improve the distribution of livestock by providing more dependable watering sites.

Alternative A - Realignment and Partial Closure and **Alternative B – Realignment and ATV route**: The herder would still have access to the spring for water and camping. The other affects of this alternative would be the same as the Proposed Action.

3.8 Terrestrial Wildlife

3.81 Peregrine falcon (*Falco peregrinus*)

Affected Environment

Information on the status of this species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 Land and Resource management Plan (USDA 2003b). Peregrine falcons typically nest on ledges on cliffs, but introduced individuals commonly nest on city buildings and artificial nest sites. Foraging habitat is primarily wetlands where avian prey concentrate, but also includes other open habitats such as sagebrush steppe, desert scrub, and grasslands. There are no records of peregrine falcons using and very little suitable cliff/ledge habitat in the project area. No nests have been found on the Uinta National Forest in recent years (UDWR 2002).

Environmental Consequences

All alternatives - It is expected that there would be **no impact** on peregrine falcons because the project area contains very limited nesting habitat, and there are no observations of this species in the project area (Bornstein 2008b).

3.82 Boreal toad (*Bufo boreas boreas*)

Affected Environment

Information on the status of this species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 revised Forest Plan (USDA 2003b). The boreal toad is a subspecies of the western toad. It is classified as a Wildlife Species of Concern by the state of Utah. Its Natural Heritage conservation status in Utah is S2S3 (S2 = *Imperiled*, S3 = *Vulnerable*) (UFWS 2005). Rocky Mountain populations have declined sharply since the 1970s. However, in September 2005 the Fish and Wildlife Service removed the boreal toad from the Candidate list for eligibility

under the Endangered Species Act (NatureServe 2005) citing information that indicated it was not a distinct subspecies of the western toad. Population declines also have been reported in Yellowstone National Park, Yosemite National Park, and Montana (NatureServe 2005). Population declines are poorly understood. Possible causes include disease and parasites, predation, habitat loss and degradation, competition with native and non-native species, and certain fishery management practices (NatureServe 2005). Boreal toads are found in a wide variety of habitats ranging from desert springs to mountain wetlands, and it ranges into various upland habitats around ponds, lakes, reservoirs, and slow-moving rivers and streams.

Historical records suggest that the distribution of boreal toads on the Uinta National Forest has declined (USDA 2003b). Although historical records are known from multiple locations across the Forest, the only recent records from the Forest are from Strawberry Valley near the reservoir. A population occurs along the north fork and south fork of Bryant's Fork. This population is being monitored by Utah Division of Wildlife Resources. Personnel from the UDWR Central Region native aquatics section have conducted surveys for boreal toads in recent years in Strawberry Valley, American Fork Canyon, Provo Canyon, Big Cottonwood Canyon, and Little Cottonwood Canyon but have only found boreal toads in Strawberry Valley, approximately six miles east of the project area (UDWR 2007). No observations of boreal toads have occurred in the project area (Bornstein 2008b).

Environmental Consequences

All alternatives - It is expected the proposed action will have **no impact** on this species because there have been no observations of boreal toads in the project area.

3.83 Migratory Birds and Raptors

Affected Environment

Based on habitat classifications found in the Utah Partners in Flight Avian Conservation Strategy, habitat within the project area is classified as aspen (Parrish 2002). Migratory bird surveys of the project area were conducted in June, 2007 (Bornstein 2008b). In addition, project impacts on migratory birds will be mitigated by: 1) no activities will occur during the primary nesting season of April 1 – June 30; and 2) if any Sensitive species nests are detected, they will be buffered by distances described in the LRMP (USDA 2003b).

Of the 24 species identified as Priority Species in the Utah Partners in Flight Avian Conservation Strategy (Parrish 2002), no priority species are identified as primary or secondary breeding habitat is aspen.

Environmental Consequences

No Action - Under the No Action alternative, it is anticipated there would be slightly negative impacts to migratory birds as a result of continuing sediment delivery from the existing road into the riparian area, which subsequently reduces the amount of available riparian habitat. As a result of not constructing the proposed road, approximately 4 acres of woodland habitat will not be removed, which would potentially benefit migratory birds.

Proposed Action – Realignment and Road Closure - Under the proposed action, as a result of the road obliteration, it is expected there would be a slightly beneficial impact to migratory birds from reduced sediment delivery associated with the road, which would subsequently result in an increase in the amount of available riparian habitat.

The implementation of road realignment in the upper portion of the drainage, involving construction of a new road, is expected to slightly negatively affect migratory birds which depend upon aspen and conifer habitat for nesting.

Because of the short field season at this elevation, project implementation may overlap with bird breeding season (primarily May, June, and July). Thus, nests and eggs of migratory or non-migratory bird species may be destroyed during project implementation. However, mitigation to reduce these effects will be in place such that there will be no operations during the primary breeding season of April 1-June 30). Implementation of the proposed action would have short-term negative effects for bird species that occur in these aspen forests but would likely have no effects on population trend or population viability of these species because habitat would be impacted on only 4 acres, which is only approximately 0.003% of the estimated total area of aspen forest on the Uinta National Forest (USDA 2003a). No active raptor nests have been found within the project area. If any are found prior to project implementation, they would be protected according to Guideline WL&F-11 (USDA 2003a). Therefore, it is expected the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species** (Bornstein 2008b)**.**

Alternative A - Realignment and Partial Closure: Under this alternative, many of the same benefits and impacts as those described in the Proposed Action although not to the same extent. Since about two-thirds of the area to be obliterated and restored to natural condition, it is anticipated only approximately 67% of the benefits achievable under the Proposed Action would occur under this Alternative, thereby providing less riparian benefits for nesting birds.

Alternative B - Realignment and ATV Route: The effects of the realignment of the road to upland in this alternative will be the same as the Proposed Alternative.

The new alignment and conversion of a portion of the Indian Springs road to an ATV trail will reduce sediment production by approximately 21 tons per year and reduce the amount of the riparian area taken up by the travel way. This reduction in impacts to the riparian will be more that the no action alternative but less that the other two action alternatives.

3.84 Big Game

Affected Environment

The project area is classified as summer range, and summer range habitat is not considered to be a limiting factor for big game species within this region of Utah.

Environmental Consequences

No Action - Under the No Action alternative, it is expected there will be no impacts to thermal and hiding cover beyond those which are currently occurring. The existing road will continue to provide vehicle access to the area, which is expected to result in continued human disturbance.

All Alternatives - As a result of the road realignment, the action alternatives would affect thermal and hiding cover for big game species. However, reduced aspen and conifer canopy cover following implementation would likely result in increased understory vegetation production and thus increased forage and browse production for big game species. Therefore, in the short term, action alternatives **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.** In the long term, it is expected there will be a **beneficial impact** as a result of obliterating and restoring to natural condition the existing road in riparian habitat, resulting in improved riparian plant conditions and reduced human disturbance.

3.85 Threatened/Endangered Species

Under **all alternatives** it is expected there will be **No Effect** to wildlife species listed under the Endangered Species Act, including the Canada lynx (threatened), and western yellow-billed cuckoo (candidate). The bald eagle was delisted by the U.S. Fish and Wildlife Service on July 9, 2007 (USDI 2007). Legal protection is still afforded it under the Bald and Golden Eagle Protection Act, and therefore impacts will be assessed similar to those for a Forest Service Sensitive Species (see Section 3.87).

Western yellow-billed cuckoos are not known to use high-elevation conifer forest in Utah (UDWR 2002a, p.146), and thus the project area contains no suitable habitat for this species. The project area lies just below Strawberry Ridge, which is a key potential travel corridor for Canada lynx. Although the proposed road reconstruction occurs adjacent to a key lynx potential travel corridor, preliminary information suggests lynx do not avoid roads (Ruggiero et al. 2000), and very little canopy will be removed as a result of this action. Therefore, it is expected that project implementation would have No Effect on the Canada lynx because: one, there are no known resident lynx populations in Utah; two, the project does not occur in a Lynx Analysis Unit (LAU); three, little forest canopy will be removed; and four, the spatial scale of the disturbance would be very small compared to the large areas used by individual lynx (Bornstein 2008).

3.86 Terrestrial Management Indicator Species

Goshawk

The project area contains potential nesting and foraging habitat for goshawks. No historical goshawk territories are known in the project area. No goshawk was seen or heard in the project area during field visits in 2006 and a survey conducted in 2007 (Bornstein 2008a).

The goshawk is considered an opportunistic hunter, foraging on a wide variety of prey species depending on prey availability. Common prey species include ground and tree squirrels, rabbits and hares, and medium to large birds such as American robins, northern flickers and other woodpeckers, Stellar's jays, and ruffed and blue grouse. Based on potential prey species present and prey remains typically found around nest trees, common goshawk prey species on the Uinta National Forest include red squirrels, snowshoe hares, ruffed grouse, blue grouse, northern flickers, Stellar's jays, and American robins.

Environmental Consequences

No Action - It is expected there could be a very minor negative impact to goshawk prey availability in the riparian area as a result of taking no action. Conversely, as a result of not constructing the proposed road, approximately 4 acres of woodland habitat will not be removed, which would potentially benefit goshawk prey. Therefore, the net effect of not implementing the proposed action may be neutral under the No Action alternative.

Proposed Action – Realignment and Road Closure: The portion of the proposed action which would obliterate the road within the riparian area would be a beneficial impact to goshawks since vehicular access and related disturbance would be reduced. This could increase riparian bird production, an important prey resource for goshawks.

The road realignment is expected to slightly negatively affect goshawk nesting habitat by reducing the number of mature aspens and conifers. However, it is expected only a few large-diameter trees (less than 20) would be removed, since most of the road realignment occurs in small-diameter size classes. The proposed action also would affect goshawk foraging habitat. Because a few larger aspens, spruce, and firs which provide habitat for these bird species will be removed, there may be small negative impacts to goshawk foraging habitat as a result of the proposed action. However, Uinta National Forest has extensive stands of aspen, approximately 244,000 acres. Because (1) aspen forested habitat would be impacted on about 4 acres, which is only approximately 0.01% of the estimated total area of aspen forest on the Uinta National Forest (USDA 2003b) impacts to goshawk prey habitat are expected to be minor, and (2) wildlife surveys have failed to detect any goshawks within the project area, the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.**

Alternative A - Realignment and Partial Closure: Many of the same benefits and impacts as those described in Proposed Alternative would occur, although not to the same extent. Since about two-thirds of the area to be obliterated and restored to natural condition would occur, it is anticipated only approximately 67% of the benefits achievable under Proposed Action Alternative would occur under this Alternative, thereby providing less riparian bird prey for northern goshawks.

Alternative B - Realignment and ATV Route: The realignment of the road to an upland site in this alternative will have slightly less impacts as the Proposed Action Alternative.

The conversion of the Indian Springs road to an ATV trail will reduce sediment by approximately 21 tons per year and reduce that amount of the riparian area taken up by the

travel way. This reduction in impacts to the riparian would result in more riparian bird prey for Goshawks than the No Action Alternative but less that the other two action Alternatives.

Three-toed Woodpecker

A field visit to the proposed road relocation was conducted in August, 2006, and no three-toed woodpeckers were observed at that time. On June 13, 2007, the entire length of proposed road realignment was surveyed to ascertain if any three-toed woodpeckers were nesting within or in close proximity to the proposed road. There was no sign of three-toed woodpecker nests or individuals during this survey (Bornstein, 2008a).

Environmental Consequences

No Action - No information is available on three-toed woodpeckers in the riparian portion of the project area. No additional impacts, above the existing condition, to dead or dying conifers, which provide suitable three-toed woodpecker habitat, would occur.

Proposed Action – Realignment and Road Closure - Under the proposed action, the road obliteration in the riparian area is not expected to impact any dead or dying conifers which would provide habitat for three-toed woodpeckers.

The proposed road realignment will have a slightly negative impact on this species as a result of additional habitat fragmentation, since they are sensitive to this forest characteristic. The proposed road realignment would remove a few (approximately 20) dead or dying conifers which would provide habitat for three-toed woodpeckers. Because 1) three-toed woodpecker habitat would be impacted on about 0.25 acres of conifer forest, which is only approximately 0.0001% of the estimated total area of conifer forest on the Uinta National Forest (USDA 2003b); and 2) three-toed woodpecker surveys indicate that three-toed woodpeckers occur at many other sites on the Uinta National Forest outside of the proposed road realignment (Bornstein 2008a), implementation of the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.**

Alternative A - Realignment and Partial Closure and **Alternative B - Realignment and ATV Route**: Many of the same benefits and impacts as those described in the Proposed Alternative would occur, although not to the same extent. Since the road obliteration or ATV trail is not expected to affect dead and dying conifers, it will have no impact on three-toed woodpeckers. Under these alternatives, the proposed road realignment would still occur. The proposed road realignment would remove a few (approximately 20) dead or dying conifers which would provide habitat for three-toed woodpeckers. Because 1) three-toed woodpecker habitat would be impacted on about 0.25 acres of conifer forest, which is less than 0.0001% of the estimated total area of conifer forest on the Uinta National Forest (USDA 2003b); and 2) three-toed woodpecker surveys indicate that three-toed woodpeckers occur at many other sites on the Uinta National Forest outside of the proposed road realignment (Bornstein 2008a), implementation of the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.**

American Beaver

The section of Indian Creek with in the project area (from Indian Springs down stream approximately 1800 feet) contains suitable habitat but no beaver activity at this time (Bornstein 2008a).

No Action - Under the No Action alternative, the Indian Springs road will continue to negatively impact existing riparian habitat due to sediment impacts, which will continue to decrease available riparian area, thus negatively affecting beaver habitat.

Proposed Action – Realignment and Road Closure: The proposed road realignment occurs in the upper portion of the drainage, and affects no perennial streams. Therefore, it occurs in habitat unsuitable for beavers.

The road obliteration in the riparian area is expected to have a beneficial impact on beavers by removal of the existing road and its related sediment delivery negative effects on the riparian area associated with Indian Creek.

Indian Creek comprises only a small portion of the total available riparian habitat on Uinta National Forest. Since riparian habitat condition is expected to benefit from the proposed road obliteration, implementation of the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.**

Alternative A - Realignment and Partial Closure: Many of the same benefits and impacts as those described in Proposed Alternative would occur, although not to the same extent. Since about two-thirds of the area to be obliterated and restored to natural condition would occur, it is anticipated only approximately 67% of the benefits achievable under Proposed Action Alternative would occur under this Alternative, thereby providing less riparian habitat benefits for American beavers.

Alternative B - Realignment and ATV Route: Many of the same benefits and impacts as those described in Proposed Alternative would occur, although not to the same extent. Since about two-thirds of the Indian Springs road would be changed to an ATV trail, it is anticipated that this alternative would benefit beaver more than the No Action alternative but not to the same extent as the other two action alternatives.

3.87 Forest Service Sensitive Species

Bald Eagle

The bald eagle was delisted by the U.S. Fish and Wildlife Service on July 9, 2007 (UFWS 2007). While not specifically listed by the U.S. Forest Service as a Sensitive Species, legal protection is still afforded it under the Bald and Golden Eagle Protection Act, and therefore impacts will be assessed similar to those for a Forest Service Sensitive Species.

Bald eagles require habitat that will provide open water for feeding and large, mature trees for nesting, roosting, and perching (DeGraff 1991). Winter habitat used by eagles includes

lakes, streams or rivers utilized for feeding (Buehler 2000). In Utah, the bald eagle is primarily a winter resident, with only one breeding area known to occur on Uinta National Forest, in the southeast portion of the Strawberry Reservoir unit, near Soldier Creek Dam. Bald eagles have established winter roosts near the Forest in riparian areas dominated with large cottonwood trees. Occasional migrational or foraging use over the project area may occur. Foraging on the Forest involves the selection of prey species such as fish, small mammals, and carrion, none of which are likely to be in abundance during the winter months when the eagles are roosting in downstream areas.

Environmental Consequences - All Alternatives: The project area contains no suitable habitat for bald eagles, and none are known to occur in the project area. Therefore, it is expected the project will have no impact on bald eagles.

Columbia spotted frog *(Rana luteiventris)*

Information on the status of this species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 revised Forest Plan (USDA 2003b). In Utah, populations of this species have been located only in the Wasatch Range and in the West Desert within the Bonneville Basin. Populations are found in aquatic habitats with perennial sources of water. Breeding sites are typically pools or ponds with little or no current, and that are surrounded by dense aquatic vegetation. The project area occurs within the Strawberry River watershed, which is located in the Colorado River Basin, outside of the Bonneville Basin and thus outside of the known range of this species.

Environmental Consequences - All Alternatives: It is expected there would be **no impact** to Columbia spotted frogs because the project area occurs outside of the known range of this species.

Greater sage-grouse *(Centrocercus urophasianus)*

Information on the status of this species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 revised Forest Plan (USDA 2003b). The greater sage-grouse is a sagebrush-obligate species. Only two populations are known to occur on the Uinta National Forest: one in Strawberry Valley, approximately nine miles southeast of the project area, and one within the Vernon Unit in the West Desert.

Environmental Consequences - All Alternatives: Because of the lack of sagebrush habitat within the project area, it is expected there would be **no impact** on greater sage-grouse.

Flammulated owl *(Otus flammeolus)*

Information on the status of this species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 revised Forest Plan (USDA 2003b). The flammulated owl is a neo-tropical migrant that primarily preys on flying insects. Nesting habitat in Utah is primarily mature and old growth ponderosa pine and Douglas-fir (USDA 2003b). Flammulated owls select open forest

structure for foraging (USDA 1994). Although little is known about the distribution and abundance of flammulated owls on the Uinta National Forest, it has been detected in aspen, conifer, and mixed aspen/conifer stand types on the Forest.

No Action - Sediment impacts will continue to accrue in Indian Creek. However, it is not anticipated to affect the mature forest habitat used by flammulated owls over the current conditions.

Proposed Action – Realignment and Road Closure: The removal of the road along Indian Creek is expected to have a slightly beneficial impact to flammulated owls by reducing vehicular traffic and human use during the nesting season in the mature forest adjacent to the road.

The proposed road realignment will remove a few (less than 20) mature trees. Because flammulated owls are cavity nesters and cavities are most commonly found in large, dead and dying trees, the proposed action would reduce nest site availability for flammulated owls in a few mature trees. Potential effects on foraging habitat are less clear because the proposed action would result in more open forest structure, and flammulated owls select open forest structures for foraging habitat.

The proposed action would affect flammulated owl nesting habitat but would not affect population trend or population viability of this species on the Uinta National Forest because 1) conifer forest would be impacted on about 3 acres, which is only approximately 0.003% of the estimated total area of conifer forest on the Uinta National Forest (USDA 2003b) the proposed action would likely have a neutral or positive effect on flammulated owl foraging habitat as well as through reduced disturbance to nesting flammulated owls in the area proposed for road obliteration. Therefore the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.**

Alternative A - Realignment and Partial Closure: Many of the same benefits and impacts as those described in Proposed Alternative would occur, although not to the same extent. Since about two-thirds of the area to be obliterated and restored to natural condition would occur, it is anticipated only approximately 67% of the benefits achievable under Proposed Action would occur under this alternative. Thereby, more disturbances to flammulated owl nesting would occur than in the Proposed Action Alternative.

Alternative B - Realignment and ATV Route: The realignment of the road would have the same effects as the other action alternatives. The road conversion to an ATV trail is expected have similar disturbance as a result of vehicle traffic and human use, which may have a slight negative impact on flammulated owls nesting in mature forest adjacent to the ATV trail as compared to the Proposed Action and Alternative A.

Spotted bat *(Euderma maculatum) and* ***Townsend's big-eared bat*** *(Corynorhinus townsendii)*

Information on the status of these species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 revised

Forest Plan (USDA 2003b). These species feed on flying insects, often above streams, ponds, wet meadows, and other riparian habitats. The spotted bat typically roosts in rock crevices or under loose rocks or boulders. It occupies a wide variety of habitats from low-elevation deserts to ponderosa pine forests. In Utah, Townsend's big-eared bats are typically found below about 9,000 feet elevation. They roost in rock crevices, tree hollows, buildings and other man-made structures, caves, and mines. They typically hibernate in caves and mines. Distribution of these and other bat species on the Uinta National Forest is poorly understood. It is not known whether either bat species occurs in the project area. No caves or mines are located within or near the project area. No records of either species are known within the project area (Bornstein, 2008a).

No Action - There are no caves or mines located in the project area. Spotted bats and Townsend's big-eared bats are not documented at the project location. It is anticipated that under the no action alternative there will be **no effect** to these bat species.

Proposed Action – Realignment and Road Closure: The area proposed for road obliteration is not expected to affect either bat species. At the road realignment location, there may be some effects to bat foraging habitat by changing stand structure, which could affect flying insect abundance or distribution. Townsend's big-eared bats are known to roost in tree hollows, so the proposed action may reduce potential roost site availability by a small degree.

Because the spatial scale of the project is very small relative to the amount of similar habitat available on the Uinta National Forest, impacting less than 0.0001% of conifer forest habitat, the proposed action **may impact individuals or habitat but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.**

Alternative A - Realignment and Partial Closure: and **Alternative B - Realignment and ATV Route:** Many of the same benefits and impacts as those described in Proposed Alternative would occur, although not to the same extent. Since the only change in these alternatives from proposed action is the amount of road obliteration and road to trail conversion, it is anticipated the effects to bat species will be the same as the proposed action.

Fisher *(Martes pennanti)*

Information on the status of this species on the Uinta National Forest can be found within the viability assessment portion of the Environmental Impact Statement for the 2003 revised Forest Plan (USDA 2003b). Fishers are generalized predators that occur in landscapes dominated by mature forests throughout their range. Although the project area contains potential fisher habitat, this species is unlikely to occur anywhere near the project area. Utah Division of Wildlife Resources (UDWR) considers the fisher to be extirpated from the state (http://www.wildlife.utah.gov/pdf/utsoclist.pdf).

Environmental Consequences - All Alternatives: It is expected that there would be **no impact** on fishers because the project area is outside of the current known range of the species.

3.9 Vegetation

Affected Environment

No Threatened, Endangered or Sensitive plants or suitable habitat for those plants were found in the area of the proposed new road alignment or the existing road (Van Keuren 2007).

The project area is within the Strawberry Reservoir Management Area. Existing vegetation and desired future conditions for vegetation within this management area are described in the Forest Plan (p. 5-123 to 5-125). GIS analysis of the Uinta National Forest midscale-vegetation GIS data indicates the existing Indian Springs road traverses through sage-grass (about 1.4 miles encompassing ~7.8 acres), aspen/aspen-conifer (about 0.1 miles, 0.3 acres) and spruce-fir (about 0.1 miles, 0.6 acres) vegetation communities (total of about 8.7 acres encompassed by the 45-foot wide road corridor). Vegetation communities in the adjoining areas are primarily aspen/aspen-conifer and sage-grass, with spruce-fir found on north- and east-facing slopes along the east side of Strawberry Ridge, and oak and mountain brush stands interspersed along the west side of Strawberry Ridge.

The Uinta National Forest has an estimated 40,000 acres infested by noxious weeds (USDA 2006d, p. 35). Due to funding and staffing limitations is only able to treat about 1,000 to 2,000 acres annually (USDA 2006d, p. 32), though this does not include areas previously treated with biological agents (and in many cases these agents are still active, working and spreading). In 2005 and 2006, inventories for noxious weeds were completed along travel routes within the project area. GIS analysis of this inventory data indicates there are four noxious weed species present within the project area. Inventory data indicates these species occupy 5-15% of the infested areas. Noxious weeds located in the project area include musk thistle (Corduus nutans), Canada thistle (Cirsium arvense), and a small patch (< 0.5 acres) of whitetop (also known as hoary cress, Cardaria draba). All three of these species are included on the State of Utah Noxious Weed list. Houndstongue (Cynoglossum officinale L.), a species included on Wasatch County's noxious weed list, was also found in the project area.

Houndstongue and musk thistle were found along the Indian Springs Road above Indian Springs. Houndstongue and Canada thistle were found along the Indian Springs Road below Indian Springs, and also along sections of the Indian Creek Road above its junction with the Indian Springs Road. The small patch of whitetop was found near the southern end of the proposed road alignment. Houndstongue, Canada thistle, and musk thistle were found along the section of Indian Creek Road located between its intersection with the Great Western Trail and the south termini of the proposed road alignment.

Environmental Consequences

All Alternatives - There is no suitable habitat for Garrett bladderpod, Rockcress draba, Wasatch jamesia, Barneby woody aster, slender moonwort and dainty moonwort in the road project area, therefore selection of any of the alternatives **will not impact** these species. The

existing road and proposed alignment areas are lacking rock outcrops, cliffs and are generally too low in elevation for there to be suitable habitat. The road project area is too high in elevation to be suitable habitat for the Threatened Ute ladies-tresses orchid, therefore selection of any of the alternatives will have **No Effect** on this plant species.

Since only a small portion of the weed infestations on the Forest are treated annually, infestations are continuing to grow. This is particularly true along trails and roads, and in disturbed areas (USDA 2003b, p. 3-522 to 3-523).

No Action: Weed infestations will likely continue to grow across the Forest, and due to a probable continuing lack of resources for adequate treatment, will likely remain and possibly spread in susceptible habitats adjoining dispersed recreation sites and along existing roads and trails in the project area. No new ground disturbance would occur that would create a bare soil seedbed ripe for noxious weed expansion. About 0.2 miles of the Indian Springs road traverses through aspen/aspen-conifer and spruce-fir vegetation communities where competition and shading from the trees will retard the establishment and/or further spread of weeds.

Proposed Action – Realignment and Road Closure: Under the Proposed Action, about 14.7 acres (assuming average 65-foot width) of vegetation will be disturbed by construction on the new road alignment. Vegetation within the proposed road alignment consists of aspen/aspen-conifer (about 1.7 miles of proposed road encompassing ~13.3 acres), sage-grass (0.1 miles, 0.8 acres), and oak-oak/maple (0.1 miles, 0.5 acres) vegetation communities.

On the existing Indian Springs Road, about 0.2 acres of aspen/aspen-conifer and sage-grass will continue to be impacted by the Great Western Trail (upper 0.2 miles of the Indian Creek road). However, narrowing of the corridor from its present width to a trail (about 2 feet wide) will result in restoration of about 1.1 acres of vegetation. These occur within aspen/aspen-conifer (about 0.2 acres), and sage-grass (0.9 acres) vegetation communities. The remainder of the Indian Springs Road (encompassing about 7.5 acres) will also be restored. This will mostly occur in sage-grass (about 6.8 acres) and spruce-fir (about 0.6 acres) vegetation types. Restored areas will be recontoured and revegetated with native grasses and forbes as part of the proposed action. Over time, sage, grasses, aspen, and conifers from the adjoining stands will expand into the restored areas.

Collectively, considering the new road construction and existing road obliteration and conversion to trail, about 14.8 acres of vegetation will continue to be impacted by the existing Indian Springs and proposed road. This includes about 13.4 acres of aspen/aspen-conifer, 0.9 acre of sage-grass, and 0.5 acres of oak/oak-maple vegetation communities. This alternative will result in a net loss of about 6.1 acres of vegetation compared to the No Action Alternative.

Ground disturbance from the proposed road construction and obliteration potentially will increase the potential for the spread of noxious weeds already present in the area. However, application of the mitigation measures described in Chapter 2 will mitigate this potential. Obliteration of the Indian Springs road will eliminate vehicle access along this route, eliminating a source of future weed infestation. However, it will also make treatment of

existing weed infestations along this road slightly more time-consuming and costly (due to access), but due to the relatively short length of road involved and access remaining from above and below this will be minor.

Alternative A – Realignment and Partial Closure: Impacts from the new road construction and road to trail conversion of a portion of the Indian Springs Road (along the Great Western Trail section) will be as described for the Proposed Action. Restored areas will be recontoured and revegetated with native grasses and forbes as part of the proposed action. Over time, sage, grasses, aspen, and conifers from the adjoining stands will expand into the restored areas.

In this alternative the lower 0.5 miles of the Indian Springs Road will remain. This section of road lies within sage-grass vegetation communities, and encompasses about 3 acres. Collectively, about 17.8 acres of vegetation will be impacted by the remaining Indian Springs Road, segment of the Great Western Trail, and proposed new road. This includes about 13.4 acres of aspen/aspen-conifer, 3.9 acres of sage-grass, and 0.5 acres of oak/oak-maple. This alternative will result in a net loss of about 9.1 acres of vegetation compared to the No Action alternative.

Impacts on noxious weeds will be similar to as described for the Proposed Action, except that about 0.5 acres of the Indian Springs road will remain. Use of this road segment will continue to perpetuate potential for new introduction of weeds by road users. Conversely, the additional access will make treatment of weeds along this and the obliterated section of road easier (overall a fairly minor difference).

Alternative B – Realignment and ATV Route: Under this alternative, impacts to vegetation along the proposed new road alignment will be as described for the Proposed Action. Impacts on vegetation communities along the lower 0.5 miles of the Indian Springs road will be as described for Alternative A. For the remaining 1.1 miles of the existing Indian Springs road which will be converted to ATV trail, impacts will be lessened from the current situation along this road due to the narrowing of the disturbance corridor. The new trail will impact about 0.8 acres of vegetation (about 0.6 acres of sage-grass and 0.2 acre of spruce-fir). This alternative will result in a net loss of about 9.8 acres of vegetation compared to the No Action alternative. This assumes ATVs using this trail stay on the trail. Restored areas will be recontoured and revegetated with native grasses and forbes as part of the proposed action. Over time, sage, grasses, aspen, and conifers from the adjoining stands will expand into the restored areas.

This alternative will have a negligible impact on treatment of weeds along the existing Indian Springs alignment as ATV access is maintained. However potential for continued new introductions of weeds by road and trail users will also be perpetuated.

3.10 Visual Quality

Affected Environment

The analysis area is part of Province M331 - Southern Rocky Mountain Steppe – Open Woodland-Coniferous Forest – Alpine Meadow, Section M331D – Overthrust Mountain – Sub-Section M331D-17 Strawberry Valley. See project record maps for map of Strawberry Valley (Barthelenghi, Hatch 2008). The landscape character is described as follows:

Forest landscapes serve as a scenic backdrop to numerous communities, recreation facilities and amenities in the area. The 2003 Forest Plan utilized the agency's Visual Management System to address landscape management as it applies to scenic quality. Using this system and Forest management prescriptions, Visual Quality Objectives (VQOs) were assigned to forest landscapes based on the areas visual variety, sensitivity, distance from recreation sites, communities and travelways and the resource emphasis and associated limits on use and development. The five established classes of VQOs are Preservation, Retention, Partial Retention, Modification, and Maximum Modification. Each VQO describes a differing degree of acceptable alteration of the natural landscape.

The project area is located in the southerly end of the viewshed and Strawberry Valley. As one leaves Highway 40 and turns south onto Westside Strawberry Road, FSR #70131, this double lane road, which is paved for most of its length, is relatively developed in appearance. Mile markers, identity signs for major recreation development such as Strawberry Bay Marina and several campgrounds are apparent; all impacting the aesthetic experience of both the traveler and the large reservoir is dominate view. The viewshed is characterized by more rolling sage brush and grassy terrain, with expansive views of higher elevation areas which form Strawberry Ridge consisting of both conifers and aspen. Man made features dominate the landscape adjacent to the reservoir, with evidence of human modification in the form of parking lots, marina, restrooms, resort buildings, powerlines, fencing along the Strawberry Valley road. Most development is associated with the reservoir and the supporting recreation amenities.

Following Indian Creek Road, FSR #70042, one will encounter some evidence of human modification in the form of fences, corrals, powerlines and unpaved roads. These are subordinate to the viewed landscape of Strawberry Ridge, which forms a dramatic backdrop for a considerable distance. For the most part the viewed landscape appears natural with incursions of minor roadways.

The project area primarily lies within the foreground and middleground of Indian Creek Road and the foreground of Center Great Western Trail (GWT). The Visual Quality Objective (VQO) for the area is Modification and Partial Retention. See project record for map of the VQO and the project area.

For Partial Retention VQO management activities remain visually subordinate to the characteristic landscape. Management activities should repeat form, line, color, or texture common to the characteristic landscape, but structures can introduce form, line, color, or

texture that are found infrequently or not at all in the characteristic landscape. Reduction in form, line, color, and texture to meet Partial Retention should be accomplished as soon after project completion as possible, or at a minimum, within the first year. In other words, any management activity must be blended into the landscape so as to attract little attention. (UDSA 2003a)

Modification Management activities may visually dominate the original characteristic landscape. However, activities involving vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures and roads must remain visually subordinate to the proposed composition. In summary, this broad objective allows for most forms of management activity including those such as structures which are more visually obtrusive, provided they are designed to fit the context of the natural surroundings at all viewing distances. (UDSA 2003a)

This area common in variety and varies from relatively steep terrain just under Strawberry Ridge to areas of undulating hills cut by several small streams with upper side slopes partially covered by aspen and conifer with sage and grass filling in the lower reach of slopes and valley bottoms. The existing alignment of the Indian Springs road is steep with 10 percent plus grades for a majority of the road and short pitches of 20 percent and greater grades. It is located in the bottom of a drainage were run off is concentrated creating rutted and boggy areas in the dominant clay soils in the alignment. Users have created a web of road tracks outside of the managed road prism to avoid treacherous bogs and ruts.

Environmental Consequences

No Action Alternative - There will be no change to scenery under the no action alternative. User created road tracks will continue to dominate the immediate foreground of the casual visitor along the existing road alignment. Foreground through background views will continue to be screened by landform from Indian Creek Road and other travelways.

Effects Common to All Action Alternatives (Proposed, Alternative A and B) - The proposed Indian Springs re-alignment consists of the construction of a 14-foot wide road located on the easterly slope of Strawberry Ridge that will follow the general contour of the slope horizontally for a majority of the alignment with centerlines grades ranging from 0 through 8 percent. A large portion of the proposed road re-alignment will be screened by the overstory of aspen and conifer in foreground views from FSR 70042, FSR 70131 and the GWT. For middleground through background views from Strawberry Reservoir and associated recreation facilities and roads the re-aligned road is screened by land form. The direct effect will be in the immediate foreground where the highest degree of sensitivity and detail of the effected landscape is anticipated. For the short term until re-vegetation of the cut and fill slopes occur the curvilinear alignment may be dominant in the characteristic landscape but will repeat the form of the landscape. In the long term for a majority of this VQO of Modification landscape once vegetation is re-established in the cuts and fills of the roadway will become subordinate to the casual visitor because of repetition of the form, line, color and texture of the surrounding landscape.

An indirect effect as a result of the re-aligning Indian Springs road is the lack of or reduction of user created roads to avoid hazards or to drive illegally cross country because of moving the road out of a drainage and mitigation measures to inhibit cross country travel.

Proposed Action – Realignment and Road Closure: - See effects common to "All Action Alternatives" for effects from the construction and management of the proposed re-alignment of the Indian Springs Road. This alternative will obliterate, re-contour and re-vegetate the entire length of the existing Indian Spring road except for a 0.2 mile section on the westerly end where obliteration and re-contouring will be reduce the width of the exist road to the same width as the Center Great Western trail. Once re-vegetation occurs in the short term this will return the landscape to a natural appearing landscape and the old road alignment should no longer be evident in the viewed landscape.

Alternative A – Realignment and Partial Closure - The effects will be the same as the Proposed Action except for approximately 1/2 mile of the eastern end of the existing Indian Springs road alignment would remain as a dead-end road for access to dispersed camping, and access to permittee water development. For this short section of road, effects will be similar to the No Action Alternative. User created roads, to avoid hazard areas, on the existing road alignment may dominate the immediate foreground views in this Partial Retention VQO managed landscape.

Alternative B- Realignment and ATV Route - The effects will be the same as the Proposed Action and the No Action Alternative since the existing Indian Springs road will be managed as an ATV trail. It is not anticipated that either the road prism or the user created trails, to avoid hazard areas, will change much in the immediate foreground as compared to the No Action Alternative, even though the existing road will be managed as an ATV trail.

3.11 Heritage

Affected Environment

American Indians used the Indian Creek area throughout ancient and historic times, for fishing, hunting, plant gathering, religious activities, and as a travel route. It has also been used in the last 150 years by European Americans for recreation, hunting, travel, and livestock grazing.

A complete cultural resources inventory of the Indian Springs Road Relocation project area was completed in August 2006. No traditional cultural properties, prehistoric sites or historic sites, artifacts or features were found within the project boundaries. There are also no known traditional plant gathering areas located within the project area. The types of plants that occur within the project area are widely available elsewhere in the Strawberry River watershed, and are more easily accessed elsewhere.

Environmental Consequences

All Alternatives - There are no archaeological sites or traditional cultural properties within the project area. As a result, there will be no historic properties (National Register of Historic Places eligible) affected by the proposed Indian Springs Road. In addition, there are

no other known American Indian religious or sacred sites within or near the project area. No such sites were identified by Tribes during scoping for and consultation on this project. No known traditional plant gathering or other traditional uses are known to exist in the project area. The project, therefore, will have no direct or indirect impacts on cultural resources or on any known American Indian religious or cultural sites.

Cumulative Effects

Overview

The cumulative effects area for this project is considered to the portion of the Indian Creek watershed above the confluence of Streeper Creek to the headwaters unless stated specifically for the identified resource. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Past, ongoing, planned and foreseeable future activities are considered for each of the actions on the existing environment.

Past and/or historic activities include:

- Livestock grazing: The area has been grazed by livestock (mostly sheep) since the late 1800s.
- Logging and timber management there is not recorded timber sale in the area but it is assumed that the pioneers did some logging in this area
- Construction and maintenance of roads and trails - most of the original roads in the area are developed from the trails used by the livestock operators. As other users started to use the area the roads were continually upgraded to meet the new needs. In the late 1980 the Indian Creek road was designated as an arterial route for the Forest. This road was relocated out of the riparian area and upgraded to a two lane gravel surfaced road suitable for passenger cars. As a result of the decision to up grade the Indian Creek road the old Indian Creek road alignment and other roads in the upper portion of Indian Creek were closed to reduce sediment and improve wildlife habitat. In the early 1990s further road closures in upper Indian Creek were completed.
- Habitat restoration projects: There are no recorded habitat improvements in the cumulative affects area.
- Vegetation management projects - In the early 1990 the sparsely vegetation areas including the Green River Shale areas along Indian Creek and Streeper Creek were aerial seeded to increase vegetation and ground cover. Invasive plant control has been a yearly activity since the early 1980s
- Chipman Creek Culvert Installation - The culvert installation across Indian Creek and gravel surfacing on the Chipman Creek Road was completed in the summer of 2006. Under all alternatives, the Chipman Creek Culvert Installation project is not expected to have any direct or indirect effects on the Indian Springs Road Reconstruction project.

Ongoing activities include:

- Livestock grazing: All of the South Streeper sheep allotment, along with portions of the Chipman and North Streeper sheep allotments, is within the cumulative effects area. These allotments are grazed by sheep under an intensive rest management system.
- Dispersed recreation use: Dispersed camping occurs throughout the season along the Indian Creek road. This recreation use is mostly for pleasure and enjoyment of the out of doors. Starting in mid August the recreation use in the area becomes dominated by people hunting for big game.
- Maintenance/improvement of roads, trails, and infrastructure

  Indian Creek Road Reconstruction – The Indian Creek Road has been reconstructed. The most recent reconstructed portion starts to the south of the existing intersection with Indian Springs Road and continues south over the ridge (past the proposed intersection of the Indian Springs Road). Reconstruction of the Indian Creek Road is substantially complete and under all alternatives access to the Indian Springs Road will be improved.

- Use of unauthorized roads: Many of the roads that were closed were not obliterated and thus are being used by ATVs.
- Continued weed treatment: Invasive plant control is conducted along most of the authorized travelways.
- Personal use fuel-wood: The fuel-wood permits are issued for the district as a whole and there is not formal record as to where people get their wood. Since the Indian creek road is well maintained and goes through some forested areas it is assumed that there is some fuel-wood gathering in the area.

Planned Activities:

- Weed Treatment: Control of invasive plant species will continue as funding allows.
- Maintenance of roads, trails and infrastructure: Maintenance of roads and trails will continue as funding allows.
- Livestock grazing: Livestock grazing will continue at the present or a reduced rate
- Dispersed recreation use: Dispersed recreation use will continue to increase.
- Personal use Fuelwood: Fuelwood gathering will continue and may increase
- Range improvement projects: A water line in planned to start in Baldy Creek and pipe water to troughs outside of the cumulative effects area

Foreseeable Future Activities:

- *SB181S01 – Off Highway Vehicle Use on Public Highway*, has been signed into Utah State Law and the bill takes effect on October 1, 2008. It creates by definition a new class of motor vehicles known as “Street-Legal All-Terrain Vehicles, or Street-Legal ATVs”, and modifies the law as it relates to county and municipality authority to designate highways under their perspective jurisdictions for OHV use. Both Type I and Type II ATVs are eligible to become street-legal if retrofitted with required equipment, registered and licensed, and operated in accordance with provisions.
- Oil and Gas Exploration: The project is within a currently leased area. Existing leases will remain in effect under the Western Uinta Basin Oil and Gas EIS. The Forest has

recently issued a Draft EIS, *Oil and Gas Leasing on the Uinta National Forest*. If and when a decision is made on that project new leases will be subject to that record of decision.

Cumulative Effects by Resource

SOILS

Because soils are sedentary, effects in a particular area only loosely influence soil conditions in adjacent areas. Consequently, the area of consideration for cumulative effects on soil resources consists of the immediate watershed drainage comprising the proposed new road and the closing of the Indian Springs road area (Davidson, 2007).

The cumulative effects for soils are summarized in the following table. The total acreage for the proposed new road alignment area is 3.7 acres. The estimated amount of land with long-term soil commitments is anticipated to be around 26 acres for the proposed alternative.

INDICATOR	ACRES BY ALTERNATIVE*			
	Proposed Action	**Alternative A**	**Alternative B**	**No Action**
LONG-TERM SOIL COMMITMENT				
Classified FS Roads[1]	10	11	11	9
Unclassified Roads[1]	15	15	15	15
Trails[2]	1	1	2	1
Administrative Site	<1	<1	<1	<1
Private In-holdings	<1	<1	<1	<1
Total Estimated Soil Commitment	26	27	28	25
% of Allotments' Project Area	1.30%	1.40%	1.40%	1.20%
MAXIMUM SHORT-TERM EFFECTS				
Livestock Grazing[3]	1,981	1,980	1,979	1,982
Dispersed Recreation[4]	<1	<1	<1	1
Noxious Weeds[5]	<1	<1	<1	54
Range Improvements[4]	<1	<1	<1	<1
Total Short-Term Impacts	1,981	1,980	1,979	1,982
% of Project Area	98.70%	98.70%	98.60%	98.80%
TOTALS				
Total Long-Term Soil Commitment	26	27	28	25
Total Short-Term Impacts	1,981	1,980	1,979	1,982
Total Estimated Impacted Soils	2,007	2,007	2,007	2,007
% of Project Area	100%	100%	100%	100%

* Estimated acres rounded to nearest 1 acres

[1] assuming 16-ft average width

[2] assuming 4-ft average width

[3] assuming 100% grazing suitability

[4] assuming 60 ft diameter-use per site

[5] actual acres (acres times percent cover)

The short-term impacts are projected to range from 1,979 acres for the no-action alternative to 1,982 acres under the proposed action of constructing a new road alignment. The total acres from long-term plus short-term impacts are 2,007 acres for all alternatives.

The difference between the proposed action alternative and the no-action alternative is 1 acre, or <1 percent of the project area. Through analysis of the proposed action alternative, it is determined that there will be no net increase in long-term cumulative effects to soil resources beyond existing conditions under this alternative. Therefore, it is determined that there will be less than 15% detrimental disturbance to soil resources for both direct or indirect cumulative effects beyond existing conditions under this alternative.

The short-term impacts are projected to range from 1,979 acres for the no-action alternative to 1,982 acres under the proposed action of constructing a new road alignment. The total acres from long-term plus short-term impacts are 2,007 acres for all alternatives.

The difference between the proposed action alternative and the no-action alternative is 1 acre, or <1 percent of the project area. Through analysis of the proposed action alternative, it is determined that there will be no net increase in long-term cumulative effects to soil resources beyond existing conditions under this alternative. Therefore, it is determined that there will be less than 15% detrimental disturbance to soil resources for both direct or indirect cumulative effects beyond existing conditions under this alternative.

WATERSHED RESOURCES

The Cumulative Effects Area of Analysis is the Indian Creek watershed above Streeper Creek confluence (Jarnecke, 2007). From aerial photography, it appears that Indian Creek was incised prior to 1938. Much like the other tributaries in the Strawberry River watershed, Indian Creek was heavily grazed prior to 1938.

Currently, bank erosion rates on Indian Creek are relatively low (32 tons/mile), but this is still the fourth highest rate in Strawberry Valley. Much of the erosion on Indian Creek occurs in the cumulative effects area and may not reach the reservoir due to the presence of a number of intact beaver dams.

Historically, roads within the Indian Creek watershed have contributed to sediment reaching the Indian Creek channel and, ultimately, the Strawberry Reservoir (USDA 2004). Other activities contributing to sediment delivery to streams include temporary impacts associated with the reconstruction of the Indian Creek road, replacement of low water ford crossing with culvert at Chipman Creek (immediately above Streeper Creek confluence), livestock grazing and range improvement, and use of unauthorized roads and trails.

No Action - Under this alternative, no action would be taken. Indian Springs Road would continue to erode and produce sediment at current rates and impact downstream water quality, wetland, and floodplain resources. As a result, no cumulative impact beyond existing conditions would occur if this alternative is selected.

Common to Proposed Action, Alternative A, and Alternative B - Under these alternatives, the new road segment will pass through a number of headwater swales, none of which have developed stream channels. This road will be located entirely away from stream channels and Riparian Habitat Conservation Areas (RHCA's) and surfaced with aggregate

material. Studies have shown that surfacing materials and vegetation measures can be used to reduce the yield of fine sediment from road surfaces (Swift 1984). The mid-slope alignment can affect the existing drainage network by concentrating road runoff channeled in roadside ditches, extend the channel network by eroding gullies or intermittent channels on hillslopes, and link road segments to small tributary streams initiating new channels or extending the existing drainage network. Proper road design, gradient, surfacing, and drainage frequency will minimize these potential impacts (USDA 2000, Swift 1984).

Incorporating road surfacing, proper road design, and considering the overall distance of the alignment from any developed stream channel, the new road segment will dramatically reduce road prism sediment production (approximately 2 tons/year) and sedimentation delivered to the stream (approximately 0 tons/year) (USDA 2000).

An unquantifiable amount of sediment may be generated during construction and continue for up 1-2 years until the rehabilitated canyon bottom is adequately re-vegetated. This erosion and sedimentation can be dramatically reduced by incorporation of Best Management Practices into the construction process. Overall, rehabilitation of the road will restore natural drainage in terms of stream/ floodplain function in Indian Springs Canyon.

Other past, present, and reasonably foreseeable activities expected to contributing to sediment production and delivery include are temporary impacts associated with the reconstruction of the Indian Creek road, replacement of low water ford crossing with culvert at Chipman Creek (immediately above Streeper Creek confluence), livestock grazing and range improvement, and use of unauthorized roads and trails.

Proposed Action - Under this alternative, miles of road within the watershed will increase from ~1.6 miles to ~1.9 miles and will reduce the miles of road within the RHCA from ~1.0 miles to 0 miles. The removal of Indian Springs Road will positively impact the riparian and aquatic ecosystems because impacts of erosion and sedimentation of highly erosive soils from the road surface will be essentially eliminated. Erosion rates will decline over time as Indian Springs Canyon is revegetated. This alternative will essentially eliminate road related sedimentation into RHCA and streams, up to 97% in the long term. These combined actions will restore more natural drainage for Indian Springs Canyon and would have an overall positive impact to water quality, stream, and wetland resources and would not contribute negative cumulative impact to these resources.

Alternative A - Realignment and Partial Closure - Under this alternative, an increase in the miles of road within the watershed will increase from ~1.6 to ~2.4. Approximately 0.7 miles of road located within a Class II RHCA would be obliterated and 0.3 miles would remain. This alternative would result in a reduction of road related erosion (60%) and stream sedimentation (64%) reduction in stream sedimentation from existing conditions. These combined actions will restore more natural drainage for Indian Springs Canyon and would have an overall positive impact to water quality, stream, and wetland resources (although not to the extent of the Proposed Action) and would not contribute negative cumulative impact to these resources.

Alternative B - Realignment and ATV Route - Under this alternative, an increase in the miles of road within the watershed will increase from ~1.6 to ~2.4. Approximately 0.3 miles of road and 0.7 miles of OHV trail would remain within a Class II RHCA. The 0.7 mile Indian Springs Road to be converted to an ATV trail is located in moderate to severely erosive soils and in or adjacent to the drainage bottom of Indian Springs Canyon. These

actions would result in a reduction of approximately 9% in erosion and 11% in stream sedimentation from existing conditions. Selection of this alternative would result in minimal positive impact to water quality, stream, and wetland resources and would not contribute negative cumulative impact to these resources.

AQUATIC SPECIES

The overall cumulative effects for fisheries and aquatic resources in the Indian Creek drainage results from the combined activities associated with past and current grazing activities; logging and timber management; construction and maintenance of roads and trails; wildfire and vegetation management. The combined effect of these activities on fisheries and aquatic resources varies with proximity to the aquatic environment and intensity of the associated activities.

Activities that would contribute to stream bank erosion, channel instability and increased levels of fine sediment within Indian Creek would have the greatest cumulative effect on aquatic species and their habitat. Past, historic, current and reasonably foreseeable activities that may have an impact on aquatic species include livestock management, maintenance/improvement of roads, trail and infrastructure, dispersed recreation use, use of unauthorized roads, personal-use fuel wood. Other activities identified are believed to be past and no longer occurring, are outside identified RHCA's, should not have direct or indirect impacts to aquatic species and habitat, or may have potential impacts can not be determined because reasonable foreseeable activities decisions have not been made.

Sheep trailing and grazing is having a direct effect as sheep cross over the stream and embryos (eggs), in the gravel from mid-May through the middle of August, are crushed. Sediment that comes from the trailing and salting of sheep are indirect impacting on embryo survival as sediment covers the redds and smothers them.

Dispersed recreationalists are having a direct effect as people trample riparian vegetation or wade in the stream crushing embryos (eggs) which are in the gravel from mid-May through the middle of August. The use of the fords may also have a similar impact.

Maintenance of the existing roads and trails which are adjacent to the streams in the headwaters of Indian Creek are adding sediment to the streams and causing increased potential mortality to the fish and aquatic insects in the area. Many of the roads that were closed were not obliterated and restored to natural condition and thus are being used by ATVs. The unauthorized use of these roads, which may be in close proximity to the stream, increases the sediment in the spawning channels causing additional indirect mortality as described above.

Fuel wood gather along the Indian Springs road may affect the water quality within that section of the drainage as trees are dropped into the stream during harvest and additional vehicles are driven up the existing Indian Springs road. This may cause a loss of pool habitat and increase sedimentation.

The proposed action will reduce the amount of fine sediment being introduced into Indian Creek. The degree of benefit that would be obtained through implementation of the project

would be enhanced or lessened relative to non-project related activities that may increase or decrease the amount of fine sediment being introduced into the system.

Following review of the recommended conservation measures and applicable Uinta National Forest LRMP standards and guidelines for aquatic and riparian habitat management, it is anticipated that implementation of the proposed project within the identified operational guidelines and mitigation measures will not result in any long-term detrimental effects to existing aquatic resources.

It is determined that the overall **cumulative impact** of the proposed action in this project will be beneficial for fisheries and aquatic resources and that there will be **no negative long-term impacts** to aquatic species or their habitat resulting from implementation of the proposed project.

RECREATION

The primary recreation activities for this location are representative of opportunities in the surrounding areas. Motorized routes would continue to be provided under all alternatives. The cumulative effects common to all action alternatives will be minimal due to the fact that similar recreation experiences can be found in adjacent areas.

The Indian Creek road reconstruction improves access to the area and remains as an arterial route to and from Strawberry Reservoir. Improved alignment may extend available spring and fall recreation access to the area due to road relocation off north facing slopes, improved cross drainage, and increase in crushed aggregate surface course.

It is likely that sheep grazing in dispersed camping sites will be reduced due to upland drier site location verses existing camping sites along Indian Springs. This may improve recreation experience in terms of cleaner campsites and reduced noise. Visitors will still be able to see sheep grazing from surrounding roads.

The trend of more visitors to the area is a management challenge across the Forest. This increased use will cause cumulative effects to the recreating public.

When *SB181S01 – Off Highway Vehicle Use on Public Highway*, takes effect on October 1, 2008 there may be an impact to safety. It is unknown how many ATVs will be licensed as street-legal, what safety ramifications will be in mixing ATVs and passenger vehicles, how this will effect the future of OHV recreation, and what the impacts associated with street-legal ATV use may be to the social, economical and physical environment.

Because of residual land disturbance of management activities there may be a potential of unauthorized use on livestock driveways or other management disturbances for all alternatives.

HEALTH, SAFETY, AND TRANSPORTATION

The cumulative effects consider the ability to travel in and through the area in a manner that is considered safe for the type of conveyance.

Common to all Alternatives – The reconstruction of the Indian Creek Road may increase the amount of recreation traffic in the area as well as make the area available earlier in the spring and later in the fall. This could make the existing or new alignment available to travelers longer then prior to reconstruction.

When *SB181S01 – Off Highway Vehicle Use on Public Highway*, takes effect on October 1, 2008 there may be an impact to safety. It is unknown how many ATVs will be licensed as street-legal and what safety ramifications will be in mixing ATVs and passenger vehicles.

No Action: This alternative maintains access in and through the area. It provides for access to the area but because of the condition of the Indian Springs road and the difficulty of maintaining it to standard during inclement weather there is an increase in accident potential.

Proposed Action – Realignment and Road Closure and **Alternative A - Realignment and Partial Closure -** These alternatives will provide safe and reliable access in and through the area for all current and reasonably foreseeable activities. The safety of the traveler is increased by realignment of all of the most dangerous portions of the Indian Spring road.

Alternative B - Realignment and ATV Route: This alternative provides access in and through the area. The safety of the traveler will improve. The extent to the improvement of the traveler's safety differs from the other action alternatives depending on the ability to maintain the new ATV trail and the driving ability of those using it.

INVENTORIED ROADLESS AREAS

Because of residual land disturbance of management activities there may be an inferred potential of unauthorized road/ trail use on live stock driveways.

LIVESTOCK MANAGEMENT

No Action - The management of livestock with in the cumulative areas would remain the same.

Proposed Action – Realignment and Road Closure, Alternative A - Realignment and Partial Closure and **Alternative B - Realignment and ATV Route -** The management livestock would change. The herder would be able to camp along the new road resulting in an increase in the ability to herd the sheep. The new water developments would allow for better distribution of livestock and more uniform utilization of the available forage. This change in management will increase the cost of the permittees overall operation. An improved road could result in vehicles traveling faster, which could interfere with grazing management.

WILDLIFE

Within the cumulative area of Indian Creek, there has been very little activity in the recent past, outside of routine road maintenance and some additional road closures. Grazing has occurred in this subwatershed for many decades, and no timber harvest has occurred in this subwatershed for several decades. No future activities are planned outside of the proposed

project. The Biological determination for MIS would remain the same and a **No Effect** determination for wildlife species listed under the Endangered Species Act.

VEGETATION

There will be no direct or indirect affects from any of the alternatives. Therefore, none of the alternatives will have a cumulative affect on TES plant species.

The action alternatives will reduce the acres occupied by vegetation within the Strawberry Management Area as shown by comparing the existing acres occupied with those that would be occupied under the various alternatives. As can be seen in the following table, the effects and consequently the cumulative effects would be negligible (<0.008% overall or <0.02% to any vegetation type).

Type	Strawberry MA (SMA)	No Action		Proposed Action		Alternative A		Alternative B	
	Acres	Acres Occupied	% of MA	Acres Occupied	% of MA	Acres Occupied	% of MA	Acres Occupied	% of MA
Aspen	54,017	0.3	0.001%	13.4	0.025%	13.4	0.025%	13.4	0.025%
Sage-Grass	10,050	7.8	0.078%	0.9	0.009%	3.9	0.039%	4.5	0.045%
Oak	15,074	0	0.000%	0.5	0.003%	0.5	0.003%	0.5	0.003%
Spruce-Fir	32,661	0.6	0.002%	0	0.000%	0	0.000%	0.1	0.000%
Other	13,458	---	0.000%	---	0.000%	---	0.000%	---	0.000%
Total	125,260	8.7	0.007%	14.8	0.012%	17.8	0.014%	18.5	0.015%

SOURCE: Acres by vegetation type in Strawberry Management Area from the Forest Plan (p. 5-124).

Miles of open road and trail can be used as an indicator of potential future weed infestation. The various alternatives would result of 1.6 to 3.5 miles of road or trails existing as potential avenues for future weed infestations. This represents about 0.6% of the existing road and trail within the management area. The various action alternatives would increase this by less than 1 percent, a very minor increase. The proposed alternative would increase the amount of road and trail (i.e., potential for new weed infestation by road/trail users) within the management area by about 0.2%. Alternative A would increase the amount by 0.4%, and Alternative B by about 0.8%.

Approximately 10 acres within or adjacent to the project area are infested with weeds (only 5-15% of this, or about 0.5 to 1.5 acres within the 10 acres are actually occupied by weeds). This represents ~ 0.025% of the acres of weed infestation across the Uinta National Forest. Direct effects are expected to be minimal or none with application of BMPs. Therefore, the direct effects would little or none to the cumulative effects of other activities within the Forest or Management Area.

Transportation Route Type	SMA	No Action		Proposed Action		Alternative A		Alternative B	
	Approximate Miles	Miles Occupied	% of MA	Miles Occupied	% of MA	Miles Occupied	% of MA	Miles Occupied	% of MA
Classified Road	207	1.6	0.773%	1.9	0.918%	2.4	1.159%	2.4	1.159%
Trails	40	0	0.000%	0.2	0.500%	0.2	0.500%	1.1	2.750%
Total	247	1.6	0.648%	2.1	0.850%	2.6	1.053%	3.5	1.417%

SOURCE: Road and trail miles in Strawberry Management Area from the Forest Plan (p. 5-130).

VISUAL QUALITY

Scenery may be minimally impacted by cumulative effects by displacement to and from adjacent areas. Because of residual land disturbance of management activities there may be an inferred potential of unauthorized road/ trail use on live stock driveways or other management disturbances that may affect scenery for all alternatives.

HERITAGE

There are no archaeological sites or traditional cultural properties within the project area. As a result, there will be no historic properties (National Register of Historic Places eligible) affected by the proposed Indian Springs Road. In addition, there are no other known American Indian religious or sacred sites within or near the project area. No such sites were identified by Tribes during scoping for and consultation on this project. No known traditional plant gathering or other traditional uses are known to exist in the project area. The project, therefore, will have no cumulative impacts on cultural resources or on any known American Indian religious or cultural sites.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line rights-of-way or road.

The only irreversible and irreversible resource would be the loss of soil as outlined in the soil section of this chapter.

CHAPTER 4. CONSULTATION AND COORDINATION

Preparers and Contributors

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental impact statement:

ID TEAM MEMBERS:

Julie King – Heber District Ranger, Deciding Officer
Jim Percy – Team Lead, Rangeland Management Specialist
Renee Flanagan – Civil Engineer
John Campbell – District Recreation Staff Officer
Dave Hatch – Landscape Architect
Bernadette Barthelenghi – Landscape Architect
Jeremy Jarnecke – Hydrologist
Molly Hanson - Hydrologist
Robert Davidson – Soils Scientist
Michael Bornstein – Wildlife Biologist
Ron Smith – Fisheries Biologist
Paul Cowley – Fisheries Biologist
Denise Van Keuren – Ecologist
Michael Duncan – Botanist
Reese Pope – Ecosystem Group Leader
Charmaine Thompson – Heritage Specialist
Pam Jarnecke – Environmental Coordinator
Ken Burton - GIS Coordinator
Lauren Shapiro – Fire Ecologist

FEDERAL, STATE, AND LOCAL AGENCIES:

EPA, Region 8
USDA, National Agricultural Library
Office of Environmental Policy & Compliance – USDI
Utah Department of Environmental Quality
State Historic Preservation Office
Department of Environmental Quality – Division of Water Quality
US Fish and Wildlife Service
Department of Natural Resources
Utah Division of Forestry, Fire and State Lands
Governor's Office- Public Lands Policy Department
Governor's office of Planning and Budget
Wasatch County Commission
Congressman Jim Matheson
Governor John Huntsman Jr.
Congressman Chris Cannon
Congressman Rob Bishop
Senator Bennett
Sennator Hatch
Utah Division of Wildlife Resources
UDWR Strawberry/Jordanelle
CUWCD

US Army Corp of Engineers
UDWR, Northeast Region
Utah Reclamation Mitigation & Conservation Commission
USDI
CUP Completion Act Office
BLM – Salt Lake Field Office
DEQ, Division of Air Quality
BOR – Provo Office
Animal & Plant Health Inspection Service
Division of Water Rights – Regional Engineer
Utah Division of Water Resources
UDWR, Central Region
Utah Department of Public Safety
Wasatch Mountain State Park
USDA AHPHIS PPD/EAD
Natural Resources Conservation Service
US Army Engineer, Division South Pacific
US Coast Guard
Federal Aviation Administration
US Department of Energy
Federal Highway Administration
Advisory Council on Historic Preservation
Department of Environmental Quality - Division of Water Quality

TRIBES:

Confederate Tribes of Goshute
Ute Indian Tribe
Skull Valley Band of Goshute Indians

OTHERS:

Utah Environmental Congress
K. Frederick Burton
Marvis Clyde
Mark Holden
LaRen Provost
Ray Okelberry
Jerry Christensen
Roger Hicken
J.E. and S.A. Hines
Phyllis Christensen
The Nature Conservancy
Strawberry Pines Developer (returned)
Trout Unlimited
Wayne Jones
Nick Provost
Allen Sweat
Ryker Sweat
Richard Weissert
Gary Stringham
Trout Unlimited
Blazzard Lumber Company
Friends of Wasatch Mountain State Park
Forest Conservation Council
The Nature Conservancy
Natural Resources Conservation
Anita Allen
Predator Education Fund
Lake Fork Ranch & Cattle Co.
Craig Bryson
Great Salt Lake Audobon
Auza Ranches
Bill Coleman
Strawberry Water users
Nolan Giles
Backcountry Horsemen of Utah
Leavitt Lumber Company
Brian Bitner
Utah Shared Access Alliance
Strawberry Angler's Association
North Fork Preservation Alliance
Dave McNeill
Utah Four Wheel Drive Association
Deit Fischer
John Booth
TUNA
Utah Snowmobile Association
Vern Wilson
Utah Forest Network
John Wooldridge
Robert Riddle

Distribution of the Environmental Impact Statement ___

This environmental impact statement has been distributed to individuals who specifically requested a copy of the document. In addition, copies have been sent to the following Federal agencies, federally recognized tribes, State and local governments.

EPA, Region 8
USDA, National Agricultural Library

US Fish and Wildlife Service
Governor's Office- Public Lands Policy Department
Wasatch County Commission
Utah Environmental Congress
NRCS
Wayne Jones
Strawberry Water Users
Great Salt Lake Audobon
Nolan Giles
Red Rock Forests
Utah Division of Water Resources
Utah Shared Alliance
USDA AHPHIS PPD/EAD
Natural Resources Conservation Service

Office of Environmental Policy & Compliance – USDI
State Historic Preservation Office
US Army Engineer, Division South Pacific
US Coast Guard
Federal Aviation Administration
US Department of Energy
Federal Highway Administration
Advisory Council on Historic Preservation
Department of Environmental Quality - Division of Water Quality
Nick Provost
Richard Weissert
Utah Department of Public Safety
Utah Division of Water Resources
Robert Riddle
Trout Unlimited
Army Corp of Engineers

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This list of terms is intended to assist the reader in locating a broad scope of subject areas discussed in this document. The reference to specific page numbers is not intended to be all-inclusive.

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United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

TAKE PRIDE IN AMERICA

November 30, 2007

9043.1
ER 07/897

Julie K. King, District Ranger
Gallatin National Forest
2460 South Highway 40
Heber City, UT 84032

Dear Ms. King:

The Department of the Interior has reviewed the Draft Environmental Impact Statement for the Indian Springs Road Realignment, Uinta National Forest, Wasatch County, Utah, and offers the following comments.

SPECIFIC COMMENTS

Section 3.3, Aquatic Species, pages 3-34 -- 3-37, and Section 3.7, Terrestrial Wildlife, pages 3-51 -- 3-60

There are numerous statements of fact and field surveys mentioned in the sections without the benefit of supporting references. In several instances the information is used to document whether or not specific species may be found in the project area. The final EIS would be enhanced if the document included supporting references for such statements of fact and field surveys. Examples include, but are not limited to, the following:

- "The distribution of amphibian species within the Indian Creek drainage . . . through surveys conducted by the USFS and UDWR." (page 3-35) ***1-1***
- "Peregrine falcons typically nest on ledges on cliffs, . . . other open habitats such as sagebrush steppe, desert scrub, and grasslands." (page 3-51) ***1-2***
- "No observations of boreal toads have occurred in the project area." (page 3-51) ***1-3***
- "Migratory bird surveys of the project area were conducted in June 2007." (page 3-52) ***1-4***
- "Western yellow-billed cuckoos are not known to use high-elevation conifer forest in Utah, and thus the project area contains no suitable habitat for this species." (page 3-53) ***1-5***
- "No goshawk was seen or heard in the project area during field visits conducted in 2006 and 2007." (page 3-53) ***1-6***

RESPONSE TO COMMENTS

1-1 Material has been incorporated in FEIS by reference in order to cut down on bulk (NEPA, 40 CFR Part 1502.21). The reference is identified at the end of the paragraph, "(Smith 2005b)" and is available for inspection with the project record at the Heber Ranger District, 2460 South Highway 40, Heber City, UT.

1-2 The second sentence in comment *1-2* is a description of habitat chiefly related to where this species forages. The two sentences requesting references come directly from reference USDA 2003b, p. E-76 and F-78 (already cited in this paragraph). The following statement has been added to FEIS: "No nests have been found on the Uinta National Forest in recent years (UDWR 2002)." (FEIS, Section 3.81)

1-3 A clarifying statement and reference has been added to the FEIS (FEIS, Section 3.82).

1-4 The following reference was added to FEIS, Section 3.83: (Bornstein 2008b).

1-5 The following reference has been added to FEIS, Section 3.85 and Reference Section: (UDWR 2002a, p.146).

1-6 The following reference was added to FEIS, Section 3.85: (Bornstein 2008).

- "On June 13, 2007, the entire length of proposed road realignment was surveyed to ascertain if any three-toad woodpeckers were nesting . . . there was no sign . . . during this survey." (page 3-55) **1-7**

References, page R-80

The referenced link to the U.S. Department of Interior (USDI) 1997 citation is no longer available. To access information regarding the Utah gap analysis, please instead provide the following reference: **1-8**

Edwards, T.C., Jr., C.H. Homer, S.D. Bassett, A. Falconer, R.D. Ramsey, and D.W. Wight. 1995. Utah Gap Analysis: An environmental information system. Technical Report 95-1, Utah Cooperative Fish and Wildlife Research Unit, Utah State University, Logan, Utah.

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning our comments, please contact Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at (703) 648-5028 or at lwoosley@usgs.gov. **1-9**

Sincerely,

Robert F. Stewart
Regional Environmental Officer

1-7 The following reference was added to FEIS, Section 3.86: (Bornstein 2008a).

1-8 Edits have been incorporated in to the Reference Section of the FEIS.

1-9 We appreciate your response and comments.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

DEC 0 2007

Ref: EPR-N

Ms Julie K. King, District Ranger
Heber Ranger District
Uinta National Forest
Post Office Box 190
Heber City, Utah 84032

Re: CEQ 20070451; Indian Springs Road Realignment Draft Supplemental Environmental Impact Statement, Uinta National Forest

Dear Ms. King

The Environmental Protection Agency (EPA) Region 8 has reviewed the Draft Environmental Impact Statement (DEIS) for the Indian Springs Road Realignment Project. In accordance with our responsibilities under the National Environmental Policy Act (NEPA), 42 U.S.C. 4371 *et seq.* and the Clean Air Act §309, 42 U.S.C. 7609, EPA offers the following comments for your consideration.

With this DEIS, the US Forest Service (USFS) proposes to relocate the Indian Springs Road from its present location within the Indian Creek drainage to an upland location just east of Strawberry Ridge. The new road will be 1.9 miles long and will be a single lane with 10 turnouts. The existing Indian Springs Road is a local route located on the Heber Ranger District approximately 35 miles south of Heber City, Utah.

Purpose and need

The purpose and need for the USFS proposed action, as stated in the DEIS "*is to reduce adverse impacts to watershed and fisheries impacted by the existing road, provide safe driving conditions and maintain access to Strawberry Ridge from the south.*" EPA concurs with this purpose and need statement, finding it broad enough to evaluate a robust range of alternatives. **2-1**

Range of alternatives

The DEIS has evaluated three action alternatives. The Proposed Action would reconstruct the road on Strawberry Ridge and obliterate the existing road and restore the natural

2-1 We appreciate your comments and concurrence of the purpose and need statement.

characteristics of the Indian Creek drainage; Alternative "A" would reconstruct the road on Strawberry Ridge and obliterate a large portion of the existing road. Approximately 0.5 miles of a dead-end road would remain to allow grazing and recreational access; and Alternative "B" would reconstruct the road on Strawberry Ridge, convert a large portion of the existing road to an all terrain vehicle (ATV) trail and approximately 0.5 miles of a dead-end road would remain to allow grazing and recreational access.

The Proposed Action alternative would significantly reduce the sediment load currently being transported downstream to the Strawberry Reservoir, reduce turbidly and improve water quality in Indian Creek. Alternatives "A" and "B" would still allow for disturbances to occur in the Indian Creek drainage impacting water quality in Strawberry Reservoir and Indian Creek. *2-2.*

In addition, in reviewing the EIS, EPA is not fully convinced that all reasonable alternatives have been fully explored. EPA would like to see a more detailed evaluation of why a road could not be constructed outside the designated roadless area and still meet the purpose and need of the EIS. The FEIS should include an explanation of why other alternatives outside the roadless area were rejected. *2-3*

Inventoried Roadless Area

All three of the proposed action alternatives would impact a portion of a USFS designated roadless area. EPA is concerned that the relocation of this road would impact the status of the current roadless area. The FEIS should clearly describe what actions the USFS will undertake to preserve the status of this area as roadless, e.g. mitigation that the USFS could undertake to offset the impacts of the road placement. Mitigation that would be acceptable would include: *2-4*

- Restoring existing non authorized roadways in the roadless area to natural conditions to offset the new road construction.
- Restrict potential access and human impacts off the proposed road. This could include restricting dispersed camping opportunities along the proposed new roadway.
- Developing and implementing an education program for forest user on the importance of staying on designated roadways.
- Improved signage.

Based on the procedures the EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and its alternatives in an EIS, EPA rates this DEIS as EC-2 (Environmental Concerns – Insufficient Information). An "EC" signifies that EPA's review of the DEIS has identified potential environmental impacts that should be avoided in order to provide adequate protection for the environment. A "2" rating signifies that the DEIS does not contain sufficient information for the EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment. A copy of EPA's rating criteria is enclosed. *2-5*

2

2-2 This is correct. The Proposed Action alternative will provide the largest reduction in erosion from the road prism and sediment into streams from the road prism of the no action and action alternatives analyzed in detail. See FEIS Table 2-1 for comparison of alternatives.

2-3 An additional alternative to relocate the road outside of inventoried roadless area has been incorporated into the FEIS. This alternative would not meet components of the purpose and need for action and was eliminated from detailed study (FEIS, p. 2-3).

2-4 Population growth and increased ATV use is recognized. An increasing number of users are accommodated within the capability of the resource by maintaining and improving existing developed recreation sites and emphasizing management of dispersed recreation (USDA 2003a, p. 2-18). Enforcement and education tools are in place to address unauthorized use:

- Order Number: 04-18-05-01 Summer Travel Map
- Motorized access is allowed within 150 feet of a designated Forest development road unless that area is posted closed to camping.
- Tread Lightly! Partnership
- The Motor Vehicle Use Map (MVUM) is provided free to the public and has been created as a legal enforcement tool.

However, budget committed to on the ground enforcement and education resources are steadily declining.

Additional comments are addressed in FEIS, Table 2-2, Mitigation Measures for Action Alternative, GEO9, REC2-6, and IRA2.

2-5 We appreciate your response and rating of the proposed action and alternatives in the DEIS.

We appreciate the opportunity to comment on the DEIS. If you have any questions or would like to discuss our comments, please contact Dick Clark of my staff at (303) 312-6748 or by email at clark.richard@epa.gov.

Sincerely,

Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection and Remediation

enclosure

2-6

3

2-6 See response to comment *2-5* on page C-4.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

2- 7

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment 'ebruary 1987.

2-7 See response to comment *2-5* on page C-4.

We Speak for the Trees

Utah Environmental Congress

RECEIVED DEC 11 2007

December 10, 2007

Julie King, District Ranger
Heber Ranger District
2460 South Highway 40
Heber City, UT 84032

Dear Julie,

The Utah Environmental Congress (UEC) submits these comments on the Uinta National Forest's Draft EIS for the **Indian Springs Road Realignment** project.

We support the portion of this proposed action that will rip up the dirt road paralleling Indian Creek. Kudos for taking steps to protect the integrity of the creek, an important tributary of Strawberry Reservoir. The road ripping and restoration of the 1.6 mile road (for a total of 8.7 acres) should restore habitat to aquatic and riparian species. *3-1*

However, we do not support the creation of a replacement road. It is unnecessary, and appears to be proposed mainly to save recreational users a small amount of driving time. There are other access roads available. *3-2*

Realigned road is unnecessary

The Indian Springs Road Realignment DEIS states that the purpose of the new road construction is to maintain access to Strawberry Ridge from the south in order to support recreation, historic uses, and access for administrative management. DEIS at 2-11 to 2-12. The Forest admits that the public use of the road is primarily for deer and elk hunters in the fall. DEIS 3-62. Without the 1.9 mile-long new road, drivers would have an approximately 13 mile route from the dead end of Strawberry Ridge Road to the locale of the eastern outlet of the current Indian Springs Road. DEIS 2-16, 3-39. An 11 mile difference is not worth the detrimental impacts of constructing a two-mile road in an Inventoried Roadless Area. The new road would probably save users only about one-half hour of driving. The costs of new road construction outweigh the benefit of a bit of saved time. The UNF should be closing the current Indian Springs Road and not creating another in its place. *3-3* *3-4*

The DEIS claims that a permanent closure of the Indian Springs Road would result in an increase in traffic, accidents and maintenance on Strawberry Ridge Road because drivers would have to backtrack along the dead-end road. DEIS 3-41. Honestly, proper signage along the northern part of Strawberry Ridge Road could alert drivers that the road is a dead-end. The UNF currently posts signs alerting the public when Indian Springs Road is closed due to weather. DEIS 2-23. Signs are an inexpensive way to assure that most drivers who embark down Strawberry Ridge Road would do so knowing that they will need to backtrack to get out. *3-5* *3-6*

3-1 Thank you for your comment and support of the obliteration and restoration of the existing Indian Springs Road alignment as described in the Proposed Action.

3-2 Currently, the Indian Springs Road is the only road that meets the purpose and need for action statement. "*…maintain access to Strawberry Ridge from the south.*" (p. 1-1).

3-3 The statement is in relation to issues associated with recreation only and has been clarified to read: "There is a series of dispersed campsites in the project area and adjacent road corridors. The primary uses in this area camping, OHV riding, hunting, and other dispersed recreation activities. The highest use of this area is during hunting season in the fall." (FEIS, Section 3.4 Recreation).

3-4 This decision does not include whether to retain or eliminate the Indian Springs Road. The road has been identified to retain for public and administrative access (USDA 2002). The closure of the Indian Springs Road is outside the scope of this analysis (p. 1-8) and considered but eliminated from detailed study (p. 2-2).

3-5 The portion of the DEIS you referenced, DEIS 3-41, discusses environmental consequences of the No Action alternative on the Strawberry Ridge Road during inclement weather, not permanent closure of the Indian Springs Road. See response to comment *3-4* on closure of the Indian Springs Road.

3-6 Yes, a sign could reduce some of the back-track traffic. The portion of the DEIS you referenced is Table 2-2, Mitigation Measures for Action Alternatives, not current operating procedures. Signs and public notices are in reference to informing the public during project implementation of the closure of the existing alignment and alternative routes available. Clarification to HST1 and REC1 mitigation measures have been made. Seasonal closure of the Indian Springs Road under action alternatives is described in Table 2-2, Mitigation Measures, HST5.

3-7 (p.C-8) **Watershed Resources:** The two referenced reports: *"The Ecological Effects of Roads"* and the *"End of the Road…"* document the adverse impacts of roads on aquatic ecosystems. These impacts are recognized and are driving factors for this proposed project. The purpose of realigning the Indian Springs Road onto a drier upland site and out of the riparian/aquatic ecosystem is to eliminate the current adverse impacts that the existing road has on the riparian and aquatic ecosystem. The current degraded condition of the aquatic ecosystem within the Indian Springs road relocation project area is directly related to the location of the existing road in the stream bottom. This project identifies these impacts and addresses the need to remedy these adverse effects by removing the road from the impacted riparian area. With this project is an opportunity to show how important road design, drainage and location is for the proper management of riparian and aquatic habitats.

Detrimental impacts from roads and ATV use

Few things harm sensitive wildlife like a road. Studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals. Road-building in National Forests and other public lands threatens the existence of de facto wilderness and the species that depend on wilderness. Noss, Reed; *The Ecological Effects of Roads.* See also NRDC Report *End of the Road: The Adverse Ecological Impacts of Roads and Logging: A Compilation of Independently Reviewed Research* (1999), which discusses the fact that roads harm wildlife, spread tree diseases and bark beetles, promote insect infestations, cause invasion to harmful non-native plant and animal species, damage soil resources and tree growth, and adversely impact aquatic ecosystem. *3-7*

The realigned Indian Springs Road will also be open to ATV use. Retired Forest Service Chief Dale Bosworth has identified unmanaged recreation – in particular ORV use – as one of four principal threats to the National Forests. *See* http://www.fs.fed.us/news/2004/speeches/01/idaho-four-threats.shtml. He said, "Each year, the national forests and grasslands get hundreds of miles of unauthorized roads and trails due to repeated cross-country use. We're seeing more and more erosion, water degradation, and habitat destruction. We're seeing more and more conflicts between users." *3-8*

The Forest Service has noted that:

- The number of ORV users has climbed sevenfold in the past 30 years, from approximately 5 million in 1972 to 36 million in 2002. http://www.fs.fed.us/r5/shastatrinity/news/ohv/news-rs-10-2-05.shtml.
- ORV use has been consistently implicated in the spread of invasive weeds, a vexing problem that the Agency has cited as another of the "Four Threats." *See*, http://www.fs.fed.us/projects/four-threats/. *3-9*
- The number of large fires is dramatically higher in areas that are roaded than in inventoried roadless areas. USDA Forest Service, *Roadless Area Conservation Final Environmental Impact Statement*, Volume 1. November, 2000, page 3-115. *3-10*
- Forest roads have negative effects on water quality, fires, wildlife habitat, invasion by exotic species, and local economies. USDA Forest Service, *Forest Roads: A Synthesis of Scientific Information, Pacific Northwest Research Station*, General Technical Report PNW-GTR-509. May, 2001, page 4. *3-11*

The realigned Indian Springs Road will be 1.9 miles long with an imprint on average of 65 feet wide. DEIS 1-2. The DEIS notes that because of the new road construction and use, there will be a negative impact to migratory birds (DEIS 3-52), goshawk habitat (DEIS 3-54), three-toed woodpeckers (DEIS 3-55), and potential harm to the watershed by concentrating road runoff (DEIS 3-30). The new road will also be in the "key potential travel corridor for Canada lynx." DEIS 3-53. *3-12*

2

***3-7* cont.** **Wildlife:** This is recognized for some wildlife species. In the case of Canada lynx, this has not been established (Ruggiero et al 2000 in wildlife B.A.). For northern goshawk, in terms of reducing nesting habitat, there may be a small negative impact, with only a very few large diameter trees (less than 20") would be removed. The proposed road realignment would not affect American beavers, and relocation of the existing road out of the riparian habitat would have a potentially beneficial effect on American beavers (Bornstein 2008a). There are no avian priority species located in the habitat type where road construction is proposed. Also, moving the road out of riparian habitat will have a beneficial impact on some riparian-associated bird species, while placement of an alternate road in the upper portion of the drainage may have a small negative impact on potential nesting habitat (Bornstein 2008b). However, mitigations to minimize adverse impacts to nesting migratory birds are in place such that operations will occur after the primary nesting season (FEIS, Table 2-2). Potential road impacts to additional wildlife species are discussed in the wildlife specialist report.

The cited references, including "*The Ecological Effects of Roads…*" and "*End of the Road…*" both focus on impacts to an array of wildlife species, including amphibians and reptiles, forest interior nesting birds, and big game. There are no known observations of the boreal toad, the only amphibian species of concern, in this drainage. A limited operating period has been identified to minimize impacts to migratory birds during the primary nesting season, and this area does not encompass any critical winter range for big-game species (Bornstein 2008b). Impacts were considered and evaluated at the site-specific level of the Indian Springs Road project using the best available science, and were considered to be minor.

Vegetation: As noted in the EIS, there are no known rare plants, including rare plants with collector appeal within the project area (Van Keuren, 2006) and therefore, poaching of rare plants is not an issue. Regarding roads facilitating spread of non-native invasive plants, we agree there is potential for road construction and subsequent road use to facilitate the spread of invasive plants. The action alternatives all incorporate measures to mitigate this during and for 5 years following road construction. In regards to road and trail users spreading invasives, this is addressed in the FEIS. Overall, with the mitigation applied there should be a little change in noxious weed infestations.

Aquatic Species: We agree with the general statements and their affects of fish and aquatic resources. One of the purpose and needs of this initiative is to reduce adverse impacts to fisheries impacted by the existing road. This action is needed because the existing road is primarily occupying the valley/drainage bottom or located adjacent to Indian Creek (FEIS, p.1-2). Relocation of the road away from Indian Creek would reduce the very impacts discussed in the two referenced reports: "*The Ecological Effects of Roads*" and the "*End of the Road…*". The new road alignment would substantially improve water quality through reduction of sediment production and fine sediment in Indian Creek would significantly improve habitat for fish and other aquatic species (FEIS, Section 3.2).

Additional information is available in FEIS, Chapter 3, Affected Environment and Environmental Consequences.

3-8 through 3-12. See response to comment on next page, C-9.

Damage to Inventoried Roadless Area

The new road will be in an Inventory Roadless Area. IRAs are areas maintained as substantially natural and generally without roads. They are intended to preserve important values and benefits by prohibiting activities that have a likelihood of degrading desirable characteristics of IRAs. DEIS 3-46. The realigned Indian Springs Road through an IRA will strip from a portion of that area the qualities the IRA designation was meant to preserve. The Draft EIS acknowledges that the realigned road will remove 15 acres of IRA and will degrade the natural integrity and apparent naturalness of the Strawberry Roadless Area. DEIS 2-22. The Strawberry Roadless Area is already subject to illegal ATV use (DEIS 3-46), and a net increase of 0.3 miles of ATV-opened roadway can only exacerbate the problem. ***3-13***

Must do realistic cumulative effects analysis

The UNF must take a harder look at effects from ATV use, given that the new road (as the current road) will be open to ATV users.

The DEIS admits that the realignment may result in a "[p]otential increase of inappropriate use of off highway vehicles." DEIS 1-6. But the UNF does not adequately address the impacts from this likely increase of illegal use by ATVs. Yes, it claims that as a mitigation measure the road design will use cut and fill methods to discourage illegal ATV use (DEIS 2-24), but there will admittedly still be off-road, inappropriate use.[1] ***3-14***

The UNF claims that an altogether elimination of Indian Springs Road would encourage and increase inappropriate and unsafe ATV use on arterial roads. DEIS 1-6. So the Forest Service is catering to illegal activity by trading ecosystem integrity for a road it admits will be used primarily by one subset of recreational users (autumnal hunters who often travel with ATVs)? We realize that illegal ATV use is rampant and an enormous problem, and that the Forest Service is understaffed to deal most effectively with the problem, but illegal use to the detriment of our natural resources should not be rewarded. ***3-15***

Recently the Wasatch-Cache NF in Utah issued a Draft EIS for a road relocation project, and admitted the destructive effects of ATV use on the Forest. The Forest Service noted that with ATV use often comes illegal off-trail use, resulting in braided routes and destroyed stock ponds, not to mention destroyed roads, and that "several unauthorized, motorized routes occur in or adjacent to the project area." (Milleville Peak/Logan Peak Road Relocation Project DEIS p. 3-12.) That project DEIS also admitted that the unauthorized ATV roads increase negative effects to soils and aquatic habitats. (DEIS p. 3-35 to 36.) In responding to that project, the UEC pointed out that the NF on one hand admitted that many motorized vehicle users abuse forest resources, but on the other hand explicitly stated that it based the project evaluation on the assumption that ATV riders obey posted laws and regulations. ***3-16***

[1] Oddly, the DEIS states that the realignment project would result in *decreased* miles of authorized ATV access. DEIS 2-22. This makes no sense: how can the closure of a 1.6 mile road and the creation of a 1.9 mile road result in *decreased* miles of authorized ATV access when both roads are/will be open to ATV use? ***3-17***

3

3-8 The same speech references Tread Lightly! Partnership and the 2005 Travel Rule, which mandated each Forest to designate a travel system and the produce a Motor Vehicle Use Map (MVUM). Both of these are addressed in Response to Comment *2-4*.

3-9 See Response to Comment *2-4* and *3-7(*Vegetation).

3-10 Your comments have been incorporated in the FEIS, p. 1-8.

3-11 **Fire -** Your comments have been incorporated in the FEIS, p. 1-8.

Watershed - Specific language on the effects of roads on water quality (chemical contamination) is referenced in the PNW-GTR-509 on pages 40-42. There have been no known current or planned occurrences of chemical contamination to water quality in the area and no aerial application of chemicals to roadways is planned with this project . The FEIS discussed that Strawberry Reservoir was impaired in 2004 for Total Phosphorus and Dissolved Oxygen and the 2005 TMDL report described that current conditions and planned management practices will continue to improve water quality (Section 3.3). The Indian Springs Road Relocation project targets one of the problematic sedimentation sources that has had a negative impact to water quality in the Strawberry Reservoir. The projected reduction in sedimentation as related to the action alternatives in described in FEIS, Sections 3.1-3.3.

Wildlife - The cited reference, USDA: Forest roads: a synthesis of scientific information, describes the negative consequences of forest roads, including habitat fragmentation, road-kill, and loss of biodiversity. This publication also notes that roads differ greatly in their impacts. Site-specific impacts for the proposed Indian Springs Road were considered using the best available science. As noted in the Wildlife Specialist Report, there are no known observations of the boreal toad, the only amphibian species of concern, in this drainage. A limited operating period has been identified to minimize impacts to migratory birds during the primary nesting season, and this area does not encompass any critical winter range for big-game species. Therefore, negative consequences from the proposed road are expected to be minor.

Vegetation – The discussions of the effects of all alternatives on vegetation and weeds has been expanded in the FEIS. The references listed here provide general information regarding the effects of roads on a variety of resources. This includes potential for noxious weeds. These references areare general in nature, and not specific to the Rocky Mountains, Utah, or the project area. Noxious weed species found within the project area were not mentioned in any of these documents. The general effects described in these documents was considered (Pope 2008a), and incorporated as relevant in the discussion of environmental effects.

3-12 Several statements in this paragraph are incorrect. Reference the following sections for affected environment and environmental consequences of alternatives: migratory bird species (FEIS, Section 3.83), goshawk and three-toed woodpeckers (FEIS, Section 3.86), and Canada lynx (FEIS, Section 3.85). Under the proposed action the mid-slope alignment can affect existing drainage network by concentrating road runoff…Proper road design, gradient, surfacing, and drainage frequency will minimize these potential impacts…The new road segment will dramatically reduce stream sedimentation. (FEIS, Section 3.2).

3-13 through 3-17 See response to comment on next page, C-10.

In addressing the 1.9 miles of new road construction for the Indian Springs Road Realignment, the UNF *must* take on-the-ground reality into account when doing its effects analysis, even if by doing this it acknowledges illegal usage of the Forest by some members of the public. The Draft EIS fails to do so. It mentions the possibility of off-trial use by ATV's, but does not disclose the extent of that destructive use or anticipated results. The environmental documentation does not include data on the estimated locations of the likely creation of unauthorized routes on the Forest. Routes are constructed deliberately from existing routes or as a consequence of repeated use. The Forest needs to present its knowledge of the extent and rate of unauthorized route creation. ***3-18***

The UNF must also consider the camping that accompanies ATV use. Dispersed camping sites are proliferating and often expanding into large areas where significant numbers of RVs and trucks park and where ATVs travel within and between sites. Within these sites, the soil becomes rutted, compacted, and denuded. When the unauthorized route out to the site becomes muddy and rutted, another route is pioneered. When one dispersed camping site becomes trashed, people often seek a more pristine setting for their motorized camping experience, and the cycle begins again. Because dispersed camping is a major form of habitat-destruction and unmanaged off-route vehicle driving, the analysis for these ATV routes must plan how dispersed camping now will be designated in and limited to ecologically defensible locations. ***3-19***

The Forest should also take a close look at the increase in popularity of ATV use in the National Forests, and account for foreseeable surges. The Wasatch-Cache Revised Forest Plan EIS notes that motorized recreation in Utah is expected to greatly increase over time. For example, "[t]here is a dramatic trend toward increased use of ATV's and snowmobiles. The number of snowmobiles and ATV's registered in Utah has climbed from about 26,000 in 1980 to about 111,000 in 2000." WCNF Forest Plan EIS at 3-233. Additionally, "[a]s the population continues to grow (predicted to be an increase of 1,000,000 by 2020, … it is expected that the demand for outdoor recreation will increase at a similar or greater rate[.]" Id. With regard to big game winter range, there has been a "loss of habitat through development, and a reduction in the quality of habitat through introduction of non-native grasses, forbs, and noxious weeds." Id. at 3-161. The UNF admits lack of knowledge of quantity of Forest users in the Indian Springs Road Realignment project area. ("There is very little data available on the amount of traffic that travels classified FSR's within the analysis area. No current data is available for amount of traffic on the FSR's within the project area." DEIS 3-38.) NEPA requires a "hard look" analysis. That was not done here. ***3-20*** ***3-21***

Please keep the Utah Environmental Congress on all mailing lists associated with this proposed action. Please mail a hard copy of all related environmental decisions and documents to our office.

Sincerely,

Sarah Tal

Sarah Tal
Utah Environmental Congress
1817 South Main, suite 10
Salt Lake City, UT 84115

3-13 Under the proposed action there is a net decrease of 1.5 miles of roads open to ATVs. This is due to the change in designation on the Indian Creek Road from the existing Indian Spring intersection the Bald Mountain Road. Edits to the proposed action alternative description (FEIS, p.2-6), map (FEIS, p.2-7), and Table 2-1: Comparison of Alternatives have been made to clarify this issue. This will reduce the road mileage designated for ATV use, clarify open routes, and better manage mixed use traffic.

3-14 Yes, there is potential for the creation of unauthorized trails/roads. Mitigation measures and the continued implementation of travel management may reduce the potential of unauthorized trails/roads. An analysis of unauthorized trails/roads has been incorporated in the FEIS, Section 3.4 Recreation.

3-15 The road serves several different uses, one of which is hunters traveling on ATVs; however, we are also correcting serious resource damage by closing, obliterating and restoring to natural condition the current alignment. There is a trade-off between affecting roadless characteristics and improved riparian and aquatic habitat which is analyzed in Chapter 3.

3-16 See response to comments *2-4* and *3-14*.

3-17 See response to comments *3-13*

3-18 See response to comment *3-14*.

3-19 Dispersed recreation opportunities are part of travel management for the Forest. Designated routes 042 Indian Creek road and 501 Indian Springs road MVUM road symbols show that "limited cross-country motor vehicle use is allowed with a specific distance" MVUM 2007. The Special Regulation states 150 feet for dispersed camping (MVUM 2007, Closure Order Number 04-18-05-01, and USDA 2003a, REC-13 Standard, pg. 3-30). A change in management of dispersed camping is outside the scope of this decision, but maintaining existing opportunities is incorporated in Section 3.4 Recreation of this FEIS.

3-20 See response to comment *2-4* and *3-7* (Vegetation). Big game is addressed in FEIS, Section 3.84.

3-21 While we have little data concerning the amount of traffic, we found that the amount of traffic was not necessary to adequately assess the impacts of our actions. The new alignment has been designed for low-volume, which even with increased use over time is appropriate for its intended function. The design criteria for low-volume roads does not emphasize the amount of traffic as significant in comparison to vehicle characteristics, such as design and critical vehicles, traffic service level, road users and economics. Traffic service levels reflect factors such as speed, travel time, traffic interruptions, freedom to maneuver, safety, driver comfort, convenience and operating costs. These factors affect design elements such as number of lanes, turnout spacing, lane widths, driving surface material, sight distance, design speeds, clearance, horizontal and vertical alignment, curve widening and turnarounds (USDA 1987, USDA 2005). Analysis of design criteria best addresses health, safety and transportation issues (see FEIS, Section 3.5 and Table 3.5-1).

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