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Department of  
Agriculture

Forest  
Service

October  
2007



# Draft Environmental Impact Statement

## Indian Springs Road Realignment

Heber Ranger District, Uinta National Forest  
Wasatch County, Utah

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**Indian Springs Road Realignment  
Draft Environmental Impact Statement  
Wasatch County, Utah**

**Lead Agency:** USDA Forest Service

**Cooperating Agencies:** Wasatch County

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**Abstract:** The Heber District of the Uinta National Forest proposes to realign the Indian Springs Road. The Forest Service developed four alternatives, including the No Action, Proposed Action, and two alternatives that would leave a portion of the existing alignment in place.

Reviewers should provide the Forest Service with their comments during the review period of the draft environmental impact statement. This will enable the Forest Service to analyze and respond to the comments at one time and to use information acquired in the preparation of the final environmental impact statement, thus avoiding undue delay in the decision making process. Reviewers have an obligation to structure their participation in the National Environmental Policy Act process so that it is meaningful and alerts the agency to the reviewers' position and contentions. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the final environmental impact statement. City of Angoon v. Hodel (9<sup>th</sup> Circuit, 1986) and Wisconsin Heritages, Inc. v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on the draft environmental impact statement should be specific and should address the adequacy of the statement and the merits of the alternatives discussed (40 CFR 1503.3). Each individual or representative from each organization submitting comments must either sign the comments or otherwise verify identity in order to obtain appeal eligibility. Comments received in response to solicitation, including names and addresses of those who comment, will be considered part of the public record for this project.

**Send Comments to:** Responsible Official: Julie King, Heber District Ranger, 2460 South Highway 40, Heber City, UT 84032; by phone at (435)-654-0470; or by fax at (435) 654-5772. E-mail comments to [intermtn-heber@fs.fed.us](mailto:intermtn-heber@fs.fed.us); e-mails must be submitted in MS Word (\*.doc) or rich text format (\*.rtf) and should include the project name and subject line. Oral comments may also be submitted at the above address during regular business hours of 8:00 a.m. to 5:00 p.m., Monday-Friday, excluding federal holidays.

**Date Comments Must Be Received:** December 3, 2007

## SUMMARY

The Heber Ranger District of the Uinta 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. The road is a Forest local route and has been in existence for many years. This action is needed, because the existing road is a single lane, native surface primarily located within 50 feet of Indian Creek. Several sections of the road are within the intermittent stream channel above Indian Springs. Resource impacts created by the existing road cannot be corrected by maintenance.

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 within a riparian zone.

**Proposed Action - Realignment and complete closure:** Reconstruct a single lane road with turnouts along a new alignment and obliterate the entire length of the existing alignment.

**Alternative A - Realignment and Partial Closure:** Reconstruct a single lane road with turnouts along a new alignment and obliterate a large portion of the existing alignment. Approximately 0.5 miles of a dead end road would remain to allow access for dispersed camping and for access to water for the livestock permittee.

**Alternative B - Realignment and ATV Route:** Reconstruct a single lane with turnouts along a 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 to allow access for dispersed camping and for access to water for the livestock permittee.

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

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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 #051), to comply with agency policy. This road is an existing local route located on the Heber 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.

## Purpose and Need for Action

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The purpose of this initiative 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. The road is a Forest local route and has been in existence for many years. This action is needed, because the existing road is a single lane, native surface road primarily located within 50 feet of Indian Creek. Several sections of the road are within the stream channel. Resource impacts created by the existing road cannot be corrected by maintenance. 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.

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## **Administrative Scope of the Purpose and Need**

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 issues and concerns, goals and objectives, standards and guidelines, and direction for the management of National Forest System lands administered by the Uinta National Forest. Below are examples of how the purpose and need address management direction.

### ***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 Forest Service 2003; USDA Forest Service 2003a). 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.

### ***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. (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**

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Under the Proposed Action, the Forest Service would reconstruct the Indian Springs Road on a new alignment and obliterate and restore the existing road at its current location.

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.

The existing Indian Spring Road will be obliterated and restored. The restoration of 1.6 miles (8.7 acres) will include full obliteration, shaping and recontouring to match adjacent slopes, seeding with native species, treatment of noxious weeds, and protected from access until new vegetation is established. Under this alternative the new alignment would continue to be open to ATV travel. The Indian Creek road (FSR#70042) would no longer be designated for ATV travel from the old intersection of the Indian Spring road (FSR#70501) in the NE1/4NW1/4 of Section 10, T5S, R12W, USM to the intersection of the East Tie Fork Ridge road

(FSR#70043) and the Indian Creek road (FSR#70042) in the NE1/4SE1/4 section 15, Township 5 South, Range 12 West, USM.

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

## Decision Framework

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Given the purpose and need, the deciding official reviews the proposed action, the other alternatives, and the environmental consequences in order to make a decision on whether to authorize construction on the Indian Springs Road realignment and to close and rehabilitate the existing road location. Four alternatives for detailed analysis and consideration have been identified:

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

**Proposed Action** – Reconstruct a single lane road with turnouts along a new alignment and obliterate the entire length of the existing alignment.

**Alternative A - Realignment and Partial Closure**– Reconstruct a single lane road with turnouts along a new alignment and obliterate a large portion of the existing alignment. Approximately 0.5 miles of a dead end road would remain to allow access for dispersed camping and for access to water for the livestock permittee.

**Alternative B - Realignment and ATV Route** – Reconstruct a single lane with turnouts along a 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 to allow access for dispersed camping and for access to water for the livestock permittee.

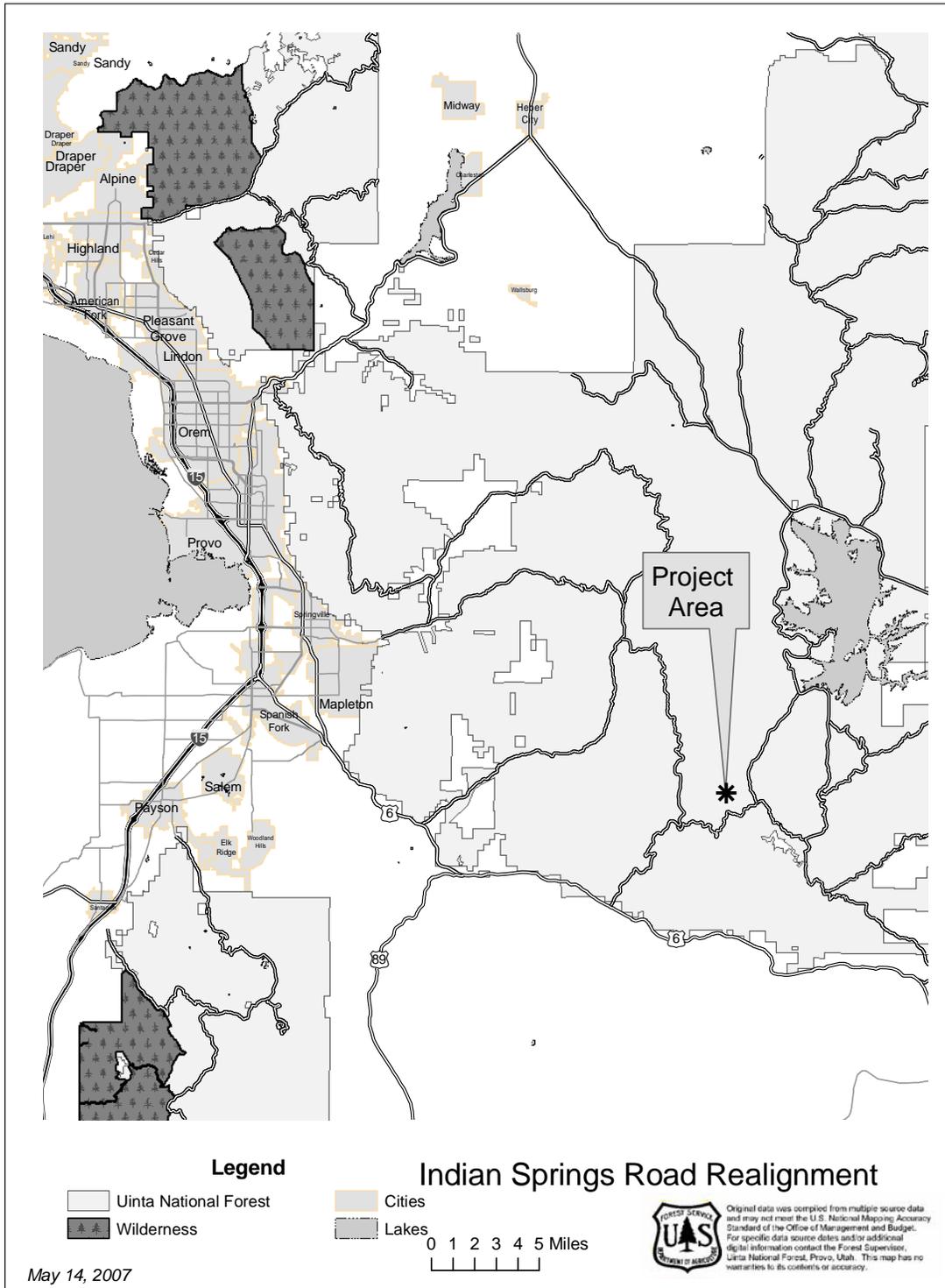
This decision does not include whether to retain or eliminate the Indian Springs Road. The road has been identified to retain for public and administrative access (USDA 2002).

Alternatives to eliminate roads from the National Forest System Road database are outside the scope of this action.

## Location

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The project area is 35 miles south of Heber City, Utah and 25 miles east of Spanish Fork, Utah. The project can be accessed from the north via State Route 40, West Side Strawberry Road (FSR#70501) and Indian Creek Road (FSR #70501) 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**

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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*.

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.

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**

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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, mandatory issues set by law and policy and those outside the scope of this decision as non-significant issues.

### **Significant Issues**

#### ***Watershed Resources***

The Strawberry Valley watershed is listed on the State of Utah's 303 List of Impaired Waters for Total Phosphorus and Dissolved Oxygen. The Strawberry Reservoir Total Maximum Daily Load (TMDL) Study directs that the TMDL be reduced. Much of the phosphorous is delivered to the reservoir in the form of sediment.

#### ***Aquatic Species***

Strawberry Reservoir is one of Utah's premiere freshwater fisheries and Indian Creek is a major contributor to the well being of that fisheries. Indian Creek is a major spawning stream for fish from the reservoir. Sediment contributed to the stream directly affects the habitat and the spawning of these fish by, covering the redds (eggs of spawning fish) and suffocating them, filling in spawning gravels so there is not place for the fish to lay their eggs, silting in feeding areas so the insects needed for the fish can not survive.

#### ***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 District and northern portion of the Spanish Fork district for high clearance vehicles and ATVs.

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### ***Inventoried Roadless Areas***

Relocation of the Indian Springs Road would affect roadless values of the Strawberry Ridge Roadless Area (418015).

### ***Livestock Management***

The livestock permittee utilizes the current Indian Springs Road alignment to access water for herder and livestock. Rerouting the road could impact livestock management.

### ***Recreation***

Recreational opportunities is a new issue raised during public scoping. Recreation use of the area is primarily during the hunting season for access and dispersed camping. An issue was raised in regard to the continued availability and no reduction in availability of designated travel routes for use by ATVs. The Indian Springs Road is open to ATVs and under all alternatives the road would remain open to ATV travel. Any changes including the addition or removal of trails from the current system would be addressed in Travel Management Planning and is outside the scope of this project. Some additional use of the existing system may occur in this area due to improved access. Potential increase of inappropriate use of off highway vehicles may occur and is addressed in this analysis.

### **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 route on Strawberry Ridge. The Indian Springs Road provides continuous ATV access from the southeast portion of the Forest (northeast portion of Spanish Fork Ranger District) to the middle (west and southwest portion of Heber Ranger District). Eliminating this access would split ATV access across the Forest encouraging an increase of inappropriate and unsafe ATV use on arterial roads. Consideration of this alternative is outside the scope of this project and does not meet the purpose and need to maintain access from the south to Strawberry Ridge.

### **Permits and Authorizations**

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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, no other scientific information was brought forward for analysis.

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

| Agency                                | Type of Action   | Description of Permit or Action  |
|---------------------------------------|--|--|
| <b>Federal</b>                        |  |  |
| Forest Service                        | Forest Service Decision<br><br>Preparation of Biological Assessment<br><br>Preparation of Biological Evaluation  | 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.<br><br>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 (COE)    | 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.  |
| Environmental Protection Agency (EPA) | Review and comment regarding:<br><br>Clean Air Act, as amended, 42 U.S.C.A. Section 7410-762 (PL 95-604, PL 95-95)<br><br>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)<br><br>Safe Drinking Water Act, 42 U.S.C.A. Section 300F-300J-10 (PL 93-523)<br><br>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<br><br>Fish and Wildlife Coordination Act consultation<br><br>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.   |

| <b>State Of Utah</b>                      |  |   |
|---|--|---|
| Department of Environmental Quality:      |  |   |
| Air Quality Division                      | Review and comment<br>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<br>Section 401 certification<br>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<br>"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.   |
| <b>Tribal Consultation</b>                |  |   |
| 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**

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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. The IDT identified driving issues to develop and analyze alternatives.

Significant issues outlined in Chapter 1 include the following resource areas: watershed resources; aquatic resources; health, safety, and transportation; inventoried roadless areas; recreation and livestock management.

### **Alternatives Considered but Eliminated from Detailed Study**

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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, two alternatives were considered, but dismissed from detailed consideration:

#### **Closure of the Indian Springs Road**

One element of the purpose and need, as discussed in Chapter 1, is to provide safe and reliable road access for public and administrative use. The Indian Springs Road is a key component of the Forest's transportation system. This road provides administrative and public access to Strawberry Ridge; supports a wide range of recreation opportunities and historic uses; only available ATV connector between northeast portion of the Spanish Fork Ranger District to the southwest portion of the Heber Ranger District; and access for

management of National Forest System lands including fire, wildlife, range, vegetation and recreation management.

As stated in Chapter 1, there is a need to provide a safe driving facility. The Indian Springs Road is narrow with a native surface and steep grades. The native surface becomes impassible in wet weather due to location in bottom of drainage. The existing road can not be upgraded in its current location without significant economic costs due to existing topography and geologic features. An improved road on this alignment would require excessive cut slopes, embankment fills, switchbacks, and steep grades.

## Alternatives Considered in Detail

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

**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 complete closure:** Reconstruct a single lane road with turnouts along a new alignment and obliterate the entire length of the existing alignment. This new alignment would continue to be open to ATV travel. Close the section of the Indian Creek road from the intersection of the existing Indian Spring road to the intersection of the East Tie Fork Ridge road.

**Alternative A - Realignment and Partial Closure -** Reconstruct a single lane road with turnouts along a new alignment and obliterate a large portion of the existing alignment. Approximately 0.5 miles of a dead end road would remain to allow access for dispersed camping and for access to water for the livestock permittee.

**Alternative B - Realignment and ATV Route –** Reconstruct a single lane with turnouts along a 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 to allow access for dispersed camping and for access to water for the livestock permittee.

## 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. No road realignment to an upland location or obliteration and restoration of the existing alignment would be implemented to accomplish project goals.

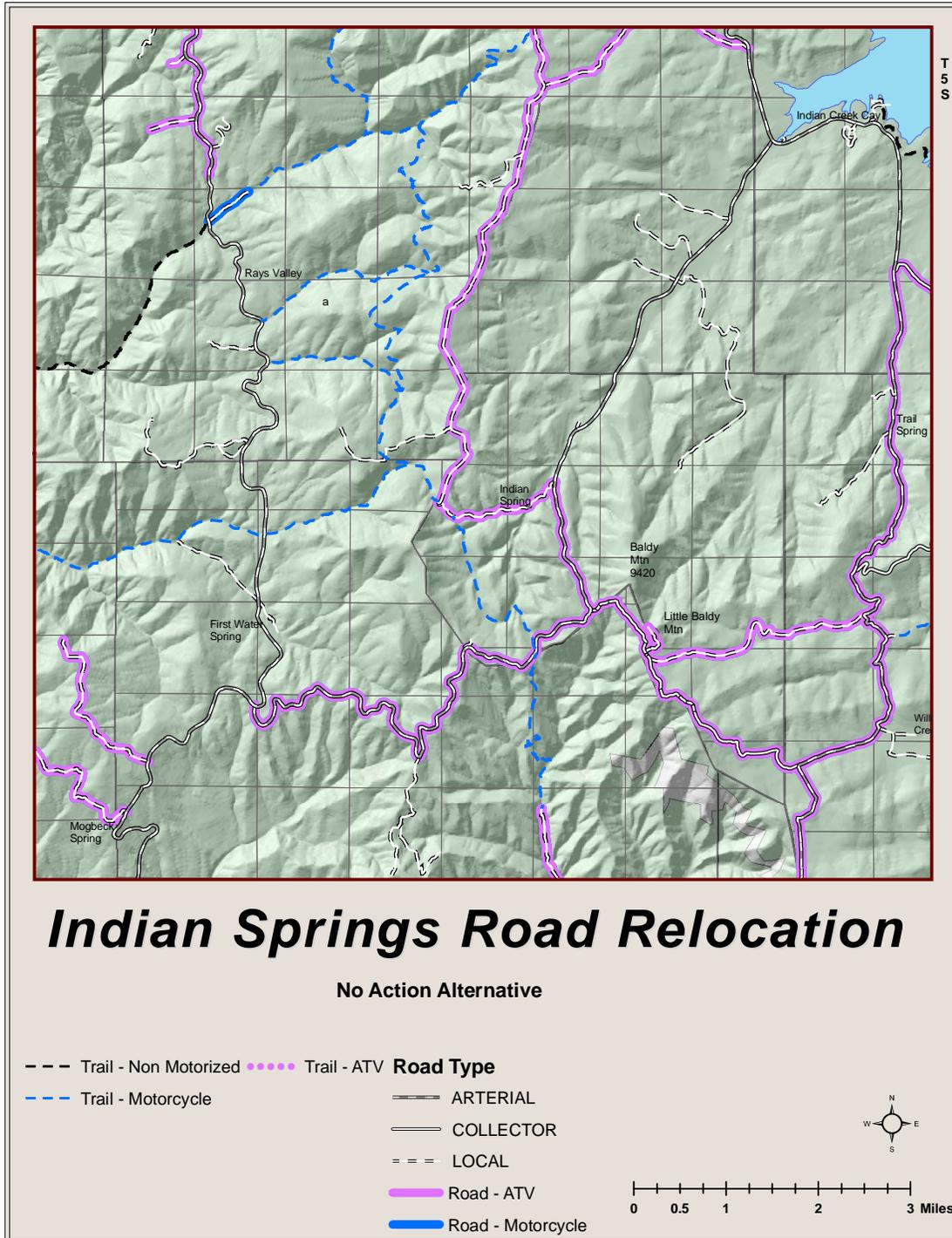
The existing road is 1.6 miles in length from Strawberry Ridge past Indian Creek to the intersection on Indian Creek Road. The road has a native surface and a single lane 10-14 foot width. The road grades are steep and located in the bottom of the drainage. The estimated average width of the road corridor is 45 feet for a total of 8.7 existing disturbed acres. No new acres would be disturbed.

Approximately 0.7 miles of the road is located in a drainage bottom and within 50 feet of Indian Creek and is within an area with erosive soils. Drainage structures are either

undersized or non-existent and can not handle or distribute eroding soils. Indian Creek provides habitat for Bonneville cutthroat trout (*Oncorhynchus clarki utah*), a Forest Service, Region 4, sensitive species.

The transportation system would continue to provide access from Strawberry Ridge to southern portions of the Forest via the Indian Creek Road. The road serves as access to recreational opportunities including dispersed camping, driving for pleasure, horseback riders, mountain bikers, high clearance vehicle, off highway vehicles, and snowmobiles. The level of use is expected to increase proportionally to the growth of the State, which is 2.1 percent annually. Administrative access includes fire, range, and natural resource program management.

The road does not meet road management objectives including functional class, operation maintenance level, road width and surface type. During and after inclement weather the road is hazardous to travel and at times impassible. Maintenance of this road occurs once every 2-3 years, but is not frequent enough to provide safe travel. During storm events, ruts in the native surface are reintroduced negating maintenance activities.



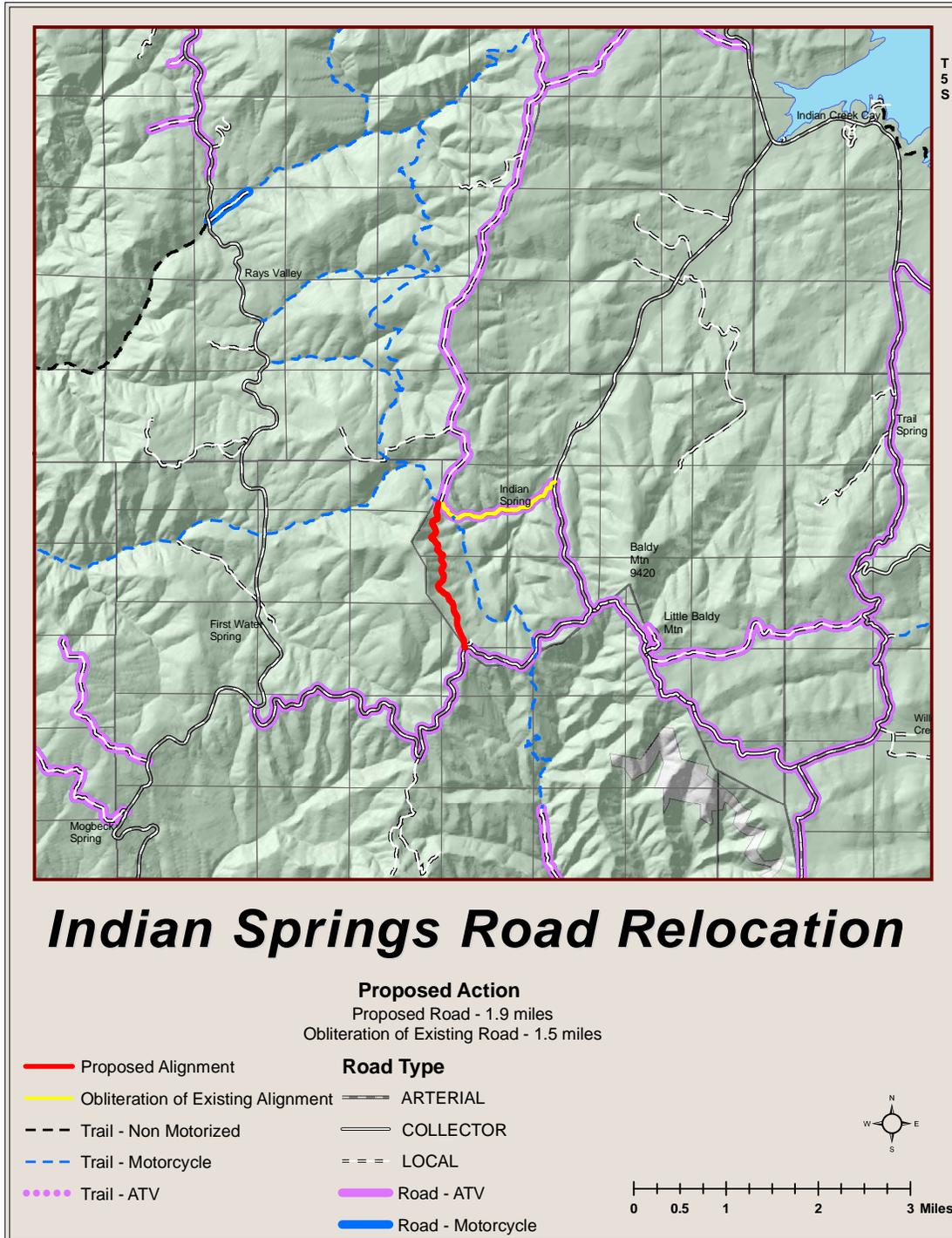
## Proposed Action

Under the Proposed Action, the Forest Service will reconstruct the Indian Springs Road on a new alignment and obliterate and restore the existing road at its current location.

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 existing Indian Spring Road would be obliterated and restored. The restoration of 1.6 miles (8.7 acres) will include full obliteration, shaping and recontouring to match adjacent slopes, seeding with native species, treatment of noxious weeds, and protected from access until new vegetation is established. Under this alternative the new alignment would continue to be open to ATV travel. The Indian Creek road (FSR#70042) would no longer be designated for ATV travel from the old intersection of the Indian Spring road (FSR#70501) in the NE1/4NW1/4 of Section 10, T5S, R12W,USM to the intersection of the East Tie Fork Ridge road (FSR#70043) and the Indian Creek road (FSR#70042) in the NE1/4SE1/4 section 15, Township 5 South, Range 12 West, USM.

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



## **Alternative A - Realignment and Partial Closure**

Under this alternative, the Forest Service will reconstruct the Indian Springs Road on a new alignment and obliterate and restore a large portion of the existing road at its current location.

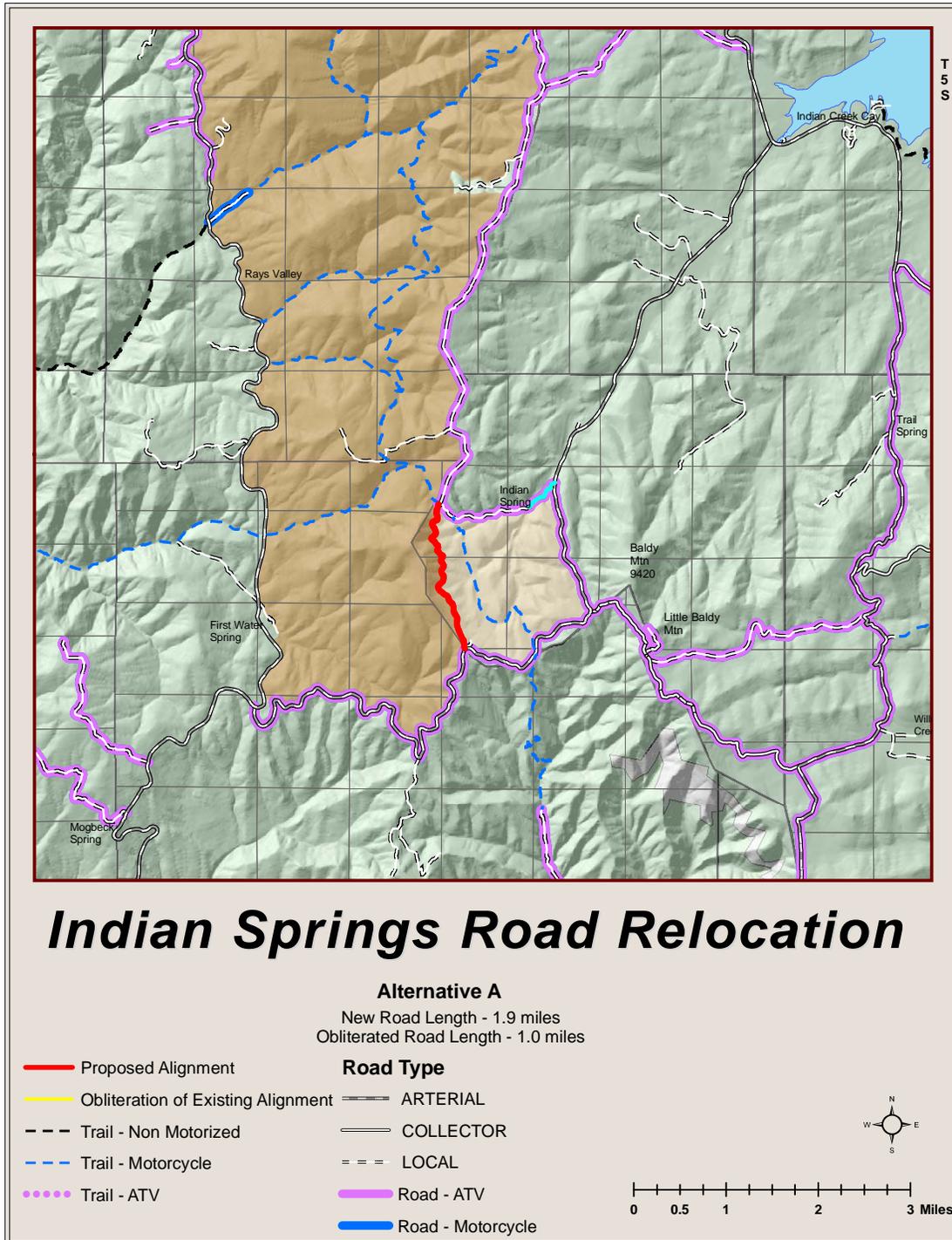
The new road will be 1.9 miles long with an alignment placed at in an upland location just to the east of Strawberry Ridge. It would be a single lane (14 feet wide running surface) with 10 foot wide turnouts. The road grades would be significantly reduced. The entire road will be surfaced with crushed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

A large portion of the existing Indian Creek Road at its current location will be obliterated and restored. The restoration of 1.1 miles (6.0 acres) will include full obliteration, shaping and recontouring to match adjacent slopes, seeding with native species, treatment of noxious weeds, and protected from access until new vegetation is established.

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 new alignment and 0.5 miles of existing alignment would be designated open for ATV travel and the restored section of the existing alignment would be removed from the roads system.

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



## **Alternative B - Realignment and ATV Route**

Under this alternative, the Forest Service will reconstruct the Indian Springs Road on a new alignment and convert the existing road at its current location to an ATV trail.

Approximately 0.5 miles of a dead end road would remain to allow access for dispersed camping and for access to water for the livestock permittee.

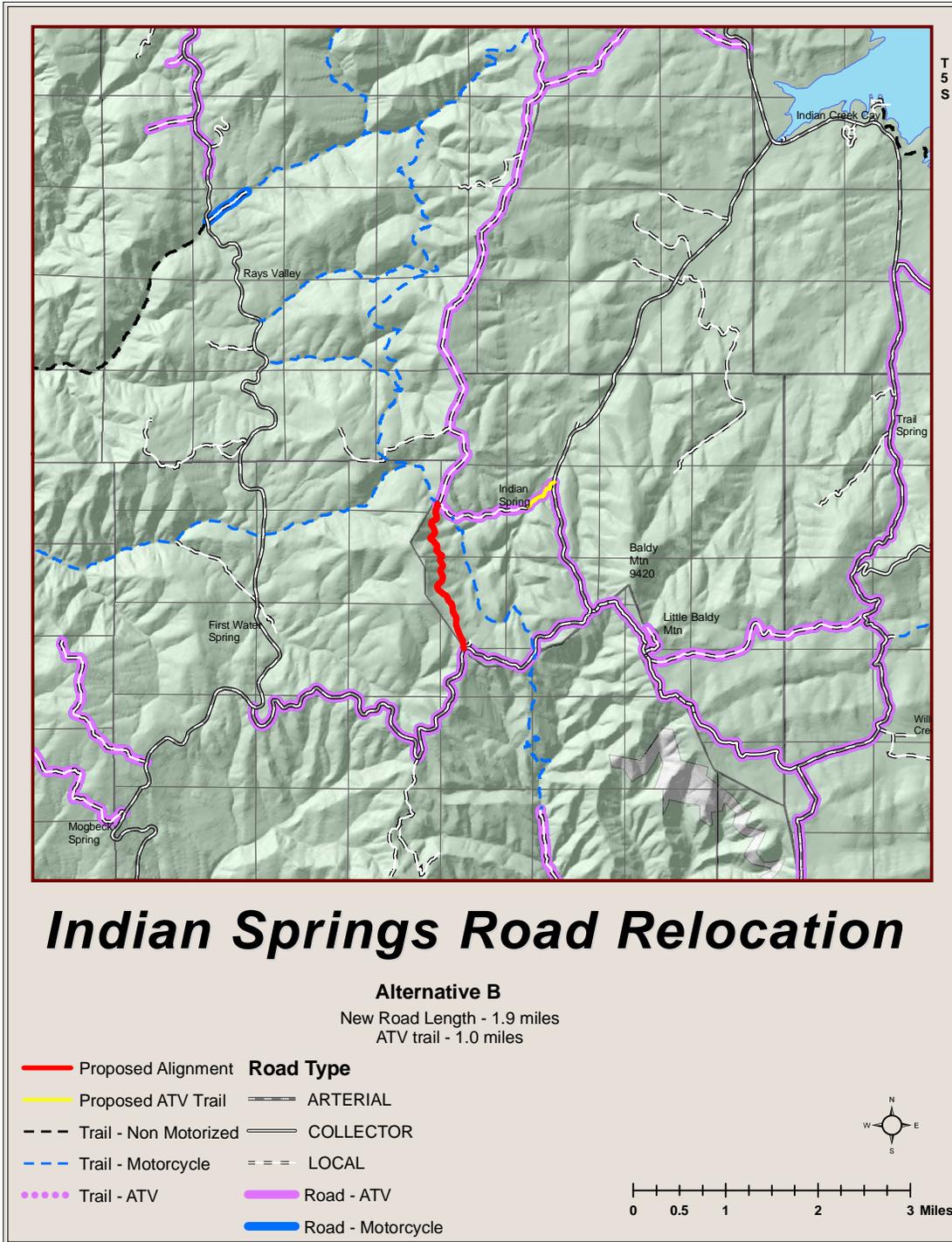
The new road will be 1.9 miles long with an alignment placed at in an upland location just to the east of Strawberry Ridge. It would be a single lane (14 feet wide running surface) with 10 foot wide turnouts. The road grades would be significantly reduced. The entire road will be surfaced with crushed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

A large portion of the existing Indian Creek Road at its current location will be converted to an ATV trail. The road will be barricaded at Strawberry Ridge and the end of the trail. The conversion of 1.1 miles will include reducing template width from 10-14 feet to 6 feet and constructing adequate drainage. Area outside of reconstructed trail will be fully obliterated including shaping and recontouring to match adjacent slopes, seeding with native species, and treatment of noxious weeds (3.0 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 new alignment and 0.5 miles of existing alignment would be designated open for ATV travel and the restored section of the existing alignment would be removed from the roads system and added to the trail system as an ATV route.

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



## 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 driving and non-driving 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.

| <b>Table 2-1: Comparison of Alternatives</b>       |   |  |  |  |
|--|---|--|--|--|
| <b>Significant Issues</b>                          | <b>No Action</b>  | <b>Proposed Action – Realignment and complete closure</b>  | <b>Alternative A - Realignment and Partial Closure</b>   | <b>Alternative B - Realignment and ATV Route</b>   |
| <b>Watershed Resources</b>                         |   |  |  |  |
| Erosion from road prisms                           | 226 tons / year   | 2 tons / year  | 81 tons / year   | 122 tons / year  |
| Sediment into streams from road prisms             | 35 tons / year  | 0 tons / year  | 12 tons / year   | 20 tons / year   |
| Road/ATV trail in riparian area                    | 1 mile  | 0 miles  | .3 miles   | 1 mile   |
| <b>Aquatic Resources</b>                           |   |  |  |  |
| Sediment in streams                                | 35 tons / year  | 0 tons / year  | 12 tons / year   | 20 tons / year   |
| <b>Health, safety and transportation</b>           |   |  |  |  |
| Safety & transportation system                     | Narrow, winding, 10-14 wide travel way, & inadequate stopping sight distances.<br><br>When wet, high accident potential and at times impassible | 14 wide travel way with turnouts, aggregate surface & adequate stopping sight distances.<br><br>Low accident potential and passable when wet | 14 wide travel way with turnouts, aggregate surface & adequate stopping sight distances.<br><br>Low accident potential and passable when wet | 14 wide travel way with turnouts, aggregate surface & adequate stopping sight distances.<br><br>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  |

| <b>Table 2-1: Comparison of Alternatives (cont.)</b>           |   |  |  |  |
|--|---|--|--|--|
| <b>Significant Issues</b>                                      | <b>No Action</b>  | <b>Proposed Action – Realignment and complete closure</b>  | <b>Alternative A - Realignment and Partial Closure</b>   | <b>Alternative B - Realignment and ATV Route</b>   |
| <b>Inventoried Roadless Areas</b>                              |   |  |  |  |
| Roadless values of the Strawberry Ridge Roadless Area (418015) | Roadless values would not be changed  | Some degrading of natural integrity and apparent naturalness near new alignment  | Some degrading of natural integrity and apparent naturalness near new alignment  | Some degrading of natural integrity and apparent naturalness near new alignment  |
| Loss or gain of Roadless acres                                 | No loss or gain of area   | Loss of approximately 15 acres   | Loss of approximately 15 acres   | Loss of approximately 15 acres   |
| <b>Livestock management</b>                                    |   |  |  |  |
| Livestock management   | Water would be hauled up Indian Springs road and herder would camp at Indian Springs                | Haul distance for water would increase, there would be more options for watering sites resulting in better distribution of livestock, new herder camp sites would need to be located | Haul distance for water would increase, there would be more options for watering sites resulting in better distribution of livestock, existing herder camp sites would be used                           | Haul distance for water would increase, there would be more options for watering sites resulting in better distribution of livestock, existing herder camp sites would be used |
| <b>Recreation</b>  |   |  |  |  |
| Dispersed camping  | 4 dispersed camping sites already present would continue to be available for use.                   | 4 existing camp sites would no longer be accessible; sites would be reclaimed. 4 new sites would be developed along the new road alignment.  | Access to campsite near the upper end of the Indian Springs road would be eliminated; the remaining existing sites would not be accessible. 4 new sites along the new road alignment would be developed. | Same as Alternative A  |
| ATV Access   | Miles of authorized ATV access would remain the same, unauthorized access will continue to increase | Miles of authorized ATV access would be decreased, unauthorized access will continue to increase   | Miles of authorized ATV access would be increased, unauthorized access will continue to increase   | Miles of authorized ATV access would be increased, unauthorized access will continue to increase   |

Mandatory issues are addressed in Chapter 3

| <p><b>Table 2-2: Mitigation Measures</b></p> <p><b>Mitigation Measures for Action Alternatives.</b></p> <p><b>Under the No Action, continued maintenance would occur.</b></p>  |
|--|
| <p><b>WAT 1:</b> 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.</p> <p><b>WAT 2:</b> Silt fence and/or applicable collection devices will be installed along Indian Creek during construction activities to capture disturbed mobile sediment where appropriate.</p> <p><b>WAT 3:</b> Realigned road will be constructed in accordance with Forest Service standards and proper drainage structures will be installed to control surface runoff so that erosion is minimized and sediment is trapped to enhance establishment of vegetation.</p> <p><b>WAT 4:</b> Disturbed areas will be seeded and mulched (where needed) after construction.</p> <p><b>WAT 5:</b> Fence will be installed or constructed around the obliterated road sections (where needed) in the project area to exclude livestock and off highway vehicles until vegetation has had a chance to recover.</p> |
| <p><b>AQU 1:</b> 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.</p> <p><b>AQU 2:</b> Water quality will be monitored pre and post construction</p> <p><b>AQU 3:</b> All instream work will be conducted after July 1 to allow Bonneville cutthroat trout to spawn undisturbed.</p> <p><b>AQU 4:</b> Sheep will excluded from all disturbed areas associated with construction activities to allow adequate vegetation recovery.</p>   |
| <p><b>HST 1:</b> Post and maintain signs and place public notices informing the public of the closure of Indian Spring road.</p> <p><b>HST 2:</b> Maintain and replace infrastructure (roadbase and cross drainage structures) as needed to maintain capital investment and meet acceptable health and safety standards.</p> <p><b>HST 3:</b> Design roads to Forest Service standards including horizontal and vertical alignments; road widths; number of lanes or turnouts; shoulder widths; ditch depths and widths; cut and fill slope ratios for appropriate soil type and material depth; surface material; cross drainage structures; and signing.</p> <p><b>HST 4:</b> Realign road to applicable Forest Service standards as outlined in Forest Service Specification for Construction of Roads and Bridges and A.A.S.H.T.O. Standard Specifications for Bridges.</p> <p><b>HST5:</b> Seasonal road closure would be implemented when access and weather conditions warranted protection of infrastructure investment.</p>   |
| <p><b>IRA 1:</b> Road obliteration and restoration will include recontouring cut and embankment slopes to match existing undisturbed slopes where possible.</p>  |
| <p><b>GEO 1:</b> Lay back cut slopes as far as possible.</p> <p><b>GEO 2:</b> If subsurface flows are encountered, subsurface drains will be employed where necessary to improve drainage of these areas.</p> <p><b>GEO 3:</b> 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.</p> <p><b>GEO 4:</b> Out slope and/or crown the road prism.</p> <p><b>GEO 5:</b> Cut and fill slopes will be revegetated after construction where applicable. Topsoil replacement,</p>   |

**Table 2-2: Mitigation Measures**

**Mitigation Measures for Action Alternatives.  
Under the No Action, continued maintenance would occur.**

erosion blankets, and heavier seeding will be used when necessary to promote revegetation success.

**GEO 6:** 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 7:** Place blockades to prevent ATV and/or grazing access on the rehabilitated area until revegetation is established.

**GEO 8:** Routine maintenance will be conducted to keep the integrity of the road prism, ditches, holding ponds, relief culverts, and surface cross drains.

**TW 1:** Block obliterated and restored road alignment to prevent vehicular travel on the road to allow for establishment of vegetation.

**VEG 1:** Recontour the existing road prism as close to the pre-road contour as possible.

**VEG 2:** If subsurface flows are encountered, subsurface drains will be employed where necessary to improve drainage of these areas.

**VEG 3:** Revegetate all disturbed areas with native plant species.

**VEG 4:** 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.

**VEG 5:** Cut slopes in excess of 30 feet will be treated with jute netting or similar material if surface erosion is evident.

**VEG 6:** Place blockades to prevent ATV and/or grazing access on the rehabilitated area until revegetation is established.

**VEG 7:** Intensively treat revegetated areas for noxious weeds for 5-10 years following construction and obliteration

**REC 1:** Post and maintain signs and place public notices informing the public of the closure of Indian Springs road and alternative routes.

**REC 2:** Design roads to terrain with adequate cut and fill slopes to discourage illegal ATV use.

**REC 3:** Relocate all obliterated dispersed camping along existing alignment to areas along reconstructed or relocated road to provide equivalent number of sites.

**REC 4:** Dispersed recreation sites would be developed along new alignment to mitigate the loss of access to existing dispersed sites.

**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.

**VIS 3:** Cut and fill slopes will be vegetated as soon as possible.

**VIS 4:** Road width, curve widening, and associated cuts/fills will be the minimum needed for the proposed use, particularly at a dugway or along a steeper slope. 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:** If topography does not provide an adequate screen, vegetative cover will be used to diminish visual

| <b>Table 2-2: Mitigation Measures</b><br><b>Mitigation Measures for Action Alternatives.</b><br><b>Under the No Action, continued maintenance would occur.</b>  |
|---|
| <p>effects. Removal of vegetation in the road shoulder will be approved. Care will be taken not to remove or overly establish vegetation so as to cause as unnatural contrast in texture. Where practicable, vegetative screening that is effective all year, i.e., indigenous conifers will be utilized. Treatment to prevent disease and insect infestation will be employed as necessary to retain as many healthy trees as possible to assist in screening.</p>   |
| <p><b>WLF 1:</b> Protect known three-toed woodpecker nesting sites by prohibiting vegetative management activities from April 15 – September 1 annually in a 30-acre nest area.</p> <p><b>WLF 2:</b> 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).</p> <p><b>WLF 3:</b> Prohibit management activities around active raptor nest sites (for species other than northern goshawk) from nest site selection to fledgling.</p> <p><b>WLF 4:</b> No activities will occur during the primary nesting season of April 1 – June 30 for migratory birds.</p> |
| <p><b>HERT 1:</b> Intensive Level Survey Form (ILS): An ILS form must be completed to basic survey standards.</p> <p><b>HERT 2:</b> All materials in mitigation measures shall be submitted to the Division of State History, Historic Preservation Office, to be placed on file.</p>   |
| <p><b>LM 1:</b> Develop water sites with turnouts along new alignments</p>  |

## Identification of the Preferred Alternative \_\_\_\_\_

The Proposed Action to reconstruct a single lane road with turnouts along a new alignment and obliterate the entire length of the existing alignment is the Forest Service’s preferred alternative.



## CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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 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 35 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 complete closure:** The new road alignment is contained with both 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 server 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 would be obliterated and restored. Based on Forest Service WEPP model, the predicted prism erosion for this

alternative is approximately 2 tons/year with 0 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 revegetate.

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 with both 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 server 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 with 0.5 miles retained for livestock and dispersed camping access. Therefore, the alternative action 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 would continue to erode (approximately 81 tone/yr) and contribute a significant sediment load (approximately 12 tons/yr) to streams within the watershed.

**Alternative B - Realignment and ATV Route:** Reconstruct a single lane road with turnouts along the new alignment and leave the existing alignment as an ATV trail. This alternative action would not reduce sediment production to the same extent as the proposed action since the existing road would remain as an ATV trail. Based on the Forest Service WEPP model the retained Indian Springs Road would continue to erode (approximately 122tons/yr) and contribute a significant sediment load (approximately 20 tons/yr) to streams within the watershed.

## 3.2 Watershed Resources

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### Affected Environment

The canyon in which the Indian Springs road is located is identified as the headwaters of Indian Creek (6<sup>th</sup> 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 9420 feet at Baldy Mountain to approximately 7,680 at the Indian-Streep 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 ~18% of the streamflow input to Strawberry Reservoir. However, the majority of this flow originates in Streep Creek, immediately below the project analysis area. The stream segment immediately below the project analysis area (from Streep 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 Streep 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, ~1.1 miles below the Indian Springs drainage. Successful bank stabilization and intact beaver dams have helped lower erosion rates on Indian Creek above Streep 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, 2007). 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 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 ~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 road segment for proposed 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 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 complete closure:** The proposed road would locate at mid-slope and would not cross RHCAs, streams, or wetlands. 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).

This alternative also includes obliteration 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 erosion and sedimentation from roads prisms in this canyon by up to 100% in the long term (Davidson, 2007). 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.

**Alternative A - Realignment and Partial Closure:** 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. Obliteration and re-establishment of the upper ~0.7 miles of drainage-bottom road located in moderate to severely erosive soils. These actions will restore more natural drainage for Indian Springs Canyon and reduce predicted road prism erosion by 64% and sedimentation to Indian Creek by 66% below existing conditions (Davidson, 2007).

**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. 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. Approximately 1.0 miles of road or trail will be located within Identified RHCAs and reduce predicted road prism erosion by ~ 10% and sedimentation to Indian Creek by ~11% below existing conditions (Davidson, 2007).

## 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<sup>1</sup>. 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).

<sup>1</sup> 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.

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.

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. 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 complete closure:** The obliteration and reclamation of the existing road alignment will reduce sedimentation to Indian Creek by ~ 36 tons/year resulting in approximately a 100% reduction of road prism erosion and stream sedimentation 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. Overall, rehabilitation of the road will restore natural drainage in terms of stream/ floodplain function in Indian Springs Canyon.

**Alternative A - Realignment and Partial Closure:** The obliteration and reclamation of 0.7 miles of the existing road alignment will reduce road prism erosion 64% and sedimentation to Indian Creek by 66% below existing conditions. The remaining road segment will still produce ~81 tons/year of road prism erosion and 12 tons of sediment to Indian Creek (Davidson, 2007). 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.

**Alternative B - Realignment and ATV Route:** 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 and moderate to severely erosive soils, this road is a chronic and long-term contributor of fine sediment to Indian Creek during precipitation events and spring runoff. Road prism erosion predicted from this alternative is 203.2 tons/yr. Of this road prism erosion, approximately 32.1 tons/yr of sediment is delivered to Indian Creek (Davidson, 2007). This is a reduction of ~10% for road prism erosion and stream sedimentation below existing conditions. 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 reduced by incorporation of Best Management Practices into the construction process.

### 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 these resources will be completed.

### 3.3 Aquatic Species

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#### 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 Unit (GU) 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. However, the Bear Lake strain of BCT has been introduced into the Northeastern GU 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.

Indian Creek is located within the Northeastern GU for Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*). Streams in the watershed were historically inhabited by CRCT. Colorado River cutthroat trout are a USFS Region 4 and State of Utah listed sensitive species and conservation agreements between the USFS and UDWR have been developed for this species. 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 Indian Creek drainage. Consequently, no conservation or persistence populations for CRCT have been identified within Indian Creek.

### ***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*), redbelt 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).

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 (USDI 1997) 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  $2.13 \pm 0.37$  fish/m and range from  $1.90 \pm 0.53$  fish/m during 2005 to  $2.70 \pm 0.77$  fish/m during 2004. (Smith 2007a)

### ***Aquatic Habitat***

Results of the R1/R4 and HSI surveys indicate that the habitat suitability for cutthroat trout in Indian Creek is relatively poor with a combined HSI score of 0.67. 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 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)

After review of the available habitat survey information, it is concluded that aquatic habitat in the Indian Creek although relatively poor, is sufficient to support existing populations of fish and other aquatic species at their present levels.

## **Environmental Consequences**

**No Action:** Under this alternative, no action would occur; the existing native surface, single lane road would remain at its present location, which is within a riparian zone. The predicted

prism erosion for this road is approximately 230 tons/yr (100 tons/acre) with 40 tons/yr (20 tons/acre) of sediment delivered to streams (Davidson 2007). 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. (refer to sections 3.1 and 3.2 for additional discussion regarding sedimentation)

**Proposed Action** – Realignment and complete closure: The new alignment would substantially improve water quality through reduction of sediment production, enhanced habitat for faunal and floral species, provision of safe infrastructure through improved horizontal and vertical alignment, and reduction of short and long term operation and maintenance costs. Reductions in fine sediment in Indian Creek would 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 would continue to erode (approximately 70 tons/yr) and contribute a significant sediment load (approximately 10 tons/yr) to streams within the watershed (Davidson 2007). Sediment loads into Indian Creek would be reduced from present levels but would still be higher than under the proposed action and would continue to negatively impact fish and other aquatic species in the Indian Creek.

**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 retained 0.5 portion of the Indian Springs road would continue to erode (approximately 70 tons/yr) and contribute a significant sediment load (approximately 10 tons/yr) to streams within the watershed (Davidson 2007). The re-designated portion of the road would also continue to be a source of sediment into Indian Creek. Sediment loads into Indian Creek would not be significantly reduced from present levels, would be higher than under the proposed action and would continue to negatively impact fish and other aquatic species in Indian Creek.

## 3.4 Health, Safety and Transportation

### Affected Environment

The analysis area includes classified National Forest System Roads (FSR) that directly connects 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.

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. Transportation management can best be measured in terms of design standards; road surface; accident history and potential; access; and maintenance for the affected infrastructure.

The road transportation system within the analysis area includes arterial and local . 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.

Collector roads provide service to smaller land areas and usually connect forest arterial roads to local roads or terminal facilities (USDA 1981). There are no collector roads within the analysis area that affect the project. These provide alternative routes and access to National Forest System lands. These routes typically are single or double lane roads with hardened surfaces and provide a moderate degree of user comfort if they connect arterial routes, but can also be native surface and recommended for travel by high clearance vehicles.

Local roads connect terminal facilities to forest arterial or collector roads or public highways and are usually single purpose transportation facilities. 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 data below is also based on Forest Service personal accounts and experience.

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. From a safety perspective the amount of traffic is not as significant as the current condition of the road prism which is a source of concern during travel and when any two vehicles must pass each other. Health and safety related road template and RMO's are listed 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 3-1). 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 located in the drainage bottom with in excess of 50% within 100 feet 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, 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 3-1: 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), horseback riders, mountain bikes, hikers, fishermen, 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 is impassible in the spring due to snow accumulation on a north facing slope. This portion of the road is within the last 3.6 mile section currently under construction to meet planned RMO's. Currently we have no reported accident data.

The Indian Creek road is part of 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 (along Indian Creek , Indian Springs and Strawberry Ridge), 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:** –Health, safety, and transportation will be impacted as described below.

**Indian Springs Road.** The road will continue to not meet current operational or objective maintenance levels. Portions of the 1.6 miles of road will have a prism that is narrow and winding. The horizontal and vertical alignments will not meet current design standards for safe sight distances. 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 high surface runoff and severe erosion hazards. During inclement (wet) weather the road surface will be readily saturated and become slick. The surface water from storm events will flow across road surface creating ruts. These ruts will 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.

The percentage of accidents per vehicles traveling the road will remain the same, but it is anticipated that accident frequency will increase based on population growth. 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, snowmobile and ATV users.

**Strawberry Ridge Road, FSR #518.** The Road Management Objectives will remain as the existing condition describes. The existing physical condition of this road will deteriorate. 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 will increase as route becomes a dead end and users will have to back track instead of having a loop to the Indian Creek Road. Increases in traffic on these roads will also increase accident potential and needed maintenance.

**Indian Creek Road, FSR #042.** The Road Management Objectives will remain as the existing condition describes. The use of this road from the existing Indian Springs intersection to the West Side Strawberry road will increase deteriorating the aggregate surface increasing the need for 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 Road will see an increase in traffic increasing accident potential and maintenance needs. Portions of the Indian Creek Road will see an increase in use increasing the need for additional maintenance activities.

**Proposed Action:** Health, safety, and transportation will be impacted as described below.

**Indian Springs Road.** The road reconstruction will meet all operation, objective and planned 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.

Accident potential will be the least of all alternatives. 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 \$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 planned 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 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, horseback riders, mountain bikes, hikers, snowmobile and ATV users.

**Strawberry Ridge Road, FSR #70518.** The Road Management Objectives will remain as the existing condition describes. The existing physical condition of this road will improve. 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 #70042.** 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 1.5 miles from the intersection of 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 intersection. Reduced miles of ATV designation on this arterial road will reduce accident potential.

**Summary:** The road reconstruction will meet all planned RMO's including number of lanes, lane width, surface type, maintenance level, traffic level, and drainage structures for all roads in the project area. Road relocation will provide the safest and most reliable access during wet weather conditions. Accident potential will be the least of all alternatives. 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, horseback riders, mountain bikes, hikers, and snowmobile and ATV users.

**Alternative A - Realignment and Partial Closure:** Health, safety, and transportation would be impacted as described below.

**Indian Springs Road.** The 1.9 mile road reconstruction will meet all operational, objective and planned 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 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 high surface runoff and severe erosion hazards. During inclement (wet) weather the road surface will be readily saturated and become slick. During the above conditions the road would remain 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 than the proposed action. 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 \$285,000 in capital improvements and road obliteration of the road prism and cross drainage will have to be implemented to meet planned 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 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, horseback riders, mountain bikes, hikers, snowmobile and ATV users.

**Strawberry Ridge Road, FSR #518.** The Road Management Objectives will remain as the existing condition describes. The existing physical condition of this road will improve. 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 mile of road reconstruction will meet all objective and planned RMO's including number of lanes, lane width, surface type, maintenance level, traffic level, and drainage structures for all roads in the project area. The 0.5 mile portion of the road that would remain will continue to not meet operational or objective maintenance levels. Overall, this alternative will be safer than the no action alternative since the majority of traffic will travel on the reconstructed route, but some accident potential will still be present on the 0.5 mile section remaining. 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 roads 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, horseback riders, mountain bikes, hikers, snowmobile and ATV users.

**Alternative B - Realignment and ATV Route:** Health, safety, and transportation would be impacted as described below.

**Indian Springs Road.** The 1.9 mile road reconstruction will meet all operational, objective and planned 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 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 high surface runoff and severe erosion hazards. During inclement (wet) weather the road surface will be readily saturated and become slick. During the above conditions the road would remain 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 higher than the proposed action. 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 planned 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 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, horseback riders, mountain bikes, hikers, snowmobile and ATV users.

**ATV Trail.** 1.1 miles of the existing road would be converted to an ATV trail. This would require reconstructing 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 would 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. The existing physical condition of this road will improve. 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 mile of road reconstruction will meet all objective and planned RMO's including number of lanes, lane width, surface type, maintenance level, traffic level, and drainage structures for all roads in the project area. The 0.5 mile portion of the road that would remain will continue to not meet operational or objective maintenance levels. The 1.1 mile portion will be converted to an OHV trail adding recreational traffic to the trail systems. Overall, this alternative will be safer than the no action alternative since the majority of traffic will travel on the reconstructed route, but some vehicle accident potential will still be present on the 0.5 mile section remaining.

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 roads and trail 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, horseback riders, mountain bikes, hikers, snowmobile and OHV users.

### 3.5 Inventoried Roadless Areas

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#### Affected Environment

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 as of September 2006. 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 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. Roadless areas are managed according to the management prescriptions applied. Most are protected and maintained to conserve and preserve important values and benefits by prohibiting activities that have a likelihood of degrading desirable characteristics of inventoried roadless areas. (USDA 2003a).

The Uinta National Forest has 35 inventoried Roadless areas totaling 554,880 acres. Part of the proposed action, Alternative A, and Alternative B is within the Strawberry Ridge Roadless Area (#418015) which consists of approximately 17,230 acres (USDA 2003b). Roadless area values and the criteria by which they were assessed included wilderness attributes and roadless characteristics (Barthelenghi 2007). These attributes and characteristics are:

#### ***Natural Integrity***

The natural integrity of the area is high, being bounded on the top by the ridgeline and the bottom by the base of the slopes. Man's influence on the area's natural integrity has been relatively low naturalness.

#### ***Apparent Naturalness***

The area has a high natural appearance. This landscape varies from relatively steep terrain just under Strawberry Ridge to areas of undulating hills cut by several small stream and creeks. Man's influence on the area's Apparent Naturalness has been relatively low. The livestock allotment contributes fence lines, water developments and the visual appearance of livestock grazing including impacts to riparian areas and trailing. Some of the Strawberry Roadless area is subjected to illegal ATV use resulting in unplanned travelways. The Great Western trail which crosses portions of the SRRA and is classified for hiking, biking, horse back riding and motorized use for motorcycles.

#### ***Remoteness***

The great Western trail allows for motorized use of motorcycles in this Roadless Area. Irreversible and irretrievable effects on the proposed roadless area resource related to past road construction have already impacted this as a wilderness resource. These are the CUP

related powerplant and transmission line construction, therefore the roadless area is designated as nonwilderness.

### ***Solitude***

Opportunities for solitude are few due to narrow configuration of the area. Views over the area have high road and other structural developments and close proximity to other roads. Motorized noise from motorcycles is permitted by 2003 Forest Plan on the Great Western Trail.

### ***Opportunities for Primitive Recreation***

Opportunities for primitive recreation are primarily confined to hiking and horseback riding in the canyon bottoms. Few challenging experiences exist. The Great Western Trail permits motorcycle use in this Roadless Area.

Recreation use consists primarily deer and elk hunting in the late fall, when 90 percent of visitor use occurs. Some of the trails are used for horseback travel and dispersed camping.

### ***Manageability (as Wilderness)***

Currently the steep side slopes of Strawberry Ridge provide good manageability of the boundaries. Signs and barriers incorporated with the construction will improve manageability of the boundaries. Although not seen within the proposed project area, the Deseret Generation power transmission corridor access road and some facilities associated with CUP impact the wilderness character.

### ***Special Features (Ecological, Geologic, Scenic or Historical)***

The capability assessment rated this IRA as having a low rating for special features; therefore it is anticipated that none of the alternatives would have an impact.

### ***Soil, water and Air resources***

There are no critical watershed resources within the Roadless portion of the project area.

### ***Sources of public drinking water***

The area of the Roadless Area affected by the project is not within a culinary watershed.

### ***Diversity of plant and animal communities***

The project area of the IRA consists of Aspen, aspen/Conifer, Mountain Brush and Sagebrush community types. The diversity expected of these types are present in the project area.

### ***Habitat for TES and species dependent on large undisturbed areas of land***

Two terrestrial animals needing large amounts of undisturbed habitat have consideration within Wasatch County under the Endangered Species Act: the Threatened Canada lynx and the Candidate Yellow-billed cuckoo. This area of Heber Ranger District is too high in elevation to be cuckoo habitat, and not within a Lynx Analysis Unit (Bornstein, 2007).

### ***Primitive and semi-primitive classes of recreation***

The project area for ROS categories is Semi-Primitive Motorized and Road Modified.

No manmade developed recreation facilities will be constructed therefore the visitor would still feel challenged while using this outdoor area. The area offers a few challenging experiences in the lower canyons as inventoried in 1988.

***Reference landscapes for research study or interpretation***

The project is not within any proposed, candidate or designated Research Natural Area.

***Landscape character and integrity***

The IRA contains 13,464 acres of partial retention and 567 acres of retention. As one leaves Highway 40 and turns south onto Forest Service Road 70131 (Westside Strawberry Road) 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 dominant 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. Most of the man made features dominate the landscape, but most evidence of human modification in the form of parking lots, marina, restrooms, resort buildings, powerlines, fencing exists along the Strawberry Valley road. Most development is associated with the Strawberry Bay Marina and Campground. Along 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 would primarily lie within an area determined to be Foreground Retention and Middleground Partial Retention.

***Traditional cultural properties and sacred sites***

The existing and proposed road alignments have been surveyed; no cultural or sacred sites are within either alignment. Therefore, none of the alternatives would impact TCPs or sacred sites.

***Other locally unique characteristics***

There are no locally unique characteristics so therefore no impact by any of the alternatives.

**Environmental Consequences**

**No Action:** This alternative would not change the management of the area nor change the Wilderness Attributes and Roadless Characteristics the area.

**Proposed Action – Realignment and complete closure, Alternative A - Realignment and Partial Closure, and Alternative B - Realignment and ATV Route:** These alternatives propose the same actions within the IRA and directly impact approximately fifteen acres of the IRA. The difference in these alternatives is the treatment of the existing road which is adjacent to the IRA.

Construction of the new road alignment would segment 1,322 acres from the existing 17,230 acres within the Strawberry Ridge Roadless Area. The segmented acreage would still be managed as Roadless.

#### ***Natural Integrity and Apparent Naturalness***

The Proposed Action and Alternative A - Realignment and Partial Closure would include construction of 1.9 miles of unpaved road within the Strawberry Ridge Roadless area. Degrading the apparent naturalness of the area with a permanent road.

#### ***Remoteness***

Proposed Action, Alternative A, Alternative B would provide access through the IRA.

#### ***Solitude***

Currently solitude is low due to limited access and narrow canyons and current motorized use designation and would continue to be low

#### ***Opportunities for Primitive Recreation***

Opportunities for primitive recreation are primarily confined to hiking and horseback riding in the canyon bottoms. Few challenging experiences exist. The Great Western Trail permits motorcycle use in this roadless area. Recreation use consists primarily deer and elk hunting in the late fall, when 90 percent of visitor use occurs. Some of the trails are used for horseback travel and dispersed camping.

#### ***Special Features (Ecological, Geologic, Scenic or Historical)***

The capability assessment rated this IRA has having a low rating for special features; therefore it is anticipated that none of the alternatives would have an impact.

#### ***Manageability (as Wilderness)***

Currently the steep side slopes of Strawberry Ridge provide good manageability of the boundaries. Signs and barriers incorporated with the construction will improve manageability of the boundaries

#### ***Other Characteristics***

There will be little or no consequences to the IRA for the Characteristics soil, water and air resources, sources of public drinking water, diversity of plant and animal communities, habitat for TES and species dependent on large undisturbed areas of land, Primitive and Semi-Primitive classes of recreation, reference landscapes for research study or interpretation, landscape character and integrity, landscape character and integrity, traditional cultural properties and sacred sites, and other locally unique characteristics

## **3.6 Livestock Management**

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### **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 within the West Indian Creek pasture and the proposed road to be constructed has a short section in the West Indian Creek pasture but most of it is within the South 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. Water from the spring is hauled approximately 1 mile up the Indian Springs road to the west and dumped in to a set of portable troughs for the sheep to drink out of. 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 (see improvement map). By mid summer Indian Creek subs out and 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 complete closure:** This alternative would eliminate the herd's 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 other watering sites would be developed off the new road so the permittee could haul water along the new road and pipe water down hill to the new sites. The new sites would be constructed out of sight of the new road to reduce visual impacts and vandalism. 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 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:** The herder would still have access to the spring for water. The other affects of this alternative would be the same as the Proposed Action.

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

## 3.7 Terrestrial Wildlife

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### 3.71 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 revised Forest 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 the project area.

#### 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. .

### 3.72 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. No observations of boreal toads have occurred in the project area.

## 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.

### 3.73 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. 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 would subsequently reduce the amount of available riparian habitat.

**Proposed Action – Realignment and complete 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 reduced loss of riparian habitat.

The implementation of a road realignment in the upper portion of the drainage, involving construction of 1.6 miles of 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 have a small negative impact on individuals but is not expected to affect population viability of any migratory bird species**

**Alternative A - Realignment and Partial Closure:** 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 road obliteration would occur, 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 realignment of the road to upland in this alternative will be the same as the Proposed Alternative.

The conversion of the Indian Springs road to an ATV trail will reduce sediment by approximately 104 tons per year and reduce that amount of the riparian area taken up by the travel way. This reduction in impacts to the riparian will be more than the no action alternative but less than the other two action alternatives.

### 3.74 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 project area contains no suitable habitat for bald eagles, and none are known to occur in the project area. 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. 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.

### 3.75 Terrestrial Management Indicator Species

#### *Goshawk*

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

## Environmental Consequences

**No Action** - Under the No Action alternative, 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 complete 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 in this area, which could increase riparian bird production, an important prey resource for goshawks.

The road realignment is expected to negatively affect goshawk nesting habitat by reducing the density 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. 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. 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 3) wildlife surveys have failed to detect any goshawks within the project area, the proposed action may have a small negative effect on individuals but is not expected to affect population viability on the Uinta National Forest.

**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 road obliteration would occur, it is anticipated only approximately 67% of the benefits achievable under Proposed 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 the same affects as the Proposed Alternative.

The conversion of the Indian Springs road to an ATV trail will reduce sediment by approximately 104 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 than 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.

### **Environmental Consequences**

**No Action** - No information is available on three-toed woodpeckers in the riparian portion of the project area, and it is unknown what effect the proposed road closure will have on dead or dying conifers which provide suitable three-toed woodpecker habitat.

**Proposed Action** – Realignment and complete 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 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 0.01% 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 (2006 Three-toed Woodpecker Monitoring Report, project file; 2006 wildlife survey forms, project file), implementation of the proposed action **may have a small negative impact on individuals, but is not expected to affect population viability** of three-toed woodpeckers on the Uinta National Forest.

**Alternative A - Realignment and Partial Closure** and **Alternative B - Realignment and ATV Route** - 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 this alternative, the proposed road realignment would still occur. The proposed road realignment would remove a few (approximately 10 or less) 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 0.01% of the estimated total area of conifer forest on the Uinta National Forest (USDA Forest Service 2003b:page 3-128); 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 (2006 Three-toed Woodpecker Monitoring Report, project file; 2006 wildlife survey forms, project file), implementation of the proposed action **may have a small negative impact on individuals, but is not expected to affect population viability** of three-toed woodpeckers on the Uinta National Forest.

### *American Beaver*

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

**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.

The proposed road realignment occurs in the upper portion of the drainage, and affects no perennial streams or ponds. Therefore, it occurs in habitat unsuitable for beavers.

**Proposed Action – Realignment and complete closure:** Under the proposed action, 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.

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.

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 have a small beneficial impact on individuals but would not affect population viability** on the Uinta National Forest.

**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 road obliteration would occur, it is anticipated only approximately 67% of the benefits achievable under Proposed Alternative would occur under this Alternative, thereby providing less riparian habitat benefits for American beavers.

**Alternative B - Realignment and ATV Route:** 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 This alternative benefit beaver more than the No Action alternative but not as much as the other two action alternatives.

## **3.76 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 no breeding areas known to occur on Uinta National Forest. 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.

**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.

**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 effect the mature forest habitat used by flammulated owls over the current conditions.

**Proposed Action** – Realignment and complete 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 have a small negative impact on individuals, but is not expected to affect population viability.**

**Alternative A - Realignment and Partial Closure:** Many of the same benefits and impacts as those described in Propose Alternative would occur, although not to the same extent. Since about two-thirds of the road obliteration would occur, it is anticipated only approximately 67% of the benefits achievable under Proposed alternative would occur under this Alternative, thereby providing less disturbance to flammulated owl nesting than Proposed Alternative.

**Alternative B - Realignment and ATV Route:** Realignment and ATV route: The realignment of the road would have the same effects as the other town action alternatives. The construction of an ATV trail is expected have the same or more 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.

**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.

**No Action** - Since no caves or mines are located in the project area, and spotted bats and Townsend's big-eared bats are not documented at the proposed project location, it is anticipated there will be **no effect** to these bat species from the No Action alternative.

**Proposed Action** – Realignment and complete closure: The proposed action is not expected to affect either bat species in the area proposed for road obliteration.

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, the proposed action **may have a small negative impact on individuals but is not expected to affect population viability of either bat 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 this alternative from alternative two is the amount of road obliteration, it is anticipated the effects to bat species will be the same in this alternative as Alternative Two.

***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>).

**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.

## 3.8 Vegetation

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### 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).

### 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.

## 3.9 Visual Quality

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### Affected Environment

The geographic features that define the boundaries of the viewsheds within the analysis area are Strawberry Ridge on the west and US Highway 40 on the east, Forest Service Road on the south and north is Indian Springs Road. The duration of short term effects of the proposed action is considered to be 5 years or until revegetation of the understory is complete within the corridor of disturbance associated with the road construction activities. Long term effects to scenery are those that would last until conifer stands adjacent to the construction area reach mature heights.

The analysis area is part of the Rocky Mountain Forest Province/Juniper – pinyon Woodland ecosystem. (K3110-21). The landscape character is described as follows:

Forest landscapes serve as a scenic backdrop to numerous communities in the area. The 2003 Forest Plan utilized the agency's Visual Management System, developed in the 1970's (USDA 1973), to address landscape management as it applies to scenic quality. Using this system, Visual Quality Objectives (VQOs) were determined for the forest landscapes, based on the areas visibility and distance from recreation sites, communities and major roadways. 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.

As one leaves Highway 40 and turns south onto Forest Service Road 131 (Strawberry Westside Road) 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. Most of the man made features dominate the landscape, but most evidence of human modification in the form of parking lots, marina, restrooms, resort buildings, powerlines, fencing exists along the Strawberry Valley road. Most development is associated with the Strawberry Bay Marina and Campground. Along Forest Service Road 042 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 would primarily lie within an area determined to be Foreground Retention and Middleground Partial Retention. The road construction should not exceed the Retention Visual Quality Objective when viewed from nearby or connected corridors, viewpoints of Strawberry Reservoir, Strawberry Ridge Road, Forest Service Road 042, Forest Service Road 131 and Great Western Trail.

The objective classification of Retention is to ensure that landscape alterations are not visually evident to the casual visitor. The objective classification of Partial Retention is to ensure that management activities remain visually subordinate to the characteristic landscape. Management activities should repeat form, line, color, or texture commonly observed in the area. Activities may introduce form, line, color, or texture that are found infrequently or not at all in the adjacent scenery; but they should not become dominant in the landscape.

### **Environmental Consequences**

**No Action** - There will be no change to scenery under the no action alternative.

**Proposed Action – Realignment and complete closure:** The proposed action consists of the construction of a 16-foot wide road on a mountain side with slopes ranging from 1 to 8 percent, where vegetation is dense conifer, aspen, mountain shrubs and grass. Numerous mitigation measures are included in this proposed action to reduce the footprint of the proposed road. These include such items as minor alignment changes, rock walls, logs, tree well through cuts with 1:1 cuts, revegetation using native seed/plants. Timber that is removed from the proposed alignment would be decked, scattered in the old road alignment and used in some locations to help inhibit unauthorized, cross country travel, or to be incorporated in log cribbing or tree wells.

About ninety percent of the road is located in dense aspen and conifer stands. The conifer and aspen trees surrounding the proposed road location would screen a majority of the proposed road from views from other portions of the road. Within 5 years, once grasses and forbs are established on cut slopes, the affected landscape would be visually subordinate to the surrounding landscape. Not until conifers and aspen begin to mature in the disturbed areas would visual quality objective of Retention be accomplished along the proposed road alignment.

1.6 miles of roadway will be reclaimed through revegetation and erosion control techniques. These management techniques are unnoticeable to the casual observer. Portions of the roadway would achieve visual quality objective of partial retention by blending into the surround landscape.

**Alternatives A- Realignment and Partial Closure and Alternative B - Realignment and ATV Route:** The proposed location for the new road alignment varies from relatively steep terrain just under Strawberry Ridge to areas of undulating hills cut by several small streams. This road will not be dominate in the landscape.

Where cut slopes are greater than 1 to 1, revegetation has not occurred in the existing alignment. It is anticipated the same would occur in the proposed alignment without mitigation rock walls or logs that would provide cells for plant growth to establish. In these sections road the alignment will repeat the form, line, and texture of the surrounding landscape and would be managed as a low integrity within the foreground, and moderate in the middle ground, views of the landscape.

## 3.10 Recreation

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### Affected Environment

#### *The Recreation Experience*

The Indian Springs Road Realignment project area provides for limited recreation use. Recreation use consists primarily of deer and elk hunting in the late fall with dispersed camping along road in the area. Some trails are found such as the Great Western Trail. These trails are occasionally used for horseback and motorcycle travel. There is very little winter use due to the distance from access points and steepness of the terrain.

#### *The Recreation Opportunity Spectrum*

There are two ROS settings in the project area. The designated –open motorized routes are in a Semi-Primitive Motorized designation. Under this designation visitors can expect to find a natural appearing landscape with minor improvements to protect resources. Managers provide limited numbers of signs that are rustic looking made of natural materials. The designated Roded Natural are predominately natural environment with evidence moderate sights and sounds of man but in harmony with the natural environment. Both of these ROS classes provide opportunities for visitors to experience closeness to nature, challenging travel and a high degree of self-reliance with some risk involved.

### Environmental Consequences

**No Action** - The recreation use will still be primarily during the hunting season for access to the area and for some dispersed camping. The ROS of the area will remain the same.

**Proposed Action – Realignment and complete closure-** Recreation use would be primarily during the hunting season. Access to the area will continue via the new road. The closure of

the road will eliminate access to four dispersed sites but it is anticipated that at least four new dispersed sites will be developed along the new road.

**Alternative A - Realignment and Partial Closure-** Recreation use would be primarily during the hunting season. Access to the area will continue via the new alignment. Access to the dispersed camp site near the upper end of the closed road will be eliminated. There will continue to be access to the camps sites near Indian Springs and it is anticipated that at least four new dispersed sites will be developed along the new road.

**Alternative B - Realignment and ATV Route-** Recreation use would be primarily during the hunting season. Access to the area will continue via the new alignment and ATV trail. Access to the dispersed camp site near the upper end of the closed road will be eliminated. There will continue to be access to the camps sites near Indian Springs and it is anticipated that at least four new dispersed sites will be developed along the new road.

ROS designation of semi-primitive motorized would not be changed for any of the alternatives.

### 3.11 Heritage

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#### Affected Environment

The Indian Creek area, north of Strawberry Reservoir, has been used by European Americans for recreation, hunting, cattle and land management, and habitation since early settlement times in Utah Valley. Native Americans used the area throughout prehistory, which is generally observed in the form of lithic scatters today.

A complete cultural resources inventory, in 10-15 meter wide transects, of the Indian Springs Road Relocation project area was completed in August 2006. No prehistoric or historic sites, artifacts or features were found within the project boundaries. There are also no traditional plants or use areas located within the project area. The best available science was considered in making this determination, and is based on direct field research specific to the potential effects of this project and on both known and likely trends in plant use.

There are no archaeological sites and no other known American Indian religious or cultural sites or plants associated with traditional use.

#### Environmental Consequences

**All Alternatives** - The project will have no direct or indirect impacts on any known American Indian religious or cultural sites, or any archaeological sites or historic properties.

## Cumulative Effects

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### Overview

The cumulative effects area for this project is considered to be the portion of the Indian Creek watershed above the confluence of Streeper Creek to the headwaters unless stated specifically for the identified resource. This section looks at activities that have occurred, are occurring and are reasonably foreseeable to occur in the area.

Past and/or historic activities include:

- Livestock grazing: The area has been grazed by livestock (mostly sheep) since the late 1800.
- 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 upgrading to a two lane low clearance vehicle road was started, As a result of the decision to up grade the Indian Creek road the old Indian creek road and other arterial road in the upper portion of the 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 improvement 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

Ongoing activities include:

- Livestock grazing: All of the South Streeper sheep allotment along with portions of The Chipman and North Streeper sheep allotments are within the cumulative effects area. These allotment are grazed by sheep under an intensive rest management system.
- Dispersed recreation use: Dispersed camping occurs through out the season along the Indian Creek road. This recreation use is mostly for pleasure and enjoyment of the outdoors. 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 – A portion of the Indian Creek Road is currently under construction. The portion under construction 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). It is anticipated that reconstruction of the Indian Creek Road will be completed prior to implementation of a selected alternative. Under all alternatives access to the Indian Springs Road will be improved.

Chipman Creek Culvert Installation - The spot gravel surfacing and low water crossing on the Chipman Creek Road that crosses Indian Creek is scheduled for replacement in the summer of 2007. This work has been completed. Under all alternatives this project is not expected to have a direct or indirect effects on the Indian Springs project.

- Use of unclassified 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 Fuel-wood: Fuel-wood gathering will continue and may increase
- Range improvement projects: A water line is planned to start in Baldy Creek and pipe water to troughs outside of the cumulative effects area

Foreseeable Future Activities:

- None other than those listed in the planned Activities

## **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). 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.

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.

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.

| Indicator                         | Acres by Alternative* |               |  |           |
|-----------------------------------|-----------------------|---------------|--|-----------|
|                                   | Proposed Action       | Alternative A | Alternative B<br>- Realignment<br>and ATV<br>Route | No Action |
| <b>LONG-TERM SOIL COMMITMENT</b>  |                       |               |  |           |
| Classified FS Roads <sup>1</sup>  | 10                    | 11            | 11   | 9         |
| Unclassified Roads <sup>1</sup>   | 15                    | 15            | 15   | 15        |
| Trails <sup>2</sup>               | 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     | 1.3%                  | 1.4%          | 1.4%   | 1.2%      |
| <b>MAXIMUM SHORT-TERM EFFECTS</b> |                       |               |  |           |
| livestock Grazing <sup>3</sup>    | 1,981                 | 1,980         | 1,979  | 1,982     |
| Dispersed Recreation <sup>4</sup> | <1                    | <1            | <1   | 1         |
| Noxious Weeds <sup>5</sup>        | <1                    | <1            | <1   | 54        |
| Range Improvements <sup>4</sup>   | <1                    | <1            | <1   | <1        |
| Total Short-Term Impacts          | 1,981                 | 1,980         | 1,979  | 1,982     |
| % of Project Area                 | 98.7%                 | 98.7%         | 98.6%  | 98.8%     |
| <b>TOTALS</b>                     |                       |               |  |           |
| 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

<sup>1</sup> assuming 16-ft average width

<sup>2</sup> assuming 4-ft average width

<sup>3</sup> assuming 100% grazing suitability

<sup>4</sup> assuming 60 ft diameter-use per site

<sup>5</sup> actual acres (acres times percent cover)

## 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).

**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.

**Proposed Action** - Under this alternative, the proposed action would reduce overall impact to RHCA, wetland, and floodplain resources in the Cumulative Effects Analysis area. Closure and reclamation of the entire 1.6 mile long Indian Springs Road would restore natural drainage and reduce erosion and sedimentation to stream and wetland resources. The new alignment would pass through a number of headwater swales, none of which have developed stream channels. That and the road surfacing (need to find reference) will result in minimal prism erosion (Davidson, 2007). As a result of these factors, no negative cumulative effects to stream, wetland, or RHCAs are anticipated from implementation of this alternative.

**Alternative A - Realignment and Partial Closure** - Under this alternative, ~0.7 miles of road located within a Class II RHCA would be obliterated. This would result in a 66% reduction in erosion and stream sedimentation from existing conditions. Selection of this alternative would have an overall positive impact to water quality, stream, and wetland resources and would not contribute negative cumulative impact to these resources.

**Alternative B - Realignment and ATV Route** - Under this alternative, ~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 ~11% reduction in erosion and 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 uses. 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. 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 action alternatives 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.

**No Action** -Under the **no action**, 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.

**Proposed Action** – Realignment and complete closure:, **Alternative A - Realignment and Partial Closure** and **Alternative B - Realignment and ATV Route**: It is determined that the overall **cumulative impact** of these would 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.

## HEALTH, SAFETY, AND TRANSPORTATION

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

**No Action**: This alternative maintains access through and in the areas. It provides for a safer access to the area but because of the condition of the Indian Springs road and the difficulty of maintaining it to standard increase the probability of an accident.

**Proposed Action** – **Realignment and complete closure** and **Alternative A - Realignment and Partial Closure** - These alternatives provide access. These alternatives provide access through and in the area. The safety of the traveler is increased by removal of all of the most dangerous portion of the Indian Spring road.

**Alternative B - Realignment and ATV Route:** This alternative provides to access through and in the area. The safety of the traveler will improve. The extent to the improvement of the travelers 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

**No Action Alternative -** There would be no change to the roadless values or roadless area because no roads would be decommissioned or relocated.

**Proposed Action - Realignment and complete closure, Alternative A - Realignment and Partial Closure and Alternative B - Realignment and ATV Route:** The existing road sections would be closed with logs, rock, debris and would be revegetated with native seed. The old road surface would be visible in the short term, but eventually would not be distinguishable from surrounding vegetation.

Relocation of the road section would affect a very small portion of roadless area involved. Old road sections would be reclaimed. The new road section would be considered as “disturbed areas” within the respective roadless area. According to Forest protocol, the affected area is a 30 foot buffer each side if the center line of the road occurring in the roadless area. Roadless values ranged from low to high. Road construction would be mitigated and there negligible effect on plant and animal diversity, the proposed action would have no overall effect on roadless areas, and roadless values would be maintained.

## LIVESTOCK MANAGEMENT

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

**Proposed Action – Realignment and complete 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 increase in management will increase the cost of the permittees overall operation.

## 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

None of the alternatives will have a cumulative affect on TES plant species.

## VISUAL QUALITY

There are no direct effects from any of the alternatives to visual quality, therefore there will be no cumulative effects.

## RECREATION

Motorized routes would continue to be provided under **all alternatives**, there would be no effect on the availability of motorized recreation opportunities and experiences with in the cumulative area, and therefore, no cumulative effect.

## HERITAGE

There are no archaeological sites and no other known American Indian religious or cultural sites or plants associated with traditional use. There would be no cumulative impacts on any known American Indian religious or cultural sites, or any archaeological sites or historic properties.

## 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

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

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| US Fish and Wildlife Service                                    | US Army Corp of Engineers                             |
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| Governor’s office of Planning and Budget                        | CUP Completion Act Office                             |
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## 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  
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