United States Department of Agriculture

Forest Service

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Environmental Assessment

Floyd Hill Distribution Line Tie-in Project

Clear Creek Ranger District
Arapaho National Forest,
Clear Creek County, Colorado

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Environmental Analysis Background

The Louis Berger Group in consultation with the U.S. Forest Service (Forest Service) has prepared this environmental assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Chapter 1 and Chapter 2 serve as an executive summary.

- Chapter 1 includes information on the history of the proposed project, the purpose of and need for the project, and Intermountain Rural Electric Association's (IREA) proposal for achieving that purpose and need. This chapter also details how the public was informed of and responded to the proposal.

- Chapter 2 provides a more detailed description of IREA's proposed action as well as alternative methods for achieving the stated purpose. The alternatives were developed based on issues raised by the public and other agencies. This discussion also includes possible mitigation measures. Finally, this chapter provides a summary table of the environmental consequences associated with each alternative.

- Chapter 3 contains detailed information of the affected environment and environmental consequences of implementing the proposed action or the alternatives.

- The appendices provide a list of agencies and persons consulted and contacted, a glossary for technical terms and a list of acronyms.

Note: Comments received in response to this solicitation, including names and addresses of those who comment, would be considered part of the public record on this proposed action and would be available for public inspection. Comments submitted anonymously would be accepted and considered; however, those who only submit anonymous comments would not have standing to appeal the subsequent decision under 36 Code of Federal Regulations [CFR] Part 215. Additionally, pursuant to 7 CFR 1.27(d), any person may request the agency to withhold a submission from the public record by showing how the Freedom of Information Act (FOIA) permits such confidentiality. Persons requesting such confidentiality should be aware that, under the FOIA, confidentiality may be granted in only very limited circumstances, such as to protect trade secrets. The Forest Service would inform the requester of the agency's decision regarding the request for confidentiality, and where the request is denied; the agency would return the submission and notify the requester that the comments may be resubmitted with or without name and address within 15 days.

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Chapter 1: Purpose and Need for Action

1.1 Introduction

The following environmental assessment (EA) describes the environmental effects of Intermountain Rural Electric Association's (IREA) proposal to the U.S. Forest Service (Forest Service) to construct a new, 2.97-mile-long distribution line in southeastern Clear Creek County, Colorado, in the Arapaho and Roosevelt National Forests and Pawnee National Grasslands (ARP) near Squaw Pass. This project would require the Forest Service to amend IREA's existing Special Use Permit (SUP) and issue a temporary construction permit allowing IREA to build the new line across National Forest System lands. The proposed distribution line would connect IREA's Floyd Hill and Conifer substations to prevent power outages at these substations and distribution lines and to improve service delivery reliability to its customers.

1.1.1 Location

The project area is located approximately 32 miles west of Denver, Colorado and approximately 7.5 miles west of Evergreen, Colorado in the southern portion of the ARP, in southeastern Clear Creek County, 6th Principal Meridian, T4S, R72W, sections 20, 27, 28, and 29 (see Figure 1). Access to the project area is through the Mount Evans Scenic Byway, (also known as Colorado State Highway 103 and Squaw Pass Road) and Clear Creek County Road (CR) 470.

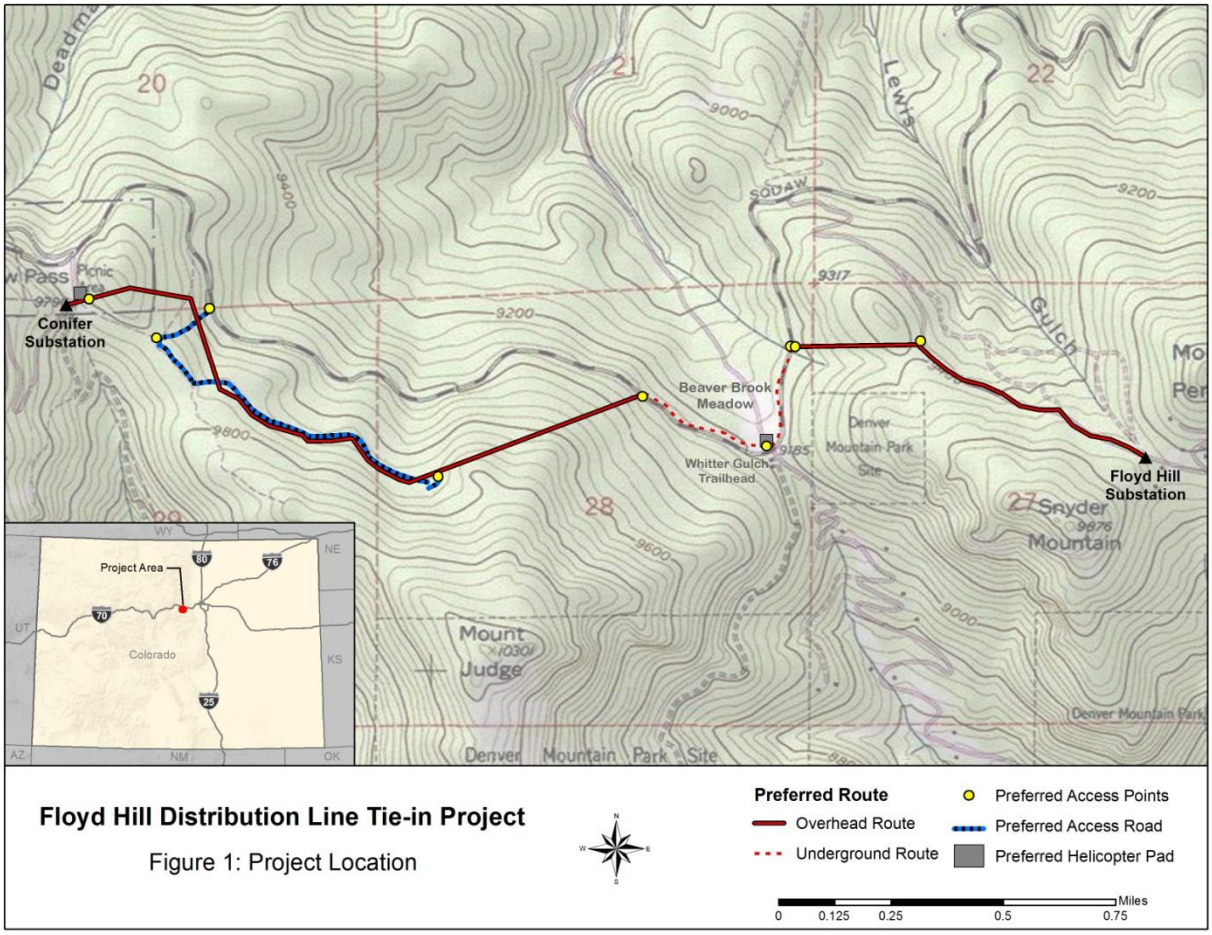
1.1.2 Project Background

IREA provides reliable electric service to consumers within its assigned territory. Currently, outages periodically occur at the nearby Floyd Hill and Conifer substations and along the distribution lines originating from these substations. IREA seeks to protect against outages and provide reliable service to customers in this area.

1.2 Proposed Action

The Forest Service proposes to amend IREA's existing SUP and issue a temporary construction permit, under the authority of the Federal Land Policy and Management Act of 1976 (FLPMA) to allow the IREA to construct a 2.97 mile distribution line connecting the existing Floyd Hill and Conifer substations. The proposed distribution line would begin at the east edge of the Echo Hills Imes Subdivision and parallel CR 470 before heading west and crossing under the Mount Evans Scenic Byway (**Figure 1**). The line would be buried along the Mount Evans Scenic Byway before crossing under the road again and heading southwest. The line would then generally head northwest before terminating at the Conifer Substation.

Figure 1. Proposed Action



Of the proposed 2.97 miles, approximately 0.58 mile would require rebuilding an existing line located along CR 470, which is already authorized under IREA's current SUP. The remainder of the project would require a new line across Forest Service land. For a detailed description of the proposed action, see Chapter 2, Section 2.2.2.

After a decision is made, the project would be managed by IREA and constructed by a construction contractor over a 24-month period, with construction not occurring during winter months.

1.3 Purpose and Need for Action

IREA provides reliable electric service to consumers within its assigned territory. Currently, outages periodically occur at the Floyd Hill and Conifer substations or along distribution lines originating from these substations. The purpose of the proposed project is to improve reliability of service delivery to customers in this area. At this time, there is no alternate source of power, and consumers in the project area are without electric power until outages are located and

repaired. IREA has determined that constructing a line to tie the two power sources together would allow it to provide reliable electric power to both of these areas by reducing outage times and addressing a variety of operating concerns.

Because the project area is located on National Forest System lands, the Forest Service would need to amend the current SUP and issue a temporary construction permit to construct the proposed project. IREA has submitted an application for an amendment to its current SUP to allow for the construction of a distribution line connecting the Conifer Substation with the Floyd Hill Substation.

1.4 Existing Direction

This section describes pertinent direction through law and regulations, the 1997 Revision of the Land and Resource Management Plan (*Forest Plan*) of ARP (Forest Service 1997), and various strategies developed for utility management and development in the project area. No project within the ARP can be outside of law, regulations, or policy. If the project does not follow the *Forest Plan* direction, then an amendment to the *Forest Plan* for that particular direction would be needed. This is not the case for this project. All goals, objectives, standards, and guidelines listed in the *Forest Plan* are followed. The various strategies, whether written specifically for the Squaw Pass area or the ARP, are guidance and provide the starting point for much of the proposed action. As analysis by the interdisciplinary team progressed, this guidance was modified to meet *Forest Plan* direction or to "fit" ecologically on the ground.

The proposed action responds to the standards, goals, and guidelines outlined in the *Forest Plan*, and helps move the project area towards desired conditions described in the *Forest Plan*. Goals, standards, and guidelines applicable to this project include:

1.4.1 Forest Plan

As described in the *Forest Plan* (Forest Service 1997), goals, desired conditions, and management direction forest-wide for utilities and utility corridor area include the following.

- Ensure utility corridors are consistent between adjoining forest, regions, and other federal and state land management agencies.
- Require that electrical utility lines of 33 kilovolts (kV) or less and telephone lines are buried unless one or more of the following applies:
    - Scenic Integrity Objective (SIO) of the area can be met using an overhead line.
    - Burial is not feasible due to geological hazard or unfavorable geologic conditions.
    - Greater long-term site disturbance would result.
    - Burial is not technically feasible.
- Utilize current utility corridors fully and provide utility corridors in the future in areas that meet the needs of society while protecting the integrity of the environment.

- Authorize proposals to utilize designated utility corridors without alternative route analysis, subject to site-specific environmental analysis.

- Consolidate occupancy of transportation and or utility corridors and sites wherever possible and compatible.

Other standards and guidelines that apply to this project are discussed in detail in Chapters 2 and 3.

1.4.2 Laws

- **Federal Land Policy and Management Act of October 21, 1976 (FLPMA)**—FLPMA is the primary authority for the Forest Service to acquire and grant easements and allow for other special uses.

- **Endangered Species Act (ESA) of 1973, as amended**—ESA requires federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of Proposed, Threatened, and Endangered Species (PTES), or result in the destruction or adverse modification of their critical habitat.

- **National Historic Preservation Act (NHPA) of 1966, as amended**—NHPA established policy regarding historic preservation and provided for the establishment of the National Register of Historic Places (NRHP).

1.5 Decisions to be Made

Given the purpose and need, the proposed action and the other alternatives are reviewed in order to make the following determinations:

- The proposed project complies with applicable standards and guidelines found in the *Forest Plan* and all laws governing Forest Service actions.

- Sufficient site-specific environmental analysis has been completed.

- The proposed project benefits the public and is in their best interest.

Once these determinations have been made, the deciding officer must then determine:

- Whether or not to accept the proposed action or one of the alternatives, including the no action alternative.

- What, if any, additional actions should be required to better implement utility management opportunities in the project area.

1.6 Public Involvement

Public involvement for the project began in 2011 with letters sent to the public, newspaper articles, and fieldwork by the Interdisciplinary Team (ID Team) to gather data. External

involvement by the public and other agencies included: soliciting comments to a project description letter; fieldtrips; consultation with the State Historic Preservation Office (SHPO); consultation with applicable Native American Tribal Councils; and informal discussions with the Colorado Division of Wildlife (CDOW), the Public Utility Commission of Colorado, Clear Creek County, the U.S. Army Corps of Engineers (USACE), and the Colorado Department of Transportation (CDOT).

To date, the public has been invited to participate in the project in the following ways:

- On June 8, 2011, the Forest Service opened the public scoping period by publishing a legal notice in two Clear Creek County newspapers including the *Canyon Courier* and the *Clear Creek Courant* on June 8, 2011.

- An email or hardcopy notification indicating the opening of the scoping period was sent to approximately 60 area residents, interested parties, and people frequenting the area for recreational purposes seeking their comments on the action proposed by the Forest Service.

- On September 24, 2012, the Forest Service notified interested parties of the slight modification of the proposed action to bury the distribution line along the Mount Evans Scenic Byway.

A total of 10 correspondences were received, four from area residents and six from local businesses or government agencies. These public comments, scoping letters, mailing lists, and meeting notes are part of the project file located at the Clear Creek Ranger District Office, 101 Highway 103, Idaho Springs, Colorado 80452.

1.7 Issues

The following issues and questions regarding the proposed project were raised during public and internal scoping efforts. These issues fall into three categories:

1. **Key Issues:** These issues are used to develop and analyze the alternatives. They involve potential effects to resources that might not be addressed by existing laws, *Forest Plan* Standards and Guidelines, policies, or design criteria.

2. **Other Issues:** These issues are also analyzed by alternative but can be addressed by existing laws, *Forest Plan* Standards and Guidelines, policies, or design criteria.

3. **Issues Dismissed from Detailed Analysis:** These issues are not given detailed analysis because the potential effects would not vary between alternatives and/or the effects would not be expected to be significant, could be mitigated, or would not be within the scope of this document.

1.7.1 Key Issues

- **Visual Impacts**—Construction and operations of the Floyd Hill distribution line could affect the scenic integrity of the landscape and viewshed for local residents and recreators using the Mount Evans Scenic Byway, Beaver Brook Watershed, and surrounding areas.

1.7.2 Other Issues

- **Wetlands and Riparian Areas**—Wetlands and riparian areas exist within the area. Construction and operation of the Floyd Hill distribution line could indirectly affect stream health, riparian areas, and wetland function.

- **Soils**—Most soils in the project area have high potential for erosion if protective cover is removed. Construction and operation of the Floyd Hill distribution line could directly and indirectly affect rates of soil erosion, soil compaction and exposure, and soil productivity.

- **PTES and Management Indicator Species (MIS) for Wildlife, Fish, and Plants**—The project area and immediate vicinity contains habitat for certain PTES and MIS. Constructing the proposed distribution line including right-of-way (ROW) clearance and maintenance, access roads, and helicopter access areas could affect PTES and MIS and their habitat and could fragment habitat within and/or adjacent to the project area.

- **Cultural Resources**—In consultation with the Colorado SHPO, a portion of the Mount Evans Scenic Byway has been recommended as eligible for listing under the NRHP. The construction of the new distribution line could affect the historic structures found along the roadway. In addition, the historic viewshed from the road could be impacted by the construction and location of the proposed distribution line.

1.7.3 Issues Dismissed from Further Analysis

Some issues have been dismissed from further analysis because the potential effects would not vary between alternatives and/or the effects would not be expected to be significant, could be mitigated either through project design or customized mitigation measures, would be governed by law, or would not be within the scope of the proposed actions. Issue areas dismissed from further analysis include:

- **Environmental Justice**—No minority and/or low-income populations would be disproportionately affected by the implementation of any of the alternatives considered. Any changes to the project area would affect all persons who visit the area equally.

- **Prime Rangeland, Forest Land, and Farm Land**—The alternatives presented are in compliance with federal regulations for prime lands. The project area, the ARP, contains no prime rangeland, forest land, or farm land.

- **Social Groups**—There would be no overall differences between alternatives in the effects on minorities, Native American Indians, women, or the civil liberties of any American citizen.

- **Energy Requirements and Conservation Potential of Alternatives**—The energy required to implement the proposed alternatives in terms of petroleum products would be insignificant when viewed in light of the production costs and effects of the national and worldwide petroleum reserves.

- **Forest Health and Vegetation**—The proposed project is very small in scale relative to the ARP and impacts from the proposed line would not affect overall forest health and vegetation. In addition, design criteria for the line would protect vegetation on a more localized scale within the project boundary.

- **Noise**—There would potentially be an increase in noise during the construction period when helicopters are being used to construct the line. However, these impacts would be of short duration during hours of construction between 8 am and 5 pm, Monday through Friday. In addition, any increase in decibels would be within a safe level of human hearing.

- **Air Quality**—Air quality within the project area is below National Ambient Air Quality Standards for all air pollution parameters and is therefore considered an air attainment area. A non-attainment area for ozone is designated just east of the Jefferson County line. Air quality issues under the alternatives were considered, but dismissed from further analysis because emissions within the project area should be negligible and well below emission standards and would not pose a threat to Class 1 or 2 areas, wildlife, vegetation, or human health. It would be highly unlikely that the PM_{10} standard of 5 tons per year will be exceeded by this project. However, standard dust emission best management practices (BMPs) would be implemented during construction to suppress dust.

- **Recreation**—During internal scoping, impacts on recreational resources were raised as a potential issue, particularly where the proposed line is sited along a closed road. A subsequent field survey on the closed road indicated that it is not widely used for recreational purposes, mainly because access begins on private property. In addition, this closed road is not being considered for future development as a system trail.

- **Wildfire Hazard**—The overhead component of the proposed project would include the installation of wooden utility poles. There was an issue raised during public scoping that the use of wooden poles would create a fire hazard, and a subsurface alignment would reduce these risks. Health and safety concerns would be considered in the design and materials used for the utility poles, and guidelines in the operating plan would address removal of hazard trees to reduce wildfire risk.

- **Illegal Off-road Highway Vehicle Use**—A concern was raised during scoping that motorized users, such as all-terrain vehicles and motorcycles, would use the line corridor as a new motorized trail. Design criteria would be implemented on the project to discourage this use.

- **Use of Public Lands**—The proposed project would be, in part, constructed on publicly-owned lands. Respondents have questioned the feasibility of locating the new alignment entirely on private lands and whether tax payers would be covering the bill for operation

and maintenance costs of the proposed project**.** The new electric distribution line proposal was screened using CFR 251 pre-application screening criteria, which include determining whether the use could be accommodated on private land. If the use could be accommodated on private land, the proposal would not be accepted. Due to the location of the two existing lines that the new line would connect, it would not be possible to construct the line without crossing federal lands. In addition, the federal government does not have any financial responsibility for proponent-driven projects on public lands. In this case, the proponent, IREA, understands it would be responsible for covering the full cost of constructing and operating the proposed distribution line.

- **Electric Service Reliability and Maintenance Costs**—Some individuals expressed their preference for the entire distribution line to be below grade in order to eliminate or reduce maintenance costs and ensure service delivery during severe weather events. According to IREA engineers, burying the line would neither eliminate maintenance costs nor would it increase reliability. Additionally, the Forest Service would not consider operation and maintenance costs as part of the analysis, which is outside the scope of this project.

- **CDOT Easement**—The proposed project would parallel the Mount Evans Scenic Byway for a short distance. CDOT initially responded during public scoping that the proposed project would require a permit and coordination from the agency. However, the location where the line would parallel the road is maintained by Clear Creek County. Because the road is under the jurisdiction of the county, no CDOT permits would be required.

1.8 Other Permits, Comments, or Consultation Needed for this Analysis

The following consultation is required in addition to a Forest Service Finding of No Significant Impact (FONSI) and Decision Notice before the proposed action may proceed:

Table 1: Consultation Needed With Other Agencies

Consultation	Agency/Company
SHPO clearance on cultural resources	Colorado SHPO
Biological Assessment consultation	United States Fish and Wildlife Service (USFWS)
County Road 103	Clear Creek County
Access Permit	Colorado Department of Transportation

Chapter 2: Alternatives Including the Proposed Action

2.1 Introduction

This chapter describes and compares the no action and proposed action alternative for the Floyd Hill Distribution Line Tie-in Project. It includes a description and map of the proposed action alternative, applicable project-specific design criteria and mitigation and monitoring measures for the action alternative. Also included in this chapter are alternatives considered but eliminated from further analysis, actions that may contribute to cumulative impacts, and a brief comparison of alternatives.

2.2 Alternatives

2.2.1 No Action Alternative

Under the no action alternative, the Forest Service would not amend the SUP or issue a temporary construction permit. IREA would not construct the Floyd Hill distribution line connecting the Floyd Hill and Conifer substations. Without the distribution line, outages would continue to occur periodically. When outages occur, there would be no alternate source of power and consumers in the project area would be without electric power until the outage is located and repaired. IREA would continue to manage the system to reduce outage times and address operating concerns in other ways. Law requires consideration of this alternative. The no action alternative provides a comparison baseline for the alternatives.

2.2.2 Proposed Action with Modification (*Distribution Line Development*)

Under the authority of FLPMA, the Forest Service would amend IREA's current SUP and issue a temporary construction permit that would allow the construction, operation, and maintenance of a distribution line connecting the Conifer Substation with the Floyd Hill Substation. The distribution line for this modified proposed action would start at the east edge of the Echo Hills Imes Subdivision and would parallel CR 470 before heading west and crossing under the Mount Evans Scenic Byway. The line would be buried along the byway shoulder before crossing under the road again and heading southwest. The line would turn to the northwest before terminating at the Conifer substation. The distribution line, once constructed, would be 2.97 miles long and would occur within the newly acquired Beaver Brook Watershed area. The Floyd Hill Distribution Line Tie-in Project proposed action is shown in Figure 1.

The proposed action would include the following components.

- A 12.5 kV, three-phase distribution line roughly 15,660 feet long, within a 20 foot easement would be constructed to connect the Conifer and Floyd Hill substations.
- The line would be a combination of overhead and underground lines.
- A 20 foot ROW (10 feet from center line of pole locations) would be cleared of all vegetation for the overhead and underground portions of the line.
- Maintenance of the line will follow the Operation and Maintenance Plan, which is part of the existing SUP.

The overhead portion of the line would include 35-foot high wood poles installed to a depth of 6 feet, with 10-foot crossarms for raptor protection. Span lengths would vary from approximately 150 to 275 feet depending on terrain considerations. The 0.4 mile of the existing Beaver Brook line, located along CR 470, would be rebuilt as authorized under the SUP, by replacing poles and installing new anchors. The new poles would be placed within the existing ROW alignment but would not necessarily be in the same location. For the underground portion of the line, approximately 3,000 feet of electric cable would be buried, 48 inches deep, either by trenching or directional boring.

Vegetation Clearing

Vegetation from a 20 foot corridor for the overhead and underground lines would be cleared to accommodate the distribution line; vegetation would be cleared using hand chain saws or other methods identified in IREA's existing, Forest Plan-approved Operation and Maintenance Plan. For those portions of the proposed project that would be restrung along the Squaw Pass line, no additional vegetation clearing would occur. Under the proposed action, 9.55 acres would be maintained as cleared (8.19 acres of new disturbance).

Access Roads

An existing road would be used for access locations where on-the-ground activity would occur. However, this road might require clearing and widening to allow access for construction vehicles. Widening activities would involve trimming vegetation in order to avoid damage to trees from passing construction vehicles. A 20-foot wide disturbance would be assumed for all existing road clearing in currently forested areas. Once construction is completed, the road would be closed and rehabilitated, as approved and directed by the Forest Service, using techniques such as ripping, seeding, mulching, and fencing.

Helicopter Use

In areas where vehicle access would not be possible, helicopters would be used for pole placement. Prior to being picked up by helicopter, power poles would be assembled in two staging areas, the Whitter Gulch parking area and the cul-de-sac at the west end of the project. Helicopters would pick up the poles and place them into the pre-dug holes.

Construction Period

IREA estimates that construction activities would take 12 weeks to complete within a 24 month period and would occur during the spring, summer, and fall months depending on weather conditions and wildlife restrictions. ROW clearing would occur first, followed by the setting of poles and stringing of overhead lines.

2.3 Design Criteria for the Proposed Action

Design criteria are actions taken to avoid, minimize, reduce, or eliminate adverse effects resulting from the implementation of the "action" alternative. Watershed Conservation Practices (WCP) design criteria have been applied to many projects and their effectiveness in reducing impacts is known. However, monitoring their implementation and efficiency would occur to ensure success. Operation Goals, Standards, and Guidelines from the *Forest Plan* (Forest Service

1997) and design criteria from the WCP Handbook (Forest Service 2006) will be incorporated to protect soil and water resources.

2.3.1 Wildlife Design Criteria

- Structures will be designed and built so that they do not create unreasonable or unnecessary movement barriers or hazards for wildlife.

- Any known raptor nests will be protected by enforcing a no-disturbance buffer around active nest sites between nest-site selection through fledging, which is generally March through July.

- Clearing vegetation prior to the onset of the nesting season (mid-March through mid-July) when possible, or conducting migratory bird nest surveys if vegetation would be cleared during the nesting season would minimize the take of migratory birds and reduce local impacts on species that nest in and adjacent to the construction areas.

- In order to minimize disturbance to nesting boreal owls, no construction activities would be permitted to occur within ¼-mile of a known or suspected nest between April 15 and July 15. If construction during the breeding season cannot be avoided, pre-construction surveys would be conducted utilizing a USFS approved protocol. If no nests are located, no timing restrictions would be necessary. If pre-construction surveys are not conducted, no construction activities would be permitted within any portion of the project area between April 15 and July 15.

- Construction will be limited to daylight hours.

- Existing forest cover adjacent to access roads will be maintained to the maximum extent possible.

- Overhead lines will be hung from wooden poles with 10-foot crossarms for raptor protection.

2.3.2 Forest Vegetation and Watershed Health Design Criteria

- Large woody debris will be retained to help retain moisture, trap soil movement, provide microsites for establishment of forbs, grasses, shrubs, and trees, and to provide habitat for wildlife.

- Where known occurrences of Species of Local Concern (SOLC) plant species are found adjacent to the project area, the Forest Service botanist will recommend to the appropriate personnel where site-specific protection measures are needed such that implementation will not result in a trend toward federal listing or loss of viability on the Planning Unit and sites will be flagged for avoidance or minimal impact during construction activities.

- Vegetation within the ROW will be cleared by hand using chain saws or other methods identified in the IREA's Forest Plan-approved Vegetation Plan.

- As directed by the Forest Service, the existing road and other areas that might be damaged by construction activities will be closed and rehabilitated following construction.

- Topsoil removed during construction will be salvaged and stockpiled and later used during rehabilitation efforts.

- Slope stabilization, revegetation specifications, and locations will be developed and identified in a revegetation plan by IREA's contractor and approved by the Forest Service Botanist, Forest Service Engineer, and Forest Service Landscape Architect.

- To minimize risk of noxious weed introduction and spread, all equipment used for ground-disturbing activities (not including service trucks or other vehicles that remain on roadways) would be required to be clean (free of mud, dirt, and plant parts, or other debris that could contain or hold seeds, prior to entering the project area). Equipment will be considered clean when a visual inspection does not disclose such material. Disassembly of equipment components or specialized tools will not be required.

- All imported fill material, revegetation plant mixes, and mulch material will be certified weed-free and subject to inspection by the Forest Service.

If straw is used for revegetation or erosion control, it will be certified weed-free per the Forest Service Weed Free Forage Products Order Number: R2-2005-01.

- Sites will be revegetated with certified weed-free seed. Seed mixes will be developed in accordance with the ARP revegetation policy and in consultation with the Forest Service botanist or botanical representative. Independent testing of seed by the Forest Service may be required.

- IREA will conduct a noxious weed inventory along the proposed route prior to construction, and will periodically check for noxious weeds along the corridor, using qualified personnel approved by the Forest Service. If noxious weeds are found, IREA will treat them using appropriate methods consistent with the ARP Noxious Weed Management Plan and in compliance with the ARP Guidance to Herbicide Application on Forest Service Lands By Non-Forest Service Personnel.

- Drainage features will be installed as needed per engineering standards or identified by the Forest Service engineer, hydrologist, or soil scientist.

2.3.3 Wetland and Riparian Area Design Criteria

- Wetland areas will be avoided to the greatest extent practical.

- No new road construction or upgrade of existing roads will occur within wetlands.

- No mechanized clearing of the ROW within wetlands will be permitted.

- Equipment, construction materials, and staging areas will be stored away from wetland and riparian areas.

- Helicopter pads will be located away from wetland and riparian areas.

- Temporary fencing and/or barriers will be placed along the line in the project area to prevent contractors from working outside established construction limits to protect wetlands, riparian, and other areas such as sensitive plant and animal habitat from accidental construction equipment encroachment.

- Ground based equipment will not be permitted within 100 feet from the edge of streams, or within the edge of riparian or wetland vegetation.

2.3.4 Soils Design Criteria

- Machinery will not be used on slopes greater than 35 percent grade, except for slopes shorter than 100 feet long.

- Heavy equipment will be restricted from operating when soil conditions are too wet. Soils are too wet when soil can be molded into a ball that holds together under repeated tosses, or if the soil can be rolled into a 3 millimeter thread without breaking or crumbling.

- Temporary restrictions on off-road equipment operation will be implemented in periods of heavy rains, when soils are wet, or when excessive soil damage is occurring due to unsuitable operating conditions.

- Unless otherwise determined through consultation with the Forest Service soil scientist and botanist, effective ground cover will be established through seeding or mulching on disturbed sites to prevent accelerated on-site soil loss and sediment delivery to streams.

- Allowable chipped material depth and percent ground cover, outside the power line ROWs will be determined by the Forest Service representative on a site-specific basis.

- When masticating/chipping felled trees or existing down slash, masticated materials must be spread to be discontinuous (less than 60 percent of surface covered by 4 inches maximum depth of chips). Masticated/chipped materials may be scattered outside the corridor to achieve this criterion.

- When required, the road and other disturbed sites will be stabilized and maintained during and after implementation to control erosion.

- Waterbars and drainage dips will be installed as appropriate and identified by a Forest Service engineer, hydrologist, or soil scientist.

2.3.5 Water Quality Design Criteria

- A detailed construction Storm Water Pollution Prevention Plan will be developed for the project to help minimize the potential for discharge of pollutants from the site during construction activities.

- Temporary erosion control measures such as straw bales, silt fences, and excelsior logs will be constructed during the project and maintained until sufficient revegetation has been established to protect soil stability.

- Existing erosion problem areas will be repaired by improving drainage and revegetating and stabilizing slopes.

2.3.6 Cultural Resources Design Criteria

- As specified in the Class III Cultural Resource Investigation, IREA will be required to avoid resources that are listed on or eligible for listing on the NRHP. Sites that have not been evaluated for the NRHP will also be avoided. If additional cultural resources are discovered during construction, the ARP Authorized Officer will be notified and work will be stopped in the area of the finding until appropriate design criteria can be implemented.

2.3.7 Public Safety Design Criteria

- Illegal off-road vehicle use within the ROW will be prevented as much as possible by installing barrier features as gates, buck and pole fence, and/or large rocks. Monitoring will occur to see if the barriers constructed are effective, or if there is a need for additional structures. Complete elimination of illegal off-road vehicle use may not be possible with resources available for enforcement and monitoring.
- The following construction-related design criteria will be implemented to ensure public safety:

    - Highway 103 will have temporary road closures to accommodate helicopter take-offs and landings during construction.

    - Traffic control personnel will be in place during all construction activities that involve temporary lane closures.

    - Temporary construction signing will be placed above and below active work areas.

    - Information notices about the project will be posted at the Forest Service visitor center and on IREA's website.

    - For delays longer than 30 minutes, public notice will be given in advance through the local news media and informational signs.

    - The underground electric cable line would be installed within Clear Creek County's easement for County Road 103. If possible, burial of the conduit would

be performed in conjunction with the roadway improvements planned for the summer of 2013. If this timeline cannot be met, IREA will coordinate with Clear Creek County Road and Bridge on the electric cable burial within the easement. IREA will have to comply with Clear Creek County Road and Bridge standards for repaving and/or repairing damaged sections of the roadway and asphalt. These repairs shall be made as soon as the cable is installed and all repair costs are the responsibility of IREA.

- IREA will be required to keep work areas in an orderly condition; to dispose of all refuse properly; and to obtain permits for the construction and maintenance of all construction camps, stores, warehouses, latrines, and other structures in accordance with applicable requirements. No edible foodstuffs will be stored in a location accessible to scavengers.

- IREA, in coordination with the Forest Service and Clear Creek County, will use only approved portions of the ROW for storing material and equipment, and will not use private property for storage without written permission of the owner.

- IREA will comply with all legal load restrictions when hauling material and equipment on public roads to and from the project.

- IREA will maintain access to trails, roads, streets, businesses, parking lots, residences, garages, and other features.

- The Mount Evans Scenic Byway will be kept open on weekends without construction delays from 6:00 p.m. Friday to 11:00 p.m. Sunday and on national holidays; and during special events permitted by the Forest Service and Clear Creek County such as the Triple Bypass Bicycle Tour, Colorado Rocky Mountain Bicycle Tour, Ride the Rockies, Red Rock Century Ride, and others as necessary.

- Emergency service providers will be given up-to-date information on construction schedules, anticipated delays, and locations.

- IREA will be required to provide immediate passage through the construction area for all emergency service vehicles.

2.3.8 Visual Resources Design Criteria

- Transition facilities will be located as far back from the Mount Evans Scenic Byway ROW as possible.

- The paint color and materials used for poles and other equipment will allow the distribution line to blend in with surrounding vegetation and landscape.

- Wire used for the distribution line will be a non-reflective material.

2.4 Monitoring for the Proposed Action

Monitoring during project implementation would be completed to ensure that goals, standards, and guidelines of the *Forest Plan* (Forest Service 1997) and design criteria and management measures of the WCP Handbook (Forest Service 2006) are met where resources might be affected by project activities. Items to be monitored and associated information are found in Table 2. The Forest Service would also review all construction plans, have representation on site, and would monitor the implementation of the design criteria.

Once in operation, there would be regular monitoring and inspections of the distribution line per the terms and conditions of the SUP. Maintenance activities would be scheduled in coordination with the Forest Service and would occur in a similar fashion as construction activities. Immediate maintenance would be necessary in the event of a power outage.

Table 2. Monitoring for the Floyd Hill Distribution Line Tie-in Project.

Item to be Monitored	Responsibility	Timing of Monitoring and Duration	Objective for Monitoring
Recreation	Forest Service Recreation Staff or Planner	During post-construction for 2 years.	Ensure that no illegal access to roads and trails is occurring in the project site and determine whether there is a need for additional barriers or fencing.
Botanical resources, including forest vegetation and rare plant species	Forest Service Botanist/IREA Biologist*	During project area design, layout, and construction.	Ensure compliance with *Forest Plan*, WCP Handbook, and mitigation requirements.
Nesting habitat for raptors, migratory birds, and other sensitive avian species	Forest Service Wildlife Biologist/IREA Biologist*	During project area design, layout, and construction.	Monitor known nest locations and discover new nest locations to ensure compliance with *Forest Plan* and mitigation requirements.
Noxious and undesirable weed infestations and spread	Forest Service/Contractor Botanist and/or Invasive Plants Coordinator*	During project area design, layout, construction, and post-construction until revegetation is complete. Also periodically after construction, with frequency to be agreed on between Forest Service and IREA after initial weed inventory and post-construction site review.	Ensure compliance with *Forest Plan*, WCP Handbook, ARP Noxious Weed Management Plan, and mitigation requirements.

Item to be Monitored	Responsibility	Timing of Monitoring and Duration	Objective for Monitoring
Soil compaction, erosion, and disturbance	Forest Service Soil Scientist/IREA Soil Scientist*	During project area design, layout, construction, and post-construction until revegetation is complete.	Ensure compliance with *Forest Plan*, WCP Handbook, and mitigation requirements.
Riparian area/wetland	Forest Service Hydrologist/ IREA Biologist/IREA Wetland Scientist*	During project construction and post-construction for two growing seasons or until mitigation is complete.	Ensure compliance with *Forest Plan*, WCP Handbook, and mitigation requirements.
Soil and vegetation recovery in construction and rehabilitation areas	Forest Service Landscape Architect and Forest Service Botanist/IREA Biologist*	Post-construction for two growing seasons or until mitigation is complete.	Evaluate soil and vegetation recovery in disturbance locations.
Heritage/cultural resources within and adjacent to the project area	Forest Service Archeologist/IREA Archeologist*	During project design and construction.	Document, examine, and protect historic/cultural properties.
Motorist and Cyclist Safety	Forest Service Engineer/ IREA	During project construction.	Ensure public safety is not being compromised.

*Forest Service approved contractor

2.5 Alternatives Considered but Eliminated from Further Analysis

The following alternatives were considered during the planning process, but have not been studied in detail. These are described briefly below, along with the reasons for not considering them further.

2.5.1 Issue SUP and Allow for Construction of Floyd Hill Distribution Line – Alternative Alignment

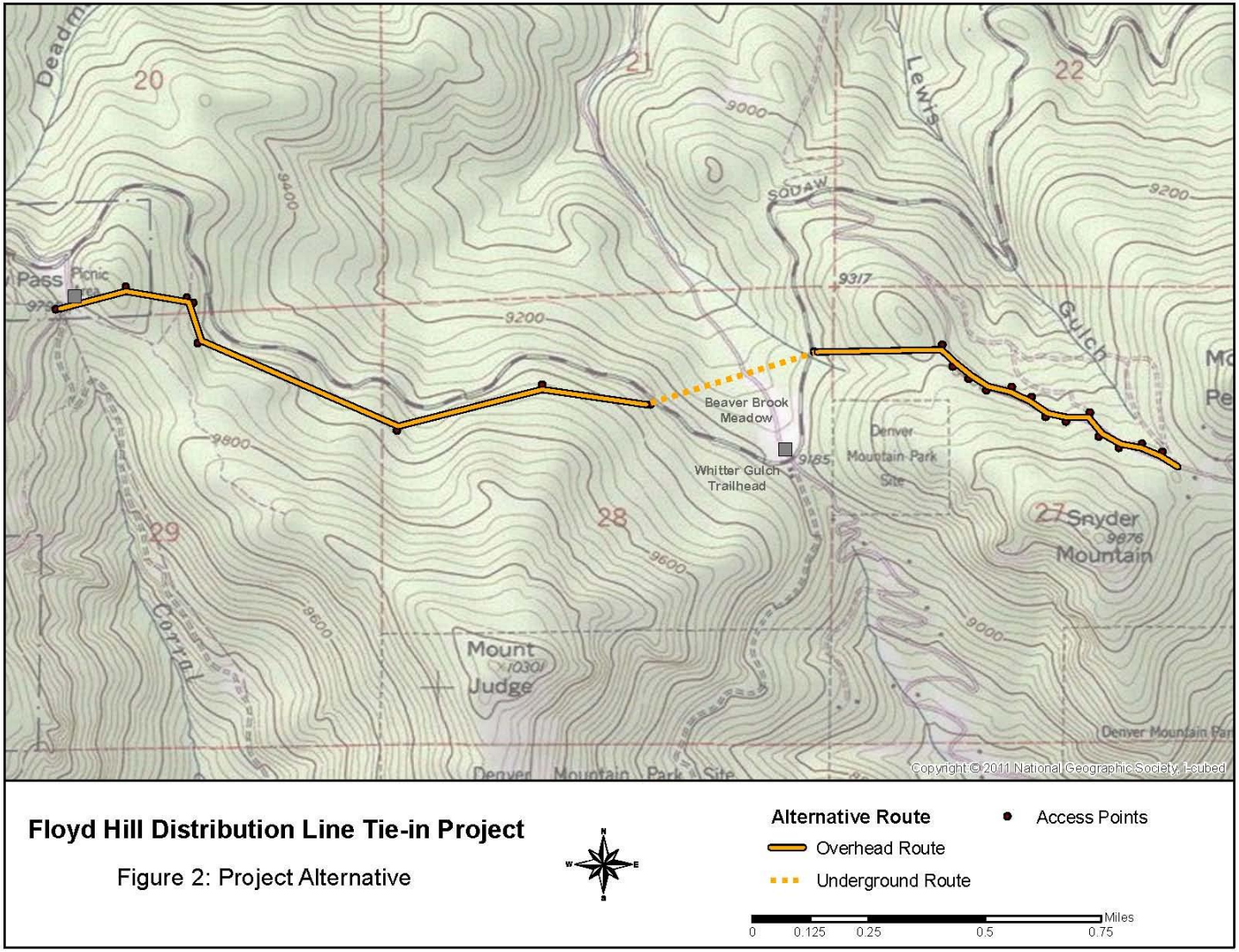
This alternative would be similar to the proposed action in construction methods, materials, and schedule but would have a different alignment. The alternative alignment, shown in Figure 2, would include an overhead line, parallel to the Mount Evans Scenic Byway and would likely be visible from the road. In addition, the alignment of this alternative would require the line to be buried through the Beaver Brook meadow.

This alternative was considered but not analyzed in detail due to the perceived impacts on visual resources. Visual resource impacts would be especially important for the portion of the overhead line that would parallel the Mount Evans Scenic Byway, an important resource to the county, local residents and visitors traveling to the area. The perceived impacts of this alternative influenced the modification of the proposed action to include design features that would further reduce impacts on visual resources such as burying the line along the shoulder of the Mount Evans Scenic Byway.

2.5.2 Issue SUP and Allow for Construction of Floyd Hill Distribution Line – Buried Line

This alternative would be similar to the proposed action in alignment but would require different construction methods, materials, and schedule and would be buried along the entire length of the alignment. This alternative was considered but not analyzed in detail due to the perceived physical challenges that would exist in the construction (geology, topography, etc.) of a fully buried line. This alternative would likely cause greater environmental impacts than the above-ground alternatives. IREA engineers also determined that it would not be physically possible to bury the entire line without extensive rock blasting in areas because of the existing geology.

Figure 2. Project Alternative



2.6 Actions that Might Lead to Cumulative Impacts on the Project Area

There are past, present, and reasonably foreseeable actions in the Mount Evans Geographic Area that were considered as context for the proposed action and alternatives. Though not directly related in scope to the proposed action, these other actions can contribute to cumulative impacts defined as direct and indirect effects of the proposed action when added to the direct and indirect effects of past, present, and reasonably foreseeable future actions that overlap in space and time as defined by the Council on Environmental Quality (CEQ) (CEQ 1997).

2.6.1 Past Actions

The area surrounding the project area has a history of development dating back to the early 1900s and includes the following.

- Historic mining and logging in the Beaver Brook Watershed, including many abandoned access roads and trails.
- Private low- and high-density residential land development including access roads, development footprints, and individual sewage disposal (septic systems).
- Existing and abandoned forest roads and trails, including roads that cross and/or parallel Beaver Brook and Deadman Gulch.
- Beaver Brook reservoir constructed for the city of Golden and managed by the Lookout Mountain Water District.
- Construction of the Mount Evans Scenic Byway began 1918 and was completed around 1927. The road was originally constructed to reach Denver Mountain Parks properties.
- Mount Evans National Scenic Byway (Colorado State Highway 5) was constructed between 1915 and 1927. The highway was later paved in 1930.
- The former Squaw Pass Ski Area was constructed in 1960 and closed in 1975. The ski area reopened as Echo Mountain in 2005.
- Acquisition of the Beaver Brook Watershed by the Forest Service. Previously prohibited activities such as target shooting, hunting, and dispersed camping are permitted in certain areas.

2.6.2 Present Actions

Several projects listed above continue today. New actions include:

- Jefferson County, Clear Creek County, and CDOT operate and maintain the extension of the Mount Evans Scenic Byway (also known as Squaw Pass Road), CR 103, and State Highway 103. Snow removal allows year-round travel.

2.6.3 Reasonably Foreseeable Actions

There are reasonably foreseeable actions that should be considered in the environmental analysis, including the following:

- The Forest Service plans to install a boundary portal sign along the Mount Evans Scenic Byway near Old Squaw Pass Road.

- CDOT plans to repave its portion of the Mount Evans Scenic Byway from Squaw Pass to the Echo Lake turnoff. With the repaving, CDOT is proposing to restripe the ascending shoulder to allow for 1 foot of additional width.

- The Squaw Pass Road Improvement Project includes widening CR 103 to allow for a 4-foot-wide ascending bike line from the beginning of the road at Bergen Park to the Little Bear turnoff at Squaw Pass.

- The Forest Service plans to decommission two picnic sites on the west side of Squaw Pass, along Highway 103.

- There are two projects (on the west side of Squaw Pass) for Squaw Mountain fire lookout cabin rental to improve summer parking access at trailhead on Forest Road 192.1 and to winter parking along Highway 103 and Forest Road 192.1.

2.7 Comparison of Alternatives

The following table briefly summarizes the effects analysis documented in Chapter 3 of this document.

Table 3. Comparison of Alternatives

Issues	No Action Alternative Current situation continues	Proposed Action Distribution Line Development
Visual Resources	Because no construction would occur within the project area, no direct or indirect impacts on visual resources are expected to occur.	Construction and operations of the Floyd Hill distribution line could affect the visual integretity of the landscape and viewshed for local residents and recreators using the Mount Evans Scenic Byway, Beaver Brook Watershed, and surrounding areas. Throughout the operational lifetime of the distribution line, the visual quality of the landscape would be altered at the transistional zones along the byway where distribution lines would enter the ground. However, the effects would not be notable in other, more highly visible areas such as Beaver Brook Meadow. As a result, minor impacts on visual resources would occur because the line would be intermittently visible from some vantage points that exist at clearings. Minor cumulative impacts on visual resources would occur when the impacts from the proposed project are combined with other planned projects including roadway improvements and electrical system upgrades.
Wetlands and Riparian Areas	Because no construction would occur within the project area, no direct or indirect impacts on wetlands and riparian areas are expected to occur.	Wetlands and riparian areas exist within the project area. Construction and operations of the Floyd Hill distribution line could indirectly affect stream health, riparian areas, and wetland function. Indirect impacts on wetlands and tributaries might occur due to sedimentation and changes to drainage patterns from both the overhead and underground sections of the distribution line. The placement of access points and/or anchor points near tributaries have the potential to have indirect impacts temporarily due to sedimentation and changes to drainage patterns; however, because of the small size of the tributaries and the ability to avoid the tributary, if impacts do occur they would be minimal. Removing trees around a wetland or riparian area might also increase the sediment load to that wetland or riparian area until revegetation occurs over the short term (until vegetation could be reestablished in disturbed areas); therefore, some erosion would occur. However, such erosion would be minimized through the use of BMPs.
Soils	Because no construction will occur within the project area under this alternative, there would be no project-related ground disturbance from mechanical or hand treatments and direct effects on soil resources would not occur.	Potential direct and indirect effects of construction and operations of the Floyd Hill distribution line include increased rates of soil erosion, soil compaction and exposure, and decreased soil productivity.

Issues	No Action Alternative Current situation continues	Proposed Action Distribution Line Development
Wildlife, Fish, and Plants (PTES and MIS)	Because no construction would occur within the project area, no direct or indirect impacts on wildlife, fish, and plants are expected to occur.	The project area and immediate vicinity contains habitat for certain PTES and MIS. Construction and operation of the proposed distribution line including ROW clearance and maintenance and access road and helicopter access areas could affect PTES and MIS and their habitat, including fragmentation within and/or adjacent to the project area. Potential impacts on mammal, avian, amphibian, fish, and insect species include increased stress, litter abandonment, nest abandonment, reduced productivity, decreased foraging success, reduced prey populations, collisions with construction related traffic or overhead transmission lines, reduced litter and/or clutch size, disturbance and displacement, and other impacts associated with construction activities. There would be an increase in potential direct and indirect effects to some species resulting from increased human activity in and around the project area. However, there would be negligible additional disturbance to potentially suitable habitat for the majority of PTES and MIS species in and around the project area as a result of project implementation. Other direct or indirect effects that could contribute to cumulative effects to PTES and MIS are considered unlikely and of low magnitude. Therefore effects to PTES and MIS as a result of the proposed project would not contribute measurably to cumulative effects to these species. There would be negligible additional disturbance to potentially suitable habitat for plant SOLC as a result of project implementation. Other direct or indirect effects that could contribute to cumulative effects to plant SOLC are considered unlikely and of low magnitude. Therefore effects to plant SOLC as a result of the proposed project would not contribute measurably to cumulative effects to this species.
Cultural Resources	Because no construction would occur within the project area, no direct or indirect impacts on cultural resources are expected to occur.	A portion of the Mount Evans Scenic Byway has been recommended as eligible for the NRHP in consultation with the SHPO. The construction of the new distribution line could affect the historic structures found along the roadway. In addition, the historic viewshed from the road could be impacted by the construction and location of the proposed distribution line.

Chapter 3: Affected Environment and Environmental Consequences

3.1 Introduction

Chapter 3 is organized according to the issues that were raised during the public and internal scoping process. These issues include: 1) visual resources, 2) wetlands and riparian areas, 3) proposed, PTES, MIS, and SOLC for wildlife, fish, and plants, and 4) cultural resources. This chapter describes the probable consequences (impacts, effects) of implementing the proposed action or alternatives on selected resources and issues. Effects and impacts as used in this section of the document are synonymous.

The affected environment is the existing environment and comprises those areas in and adjacent to the project area that is likely to experience physical and or biological consequences as a direct or indirect result of the proposed action. The affected environment is initially described to provide a baseline for evaluation and comparison of the proposed action and alternatives.

Direct effects are caused by implementing the action and occur at the same time and place. Indirect effects are caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable. Effects might also include those resulting from actions that might have both beneficial and detrimental effects, even if, on balance, the Forest Service believes that the effect would be beneficial.

Cumulative effects are the impact on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or private citizen/group undertake such other actions. These impacts can result from individually minor but collectively significant actions taking place over a period of time (CEQ 1508.7). Actions that have been identified as possibly falling into this category are described in section 2.6 of this document.

3.2 Visual Resources

The project area is located near Squaw Pass Road/Highway 103, which is part of the Mount Evans Scenic Byway. Construction and operation of the Floyd Hill distribution line could affect the visual quality of the landscape and viewshed for local residents and recreationalists using the Mount Evans Scenic Byway, Beaver Brook Watershed, and surrounding areas. Visual concerns were especially pronounced for the portion of the line that would parallel Squaw Pass Road/Highway 103 and transect Beaver Brook Meadow, both of which are important recreational resources to the county, local residents, and visitors to the area. The project was modified from its original design to account for these concerns and to mitigate potential visual impacts from the distribution line. The proposed action now incorporates burying the electric cable 48 inches deep, either by trenching or directional boring, along the Mount Evans Scenic Byway to avoid visual impacts from the distribution line in the area.

Regulatory Setting

Development within the project area is subject to conformity with the standards, goals, and guidelines identified in the Forest Plan for the adjacent Chicago Creek Geographic Unit, Management Area 4.3 – Dispersed Recreation. Dispersed recreation areas are managed to provide recreational opportunities in natural or nearly natural-appearing landscapes. The

guideline included in the direction of Management Area 4.3 call for "Restrict[ing] vegetation management operations during periods of high recreational use (weekends, holidays, high-use seasons, etc.) as needed, to maintain the desired recreational setting or to reduce interference with the recreational activities."

The proposed distribution line corridor is located within the Beaver Brook Watershed, which was acquired by the Forest Service in 2009. Under Forest Service administration, discrete units of the National Forest are assigned scenic integrity objectives (SIOs). SIOs guide the amount, degree, intensity, and distribution of management activities needed to achieve desired scenic conditions. SIO classifications range from very high scenic quality to very low scenic quality. These SIOs are the management objectives adopted through the approval of the Forest Land and Resource Management Plan. In 2006, the 1997 Revised Forest Plan (Forest Service 1997) was amended to include the Scenery Management System. The amendment describes the following standard for scenery management:

> Standard: Prohibit management activities that are inconsistent with the Scenic Integrity Objective (SIO) unless a decision is made to change the SIO. A decision to change the SIO would be documented in a project-level NEPA decision document.
>
> Guideline: Design and implement management activities to meet the adopted SIO for the area as shown on the SIO Map.

As described in the following section, high-quality scenic resources representative of the natural character of the ARP exist in abundance within the project area and can be experienced along the Mount Evans Scenic Byway. Although the project area was not part of the ARP land base at the time of the current 1997 Forest Plan, it is expected that this newly-acquired portion of Forest Service land will be designated as having a high scenic quality during subsequent plan revisions. The Mount Evans Scenic Byway is a designated scenic byway, and as such, its scenic integrity should be managed in such a manner that does not preclude any future opportunities for scenery-based recreation or visitation (personal communication Roeber 2012).

3.2.1 Affected Environment

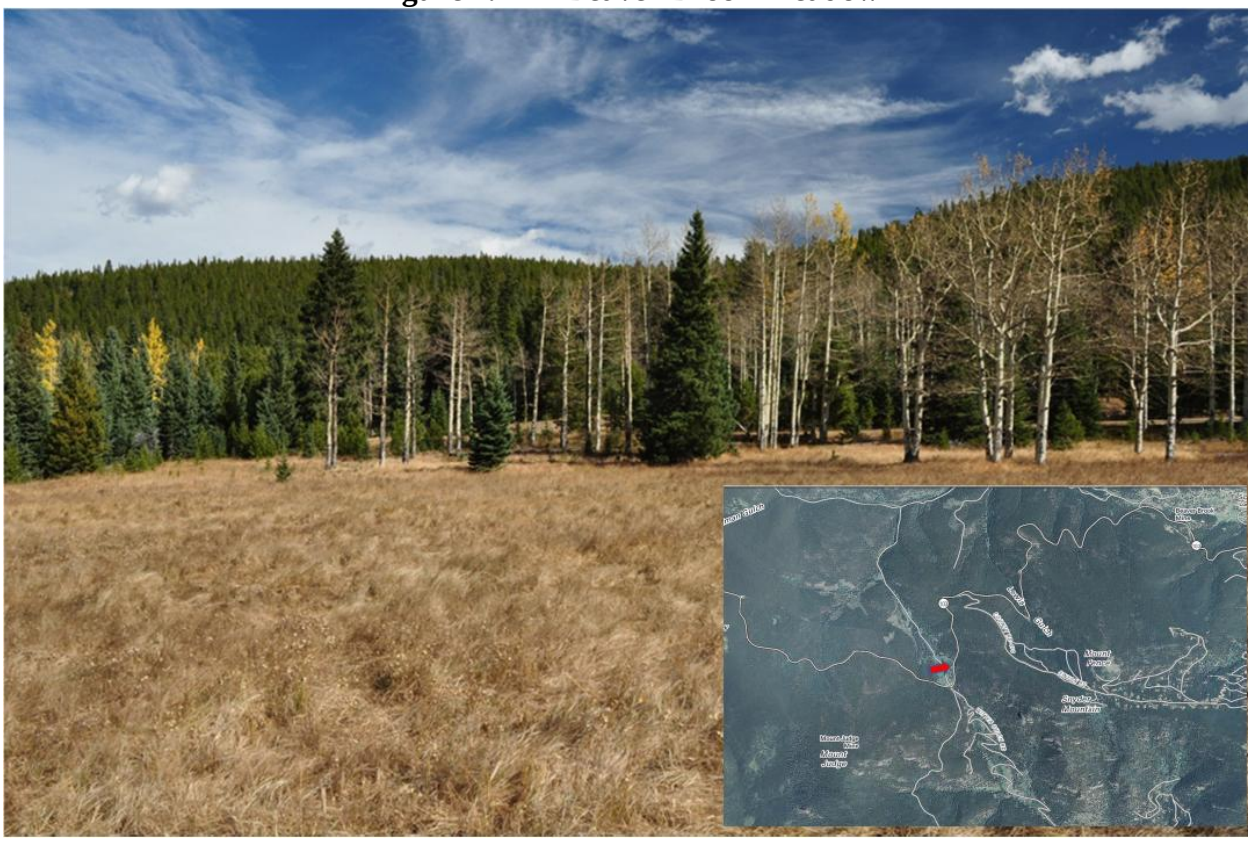
The project area is located within an abundant and healthy coniferous forest of young to mature spruce/fir forest with pockets of aspen and lodge pole pine reaching 20 to 40 feet tall. For a more detailed description of particular species that occur within the project area, refer to section 3.5, Wildlife, Fish and Plants, PTES, MIS, and SOLC. The terrain is undulating and mountainous, characteristic of the wider sub-alpine setting. Elevations range from approximately 9,000 to 10,000 feet above sea level. The primary colors visible in the landscape include greens and browns representative of the forest landscape. Throughout the project area, stands of trees occur near the Mount Evans Scenic Byway, which is a heavily utilized roadway offering the most accessible views of the project area. As illustrated in **Figure 3**, trees along the roadside largely limit distant views of the hillsides. As a result, very few long-range views exist along the roadway, although views of the project area are available from higher elevations accessible via nearby routes such as Clemens Road.

Figure 3. Typical Vegetation, Including Trees along the Highway 103 Corridor

The Mount Evans Scenic Byway is the most prominent human-made feature in the study area. In the immediate foreground of the Mount Evans Scenic Byway, landform features consist of moderate slopes, dense vegetation patterns, and intermittent water features such as streams. From a landscape perspective, the project area is part of the basic matrix that makes up the mid-elevation forest ecosystem. There are no significant outstanding features— such as dramatic mountain views, large waterfalls, or scenic rivers. Viewers travelling along the Mount Evans Scenic Byway can see the predominant vegetation community of spruce/fir forests and the historic fabric of the area. While providing a positive scenic quality, these features contribute to the ordinary or common backdrop of the area (Forest Service, 2012).

The Mount Evans Scenic Byway travels through an area of forest in close proximity to the distribution line ROW, generally following natural topographic contours as it ascends and descends throughout the project area. Beaver Brook Meadow is visible from the road at the intersection of the Mount Evans Scenic Byway and County Road 475 (Witter Gulch Road). The open meadow lies adjacent to the byway at Whitter Gulch and is representative of the natural character of the forests that exist along Mount Evans Scenic Byway and forested land within the greater Beaver Brook Watershed (**See Figure 4**). Recreational visitors to Beaver Brook Meadow have partially obstructed views of the hillsides to the east and west.

Figure 4. Beaver Brook Meadow



3.2.2 Effects of the No Action Alternative

Direct and Indirect Impacts

Because no construction would occur within the project area under the no action alternative, no direct or indirect effects on visual resources are anticipated. The natural forest aesthetic that occurs along the scenic byway would persist uninterrupted, and present landscape features would remain intact. Over the long term, the visual quality would be unaffected.

Cumulative Impacts

The no action alternative would result in no direct or indirect effects and therefore would not result in cumulative effects on visual resources in or near the project area. Past, present, or foreseeable future projects, such as the aforementioned forest management plans and policies, would lead to increasing protections to the forest landscape, thereby resulting in benefits to visual quality over time. Future actions such as roadway improvements are not anticipated to result in significant adverse impacts on visual quality within the project area.

3.2.3 Effects of the Proposed Action

Direct and Indirect Impacts

The proposed Floyd Hill Distribution Tie-in Line Project would affect a 20-foot-wide swath of forested easement to accommodate a roughly 15,660-foot-long mostly overhead distribution line supported by 35-foot-high wooden poles. Vegetation clearing on hillsides within the project area would be a necessary component of site preparation for distribution line placement along the distribution ROW. This clearing, and the subsequent placement of 35-foot-high wooden poles, would result in visual modifications to the landscape. Construction activities would take

approximately 12 weeks to complete within a 24 month period and would occur during the spring, summer, and fall months depending on weather conditions and wildlife restrictions. ROW clearing would occur first, followed by the setting of poles and stringing of overhead lines.

As noted in Section 2.3, specific aspects of the project that would be incorporated to minimize impacts on visual resources include:

- burying the distribution line along the Mount Evans Scenic Byway to avoid an overhead crossing that would be visible from the Beaver Brook Meadow, Mount Evans Scenic Byway, and Whitter Gulch; and

- locating the distribution facilities as far back from the Mount Evans Scenic Byway ROW as possible.

During construction, vegetation would initially be cleared within the 20-foot utility corridor ROW. The underground line would terminate at the first utility pole, which would be located approximately 60 feet from the edge of the roadway. The permanent clearing width would be maintained at 20 feet. Access to the ROW from the roadway would also be maintained. As a result, a 20-foot wide clearing would exist at the edge of the roadway at both locations where underground lines transition to overhead lines. While ground cover, shrubs, and young trees would be allowed to reestablish over time within the cleared ROW, any impedances to the safe operation of the utility line would be removed during regular maintenance activities. Clearances would be maintained to industry standards and would be determined by factors such as the National Electric Safety Code minimum clearances, voltage of the line, sag factor of the conductor, tree species, growing environment, and maintenance cycle. Specifically, Section 218.A.1, Vegetation Management, of the National Electric Safety Code states that:

> Vegetation that may damage ungrounded supply conductors should be pruned or removed. Vegetation management should be performed as experience has shown to be necessary. Factors to consider in determining the extent of vegetation management required include, but are not limited to the following; electric line voltage, species' growth rates and tree failure characteristics, right-of-way limitations, the vegetation's location in relation to the energized conductors, the potential combined movement of vegetation and conductors during routine winds, and sagging of conductors due to elevated temperatures or icing.

Tree removal would also be required within 10 feet of all energized lines. This is required to maintain the necessary clearance to energized conductors, improve access to electrical facilities, and reduce the need for future work. In addition, tree removal would be required under the following circumstances.

- Trees that are under or near the power lines that have the potential to come in contact with energized conductors.

- Dead, dying, diseased, deformed, and unstable trees inside or outside the ROW that have a high probability of falling and contacting energized conductors.

- Trees that will require excessive trimming, where less than 50 percent of the tree would remain; and, therefore, the tree health would be at risk (IREA, 2012).

The 20-foot-wide cleared area at the edge of the roadway at the two transition areas and continuing along the corridor ROW would be maintained in accordance with the requirements

stated above. Construction-related vegetation clearing and ongoing clearing for maintenance would be most visible to observers at two discrete roadside locations beyond Beaver Brook Meadow where the aerial distribution line would enter the ground (**see Figure 5**). These locations would represent transition areas where project-related effects on the landscape would be most visible.

At these transition areas, the project would be at least intermittently visible to viewers traveling along the roadway or stationed for longer periods of time at these locations. Vegetation would be cleared at these locations and soils would be disturbed to accommodate the boreholes through which the distribution line would be routed. Clearings would be maintained in order to accommodate service vehicles throughout the lifetime of the project.

These modifications of the landscape, while occurring on previously undisturbed portions of the forest, would only be readily apparent at discrete locations and not immediately obvious to casual observers. Motorists travelling at highway speeds would have only limited opportunities to view the transition areas along the roadway. However, other recreationalists using the roadway, such as cyclists, would have a greater potential to note the visual disturbances because they would be traveling at a slower speed than motorists.

Figure 5. Transition Zone Locations

Utility wires and the tops of support poles may be visible in the background to recreational visitors travelling at higher elevations north of Beaver Brook Meadow. However, short-range views of the project would not occur from within the meadow itself. No project features would be visible at Beaver Brook Meadow because the project would cross underground at this location. In addition, because the forest is dense throughout the project area, features of the utility line would not be visible to most observers. However, recreational visitors to Beaver Brook Meadow would have moderately obstructed longer range views of the hillsides to the east and west. Utility poles and conductors within the cleared ROW would potentially be visible to

these observers. While bright yellow markers would be affixed to guywires where support poles are located, these markers would be visible only to observers at ground level immediately adjacent to the poles.

During construction and installation of the distribution line, visual affects would be readily apparent for local residents and recreators using the Mount Evans Scenic Byway, Beaver Brook Watershed, and surrounding areas. These adverse effects on visual quality would be directly related to construction activities, and as such, would be short term and localized.

Throughout the operational life of the distribution line, the visual quality of the landscape would be altered at the transistional areas along the Mount Evans Scenic Byway where the distribution line would enter and exit the ground. However, the effects would not be notable in other, more highly visible areas such as Beaver Brook Meadow. Distant views of the transmission line from more than 2 miles away would be available from public viewpoints such as Squaw Pass, along turnouts along Clements Road near the Squaw Pass Picnic Ground, and on Squaw Mountain. However, highly visible features of the project, such as poles, ROW clearing, and lines would receed visually into the background and would not appear prominent from such long-distance vantage points.

Overall, the proposed action would result in minor, short-term, localized impacts on visual resources during the construction phase and minor, long-term impacts following project implementation.

Cumulative Impacts

Cumulative impacts would occur as a result of other past, present, and reasonably foreseeable future plans, projects and actions. These include: modifications to the Forest Service plans and policies; roadway improvements; and electric distribution system upgrades. It is expected that the newly-acquired portion of Forest Service land will be designated as having a high scenic quality during subsequent plan revisions. This area will likely be managed in a manner that does not preclude any future opportunities for scenery-based recreation or visitation. However, some projects, such as the planned road improvement project may have additional short-term impacts on visual resources. When combined with all past, present, and resonably foreseable future actions, long-term minor adverse cumulative effects on visual resourcesand scenic quality would occur.

3.3 Wetlands and Riparian Areas

3.3.1 Affected Environment

Executive Order 11990 (Protection of Wetlands) requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the beneficial values of wetlands. The project area is located within the Beaver Brook Watershed and drains via intermittent and ephemeral streams and drainages into Beaver Brook, which is about 1 mile north. Wetlands and Waters of the United States near the proposed route include 0.34 acre of palustrine forest wetlands (PFO), 0.32 acre of palustrine emergent wetlands (PEM), 0.83 acre of palustrine forested/palustrine emergent wetlands (PFO/PEM), 0.02 acre of scrub-shrub wetlands, and 1,079 linear feet of tributaries. **Figures 6** through **8** show the wetlands and tributaries identified near the project area.

Riparian areas are associated with lands adjacent to perennial and some intermittent streams.

Figure 6. Wetlands and Tributaries

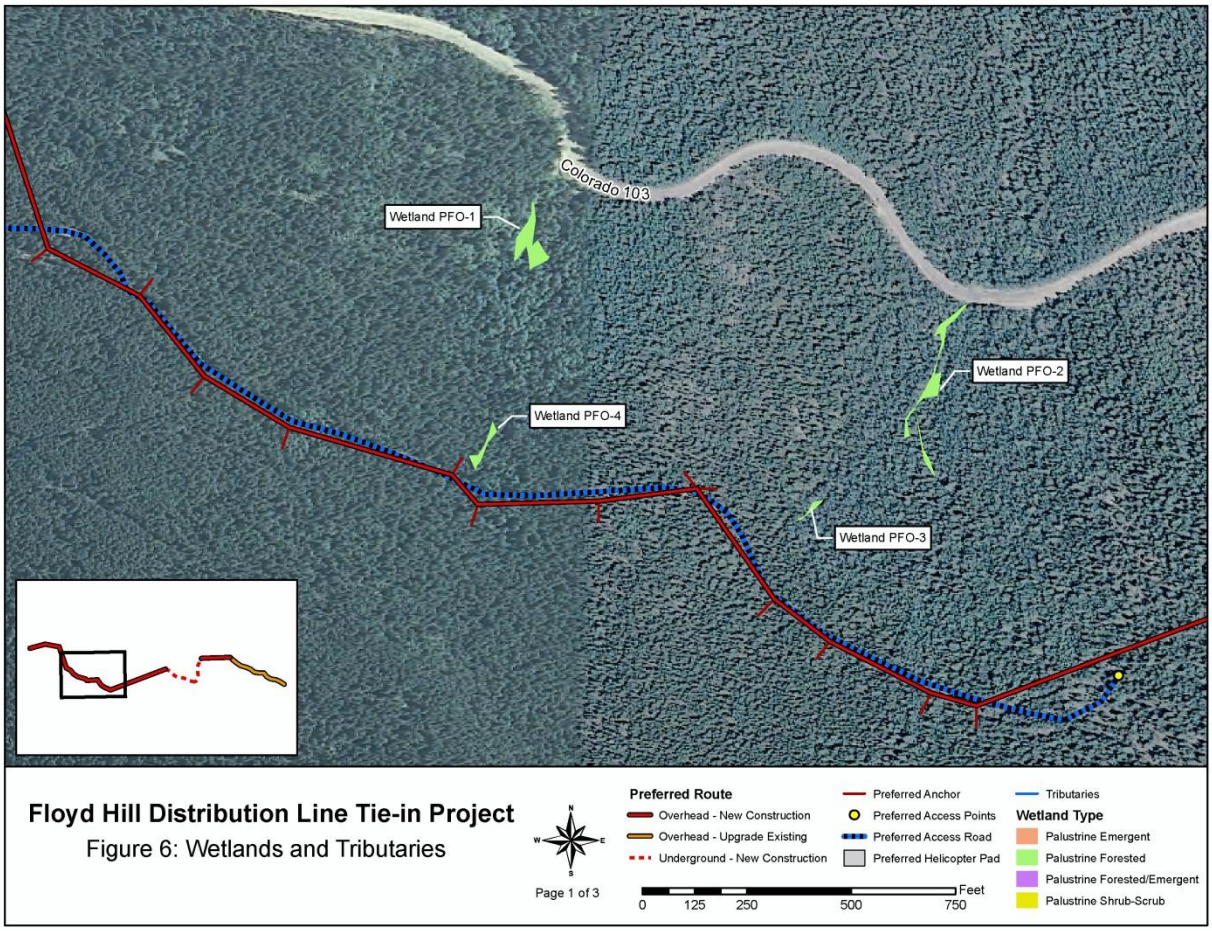


Figure 7. Wetlands and Tributaries

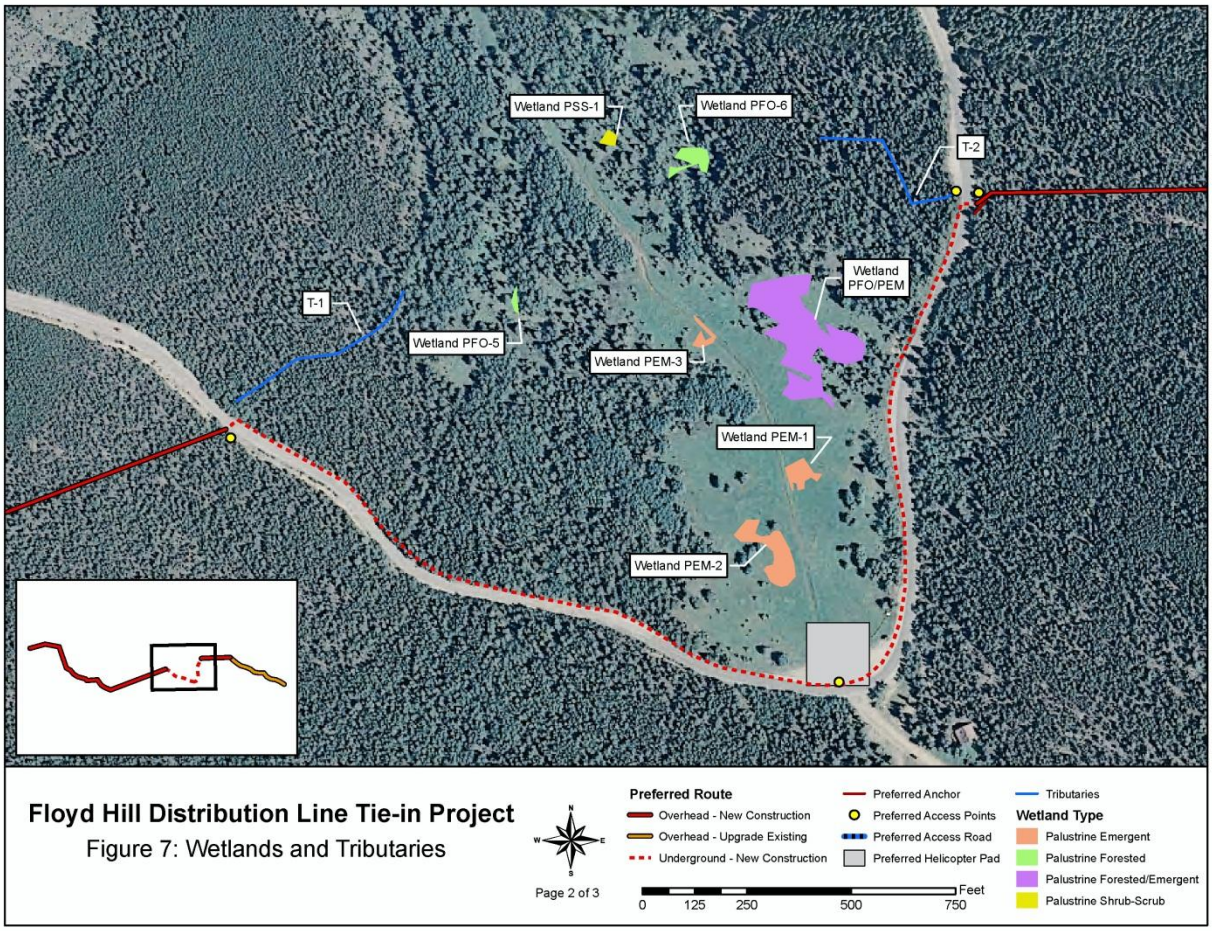
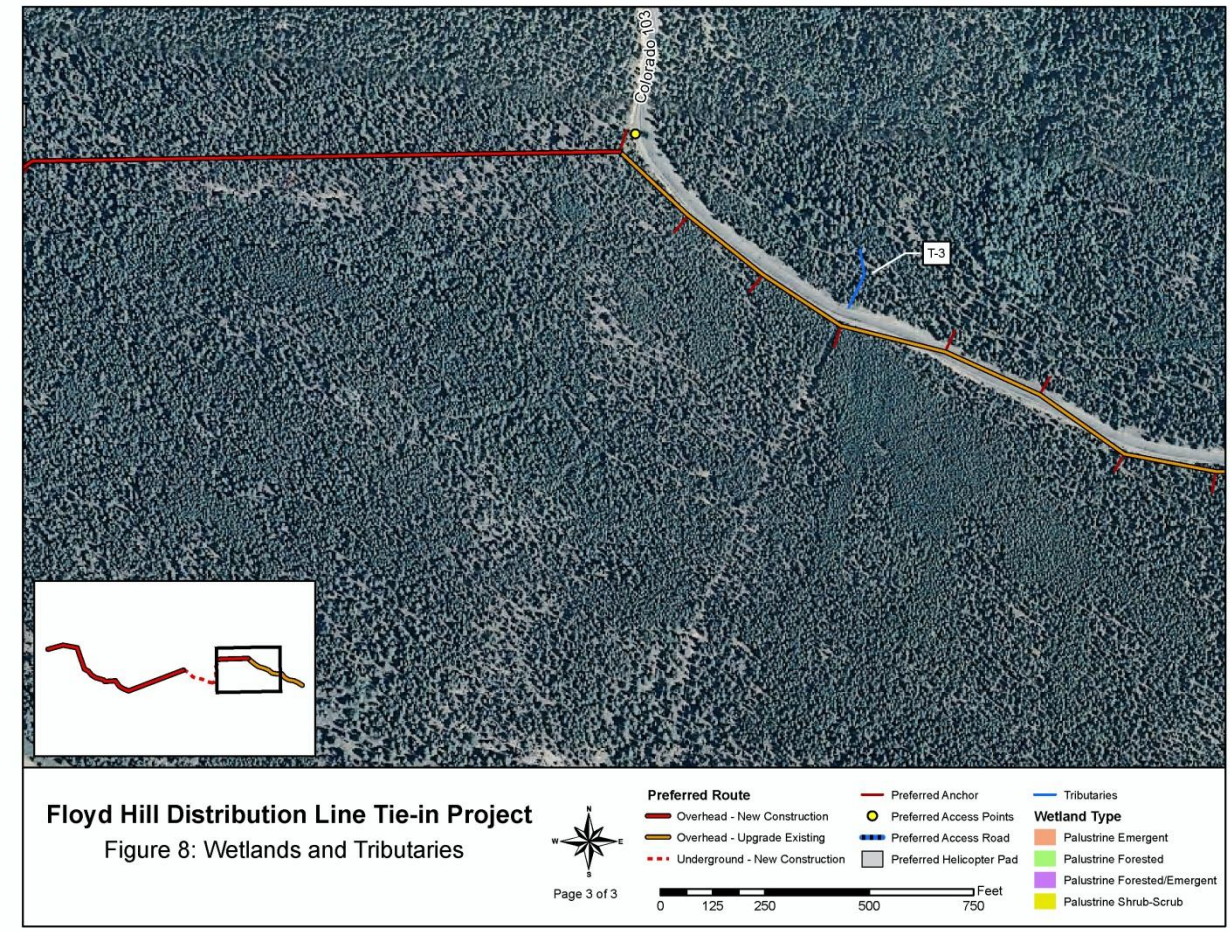


Figure 8. Wetlands and Tributaries



Palustrine Forested Wetlands (PFO)

Six PFOs were identified near or within the proposed project area. Four narrow PFOs (PFO-1, PFO-2, PFO-3, and PFO-4) exist on the steep northeast and northwest facing mountainside in the western portion of the project area. These wetlands are sustained by groundwater-fed springs and seeps, are generally saturated to the surface, and have small channels that disperse water down gradient. Surface flow is commonly interrupted and often returns below grade into the underlying rocky substrate, but a series of rivulets and small channels exist, and likely have surface flow during periods of spring snowmelt, connecting these flows with areas that have more permanent surface flows. Springs and seeps within these wetlands are forested in lodgepole pine (*Pinus contorta*) and some quaking aspen (*Populus tremuloides)*, and in some higher elevations are mixed with Englemann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*). Few scattered blue spruce (*Picea pungens*) occur adjacent to established channels. A few seep areas support histic epipedons and one wetland (PFO-1) supports a small area of Histosols (organic soil with at least 16 inches of organic-rich soil in the upper 32 inches).

Two small PFOs (PFO-5, PFO-6) occur near the grassy meadow located near the center of the project area. These wetlands are also sustained by groundwater seeps and are generally saturated to the surface. These two wetlands are forested in lodgepole pine, quaking aspen, and blue spruce with water birch (*Betula occidentalis*), thinleaf alder (*Alnus incana* ssp. *tenuifolia*), and herbaceous species in the understory.

Other vegetative species known to occur within these wetlands include thinleaf alder, water birch, and American red raspberry (*Rubus idaeus*). Bluejoint (*Calamagrostis canadensis*), softleaf sedge (*Carex disperma*), bunchberry dogwood (*Cornus canadensis*), field horsetail (*Equisetum arvense),* poverty rush (*Juncus tenuis*), purple-petal bog orchid (*Platanthera purpurascens*), Fendler's cowbane (*Oxypolis fendleri),* brook saxifrage (*Saxifraga odontoloma*), arrowleaf ragwort (*Senecio triangularis),* felwort (*Swertia perennis*), and whortleberry (*Vaccinium myrtillus*) are prominent understory species throughout these wetlands.

Palustrine Emergent Wetlands (PEM)

Three PEMs (PEM-1, PEM-2, and PEM-3) were identified near the proposed route in the grassy meadow located near the center of the project area.

The dominant vegetation in these wetlands is shortawn foxtail (*Alopecurus aequalis*), poverty rush, northern bedstraw (*Galium boreale*), and mountain goldenbanner (*Thermopsis montana*). Few shrubs were documented in some wetlands and included shrubby cinquefoil (*Dasiphora fruticosa*) and Bebb willow (*Salix bebbiana*), with a few scattered blue spruce throughout. The soils in these wetlands are black to very dark grayish brown with brown and dark brown redoximorphic features. The subsoil is commonly rocky and is derived from glacial drift. Groundwater was documented in a few of the soil pits during the delineation.

Palustrine Forested/Palustrine Emergent Wetlands (PFO/PEM)

There is one PFO/PEM (PFO/PEM-1) located near the project area, in the lower eastern edge of the wet, grassy meadow along a tributary to Beaver Brook. This wetland is partially forested in blue spruce, lodgepole pine, and some quaking aspen, with areas that support dense shrub cover of thinleaf alder, Bebb willow, and shrubby cinquefoil. Bluejoint, fowl bluegrass (*Poa palustris*), shortawn foxtail, poverty rush, and mountain goldenbanner are dominant in the understory. Groundwater seepage and snowmelt support this wetland. The soils are generally black to very dark grayish brown with dark brown redoximorphic features.

Palustrine Scrub-Shrub Wetland (PSS)

One PSS (PSS-1) exists on the lower edge of the wet, grassy meadow along an unnamed tributary to Beaver Brook and north of the proposed route and underground area. The wetland is shrub-dominated; common shrubs include thinleaf alder, water birch and Bebb willow. Common understory species include shortawn foxtail and bluejoint. This wetland is sustained by a seep and surface flows during periods of snowmelt and high rainfall. Soils saturated to the surface were noted during the wetland survey in this wetland.

Tributaries

Three high-gradient, slightly meandering tributaries (T-1, T-2, and T-3) exist within the project area. They display a defined bed and bank, which are typically saturated during periods of precipitation and water flow, and are bounded by a forested riparian buffer. They are all forested in lodgepole pine and some have a few scattered blue spruce and sparse cover of mixed forbs and graminoids. Drainage through the tributaries comes from runoff from upgradient forested land during heavy rainfalls and snowmelt. These tributaries do not have any adjacent or abutting wetlands.

3.3.2 Effects of the No Action Alternative

The no action alternative represents the existing condition and use of the project area. Under this alternative the proposed distribution tie-in line and helicopter pads would not be constructed and the Forest Service would not issue a SUP to IREA.

Direct and Indirect Impacts

Because no construction will occur within the project area, no direct or indirect impacts on wetlands are expected.

Cumulative Impacts

The no action alternative would result in no direct or indirect effects and therefore would not result in cumulative effects on wetlands. Implementation of the actions described in Section 2.2 would have no additional cumulative effects on wetlands and riparian areas above the existing conditions.

3.3.3 Effects of the Proposed Action

The proposed action would include construction of approximately 2.97 miles of distribution line within the project area. The proposed route avoids PFO-1, PFO-2, PFO-5, PFO-6, PEM-2, PEM-3, and PSS-1 and crosses within 200-feet of PFO-3, and PFO-4, PFO/PEM, PEM-1 and tributaries T-1, T-2, and T-3. The route does not directly crosses any wetlands or tributaries.

Direct and Indirect Impacts

Under this alternative, direct impacts on wetlands and tributaries would not occur. However, indirect impacts on wetlands PFO-3, PFO-4, PFO-PEM, and PEM-1, and tributaries T-1, T-2, and T-3 stemming from impacts due to sedimentation and changes to drainage patterns may occur from both the overhead and underground sections of the distribution line. The placement of access points and/or anchor points near T-1 and T-2 has the potential to have indirect impacts temporarily due to sedimentation and changes to drainage patterns; however, because of the small size of the tributaries and the ability to avoid them, if impacts do occur they would be minimal. Removing trees around a wetland or riparian area may also increase the sediment load to that wetland or riparian area until revegetation occurs. Over the short term (until vegetation could be reestablished in disturbed areas) some erosion would occur. However, such erosion would be minimized through the use of BMPs and through adherence to the Forest Service Region 2 WCP Handbook. Additionally, the project would comply with the Wetlands Exectutive Order 11990, the Clean Water Act, and Colorado State Water Quality Standards.

Construction areas would be accessed by existing roads and through the development of temporary roads. No direct impacts on riparian areas or wetlands along these routes would occur. Equipment access along the proposed power line access roads may result in minor temporary effects on riparian areas and wetlands because these roads are relatively primitive and may need to be improved (ie. vegetation trimming) to allow access for large equipment. Soil design criteria have been developed to minimize or eliminate the potential effects of temporary road improvements.

Indirect effects on streams would include a temporary increase in sediment loading from removal of trees and equipment access until vegetation is reestablished on disturbed soils. Little to no sedimentation along existing state, county, and Forest Service roads would occur because these roads generally have culverts at stream crossings. Equipment access along the more primitive

access roads may result in temporary increases in sedimentation, especially in areas where no culverts exist at crossings. These effects would occur only during use and recovery of the areas and would be minimized by following the established soil design criteria and BMPs, which have shown to be effective in reducing erosion and sedimentation, and limit or preclude the use of heavy equipment in and near streams.

Cumulative Impacts

The implementation of other projects planned or being implemented as described in Section 2.2 would experience effects similar to those listed above. While there are no direct effects on wetlands and riparian areas as a result of the proposed action, when added to the direct and indirect effects of past, present, and reasonably foreseeable future actions, the cumulative effects would be similar to, or slightly higher that what is described for the no action alternative.

Some cumulative effects would occur as a result of soil stabilization within the project area. Over the short term, some sedimentation would occur; however, such sedimentation would be minimized through the use of BMPs and adherence to the WCP Handbook. Sedimentation related to this project would contribute to the overall cumulative effects on wetlands and riparian areas throughout the region.

3.4 Soils

3.4.1 Affected Environment

Generally, soils in mountainous regions, including forested slopes and valley bottoms are shallow, rocky, and coarse textured. Most are characterized by thin surface layers with little to no organic layer and low water-holding capacity. However, valley bottom soils can have thicker organic layers. Most soils in the project area have high potential for erosion if protective ground cover is removed.

Riparian, wetland, and hydric soils can also be present in mountainous regions. A riparian soil is found in an area that is the interface between land and stream. Hydric soils are formed under conditions of saturation, flooding, or ponding. Wetland soils are soils that are saturated either permanently or seasonally.

The dominant soil series that occur in the project area on forested mountainsides include Ohman very stony sandy loam, Legault gravelly sandy loam, Mammoth very gravelly sandy loam, Leighcan very stony sandy loam, and Tahana gravelly sandy loam (NRCS 2003). These soils are shallow to very deep (10 to greater than 60 inches) that formed in residuum[1] and colluvium[2] derived from metamorphic rocks. They are generally well-drained, very rocky with loamy and sandy textures, and have rapid runoff and rapid permeability. There are few scattered rock outcrops throughout these soils. The dominant soil series that occur in the grassy meadow are Kittredge sandy loam and Guanella gravelly loam (USDA-NRCS 2003). These soils are very deep and formed in alluvium derived from metamorphic rocks. They have loamy and sandy

[1] Residuum is an accumulation of rock debris formed by weathering.

[2] Colluvium is loose, unconsolidated sediments that have been deposited at the base of gentle slopes or hillsides by rainwash, sheetwash, or slow, continuous downslope creep.

textures and contain some gravel. Runoff is slow to medium, with moderate to rapid permeability.

The soils in wetlands found adjacent to the project area are black to very dark grayish brown with brown and dark brown redoximorphic features. The subsoil is commonly rocky and is derived from glacial drift. A few seep areas in the project area support histic epipedons and one wetland (PFO-1) supports a small area of Histosols (organic soil with at least 16 inches of organic-rich soil in the upper 32 inches).

3.4.2 Effects of the No Action Alternative

The no action alternative represents the existing condition and use of the project area. Under this alternative the proposed distribution line and helicopter pads would not be constructed and the Forest Service would not issue a SUP to IREA. There would be no additional erosion, compaction, or displacement above existing conditions.

Direct and Indirect Impacts

Because no construction would occur within the project area under this alternative, there would be no project-related ground disturbance from mechanical or hand treatments and direct effects to soil resources would not occur.

The no action alternative would not change the current state or ongoing natural processes (directly or indirectly) of soil resources.

Cumulative Impacts

The no action alternative would result in no direct or indirect effects and therefore would not result in cumulative effects on soils. Implementation of the actions described in Section 2.2 would have no additional cumulative effects on soil resources above the existing conditions.

3.4.3 Effects of the Proposed Action

The proposed action would include construction of approximately 2.97 miles of distribution line with a 20 foot corridor that would be cleared of vegetation with 9.55 acres maintained as cleared (8.19 acres of new disturbance) within the project area.

Direct and Indirect Impacts

Potential direct and indirect effects of the proposed action include increased rates of soil erosion, soil compaction and exposure, and decreased soil productivity, as well as other effects detailed below.

Removal of vegetative cover (canopy and surface) would reduce precipitation interception, and expose the soil to the erosive forces of rainfall. Ground-disturbing activities associated with distribution line construction would increase soil surface exposure and erosion rates, which may also result in soil displacement and rutting. The potential to increase erosion rates would be more pronounced as slope steepness increases. Construction where all trees would be permanently removed would have the highest probability for soil erosion. These areas are mainly confined to the distribution line easement (20 foot corridor). However, following WCP Handbook, Design Criteria, and Operation Goals, Standards, and Guidelines from the *Forest Plan*, would assure non-detrimental soil erosion rates in these areas. The risk of detrimental soil erosion in the project area would be minimized by ensuring acceptable amounts of ground cover. Ground cover

is very effective in reducing post-construction erosion. In addition, in areas where detrimental erosion occurs, a soil scientist would be consulted per the proposed design criteria.

Mechanized vegetation clearing and distribution line construction methods would increase soil bulk density and may lead to compaction within the project area. Concentrated landing activities also would create soil compaction. Soils are considered detrimentally compacted if there is a 15 percent increase in bulk density. Direct effects of machine trampling include increased compaction and some soil displacement due to the weight of the equipment.

Ground-based skidding of trees can result in soil exposure in construction areas. To reduce this soil exposure, skid trail locations would be designated by the Forest Service before beginning any construction activities. Minimizing passes and turns with heavy equipment, proper planning, and use of designated skid trails can reduce ground disturbance within the project area.

Riparian and wetland soils are very susceptible to detrimental compaction and erosion. No ground disturbing construction activities would occur within 100 feet of riparian and wetland areas, or on hydric soils.

The use of existing road and temporary access roads for project implementation may cause temporary ground disturbance and sediment production. Use of roads that were previously only lightly used, well vegetated, and stable would generate additional watershed effects such as sediment production and soil runoff.

The effects of lopping/scattering, chipping, and masticating for slash disposal activities on soil resources could be beneficial or harmful, depending on the amount, size, and spatial distribution of material retained. Retention of slash may benefit soil resources by providing protective ground cover while excessive slash depth may cause a decrease in soil productivity.

Indirect effects include probable decreases in soil productivity within the project area. However, to minimize these effects, de-compaction measures would be implemented in areas where detrimental impacts are greater than 15 percent,

Cumulative Impacts

The implementation of other projects planned or being implemented as described in Section 2.2 would produce effects similar to those listed above.

Increased levels of erosion, soil compaction, and disturbance would occur throughout the project area and around the region. However, such effects would be minimized through the use of BMPs and adherence to the WCP Handbook. It is reasonably foreseeable that the effects on soil resources that would occur as a result of implementation of the proposed action would contribute to the overall cumulative effects on soil resources throughout the region.

3.5 Wildlife, Fish and Plants, PTES, MIS, and SOLC

3.5.1 Affected Environment

Wildlife

Within the project area itself, wildlife species found are those that use subalpine forest, riparian forest, and wetland habitats. The project area contains summer range for mule deer and elk. Small mammals including squirrels (*Ammospermophilus leucurus*; *Callospermophilus lateralis*),

porcupine (*Erethizon dorsatum*), rabbits (*Lepus* spp.), chipmunks (*Neotamias* spp.), voles (*Microtus* spp.), and marmot (*Marmota flaviventris*) are also common within the project area. Carnivores include coyote (*Canis latrans*), red fox (*Vulpes vulpes*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), weasels (*Mustela* spp.), and an occasional black bear (*Ursus americanus*). A large variety of bird species use the habitats within the area including songbirds, woodpeckers (*Melanerpes* spp.; *Picoides* spp.), grouse (*Bonasa umbellus*), waterfowl, and raptors

Plants

The project area sits within the Beaver Brook Watershed and contains several small high-gradient drainages that flow north across the project area. These drainages are fed by numerous mountainside springs and seeps that feed various types of wetland communities. There are three high-gradient ephemeral tributaries leading into Beaver Brook, which is about 1 mile north of the project area. Drainage through the tributaries comes from runoff from upgradient forested lands during heavy rainfalls and snowmelt. Seasonally high ground water in a grassy meadow supports several wetlands that occur in slight swales and depressions.

The project area is composed of north and west facing steep mountainsides under coniferous forest and a grassy meadow. Topography of the project area ranges from gently sloping on ridge tops and in the grassy meadow to steep along northeast and west facing mountainsides. Slopes range from about 45 percent on forested mountainsides to 5 percent in the grassy meadow. Elevation ranges from about 9,060 feet to about 9,920 feet.

The project area is dominated by upland forested communities but also contains various types of wetland communities, ephemeral tributaries, and a grassy meadow. A moderately dense canopy cover of lodgepole pine dominates the mountainsides; it is commonly mixed with Engelmann spruce and subalpine fir, and to a lesser extent, quaking aspen. In numerous areas, lodgepole pine is small and dense, has a thick layer of pine-needle litter accumulation, and a sparse understory. Common juniper (*Juniperus communis*), kinnikinnik (*Arctostaphylos uva-ursi*), Woods' rose (*Rosa woodsii*), whortleberry, and grouse whortleberry (*Vaccinium scoparium*) are common shrubs in this mixed forest, and heartleaf arnica (*Arnica cordifolia*), small-leaf pussytoes (*Antennaria parvifolia*), and sidebells wintergreen (*Orthilia secunda*) are common understory species. Beetle-killed coniferous trees are currently absent from the project area. However, the threat of a large-scale beetle kill and subsequent loss of habitats is a concern.

There are several narrow PFOs on the steep forested northeast and northwest facing mountainside. These wetlands are sustained by groundwater-fed springs and seeps and are generally saturated to the surface and have small channels that disperse water down gradient. Thinleaf alder, water birch, and American red raspberry are common shrubs in some of these wetlands. Bluejoint, softleaf sedge, bunchberry dogwood, field horsetail, poverty rush, purple-petal bog orchid, Fendler's cowbane, brook saxifrage, arrowleaf ragwort, felwort, and whortleberry are prominent understory species throughout these wetlands.

A seasonally wet, grassy meadow occurs north of the eastern proposed helicopter pad and is composed of shortawn foxtail, poverty rush, northern bedstraw, and mountain goldenbanner. Few shrubs were documented in this meadow and included shrubby cinquefoil and Bebb willow; there are a few scattered blue spruce throughout.

Proposed, Threatened, and Endangered Species (PTES)

A list of threatened and endangered species potentially occurring in the project area was generated using the USFWS Information Planning and Conservation System (IPaC; USFWS 2011). Within the project area ten threatened or endangered species have the potential to occur including: the whooping crane *(Grus americana),* least tern *(Sterna antillarum),* piping plover *(Charadrius melodus),* greenback cutthroat trout (*Oncorhynchus clarki stomias),* pallid sturgeon *(Scaphirhynchus albus),* western prairie fringed orchid (*Plantanthera praeclara),* Colorado butterfly plant *(Gaura neomexicana* ssp. *coloradensis),* Ute ladies tresses *(Spiranthes diluvialis),* Mexican spotted owl *(Strix occidentalis lucida),* and the Canada lynx *(Lynx canadensis).* Of these only the Mexican spotted owl and Canada lynx have suitable habitat in the project and are studied in detail in this analysis.

A Biological Assessment has been prepared for all PTES that have the potential to occur and/or have suitable habitat on or within the area potentially affected by the proposed project and is available as part of the project file. .

Region 2 Sensitive Species

The Region 2 Sensitive Species List for the ARP was initially evaluated for the occurrence of known populations or habitats capable of supporting these species within the area that could be affected by the proposed project. A list of these species is provided in **Table 4**. Species lacking suitable habitat in the area potentially affected were dropped from further consideration based on the low likelihood of effects on these species. Sensitive species with known occurrence or the presence of suitable habitat in the area potentially affected were selected for analysis in this assessment. Of the 85 sensitive species considered, 37 sensitive species are known or suspected to occur within the project area. The species noted as excluded in Table 4 are not discussed further.

Table 4. Region 2 Forest Service Sensitive Species Considered

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
Mammals				
American marten	*Martes americana*	No	No	Species analyzed
Black-tailed prairie dog	*Cynomys ludovicianus*	Yes/Prairie dog towns	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
☼ ▼ Fringed myotis	*Myotis thysanodes*	No	No	Species analyzed
Pygmy shrew	*Sorex hoyi montanus*	No	No	Species analyzed
River Otter	*Lontra canadensis*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Swift fox	*Vulpes velox*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Townsend's Big-eared bat	*Corynorhinus townsendii*	No	No	Species analyzed
Ψ White-tailed prairie dog	*Cynomys leucurus*	No	Yes	Suitable habitat not present within the

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
				project area; species not known to occur within the project area.
Ψ North American wolverine	*Gulo gulo luscus*	No	No	Species analyzed
Ψ Bighorn sheep	*Ovis canadensis*	Yes/Openings	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Ψ Hoary bat	*Lasiurus cinereus*	No	No	Species analyzed
Birds				
☼ American bittern	*Botaurus lentiginosus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
▲ Bald eagle	*Haliaeetus leucocephalus*	No	No	Species analyzed
Black swift	*Cypseloides niger*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Black tern	*Chlidonias niger*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Boreal owl	*Aegolius funereus*	No	No	Species analyzed
Brewer's sparrow	*Spizella breweri*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Burrowing owl	*Athene cunicularia*	Yes/Prairie dog towns	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Cassin's sparrow	*Aimophila cassini*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Chestnut-collared longspur	*Calcarius ornatus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Ferruginous hawk	*Buteo regalis*	Yes/Shortgrass and midgrass prairie	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Flammulated owl	*Otus flammeolus*	No	No	Species analyzed
Grasshopper	*Ammodramus*	No	Yes	Suitable habitat not

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
sparrow	*savannarum*			present within the project area; species not known to occur within the project area.
▼ Greater sage grouse	*Centrocercus urophasianus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
☼ Lewis' woodpecker	*Melanerpes lewis*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Loggerhead shrike	*Lanius ludovicianus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Long-billed curlew	*Numenius americanus*	No	No	Species analyzed
McCown's longspur	*Calcarius mccownii*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Mountain plover	*Charadrius montanus*	Yes/Shortgrass prairie	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Northern goshawk	*Accipiter gentiles*	No	No	Species analyzed
Northern harrier	*Circus cyaneus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Olive-sided flycatcher	*Contopus cooperi*	No	No	Species analyzed
Peregrine falcon	*Falco peregrinus*	Yes/no defined community	No	Species analyzed
Purple martin	*Progne subis*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
White-tailed ptarmigan	*Lagopus leucurus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
▼ Yellow-billed cuckoo	*Coccyzus americanus occidentalis*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Amphibians				

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
Boreal toad	*Bufo boreas boreas*	Yes/Montane riparian and wetlands	No	Species analyzed
Northern leopard frog	*Rana pipiens*	No	No	Species analyzed
Wood frog	*Rana sylvatica*	No	No	Species analyzed
Mollusks				
Rocky Mountain capshell snail	*Acroloxus coloradensis*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Insects				
Hudsonian emerald	*Somatochlora hudsonica*	No	No	Species analyzed
Ψ Regal fritillary butterfly	*Speyenia idalia*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Fish				
Bluehead sucker	*Catostomus discobolus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Mountain sucker	*Catostomus platyrhynchus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Rio Grande sucker	*Catostomus plebius*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Lake chub	*Couesius plumbeus*	No	No	Species analyzed
Rio Grande chub	*Gila Pandora*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Roundtail chub	*Gila robusta*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Plains minnow	*Hybognathus placitus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Sturgeon chub	*Macrhybopsis gelida*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
Pearl dace	*Margariscus margarita*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Hornyhead chub	*Mocomis biguttatus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Colorado River cutthroat trout	*Oncorhynchus clarkia virginalis*	Yes/Montane aquatic environments	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Rio Grande cutthroat trout	*Oncorhynchus clarkia bouvieri*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Yellowstone cutthroat trout	*Oncorhynchus clarkia bouvieri*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Northern redbelly dace	*Phoxinus eos*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Southern redbelly dace	*Phoxinus erythrogaster*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Finescale dace	*Phoxinus neogaeus*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Flathead chub	*Platygobio gracilis*	No	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Plants				
Trianglelobe moonwort	*Botrychium ascendens*	Riparian generalist or transitional	No	Species analyzed
☼ Iowa moonwort	*Botrychium campestre*	Open, sparsely vegetated upland	No	Species analyzed
Forkleaved moonwort	*Botrychium "furcatum"**	Open, sparsely vegetated upland	No	Species analyzed
ΨNarrowleaf grapefern	*Botrychium lineare*	Open, sparsely vegetated upland	No	Species analyzed
Peculiar moonwort	*Botrychium paradoxum*	Riparian to sparsely vegetated	No	Species Analyzed

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
		upland		
Lesser panicled sedge	*Carex diandra*	Riparian generalist or transitional	No	Species Analyzed
Livid sedge	*Carex livida*	Fen obligate	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Lesser yellow lady's slipper	*Cypripedium parviflorum*	Riparian to aspen glades	No	Species analyzed
Whitebristle cottongrass	*Eriophorum altaicum* var. *neogaeum*	Bogs, fens, wetlands and riparian areas	No	Species analyzed
Slender cottongrass	*Eriophorum gracile*	Fen obligate	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Plains rough fescue	*Festuca hallii*	Open, upper subalpine meadows	No	Species analyzed
Ψ Scarlet gilia	*Ipomopsis aggregata* ssp. *weberi*	Openings in coniferous forests	No	Species analyzed
Groundcedar	*Lycopodium complanatum*	Open coniferous or mixed hardwood forests	No	Species analyzed
Colorado tansyaster	*Machaeranthera coloradoensis*	Open, sparsely vegetated upland	No	Species analyzed
Ψ White adder's-mouth orchid	*Malaxis brachypoda*	Riparian areas	No	Species analyzed
Rocky Mountain monkeyflower	*Mimulus gemmiparus*	Riparian areas, wet cliffs	No	Species analyzed
Kotzebue's grass of Parnassus	*Parnassia kotzebuei*	Riparian areas	No	Species analyzed
Rock cinquefoil	*Potentilla rupincola*	Open, sparsely vegetated upland	No	Species analyzed
Dwarf raspberry	*Rubus arcticus* ssp. *acaulis*	Riparian generalist or transitional	No	Species analyzed
Sageleaf willow	*Salix candida*	Fens or cars	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Autumn willow	*Salix serissima*	Fens or cars	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Club spikemoss	*Selaginella selaginoides*	Riparian generalist or transitional	No	Species analyzed
Sphagnum	*Sphagnum angustifolium*	Fen obligate	Yes	Suitable habitat not present within the project area; species not known to occur within

Common Name	Species	MIS/Indicator Community	Species Excluded	Reason for Exclusion
				the project area.
Baltic sphagnum	*Sphagnum balticum*	Fen obligate	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Lesser bladderwort	*Utricularia minor*	Fens or sluggish water	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Ψ Selkirk's violet	*Viola selkirkii*	Riparian generalist or transitional	No	Species analyzed

Note: Ψ These species are suspected to occur but unconfirmed on the Arapaho/Roosevelt National Forest.
▼These species not known or suspected to occur on National Forest System lands, however it may occur in the planning area vicinity.
☼ These species are suspected to occur but unconfirmed on the Pawnee National Grassland.
* This unpublished taxonomic entity is now considered a form of Botrychium lineare.

A Biological Evaluation has been prepared that includes the sensitive species that are known or suspected to occur within the area that could be affected by the proposed project and is available as part of the project file.

Management Indicator Species (MIS)

Table 5 includes only species found within or adjacent to the project area or potentially influenced by the project. Table 5 includes only species found within or adjacent to the project area or potentially influenced by the project. Of the 16 MIS considered, 10 MIS are known or suspected to occur within the project area. The species noted as excluded in the table below are not discussed further in this document.

A Biological Evaluation has been prepared that includes the MIS that are known or suspected to occur within the area that could be affected by the proposed project and is available as part of the project file.

Table 5. Additional Management Indicator Species Considered[1]

Common Name	Species	Management Indicator Community	Species Excluded	Reason for Exclusion
Mammals				
Bighorn sheep	*Ovis canadensis*	Openings	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Elk	*Cervus elaphus*	Young to mature forest and openings	No	Species analyzed
Mule deer	*Odocoileus hemionus*	Young to mature forest/openings and prairie woodlands	No	Species analyzed
Birds				
Golden-crowned kinglet	*Regulus satrapa*	Interior forests	No	Species analyzed
Hairy woodpecker	*Picoides villosus*	Young to mature forests	No	Species analyzed
Lark bunting	*Calamospiza melanocorys*	Midgrass prairie	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Mountain bluebird	*Sialia currucoides*	Openings	No	Species analyzed
Pygmy nuthatch	*Sitta pygmaea*	Old growth	No	Species analyzed
Warbling vireo	*Vireo gilvus*	Aspen forest	No	Species analyzed
Wilson's warbler	*Wilsonia pusilla*	Montane riparian and wetlands	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Fish				
Greenback cutthroat trout	*Oncorhynchus clarkii stomias*	Montane aquatic	No	Species analyzed
Colorado River cutthroat trout	*Oncorhynchus clarkii pleuriticus*	Montane aquatic	Yes	Species not known to occur within the project area, historically a west slope species.
Brook trout	*Salvelinus fontinalis*	Montane aquatic	No	Species analyzed
Brown trout	*Salmo trutta*	Montane aquatic	No	Species analyzed
Plains topminnow	*Fundulus sciadicus*	Prairie aquatic	Yes	Species not known to occur within the project area; suitable habitat not present within the project area, plains species.
Plains killifish	*Fundulus zebrinus*	Prairie aquatic	Yes	Species not known to occur within the project area; suitable habitat not present within the project area, plains species.

[1]Several species are addressed under multiple categories; MIS, Sensitive and/or Federally Listed

Plant Species of Local Concern (SOLC)

Table 6 includes only plant SOLC found within or adjacent to the project area or potentially influenced by the project. Of the 26 SOLC considered, 24 SOLC are known or suspected to

occur within the project area. The species noted as excluded in the table below are not discussed further in this document.

A Biological Evaluation has been prepared that includes the SOLC species that are known or suspected to occur within the area that could be affected by the proposed project and is available as part of the project file.

Table 6. Plant Species of Local Concern Considered for Analysis

Common Name	Species	Management Indicator Community	Species Excluded	Reason for Exclusion
Plants				
Rocky Mountain blue columbine	*Aquilegia saximontana*	Rocky slopes in alpine and subalpine areas 10,800 to 13,100 feet	No	Species analyzed
Forked spleenwort	*Asplenium septentrionale*	Cracks and crevices of rock outcrops and large boulders	No	Species analyzed
Reflected grapefern	*Botrychium echo*	Grassy slopes, roadsides, meadows, rocky hillsides, and edges of lakes from 9,500 to 11,000 feet	No	Species analyzed
Western moonwort	*Botrychium hesperium*	Montane forest with relatively open canopy, roadsides, gravel bars, edges of lakes	No	Species analyzed
Lanceleaf grapefern	*Botrychium lanceolatum*	Shaded woods with acid soils	No	Species analyzed
Leathery grapefern	*Botrychium multifidum*	Wetlands and open upland areas 3,000 to 10,000 feet	No	Species analyzed
Northern moonwort	*Botrychium pinnatum*	Montane, wet/moist grassy slopes, mossy woods, streambanks, and roadsides	No	Species analyzed
"Redbank" moonwort	*Botrychium* "redbank"	Subalpine open upland areas in Colorado	No	Species analyzed
Little grapefern	*Botrychium simplex*	Wetlands and transitional upland areas 5,000 to 10,500 feet	No	Species analyzed
Spathulate botrychium	*Botrychium spathulatum*	Open/partially open montane and lakeshore areas; 0 to 6,500 feet to subalpine in Colorado	No	Species analyzed
Fairy slipper	*Calypso bulbosa*	Open, well-drained coniferous slopes	No	Species analyzed
Bunchberry dogwood	*Cornus canadensis*	Moist coniferous woods from 5,700 to 11,000 feet	No	Species analyzed
Yellow coralroot	*Corallorhiza trifida*	Shaded forest habitats, thickets, fens, and streambanks	No	Species analyzed
Clustered lady's slipper	*Cypripedium fasciculatum*	Shaded woods	No	Species analyzed
Mountain bladderfern	*Cystopteris montana*	Calcareous wet woods, riparian areas, subalpine *Salix* communities	No	Species analyzed
Lesser rattlesnake plantain	*Goodyera repens*	Moist to dry, cold, coniferous forests	No	Species analyzed
Northern twayblade	*Listera borealis*	Moist meadows, woodlands and seeps	No	Species analyzed

Common Name	Species	Management Indicator Community	Species Excluded	Reason for Exclusion
Broadlipped twayblade	*Listera convallarioides*	Wetland and upland areas 0 and 8,000 feet, seeps	No	Species analyzed
Heartleaf twayblade	*Listera cordata*	Dry/wet woods, thickets, and seeps	No	Species analyzed
Marsh felwort	*Lomatogonium rotatum*	Fens and fen-like areas	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Stiff clubmoss	*Lycopodium annotinum*	Cool, shaded, moist woods, thickets, bogs, and meadows, 0 to 11,000 feet	No	Species analyzed
Arrowleaf sweet coltsfoot	*Petasites frigidus* var. *sagittatus*	Fen and fen-like meadows	Yes	Suitable habitat not present within the project area; species not known to occur within the project area.
Whiteveined wintergreen	*Pyrola picta*	Slopes of ponderosa pine or mixed conifer forests 1,000 to 10,000 feet	No	Species analyzed
Underwood's spikemoss	*Selaginella underwoodii*	Moist or shaded cliffs, rocky slopes, rock crevices, granitic outcrops, hanging over granite cliffs, and sandstone or limestone ledges in protected canyonsides.	No	Species analyzed
Alpine meadow-rue	*Thalictrum alpinum*	Subalpine fens, alpine meadows, and stony slopes 0 to 7,000 feet	No	Species analyzed
Oregon cliff fern	*Woodsia oregana*	Crevices, rock bases, and talus slopes on calcareous substrates	No	Species analyzed

3.5.2 Effects of the No Action Alternative

The no action alternative represents the existing condition and use of the project area. Under this alternative the proposed distribution line and helicopter pads would not be constructed and the Forest Service would not issue an SUP to IREA.

Direct and Indirect Impacts

Because no construction or improvements would occur, no effects on wildlife, fish, plants, PTES, MIS, and SOLC are expected as a result of the no action alternative. Under this alternative, existing conditions would persist. The transmission line (including new overhead line, new underground line, and rebuilt overhead lines) would not be constructed. No clearing of trees and vegetation associated with the ROW, access roads, or other project components would occur. Human activity levels would remain unchanged. Ongoing forest protection efforts would continue as directed by the *Forest Plan*. The no action alternative would maintain PTES, MIS, and SOLC habitat and protect biodiversity.

Cumulative Impacts

Loss and alteration of occupied suitable habitats and unoccupied potentially suitable habitats are the primary effects from past, present, and reasonably foreseeable actions on the forest. Reasonably foreseeable federal ongoing activities or management actions that may remove or alter wildlife, fish, plants, PTES, MIS, and SOLC species habitats include, but are not limited to recreation and road maintenance and improvement. The implementation of other projects planned or being implemented as described in Section 2.2 would produce effects similar to those listed above.

3.5.3 Effects of the Proposed Action

The proposed action includes the construction of approximately 2.97 miles of both overhead and underground distribution line within the project area. In addition, current access roads would be improved and two helicopter pads would be developed. Construction activities would occur over 12 weeks in a 24-month timeline, with construction only occurring in spring, summer, and fall months when the weather allows.

Direct and Indirect Impacts

Wildlife

Impacts associated with the construction and operation of the distribution line and helicopter pads and improvements to the access roads would be short term and minor. Due to the small size of area potentially affected by the distribution line and the large amount of nearby habitat; wildlife habitat and population numbers would not be significantly altered. Human activity associated with maintenance of the distribution lines would not have direct impacts on wildlife, based on the limited amount of maintenance activity and the current human presence in the area.

Fish

Four fish species—the lake chub, greenback cutthroat trout, brook trout, and brown trout—were considered because ephemeral streams within the project area could carry water downstream to potentially suitable habitats, although no known or suspected suitable habitats for these species are known to exist downstream of the project area. No suitable habitat for the lake chub, greenback cutthroat trout, brook trout, or brown trout would be disturbed as part of the proposed action.

Because there is no suitable habitat for the lake chub, greenback cutthroat trout, brook trout, or brown trout in or around the project area, no direct effects would occur.

Several very small ephemeral drainages occur downstream of the project area. Appropriate erosion control measures would be employed to prevent the deposition of sediments into watersheds. Increased sediment in the watershed could increase the turbidity of waters downstream and make them less suitable for the lake chub, greenback cutthroat trout, brook trout, and brown trout. However, because these species are not known to occur downstream of the project area, any sediment deposition that may occur despite erosion control measures would be unlikely to affect lake chub, greenback cutthroat trout, brook trout, and brown trout.

Plants

The proposed action would have some direct impacts on plants during construction and associated construction activities of the distribution line, helicopter pads, and access roads.

During construction vegetative species in the direct footprint of distribution line poles, the helicopter pads, and access roads would be removed. However, based on the relatively small scale of construction, few vegetative species would be impacted and because there is extensive vegetation nearby, impacts would be minor.

Proposed, Threatened, and Endangered Species (PTES)

The Southern Rockies Lynx Amendment was adopted in October 2008 (Forest Service 2008) and updates current management direction for lynx for eight national forests including the ARP. As described in the Biological Assessment, all applicable standards under the amendment would be met under the proposed action.

While this project has a low potential to impact individual lynx because very small portions of individual lynx home ranges could be impacted, it would not impact the lynx population as a whole. Furthermore, because the acreage of suitable lynx habitat that would be impacted (7.65 acres) would be small, the loss of habitat within even a single lynx home-range would not present an adverse effect. In addition to the loss of 7.65 acres of suitable foraging habitat, effects of the proposed action on lynx could include increased competition from sympatric carnivores (e.g. coyote, bobcat, etc.), reduced prey densities (Doucet and Brown 1997), and increased disturbance from unauthorized public access to the cleared ROW.

Therefore, the proposed alternative may affect, but would not likely to adversely affect lynx because effects would be insignificant and/or extremely unlikely.

The proposed action would have no effect on the Mexican spotted owl because there is no suitable breeding habitat within or around the project area and the species is not known or suspected to occur in or around the project area.

Region 2 Sensitive Species

Effects from the proposed action on sensitive wildlife species may impact individuals, but would not result in a loss of viability of any of the sensitive species present within the project area.

Biological Determination and Rationale

As fully described in the Biological Evaluation, it has been determined that the proposed action "***may adversely impact individuals, but is not likely to result in a loss of viability in the Planning area, nor cause a trend to federal listing****"* for individual Townsend's big-eared bat, hoary bat, North American wolverine, boreal owl, flammulated owl, northern goshawk, olive-sided flycatcher, and the boreal toad.

No Forest Service sensitive plant species are known to occur within the project area. Suitable habitat exists for numerous upland forest and riparian sensitive species, and the probability of occurrence of undetected plants is slight to moderate. Because suitable habitat for plant species analyzed are similar the effects analysis was combined for all species.

Implementation of the proposed action "***may adversely impact individuals, but is not likely to result in a loss of viability in the Planning area, nor cause a trend to federal listing****"* for sensitive plant species. This determination is based on:

- The relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area.

- The low likelihood that Region 2 sensitive plant species occur in or around the project area.

Determinations were based upon professional knowledge, surveys, and the most updated information available. **Table 7** lists the species considered and describes their habitat and the rational for the effects determination.

Table 7. Region 2 Sensitive Species

Common Name	Species	Primary Habitat	Determination of Effects and Rational for Determination
Mammals			
American marten	*Martes americana*	Mature dense forests of mixed Douglas fir, lodgepole pine and spruce	No Impact Lack of suitable habitats in and around the project area Very low likelihood that the species occurs in or around the project area
Fringed myotis	*Myotis thysanodes*	Desert environments and low to mid elevation conifers, crevices, caves, mines, overhangs, and snags, bridges and other manmade structures	No Impact Relatively small acreage of marginal habitat would be affected No hibernacula would be directly or indirectly impacted Project's location at or above the upper elevation limit for this species Low likelihood of direct or indirect effects to individuals of the species
Pygmy shrew	*Sorex hoyi montanus*	Wet conifer forests, bogs, marshes, dense stream networks-wetlands, elevations above 8,000 feet	No Impact Relatively small acreage and poor quality habitat that would be impacted Very low likelihood that the species occurs in or around the project area
Townsend's Big-eared bat	*Corynorhinus townsendii*	Old abandoned mines, caves, forested habitats and along forest edges, especially in riparian areas and forests dominated by conifers	May adversely impact individuals. Relatively small acreage of foraging habitat that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area No hibernacula or potential roosting locations would be directly or indirectly impacted Low likelihood of collisions with project related infrastructure
North American wolverine	*Gulo gulo luscus*	Secluded spruce-fir/lodgepole pine and heavy timber areas, high elevation	May adversely impact individuals. The 7.73 acres lower quality habitats that would be disturbed as a result of the project implementation Extremely low likelihood that the species occurs in or around the project area as there is only one known to currently reside in Colorado
Hoary bat	*Lasiurus cinereus*	Any habitat with trees, forest edges around small openings, meadows, and disturbed areas	May adversely impact individuals. Relatively small acreage of foraging and roosting habitat that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood of collisions with project related infrastructure Implementation of mitigation measures would further reduce the potential for direct impacts to the species
Birds			
Bald eagle	*Haliaeetus leucocephalus*	Large trees near the edge of large bodies of water such as	No Impact Lack of suitable nesting, foraging or wintering habitat in and around the project area

Common Name	Species	Primary Habitat	Determination of Effects and Rational for Determination
		lakes, rivers, and/or oceans	Lack of known occurrences of this species in the vicinity of the project area during any season Extremely low likelihood of interation between project infrastructure and the species.
Boreal owl	*Aegolius funereus*	Aspen and mature/old fir and spruce, mixed conifer and lodgepole pine	May adversely impact individuals. A relatively small acreage would be impacted compared to the amount of available suitable habitat in the immediate vicinity of the project area Implementation of mitigation measures will render direst effects to the species and the species nests extremely unlikely during the breeding season
Flammulated owl	*Otus flammeolus*	Coniferous mountain forest mixed with Douglas-fir, aspen or oak	May adversely impact individuals. Relatively small acreage of poor quality habitat that would be impacted Very low likelihood that the species occur in or around the project area
Long-billed curlew	*Numenius americanus*	Short grass prairie and fallow agricultural areas, valleys and parks	No Impact Lack of suitable nesting or foraging habitat in and around the project area Lack of known occurrences of this species in the vicinity of the project area or other similar higher elevations habitats Majority of the species migrants associated with eastern plains Extremely low likelihood of interaction between project infrastructure and the species
Northern goshawk	*Accipiter gentiles*	Spruce-fir, aspen, and lodgepole pine, old growth mature and even-aged stands	May adversely impact individuals. Relatively small acreage of marginally suitable foraging habitat would be impacted Lack of disturbance to potentially suitable nesting habitat Very low likelihood that the species occur in or around the project area
Olive-sided flycatcher	*Contopus cooperi*	Mixed-coniferous forests, and forest edges, especially disturbed forest edges	May adversely impact individuals. Small amount of suitable habitat in and around the project area Low likelihood that project implementation would preclude long term occupancy of the areas by the species
Peregrine falcon	*Falco peregrinus*	No defined community	No Impact Lack of suitable nesting or foraging habitat in and around the project area Lack of known occurrences of this species in the vicinity of the project area or other similar higher elevation habitats Majority of the species migrants concentrated to the east of the project area along the mountain front Extremely low likelihood of interaction between project infrastructure and the species
Amphibians			
Boreal toad	*Bufo boreas boreas*	Marshes, wet meadows, streams, shallow water edges of beaver ponds and lakes interspersed with subalpine forests	May adversely impact individuals. Lack of proposed disturbance to wetland habitats Relatively low likelihood that the species occurs in or around the project area Implementation of mitigation measures would reduce the likelihood and intensity of potential direct and indirect effects to the species

Common Name	Species	Primary Habitat	Determination of Effects and Rational for Determination
Northern leopard frog	*Rana pipiens*	Wet meadows, banks and seasonally flooded areas near streams and lakes, marshes, ponds, beaver ponds, lakes and rivers, and irrigation ditches	No Impact Lack of a suitable habitat mosaic for this species Extremely low likelihood that the species occurs in or around the project area
Wood frog	*Rana sylvatica*	Inundated wetlands and small ponds with emergent vegetation, adjoining grassy meadows, willow bogs, moist and humid coniferous forests, and aspen groves	No Impact Lack of suitable habitat for this species Extremely low likelihood that the species occur in or around the project area Project area location outside the species suspected range
Insects			
Hudsonian emerald	*Somatochlora hudsonica*	Deep sedge-bordered lakes and ponds, streams, bogs, and wetlands associated with forest edge habitats	No Impact Limited amount of potentially suitable habitat for this species Extremely low likelihood that the species occurs in or around the project area Project area location outside the species known range
Fish			
Lake chub	*Couesius plumbeus*	Glacial scour lakes, rivers, and streams with clear cold water and gravel bottoms	No Impact Lack of suitable habitat for this species Extremely low likelihood that the species occurs in or around the project area Implementation of erosion and control measures at tributary crossings as well as the maintenance of downstream flows
Plants			
Trianglelobe moonwort	*Botrychium ascendens*	Riparian generalist or transitional	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Iowa moonwort	*Botrychium campestre*	Open, sparsely vegetated upland	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Forkleaved moonwort	*Botrychium furcatum*	Open, sparsely vegetated upland	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Narrowleaf grapefern	*Botrychium lineare*	Open, sparsely vegetated upland	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area

Common Name	Species	Primary Habitat	Determination of Effects and Rational for Determination
Peculiar moonwort	*Botrychium paradoxum*	Riparian to sparsely vegetated upland	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Lesser panicled sedge	*Carex diandra*	Riparian generalist or transitional	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Lesser yellow lady's slipper	*Cypripedium parviflorum*	Riparian to aspen glades	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Whitebristle cottongrass	*Eriophorum altaicum* var. *neogaeum*	Bogs, fens, wetlands and riparian areas	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Plains rough fescue	*Festuca hallii*	Open, upper subalpine meadows	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Scarlet gilia	*Ipomopsis aggregata* ssp. *weberi*	Openings in coniferous forests	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Groundcedar	*Lycopodium complanatum*	Open coniferous or mixed hardwood forests	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Colorado tansyaster	*Machaeranthera coloradoensis*	Open, sparsely vegetated upland	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
White adder's-mouth orchid	*Malaxis brachypoda*	Riparian areas	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Rocky Mountain monkeyflower	*Mimulus gemmiparus*	Riparian areas, wet cliffs	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in

Common Name	Species	Primary Habitat	Determination of Effects and Rational for Determination
			the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Kotzebue's grass of Parnassus	*Parnassia kotzebuei*	Riparian areas	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Rock cinquefoil	*Potentilla rupincola*	Open, sparsely vegetated upland	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Dwarf raspberry	*Rubus arcticus* ssp. *acaulis*	Riparian generalist or transitional	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Club spikemoss	*Selaginella selaginoides*	Riparian generalist or transitional	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area
Selkirk's violet	*Viola selkirkii*	Riparian generalist or transitional	May adversely impact individuals. Relatively small acreage that would be impacted compared to amount of available suitable habitat in the immediate vicinity of the project area Low likelihood that the species occurs in or around the project area

Direct impacts would include the removal of habitat (e.g. meadow and forested habitats) as part of ROW clearing, road widening, and clearing for the project infrastructure (e.g. anchor locations). Disturbance to these areas would represent a permanent loss of suitable habitat for North American wolverine, Townsend's big-eared bats, hoary bats, flammulated owls, northern goshawks, olive-sided flycatcher, and boreal toads. However, a relatively small acreage of suitable habitat would be impacted by implementation of the project for the Townsend's big-eared bat, fringed myotis, flammulated owl, and northern goshawk. Additionally, there is an extremely low to very low likelihood that the North American wolverine, American marten, pygmy shrew, flammulated owl, northern goshawk, boreal toad, northern leopard frog, wood frog, Hudsonian emerald, and lake chub occur in or around the project area and a low likelihood that project implementation would preclude long-term occupancy of the area by the olive-side flycatcher.

Although most species do not generally occur where high volumes of disturbance would take place, they would still utilize these areas for movement in and out of habitats. Connectivity between habitats or an adequate amount of cover for most species is important for survival against predators. Design criteria would serve to benefit habitats in some areas by leaving felled trees in place to provide cover and protection.

Potential impacts on mammal, avian, amphibian, fish, and insect species individuals would include increased stress, litter abandonment, nest abandonment, reduced productivity, decreased foraging success, reduced prey populations, collisions with construction-related traffic, reduced litter and/or clutch size, and other impacts associated with increased human presence and increased noise associated with construction activities, especially helicopter use in and around the project area. Disturbance from increased human presence could affect any individuals foraging in or immediately around the project area. These effects are unlikely to impact hibernacula or roosting habitats.

Other direct effects could include collisions with construction-related traffic or collisions with overhead transmission lines by avian and bat species. Transmission lines associated with the proposed project would be less than 35 feet above the ground, which is below to top of the forest canopy in most places along the route. The proposed line would be constructed to Avian Power Line Interaction Committee standards (Avian Power Line Interaction Committee 2006), which would prevent electrocutions if individuals attempt to perch on energized project infrastructure. Avian collisions with low voltage lines (such as those proposed as part of the project) are uncommon. Most avian collisions are associated with large, high voltage transmission lines. These collisions most frequently involve waterbirds or nocturnal migrants. Research suggests that birds most commonly collide with overhead static lines, which would not be a component of the proposed project. Most research concerning guy wire collisions has focused on communication towers, which are taller than the proposed poles and typically have Federal Aviation Administration lighting, which can influence collision patterns. Most collision impacts attributed to guy wires have involved night migrating passerines. Most avian species are able to navigate through project-related infrastructure as they do other components of their forest environment. For these reasons, avian species collisions with project-related infrastructure would not occur.

The proposed transmission line would be co-located with Highway 103 in the vicinity of the meadow, thus reducing the impacts of increased human activity in the area and the likelihood of a collision with project facilities. Because the line would be underground and co-located with Highway 103, long-term direct impacts are not anticipated as a result of project implementation.

During implementation of the proposed action, disturbance from equipment and displacement after the tree removal would potentially affect most species inhabiting the areas in and near construction sites. In these cases, some species may require larger territories or home ranges in order to meet individual survival needs. As a result, population densities may decrease temporarily in these degraded habitats, but would reestablish once forest regeneration occurs. However, potential impacts on sensitive wildlife species would be minimal due to the availability of preferred habitats adjacent to the proposed action project area.

Line maintenance would be infrequent and typically last for short durations. The impacts of maintenance operations could be similar to those of construction activities but would be of a reduced intensity based on the anticipated frequency and duration of activities. Design criteria would limit construction activities during the breeding season in the vicinity of nests or near the central portion of known territories during designated time periods.

Because the project ROW would only be 20 feet wide, project implementation may have a beneficial effect for species with edge habitat preferences because it would create additional edge habitat.

No Region 2 sensitive plant species were found within or adjacent to the project area; therefore, the risk of direct impacts would be low and limited to individuals present, but not observed during the surveys, as well as impacts on suitable habitat. If undetected populations are present, direct negative effects of project activities would include destruction of individuals and suitable habitat during soil disturbance and compaction, materials stockpiling, short-term vegetation removal, and tree removal. Equipment used during construction and maintenance could crush, bury, or dig up undetected individuals. However, impacts associated with construction activities would not extend far from construction sites; this disturbance would be similar in type and intensity to impacts associated with typical transmission line construction and maintenance activities. Potential indirect effects on undetected populations would include changes in local habitat suitability and availability and an increase in invasive species that may out-compete native species. Access to areas previously protected from impacts by illegal off-road vehicle use could be an indirect effect. New use in areas increases the potential for collecting, trampling, and other losses of individuals. Ground disturbance and use of heavy equipment used in construction could increase the impacts on R2 and SOLC plants and suitable habitat; noxious and invasive weeds would likely increase as a result of disturbance associated with the proposed action. These weeds could out-compete R2 and SOLC species as well as invade suitable habitat. The herbicides used in noxious weed control could also be detrimental to sensitive/SOLC plants if the individuals are inadvertently exposed to the herbicides.

The implementation of design criteria would reduce the negative indirect effects to the wetland habitats by establishing buffer zones around these areas. These buffers would limit the types of activities that would be allowed within these areas, which would greatly reduce the potential for directly impacting the species in these habitats. In addition, the Forest Service biologist would assess construction activities near locations where sensitive species are known to occur to determine other mitigation measures as necessary.

Management Indicator Species (MIS)

MIS that were analyzed that may experience some potential effects would include elk, mule deer, golden-crowned kinglet, hairy woodpecker, mountain bluebird, pygmy nuthatch, and the warbling vireo.

Direct and indirect effects could include increased stress resulting from increased human activity in and around the project area and collisions with construction related traffic. Increases in human activity and use of machinery may temporarily displace some species from otherwise suitable habitats. These temporary and short-term displacement effects would not likely detrimentally alter individual survivorship or population status.

Direct and indirect effects on MIS associated with the proposed action would have a low degree of impact. This level of impact is based on the relatively small disturbance area compared to the available and potentially suitable habitats that occur on the ARP, the low likelihood and short duration of direct effects to individuals, and the low potential for these effects to have a meaningful impact on forest-wide population trends for these species. Therefore, no change in the status to the forest-wide populations of these species would occur as a result of implementation of the proposed project.

Species of Local Concern (SOLC)

The locally rare plants forked spleenwort, western moonwort, reflected grapefern, lanceleaf grapefern, stiff clubmoss, bunchberry dogwood, yellow coralroot, fairy slipper, lesser rattlesnake

plantain, Underwood's spikemoss, and Oregon cliff fern were encountered in a few locations in lodgepole pine forests, grassy meadow, sparsely vegetated areas, and wetlands adjacent to the proposed action. No other SOLC were observed. Because suitable habitat for plant species analyzed are similar, the effects analysis was combined for all species. Determinations were based on professional knowledge, surveys, and the most updated information available.

There were no SOLC found within the area directly impacted by proposed action. Therefore the risk of direct impacts would be low and limited to individuals present, but not observed, during the surveys, and to impacts on suitable habitat. If undetected populations are present, direct negative effects of project activities would include destruction of individuals and suitable habitat during soil disturbance and compaction, materials stockpiling, short-term vegetation removal, and tree removal. Equipment used during construction and maintenance could crush, bury, or dig up undetected individuals. However, impacts associated with construction activities would not extend far from construction sites; this disturbance would be similar in type and intensity to impacts associated with typical transmission line construction and maintenance activities. The implementation of forest vegetation and watershed health design criteria would reduce the negative effects on known SOLC occurrences by flagging sites to avoid and minimize impacts during construction.

Potential indirect effects on undetected populations would include changes in local habitat suitability and availability and an increase in invasive species that may outcompete native species. Access to areas previously protected from impacts by illegal off-road vehicle use could be another indirect effect. New use in areas increases not only the potential for collecting, trampling, and other losses of individuals, but also increases the chance for non-native species invasion. Ground disturbance and use of heavy equipment used in construction could increase the impacts to SOLC plants and suitable habitat, and noxious and invasive weeds are likely to increase as a result of disturbance associated with the proposed action. These weeds could out compete SOLC species and invade suitable habitat. The herbicides used in noxious weed control could also be detrimental to SOLC plants if the individuals are inadvertently exposed to the herbicides.

Design criteria would reduce the negative indirect effects to the wetland habitats by establishing buffer zones around these areas. These buffers would limit the types of activities that would be allowed with these areas, greatly reducing the potential for directly impacting the species in these habitats.

Noxious Weeds

There are no known occurrences of noxious weeds within the project area. In the event that undetected occurrences are present and to minimize risk of noxious weed introduction and spread, all equipment used off-road for the project will be clean prior to entry to the project area. Through the use of the forest vegetation and watershed health design criteria these effects would be mitigated.

Cumulative Impacts

Past, present, and reasonably foreseeable activities in and around the project area include historic mining and logging, residential development, recreational use (including recreational facilities as well as dispersed recreation), traffic on and maintenance of Highway 103, nearby downhill skiing areas, fuels management projects, hazard tree removal, road improvements to Highway 103 and upgrade of the state of Colorado Communication Site, and operation and maintenance of

CDOT and county roads. All of these actions have the potential to contribute to direct and indirect effects to Region 2 sensitive species including habitat loss or degradation. The implementation of other projects planned or being implemented described in Section 2.2 would produce effects similar to those listed above.

Cumulative impacts from past, present, and reasonably foreseeable activities combined with the proposed action could contribute to impacts to PTES, MIS, and SOLC species and suitable habitat by increasing noxious and invasive weeds as a result of the disturbance associated with the use of heavy equipment during construction. These weeds could outcompete native vegetation species and invade suitable habitat. The herbicides used in the control of noxious and invasive weeds could also be detrimental to PTES, MIS, and SOLC species that are inadvertently exposed to the herbicides.

Under the proposed action, there would be an increase in potential direct and indirect effects to boreal owl, Townsend's big-eared bat, fringed myotis, and boreal toads resulting from increased human activity in and around the project area. However, there would be negligible additional disturbance to potentially suitable habitat for the majority of PTES and MIS species in and around the project area as a result of project implementation. Other direct or indirect effects that could contribute to cumulative effects to PTES and MIS are considered unlikely and of low magnitude. Therefore effects to PTES and MIS as a result of the proposed project would not contribute measurably to cumulative effects on these species.

Under the proposed action, there would be negligible additional disturbance to potentially suitable habitat for plant SOLC. Other direct or indirect effects that could contribute to cumulative effects to plant SOLC are considered unlikely and of low magnitude. Therefore effects to plant SOLC as a result of the proposed project would not contribute measurably to cumulative effects on these species.

3.6 Cultural Resources

Section 106 of the NHPA, as amended, requires federal agencies to determine if federally funded, permitted, or licensed activities would adversely affect significant historic properties (36 CFR 800). Cultural resources are considered historic properties if they are eligible for or listed on the NRHP. Determination of the eligibility of cultural resources, and the potential effects that undertakings may have on historic properties are conducted in consultation with the SHPO, relevant Indian Tribes, and certified local governments, if present.

According to the 2004 revised regulations [36 CFR 800.4(d)(1)] for the NHPA (16 U.S.C. 470f), sites considered not eligible for listing on the NRHP may be directly affected once adequately recorded and evaluated, and concurrence is received from the SHPO regarding NRHP eligibility. For the purposes of this analysis, cultural resources are considered significant if they are listed on the NRHP, are determined to be eligible for the NRHP, or if their eligibility has not been determined.

3.6.1 Affected Environment

Humans have inhabited the Rocky Mountain region of Central Colorado for at least 12,000 years. Clear Creek is a tributary of the South Platte River and is included in a study of the prehistory of the Platte River Basin by Gilmore et al. (1999). Three stages of prehistoric occupation have been identified in the region: Paleoindian, Archaic, and Late Prehistoric. Subdivisions of shorter duration, referred to as periods, comprise these stages (Gilmore et al.

1999). A more thorough culture history of the region is included in *Colorado Prehistory: A Context for the Platte River Basin* (Gilmore et al. 1999).

The first well-documented era of occupation, the Paleoindian stage, began at approximately 12,000 years before present (B.P.) and endured until 7,500 B.P. The Clovis period (12,000 to 11,000 B.P) coincides with terminal Pleistocene climatic conditions and is associated with highly mobile bands most strongly identified with a distinctive fluted, lanceolate dart point that has been found in dramatic association with mammoth bones (Chenault 1999). The more current view of Clovis adaptive strategy emphasizes a varied tool assemblage and diverse economy that includes plants and smaller game (Zier 1999).

The first non-Indian inhabitants of the Front Range of the Rocky Mountains consisted of a few French and American trappers and traders, who probably entered the area in the late eighteenth century. It was not until the Louisiana Purchase of 1803 that Americans began to explore the region in earnest. In 1806, Zebulon Pike led the first U.S. Army expedition into the region. He suggested the possibility of gold in the foothills of the Front Range (Church et al. 2007; West 1998). The mountainous areas of the Clear Creek Valley appear to have been largely unoccupied by non-Indian groups until the 1850s.

Intense exploitation and the organization of Clear Creek County, Colorado began with the discovery of placer gold in the gravels of Chicago Creek, south of present-day Idaho Springs, by George Jackson in January 1859 and by George and David Griffith on Griffith Mountain (Cushman 2010; Fell and Twitty 2008; Leyendecker et al. 2005). In 1858, gold was found in quantities near Pike's Peak, which is situated about 75 miles south of Idaho Springs. As a result, tens of thousands of out-of-work men, following the economic depression of 1857, and adventurers raced to the Rocky Mountains in Colorado to seek their fortunes. Clear Creek County became the seventh leading gold-producing county in Colorado, with some 2.4 million ounces of gold coming from lode mines between 1859 and 1959, most of which was found in placer deposits between 1859 and 1864 (Gold Fever Prospecting 2011).

While large amounts of gold were recovered, silver (with contributions by lead and zinc) has been the primary ore mined in the county (Cushman 2010; Twitty 2010). Miners, primarily in the western part of the county, recognized silver, but few took advantage of this ore until the gold deposits began to wane in the mid-1860s.

The railroad reached Denver in 1870 and a railhead was established at the base of Floyd Hill in 1873. The Colorado Central Railroad was constructed up the Clear Creek Valley, reaching Georgetown in 1877. The Georgetown, Breckenridge & Leadville Railroad reached Silver Plume in 1884 (Twitty 2010). Beginning in 1905, the Argentine Central Railroad was built to access the gold and silver mines in that district and benefited Waldorf from 1906 to 1911.

Besides the mining industry, the railroads supported logging, development of communities, and recreation in the form of resort tourism, snow skiing, camping, fishing, and hunting (Twitty 2010). Automotive vehicles began to make inroads on railroads for transportation in the 1920s. When most of the silver mines closed, the track constructed to reach them were removed and the grades used for automobiles. State Highway 103 from Clear Creek to Georgetown is an example of this practice (Wiley 1976).

In 1909, the city of Denver announced its intention to develop a series of mountain parks so that Denver residents could be assured the preservation and access to the mountains (Associate Cultural Resource Experts 2002). Roads became an important component of Denver Mountain

Parks. The State Highway 103 segment between Bergen Park and Squaw Pass is a Denver Mountain Parks roadway connecting Denver to Mt. Evans. State Highway 103 is a part of the Mount Evans Road, which at the time of completion was the highest paved automobile roadway in the United States. This segment runs southwestward along the Chicago Creek Valley from Idaho Springs to the Echo Lake turnoff. It was built from 1918 to 1929 as a joint endeavor by the state of Colorado and the National Park Service as a loop road connecting several parks. The segment of Squaw Pass Road from Bergen Park to Echo Lake Park was begun in 1918. The segment from Echo Lake to Summit Lake was completed in 1924. The segment from Summit Lake to the summit of Mount Evans was completed in 1927. Two-foot high rubble stone masonry guardrail walls lined the roadway. Improvements, such as rubble stone masonry culverts, were built by the Civilian Conservation Corps in the 1930s (Litvak 2001). The highway has been nominated to the NRHP (Resource Number 5CC1151).

Field Investigations

On August 23, 2011, a reconnaissance of the project corridor confirmed that approximately 10 percent (2,750 linear feet) of the construction corridor follows the existing ROW of County Road 470, State Highway 103, and County Road 422. The remaining 90 percent of the project corridor traverses mountainous landforms with stands of spruce, ponderosa pine, and aspen trees.

The entire project corridor, helicopter landing areas, Beaver Brook Meadow Area, and the proposed access roads were targeted for pedestrian surface survey for the presence of unrecorded archaeological sites. Five Euro-American artifact dumps (5CC1988 through 5CC1992), one prospecting site (5CC1993), and four culverts (Site 5CC1905.2 through 5CC1905.5) associated with State Highway 103 (Site 5CC1905.1) were identified during the field investigation, with culvert sites 5CC1905.6 through 5CC1905.8 and a segment of an 1880's toll road 5CC2037 and segment 5CC2037.1 being identified in a previous site assessment in 2010.

Artifacts observed at the five Euro-American artifact dumps generally have manufacture and/or use dates that extend from the end of the 19th century through the latter part of the 20th century. The materials at each dump site are assumed to be associated with mineral prospecting activities, but they cannot be associated with specific individuals or prospecting episodes. Because the archaeological materials at these sites lack clear historical associations, the sites should not be considered eligible for listing in the NRHP. Site 5CC1993 consists of the remains of a mining prospect site and includes three prospecting pits or excavations. The site is most likely associated with late 19th and/or early 20th mining activities in eastern Clear Creek County; however, no artifacts were observed at the site. Although the site includes pit features, it appears to lack associated artifact materials. The apparent absence of material associations limits the site's research potential and its potential to yield important new information that would contribute to the understanding of local or regional history. Based on these findings, it was recommended that Site 5CC1993 be considered not eligible for listing in the NRHP.

It was recommended that the culvert sites 5CC1905.2 through 5CC1905.5 be avoided as they are contributing structures to Site 5CC1905.1, which has been previously determined eligible for listing in the NRHP under Criteria A and C[3]. It is recommended that site 5CC2037.1 be avoided

[3] The proposed project to widen State Highway 103 would adversely affect these features of the historic property (5CC1905.1). A Memorandum of Agreement has been drafted to mitigate the adverse effects as the features are expected to be removed during the construction. If that project continues as planned and the historical culvert features are removed in accordance with the Memorandum of Agreement, avoidance and monitoring for the IREA power line proposed action would no longer be necessary. However, if the Highway 103 expansion project is not

although it is not a contributing segment of 5CC2037, which may be eligible for listing in the NRHP.

3.6.2 Effects of the No Action Alternative

This alternative represents the existing condition and use of the project area. Under this alternative the proposed distribution line and helicopter pads would not be constructed and the Forest Service would not issue a SUP to IREA.

Direct and Indirect Impacts

Because no construction or improvements would occur, no effects on cultural resources are expected under the no action alternative.

Cumulative Impacts

Past direct and indirect effects that have the potential to affect cultural resources within and adjacent to the project area include the loss and/or modification of resources by way of historic mining and logging (and subsequent revegetation efforts) and private and public land development (including access roads, development footprints, reservoirs, and recreational sites). Reasonably foreseeable future direct and indirect effects within the project area include the Squaw Pass Road Improvement Project and Forest Service development of the Squaw Pass Lookout rental and associated parking areas. However, since there would be no direct or indirect effects from the no action alternative, there would be no associated cumulative effects to cultural resources.

3.6.3 Effects of the Proposed Action

Under the proposed action approximately 2.97 miles of both overhead and underground electrical distribution line would be constructed within the project area.

Direct and Indirect Impacts

Under this alternative, no direct or indirect impacts would be expected to occur. Cultural resources located outside of the proposed distribution line alignment, including the five identified artifact dumps 5CC1988-5CC1992 and one prospector site 5CC1993 would see no impacts from the proposed distribution line and associated components. Impacts to the historic two-track road 5CC2037 would not occur, as the majority of the resource is located outside of the proposed distribution line alignment. For the portion of the road that is within the proposed corridor 5CC2037.1 previous impacts have occurred and the segment is not considered a contributing segment of 5CC2037; however, it is recommended that in any event this site be avoided, which would minimize additional impacts to the site. No impacts would occur at culvert sites 5CC1905.4 and 5CC1905.5 because they are located outside of the proposed distribution line alignment; however, in any event, it is recommended that these sites be avoided. Culvert sites 5CC1905.2, 5CC1905.3, 5CC1905.6, 5CC1905.7 and 5CC1905.8 are located directly in the proposed distribution line alignment; however, no impacts would occur because these sites would be avoided.

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completed, the aforementioned design criteria and monitoring requirements described in Section 2.3 would still be necessary to avoid adverse effects to the features.

Cumulative Impacts

The effects from past, present, and reasonably foreseeable future actions, when combined with the proposed action, could result in cumulative effects on cultural resource through the loss of the historic landscape along the Mount Evans Scenic Byway (5CC1905.2 and 5CC1905.2, 5CC1905.3, 5CC1905.6, 5CC1905.7 and 5CC1905.8). However, mitigation efforts recommend these sites be avoided to minimize negative impacts on these resources. Additional measures to protect cultural resources discovered during the project implementation are included in the design criteria and monitoring requirements discussed above in Sections 2.3 and 2.4. Although cumulative effects might result, they would remain below the threshold of the NEPA definition of significance.

Chapter 4: References

Associated Cultural Resource Experts. 2002. *Highways to the Sky: A Context and History of Colorado's Highway System*. Prepared for the Colorado Department of Transportation, Denver, Colorado by Associated Cultural Resource Experts, Littleton, Colorado.

Avian Power Line Interaction Committee. 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington DC and Sacramento, CA.

Chenault, Mark L. 1999. Chapter 4 – Paleoindian Stage. In *Colorado Prehistory: A Context for the Platte River Basin*, by Kevin P. Gilmore, Marcia Tate, Mark L. Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 51-90. Colorado Council of Professional Archaeologists, Denver.

Church, Minette C., Steven G. Baker, Bonnie J. Clark, Richard F. Carrillo, Jonathon C. Horn, Carl D. Späth, David R. Guilfoyle, and E. Steve Cassells. 2007. *Colorado History: A Context for Historical Archaeology*. Colorado Council of Professional Archaeologists, Denver, Colorado.

Council on Environmental Quality (CEQ). nd. Part 1508-Terminology and Index. Section 1508.7-Cumulative Impact. Available at: http://ceq.hss.doe.gov/nepa/regs/ceq/1508.htm#1508.7. Accessed 2/20/2013.

Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects under the National Environmental Policy Act [On-line]. Available at: http://ceq.hss.doe.gov/nepa/ccenepa/exec.pdf (verified 3 October 2012).

Cushman, David W. 2010. *Clear Creek County, Colorado Cultural Resources Management Plan*. Prepared for the Board of County Commissioners, Clear Creek County, Colorado by SRI Foundation, Rio Rancho, New Mexico.

Doucet, G.J. and D.T. Brown. 1997. Snowshoe hare, red squirrel and gray squirrel winter activity in a 120 kV powerline right of way and in adjacent forests. Pp. 295-298 in Williams, James R. (ed.). Proceedings of the Sixth International Symposium on Environmental Concerns in ROW Management: 24-26 Feb 1997, New Orleans, LA. Elsevier Science, Inc., New York.

Fell, James E., and Eric Twitty. 2008. *Mining Industry in Colorado*. National Register of Historic Places, Multiple Property Documentation Form, National Park Service, Washington, D.C.

Forest Service. 1995. Landscape Aesthetics: A Handbook for Scenery Management. Agricultural Handbook No. 701: USDA. Available at http://www.fs.fed.us/cdt/carrying_capacity/landscape_aesthetics_handbook_701_no_append.pdf.

Forest Service. 1997. 1997 Revision of the Land and Resource Management Plan of the Arapaho and Roosevelt National Forests and Pawnee National Grasslands (*Forest Plan*) - United States Department of Agriculture Forest Service Rocky Mountain Region. Available at: http://www.fs.usda.gov/detail/arp/landmanagement/?cid=fsm91_058285.

Forest Service. 2003. Arapaho and Roosevelt National Forests and Pawnee National Grassland Noxious Weed Management Plan.

Forest Service. 2006. Watershed Conservation Practices Handbook. Forest Service Handbook 2509.25. Fort Collins, Colorado.

Forest Service. 2008. Southern Rockies Lynx Amendment, Record of Decision. October 29, 2008.

Forest Service, Clear Creek County Ranger District. 2012. Environmental Assessment, Squaw Pass Road Improvement Project.

Gilmore, Kevin. P., Marcia Tate, Mark L. Chenault, Bonnie Clark, Terri McBride, and Margaret Wood. 1999. *Colorado Prehistory: A Context for the Platte River Basin*. Colorado Council of Professional Archaeologists, Denver.

Gold Fever Prospecting. 2011. Gold Locations in Colorado. Motherlode Outfitters. Accessed online on October 19, 2011 at http://www.goldfeverprospecting.com/cogolo.html.

Intermountain Rural Electric Association (IREA), 2012. Operating Plan For CLC503 Special Use Permit for Distribution and Transmission Lines in Clear Creek County and Portions of Jefferson County On the Arapaho and Roosevelt National Forests and Pawnee National Grassland. Prepared in cooperation with Intermountain Rural Electric Association.

Leyendecker, Liston E., Christine A. Bradley, and Duane A. Smith. 2005. *The Rise of the Silver Queen, Georgetown, Colorado, 1859-1896*. University Press of Colorado, Boulder, Colorado.

Litvak, Dianna. 2001. *Mt. Evans Road – Segment SH 103 (Idaho Springs to Echo Lake)*. Colorado Cultural Resource Survey. Colorado Historical Society, Office of Archaeology & Historic Preservation, Denver, Colorado.

National Historic Preservation Act (NHPA). 2004. Section 106. 16 U.S.C. 470f. Revised regulations: 36 CFR 800.4(d)(1).

Roeber. 2012. Personal communication with Lisa McDonald of the Louis Berger Group. Re: Scenic Integrity Map for IREA project area. Thursday, December 27, 2012.

Twitty, Eric. 2010. *1-70 CSS Historical Context*. National Register of Historic Places, Multiple Properties Nomination Form, National Park Service. Prepared for CH2M Hill for the Colorado Department of Transportation, Denver, Colorado.

United States Fish and Wildlife Service USFWS. 2011. Natural Resources of Concern, Floyd Hill Tie-line Project. Available online at: http://ecos.fws.gov/ipac/. Accessed: 10/2/2011.

USDA-Natural Resources Conservation Service (NRCS). 2003. Soil Survey of Georgetown Area, Colorado, Parts of Clear Creek, Gilpin, and Park Counties. USDA-Natural Resources Conservation Service prepared in cooperation with Colorado Agricultural Experiment Station.

West, Elliott. 1998. *The Contested Plains: Indians, Goldseekers, and the Rush to Colorado*. University of Kansas Press, Lawrence, Kansas.

Wiley, Marion C. 1976. *The High Road*. Bicentennial Project of the Division of Highways, State of Colorado, Denver Colorado.

Zier, Christian J. 1999. Chapter 5 – Paleoindian Stage. In *Colorado Prehistory: A Context for the Arkansas River Basin*, by Christian J. Zier and Stephen M. Kalasz (with contributions by Mary W. Painter, Mark Mitchell, Amy Holmes, and Michael McFaul). Colorado Council of Professional Archaeologists, Denver, Colorado.

Appendix A – Glossary

Action Area—Defined under ESA as all areas that will be affected directly or indirectly by the federal action, and not merely the immediate area involved in the action (50 CFR 402.02).

Air quality—The composition of air with respect to quantities of pollution therein, used most frequently in connection with "standards" of maximum acceptable pollutant concentrations.

Alternative—One of a number of possible options for responding to the purpose and need for action within an environmental analysis.

Boreal—Associated with northern biogeographical region, or the northern coniferous forest growing in that region.

Clean Water Act—An Act of Congress, which establishes policy to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

Council on Environmental Quality (CEQ)—Established by Title II of NEPA to oversee federal efforts to comply with NEPA.

Cultural Resources—Cultural resources include sites, structures, or objects used by prehistoric and historic residents or travelers. They are non-renewable resources that tell of life-styles of prehistoric and historic people. Cultural resources are diverse and include properties such as archaeological ruins, pictographs, early tools, burial sites, log cabins, mining structures, guard stations, and fire lookouts.

Cumulative Effects—Impacts on the environment that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Denning Habitat or Sites—Habitat and locations used by mammals during reproduction and rearing of their young, when the young are highly dependent on adults for survival.

Direct Effects**—**Effects caused directly by an action and occurring at the same time and place.

Easement—A right held by one person to make use of the land of another for a limited purpose, such as a special-use authorization for a ROW that conveys a conditioned interest in National Forest System land, and is compensable according to its terms.

Ecosystem—A naturally occurring, self-maintained system of living and non-living interacting parts that are organized into biophysical and human dimension components.

Endangered Species—Designated by USFWS or the National Marine Fisheries Service (NMFS), an animal or plant species that has been given federal protection status because it is in danger of extinction throughout all or a significant portion of its natural range.

Endangered Species Act (ESA)—-An act passed by Congress in 1973 intended to protect species and subspecies of plants and animals that are of "aesthetic, ecological, educational, historical, recreational, and scientific value." It may also protect the listed species' critical habitat, the geographic area occupied by or essential to the species. USFWS and NMFS share

authority to list endangered species, determine critical habitat, and develop species' recovery plans.

Erosion—The transportation of earth and rock materials by water, ice, wind, and gravity.

Forest Plan—This is the overall guidance document for the ARP.

Habitat—A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals.

Historic Property—Any pre-historic or historic district, site, building, structure, or object included on, or eligible for inclusion on the NRHP, including artifacts, records, and material remains related to such a property or resource.

Irretrievable, Irreversible Commitments—Applies to losses of production or use of renewable natural resources for a period of time. For example, road construction leads to an irretrievable loss of the productivity of the land under which the road is located. If the road is later obliterated, the land may eventually become productive again. The production lost is irretrievable, but the action is not irreversible.

Management Indicator Species (MIS)—Representative species whose habitat conditions or population changes are used to assess the impacts of management activities on similar species in a particular area. MIS are generally presumed to be sensitive to habitat changes.

Mitigation—Actions that avoid, minimize, reduce, eliminate, or rectify impacts from management practices.

Monitoring—The process of collecting information to evaluate if objectives and anticipated results of a management plan are being realized, or if implementation is proceeding as planned.

Native plant—A plant native to a specific region where it grows naturally and where it evolved before the arrival of European settlers in the late 1700s.

National Environmental Policy Act (NEPA)—An abbreviation for the National Environmental Policy Act of 1969, which requires environmental analysis and public disclosure of federal actions.

National Historic Preservation Act (NHPA)—A Federal Act, passed in 1966, which established a program for the preservation of additional historic properties throughout the nation and for other purposes, including the establishment of the NRHP, the National Historic Landmarks designation, regulations for supervision of antiquities, designation of the SHPO, guidelines for federal agency responsibilities, technical advice, and the establishment of the Advisory Council on Historic Preservation.

National Register of Historic Places (NRHP)—-A list of cultural resources that have local, state, or national significance maintained by the Secretary of the Interior.

No Action (alternative)—The most likely condition expected to exist if current management practices continue unchanged. The analysis of this alternative is required for federal actions under NEPA.

Noxious weed—A state-designated plant species that causes negative ecological and economic impacts to both agricultural and other lands within the state.

Persons-at-One-Time (PAOT)—A recreational-capacity measurement term indicating the number of people who can use a facility or area at one time.

Proposed Action—A proposal made by the Forest Service to authorize, recommend, or implement an action to meet a specific purpose and need.

Right-of-way (ROW)—Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project or facility passing over, upon, under, or through such land (36 CFR 251.51). The privilege that one person or persons particularly described may have of passing over the land of another in some particular line (FSH 2709.12).

Riparian—Pertaining to areas of land directly influence by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Stream banks, lake borders, or marshes are typical riparian areas. Vegetation bordering watercourses, lakes, or swamps; it requires a high water table.

Record of Decision (ROD)—A document that records the decision of the responsible official based on an environmental analysis documented in an EIS.

Scenery—General appearance of a place, general appearance of a landscape, or features of a landscape.

Scenic—Of or relating to landscape scenery, pertaining to natural or natural-appearing scenery; constituting or affording pleasant views of natural landscape attributes or positive cultural elements.

Scenic Integrity Objectives (SIO)—A set of measurable levels for the management of the Forest's visual resources. SIOs guide the amount, degree, intensity, and distribution of management activities needed to achieve desired scenic conditions. SIO classifications range from very high to very low. Each level describes a different degree of alteration in the landscape character:

- Very High refers to landscapes where the valued landscape character "is" intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level.

- High refers to landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

- Moderate refers to landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

- Low refers to landscapes where the valued landscape character "appears moderately altered." Deviations begin to dominate the landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings,

vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

- Very Low refers to landscapes where the valued landscape character "appears heavily altered." Deviations may strongly dominate the landscape character. They may not borrow from valued attributes such as size, shape, edge effect and patter on natural openings, vegetative type changes or architectural styles within or outside the landscape being viewed. However deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings and structures do not dominate the composition.

Scoping—A process defined by NEPA and used by the Forest Service to determine, through public involvement, the range of issues that the planning process should address.

Sedimentation—A general term describing both the erosion and sediment delivery processes.

Sensitive species—Sensitive plant and animal species are selected by the Regional Forester or the BLM State Director because population viability may be a concern, as evidenced by a current or predicted downward trend in population numbers or density, or a current or predicted downward trend in habitat capability that would reduce a species' existing distribution. Sensitive species are not addressed in or covered by the ESA.

Species of Local Concern—SOLC are species that are documented or suspected to be at risk at a forest-wide scale, but do not meet the criteria for regional Sensitive Species designation because they are reasonably secure within parts of their range within the region. These could include species with declining trends in only a portion of the region. Species at the edge of their range may not merit regional Sensitive Species status, but may be important elements of biological diversity for the Forest/Grassland unit. SOLC are identified during revision of individual Land and Resource Management Plans. Each species is evaluated based upon isolation from other populations, lack of dispersal mechanisms, population trends, habitat trends, habitat vulnerability and species life history and demographic characteristics, or insufficient evidence to determine local rarity.

Soil erosion—Soil erosion is the detachment and transport of soil particles or aggregates by wind, water, or gravity. Management practices may increase soil erosion hazard when they remove ground cover and detach soil particles.

State Historic Preservation Officer (SHPO) —A person appointed by a state's governor to administer the State Historic Preservation Program.

Threatened species—Designated by USFWS or NMFS; a plant or animal species given federal protection because it is likely to become endangered throughout all or a specific portion of its range within the foreseeable future.

Water quality—Refers to the chemical, physical, or biological characteristics that describe the conditions of a river, stream, or lake.

Watershed—Region or area drained by surface and groundwater flow in rivers, streams, or other surface channels. A smaller watershed can be wholly contained within a larger one, as watersheds are hierarchal in structure.

Wetlands—Land areas that are wet at least for part of the year, are poorly drained, and are characterized by hydrophytic vegetation, hydric soils, and wetland hydrology. Examples of wetlands include swamps, marshes, and bogs.

Wilderness Areas—Areas that are without developed and maintained roads and are substantially natural, and that Congress has designated as part of the National Wilderness Preservation System.

Winter range—An area or areas where animals (usually ungulates such as elk, deer, and bighorn sheep) concentrate due to favorable winter weather conditions. Conditions are often influenced by snow depth and the availability or forage and thermal cover.

Appendix B – Acronyms

ARP	Arapaho and Roosevelt National Forest and Pawnee National Grassland
BMP	Best Management Practices
CDOT	Colorado Department of Transportation
CDOW	Colorado Division of Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CR	County Road
EA	Environmental Assessment
ESA	Endangered Species Act of 1973 (as amended)
FONSI	Finding of No Significant Impact
FOIA	Freedom of Information Act
Forest Service	U.S. Forest Service
FLPMA	Federal Land Policy and Management Act of 1976
IREA	Intermountain Rural Electric Association
MIS	Management Indicator Species
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
PEM	Palustrine Emergent Wetlands
PFO	Palustrine Forested Wetlands
PSS	Palustrine Scrub-Shrub
PTES	Proposed, Threatened, and Endangered Species
ROW	Right-of-way
SHPO	State Historic Preservation Office
SOLC	Species of Local Concern
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
SIO	Scenic Integrity Objective
SUP	Special Use Permit
USACE	US Army Corps of Engineers
WCP	Watershed Conservation Practices

Appendix C – Consultation and Coordination

List of Agencies and Persons Consulted and Contacted

The following organizations and agencies were contacted for information, or assisted in identifying important issues.

U.S. Fish and Wildlife
U.S. Army Corps of Engineers
Colorado Division of Wildlife
Colorado State Historic Preservation Office
Clear Creek County
Colorado Department of Transportation
Public Utility Commission

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