

APPENDIX A13

US FOREST SERVICE SENSITIVE SPECIES TECHNICAL MEMORANDUM

FOR THE

State Highway 9 Iron Springs Alignment Environmental Assessment

Prepared for

COLORADO DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

Prepared by

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ENVIRONMENTAL PROGRAMS BRANCH

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ACRONYMS AND DEFINITIONS

BA	Biological Assessment
BE	Biological Evaluation
CDOT	Colorado Department of Transportation
CDOW	Colorado Department of Wildlife (now CPW)
cm	centimeter: a unit of length equaling 0.40 inch
CNHP	Colorado Natural Heritage Program
CPW	Colorado Parks and Wildlife
EA	Environmental Assessment
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
hectare	An area equal to 2.47 acres
IPAC	U.S. Fish and Wildlife Service Information, Planning and Conservation System
µM	micrometer: a unit of length equaling 1×10^{-6} of a meter or 3.937×10^{-5} of an inch
m	meter: a unit of length equaling 3.28 feet
mm	millimeter: a unit of length equaling 0.04 inch
MPB	Mountain Pine Beetle
NFMA	National Forest Management Act
ROD	Record of Decision
SH 9	State Highway 9
TES	Threatened, Endangered and Sensitive Species
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WRNF	White River National Forest
WUI	Wildland/Urban Interface

1 INTRODUCTION

2 This technical memorandum has been prepared in support of the State Highway (SH) 9 Iron
3 Springs Alignment Environmental Assessment (EA). This memorandum evaluates the effects of
4 the Iron Springs Alignment (Proposed Action) and the No Action Alternative (widening on the
5 existing alignment) with respect to U.S. Forest Service (USFS) Sensitive Species.

6 Species listed under the Endangered Species Act and under the jurisdiction of the U.S. Fish and
7 Wildlife Service (USFWS) are addressed in Appendix A11, concerning Threatened and
8 Endangered Species. Species listed by the State of Colorado as threatened or endangered or are
9 of special concern and under the jurisdiction of the Colorado Parks and Wildlife (CPW) are
10 addressed in the *Colorado Special Status Species Technical Memorandum* provided in
11 Appendix A12 of the EA.

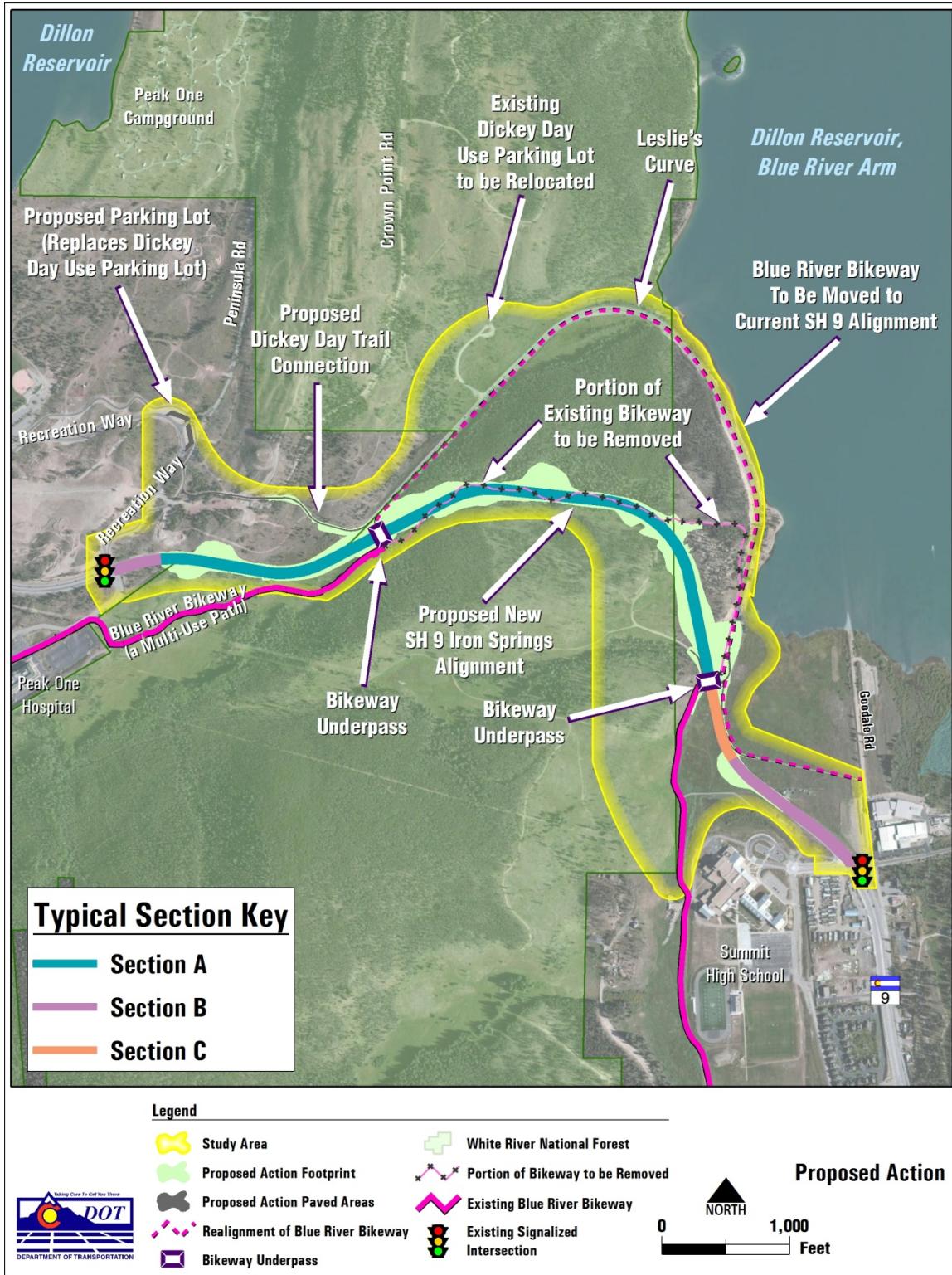
12 *Proposed Action*

13 As part of implementation of the SH 9 improvements between Frisco and Breckenridge, the
14 Colorado Department of Transportation (CDOT) and Federal Highway Administration (FHWA)
15 are proposing to realign approximately 1.3 miles of existing SH 9 just south of the Town of
16 Frisco, Colorado (see **Figure 1**). This stretch of SH 9, which falls between mileposts 93 and 95,
17 would be realigned to provide a four-lane reduced section roadway away from Dillon Reservoir.
18 This Proposed Action, also referred to as the Iron Springs Alignment, would shorten SH 9 by
19 approximately 0.4 mile. The Proposed Action would provide roadway safety benefits, as well as
20 water quality and drinking water protection benefits, as a result of straightening the highway to
21 remove a tight, compound curve (known as Leslie’s Curve), which is in close proximity to Dillon
22 Reservoir. The existing condition on Leslie’s Curve is considered substandard and contributes to
23 accidents in the area.

24 The Proposed Action would include realignment of a portion of the existing Frisco-Farmer’s
25 Korner-Blue River Bikeway (also referred to herein for brevity as the Blue River Bikeway or
26 bikeway). This portion of the bikeway would be moved to the alignment currently occupied by
27 SH 9, would be approximately 0.4 mile longer than the existing bikeway, and would be at a
28 gentler grade than the current alignment. In addition, the Dickey Day Use Parking Lot would be
29 moved west to a new parking lot to be constructed as part of the project, with access provided
30 via Recreation Way using the existing signalized intersection at SH 9 and Recreation Way. A new
31 trail connection would be provided to link the proposed parking lot with the realigned bikeway
32 and existing trail, which currently begins at the old Dickey Day Use Parking Lot.

33 Additional detail regarding the Proposed Action, including typical sections, is provided in the EA
34 main text and the project drawings provided in Appendix A1 of the EA.

1 **Figure 1 Proposed Action**



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1 *No Action Alternative*

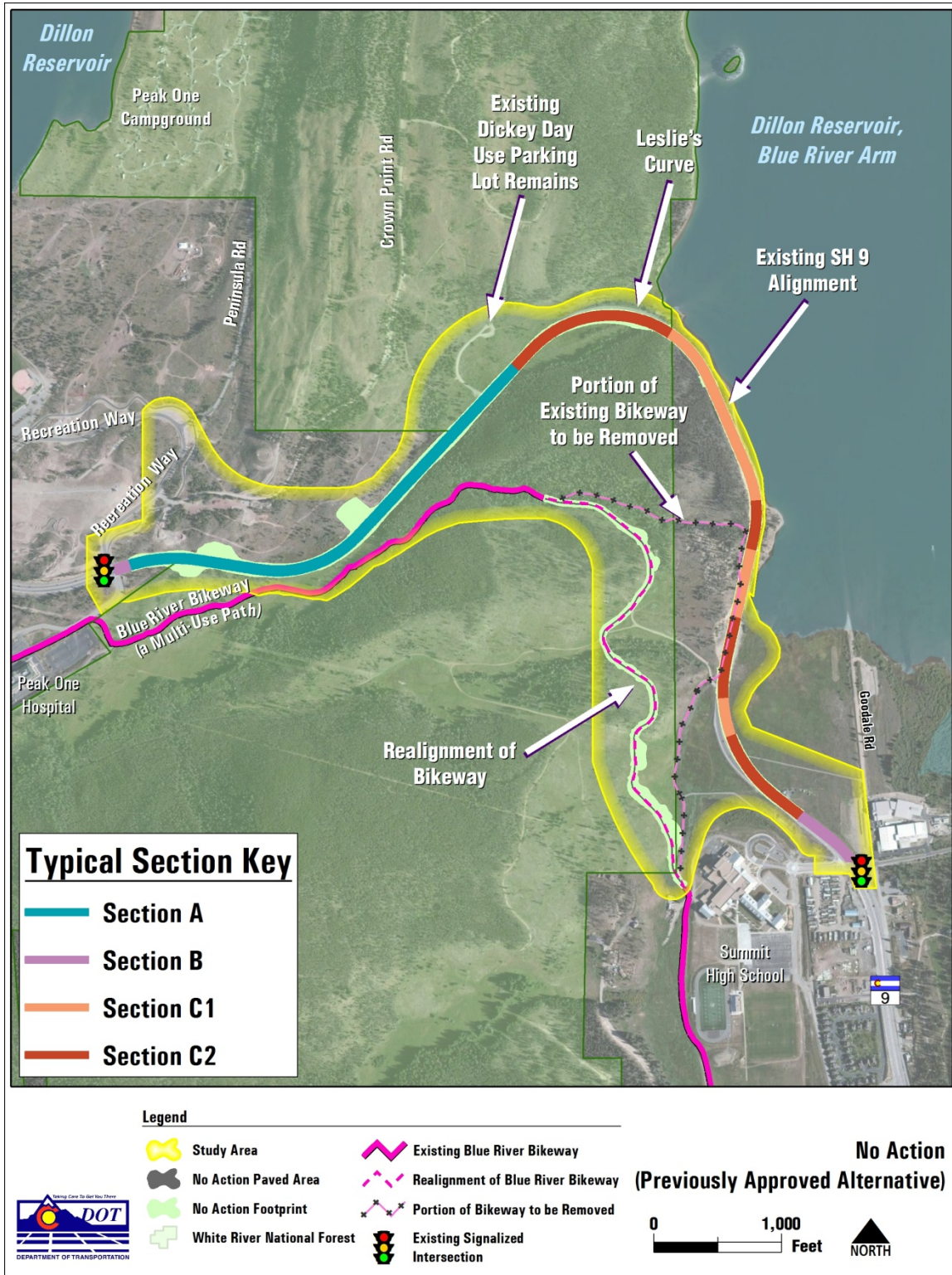
2 If the Proposed Action is not selected for implementation, SH 9 would be widened to provide a
3 four-lane reduced section roadway along the existing alignment as previously approved in the
4 SH 9 Frisco to Breckenridge Environmental Impact Statement (EIS) and Record of Decision (ROD)
5 (CDOT and FHWA, 2004a; 2004b) (**Figure 2**). The 2004 Preferred Alternative is considered the
6 “No Action Alternative” for this EA and is used as a baseline for comparison with the Proposed
7 Action. These improvements would be implemented if the Proposed Action is not selected.

8 Widening along the existing alignment would require large rock cuts and retaining walls
9 (problematic to design and construct), and the highway would remain in close proximity to
10 Dillon Reservoir. The length of SH 9 would remain the same as that of the existing highway. The
11 tight Leslie’s Curve would not be eliminated; however, safety features such as a barrier between
12 opposing lanes would be installed to improve safety.

13 With this alternative, approximately 0.8 mile of the existing Blue River Bikeway would be
14 realigned to allow space for the highway widening. The length of bikeway would not change
15 appreciably and the current relatively steep grades on the path would remain.

16 Additional detail regarding the No Action Alternative, including typical sections, is provided in
17 the EA main text and the project drawings provided in Appendix A1 of the EA.

1 Figure 2 No Action Alternative (Previously Approved)



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3

1 **APPLICABLE STATUTES AND REGULATIONS**

2 *Federal*

3 **White River National Forest – Revised Land and Resource Management Plan**

4 The White River National Forest (WRNF) Land and Resource Management Plan was first issued
5 in September 1984. Forest plans are prepared in accordance with the National Forest
6 Management Act (NFMA), the National Environmental Policy Act, and other laws and
7 regulations. NFMA regulations state that each national forest's land and resource management
8 plan be revised on a 10-year cycle or at least every 15 years (36 Code of Federal Regulations
9 219.10). The 2002 Land and Resource Management Plan (2002 Forest Plan) was prepared to
10 meet that requirement (U.S. Department of Agriculture [USDA], 2002). It sets forth the direction
11 the WRNF will follow in the future management of National Forest System lands and resources
12 within its boundaries. The 2002 Forest Plan is accompanied by a final EIS, which describes the
13 extensive analysis used in its development and formulation.

14 A forest plan provides guidance for all resource management activities on a national forest. It
15 establishes:

- 16 • Forest-wide multiple-use goals and objectives
- 17 • Forest-wide management requirements (also known as standards and guidelines)
- 18 • Direction applicable to specific management areas (provided in terms of management
19 area prescriptions)
- 20 • Monitoring and evaluation requirements
- 21 • Designation of lands as suitable or not suitable for timber production and other
22 resource management activities
- 23 • Recommendations to Congress for the establishment of wilderness areas; wild, scenic,
24 and recreational rivers; and other special designations as appropriate

25 The 2002 Forest Plan is a result of extensive analysis that is documented in the USFS Final EIS.
26 The USFS Final EIS, in turn, discusses the planning and analysis procedures used to develop the
27 Forest Plan. It describes six alternative management strategies for the WRNF and examines the
28 environmental impacts of these alternatives on the Forest's physical, biological, social, and
29 economic resources (USDA, 2002).

30 **ISSUES: POSSIBILITY OF IMPACTING THE USFS SENSITIVE SPECIES**

31 *Method of Evaluation*

32 The USFS Threatened, Endangered and Sensitive (TES) Species Program is dedicated to conserve
33 and recover plant and animal species that need special management attention and to restore
34 National Forest and Grassland ecosystems and habitats (www.fs.usda.gov/wps). The TES
35 program involves a variety of activities conducted by the USFS and their partners, including
36 inventory and monitoring, habitat assessments, habitat improvements through vegetation
37 treatments and structure installation, species reintroductions, development of conservation
38 strategies, research, and information and education. No regulations require a consultation with
39 the USFS for effects to sensitive species, but in an effort to assist the USFS with their impact
40 analysis associated with the permitting process and in the spirit of the Forest Plan and
41 interagency cooperation, coordination with the USFS was necessary. USFS coordination is also

1 vital concerning avoidance and minimization measures proposed for the affected species.
2 Potential habitat for sensitive species was assessed by performing a review of existing data from
3 readily available sources as well as site reconnaissance.

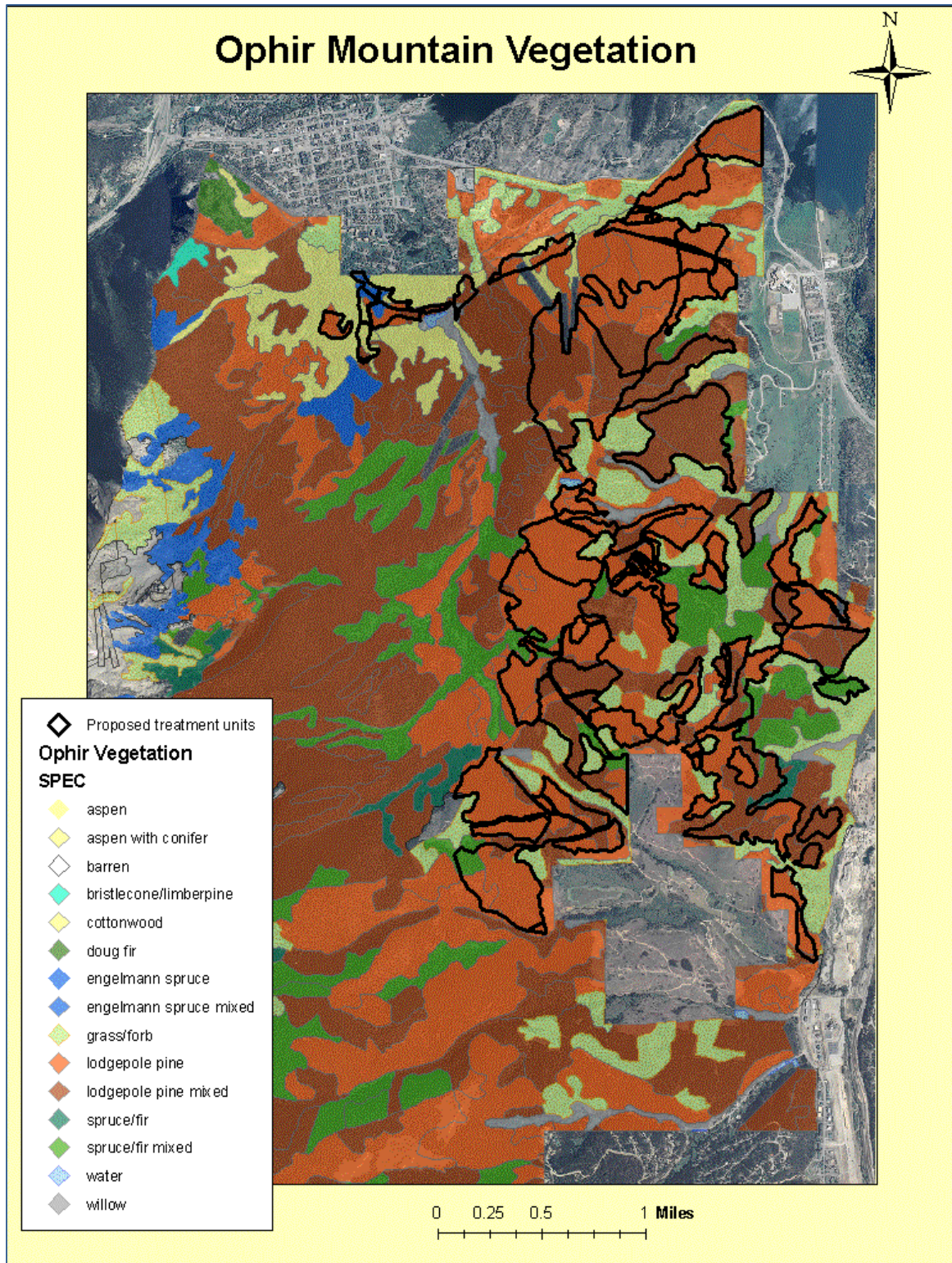
4 *Historical Precedent from Other Activities Proposed for this Area*

5 A separate action, approved by the USFS, is the *Ophir Mountain Forest Health and Fuels*
6 *Management Project* (USFS, 2011) which will treat several areas of timber by implementing a
7 “clear cut with leave trees” prescription, which will allow for the removal of dead trees, trees
8 currently infested with mountain pine beetle (MPB), trees susceptible to being infested with
9 MPB, or windthrow-prone trees while retaining the healthy living trees within a given stand. In
10 general, all stands approved for treatment are composed solely of or dominated by lodgepole
11 pine trees; however, some aspen, spruce, and fir exist as well. These species will be excluded
12 from cutting as much as practical. Due to the retention of live or non-infested trees, many areas
13 approved for treatment would not be clearcut entirely. Instead, clearcuts will at times be
14 smaller than the unit boundaries shown in **Figure 3** and will retain patches and individual trees
15 of various species within their boundaries. The project is to treat approximately 1,497 acres of
16 lodgepole pine (USFS, 2011). To accomplish the approved treatments, approximately 9.3 miles
17 of haul roads, 1.9 miles of access roads, and 8.6 miles of temporary roads will be used (USFS,
18 2011).

19 *Other Uses: Recreation*

20 Human activity has disturbed a large portion of habitat within the study area to some extent. In
21 general, the northern portion of the study area (north of the current SH 9 alignment) contains a
22 portion of the Frisco Peninsula, which is extensively used for recreation activities. The Frisco
23 Peninsula is subject to year-round recreation activities, and contains the Frisco Nordic Center, a
24 large tubing hill, campgrounds, picnic facilities, parking areas, and an extensive trails system.

1 Figure 3 Vegetation Type in the Ophir Mountain Project Area



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1 *Habitat within the Study Area*

2 Vegetation resource data for the study area were collected from existing sources such as maps,
 3 databases, publications, and agency information. This information was used to provide context
 4 of the resource in the area and to assist in assessing direct, indirect, and cumulative effects to
 5 special status species in the study area. Field studies were conducted in the study area during
 6 the fall of 2012 and provided the basis for assessing common plant species present and the
 7 current extent of vegetation communities. Additional information was obtained during the
 8 summer of 2013 when a USFS Sensitive Plant survey was conducted within the proposed project
 9 area. The extent of the natural vegetation communities were drawn on aerials showing the
 10 study area and then digitized using geographic information system overlays. **Figure 4** shows the
 11 extent of natural vegetation communities in the study area and acreages are provided in
 12 **Table 1. Table 2** lists the common vegetation observed in the study area. Vegetation cover
 13 types, including lodgepole pine forest, aspen/mixed conifer, grass/forb and shrub, and wetlands,
 14 are described in the next section.

15 **Table 1 Vegetation Cover Types within the Iron Springs Study Area**

Vegetation Cover Type	Acres in Study Area	Percent
Lodgepole Pine Forest	73.4	43.8
Grass/Forb with Shrub	58.7	35.0
Aspen/Mixed Conifer	11.8	7.0
Open Canopy Lodgepole Pine with Grass/Forb	7.8	4.6
Wetlands	7.2	4.3
Grass Forb and Aspen/Mixed Conifer	4.7	2.8
Sagebrush with Grass/Forb	3.9	2.3
TOTAL	167.5	99.8

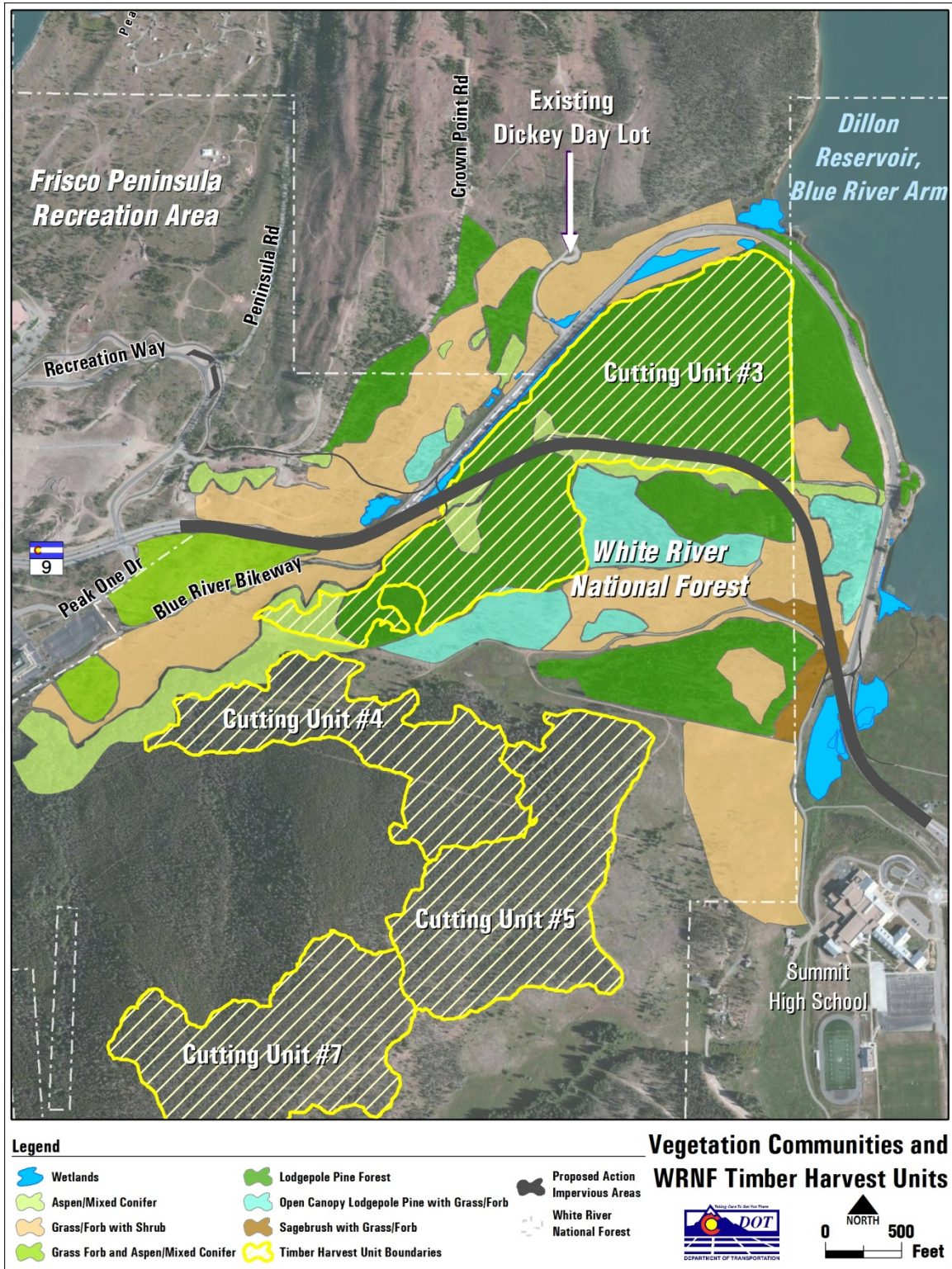
16 **Table 2 Common Vegetation within the Iron Springs Study Area**

Common Name	Scientific Name*
Lodgepole pine	<i>Pinus contorta</i>
Quaking aspen	<i>Populus tremuloides</i>
Mountain sagebrush	<i>Artemisia tridentate ssp. vaseyana</i>
Creeping holly grape	<i>Mahonia repens</i>
Common juniper	<i>Juniperus communis</i>
Junegrass	<i>Koeleria macrantha</i>
Western wheatgrass	<i>Pascopyrum smithii</i>
Ricegrass	<i>Achnatherum hymenoides</i>
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>

* Plant nomenclature derived from the USDA Plants database (<http://plants.usda.gov/index.html>), accessed January 14, 2013.

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1 Figure 4 Natural Vegetation Communities



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1 **Lodgepole Pine Forest Community**

2 The lodgepole pine forest community is typically found below 10,500 feet in elevation and is
3 characterized by even-aged stands of lodgepole pine (*Pinus contorta*) with a low diversity of
4 associated understory species. Common shade tolerant understory associates observed in the
5 study area include creeping holly grape (*Mahonia repens*) and common juniper (*Juniperus*
6 *communis*). The USFS has classified most lodgepole pine forest in the southern portion of the
7 study area as “even-aged with no regeneration observed” (USFS, 2011). Lodgepole pine stands
8 tend to be even-aged because seedlings are shade and competition intolerant and successful
9 regeneration and establishment is linked to stand-replacing disturbances, such as fire or logging
10 (Colorado Natural Heritage Program [CNHP], 2005). Currently, all mature lodgepole pine stands
11 in the study area have some degree of infestation from the recent MPB epidemic.

12 The future condition and regeneration of lodgepole pine forest surrounding the study area will
13 continue to change as the USFS implements the Ophir Mountain Forest Health and Fuels
14 Project, which will consist of additional timber harvest and clear cutting in the immediate
15 vicinity of the proposed Iron Springs alignment (timber harvest units are shown on **Figure 4**). For
16 mapping purposes, areas that were recently logged to reduce accumulating fuel loads but still
17 contain some lodgepole pine forest have been classified as “open canopy lodgepole pine with
18 grass/forb.” Areas that contain more dense stands of lodgepole pine with a low diversity of
19 understory species due to shade have been classified as “lodgepole pine forest.” The mosaic of
20 different stand density and canopy cover in the study area is due to the MPB epidemic and
21 the recent efforts by the USFS to clear dead and dying trees and expedite forest regeneration.

22 **Aspen Mixed Conifer Community**

23 Aspen (*Populus tremuloides*) forests are shade-intolerant mid-seral ecological communities and
24 typically occur at elevations ranging from 6,000 feet to 10,500 feet. Within the study area, aspen
25 are typically found adjacent to the existing Blue River Bikeway on the cooler north facing slopes
26 where soil moisture is adequate and small drainages provide for mesic soil conditions. In
27 addition, stands of aspen are found on the periphery of the lodgepole pine forest community.
28 These stands typically have a higher conifer component. Areas within the study area that have
29 already been logged contain small stands of aspen and lodgepole pine intermixed with areas of
30 the grass/forb and mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*).

31 **Grass/Forb and Shrub Community**

32 The grass/forb and shrub community is made up of non-forested meadows that are dominated
33 by native and nonnative grasses, forbs, and mountain sagebrush, which is the dominant native
34 shrub in this community. Common native grass species include western wheatgrass
35 (*Pascopyrum smithii*), junegrass (*Koeleria macrantha*), ricegrass (*Achnatherum hymenoides*), and
36 bluebunch wheatgrass (*Pseudoroegneria spicata*). Other grasslands dominated by introduced
37 species occur in disturbed areas, such as habitat directly adjacent to SH 9. The grass/forb and
38 shrub community also includes areas that have been recently logged or clear cut.

1 **Wetlands**

2 The wetlands community is primarily found adjacent to the existing SH 9 alignment and is
3 dominated by emergent herbaceous vegetation with some areas of mature woody vegetation,
4 such as willows (*Salix* sp.). Wetlands within the study area generally occur in depressional
5 features or along small intermittent drainages formed by periodic flood events and roadside
6 drainage. The largest wetland complex is found at the southern end of the study area where a
7 large fen/wet meadow complex is located near Dillon Reservoir. This community is dominated
8 by herbaceous vegetation such as water sedge (*Carex aquatilis*), Baltic rush (*Juncus balticus*),
9 and tufted hairgrass (*Deschampsia caespitosa*). This large wetland complex is primarily
10 supported by groundwater discharge and drainage from the surrounding hillside. Detailed
11 information on wetlands can be obtained from Appendix A8, *Wetlands Technical Memorandum*,
12 of the EA.

13 *USFS Sensitive Species*

14 In December 2012, a list of animal species (**Table 3**) and a list of plant species (**Table 4**) that are
15 considered to be sensitive were obtained from the USFS. With the assistance of the USFS
16 Botanist, the plant list was revised to include only those plants that occupy habitat types similar
17 to those found within the proposed project area. The revised list was used for the 2013 sensitive
18 plant survey.

19 Of these, the Bald Eagle, Boreal Owl, Northern Goshawk, Olive-sided Flycatcher, trianglelobe
20 moonwort, narrowleaf moonwort, livid sedge, roundleaf sundew, slender cottongrass, Hall
21 fescue, simple kobresia, Colorado tansyaster, dwarf raspberry, peat moss, and lesser
22 bladderwort all have habitat in the project area *and could be impacted*. Species listed under the
23 Endangered Species Act, or species listed by the state as threatened, endangered or of special
24 concern have been addressed in separate documents and will not be discussed here.

USFS Sensitive Species for the State Highway 9 Iron Springs Alignment EA

1 Table 3 USFS Sensitive Species within Study Area—Mammals, Birds, and Insects

Species Name	Habitat Description	Species Known or Suspected to Occur in Project Area?	Habitat Present in Project Area?	Surveys Conducted?	Rationale for Inclusion/Exclusion from Analysis
Mammals					
American marten (<i>Martes americana</i>)	Mature dense forests of mixed Douglas-fir, lodgepole, and spruce.	Yes	No	No	The mixed conifer forest in the project area is dominated by lodgepole pine and does not contain fir or spruce. Habitat associated with this species would not be impacted by the proposed action.
Fringed myotis (<i>Myotis thysanodes</i>)	Low elevation conifer, oakbrush, shrublands, caves, mines, building roosts.	No	No	No	Low elevation conifer, oakbrush, shrublands, caves, and mines are not located within or near the project area and would not be impacted by the Proposed Action.
Hoary bat (<i>Lasiurus cinereus</i>)	Deciduous or Ponderosa pine forests up to 10,000 feet elevation.	Yes	No	No	Ponderosa pine forests do not occur within the project area and would not be impacted by the proposed action.
Pygmy shrew (<i>Sorex hoyi</i>)	Wet conifer forests, bogs, marshes, dense stream networks – wetlands above 9,600 feet.	Yes	No	No	Project area and impacts will not extend to 9,600 feet in elevation.
River otter (<i>Lontra canadensis</i>)	Marine coasts, lakes, reservoirs, rivers, any permanent water source.	No	No	No	Rivers, lakes, or reservoirs are not located within or near the project area and would not be impacted by the Proposed Action.
Rocky Mountain bighorn sheep (<i>Ovis canadensis canadensis</i>)	Rocky outcrops, cliffs, slopes, canyons adjacent to rivers and forests.	No	No	No	Rocky outcrops, cliffs, slopes, canyons are not located within or near the project area and would not be impacted by the Proposed Action.
Spotted bat (<i>Euderma maculatum</i>)	Caves, mines, steep canyons, rock bluffs, sagebrush/pinyon-juniper surrounded by cliffs and near a water source.	No	No	No	Caves, mines, steep canyons, rock bluffs, and sagebrush/pinyon-juniper are not located within or near the project area and would not be impacted by the Proposed Action.

USFS Sensitive Species for the State Highway 9 Iron Springs Alignment EA

1 **Table 3 USFS Sensitive Species within Study Area—Mammals, Birds, and Insects**
 2 **(Continued)**

Species Name	Habitat Description	Species Known or Suspected to Occur in Project Area?	Habitat Present in Project Area?	Surveys Conducted?	Rationale for Inclusion/Exclusion from Analysis
Mammals (Continued)					
Townsend’s big-eared bat (<i>Plecotus townsendii</i>)	Semidesert shrublands, pinyon-juniper, caves and abandoned mine roosts.	No	No	No	Semidesert shrublands, pinyon-juniper, caves and abandoned mine roosts are not located within or near the project area and would not be impacted by the Proposed Action.
Birds					
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	Open spaces associated with high cliffs, caves, and bluffs overlooking rivers, sagebrush, and shrub habitats.	Yes	No	No	Open spaces associated with high cliffs would not be impacted by the Proposed Action.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Habitat includes reservoirs and rivers. In winter, they may also occur locally in semideserts and grasslands.	Yes	Yes	No	There are no nesting or roost sites in the project area. However, Bald Eagles may occasionally forage in and around Dillon Reservoir. Not excluded; discussed further in this analysis.
Black Swift (<i>Cypseloides niger</i>)	Cliff ledges, waterfall cliffs.	No	No	No	High cliffs near waterfalls are not located within or near the project area and would not be impacted by the Proposed Action.
Boreal Owl (<i>Aegolius funereus</i>)	Sub-alpine spruce-fir, mixed conifer, and lodgepole pine forests.	Yes	Yes	No	Not excluded, discussed further in this analysis.
Brewer’s Sparrow (<i>Spizella breweri</i>)	Sagebrush shrublands, mountain parks; may be found in alpine willow stands.	No	No	No	Sagebrush dominated shrublands, mountain parks, and alpine willow are not located within or near the project area and would not be impacted by the Proposed Action.
Columbian Sharp-tailed Grouse (<i>Tympanachus phasianellus columbianus</i>)	Mid elevation mountain sagebrush/grassland habitat.	No	No	No	Sagebrush/grassland habitat does not occur within or near the project area and would not be impacted by the Proposed Action.

1 **Table 3 USFS Sensitive Species within Study Area—Mammals, Birds, and Insects**
 2 **(Continued)**

Species Name	Habitat Description	Species Known or Suspected to Occur in Project Area?	Habitat Present in Project Area?	Surveys Conducted?	Rationale for Inclusion/Exclusion from Analysis
Birds (Continued)					
Ferruginous Hawk <i>(Buteo regalis)</i>	Shrub-steppe foothills, roosts/pinyon-juniper, grasslands.	No	No	No	Pinyon-juniper, grasslands and shrub-steppe foothill habitat are not located within or near the project area and would not be impacted by the Proposed Action.
Flammulated Owl <i>(Otus flammeolus)</i>	Old-growth ponderosa pine and Douglas-fir.	No	No	No	Old-growth ponderosa pine and Douglas-fir are not located within or near the project area and would not be impacted by the Proposed Action.
Lewis's Woodpecker <i>(Melanerpes lewis)</i>	Ponderosa pine with open canopy and brushy understory.	No	No	No	Ponderosa pine does not occur within the project area and would not be impacted by the Proposed Action.
Loggerhead Shrike <i>(Lanius ludovicianus)</i>	Sagebrush, short grass steppe, and semi-desert shrublands.	No	No	No	Sagebrush, semi-desert shrublands, and open shortgrass prairies do not occur within the project area and would not be impacted by the Proposed Action.
Northern Goshawk <i>(Accipiter gentilis)</i>	Old growth mature and even-aged stands.	Yes	Yes	No	Not excluded, discussed further in this analysis.
Northern Harrier <i>(Circus cyaneus)</i>	Open wetland and upland habitats, prairies grasslands.	No	No	No	Wetlands, wet and dry grasslands, and cold desert shrub-steppe does not occur within the project area and would not be impacted by the Proposed Action.
Olive-sided Flycatcher <i>(Contopus cooperi)</i>	Mixed-coniferous forests, and forest edges, especially disturbed forest edges.	Yes	Yes	No	Not excluded, discussed further in this analysis.

3

USFS Sensitive Species for the State Highway 9 Iron Springs Alignment EA

1 **Table 3 USFS Sensitive Species within Study Area—Mammals, Birds, and Insects**
 2 **(Continued)**

Species Name	Habitat Description	Species Known or Suspected to Occur in Project Area?	Habitat Present in Project Area?	Surveys Conducted?	Rationale for Inclusion/Exclusion from Analysis
Birds (Continued)					
Purple Martin (<i>Progne subis</i>)	Mature aspen forests near meadows and open water.	No	No	No	Mature aspen forests near meadows and open water do not occur within the project area and would not be impacted by the Proposed Action.
Sage Sparrow (<i>Amphispiza belli</i>)	Sagebrush shrublands.	No	No	No	Sagebrush shrublands do not occur within the project area and would not be impacted by the Proposed Action.
White-tailed Ptarmigan (<i>Lagopus leucurus</i>)	Alpine areas above tree line, rocky areas, snowfields.	No	No	No	Alpine areas above tree line, rocky areas, and snowfields do not occur within the project area and would not be impacted by the Proposed Action.
Insects					
Great Basin silverspot (<i>Speyeria nokomis</i> <i>Nokomis</i>)	Spring fed and/or subirrigated wetlands at low (7,500 feet or less) elevation.	No	No	No	The proposed project area occurs between 9,056 to 10,440 feet and is outside the known elevation range for this species.

3

1 **Table 4 Plants—Sensitive Species for the White River National Forest**

THREATENED AND ENDANGERED PLANT SPECIES				
Plant NRCS Code	Scientific Name	National Common Name	Habitat Present	Plant Found
EUPE10	<i>Eutrema penlandii</i> (Threatened)	Penland alpine fen mustard	N	N
PHSCS3	<i>Phacelia scopulina</i> (Proposed)	De beque phacelia	N	N
SCGL3	<i>Sclerocactus glaucus</i> (Threatened)	Colorado hookless cactus	N	N
SPDI6	<i>Spiranthes diluvialis</i> (Threatened)	Ute ladies' - tresses orchid	N	N
REGION 2 SENSITIVE PLANT SPECIES (WRNF)				
NRCS Code	Scientific Name	National Common Name	Habitat Present	Plant Found
ARMAS	<i>Armeria maritima</i> ssp. <i>sibirica</i>	Siberian sea thrift	N	N
ASLE9	<i>Astragalus leptaleus</i>	Park milkvetch	N	N
BOAS2	<i>Botrychium ascendens</i>	Triangle lobe moonwort	Y	N
BOLI7	<i>Botrychium lineare</i>	Narrowleaf grapefern	Y	N
BOPA9	<i>Botrychium paradoxum</i>	Paradox moonwort	N	N
BRGL	<i>Braya glabella</i>	Smooth rockcress	N	N
CADI4	<i>Carex diandra</i>	Lesser paniced sedge	Y	N
CALI	<i>Carex livida</i>	Livid sedge	Y	N
CYPA19	<i>Cypripedium parviflorum</i>	Lesser yellow lady's slipper	Y	N
DREX3	<i>Draba exunguiculata</i>	Clawless draba	N	N
DRGR3	<i>Draba grayana</i>	Gray's draba	N	N
DRWE	<i>Draba weberi</i>	Weber's draba	N	N
DRRO	<i>Drosera rotundifolia</i>	Roundleaf sundew	Y	N
EPGI	<i>Epipactis gigantea</i>	Giant helleborine	N	N
EREX2	<i>Eriogonum exilifolium</i>	Dropleaf buckwheat	Y	N
ERALN	<i>Eriophorum altaicum</i> var. <i>neogaeum</i>	Whitebristle cottongrass	Y	N
ERCH7	<i>Eriophorum chamissonis</i>	Russet cottongrass	Y	N
ERGR8	<i>Eriophorum gracile</i>	Slender cottongrass	Y	N
FEHA3	<i>Festuca hallii</i>	Plains rough fescue	Y	N
KOSI2	<i>Kobresia simpliciuscula</i>	Simple bog sedge	Y	N
MACO13	<i>Machaeranthera coloradoensis</i>	Colorado tansyaster	Y	N
PAKO3	<i>Parnassia kotzebuei</i>	Kotzebue's grass of Parnassus	Y	N
PEHA11	<i>Penstemon harringtonii</i>	Harrington's beardtongue	Y	N
PTPO	<i>Ptilagrostis porterii</i>	Porter's feathergrass	Y	N
RAKA3	<i>Ranunculus karelinii</i>	Ice cold buttercup	N	N
RUARA2	<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Dwarf raspberry	Y	N
SACA4	<i>Salix candida</i>	Sageleaf willow	Y	N
SASE2	<i>Salix serissima</i>	Autumn willow	Y	N

2

1 **Table 4** **Plants—Sensitive Species for the White River National Forest**
 2 **(Continued)**

REGION 2 SENSITIVE PLANT SPECIES (WRNF) (Continued)				
NRCS Code	Scientific Name	National Common Name	Habitat Present	Plant Found
SPAN11	<i>Sphagnum angustifolium</i>	Sphagnum	Y	N
SPBA80	<i>Sphagnum balticum</i>	Baltic sphagnum	Y	N
THHE2	<i>Thalictrum heliophilum</i>	Sun-loving meadow rue	N	N
UTMI	<i>Utricularia minor</i>	Lesser bladderwort	Y	Y
VIOPA2	<i>Viburnum opulus var. americanum</i>	American cranberry bush	N	N

3 **Bald Eagle**

4 *(Haliaeetus leucocephalus)*

5 Bald Eagles live throughout North America, from Alaska to Newfoundland, and from the tip of
 6 Florida to southern California (Kingery, 1998). Historically, Bald Eagles were first found nesting in
 7 Colorado in 1889, although Oregon-bound settlers saw them in 1839 on the Blue River in Grand
 8 County (Marsh, 1931) Because of shooting, nest disturbance, loss of nest trees and nesting
 9 habitat, plus contamination of food sources by pesticides, the Bald Eagle population fell
 10 dramatically (Kingery, 1998). In 1967 the USFWS listed the eagle as endangered under the
 11 Endangered Species Preservation Act of 1966, and later under the Endangered Species Act of
 12 1973 (Buehler, 2000). Increased protection and the ban on some pesticides, DDT, in particular,
 13 has allowed the Bald Eagle to come back from the brink of extinction. The recovery has been so
 14 dramatic that in 2007 the USFWS removed the eagle from the list of threatened and endangered
 15 species.

16 *Occurrence within the Proposed Action*

17 According to CPW, the project location is found with summer range and winter range for the
 18 Bald Eagle. A roost site has also been located on the east side of Dillon Reservoir near Swan
 19 Mountain Road. There are no known nest sites in or around the project area. The nearest known
 20 nest is found approximately 31 miles northwest of Dillon Reservoir near Kremmling, Colorado.
 21 However, because the reservoir does provide foraging opportunities throughout the year, Bald
 22 Eagles may frequent the area on occasion.

23 **Boreal Owl**

24 *(Aegolius funereus)*

25 Boreal Owls occur throughout boreal forests of Canada and Alaska, and subalpine forests in the
 26 Rocky Mountains (Hayward and Hayward, 1993). In Colorado, they primarily occur in mature to
 27 old growth Engelmann spruce and subalpine fir forests characterized by an abundant growth of
 28 moss (Richter and others, 2004), but they may also occur in higher elevation lodgepole pine and
 29 aspen (Hayward and Hayward, 1993). Occupied habitat is typically interspersed with small
 30 meadows, streams, and wetlands occurring above 10,000 feet above sea level (Hayward and
 31 Verner, 1994).

32 The Boreal Owl has a large home range; winter and summer ranges both average over
 33 1,000 hectares (Hayward and Verner, 1994). Total home range may be as large as approximately
 34 3,400 hectares in habitats of preferred vegetation that lack optimum nesting, roosting, and
 35 foraging habitat (Hayward and Verner, 1994). Boreal Owls are cavity-nesting birds that prefer to

1 use abandoned woodpecker holes in large aspen and conifer trees. The distribution and
2 abundance of suitable cavities limits populations of Boreal Owls throughout much of the Rocky
3 Mountain region. Watersheds that do not support snags or dead-top trees large enough for a
4 cavity (greater than 13 inches diameter at breast height) are unlikely to provide Boreal Owls
5 habitat (Hayward, 2008). The preferred prey species, red-backed vole, depends on moss for
6 food and cover. Boreal Owls are also known to prey upon field voles, deer mice, shrews, flying
7 squirrels, and pocket gophers (Hayward and Verner, 1994).

8 The presence of large diameter snags and/or dead top trees with abandoned woodpecker holes
9 available for nesting purposes appears to be a limiting factor for this species. Logging operations
10 that open the forest to sunlight cause the moss to dry out and vole populations to decline;
11 subsequently, Boreal Owl populations may also decline (Richter and others, 2004). Timber
12 harvesting activities that result in clearcutting, or a disturbance such as a blow down would lead
13 to the most dramatic changes for the Boreal Owl (Hayward and Verner, 1994).

14 *Occurrence within the Proposed Action*

15 Boreal Owls have an average home range size of approximately 2,900 acres; however, they are
16 not known to defend this area (Hayward and Hayward, 1993). Within the study area, suitable
17 habitat for the species would be found in the aspen and lodgepole pine components. In total,
18 there are approximately 4.1 acres of potential Boreal Owl habitat within the project area. The
19 even-aged lodgepole pine stands are not characteristic of having snags and large trees with
20 cavities that are suitable for nesting purposes. However, there is potential for these stands to be
21 used for foraging purposes. Broadcast calling to detect Boreal Owl presence of suitable habitat
22 types in the area has not occurred.

23 **Northern Goshawk**

24 (*Accipiter gentilis*)

25 Northern Goshawks (Goshawks) occupy boreal and temperate forests in North America. The
26 species breeds from north-central Alaska to Newfoundland and south, to western and
27 southwestern montane forests in the United States. In Forest Service Region 2, Goshawks are
28 found year-round in Colorado, Wyoming and South Dakota and during fall and winter in Kansas
29 and Nebraska (Kennedy, 2003). Goshawks are considered habitat generalists at large spatial
30 scales. They use a wide range of forest community types during breeding season but prefer
31 mature and old growth forest for nesting and hunting.

32 The Goshawk has an average home range size of approximately 1,400 to 8,650 acres (Squires
33 and Reynolds, 1997). Aspect and slope in nesting areas may influence microclimate and habitat
34 selection for Goshawks. In southern portions of their range, Goshawk nest areas typically have
35 northerly aspects and are located near the bottom of moderate slopes (Kennedy, 2003).
36 Patterns from previous studies indicated that Goshawks select nest stands that are
37 characterized by relatively large diameter trees and high canopy closure regardless of region or
38 forest type. The nest tree diameter at breast height ranges from 8 to 20 inches (20 to 50 cm)
39 and the mean tree height is 59 to 75 feet (18 to 23 meters). Goshawks have been known to nest
40 in at least five different tree species within USFS Region 2: cottonwood, aspen, ponderosa,
41 lodgepole pine, and subalpine fir (Kennedy, 2003). Goshawks will also use dead trees and/or
42 snags for nesting, and they appear to choose nest trees based on size and structure more than
43 the species of tree. The species prefers mature forests with large trees, relatively closed
44 canopies (60 to 90 percent), and open understories that provide good visibility for foraging
45 (Kennedy, 2003).

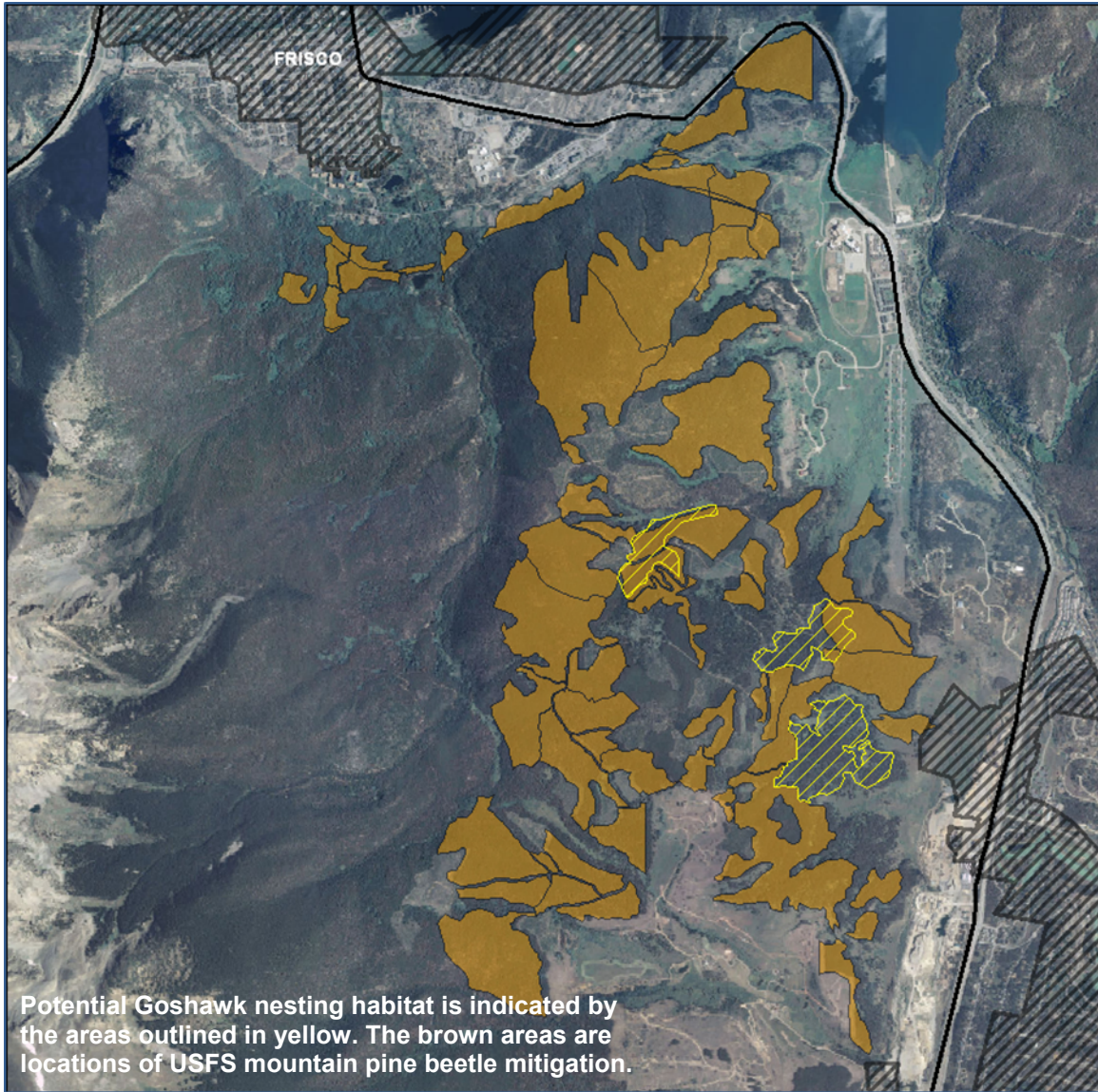
1 Goshawk foraging success depends on habitat requirements of important prey species, birds,
2 and small mammals (Kennedy, 2003). Goshawks are food-limited, particularly in low-quality
3 habitats. This can result in reduced fitness and reproduction, greater interspecific competition
4 for food, and greater susceptibility to predators (Kennedy, 2003). Food availability may also
5 affect distribution and abundance of Goshawks, their breeding area or home range sizes, the
6 proportion of pairs breeding, nesting success, and productivity.

7 Timber harvest is the principal threat to breeding populations. Fire suppression, grazing, tree
8 disease, and insect infestation are also contributing factors to the decline of adequate nesting
9 habitat. Canopy reduction from timber harvest can also result in replacement and competition
10 from other raptors (NatureServe, 2010). There is some evidence that Goshawks are resilient to
11 forest fragmentation and can re-establish when cleared areas are reforested (Kennedy, 2003).

12 *Occurrence within the Proposed Action*

13 No active Goshawk nests are currently known to occur within the project footprint. The nearest
14 known nesting habitat is located approximately 1.4 miles south of the project footprint area (see
15 **Figure 5**). Over the past 10 years, several observations have been documented of the species
16 occurring within the project area (Nettles, personal commun., 2013). Many plucking posts have
17 been found in the project area and it is likely that Goshawks from the known nest sites use the
18 project area for foraging purposes. WRNF biologists suspect that there may be at least one more
19 nest within the project area; however, none have been located. All potential nesting areas
20 within 0.5 mile of the project footprint were surveyed for Goshawk nests and presence/absence
21 of individuals during the summer of 2013 with negative results. Additional survey will be
22 conducted during the final design prior to construction. All active nests will be buffered with a
23 “no-work” zone for a distance of 0.5 mile around the nest as per CPW recommendations
24 (Colorado Division of Wildlife [CDOW], 2008).

1 **Figure 5 Potential Goshawk Nesting Habitat**



2 **Olive-sided Flycatcher**
3 (*Contopus cooperi*)

4 Olive-sided Flycatchers breed widely across the forested portion of Canada and throughout the
5 Rocky Mountains of the United States, including areas in north-central Colorado, and eastern
6 Idaho and western Montana (Kotliar, 2007). The species is restricted to coniferous or mixed-
7 coniferous forests. Throughout their breeding range, they occur within subalpine, montane, and
8 boreal forests. They may also occur along wooded shores of lakes, rivers, and bogs where forest
9 edges, standing dead trees, and variations in tree heights are located (Kotliar, 2007). This
10 species prefers forest edges and openings caused by natural disturbances that include gaps in
11 the forest canopy resulting from tree death in old growth forests and along edges of early
12 successional forests. They do not usually inhabit mature forests or closed canopy forests
13 (Kotliar, 2007).

1 In USFS Region 2, Olive-sided Flycatchers are more commonly found at higher elevations in
2 spruce/fir forests, but they are less frequently observed in aspen/mixed coniferous, ponderosa
3 pine, riparian, and occasionally pinyon/juniper forests (Kotliar, 2007). They are not usually
4 observed in mature lodgepole pine stands because of the even-aged, closed canopy structure
5 typical of these forests (Kotliar, 2007).

6 Olive-sided Flycatcher prefers openings with dead standing trees or recent fire disturbance and
7 blowdowns. Post fire disturbance provides forest openings, increased edge habitat, the
8 availability of snags and an increase in aerial insects (Hutto, 1995). However, a forest dominated
9 entirely by dead trees would not support these flycatchers (NatureServe, 2010).

10 The territorial range for the Olive-sided Flycatchers is variable in size but is typically 10 to
11 26 hectares in size. The spatial arrangement can be widely spaced if separated by dense forest
12 or otherwise unsuitable habitat (Kotliar, 2007). Studies show that this species is more abundant
13 within some types of logged forest versus an unlogged forest that still contains suitable
14 structures (that is snags or dead trees).

15 Olive-sided Flycatchers nest in live coniferous trees but will occasionally nest in trees that have
16 brown needles and are dead or dying. This species will use short-needled conifers instead of
17 longer needled (that is, Ponderosa pine) and deciduous trees for nesting. The Olive-sided
18 Flycatcher will typically forage in the openings and edges of forest canopies. They will often use
19 snags and dead topped trees as perches. Males will forage farther from the nest and at higher
20 perches versus the females (Kotliar, 2007). From their perch sites, Olive-sided Flycatchers mostly
21 catch insects that are in flight but will also eat insects from leaves and the bark of trees.

22 The migratory route of the Olive-sided Flycatcher is through forested areas of Central America,
23 Mexico, and western North America (Kotliar, 2007). They will generally use a greater diversity of
24 forest types, such as lowland and deciduous forests, than they use during the breeding season.
25 The highest elevation for the migrants was found in Colorado, although they are generally found
26 at lower elevations.

27 Necessary components of Olive-sided Flycatcher habitat include the combination of forest
28 openings, mature forest, and the presence of snags. Harvesting practices and fire management
29 activities resulting in even-aged and homogeneous stand conditions can adversely affect
30 population dynamics and habitat suitability of this species (Kotliar, 2007).

31 *Occurrence within the Proposed Action*

32 The average home range size for the Olive-sided Flycatcher is approximately 25 to 65 acres
33 (Kotliar, 2007). Riparian habitats with adjacent spruce/fir trees and dead snags provide the best
34 habitat for this species. Such habitat is not present in the project footprint.

35 **Trianglelobe Moonwort**

36 (*Botrychium ascendens*)

37 Trianglelobe moonwort is a small perennial fern with a single aboveground frond. The frond is
38 usually about 4 inches (10 cm) tall, yellow-green, and divided into two segments that share a
39 common stalk. The mostly sterile segment is once pinnatifid with up to six pairs of strongly
40 ascending, narrowly triangular pinnae which have deeply lacerate margins. The sterile segment
41 often has a few sporangia on the margins of the pinnae or on small branches. The fertile
42 segment is longer than the sterile segment, is branched, and bears grape-like sporangia. Spores
43 germinate underground and develop into minute, subterranean, non-photosynthetic
44 gametophytes which depend on an endophytic fungus for nourishment (NatureServe, 2010).

1 Within USFS Region 2, *Botrychium ascendens* is found within short and tall riparian willow
2 communities with significant moss, gravel, and cobble groundcover on volcanic or granitic
3 alluvium at 8,000 to 9,000 feet (2,400 to 2,700 meters) in elevation (Wyoming Natural Diversity
4 Database, 2003). In Shoshone National Forest, *B. ascendens* plants were found about 1 to 2 feet
5 (0.3 to 0.6 meter) above and adjacent to a braided channel (Wyoming Natural Diversity
6 Database, 2003). The groundcover here mainly consists of mosses, cobbles, and gravel, while
7 the canopy at these sites is 3 to 6 feet (0.6 to 1.2 meter) tall, dominated by *Salix* spp.
8 communities (for example, *S. wolfii*, *S. boothii*, and *S. geyeriana*).

9 Many authors have noted that several species of *Botrychium*, including *B. ascendens*,
10 *B. crenulatum*, and *B. lineare*, occur in open habitats and microsites with evidence of slight to
11 moderate disturbances. For example, Williston (2001) reported that several *Botrychium* species
12 in Canada, including *B. ascendens*, appear to be successful colonizers of disturbed habitat, such
13 as the edges of trails or old roads and in abandoned fields. Kolb and Spribille (2001) noted that
14 moonworts in Summit County, Colorado, were always found in non-forested and disturbed
15 habitat; like ski runs at ski resorts, overgrown roadbeds and logging landings, and areas that had
16 burned in the past 100 years, but the canopy had not yet grown closed. Root (1999) also found
17 several *Botrychium* species at a highly disturbed site with cut pines, evidence of fire, and old pits
18 in coarse, decomposed granite. The moonworts were growing in small pockets of soils around
19 the cut logs and stumps.

20 Suitable habitat exists within the project area. However, surveys conducted during the summer
21 of 2013 yielded negative results for presence.

22 **Narrowleaf Moonwort**

23 (*Botrychium lineare*)

24 Narrowleaf moonwort is a small perennial fern with a single pale green, above-ground frond
25 that stands 2.5 to 7 inches (about 6.4 to 18 cm) tall. The frond is divided into two segments, one
26 sterile, and one fertile, which share a common stalk. The sterile segment is once-pinnate (with
27 segments, or pinnae borne on each side of an elongated central axis) with 4 to 6 widely spaced
28 pairs of pinnae, which are linear shaped or sometimes bifid with linear lobes. The fertile
29 segment is one to two times as long as the sterile segment and has a single major axis with short
30 branches that bear grape-like sporangia, which contain thousands of spores. Spores germinate
31 underground and develop into minute, subterranean, non-photosynthetic gametophytes
32 (NatureServe, 2010).

33 Wagner and Wagner (1994) stated that it is difficult to describe a typical habitat for this species
34 because the known sites are so different. It has been found mostly at higher elevations (about
35 4,920 to 9,850 feet or 1,499 to 3,002 meters) in mountains, but specific habitats have ranged
36 from a meadow dominated by knee-high grass, shaded woods and woodlands, grassy horizontal
37 ledges on a north-facing limestone cliff, and a flat upland section of a river valley. The plant is
38 possibly a colonizer of disturbed early seral habitats (USFWS, 2003).

39 Suitable habitat exists within the project area. However, surveys conducted during the summer
40 of 2013 yielded negative results for presence.

41 **Livid Sedge**

42 (*Carex livida*)

43 Livid sedge occurs in small clumps arising from long, slender rhizomes and has flowering stems
44 up to 8 inches tall. Leaves are clustered on the lower third of the stem and have a thin pale-
45 bluish waxy coating; they are 0.05 to 0.1 inch wide with long, pointed tips. The inflorescence
46 consists of 2 to 3, or sometimes 4, loosely clustered spikes. The narrow terminal spike is 0.3 to

1 1.2 inches long and either is composed entirely of male flowers or has several fruits borne at the
2 top. The lower spikes are composed entirely of female flowers and are borne on short stalks; the
3 uppermost leaf (bract) just below the lowest spike usually exceeds the uppermost spike. Scales
4 that make up the spikes are light or dark brown in color with a green midvein. The perigynia are
5 0.08 to 0.2 inch long, pale green and glabrous, and elliptic or ovate in outline with a short beak
6 at the tip; the enclosed seed is triangular in cross-section (NatureServe, 2010).

7 General habitats described for *Carex livida* have included fens, peat bogs, calcareous floating
8 mats, swampy woods, and *Carex*-dominated marls (Hurd and others, 1998; Ball and Reznicek
9 2004). Less commonly, *C. livida* has been described from wetlands with mineral substrates
10 (Hulten, 1968; Gleason and Cronquist, 1991; Whipple, personal commun., 2005). Across its
11 range, it is most commonly found in peatlands, particularly fens with moderate to high pH and
12 calcium concentrations (Kubiw and others, 1989; Glaser, 1992).

13 The most common habitats described in Colorado and Wyoming are montane and subalpine
14 fens, including those formed in depressions, such as small kettle basins or at the toes of
15 mountain slopes or alluvial fans. The environments conducive to fen formation are generally
16 restricted to higher elevations (Windell and others, 1986) where cooler and wetter climatic and
17 hydrologic conditions prevail. As a consequence, all of the *Carex livida* occurrences are found at
18 elevations over 6,400 feet (1,950 meters).

19 Suitable habitat exists within the project area. However, surveys conducted during the summer
20 of 2013 yielded negative results for presence.

21 **Roundleaf Sundew**

22 (*Drosera rotundifolia*)

23 The leaves of the common sundew are arranged in a basal rosette. The narrow, hairy 0.5 to
24 2 inches long petioles support 0.15 to 0.4 inch long laminae. The upper surface of the lamina is
25 densely covered with red glandular hairs that secrete a sticky mucilage (Wikipedia, 2013).

26 A typical plant has a diameter of around 1.2 to 2 inches with a 2 to 10 inches tall inflorescence.
27 The flowers grow on one side of a single slender, hairless stalk that emanates from the center of
28 the leaf rosette. White or pink in color, the five-petaled flowers produce 0.04 to 0.06 inch light
29 brown, slender tapered seeds (Wikipedia, 2013).

30 In the winter, *D. rotundifolia* produces a hibernaculum to survive the cold conditions. This
31 consists of a bud of tightly curled leaves at ground level (Wikipedia, 2013).

32 The plant feeds on insects, which are attracted to its bright red color and its glistening drops of
33 mucilage, loaded with a sugary substance, covering its leaves. It has evolved this carnivorous
34 behavior in response to its habitat, which is usually poor in nutrients or is so acidic, nutrient
35 availability is severely decreased. The plant uses enzymes to dissolve the insects, which become
36 stuck to the glandular tentacles, and extract ammonia (from proteins) and other nutrients from
37 their bodies. The ammonia replaces the nitrogen that other plants absorb from the soil
38 (Wikipedia, 2013).

39 *Drosera rotundifolia* is an obligate wetland species that requires continuously moist or saturated
40 soils and is found in sites with shallow water table depths (Reed, 1988). The roots cannot
41 tolerate desiccation, and the rooting zone (less than 2.4 inches or 6 cm below ground surface)
42 must remain moist to saturated. *Drosera rotundifolia* can withstand ground frost with its leaves
43 uncurled, and this occurs often within its boreal distribution (Crowder and others, 1990).
44 Throughout its range, *D. rotundifolia* is typically found in nutrient poor peatlands, including
45 ombrotrophic (rain-fed) bogs, poor fens, and along the margins of acidic ponds (Juniper and

1 others, 1989; Crowder and others, 1990; Schnell, 2002). Although typically occurring in acidic
2 environments, the species is also known from intermediate-rich and extreme-rich fens, which
3 have circumneutral to slightly basic pH, and occasionally from wetlands with mineral, as
4 opposed to organic, substrates (Szumigalski and Bayley, 1997). The plant prefers full sun but can
5 survive in some shade. Shaded individuals growing within Sphagnum moss mats do not form
6 rosettes but have long axes (Crowder and others, 1990).

7 Suitable habitat exists within the project area. However, surveys conducted during the summer
8 of 2013 yielded negative results for presence.

9 **Slender Cottongrass**

10 (*Eriophorum gracile*)

11 Slender cottongrass is a grass-like perennial with single erect stems that are 8 to 23 inches (20 to
12 58 cm) high and that arise from slender rhizomes. The long basal and stem leaves are only
13 0.04 to 0.08 inch (0.10 to 0.20 cm) and deeply channeled or triangular in cross-section except
14 near the stem. The uppermost leaf has a blade that is shorter than the sheathing portion
15 surrounding the stem. Flowers are borne in 2 to 5 stalked, head-like spikelets arising from the
16 stem tips and subtended by a single green leaf-like bract that is shorter than the inflorescence.
17 The spikelet stalks are covered with dense, short soft hairs. Each flower consists of numerous
18 long, shining white bristles at the base of the ovary and a lance-shaped, greenish black or brown
19 scale with a slender midrib that ends well below the tip. The light brown seeds are 0.08 to
20 0.16 inch long (0.20 to 0.41 cm) and three to five times as long as wide. The mature bristles are
21 about 0.8 inch (2.03 cm) long (NatureServe, 2010).

22 Globally, *Eriophorum gracile* is found in cool temperate, alpine, and arctic regions, in alpine and
23 subalpine wetlands with peaty soils and poor drainage that is supported by groundwater
24 discharge or snowmelt (Ball and Wujek, 2002). In USFS Region 2, *E. gracile* is typically found in
25 fens and subalpine wet meadows with saturated soils, where vegetation is dominated by
26 graminoids and forbs (Dorn, 1992; Ball and Wujek, 2002). These habitats are often described as
27 bogs or marshes in the original source material. Elevations of occurrences range from about
28 7,000 to 11,140 feet, in Colorado, from 7,700 to 8,900 feet (Decker, 2006a).

29 Suitable habitat exists within the project area. However, surveys conducted during the summer
30 of 2013 yielded negative results for presence.

31 **Hall Fescue**

32 (*Festuca hallii*)

33 The Hall fescue is a monocot, perennial plant with tufted bunchgrass with creeping rhizomes,
34 11 to 20 inches tall. The leaf blades are gray-green and folded, spikelets seldom exceeding
35 glumes in length. It is often found in meadows and the edges of conifer forests from 6,800 to
36 11,000 feet in elevation (NatureServe, 2010).

37 In USFS Region 2, *Festuca hallii* grows in habitats that vary considerably in elevation and in
38 associated biota. Handley and Laursen (2002) report *F. hallii* in Wyoming from interrupted
39 habitats in montane meadows and in edges between open meadows and *Pinus contorta*-*Picea*
40 *engelmannii* forests, and in tundra. Tweit and Houston (1980) documented *F. hallii* on gentle
41 slopes (0 to 15 percent) on the Shoshone National Forest. Jones and Fertig (1999) noted the
42 species' affinity for meadows, slopes, and open woods in Wyoming. A description of the
43 Cordova Pass, Colorado, occurrence reads, "It occurs sparsely on a grassy saddle along the trail
44 from the pass toward West Spanish Peak. The saddle is dominated by *Trifolium attenuatum* and
45 *F. arizonica*, various species of *Carex* and subalpine perennials and appears to have had a history

1 of overgrazing and recovery. The few large bunches of *F. scabrella* are best developed in deep
2 loose soils churned up by gophers” (Weber and others, 1979, p. 495)

3 Suitable habitat exists within the project area. However, surveys conducted during the summer
4 of 2013 yielded negative results for presence.

5 **Simple Kobresia**

6 (*Kobresia simpliciuscula*)

7 Simple kobresia is a sedge-like plant that forms small bunches with triangular stems up to
8 6 inches (about 15 cm) tall. The leaves, which are confined to near the base of the plant, are flat
9 or rolled and approximately 1 mm wide. Dried sheaths and blades persist at the base of the
10 plant. The 3 to 12 small spikes are borne in a loosely congested inflorescence at the top of the
11 stem. Each spike is 0.2 to 0.6 inches long, is subtended by a small, brown, papery bract, and
12 consists of a few flowers; male flowers with anthers are located above female flowers. Each
13 female flower is composed of a small bract and a scale that is loosely wrapped around the ovary
14 (NatureServe, 2010).

15 In USFS Region 2, *Kobresia simpliciuscula* grows in mesic to wet tundra, in shallow wetlands of
16 glacial cirques, and in rich or extreme rich fens. In all habitats, *K. simpliciuscula* is found in
17 wetter situations than the related *K. myosuroides*, especially along rivulets below snow banks, in
18 cirque basins where snowmelt collects, and on hummocks in calcareous fens. Non-fen
19 occurrences are also often associated with calcareous substrates such as gravels derived from
20 limestone. The Wyoming occurrence is at an elevation of 6,000 to 6,600 feet. In Colorado, fen
21 occurrences in South Park range from 8,970 to 10,040 feet, while cirque and tundra occurrences
22 range from 10,760 to 12,800 feet (Decker, 2006b).

23 Suitable habitat exists within the project area. However, surveys conducted during the summer
24 of 2013 yielded negative results for presence.

25 **Colorado Tansyaster**

26 (*Machaeranthera coloradoensis*)

27 A perennial herb that forms leafy tufts, about 1.5 to 4 inches high. Leaves are coarsely-toothed,
28 spoon-shaped to linear, 0.4 to 1.5 inches long, and densely hairy. Large, showy flower heads are
29 borne singly on short stalks (not very high above the leaves). The flower heads have
30 rose-colored or purple rays surrounding a yellow disk, and it blooms from June to September. It
31 grows on gravelly places or rock outcrops, often on sandstone or limestone, in dry mountain
32 tundra at about 8,530 feet in elevation (NatureServe, 2010).

33 *Machaeranthera coloradoensis* macrohabitats range from plains/park grassland, to dry
34 grassland communities within ponderosa pine (*Pinus ponderosa*) or bristlecone pine (*Pinus*
35 *aristata*) areas, to pinyon/juniper (*Pinus/Juniperus*) woodlands, to alpine fellfields and meadows
36 (Chumley, 1998; Johnston, 2001; G. Austin personal communication, 2002; University of
37 Colorado Herbarium, 2003; CNHP, 2003; Rocky Mountain Herbarium, 2003). Within these areas,
38 this species grows on slopes, bluffs, ridges, flats, or roadsides on sedimentary and calcareous
39 substrates (for example, limestone, dolomite, shale), volcanic substrates (for example, volcanic
40 ash), or granitic substrates (Hartman, 1976; Johnston, 2001; Colorado Natural Heritage Program,
41 2003; Rocky Mountain Herbarium, 2003). This species is consistently found in areas with open
42 exposure, but the slope, aspect, and moisture vary from site to site. *Machaeranthera*
43 *coloradoensis* is found from flat areas up to 35 percent slopes, on slopes of all aspects, and in
44 both dry and mesic areas.

1 Based on qualitative estimates by botanists, many occurrences are in open settings with no or
2 scattered trees, up to 5 percent cover by shrubs, 5 to 55 percent cover by grasses, 25 percent
3 cover by forbs, 5 to 70 percent cover by bare ground, 0 to 1 percent cover by mosses/lichen,
4 and 10 to 70 percent cover by gravel (Austin, personal commun., 2003; CNHP, 2003).

5 Suitable habitat exists within the project area. However, surveys conducted during the summer
6 of 2013 yielded negative results for presence.

7 **Dwarf Raspberry**

8 (*Rubus arcticus* ssp. *acaulis*)

9 *Rubus arcticus* ssp. *acaulis* is a diminutive, unarmed rhizomatous, herbaceous perennial that is
10 “almost stemless” (Porsild, 1951). *R. arcticus* ssp. *acaulis* has short (up to 4 inches) and
11 sometimes to 5.9 inches, upright flowering branches that lack prickles or bristles. The branches
12 have two or three leaves and a solitary terminal flower on slender, finely pubescent peduncles.
13 The flower has five pale-pink to deep rose-colored petals that are up to 0.8 inches long and are
14 obviously narrowed toward the base. The sepals are lance-shaped and are up to 0.4 inches long.
15 The calyx tube is hairless and glandless, and the calyx lobes are long-tapered and reflexed. The
16 leaves are alternate, deciduous, and typically trifoliate but sometimes 5-foliate. The upper
17 surface of the leaves is hairless and a dull green color, whereas the underside is paler with
18 minutely hairy margins. The terminal leaflet is stalked, while the lateral pair is nearly sessile,
19 asymmetrical, and often bears a partially developed lobe. The leaflet margins are serrate with
20 blunt forward-pointing teeth. The fruit is an edible red raspberry (aggregate of drupelets) about
21 0.4 inch in diameter (Ladyman, 2006).

22 In USFS Region 2, *Rubus arcticus* ssp. *acaulis* grows in the montane and sub-alpine, at elevations
23 between approximately 7,000 and 9,720 feet. Vegetation types associated with *R. arcticus* ssp.
24 *acaulis* include *Salix planifolia*/*Carex* [rostrata] *utriculata* (plainleaf willow/beaked sedge), and
25 *Picea engelmannii*/*Linnaea borealis* (Engelmann spruce/twinberry). In Colorado, *R. arcticus* ssp.
26 *acaulis* grows in the upper montane willow zone (Weber, 1960). This taxon has been reported to
27 grow in boggy woods, marshes, mountain meadows, and alpine tundra (Fertig, 2000). There
28 does not appear to be documented occurrences above the treeline in USFS Region 2. In
29 addition, although collection sites have been described as “boggy,” the term might have been
30 applied loosely when the collection site was actually a fen. Most, if not all, peatlands in the
31 Colorado Rocky Mountains are fens (Cooper, 1996).

32 Suitable habitat exists within the project area. However, surveys conducted during the summer
33 of 2013 yielded negative results for presence.

34 **Peat Moss**

35 (*Sphagnum angustifolium*)

36 Plants are small and often slender and soft, lax to compact, moderately stiff-stemmed; green to
37 pale yellow to golden brown to brown; capitulum strongly convex in drier grown forms to
38 strongly 5-radiate and flat in wetter growing forms. The stems are pale green to pale brown,
39 often with pinkish red patches, cortex undifferentiated. Stem leaves are equilateral to isosceles-
40 triangular, small, less than 0.3 inch, mostly appressed to stem, apex acute to obtuse, hyaline
41 cells e fibrillose and nonseptate. Branches straight to slightly curved, usually 5-ranked; leaves not
42 much longer at distal end than proximal end. Branch fascicles have 2 spreading and 2 to 3
43 pendent branches. Branch stems have their cortex enlarged with conspicuous retort cells, often
44 pinkish-red at proximal end. Branch leaves are narrowly ovate-lanceolate, 0.3 to 0.6 inch,
45 straight, moderately undulate and recurved in larger and/or wetter grown forms, not undulate
46 and slightly recurved in compact forms from drier sites; margins entire; hyaline cells on convex

1 surface with 1 (rarely 2 to 3) pore per cell at apical end of cell, on concave surface with round
2 wall thinnings in cell ends and angles; chlorophyllous cells triangular in transverse section and
3 just enclosed on concave surface. Sexual condition is dioicous. Spores are 21 to 25 micrometers
4 (μm); coarsely papillose on proximal and distal surfaces; proximal laesura more than 0.5 spore
5 radius (McQueen and Andrus, 2007).

6 Peat moss has a wide range of habitats, from ombrotrophic to rich fens, open mires, sedge fens
7 and muskeg. It can form carpets, floating mats, low hummocks and hummock sides; low to high
8 elevations, up to 15,500 feet (zipcodezoo.com, 2013).

9 Suitable habitat exists within the project area. However, surveys conducted during the summer
10 of 2013 yielded negative results for presence.

11 **Lesser Bladderwort**

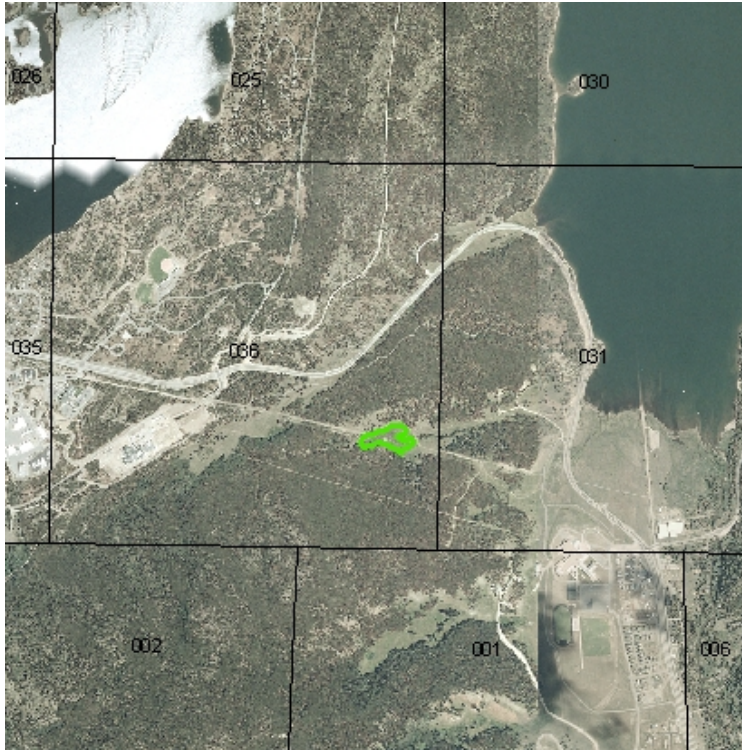
12 (*Utricularia minor*)

13 *Utricularia minor* is a small, perennial yellow-flowered aquatic bladderwort that grows affixed to
14 substrate. It has fine, smooth, thread-like stolons (stems) that have leaf and bladder segments
15 alternating along them. The stolons grow to 12 inches long but are generally less than
16 0.1 inch wide. Portions of stolons in *U. minor* are buried and anchor the plant to substrate, while
17 the remainder of the plant floats suspended in the water column. Buried portions are colorless
18 and have a greater number of bladders than the green stolon segments floating within the
19 water column. They are dichotomously branched in such a way as to appear palmately divided
20 with 7 to 22 leaflets. The end segments are moderately flattened, but this is only most readily
21 apparent under some magnification. Lateral setulae (small bristles) are absent, and apical
22 setulae are microscopic. *Utricularia minor* exhibits leaf dimorphism; leaves buried in substrate
23 differ in appearance from aquatic leaves in that they are reduced to one or two elongate
24 leaflets. Bladders of *U. minor* are stalked, oval-shaped, and 0.03 to 0.1 inch long. The mouth of
25 the bladder is opposite the stalk that attaches the bladder to the plant. It has two, long,
26 branched appendages (antennae) that curl backward over it. Additionally, the mouth is sparsely
27 adorned with simple hairs (bristles). The two pairs of arms comprising the quadrifids in *U. minor*
28 are unequal in length. The arms of the longer pair are almost parallel. The shorter pair of arms
29 forms an obtuse angle and is reflexed, bending back toward the longer pair. Flowers of *U. minor*
30 are borne on a single, narrow stem (or scape) that emerges from the water surface. The entire
31 stem can be 7 to 8 inches long but only 0.1 to 0.25 inch thick. Two to four scales are equally
32 spaced along the length of the scape below the terminal raceme of two to six flowers. Each has
33 two sepals, 0.1 to 0.15 inch long, with the top one being wider than the bottom. The lower lip of
34 the corolla is larger and longer than the upper one. The upper lip is roughly egg-shaped and
35 wider near the base than at the tip, and it has an acute, slightly notched tip. The lower lip is
36 broad and oval-shaped with the sides curving downward over a spur-like petal, which is not as
37 well-developed as in other *Utricularia* species. *Utricularia minor* has two stamens borne on the
38 petals. Pollen grains are spindle-shaped (that is, longer than wide) and have 11 to 18 elongate
39 but rounded longitudinal colpi (compound) furrows, with inner apertures arranged
40 perpendicularly to the outer aperture. Stigmas are long, with two unequal lobes. The lower lobe
41 is oval-shaped with a reflexed tip and a fringe of hairs, and the upper lobe is smaller and
42 triangular in shape. The ovary is superior, with two fused carpels and a single locule. Fruit is a
43 small (0.01 to 0.015 inch) round capsule. Seeds are numerous and small (less than 0.04 inch or
44 1 mm in length and width), polygonal at the base, and rounded on top (Neid, 2006).

1 In USFS Region 2, *Utricularia minor* is generally associated with two different types of wetland
2 systems. It is associated with montane fen ecological systems (Rondeau, 2001) and in small
3 localized seeps at higher elevations in Colorado and Wyoming, whereas it is associated with
4 freshwater marsh systems at lower elevations and in the Plains states. These systems
5 correspond to the Rocky Mountain Subalpine-Montane Fen and North American Arid West
6 Emergent Marsh ecological systems of NatureServe (2010), respectively. Montane fen and
7 freshwater marsh systems are “small patch” systems. Small patch systems are local in scale,
8 usually have distinct boundaries, require specific environmental conditions, and are strongly
9 linked to and dependent on the landscape around them (Anderson and others, 1999). Both of
10 these habitat types have distinct hydrologic regimes dictated by their surrounding landscape
11 and underlying bedrock.

12 Suitable habitat exists within the project area. A population of *U. minor* was discovered after
13 surveying the “iron fen.” This is the first recorded instance of this plant species on the WRNF
14 (Proctor, personal commun. 2014). The map below indicates the location of the “iron fen”
15 where the population was found (Figure 6). Based on the location of this fen and the Proposed
16 Action, it appears to be well outside the area of influence of the Proposed Action. Therefore, no
17 effects to this species would be expected. Impacts to this species would be similar for either
18 alternative.

19 **Figure 6 Location of the “Iron Fen” (Green Area) in Relation to the Project Area**



20
21

1 **PROJECT IMPACTS**

2 *No Action Alternative*

3 Construction of the No Action Alternative would result in loss of habitat in terms of vegetation
 4 and possible species composition. Direct impacts to existing vegetation and grass/forb and
 5 shrub communities within the No Action Alternative would result in the removal of vegetation
 6 and an increase in impervious surface where widening along the existing SH 9 corridor and
 7 realignment of the Blue River Bikeway is proposed. A total of 2.00 acres of vegetation would be
 8 permanently removed as a result of widening on the existing SH 9 alignment. In addition, a total
 9 of 1.01 acres of vegetation would be permanently impacted from the bikeway relocation. The
 10 majority of these improvements would affect the grass/forb with shrub community, which
 11 consists of roadside habitat, as well as areas that have been recently logged. **Table 5** and **Table 6**
 12 summarize permanent and temporary impacts to vegetation communities from the No Action
 13 Alternative. Mitigation measures listed in the SH 9 Frisco to Breckenridge EIS will be
 14 implemented to offset impacts to vegetation resources (CDOT and FHWA, 2004a).

15 **Table 5 Roadway Vegetation Impacts—No Action Alternative**

Vegetation Community Type	Permanent Acre of Impact (Impervious Surface)	Temporary Impacts (Acre)*
Lodgepole Pine Forest	0.61	2.62
Aspen/Mixed Conifer	0.02	0.07
Open Canopy Lodgepole Pine with Grass/Forb	0.17	1.24
Grass/Forb with Shrub	1.20	4.21
Grass/Forb and Aspen/Mixed Conifer	0	1.17
Sagebrush with Grass/Forb	0	0.10
Total Impacted Acreage	2.00	9.41

*Temporary impacts generally occur from the short-term disturbance necessary for activities like construction access.

16

17 **Table 6 Bikeway Realignment Vegetation Impacts—No Action Alternative**

Vegetation Community Type	Permanent Acre of Impact (Impervious Surface)	Temporary Impacts (Acre)
Lodgepole Pine Forest	0.17	1.10
Aspen/Mixed Conifer	0.20	0.72
Open Canopy Lodgepole Pine with Grass/Forb	0	0.05
Grass/Forb with Shrub	0.64	4.03
Grass/Forb and Aspen/Mixed Conifer	0	0
Sagebrush with Grass/Forb	0	0
Total Impacted Acreage	1.01	5.90

18

1 The construction of the No Action Alternative would also increase impervious surfaces, thereby
 2 increasing runoff and exposing the surrounding vegetation to higher levels of pollutants. Soil
 3 disturbance from construction equipment would also create favorable conditions for noxious
 4 weeds to introduce and establish, or to further spread.

5 In the BA associated with the No Action Alternative, it was determined that, despite the increase
 6 in roadway barriers and more lanes of traffic, the No Action Alternative would not have an
 7 effect on any federally listed species except the lynx, but that effect was not likely to be adverse.
 8 The USFWS concurred in writing with that determination.

9 To minimize impacts to wildlife, the following measures have been proposed:

- 10 • Minimize tree removal and disturbance to native plant communities.
- 11 • Stabilize disturbed area and re-establish native vegetation communities following
 12 construction.

13 *Proposed Action*

14 Most of the habitat impacts due to the Proposed Action would be to the aspen/mixed conifer
 15 community, lodgepole pine forest, and areas dominated by grass/forbs and mountain
 16 sagebrush. In addition, the permanent conversion of habitat to impervious surface reduces the
 17 amount of habitat available for future aspen and lodgepole pine forest regeneration. **Table 7**
 18 summarizes permanent and temporary impacts to vegetation communities from the Proposed
 19 Action within the study area.

20 **Table 7 New Roadway Alignment and Dickey Day Use Connection**
 21 **Improvements, Vegetation Impacts—Proposed Action**

Vegetation Community Type	Permanent Acre of Impact (Impervious Surface)	Temporary Impacts (Acre)*
Lodgepole Pine Forest	1.50	6.51
Aspen/Mixed Conifer	2.57	2.98
Open Canopy Lodgepole Pine with Grass/Forb	0.01	0.67
Grass/Forb with Shrub	1.97	6.13
Grass/Forb and Aspen/Mixed Conifer	0.08	1.21
Sagebrush with Grass/Forb	0.56	0.95
Total Impacted Acreage	6.69	18.45

*Temporary impacts generally occur from the short-term disturbance necessary for activities like construction access, which will include temporary widening to construct the new roadway alignment.

22 The construction of the Proposed Action would increase impervious surfaces, thereby increasing
 23 runoff and exposing the surrounding vegetation to higher levels of pollutants. Soil disturbance
 24 from construction equipment would also create favorable conditions for noxious weeds to
 25 introduce and establish, or to further spread. The addition of new winter maintenance practices
 26 along the new roadway alignment (for example, liquid deicers, traction materials) could also
 27 indirectly impact vegetation. However, under the Proposed Action, 1.76 miles of the existing
 28 SH 9 roadway would be reduced from a standard 36-foot cross section to a 12-foot paved path
 29 (at the existing grade) and would revert to recreational use. This new 12-foot paved recreational
 30 trail would not be maintained in the winter. It’s estimated that approximately 3.1 acres of the
 31 existing SH 9 alignment will be reclaimed (impervious surface removed) and revegetated with
 32 native grasses/forbs and native trees and shrubs where appropriate.

1 To minimize impacts to the lynx and wolverine during construction, CDOT proposes the
2 following conservation measures, which would be beneficial to many other species, USFS
3 Sensitive Species included:

- 4 • Two underpasses will be constructed on either end of the project which are designed for
5 recreation, but would be available for use by wildlife to cross under SH 9. The
6 underpasses will be suitable for use by wildlife the size of deer and smaller.
- 7 • The underpasses will not be lit at night.
- 8 • A 10-foot wide by 16-foot high arched wildlife crossing, suitable for use by wildlife the
9 size of deer and smaller, will be installed under the new alignment.
- 10 • Native trees and shrubs will be planted at the portals of the crossings to provide cover
11 for lynx and other wildlife when approaching the crossings.
- 12 • The allowance of no more than four consecutive nights of work immediately followed by
13 at least 3 consecutive nights of no work

14 IMPACTS TO TARGET SPECIES

15 *Bald Eagle*

16 **Impacts of No Action Alternative**

17 *Direct and Indirect Impacts*

18 The No Action Alternative would not directly or indirectly affect the Bald Eagle or its habitat.
19 Bald Eagle winter activity below Dillon Reservoir would continue uninterrupted. Cumulative
20 adverse impacts to Bald Eagles are possible if urban development or recreation activities below
21 Dillon Reservoir displace wintering eagles. Implementation of the No Action Alternative would
22 have no effect on Bald Eagles because there would be no loss or disruption of Bald Eagle winter
23 roosting or foraging activity.

24 **Impacts of Proposed Action Alternative**

25 *Direct and Indirect Impacts*

26 There are no known nest sites within the proposed project area and implementation is not
27 expected to hinder the species' ability to travel to and from foraging areas and/or alter
28 courtship and nesting behaviors. There is potential for individual eagles to use the project area
29 for foraging purposes. However, Bald Eagles are known to have relatively large ranges in which
30 to forage (NatureServe, 2013) and the proposed project area would make up a minor portion of
31 either the summer or winter range of the eagles. The roost site found east of the project has
32 been known to be used by individuals but does not provide sufficient cover and is located too
33 near to human activity to function as a communal night or winter roost. The project would not
34 be expected to increase the human activity or disturbance near the roost which would continue
35 to function as it historically has. Additionally, improved water quality that would result from the
36 project may result in better quality prey species found within the reservoir. Water quality would
37 be expected to improve because of the following actions:

- 38 • Permanent best management practices are being incorporated into the roadway design.
39 These include, but are not limited to, approximately four stormwater runoff/sediment
40 capture basins, riprap check dams along vegetated swales, and adding riprap to outfalls
41 for concentrated flows. Basins have been sized approximately to capture both Water

1 Quality Capture Volume plus an added 20 percent volume for sediment accumulation
2 from sanding operations.

- 3 • During the project design, engineers will consider other strategies to improve water
4 quality by reducing stormwater runoff volume and velocity, enhancing infiltration,
5 increasing length of drainage flow paths, and minimizing stream bank impacts in the
6 drainage areas.
- 7 • CDOT has adopted strict limitations on the amount of phosphorous that is permitted to
8 be used in liquid deicers.
- 9 • Moving the roadway away from being adjacent to Dillon Reservoir allows for the
10 [spreading out and dilution and absorption] of phosphorous between the new
11 alignment and Dillon Reservoir.

12 These mitigations are anticipated to improve water quality that reaches Dillon Reservoir, as
13 compared to both the No Action Alternative and even existing conditions for the two-lane
14 highway.

15 *Cumulative Impacts*

16 The cumulative impacts of state, private, and federal activities that would occur as a result of
17 the project are not expected to significantly impact Bald Eagles. These activities would not
18 restrict/impair Bald Eagles' ability to reproduce and fledge their young successfully.

19 Other projects occurring within the Ophir Mountain area that may add cumulatively to the
20 effects of this species include:

- 21 • County Commons, implementation occurred on 281 acres of Forest Service land in 2004;
- 22 • Gold Hill Wildland/Urban Interface (WUI), implementation occurred on 38 acres of
23 Forest Service land in 2008;
- 24 • Red Tail WUI, implementation occurred on 126 acres of Forest Service land in 2009;
- 25 • Frisco WUI, implementation occurred on 18 acres of Forest Service land in 2008;
- 26 • Iron Springs Salvage, implementation occurred on 141 acres of Forest Service land in
27 2008;
- 28 • Breckenridge Forest Health and Fuels Project, implementation to occur on 4,391 acres
29 of Forest Service land in 2011;
- 30 • Miners Creek Road Hazard Tree, implementation occurred on 44 acres of Forest Service
31 land;
- 32 • Peaks Trail Hazard Tree, implementation occurred on 190 acres of Forest Service land;
- 33 • Colorado Trail Hazard Tree, implementation occurred on 303 acres of Forest Service
34 land;
- 35 • Outfitters Guides
- 36 • Peak 6 Expansion, implementation to occur on 64 acres of Forest Service land in 2011
37 and 2012;
- 38 • Private Treatments, implementation occurring on 17,573 acres of privately owned land
39 from 2007 through 2011 (Personal Communication, Brett Crary, Forester, WRNF).
- 40 • USFS tree harvesting on Ophir Mountain and the surrounding area.

1 *Determination of Effects and Rationale*

2 The following determination is tiered to the 2002 White River National Forest – Revised Land
3 and Resource Management Plan and Final Environmental Impact Statement (US Forest Service,
4 2002) regarding management prescriptions, standards, guidelines, Biological Evaluation, and the
5 determinations made at that time.

6 In consideration of the aforementioned potential impacts, a determination of “may adversely
7 impact individuals, but is not likely to result in a loss of viability on the planning area, nor cause
8 a trend to federal listing or a loss of species viability rangewide” is made for the Bald Eagle. This
9 decision was based on the following:

- 10 1. The project would impact the species’ ability to disperse or forage in the area
11 during construction;
- 12 2. Implementation activities would not restrict/impair Bald Eagles’ ability to
13 reproduce and fledge their young successfully;
- 14 3. The project has soil, hydrology, vegetation, silviculture and wildlife design
15 features, and Forest Plan Standards and Guidelines that provide and maintain
16 ecological components across the area for potential prey species in the vicinity.
- 17 4. Habitat affected by the proposed project is not primary foraging habitat for the
18 species.
- 19 5. Foraging opportunities are abundant in the surrounding area.

20 *Boreal Owl*

21 **Impacts of No Action Alternative**

22 *Direct and Indirect Impacts*

23 The No Action Alternative would indirectly impact foraging and nesting habitat for the Boreal
24 Owl. Approximately 1.03 acres of habitat will be converted to transportation and recreation use.
25 The direct disturbance of wildlife habitat will slightly reduce habitat availability for a variety of
26 common small mammals, which would reduce the prey availability for the owls. The loss of
27 habitat from the No Action Alternative would be a low to moderate effect because of the low
28 quality of vegetation communities near the existing SH 9 alignment and the limited wildlife use
29 near the road.

30 Through selection of the No Action Alternative, there would be no change from other existing
31 management processes. Ongoing activities such as recreation, fire suppression, and road
32 maintenance would continue.

33 Cumulative adverse effects of Boreal Owl activity and habitat from urban development and
34 backcountry recreation are possible and are reasonably expected to occur.

35 **Impacts of Proposed Action Alternative**

36 *Direct and Indirect Impacts*

37 Implementation activities would affect primarily lodgepole pine trees; therefore, the proposed
38 project is not expected to negatively impact Boreal Owls, which do not nest in lodgepole pine
39 trees.

1 Implementation would result in the reduction of the forest canopy, which would allow greater
2 amounts of light to reach the forest floor, thereby creating a hotter, drier microclimate within
3 the stands. This has the potential to reduce the number of small mammals the Owl use for prey.

4 There would be a decrease in the number of miles of blacktop used by motor vehicles, which
5 means that there would be less area for small mammals and reptiles to use for
6 thermoregulation particularly in spring, in fall, and at night. While this may decrease the
7 foraging success of the Owls, it will also serve to minimize the amount of time an Owl would be
8 exposing itself to the perils of moving vehicles.

9 The noise associated with construction would likely occur throughout the year for several years.
10 This may negatively affect Boreal Owls by dissuading them from foraging in the area until the
11 construction is completed. Historic foraging behavior would be expected to return shortly after
12 the project is completed.

13 The area around the exiting SH 9 alignment that will not be used as a bikeway would be
14 revegetated with native species, including trees and shrubs. This type of vegetation would serve
15 as habitat for small mammals and may provide for nesting habitat after several years. This
16 would help to mitigate for the loss of some foraging habitat due to the removal of trees for the
17 project.

18 *Cumulative Impacts*

19 Cumulative impacts to Boreal Owls would include the ongoing MPB infestation of lodgepole pine
20 forests, which could result in a continuing loss of mostly marginal habitat for Boreal Owls.
21 Logging and salvaging of MPB infestation areas would likely reduce the amount of
22 closed-canopy coniferous forests available to Boreal Owl use. However, considering that these
23 lodgepole pine forests have died from MPB, it is uncertain how much Boreal Owls would use
24 these dead lodgepole pine forests, although it can be assumed to be a lesser amount than in
25 optimal habitats. Snowmobiling and other winter-motorized activities may have indirect impacts
26 such as noise to roosting Boreal Owls, and compaction of snow, which would decrease
27 availability to prey species. Development and expansion of ski areas would further degrade
28 available habitats, and in some instances would preclude Boreal Owl use of those areas.

29 Other projects occurring within the Ophir Mountain area that may add cumulatively to the
30 effects of this species include:

- 31 • County Commons, implementation occurred on 281 acres of Forest Service land in 2004
- 32 • Gold Hill WUI, implementation occurred on 38 acres of Forest Service land in 2008
- 33 • Red Tail WUI, implementation occurred on 126 acres of Forest Service land in 2009
- 34 • Frisco WUI, implementation occurred on 18 acres of Forest Service land in 2008
- 35 • Iron Springs Salvage, implementation occurred on 141 acres of Forest Service land in
36 2008
- 37 • Breckenridge Forest Health and Fuels Project, implementation on 4,391 acres of Forest
38 Service land
- 39 • Miners Creek Road Hazard Tree, implementation occurred on 44 acres of Forest Service
40 land
- 41 • Peaks Trail Hazard Tree, implementation occurred on 190 acres of Forest Service land
- 42 • Colorado Trail Hazard Tree, implementation occurred on 303 acres of Forest Service
43 land
- 44 • Outfitters Guides

- Peak 6 Expansion, implementation on 64 acres of Forest Service land
- USFS tree harvesting on Ophir Mountain and the surrounding area

Determination of Effects and Rationale

The following determination tiers to the 2002 White River National Forest – Revised Land and Resource Management Plan and FEIS (USFS, 2002) regarding management prescriptions, standards, guidelines, Biological Evaluation (BE), and the determinations made at that time.

In consideration of the aforementioned potential impacts, a determination of “**may adversely impact individuals, but is not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability rangewide**” is made for the Boreal Owl. This decision was based on the following:

1. Implementation of the project would primarily impact lodgepole pine trees, which are considered poor quality habitat for Boreal Owls, which prefer mature, old-growth forests consisting of Engelmann spruce and subalpine fir trees. The lodgepole trees forest found in the study area provide habitat for small mammals. Given the large home range for the Owl, and suitable habitat in the area, this area may be used occasionally for foraging.
2. There is abundant potential habitat available for the species across the Rocky Mountain Region.
3. This species prefers spruce-fir habitat, which will not be impacted from this project.

Northern Goshawk

Impacts of No Action Alternative

Direct and Indirect Impacts

The No Action Alternative would indirectly impact foraging and nesting habitat for the Goshawk. Approximately 0.22 acre of habitat would be converted to transportation and recreation use. The direct disturbance of wildlife habitat would slightly reduce habitat availability for a variety of common small mammals and birds, which would reduce the prey availability for the hawk. The loss of habitat from the No Action Alternative would be a low to moderate effect because of the low quality of vegetation communities near the existing SH 9 alignment and the limited wildlife use near the road.

Through selection of the No Action Alternative, there would be no change from other existing management processes. Ongoing activities such as recreation, fire suppression, and road maintenance would continue.

Cumulative adverse effects of Northern Goshawk activity and habitat from urban development and backcountry recreation are possible and are reasonably expected to occur. Ongoing activities such as recreation, fire suppression, and road maintenance would also continue

Impacts of Proposed Action Alternative

Direct and Indirect Impacts

In an effort to protect occupied and potential Goshawk nest sites, the following design features have been incorporated in the project design.

The project location area will be surveyed annually prior to implementation. Surveys would occur between May 1 and June 30 during the early nesting season. If a nest is found, a buffer

1 recommended by the CPW (standard buffer is currently 0.5 mile radius) will be established and
2 no work will be allowed within that buffer between March 1 and September 1.

3 Alternatively, an on-site biological monitor may be used to evaluate the construction work
4 impacts on nesting Goshawks during the breeding season in lieu of a no-work buffer area. The
5 biological monitor will be present to monitor the nest during construction activities that occur
6 within a 0.5 mile radius. If construction work near the nest results in a noticeable disturbance to
7 the Goshawks, construction will cease in the no-work buffer area or a determined disturbance
8 area, and will commence after the young have fledged and the nest has been abandoned.

9 Snags greater than 25 feet in height, with a diameter at breast height greater than 8 inches, will
10 be kept to the maximum amount practicable. This will help to ensure that appropriate nests
11 sites are available for future use.

12 Construction activities, including the use of large equipment, would have the potential to
13 disturb resident Goshawks for extended periods, especially if they occur during the breeding
14 season (April through July). There is potential for the high noise level and human presence
15 associated with implementation to startle adult Goshawks and cause them to flush from the
16 nest, which could cause high levels of stress for the adults and mortality for the young.
17 However, potential nesting sites within the project footprint will have been cleared prior to the
18 nesting season. This will minimize the potential for nest abandonment and mortality attributed
19 to the construction and highway operation activities.

20 Goshawks prefer large contiguous forested areas and the habitat fragmentation resulting from
21 the Proposed Action would have the potential to impact this species. The Proposed Action also
22 would result in a substantial reduction of canopy cover, which would preclude Goshawks from
23 nesting in close proximity to the new alignment. However, they would still be able to use the
24 area for foraging purposes as the forest would remain in its current condition over most of the
25 study area.

26 Furthermore, the WRNF Forest Wildlife Biologist keeps records of all known raptor nests within
27 the forest and works to protect these sites. As mentioned above, the project location area will
28 be surveyed annually prior to implementation. Surveys would occur between May 1 and June 30
29 during the early nesting season. If a nest is found, a buffer recommended by the CPW (standard
30 buffer is currently 0.5 mile radius) will be established and no work will be allowed within that
31 buffer between March 1 and September 1.

32 *Cumulative Impacts*

33 The cumulative impacts of state, private, and federal activities around the project area for
34 mitigation of MPB effects will likely have localized negative impacts on Northern Goshawk
35 habitat suitability through the removal of the overstory. However, lodgepole pine stands
36 support a relatively low density of Northern Goshawk. Additionally, MPB-killed lodgepole pine
37 forests would support lower densities of some Goshawk prey species, most notably red squirrel.
38 With the death of the mature lodgepole pine stands, pinecone production would be significantly
39 reduced, which may remove much of the red squirrels' food source. Red squirrel populations
40 may experience declines following the lack of pinecone production in certain areas. Conversely,
41 these MPB-killed lodgepole pine forests support an increased number of woodpeckers, which is
42 a valuable food source for the species. However, this increase in woodpecker numbers would be
43 short term due to the inevitable decline in beetle numbers within these dying trees.

1 Other projects occurring within the Ophir Mountain area that may add cumulatively to the
2 effects of this species include:

- 3 • County Commons, implementation occurred on 281 acres of Forest Service land in 2004
- 4 • Gold Hill WUI, implementation occurred on 38 acres of Forest Service land in 2008
- 5 • Red Tail WUI, implementation occurred on 126 acres of Forest Service land in 2009
- 6 • Frisco WUI, implementation occurred on 18 acres of Forest Service land in 2008
- 7 • Iron Springs Salvage, implementation occurred on 141 acres of Forest Service land in
8 2008
- 9 • Breckenridge Forest Health and Fuels Project, implementation on 4,391 acres of Forest
10 Service land
- 11 • Miners Creek Road Hazard Tree, implementation occurred on 44 acres of Forest Service
12 land
- 13 • Peaks Trail Hazard Tree, implementation occurred on 190 acres of Forest Service land
- 14 • Colorado Trail Hazard Tree, implementation occurred on 303 acres of Forest Service
15 land
- 16 • Outfitters Guides
- 17 • Peak 6 Expansion, implementation on 64 acres of Forest Service land
- 18 • USFS tree harvesting on Ophir Mountain and the surrounding area

19 *Determination of Effects and Rationale*

20 The following determination tiers to the 2002 White River National Forest – Revised Land and
21 Resource Management Plan and Final Environmental Impact Statement (US Forest Service 2002)
22 regarding management prescriptions, standards, guidelines, BE, and the determinations made at
23 that time.

24 In consideration of the aforementioned potential impacts, a determination of “**may adversely**
25 **impact individuals, but is not likely to result in a loss of viability on the planning area, nor**
26 **cause a trend to federal listing or a loss of species viability rangewide**” is made for the
27 Northern Goshawk. This decision was based on the following:

- 28 1. Implementation of the Proposed Action may reduce foraging habitat in a very small area
29 of its range.
- 30 2. There is abundant potential habitat available for the species across the Rocky Mountain
31 Region.
- 32 3. To enhance forage and nesting habitat, snags will be retained as practicable.
- 33 4. Surveys will be conducted prior to implementation.

34 *Olive-sided Flycatcher*

35 **Impacts of No Action Alternative**

36 *Direct and Indirect Impacts*

37 The No Action Alternative would indirectly impact foraging and nesting habitat for the
38 Flycatcher. Approximately 1.22 acres of habitat would be converted to transportation and
39 recreation use. The direct disturbance of wildlife habitat would slightly reduce habitat
40 availability that could be used for nesting or foraging for the Flycatcher. The loss of habitat from
41 the No Action Alternative would be a low to moderate effect because of the low quality of

1 vegetation communities near the existing SH 9 alignment and the limited wildlife use near the
2 road.

3 Through selection of the No Action Alternative, there would be no change from other existing
4 management processes. Ongoing activities such as recreation, fire suppression, and road
5 maintenance would continue.

6 Cumulative adverse effects of Olive-sided Flycatcher activity and habitat from urban
7 development and backcountry recreation are possible and are reasonably expected to occur.
8 Ongoing activities such as recreation, fire suppression, and road maintenance would also
9 continue.

10 **Impacts of Proposed Action Alternative**

11 *Direct and Indirect Impacts*

12 Short- and long-term impacts associated with the Proposed Action are expected to be similar to
13 those listed for the No Action Alternative. However, implementation of the Proposed Action
14 would also have the potential to directly impact individual birds by felling and/or damaging
15 occupied nest trees. There would also be the potential for the high noise level and human
16 presence associated with implementation to preclude nesting and foraging activities within and
17 near the proposed project area. Adults and fledglings could easily avoid direct impacts, but
18 nestlings would likely be killed if the nest tree was felled during the nesting season, which is a
19 relatively short period. However, efforts will be made to clear vegetation outside the nesting
20 season or nest surveys will be performed. Active nests will be avoided.

21 *Cumulative Impacts*

22 Cumulative impacts are expected to be similar to those listed for the No Action Alternative. In
23 addition, management activities affecting coniferous forest habitats in the area include salvage
24 harvest projects associated with beetle killed trees, fuels reduction projects, and ski area
25 vegetation treatments. The MPB outbreak will kill many large trees in the area, producing many
26 suitable roosting snags; as mortality to spruce and fir trees from MPB would not occur, nesting
27 habitats should remain intact.

28 Other projects occurring within the Ophir Mountain area that may add cumulatively to the
29 effects of this species include:

- 30 • County Commons, implementation occurred on 281 acres of Forest Service land in 2004
- 31 • Gold Hill WUI, implementation occurred on 38 acres of Forest Service land in 2008
- 32 • Red Tail WUI, implementation occurred on 126 acres of Forest Service land in 2009
- 33 • Frisco WUI, implementation occurred on 18 acres of Forest Service land in 2008
- 34 • Iron Springs Salvage, implementation occurred on 141 acres of Forest Service land
35 in 2008
- 36 • Breckenridge Forest Health and Fuels Project, implementation on 4,391 acres of Forest
37 Service land
- 38 • Miners Creek Road Hazard Tree, implementation occurred in the foreseeable future on
39 44 acres of Forest Service land
- 40 • Peaks Trail Hazard Tree, implementation occurred on 190 acres of Forest Service land
- 41 • Colorado Trail Hazard Tree, implementation occurred on 303 acres of Forest Service
42 land
- 43 • Outfitters Guides

- Peak 6 Expansion, implementation on 64 acres of Forest Service land
- USFS tree harvesting on Ophir Mountain and the surrounding area

Determination of Effects and Rationale

The following determination tiers to the 2002 White River National Forest – Revised Land and Resource Management Plan and Final Environmental Impact Statement (USFS, 2002) regarding management prescriptions, standards, guidelines, BE, and the determinations made at that time.

In consideration of the aforementioned potential impacts, a determination of “**may adversely impact individuals, but is not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability rangewide**” is made for the Olive-sided Flycatcher. This decision was based on the following:

1. There is limited available habitat for this species within the project area.
2. Implementation of the Proposed Action may reduce nesting and foraging habitat.
3. There is abundant potential habitat available for the species across the Rocky Mountain Region.

Trianglelobe Moonwort

No records of *B. ascendens* exist for Colorado. However, because of its diminutive size and low level of survey effort, the possibility of its range extending into Colorado cannot be ruled out. The described habitat for this moonwort does exist within both project areas and has the possibility to be impacted. However, in 2013, the USFS Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this species was not present within the proposed project area. Under the recommendation of the USFS Botanist, no further surveys will be needed for this plant.

Narrowleaf Moonwort

No records of *B. lineare* exist for Summit County. However, because of its diminutive size and low level of survey effort, the possibility of its range extending into the county cannot be ruled out. The described habitat for this moonwort does exist within both project areas and has the possibility to be impacted. However, in 2013, the USFS Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this species was not present within the proposed project’s area. Under the recommendation of the USFS Botanist, no further surveys will be needed for this plant.

Livid Sedge

No records of *C. livida* exist for Summit County. However, the possibility of its range extending into the county cannot be ruled out. The described habitat for this sedge does exist within the project area and has the possibility to be impacted. However, in 2013, the USFS Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this species was not present within the proposed project’s area. Under the recommendation of the USFS Botanist, no further surveys will be needed for this plant. However, efforts will still be made to avoid the fen. The Proposed Action would install a cantilever wall system that would significantly reduce the amount of fen impacted as compared to the No Action Alternative. However, even with the lesser impact, some fen may still be impacted by the construction and operation of the new alignment. Please see Appendix A8, *Wetlands Technical Memorandum*, for details on avoidance, minimization and mitigation actions taken for wetlands, including the fen.

1 *Roundleaf Sundew*

2 No records of *D. rotundifolia* exist for Summit County. However, the possibility of its range
3 extending into the county cannot be ruled out. The described habitat for this plant does exist
4 within the project area and has the possibility to be impacted. However, in 2013, the USFS
5 Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this
6 species was not present within the proposed project's area. Under the recommendation of the
7 USFS Botanist, no further surveys will be needed for this plant. However, efforts will still be
8 made to avoid the fen. The Proposed Action would install a cantilever wall system that would
9 significantly reduce the amount of fen impacted as compared to the No Action Alternative.
10 However, even with the lesser impact, some fen may still be impacted by the construction and
11 operation of the new alignment. Please see Appendix A8, *Wetlands Technical Memorandum*, for
12 details on avoidance, minimization, and mitigation actions taken for wetlands, including the fen.

13 *Slender Cottongrass*

14 The described habitat for slender cottongrass does exist within the project area and has the
15 possibility to be impacted. However, in 2013, the USFS Botanist and CDOT Biologists conducted
16 presence/absence surveys, which concluded that this species was not present within the
17 proposed project's area. Under the recommendation of the USFS Botanist, no further surveys
18 will be needed for this plant. Efforts will still be made to avoid the fen (please see Appendix A8,
19 the wetland technical memo for details). The Proposed Action would install a cantilever wall
20 system that would significantly reduce the amount of fen impacted as compared to the
21 No Action Alternative. However, even with the lesser impact, some fen may be still be impacted
22 by the construction and operation of the new alignment.

23 *Hall Fescue*

24 No records of *F. hallii* exist for Summit County. However, the possibility of its range extending
25 into the county cannot be ruled out. The described habitat for this plant does exist within the
26 project area and has the possibility to be impacted. However, in 2013, the USFS Botanist and
27 CDOT Biologists conducted presence/absence surveys, which concluded that this species was
28 not present within the proposed project's area. Under the recommendation of the USFS
29 Botanist, no further surveys will be needed for this plant.

30 *Simple Kobresia*

31 No records of *K. simpliciuscula* exist for Summit County. However, the possibility of its range
32 extending into the county cannot be ruled out. The described habitat for this plant does exist
33 within the project area and has the possibility to be impacted. However, in 2013, the USFS
34 Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this
35 species was not present within the proposed project's area. Under the recommendation of the
36 USFS Botanist, no further surveys will be needed for this plant. Efforts will still be made to avoid
37 the fen (please see the Appendix A8, *Wetlands Technical Memorandum*, for details). The
38 Proposed Action would install a cantilever wall system that would significantly reduce the
39 amount of fen impacted as compared to the No Action Alternative.

40 *Colorado Tansyaster*

41 No records of *M. coloradoensis* exist for Summit County. However, the possibility of its range
42 extending into the county cannot be ruled out. The described habitat for this plant does exist
43 within the project area and has the possibility to be impacted. However, in 2013, the USFS
44 Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this

1 species was not present within the proposed project's area. Under the recommendation of the
2 USFS Botanist, no further surveys will be needed for this plant.

3 *Dwarf Raspberry*

4 No records of *R. acticus acauliss* exist for Summit County. However, because of the low level of
5 survey effort, the possibility of its range extending into the county cannot be ruled out. The
6 described habitat for this raspberry does exist within the project area and has the possibility to
7 be impacted. However, in 2013, the USFS Botanist and CDOT Biologists conducted
8 presence/absence surveys, which concluded that this species was not present within the
9 proposed project's area. Under the recommendation of the USFS Botanist, no further surveys
10 will be needed for this plant. Efforts will still be made to avoid riparian areas by minimizing the
11 project footprint in those areas, restricting fueling and maintenance of vehicles within 100 feet
12 of any riparian area and minimizing the amount of vegetation removed within riparian areas.

13 *Peat Moss*

14 The described habitat for this plant does exist within the project area and has the possibility to
15 be impacted. However, in 2013, the USFS Botanist and CDOT Biologists conducted
16 presence/absence surveys, which concluded that this species was not present within the
17 proposed project's area. Under the recommendation of the USFS Botanist, no further surveys
18 will be needed for this plant. Efforts will still be made to avoid the fen (please see Appendix A8,
19 *Wetlands Technical Memorandum*, for details). The Proposed Action would install a counter-
20 levered system that would significantly reduce the amount of fen impacted as compared to the
21 No Action Alternative. However, even with the lesser impact, some fen may be still be impacted
22 by the construction and operation of the new alignment.

23 *Lesser Bladderwort*

24 While not known to exist in Summit County, the described habitat for this plant does exist
25 within the project area and has the possibility to be impacted. However, in 2013, the USFS
26 Botanist and CDOT Biologists conducted presence/absence surveys, which concluded that this
27 species was not present within the proposed project's area. Under the recommendation of the
28 USFS Botanist, no further surveys will be needed for this plant. Efforts will still be made to avoid
29 the fen (please see Appendix A8, *Wetlands Technical Memorandum*, for details). The Proposed
30 Action would install a counter-levered system that would significantly reduce the amount of fen
31 impacted as compared to the No Action Alternative. However, even with the lesser impact,
32 some fen may be still be impacted by the construction and operation of the new alignment.

33 **CONCLUSION**

34 *Agencies Contacted*

- 35
 - U.S. Fish and Wildlife Service, U.S. Forest Service, Colorado Parks and Wildlife.

36 *Date of Data Used*

- 37
 - Ophir Mountain Forest Health and Fuels Management BE, USFS, June 2011
 - 38 • Ophir Mountain Forest Health Fuels Management BA, USFS, June 2011
 - 39 • SH 9 BA, CDOT, 2002
 - 40 • USFWS concurrence letter for SH 9, USFWS, 2002

- 1 • SH 9 Vegetation Map, FHU, 2013
- 2 • USFS, White River National Forest Sensitive Plants Species list obtained from the USFS
- 3 12/18/2012

4 *Context Summary*

5 By comparing the existing habitat type with the requirements of the species of interest, we were
6 able to eliminate most species as being affected by this proposed project. The species that
7 remained were subjected to more scrutiny on habitat needs, impacts. A literature search was
8 completed for projects that had been proposed in the immediate area (including the approved
9 Ophir Mountain Forest Health and Fuels Management Project and the No Action Alternative,
10 [SH 9]). A query for new information was solicited from the resource agencies and new and
11 different impacts from those discussed in the earlier documents were analyzed. Most of wildlife
12 impacts stemmed from the continuing MPB infestation altering the quality of the habitat. There
13 was also a change in the recreational use of the area. These changes included the removal of
14 existing SH 9 in lieu of a bikeway and the installation of underpasses for the path, which may
15 also be used by small to mid-sized animals, and the installation of a dedicated wildlife crossing
16 under the proposed alignment of SH 9. An updated list of federally listed species was also
17 obtained from the USFWS IPaC system.

18 *Impact Summary*

19 Based on the location of the project, the type of project, and the conservation measures
20 proposed, it has been determined that this project **may affect, but is not likely to adversely**
21 **impact** the species as a whole for the Bald Eagle.

22 A determination was reached that the Proposed Action **may adversely impact individuals, but**
23 **not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing**
24 **or a loss of species viability range-wide** for the Boreal Owl, Northern Goshawk, and Olive-sided
25 Flycatcher due to habitat loss and temporary avoidance of the area during construction. Several
26 plant species had the possibility of being located in the proposed project's area. In the summer
27 of 2013, a presence/absence survey conducted by the USFS Botanist and CDOT Biologists
28 concluded that none of them were present and no further action would be needed to address
29 the plant species. This conclusion indicates that there would be **no impact** on the trianglelobe
30 moonwort, narrowleaf moonwort, livid sedge, roundleaf sundew, slender cottongrass, Hall
31 fescue, simple kobresia, Colorado tansyaster, dwarf raspberry, peat moss, and lesser
32 bladderwort. It should be noted that many of these plant species are found within fens. The
33 Proposed Action would affect 0.001 acre of fen as opposed to the No Action Alternative, which
34 would impact 0.106 acre of fens. Mitigation for wetlands is described under that mitigation
35 category in Appendix A8.

36 *Result of Evaluation*

37 A BE was prepared for the USFS outlining these determinations. CDOT received an email from
38 the USFS Botanist concluding that, "No TES plants were found and none are likely. If the project
39 footprint does not change the project can proceed with no mitigation or design specific to TES
40 plants" (Proctor, 2013, personal commun.)

41 On August 22, 2013, CDOT received the completed botanical report.

42 **Impact Significant Determination**

43 Issue not present

44 Issue present, but no impact

1 Issue present, no impact after project modification

2 Issue present, beneficial impacts

3 Issue present, negative impact, no mitigation

4 Issue present, negative impact, mitigation needed

5 **Required Project Modifications to Avoid Impacts**

6 While avoidance of all impacts may not be possible due to the current alignment of the highway
7 and the lack of engineering option for the proposed alignment, the impacts can be minimized by
8 (1) conducting wildlife presence/absence surveys at the appropriate times, (2) altering the
9 construction schedule to avoid nesting season, and (3) restricting refueling and, if possible,
10 repairing equipment more than 100 feet from the fen area.

11 **Permits**

12 None required.

13 **Mitigation Description**

14 No mitigation is required for the Bald Eagle, but a minimization measure will be required to
15 lessen the impact to the species—protect water quality by incorporating water quality best
16 management practices into the roadway design.

17 Mitigation for potential impacts to Boreal Owl habitat will include conducting a broadcast calling
18 survey to determine Boreal Owl presence in potentially affected habitat in the spring (March to
19 April) prior to construction. Survey protocol, which will be provided by the USFS, will be
20 followed. If Boreal Owls are detected, a nest survey will be conducted. If an active nest is found,
21 a buffer area (currently a 0.25-mile radius) will be established and no work will be allowed
22 within that buffer between April 15 and August 31.

23 Mitigation for potential impacts to the individual Olive-sided Flycatcher will include conducting a
24 survey of the project location area June 1 through July 31 prior to construction. Nest surveys will
25 be performed and active nests avoided with a buffer area (currently 50-foot radius) around it.
26 Nesting periods typically last three weeks (normally July 1 to August 1).

27 Mitigation for reducing foraging habitat in a very small area of the Northern Goshawk will
28 include conducting a survey of the project location area between May 1 and June 30 prior to
29 construction (and annually thereafter during construction). If a nest is found, a buffer
30 recommended by CPW (currently a 0.5-mile radius) will be established and no work will be
31 allowed within that buffer between March 1 and September 1.

32 Alternately, an on-site biological monitor may be used to evaluate the construction work
33 impacts on nesting Goshawks during the breeding season in lieu of a no-work buffer area. The
34 biological monitor will be present to monitor the nest during construction activities that occur
35 within a 0.5-mile radius. If construction work near the nest results in a noticeable disturbance to
36 the Goshawks, construction will cease in the no-work buffer area or a determined disturbance
37 area, and will commence after the young have fledged and the nest has been abandoned.

38 The removal of snags greater than 25 feet in height, with a diameter at breast height greater
39 than 8 inches, will be minimized to the extent practicable. This will help to ensure that
40 appropriate nest sites are available for future use.

41 The study area has potential habitat for 22 sensitive plant species. Rare plant surveys completed
42 for the proposed realignment were adequate to determine that they are absent from the
43 proposed new SH 9 Iron Springs alignment. However, to date no surveys have been completed

1 on National Forest Lands for plant species that could occur in portions of the existing SH 9
2 alignment which would be disturbed under both the No Action Alternative and Proposed Action,
3 including the Dickey Day Use Parking Lot. Rare plants surveys for this area will be conducted in
4 the design phase of the project. If a rare plant is found, coordination with the USFS Botanist will
5 occur to ensure impacts to the plant are avoided or minimized.

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