

**RAPID RESOURCE ASSESSMENT
AND MANAGEMENT PLAN
BUSSE OPEN SPACE
BOULDER COUNTY, COLORADO**

Prepared for—

City of Boulder
Open Space and Mountain Parks
66 S. Cherryvale Road
Boulder, Colorado 80303

Prepared by—

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ERO Project #4089

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SUMMARY

BUSSE PROPERTY		
APPROXIMATE SIZE	ACQUISITION DATE	CURRENT ZONING
37 acres	May 31, 2007	Forestry
MANAGEMENT DESIGNATION	PUBLIC ACCESS	
Habitat Conservation Area	Access only with HCA off-trail permit	

GENERAL DESCRIPTION OF SITE RESOURCES

The property includes a diverse mixture of habitat types that are dramatically influenced by topography. The slopes with a southeastern aspect near Bison Drive and the adjacent residence are open grasslands and ponderosa pine savannah. The western and northwestern facing slopes are higher density forests dominated by both ponderosa pine and Douglas fir. Harmon Gulch bisects the property from north to south and is characterized by lush vegetation that provides a corridor for wildlife movement in the larger landscape.

OPEN SPACE VALUES BASED ON RESOURCE ASSESSMENT

The property is important for open space because it maintains—

- Contiguous forested habitat within the Boulder Mountain Park system
- Winter range for mule deer; severe winter range for elk
- A winter concentration area for wild turkey
- High quality black bear habitat and movement corridor along Harmon Gulch
- Diverse songbird habitat along Harmon Gulch

MANAGEMENT ISSUES BASED ON RESOURCE ASSESSMENT

Some management issues that could adversely affect the open space values on the property include—

- Degraded grasslands on the west side of the property
- Noxious weed infestations, especially diffuse knapweed along Bison Drive; old road bed; and other disturbed areas
- Potential unauthorized use on old road along Harmon Gulch

INTRODUCTION

PURPOSE

The City of Boulder Open Space and Mountain Parks Department (OSMP) retained ERO Resources Corporation (ERO) to conduct a rapid resource assessment and develop a property management plan for the 37-acre Busse Property (“property”) near the City of Boulder in Boulder County, Colorado (Figure 1). The conditions on the property have generally been documented through photo points (Appendix A). The purpose of this rapid resource assessment and management plan for the property is to—

- Summarize the physical/ecological characteristics and conditions
- Document and record existing conditions and open space values
- Identify and prioritize management needs and opportunities
- Prescribe management actions
- Classify the property into a management area

The OSMP Visitor Master Plan directs that plans be completed for properties before they are opened and that visitor access be considered. Specific guidance for new properties is as follows:

New Property Planning and Facilities. Complete planning and infrastructure improvements in a timely manner, prior to opening newly acquired properties to public access. However, as appropriate, preserve existing public access during the planning and improvement process. Open Space and Mountain Parks will complete a site management plan recommending appropriate locations, types of uses and visitor infrastructure, and how to provide adequate visitor infrastructure and services.

Property plans direct immediate planning and improvement needs, while Trails Study Areas (TSA) planning will be used to periodically update visitor access needs based on conditions at the time.

METHODS

OSMP supplied records, documents, and GIS data applicable to the property. On June 20, 2008, a team of natural resource planners and ecologists from ERO walked the extent of the property documenting ecological and physical characteristics and identifying management needs and opportunities.

ERO consulted several organizations, agencies, and databases including the Colorado Natural Heritage Program (CNHP), Colorado Office of Archeology and Historic Preservation (OAHP), the Colorado Natural Diversity Information Source (NDIS), and Boulder County pertaining to resources on the property. Published information, such as U.S. Geological Survey (USGS) and Natural Resources Conservation Service (NRCS) maps, also was used to prepare the inventory.

REPORT ORGANIZATION

This report presents a summary of the information gathered for the rapid resource assessment and describes the results of ERO's evaluation of the resources and open space values on the property.

The report is organized into five narrative sections and three appendices. Following the *Summary* and *Introduction*, the *General Description* section provides information on the setting. The *Site Resources* section summarizes the ecological and cultural resources; existing trails and access; land use and management; and improvements and legal considerations on the property. The *Property Management Plan* describes short- and long-term management needs, management actions, and Management Area designation.

Appendix A contains photographs of the property with narrative descriptions and a corresponding photo point map. Appendix B presents plant species identified during the site visit, and Appendix C includes report references.

GENERAL DESCRIPTION

The property is located within the Southern Rocky Mountain physiographic province. The property encompasses about 37 acres characterized by sloping terrain from both the east and west towards Harmon Gulch, which bisects the property from north to south.

LOCATION AND ACCESS

The property is located in south Boulder County about 5 miles southwest of downtown Boulder (Figure 1). Specifically, the property is located in Sections 14 in Township 1 South, Range 10 West of the 6th P.M. (Figure 2).

Primary access is from Bison Drive near the southwestern corner of the property. From downtown Boulder, travel west on Baseline Road to Flagstaff Road. Follow Flagstaff Road for about 5 miles to Bison Drive. Turn left (south) on Bison Drive and travel about 3.5 miles to the property. Bison Drive defines the west side of the property along the southwest corner. Access to the property is possible in this location.

ACQUISITION

The City of Boulder acquired the Busse Property on May 31, 2007. The total price for 37 acres was \$225,000 plus an additional \$10,000 for weed management.

LAND USE

The property was previously logged and likely grazed to some extent. OSMP manages the property as undeveloped open space land. There is currently no active management.

LANDSCAPE CONTEXT

The property is located in rural Boulder County, and is bordered on the west by City of Boulder Open Space. Harmon Gulch bisects the property from north to south. Bear Peak is located about one mile to the east.

NEIGHBORING PROPERTIES

RESIDENTIAL PROPERTIES

Residential properties and basic land uses identified near the property during the site visit and with a property record search available through the Boulder County Assessor’s Office (Boulder County 2008a) are summarized below.

OWNER	LOCATION AND LAND USE
Hart, George & Clare 800 Bison Dr. Boulder, CO 80302 Parcel No. 157900100007	North and west of property Single family rural residence
Busse, Daniel E. & Laura 480 Bison Dr. Boulder, CO 80302 Parcel No. 157900100036	West of property Single family rural residence
Berry, Gregory L. & Berry, Karen R. 491 Bison Dr. Boulder, CO 80301-9525 Parcel No. 157900000025	West of property Single family rural residence
McGloin, Michael M. 428 Bison Rd. 716 Steele St. Denver, CO 80206-3943 Parcel No. 157900000024	South of property Single family rural residence

NEIGHBORING GOVERNMENT PROPERTIES

Government-owned properties and basic land uses identified near the property during the site visit and with a property record search available through the Boulder County Assessor’s Office (Boulder County 2008a) are summarized below.

OWNER	LOCATION AND LAND USE
City of Boulder Eldorado Springs Real Estate & Open Space PO Box 791; Boulder, CO 80306-0791 Parcel No. 157900000001 <i>City of Boulder Open Space</i>	East of property Undeveloped land – Landmark Designation of the Flagstaff Mountain Cultural Landscape

SITE RESOURCES

This section documents in more detail the basic physical and ecological characteristics and conditions that directly support the open space values of the property. Key features are shown on Figure 3.

TOPOGRAPHY

Topography on the property generally slopes south to southwest. The property, located about one mile from South Boulder Peak, encompasses a portion of Harmon Gulch and its associated side slopes. The summit of South Boulder Peak reaches an elevation of about 8,550 feet. Elevations on the property range from about 7,130 feet in the northwest corner to about 7,000 feet in the southeast corner. Harmon Gulch bisects the property from north to south at a minimum elevation of about 6,860 feet. The USGS topographical map of the property is shown in Figure 2.

GEOLOGY

The property occurs along the eastern margin of the Front Range of north-central Colorado, which contains igneous rocks of Precambrian age. The area is composed primarily of granitic rocks. Granitic rocks contain areas of granites, quartz monzonites, and unnamed granitic rocks (Tweto 1979).

SOILS

The Natural Resources Conservation Service (NRCS) has mapped two soil types on the property. Each mapping unit is described below and Figure 4 shows the NRCS soil mapping. All soil information was gathered from the NRCS soil survey (NRCS 1975).

Mapping Unit PgE. Peyton-Juget very gravelly loamy sands (5 to 20 percent slopes). This soil includes area of rock outcrop and a few small areas of Allens Park soils. Runoff is slow to medium and the erosion hazard is moderate to high. Native vegetation is bluestem, sandreed grass, blue grama, and needleandthread grass.

Mapping Unit FcF. Fern Cliff-Allens Park-Rock outcrop complex (15 to 60 percent slopes). This soil includes small areas of Fern Cliff stony loam sand, Juget soils, Peyton soils, and narrow bands of alluvial soils along drainageways. Runoff is medium to rapid and the erosion hazard is high. Native vegetation is mainly pine and fir woodland with an understory of fescue, mountain muhly, and pine dropseed.

HYDROLOGY

SURFACE HYDROLOGY

Harmon Gulch, an intermittent drainage, bisects the property from north to south. The property is not located within a designated floodplain area. According to topographic information from the USGS 7.5 minute quadrangle map, surface water on the property flows towards Harmon Gulch, which flows south towards South Boulder Creek (USGS 1965, revised 1994).

SUBSURFACE HYDROLOGY

Based on a review of the USGS Eldorado Springs Quadrangle, shallow ground water would flow in a southerly direction towards the South Boulder Creek Drainage (USGS 1965, revised 1994). There is one permitted water well on the property (CDWR 2008), which is described below under *Water Rights*. No seeps or springs were identified on the property.

WETLANDS

Potential wetlands occur along Harmon Gulch.

VEGETATION

GENERAL VEGETATION DESCRIPTION

The property includes a diverse mixture of habitat types that are dramatically influenced by topography. The slopes with a southeastern aspect near Bison Drive and are open grasslands and ponderosa pine savannah. The western and northwestern facing slopes are higher density forests dominated by both ponderosa pine and Douglas fir. Harmon Gulch bisects the property from north to south and is characterized by relatively lush vegetation. Vegetation communities are described below and shown in Figure 5. A list of plant species identified during the field visit appears in Appendix B.

PONDEROSA PINE – DOUGLAS FIR WOODLAND ALLIANCE (PDFW)

The upper slopes on the east and west sides of Harmon Gulch are dominated by the ponderosa pine – Douglas fir woodland alliance. The dominant overstory species in this community type are ponderosa pine (*Pinus ponderosa* ssp. *scopulorum*), Rocky Mountain juniper (*Sabina scopulorum*), and Douglas fir (*Pseudotsuga menziesii*). Dominant understory species include introduced grasses such as smooth brome (*Bromopsis inermis*), cheatgrass (*Anisantha tectorum*), and orchard grass (*Dactylis glomerata*); native perennial forbs such as little sunflower (*Helianthus pumilus*), Rocky Mountain penstemon (*Penstemon strictus*), and pale bastard toadflax (*Comandra umbellata* ssp. *pallida*); native grasses such as needle and thread (*Hesperostipa comata*), green needlegrass (*Nassella viridula*) and mountain muhly (*Muhlenbergia montana*); and native shrubs/subshrubs such as black chokecherry (*Padus virginiana* ssp. *scopulorum*) and fringed sage (*Artemisia frigida*).

DOUGLAS FIR FOREST ALLIANCE (DFF)

In the southeast corner of the property, the Douglas fir forest alliance is present. This community type is dominated by Douglas fir. Common understory species include native forbs such as Britton's skullcap (*Scutellaria brittonii*), prairie bluebells (*Mertensia lanceolata*), and maiden blue eyed Mary (*Collinsia parviflora*). Native grass or grass like plants included Geyer's sedge (*Carex geyeri*) and muttongrass (*Poa fendleriana*). Native shrubs such as kinnikinnick (*Arctostaphylos uva-ursi*) are common.

PONDEROSA PINE – DOUGLAS FIR FOREST ALLIANCE (PDFF)

In the northeastern portion of the property and on west facing slopes, a ponderosa pine – Douglas fir forest alliance is present. The dominant overstory species in this community type are ponderosa pine, Rocky Mountain juniper, and Douglas fir. Dominant understory species include introduced grasses such as smooth brome, cheatgrass, and orchard grass; native perennial forbs such as little sunflower, Rocky Mountain penstemon, and pale bastard toadflax; native grasses

such mountain brome, needle and thread, green needlegrass and mountain muhly; and native shrubs/subshrubs such as black chokecherry and fringed sage.

DOUGLAS FIR WOODLAND ALLIANCE (DFW)

In the southern portion of the property where the Douglas fir forest meets the ponderosa pine – Douglas fir woodland, a Douglas-fir woodland alliance is present. This community type is dominated by Douglas fir but ponderosa pine is also common. Common understory species include hairy false goldenaster, Geyer's sedge, and kinnikinnick.

SMOOTH BROME SEMI-NATURAL HERBACEOUS ALLIANCE (SBH)

The southeastern slopes adjacent to Bison Drive and near the residence consist of a smooth brome semi-natural herbaceous alliance. This community is dominated by smooth brome, an introduced pasture grass. Other dominant species include cheatgrass, cereal rye, and orchard grass.

QUAKING ASPEN TEMPORARILY FLOODED FOREST ALLIANCE (QATF)

A quaking aspen temporary flooded forest alliance occurs along Harmon Gulch. This community type is dominated by quaking aspen (*Populus tremuloides*) and has a relatively closed canopy. Common understory species include native shrubs such as willow (*Salix* sp.) (*Rubus idaeus* ssp. *melanolasius*), Wood's rose (*Rosa woodsii*), and wax currant (*Ribes cereum*).

RARE PLANTS AND PLANT COMMUNITIES

No rare plants or plant communities have been identified by CNHP on the property (CNHP 2006) and none were observed during the site visit.

STATE NOXIOUS WEEDS

Based on the site visit, no species from List A of the Colorado noxious weed species list was found on the property; however, a patch of myrtle spurge (*Euphorbia myrsinites*) was noted just on the west side of Bison Drive across from the property (Figure 3). Myrtle spurge is a List A species.

Four List B noxious weed species occur on the property: Canada thistle (*Cirsium arvense*), diffuse knapweed (*Acosta diffusa*), houndstongue (*Cynoglossum officinale*), and musk thistle (*Carduus nutans*). Canada thistle occurs in moister areas along Harmon Gulch. Diffuse knapweed and houndstongue were found along Bison Drive, along the old west-east road that leads from Bison Drive to Harmon Gulch, and in other disturbed areas. Musk thistle is scattered in several locations throughout the property, especially in areas dominated by cheatgrass. One additional List B species, Russian olive (*Elaeagnus angustifolia*), was noted just south of the property on the adjacent parcel. Two Russian olive trees occur near Bison Drive (Figure 3).

Three List C noxious weed species were found on the property – field bindweed (*Convolvulus arvensis*), cheatgrass (*Anisantha tectorum*), and common mullein (*Verbascum thapsus*). Field bindweed is found scattered throughout the property. Cheatgrass and common mullein are found in open savannah areas that were previously grazed. Smooth brome is not a state noxious weed but is considered an OSMP priority weed and is dominant in the SBH alliance.

Table 1. Noxious weeds present on the property.

Common Name	Scientific Name	OSMP Priority	Boulder County Weed List	State of Colorado Noxious Weed List
Canada thistle	<i>Breca arvensis</i>	Moderate	x	B
cheatgrass	<i>Anisantha tectorum</i>	Moderate	not listed	C
common mullein	<i>Verbascum thapsus</i>	None	not listed	C
diffuse knapweed	<i>Acosta diffusa</i>	High	x	B
field bindweed	<i>Convolvulus arvensis</i>	None	not listed	C
houndstongue	<i>Cynoglossum officinale</i>	Low	x	B
musk thistle	<i>Carduus nutans</i>	Low	x	B
smooth brome	<i>Bromopsis inermis</i>	Moderate	not listed	not listed

The Colorado Noxious Weed Act §§ 35-5.5-101 through 119, C.R.S. (2003) states that “List A species are species for which the Commissioner of Agriculture has designated for eradication. List B noxious weed species are species for which the Commissioner of Agriculture, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, develops and implements state noxious weed management plans designed to stop the continued spread of these species.

List C weed species are species for which the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands. The goal of such plans will not be to stop the continued spread of these species but to provide additional education, research, and biological control resources to jurisdictions that choose to require management of List C species.”

FOREST CONDITION

The three most common conifer species on the property are ponderosa pine, Douglas-fir, and lodgepole pine. Each of these species has different characteristics for management consideration summarized in Table 2. Some dead individual trees were noted; however, overall forest condition did not indicate mountain pine beetle activity.

The somewhat dense ponderosa pine/Douglas-fir forest that dominates the west slope of the property is likely the result of long-term fires suppression. The high, contiguous canopy makes the area a severe wildfire hazard. Other areas on the property are characterized by ponderosa pine savannah and have a low to moderate wildfire hazard.

RAPID RESOURCE ASSESSMENT AND MANAGEMENT PLAN
 BUSSE OPEN SPACE
 BOULDER COUNTY, COLORADO

Table 2. Common characteristics of conifer species on the property.

Characteristic	Ponderosa Pine	Lodgepole Pine	Douglas-fir
Drought tolerance	High	Moderate	Moderate
Reaction to competition	Intolerant of shade	Very intolerant of shade and competition from other plant species	Ability to tolerate shade in the seedling stage, intermediate in overall shade tolerance
Susceptibility to windthrow	Low	Moderate — thinning can contribute to snow breakage, particularly if previously dense stands are opened suddenly	Low to moderate
Resistance to fire	High for mature trees in open woodlands due to thick bark	Low with entire stands replaced and 100 percent mortality at times	Crown fires, when they occur, destroy stands of all ages; the thick bark of older Douglas-firs, however, makes them fairly resistant to ground fires
Fire interval (presettlement)	1 to 47 years apart with most at 5- to 20-year intervals	100 or more years	Intermediate between ponderosa pine and lodgepole pine based on stand structure and composition
Typical fire intensity (presettlement)	Low intensity ground fires	High intensity crown fires	Variable, low intensity ground fires in association with ponderosa pine, higher intensities elsewhere
Primary insect pathogens	Mountain pine beetle (<i>Dendroctonus ponderosa</i>)	Mountain pine beetle (<i>Dendroctonus ponderosa</i>)	Douglas-fir beetle (<i>Dendroctonus pseudotsugae</i>) and western spruce budworm (<i>Choristoneura occidentalis</i>)
Dwarf mistletoe	<i>Arceuthobium vaginatum</i> subsp. <i>crpyopodum</i> in the Southwest	<i>Arceuthobium americanum</i> is the most widespread and serious parasite affecting lodgepole pine	<i>Arceuthobium douglassii</i> occurs throughout most of the range of Douglas-fir

Based on: Burns, Russell M., and Barbara H. Honkala (tech. cords.). 1990. Silvics of North America: 1. Conifers. Agriculture Handbook 654. U.S. Department.

WILDLIFE

GENERAL DESCRIPTION

The property provides habitat for a variety of wildlife species that are typical of the forested system in the Boulder Mountain Park system. Notable mammal species that are likely to occur include black bear, mountain lion, elk, mule deer, fox, bobcat, and coyote. During the site visit, sign (i.e., scat and game trails) from elk and mule deer was observed. The property contains habitat elements for black bear, including dense forest cover, berry-producing shrubs, riparian habitat, and rock bands and outcrops that provide potential denning sites. Harmon Gulch, in particular, is likely a concentration points and movement corridor for bears in the area. It is likely

that most of the property is widely traversed by bears. Other common mammals include mountain cottontail rabbit, western spotted skunk, raccoon, Abert's squirrel, and least chipmunk.

The dense forests and open meadow on the property provides habitat for a variety of migratory songbirds such as mountain bluebird, Stellar's jay, and evening grosbeak. Common raptors potentially include sharp-shinned hawk and flammulated owl. The property also supports potential habitat for the northern goshawk, which characteristically nests in coniferous forests including those dominated by ponderosa pine or lodgepole pine or in mixed forests dominated by various coniferous species. Bird species observed during the site visit included red-tailed hawk, mountain chickadee, Stellar's jay, and red-naped sapsucker.

THREATENED, ENDANGERED, OR CANDIDATE WILDLIFE SPECIES

According to the Colorado Division of Wildlife Natural Diversity Information Source (NDIS) and CNHP databases for the area, there are no threatened or endangered species on the property (NDIS 2008).

COLORADO DIVISION OF WILDLIFE DESIGNATIONS

According to the NDIS database, the property is considered to be elk winter and elk severe winter range; mule deer winter range; a black bear-human conflict area; and turkey winter range and a turkey winter concentration area.

BOULDER COUNTY COMPREHENSIVE PLAN DESIGNATIONS

The property does not contain any county-designated Critical Wildlife Habitats or other designations related to wildlife.

CULTURAL RESOURCES

OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION FILE SEARCH

The Colorado Historical Society Office of Archaeology and Historic Preservation conducted a search of the Colorado Inventory of Cultural Resources database for the property (OAHF 2008). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, no sites of surveys occur on the property (OAHF 2008). However, other potentially unidentified cultural resources may exist within the property boundaries.

OTHER RESOURCES AND DESIGNATIONS

The property is not located within any areas designated for cultural resources in the Boulder County Comprehensive Plan; however, landmark designated areas associated with the Flagstaff Mountain Cultural District occur along the eastern edge of the property (Boulder County 2008b).

RECREATION

Public access is not permitted on the property.

PROPERTY INFRASTRUCTURE

STRUCTURES

A small cabin with a fire ring and picnic tables was observed on Harmon Gulch near an old mill site. The cabin appeared to be in use with newer bicycles in storage and a photovoltaic panel on the roof.

INFRASTRUCTURE AND UTILITIES

No utilities were observed on the property.

ROADWAYS AND TRAILS

An old roadbed enters the property from Bison Drive in the southwest corner and generally follows the property boundary along the south side. This road connects in with an older road that follows Harmon Gulch in a north-south direction. There are a couple of old roads off of Harmon Gulch that were probably used when the area was previously logged and/or grazed.

LEGAL CONSIDERATIONS

WATER RIGHTS

Purchase of the property did not include any water rights. According to the Colorado Division of Water Resources (CDWR 2008), there is one permitted domestic water well on the property (permit #184751). This well was not located during the site visit.

MINERAL RIGHTS

The purchase included all mineral rights including sand, gravel, coal, and oil and gas owned by seller.

EASEMENTS AND RIGHTS-OF-WAY INFORMATION

See OSMP property file.

LOCAL PLANNING DESIGNATIONS

The entire property is currently zoned Forestry (Boulder County 2008c). Boulder County Comprehensive Plan designations on the property include—

- Boulder Mountain Park/South Boulder Environmental Conservation Area

The property is also considered to have moderate geologic constraints due to the potential for flash flooding, or debris fans.

PROPERTY MANAGEMENT PLAN

MANAGEMENT AREA DESIGNATION

Recommended management area designation: Habitat Conservation Area

The location and features of the property are generally consistent with the characteristics, goals, and strategies outlined for Habitat Conservation Areas in the OSMP Visitor Master Plan, including naturally functioning ecosystems, lower levels of visitor use opportunities, and compatibility with adjacent land uses (OSMP 2005). This management area designation is consistent with the historic and current uses of the property and its primary open space values, and with the management designation of other nearby OSMP properties.

PUBLIC ACCESS

Recommended status: Access only with HCA off-trail permit

There is some evidence of potential unauthorized use of the property along Harmon Gulch.

The goal of this access status is to allow off-trail use by permit only, consistent with existing regulations for Habitat Conservation Areas. Off-trail permits can be obtained for OSMP-sponsored activities or other limited and approved public use. Use of designated trails is allowed without a permit. Should permitted or non-permitted public access result in a Class 2 undesignated trail (trail obvious; vegetation cover lost and/or organic litter pulverized in primary use area – see Manning et al. 2006) or other resource damage, the property may be closed at the sole discretion of the OSMP department. External gates will be locked to prevent unauthorized vehicle access. Public access and facilities on this property will be evaluated further in a future Trail Study Area or other planning processes.

MANAGEMENT ISSUES

The following management issues were identified on the property based on observations during the site visit, existing documentation, and input from OSMP staff.

Unauthorized Access. The old road along Harmon Gulch provides potential unauthorized access.

Noxious Weeds. Bison Drive and the old roadbed from Bison Drive are the primary vectors for the spread of noxious weeds. Myrtle spurge and Russian olive occur near the property.

MANAGEMENT STRATEGIES

Management objectives and recommended management actions for various resources on the property are outlined below. In general, management objectives are a concise statement of what OSMP wants to achieve in protecting open space values, addressing management issues related to a particular resource type. Management actions are the specific tasks or tools that can be used to fulfill the objective and address the issue.

ACCESS

Objective 1: Monitor potential unauthorized access.

Action: Remove small shack located along Harmon Gulch.

Action: Notify previous property owner before removal.

Action: Monitor potential access across property from Walker Ranch trail system.

PROPERTY SIGNING

Objective 1: Identify property as OSMP land through clear and defined signing of the property boundary.

Action: Install OSMP signs along property boundary.

VEGETATION

Objective 1: Prevent the spread of noxious weeds from current conditions documented in the resource assessment.

Action: Coordinate with adjacent landowner to eradicate myrtle spurge patch.

Action: Conduct survey for additional myrtle spurge.

Action: Coordinate with adjacent landowner to remove two Russian olive trees on Bison Drive.

Action: Consider herbicide spraying along Bison Drive and the old roadbed that leads from Bison Drive to Harmon Gulch.

Action: Coordinate with landowners and Boulder County to address weed management along Bison Drive.

FOREST CONDITION

Objective 1: Where access is feasible, improve forest condition by managing ecosystems and age structure.

Action: Conduct a complete assessment of overall forest conditions through a forest inventory and survey.

Action: Implement prescriptions based on the results of the inventory and survey.

Objective 2: Where access is feasible, maintain an open forest through some initial thinning, prescribed burning, and disease inspection.

Action: Focus on removing the heavy regeneration and breaking up the continuous canopy fuels on the west side of the property.

Action: Remove ladder fuels.

Action: Monitor forest stand structure and composition with permanent photo points and overstory inventories.

CULTURAL RESOURCES

Objective 1: Investigate other potentially unidentified cultural resources that may exist within the property boundaries.

Action: Assess cultural resource value of wood piles and mill site along Harmon Gulch.

CONSERVATION AND COORDINATION

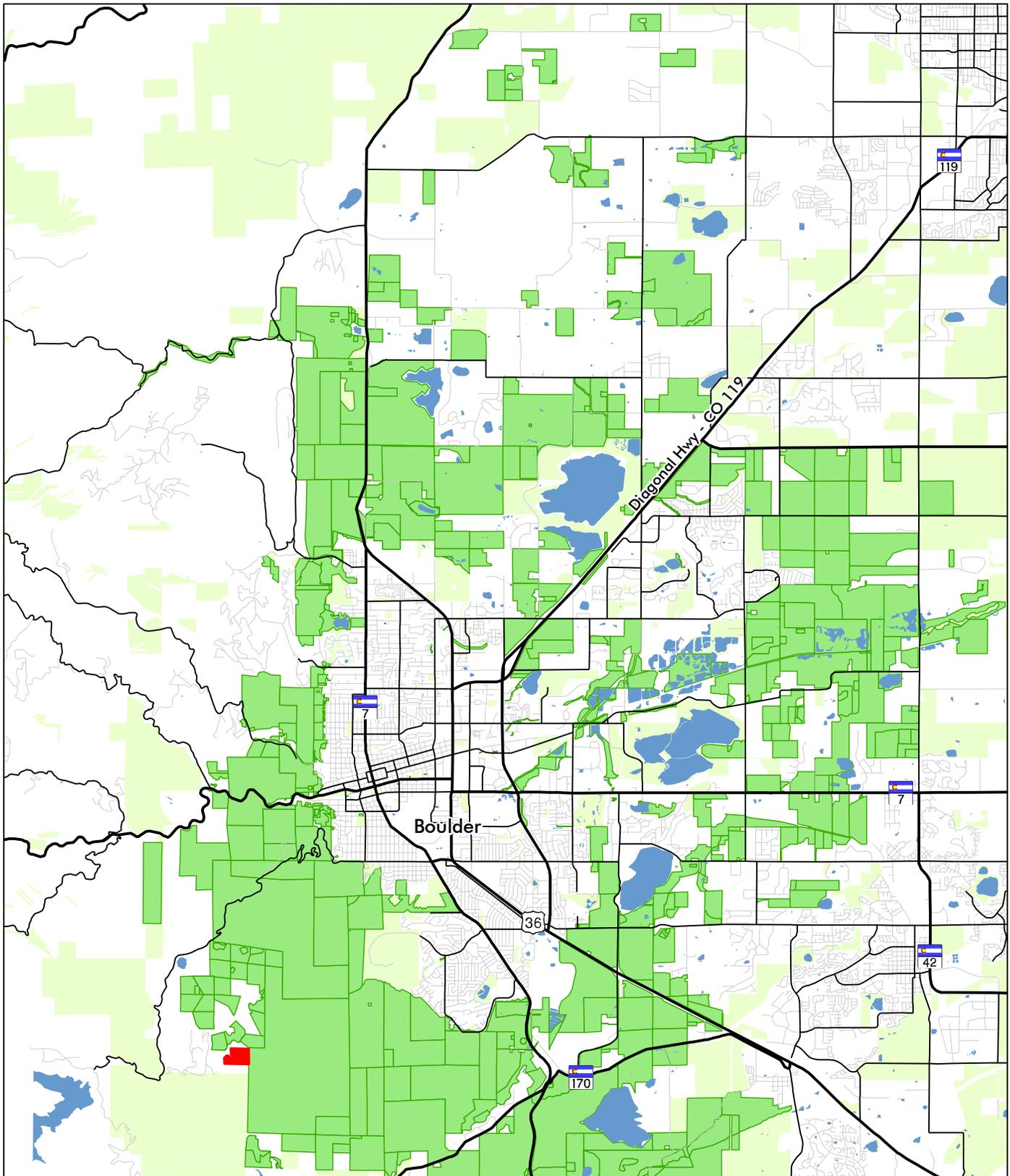
Objective 1: Work with adjacent landowners to provide consistent, sustainable management to the area accessed by Bison Drive.

Action: Establish and maintain lines of communication with adjacent landowners.

Action: Monitor resource conditions (e.g., noxious weeds, bear-human conflicts) on adjacent properties and identify potential issues or opportunities.

Action: Allow OSMP to become a resource for landowners seeking knowledge or advice on various land management topics.

FIGURES



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Busse Property RRA and Management Plan

- Busse Property
- City of Boulder Open Space
- Other Open Space

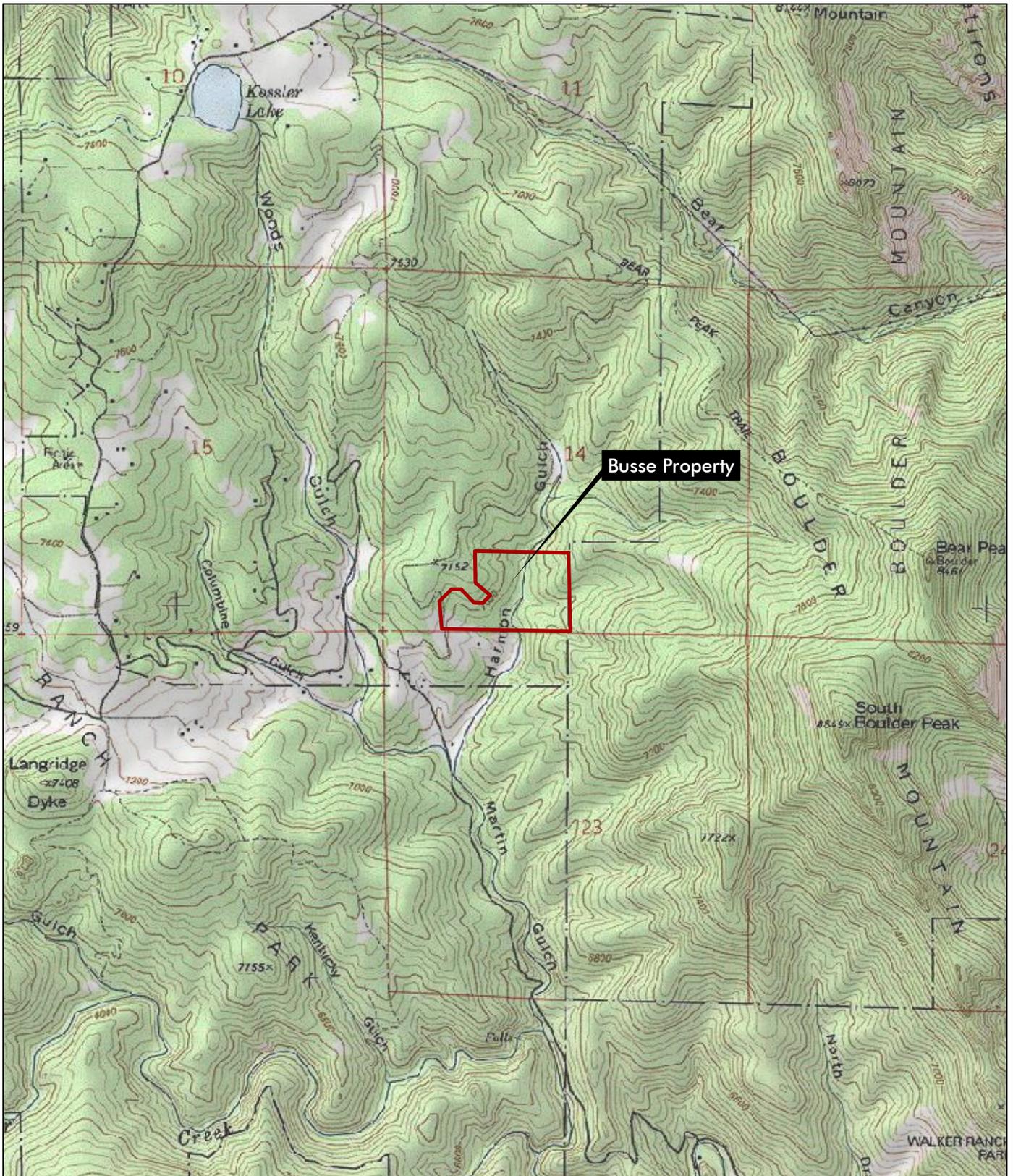


1 inch = 2 miles



**Figure 1
 Vicinity Map**

Prepared for: City of Boulder Open Space
 and Mountain Parks
 File: 4089 Figure1.mxd
 March 2008



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Busse Property RRA and Management Plan

Sections 14 & 23, T1S, R10W

UTM NAD83 Coordinate Zone 13N; 472970mE, 4423234mN

USGS Eldorado Springs CO, Quadrangle

Boulder County, Colorado

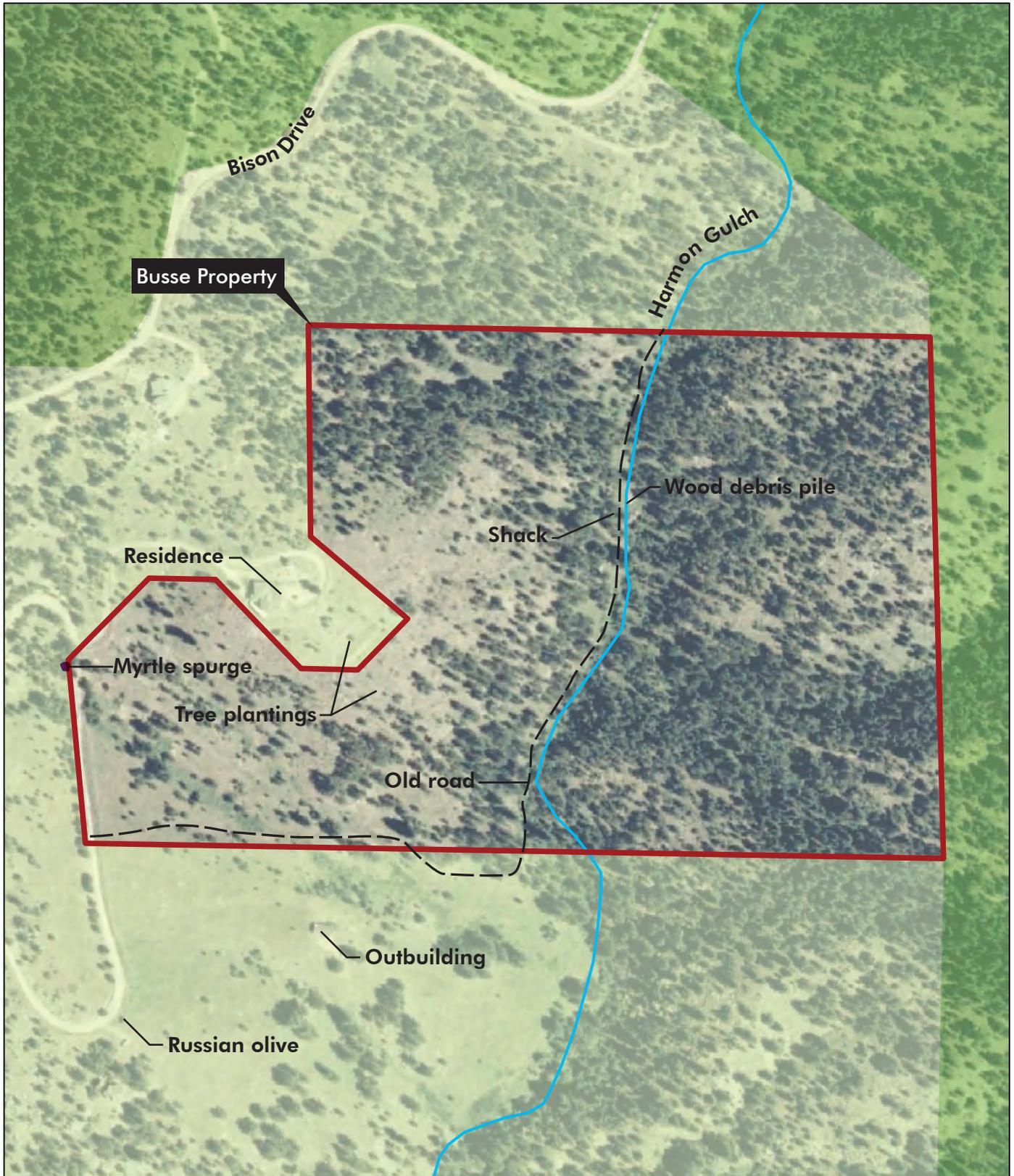


1 inch = 2,000 feet



**Figure 2
 Location**

Prepared for: City of Boulder Open Space
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Busse Property RRA and Management Plan

- City of Boulder Open Space
- Other Open Space

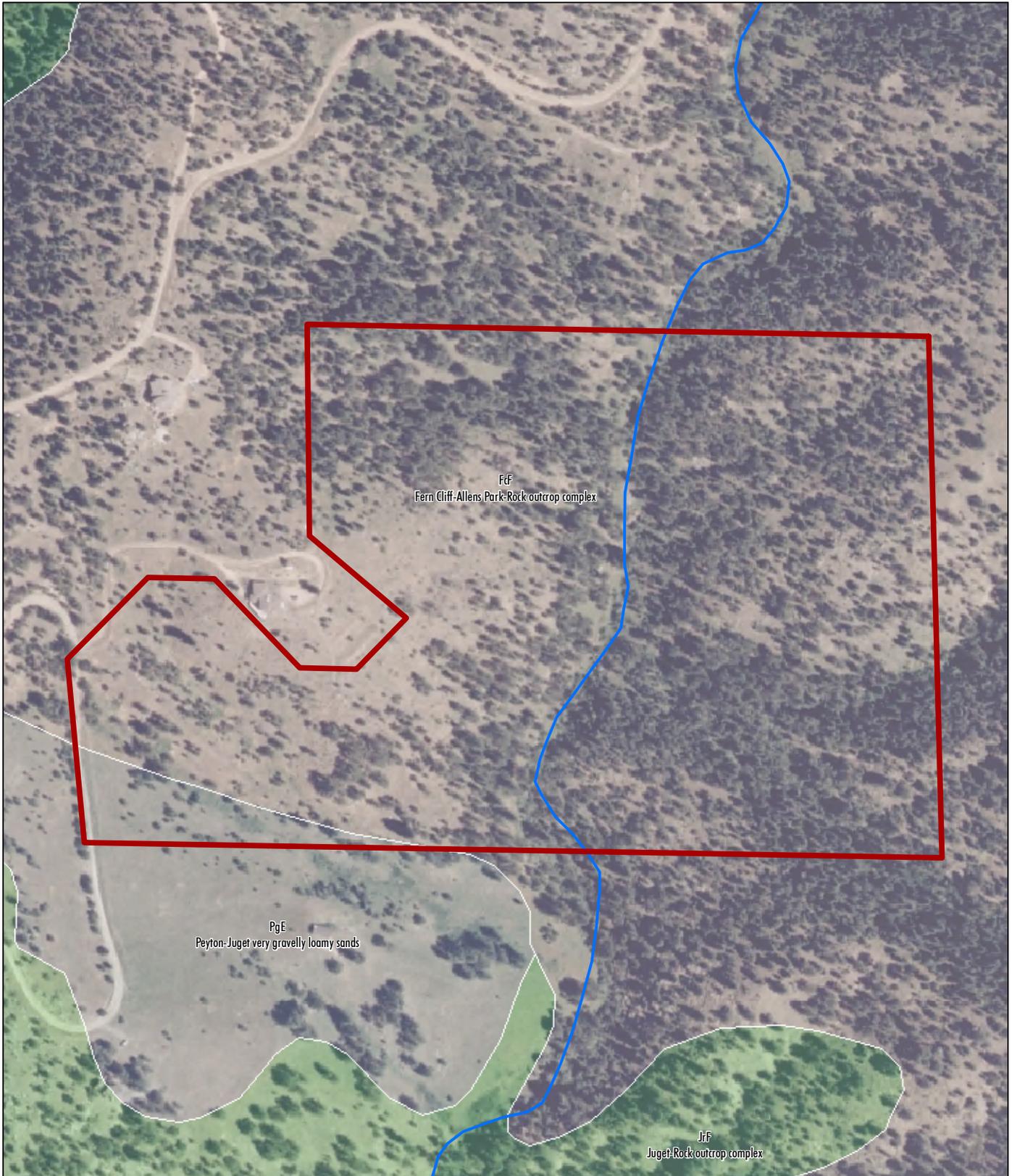


1 inch = 300 Feet



Figure 3 Property Features

Prepared for: City of Boulder Open Space
 and Mountain Parks
 File: 4089 Figure 3 Busse.pdf
 July 2008



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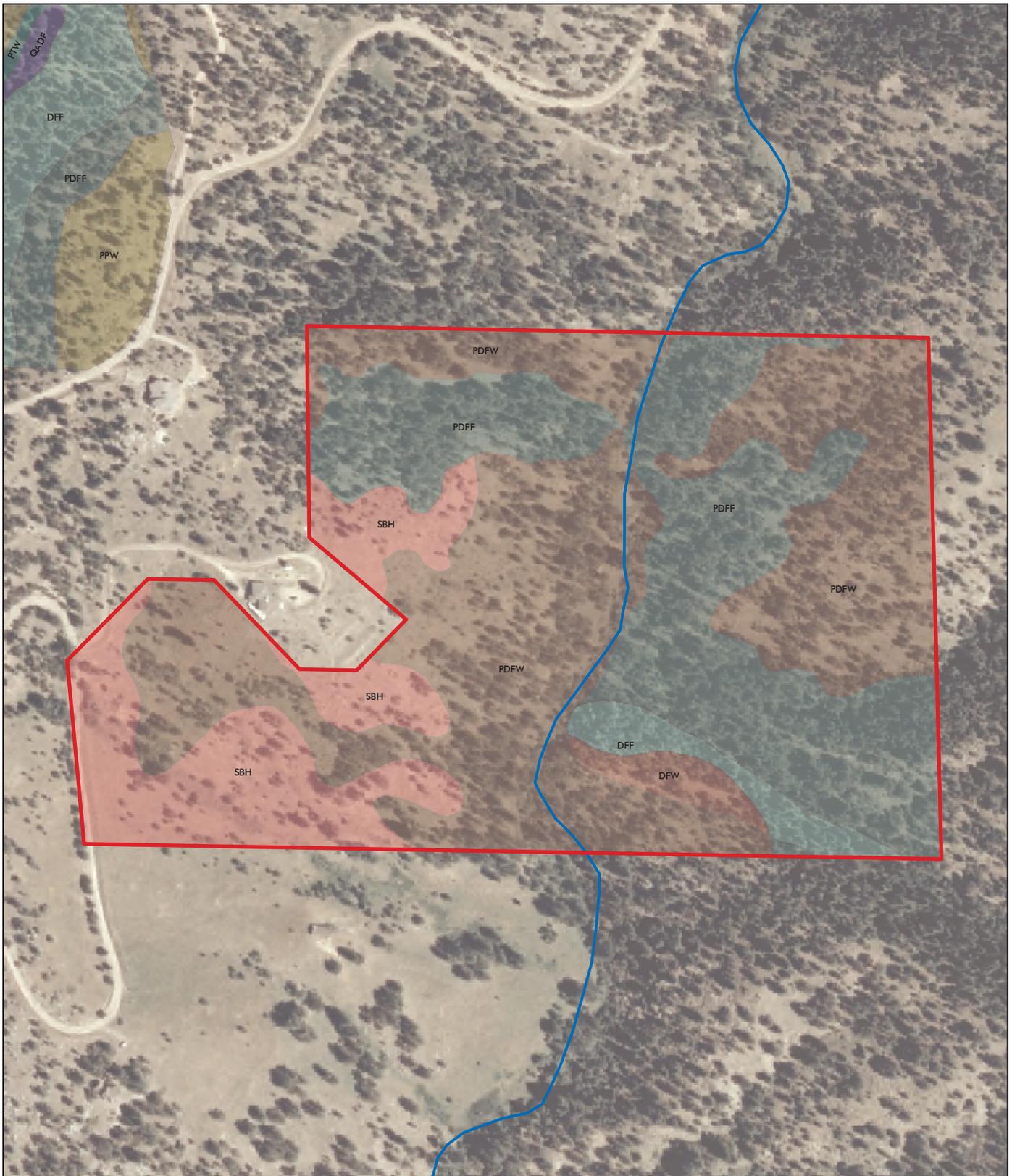


1 inch = 300 Feet



**Figure 4
 Soils**

Prepared for: City of Boulder Open Space
 and Mountain Parks
 File: 4089 Figure 4.mxd
 February 2008



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(See following page for for vegetation community names)



1 inch = 300 Feet



**Figure 5
 Vegetation Communities**

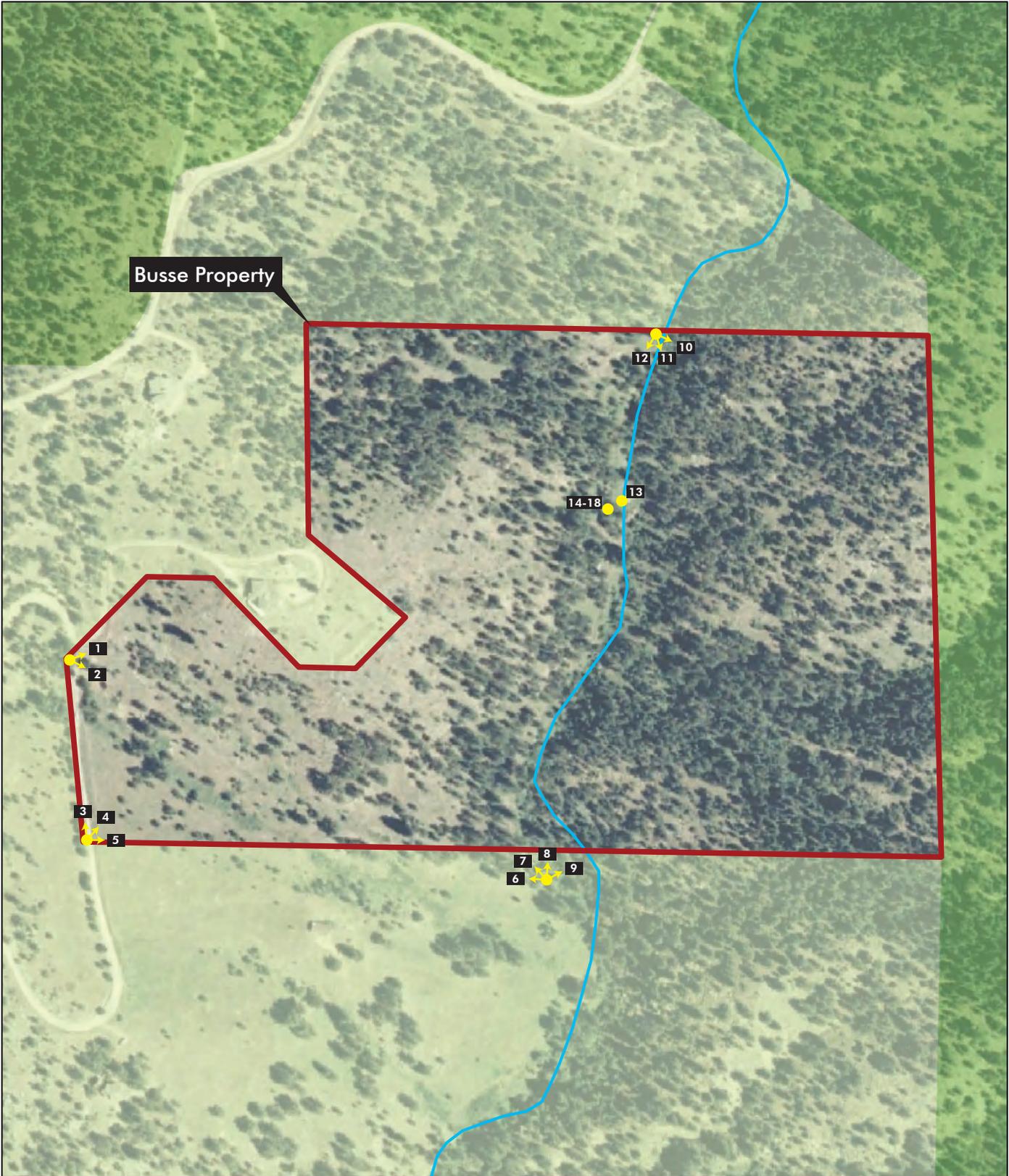
Prepared for: City of Boulder Open Space
 and Mountain Parks
 File: 4089 Figure 5.mxd
 June 2008

Vegetation Communities

Acronym, CmnName

	ADUD, Annual-dominant Upland Disturbance
	APS, American Plum Shrubland Alliance
	BBYH, Big Bluestem - (Yellow Indiangrass) Herbaceous Alliance
	BRSB, Baltic Rush Seasonally Flooded Herbaceous Alliance
	CFSH, Clustered Field Sedge Seasonally Flooded Herbaceous Alliance
	CHSH, Cattail Herbaceous Semipermanently Flooded Alliance
	CTH, Canada Thistle Weedy Forb Great Plains Herbaceous Vegetation [Provisional]
	CWH, Crested Wheatgrass Semi-Natural Herbaceous Alliance
	CWTS, (Coyote Willow, Sandbar Willow) Temporarily Flooded Shrubland Alliance
	CWW, Crack Willow (introduced) Temporarily Flooded Woodland Alliance
	DCAP, Disturbed Cultivated Agricultural Pasture
	DEV, Developed
	DFF, Douglas Fir Forest Alliance
	DFW, Douglas-fir Woodland Alliance
	ECTW, Eastern Cottonwood Temporarily Flooded Woodland Alliance
	ESSH, Emory Sedge Seasonally Flooded Herbaceous Alliance
	ETCW, Eastern Cottonwood Temporarily Flooded Woodland Alliance
	FBH, Foxtail Barley Temporarily Flooded Herbaceous Alliance
	FH, (Tall Fescue, Meadow Fescue) Herbaceous Alliance
	FSBH, Fourwing Saltbush Herbaceous Alliance
	GAH, Cultivated Alfalfa / Smooth Bromegrass Hay
	GH, Cultivated Grass Hay
	IC, Irrigated Cropland
	ISAP, Introduced Species Agricultural Pasture
	KBH, Kentucky Bluegrass Semi-Natural Herbaceous Alliance
	NNH, New Mexico Needlegrass Herbaceous Alliance
	NSH, Nebraska Sedge Seasonally Flooded Herbaceous Alliance
	NTH, Needle-and-Thread - Blue Grama Herbaceous Alliance
	OT, Ornamental Trees
	PDFF, Ponderosa Pine - Douglas-fir Forest Alliance
	PDFW, Ponderosa Pine - Douglas-fir Woodland Alliance
	PFDC, Perennial Forb Disturbance Community
	PMTH, Ponderosa Pine Wooded Mixed Herbaceous Alliance (Savannah)
	PPF, Ponderosa Pine Forest Alliance
	PPW, Ponderosa Pine Woodland Alliance
	PTSH, Ponderosa Pine Tallgrass Savannah Herbaceous Alliance
	PTW, Ponderosa Pine Temporarily Flooded Woodland Alliance
	QADF, Quaking Aspen - Douglas-fir Forest Alliance
	ROW, Russian Olive Semi-Natural Woodland Alliance
	SBH, Smooth Bromegrass Semi-Natural Herbaceous Alliance
	SDS, Snakeweed Dwarf-shrubland Alliance
	SKBH, Sun Sedge-Agassiz Kentucky Bluegrass Herbaceous
	SYS, Soapweed Yucca Evergreen Shrubland
	SYSH, Soapweed Yucca Shrub Savannah Herbaceous Alliance
	THA, Threesquare Herbaceous Alliance
	TSIS, Ill-scented Sumac Intermittently Flooded Shrubland Alliance
	TSSH, Three-leaved Sumac Shrub Savannah Herbaceous Alliance
	TSUS, Three-leaved Sumac Upland Shrubland Alliance
	WATER, Water
	WBSS, Water Birch Seasonally Flooded Shrubland Alliance
	WTFH, Western Wheatgrass Temporarily Flooded Herbaceous Alliance
	WWH, Western Wheatgrass Herbaceous Alliance

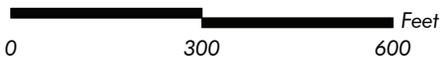
APPENDIX A
PHOTO POINT MAP AND DOCUMENTATION



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●➔■ Photo Point



1 inch = 300 Feet



**Appendix A
 Photo Points**

Prepared for: City of Boulder Open Space
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 File: 4089 Busse photo points.pdf
 July 2008

APPENDIX B
PLANT SPECIES

APPENDIX B PLANT SPECIES

Plant Species Observed during the June 20, 2008 Site Visit

			Ponderosa Pine – Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine – Douglas Fir Forest Alliance (PDFF)	Quaking Aspen Temporarily Flooded Woodland Alliance (QATF)	Douglas Fir Forest Alliance (DFE)	Douglas Fir Woodland Alliance (DFW)	Smooth Brome Semi- Natural Herbaceous Alliance (SBH)
Native Annual/Biennial Forbs								
Collinsia parviflora		maiden blue eyed Mary		■		■	■	
Introduced Annual/Biennial Forbs								
Acosta diffusa	Centaurea diffusa	diffuse knapweed	■					■
Cynoglossum officinale		houndstongue	■	■		■	■	■
Melilotus officinalis		yellow sweetclover	■	■		■	■	
Sisymbrium altissimum		tall tumbled mustard	■			■		
Tragopogon dubius ssp. major		yellow salsify	■			■		
Verbascum thapsus		common mullein	■			■		■
Introduced Annual Grasses								
Anisantha tectorum	Bromus tectorum	cheatgrass	■					■
Secale cereale		cereal rye	■					■
Native Perennial Forbs								
Achillea lanulosa	Achillea millefolium	western yarrow		■	■		■	
Amerosedum lanceolatum	Sedum lanceolatum	spearleaf stonecrop		■		■	■	
Artemisia ludoviciana		white sagebrush	■					
Cerastium strictum	Cerastium arvense	field chickweed	■		■			
Comandra umbellata ssp.		pale bastard toadflax	■					

			Ponderosa Pine – Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine – Douglas Fir Forest Alliance (PDFF)	Quaking Aspen Temporarily Flooded Woodland Alliance (QATF)	Douglas Fir Forest Alliance (DFF)	Douglas Fir Woodland Alliance (DFW)	Smooth Brome Semi-Natural Herbaceous Alliance (SBH)
pallida								
Eriogonum sp.		wild buckwheat	■					
Erysimum capitatum		sanddune wallflower		■	■		■	■
Geranium richardsonii		Richardson's geranium	■					
Helianthus pumilus		little sunflower	■					
Heterotheca villosa		hairy false goldenaster		■			■	■
Iris missouriensis		Rocky Mountain iris						
Lithospermum incisum		narrowleaf stoneseed		■			■	
Lupinus sp.		lupine				■		
Mentha arvensis		wild mint			■			
Mertensia lanceolata		prairie bluebells		■		■	■	
Monarda fistulosa var. menthifolia		mintleaf bergamot		■			■	
Penstemon strictus		Rocky Mountain penstemon	■					■
Rubus idaeus ssp. melanolasius		grayleaf red raspberry			■			
Scutellaria brittonii		Britton's skullcap		■		■	■	
Solidago sp.		goldenrod			■			
Introduced Perennial Forbs								
Breea arvensis	Cirsium arvense	Canada thistle			■			
Convolvulus arvensis		field bindweed	■					■
Rumex acetosella	Acetosella vulgaris	common sheep sorrel	■					
Taraxacum officinale		common dandelion		■			■	
Native Perennial Cool Season Grasses and Grass like								

			Ponderosa Pine – Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine – Douglas Fir Forest Alliance (PDFF)	Quaking Aspen Temporarily Flooded Woodland Alliance (QATF)	Douglas Fir Forest Alliance (DFF)	Douglas Fir Woodland Alliance (DFW)	Smooth Brome Semi-Natural Herbaceous Alliance (SBH)
Carex geyeri		Geyer's sedge		■	■	■	■	
Ceratochloa carinata	Ceratochloa marginata	mountain brome, California brome	■	■			■	
Elymus glaucus		blue wildrye		■	■		■	■
Elymus trachycaulus	Agropyron trachycaulum	slender wheatgrass		■		■	■	
Hesperostipa comata	Stipa comata	needle and thread	■					
Nassella viridula	Stipa viridula	green needlegrass	■					
Pascopyrum smithii	Agropyron smithii	western wheatgrass		■			■	
Poa fendleriana		muttongrass		■		■	■	
Introduced Perennial Cool Season Grass								
Bromopsis inermis	Bromus inermis	smooth brome	■					■
Dactylis glomerata		orchardgrass	■					■
Phleum pratense		timothy	■					■
Native Perennial Warm Season Grasses								
Muhlenbergia montana		mountain muhly	■					
Native Shrubs and Subshrubs								
Amelanchier alnifolia		Saskatoon serviceberry			■			
Arctostaphylos uva-ursi		kinnikinnick		■		■	■	
Artemisia frigida		fringed sage	■					
Padus virginiana ssp. melanocarpa	Prunus virginiana ssp. melanocarpa	black chokecherry	■		■			
Ribes lacustre		Prickly currant			■			

			Ponderosa Pine – Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine – Douglas Fir Forest Alliance (PDFF)	Quaking Aspen Temporarily Flooded Woodland Alliance (QATF)	Douglas Fir Forest Alliance (DFF)	Douglas Fir Woodland Alliance (DFW)	Smooth Brome Semi-Natural Herbaceous Alliance (SBH)
Rubus idaeus ssp. melanolasius		grayleaf red raspberry			■			
Native Trees								
Pinus contorta ssp. latifolia		lodgepole pine	■					
Pinus ponderosa ssp. scopulorum		ponderosa pine	■			■		■
Populus tremuloides		quaking aspen			■			
Pseudotsuga menziesii		Douglas-fir	■	■	■	■	■	■
Sabina scopulorum	Juniperus scopulorum	Rocky Mountain juniper	■	■				■

APPENDIX C
REFERENCES

APPENDIX C

REFERENCES

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PHOTO POINTS
BUSSE



Photo 3 - View north along west side of property and Bison Drive.



Photo 4 - View northwest from southwest corner of property.

**PHOTO POINTS
BUSSE**



Photo 5 - View east along south side of property.



Photo 6 - View west from old road bed along Harmon Gulch.

PHOTO POINTS
BUSSE



Photo 7 - View northwest from old road bed along Harmon Gulch.



Photo 8 - View north of old road bed along Harmon Gulch.

PHOTO POINTS
BUSSE



Photo 9 - View northeast from old road bed along Harmon Gulch.



Photo 10 - View west southwest from high point on north side of property.

PHOTO POINTS
BUSSE



Photo 11 - View southwest from high point on north side of property.



Photo 12 - View south over Harmon Gulch from high point on north side of property.

PHOTO POINTS
BUSSE



Photo 13 - Wood debris pile from possible old mill site.



Photo 14 - Shack near wood debris pile on Harmon Gulch.

PHOTO POINTS
BUSSE



Photo 15 - Fire pit associated with shack near wood debris pile on Harmon Gulch.



Photo 16 - Shack near wood debris pile on Harmon Gulch.

PHOTO POINTS
BUSSE



Photo 17 - Inside of shed on back of shack.

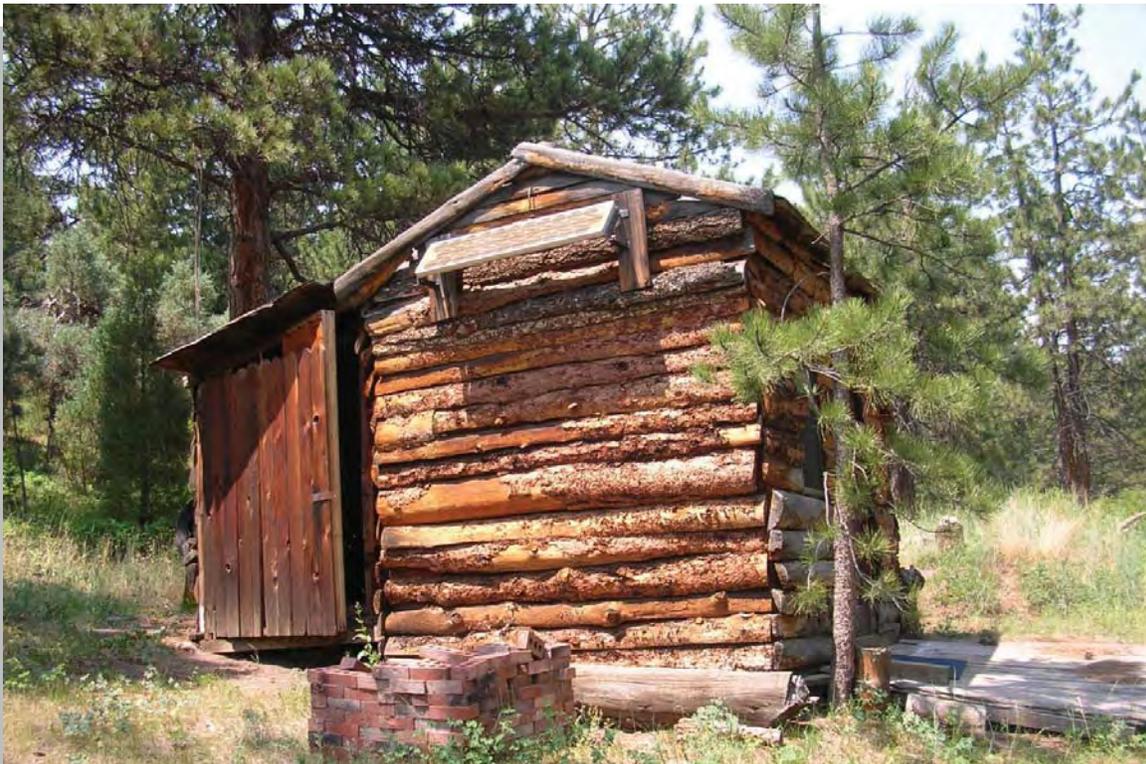


Photo 18 - Shack near wood debris pile on Harmon Gulch.