RAPID RESOURCE ASSESSMENT AND MANAGEMENT PLAN RICE 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

August 11, 2008

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SUMMARY

RICE PROPERTY		
APPROXIMATE SIZE	**ACQUISITION DATE**	**CURRENT ZONING**
35 acres	February 9, 2006	Forestry
MANAGEMENT DESIGNATION		**PUBLIC ACCESS**
Habitat Conservation Area		Access only with HCA off-trail permit

GENERAL DESCRIPTION OF SITE RESOURCES

The property is located in the southwestern corner of the City's Mountain Park complex, and is adjacent to Boulder County's Walker Ranch Open Space. The property is dominated by a ridgeline sloping down from north to south, with a ponderosa pine/Douglas fir woodland on the south and east slopes the property with Douglas fir forest on west facing slopes. A short segment of South Boulder Creek crosses the western edge of the property, while Kneale Road and its associated natural gas pipeline define most of the southern boundary.

OPEN SPACE VALUES BASED ON RESOURCE ASSESSMENT

The property is important for open space because it maintains—

- The visual integrity of the Eldorado Canyon/South Boulder Creek corridor
- Contiguous forested habitat within the South Boulder Creek corridor
- Winter range for mule deer and severe winter range for elk
- A winter concentration area for wild turkey

MANAGEMENT ISSUES BASED ON RESOURCE ASSESSMENT

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

- Noxious weeds along Kneale Road
- Mountain pine beetle infestation
- Fire hazard due to current and future fuel loading

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 35-acre Rice 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 July 3, 2008, a natural resource planner 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 and animal species identified during the site visit, and Appendix C includes report references.

GENERAL DESCRIPTION

The property is located near the eastern edge of the Southern Rocky Mountains physiographic province. The property encompasses about 35 acres characterized by steep ponderosa pine-dominated forests interspersed with openings and rocky outcrops, and the narrow, rocky riparian corridor along South Boulder Creek.

LOCATION AND ACCESS

The property is located in south Boulder County about 6 miles southwest of downtown Boulder (Figure 1). Specifically, the property is located in Section 26 in Township 1 South, Range 71 West of the 6th P.M. (Figure 2).

Primary and emergency access is from Kneale Road near the southeastern edge of the property. From downtown Boulder, travel south on South Foothills Highway (Highway 93), turning right to Eldorado Springs Drive. The property is located about 1 mile past the private gate on Kneale Road.

Secondary access is available from Boulder County's Walker Ranch Open Space, and the Eldorado Canyon Trail which provides walk-in access to Kneale Road from the north.

ACQUISITION

The City of Boulder acquired the Rice Property jointly with Boulder County on February 9, 2006. The total price for both the 35-acre parcel and a 49 acre conservation easement was $850,000.

LAND USE

The property may have been historically used for limited forestry or grazing. There is currently no evidence of forestry, grazing, or active management.

LANDSCAPE CONTEXT

The property is located in the foothills of Boulder County, and is surrounded primarily by city, county, and state parks and open space lands. The property is the southwestern-most point in the Boulder Mountain Park open space complex and abuts Boulder County's Walker Ranch Open

Space to the west. The South Boulder Creek corridor is located along the west property boundary, while Eldorado Canyon State Park is located about one mile to the east.

NEIGHBORING PROPERTIES

NEIGHBORING PRIVATE PROPERTIES

Private 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
Rice, Jenna & Travern 1120 Kneale Rd. (135 Kent Ave. Apt. C9; Brooklyn, NY 11211) Parcel No. 157926200005	Northwest, South & West of property Undeveloped land (OSMP Conservation Easement)
Costello, Joseph L. 1006 Kneale Rd. (PO Box 3005; Eldorado Springs, CO 80025) Parcel No. 157900000066	North & East 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
Boulder County 7911 Flagstaff Board of County Commissioners (PO Box 471; Boulder, CO 80306-0471) Parcel No. 157900000058 *Boulder County Open Space*	West of property Undeveloped land

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 to the south. The property, located along the southwest flanks of South Boulder Peak, encompasses a mountain ridge and a portion South Boulder Creek. Elevations on the property range from about 6,690 feet near the northern end of

the ridge to about 6,640 feet near the southern end of the ridge. South Boulder Creek crosses the western edge of the property from north to south at a minimum elevation of about 6,390 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 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.

Mapping Unit JrF. Juget-Rock outcrop (9 to 55 percent slopes). This soil includes small areas of Peyton soils near drainageways and a few small areas of Allens Park soils. Runoff is high and the erosion hazard is high. Native vegetation consists of spruce and fir at higher elevations and ponderosa pine, Gambel oak, mountain mahogany, and grasses at lower elevations.

HYDROLOGY

SURFACE HYDROLOGY

South Boulder Creek crosses the southwestern corner of 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 in the western portion of the property flows southwest towards South Boulder Creek while surface water in the eastern portion of the property flows south towards a small, intermittent stream which ultimately reaches 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 are no permitted water wells on the property (CDWR 2008), and no seeps or springs were identified on the property

WETLANDS

No wetlands or potential wetlands were observed on the property.

VEGETATION

GENERAL VEGETATION DESCRIPTION

The majority of the property is dominated by ponderosa pine (*Pinus ponderosa* ssp. *scopulorum*) and Douglas fir (*Pseudotsuga menziesii*). The ponderosa pine – Douglas fir forest alliance is found on steep east facing slopes. The Ponderosa pine – Douglas Fir Woodland Alliance is found on west facing slopes and in areas with more shade. The ponderosa pine woodland alliance is found on open steep rocky slopes that face southeast. The water birch seasonally flooded shrubland alliance is found along the steep rocky banks of South Boulder Creek.

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 FOREST ALLIANCE (PDFF)

The west facing slopes in the property are dominated by the ponderosa pine – Douglas fir forest alliance. The dominant overstory species in this community type are ponderosa pine, Rocky Mountain juniper (*Sabina scopulorum*), and Douglas fir. 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 umbellate* ssp. *pallida*); native grasses such mountain brome (*Ceratochloa carinata*), needle and thead (*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*).

PONDEROSA PINE – DOUGLAS FIR WOODLAND ALLIANCE (PDFW)

The eastern half of the property is dominated by a ponderosa pine – Douglas Fir Woodland Alliance. Ponderosa pine is the dominant overstory species but other woodland species such as Douglas fir and Rocky Mountain juniper are present. This community type has a greater shrub component and shrubby species are found intermixed with the grasses in this alliance. Common understory species include native shrubs such as silver mountain mahogany (*Cercocarpus montanus)*, black chokecherry and fringed sage; introduced grasses such as smooth brome, cheatgrass, and orchard grass; native perennial forbs such as hairy false goldenaster (*Heterotheca villosa)* little sunflower, Rocky Mountain penstemon, and pale bastard toadflax; and native grasses such mountain brome, needle and thread, green needlegrass and mountain muhly.

PONDEROSA PINE WOODLAND ALLIANCE (PPW)

In western edge of the property, across South Boulder Creek, a ponderosa pine woodland alliance is present. This community type is dominated by ponderosa pine. Understory species include silver mountain mahogany, fringed sage, wax current (*Ribes cereum)* and soapweed yucca (*Yucca glauca)*.

WATER BIRCH SEASONALLY FLOODED SHRUBLAND ALLIANCE (WBSS)

The steep rocky riparian areas along South Boulder Creek are sparsely vegetated but a few riparian species are present in a narrow band along the Creek. This community type was mapped as water birch seasonally flooded shrubland alliance because water birch (*Betula fontinalis)* is a dominant species. Other riparian species include narrowleaf cottonwood (*Populus angustifolia),*

and thinleaf alder (*Alnus incana* ssp. *tenuifolia)*. Douglas fir, Ponderosa pine, and Rocky Mountain juniper are found lining some areas of South Boulder Creek.

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. The property falls within the Boulder Foothills Potential Conservation Area (PCA).

STATE NOXIOUS WEEDS

Based on the site visit, no species from List A of the Colorado noxious weed species list were found on the property – three List B noxious weed species occur on the property: Canada thistle (*Breea arvensis*), houndstongue (*Cynoglossum officinale*), and diffuse knapweed (*Acosta diffusa*). Canada thistle occurs in isolated patches in the northwestern corner of the property; houndstongue was found in scattered locations in the forest; and diffuse knapweed was found in high concentrations along Kneale Road on the western edge of the property. Three List C noxious weed species were found on the property – field bindweed (*Convovulus arvensis*), cheatgrass (*Anisantha tectorum*), and common mullein (*Verbascum thapsus*). Field bindweed is found along Kneale Road. Cheatgrass and common mullein are common in the forest clearings throughout the property. Smooth brome is not a state-listed noxious weed, but it is considered an OSMP priority weed and is dominant on the south and east facing slopes of the property.

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	*Breea arvensis*	Moderate	x	B
cheatgrass	*Anisantha tectorum*	Moderate	not listed	C
common mullein	*Verbascum thapsus*	None	not listed	C
diffuse knapweed	*Acosta diffusa*	High	x	B
field bindweed	*Convolvulus arvensis*	None	not listed	C
houndstongue	*Cynoglossum officinale*	Low	x	B
smooth brome	*Bromopsis inermis*	Moderate	not listed	not listed

The Colorado Noxious Weed Act §§ 35-5.5-101 through 119, C.R.S. (2003) states that 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. At this time, there is no state noxious weed management plan for either Canada thistle or musk thistle. Until a plan for a particular species is developed and implemented by rule, all persons are recommended to manage that 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 most common conifer forest types in the study area are ponderosa pine, Douglas-fir, and to a lesser extent, lodgepole pine. Each of these forest types has different characteristics for management consideration summarized in Table 2. During the site visit, scattered infestations of mistletoe (*Arceuthobium vaginatum* subsp. *crypyopodum*) were noted on individual trees. Stridulations (i.e., noises made by insects rubbing body parts together) were evident and may indicate a mountain pine beetle infestation. Some dead individual trees were noted; however, overall forest condition did not indicate mountain pine beetle activity.

Table 2. Common characteristics of forested types 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 (*Dendroctonus ponderosa*)	Mountain pine beetle (*Dendroctonus ponderosa*)	Douglas-fir beetle (*Dendroctonus pseudotsugae*) and western spruce budworm (*Choristoneura occidentalis*)
Dwarf mistletoe	*Arceuthobium vaginatum* subsp. *crypyopodum* in the Southwest	*Arceuthobium americanum* is the most widespread and serious parasite affecting lodgepole pine	*Arceuthobium douglassii* 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 associated with ponderosa pine-dominated forests along the Front Range foothills. Typical large mammal species include mule deer, elk, fox, bobcat, coyote, black bear, and mountain lion. 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. Other common mammals include mountain cottontail rabbit, western spotted skunk, raccoon, least chipmunk, and a variety of mice and shrews. An individual mule deer and chipmunk were observed during the site visit. A remote radio-telemetry station, used for tracking collared wildlife species (primarily deer and elk) is located off the property along Kneale Road near the northwest property corner.

The forest canopy and openings provide habitat for a variety of migratory songbirds such as mountain bluebird, Stellar's jay, and evening grosbeak. Raptors may include red-tailed hawk, sharp-shinned hawk, Cooper's 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 visits included American robin, white-breasted nuthatch, and gray-headed junco.

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). The property is contained within the CNHP-designated Boulder Foothills Potential Conservation Area, which is considered to have high biodiversity significance (B3) (CNHP 2007).

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 (OAHP 2008). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, one site occurs on the property (OAHP 2008). (This site is associated with a portion of South Boulder Creek). Other potential 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 (Boulder County 2008b).

RECREATION

Public access is not permitted on the property. Prior to public ownership, the property was privately owned and was not open to public access. No evidence of public access or use was evident on the property.

The Eldorado Canyon Trail is located about 500 feet north of the property, while the Walker Ranch Open Space trail (Boulder County) is located about 250 feet west of the northwest property corner.

PROPERTY INFRASTRUCTURE

STRUCTURES

No structures exist on the property.

INFRASTRUCTURE AND UTILITIES

No fencing or other infrastructure was observed on the property. (A single strand of very old barbed wire was found on the ground along the north property boundary).

A large, underground natural gas line follows the length of Kneale Road, while an overhead electrical line crosses the easternmost extension of the property to serve the nearby residence.

ROADWAYS AND TRAILS

Kneale Road is a graded road that defines the south boundary on the eastern margins of the property, while a graded pipeline road defines the property boundary in the west area and crosses the western edge of the property along South Boulder Creek. In the easternmost portions of the property, this road is well used and maintained (as a residential access road). Along the southern and western edges of the property, the pipeline road has minimal use (besides apparent pedestrian use) and is revegetated in many areas. No other roads or trails were apparent on the property.

(See the description of adjacent trails above, under *Recreation*).

LEGAL CONSIDERATIONS

WATER RIGHTS

Purchase of the property did not include any water rights.

MINERAL RIGHTS

The purchase of the 35 acres (2006) included all mineral rights including sand, gravel, coal, and oil and gas owned by seller.

EASEMENTS AND RIGHTS-OF-WAY INFORMATION

Boulder County owns a conservation easement on the property. A gas pipeline right-of-way and access easement exists along the road that defines the southern and western boundaries. See OSMP property file.

LOCAL PLANNING DESIGNATIONS

The entire property is currently zoned Forestry (Boulder County 2008d).

Boulder County Comprehensive Plan designations on the property include—

- Environmental Conservation Area – Hawkin Gulch/Walker Ranch/Upper Eldorado Canyon
- Archaeologically Sensitive Area and Travel Route
- County Trails Map – Trail Corridor
- County Open Space Plan – Proposed open space and Open Corridor, Streamside

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.

This property does not currently support public access and does not contain any recreational opportunities or amenities that are not available along other nearby trails. (The occasional walk-in access along the pipeline road appears to be limited to local landowners, and does not warrant special consideration). Since no designated trails exist on the property or are recommended on the property, this closure is consistent with current use and existing policies governing HCAs.

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.

Noxious Weeds. While noxious weeds are scattered throughout the property, Kneale Road has greater concentrations of noxious weeds that could become a source for infestations on adjacent lands. A large patch of diffuse knapweed is found along the road near the western edge of the property.

Forest Condition. Some areas of forests are overgrown due to fire suppression and historic management with some trees stressed making them susceptible to beetle attacks.

Wildfire Hazard. Current and future (i.e., due to mountain pine beetle kill) fuel loading make the area susceptible to wildfire.

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.

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 landowners to address weed management along Kneale Road.

Action: Consider herbicide spraying along Kneale Road.

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 east side of the property.

Action: Remove ladder fuels.

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

CONSERVATION AND COORDINATION

Objective 1: Seek opportunities to provide long-term conservation to the remainder of the South Boulder Creek/Eldorado Canyon area and its associated resources.

Action: If possible, acquire fee ownership or a conservation easement over the remaining undeveloped portions of the adjacent properties to the east.

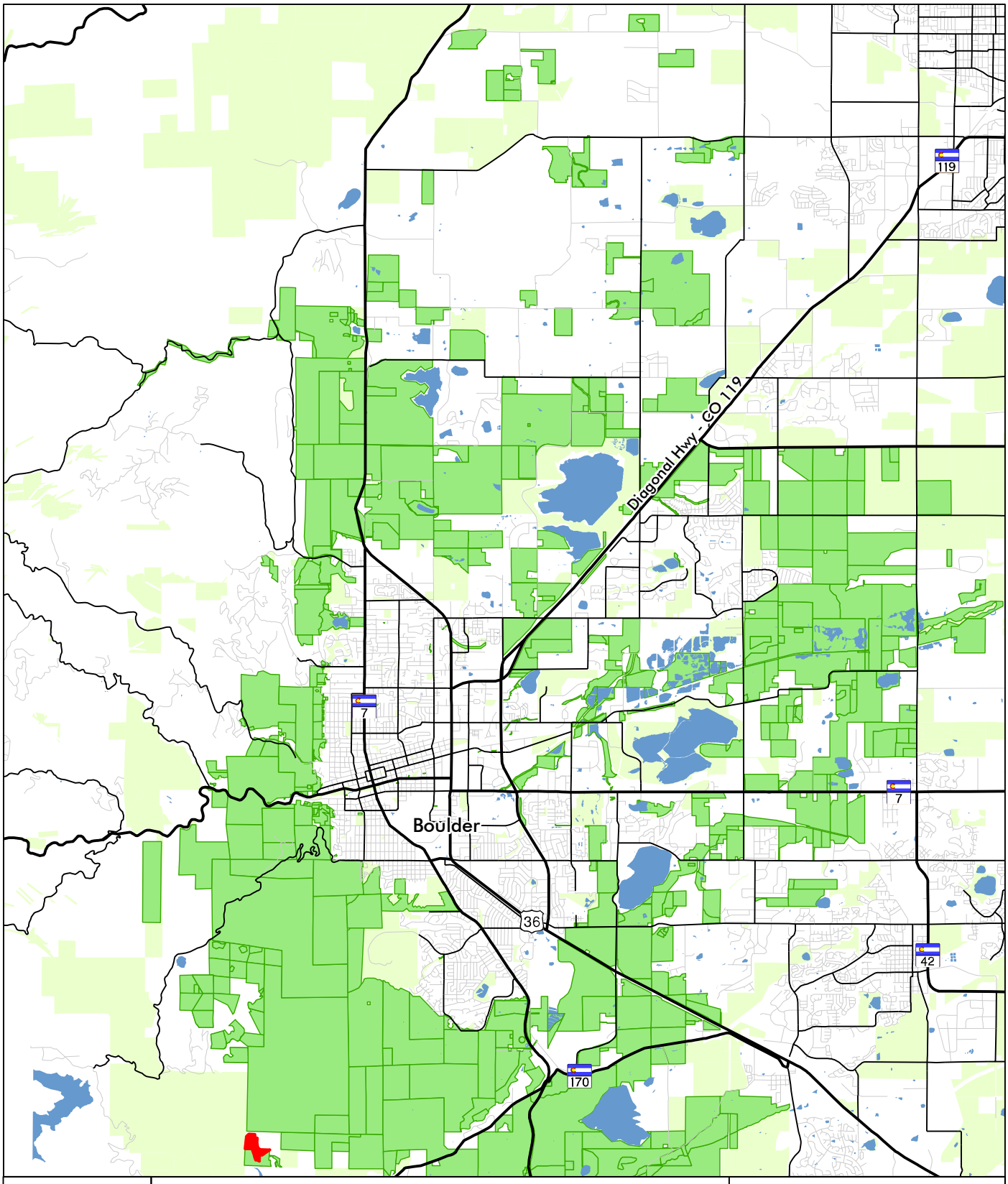
Objective 2: Work with adjacent landowners to provide consistent, sustainable management to the greater Eldorado Canyon area.

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

Action: Monitor resource conditions (e.g., 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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Rice Property RRA and Management Plan

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

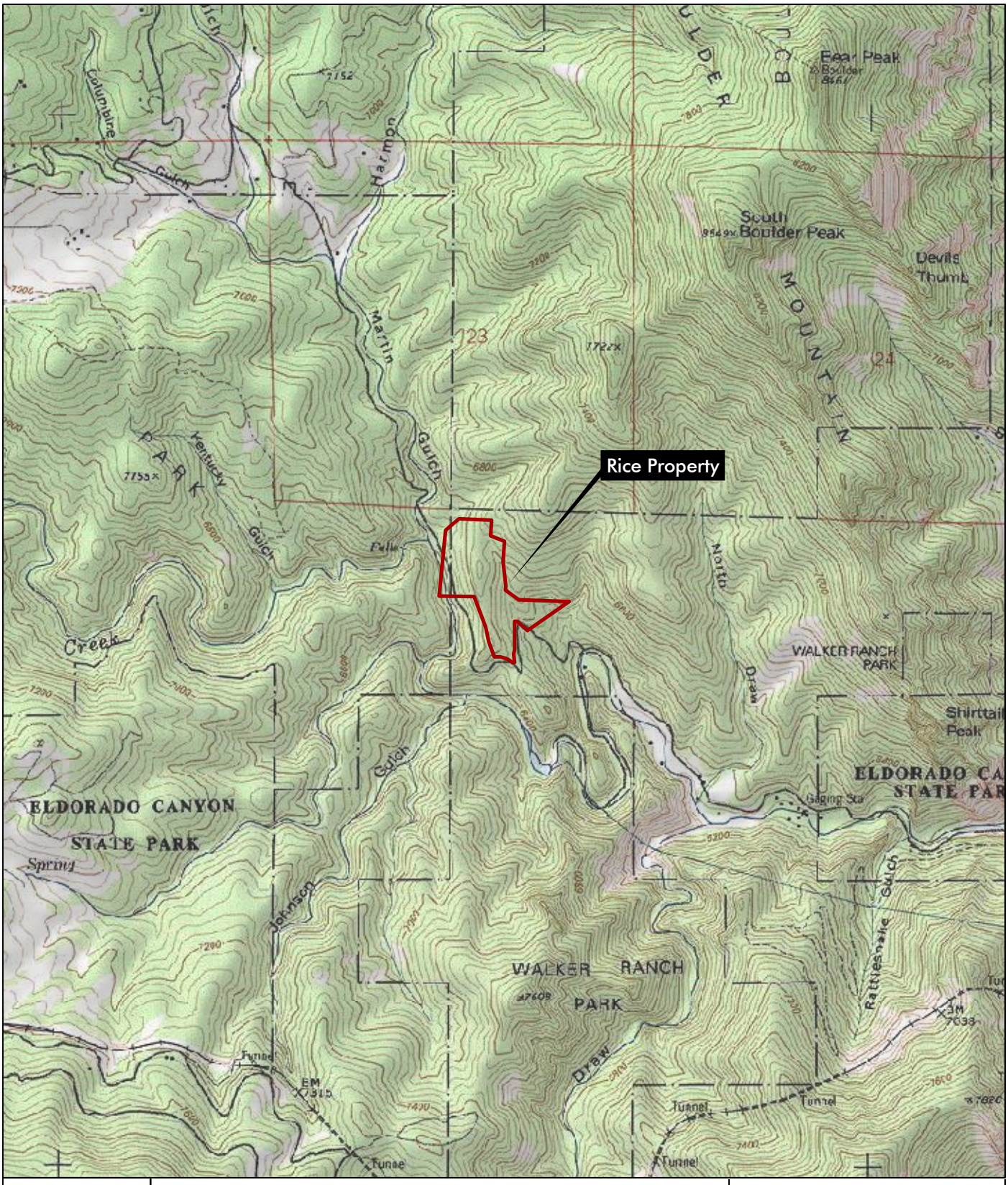
0 2 4 Miles

1 inch = 2 miles

N

Figure 1
Vicinity Map

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



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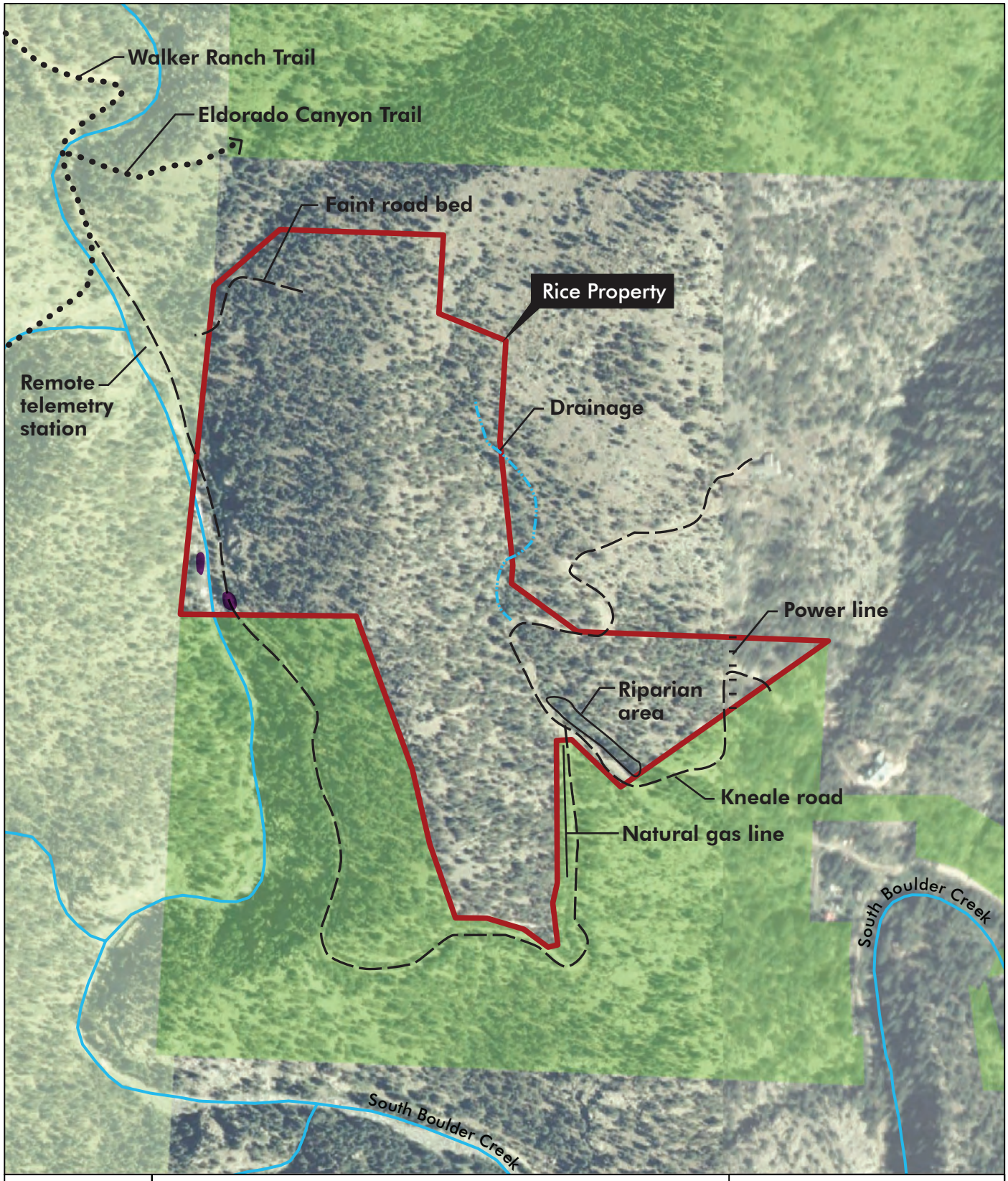
Rice Property RRA and Management Plan
Sections 26 & 27, T1S, R71W
UTM NAD83 Coordinate Zone 13N; 473361mE, 4421115mN
USGS Eldorado Springs CO, Quadrangle
Boulder County, Colorado

Feet
0 2,000 4,000
1 inch = 2,000 feet

N

Figure 2
Location

Prepared for: City of Boulder Open Space and Mountain Parks
File: 4089 Figure 2.mxd
February 2008



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Rice Property RRA and Management Plan

City of Boulder Open Space
Other Open Space
Weed patch

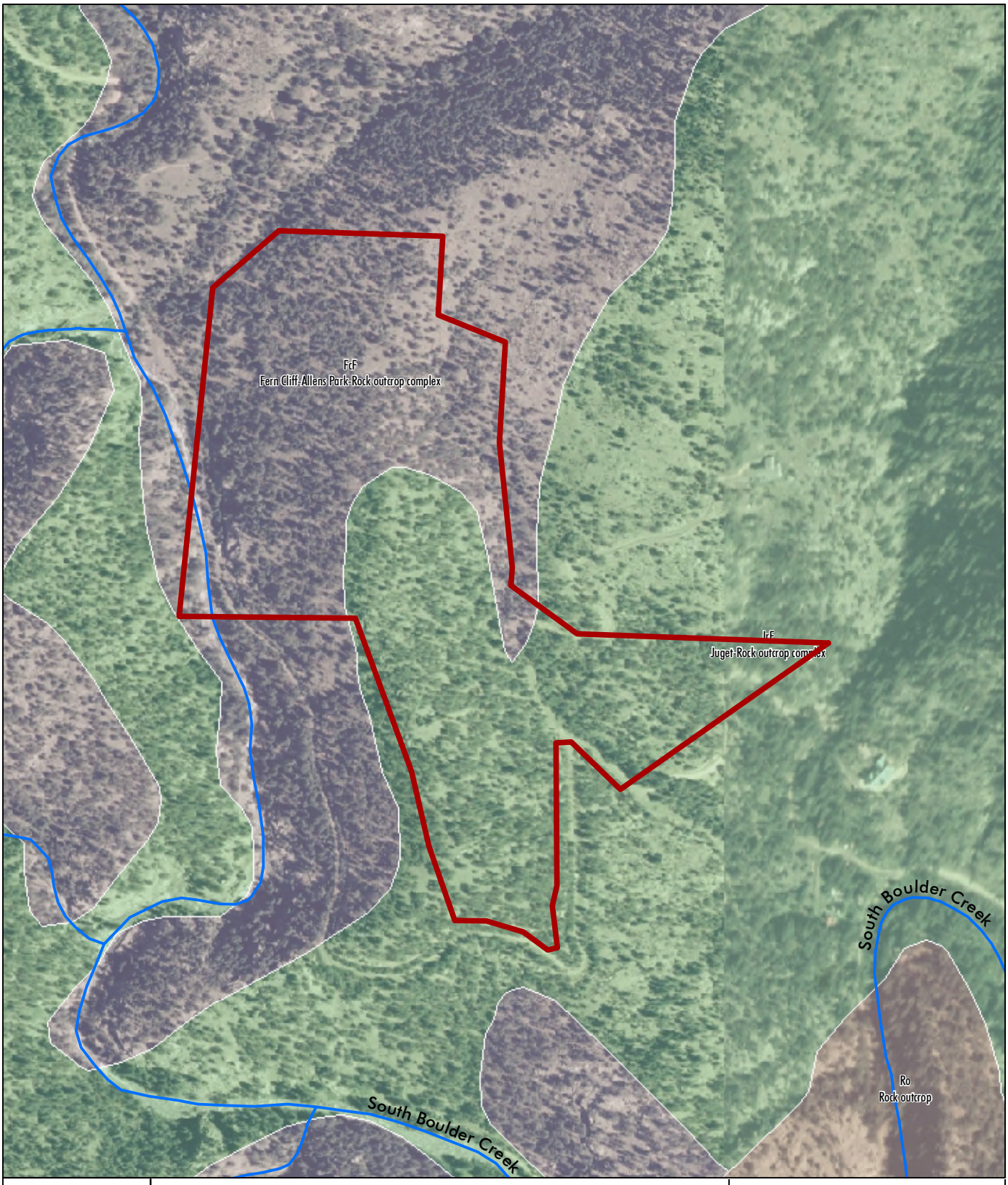
0 400 800 Feet

1 inch = 400 Feet

N

Figure 3
Property Features

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



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Denver, CO 80218
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Rice Property RRA and Management Plan

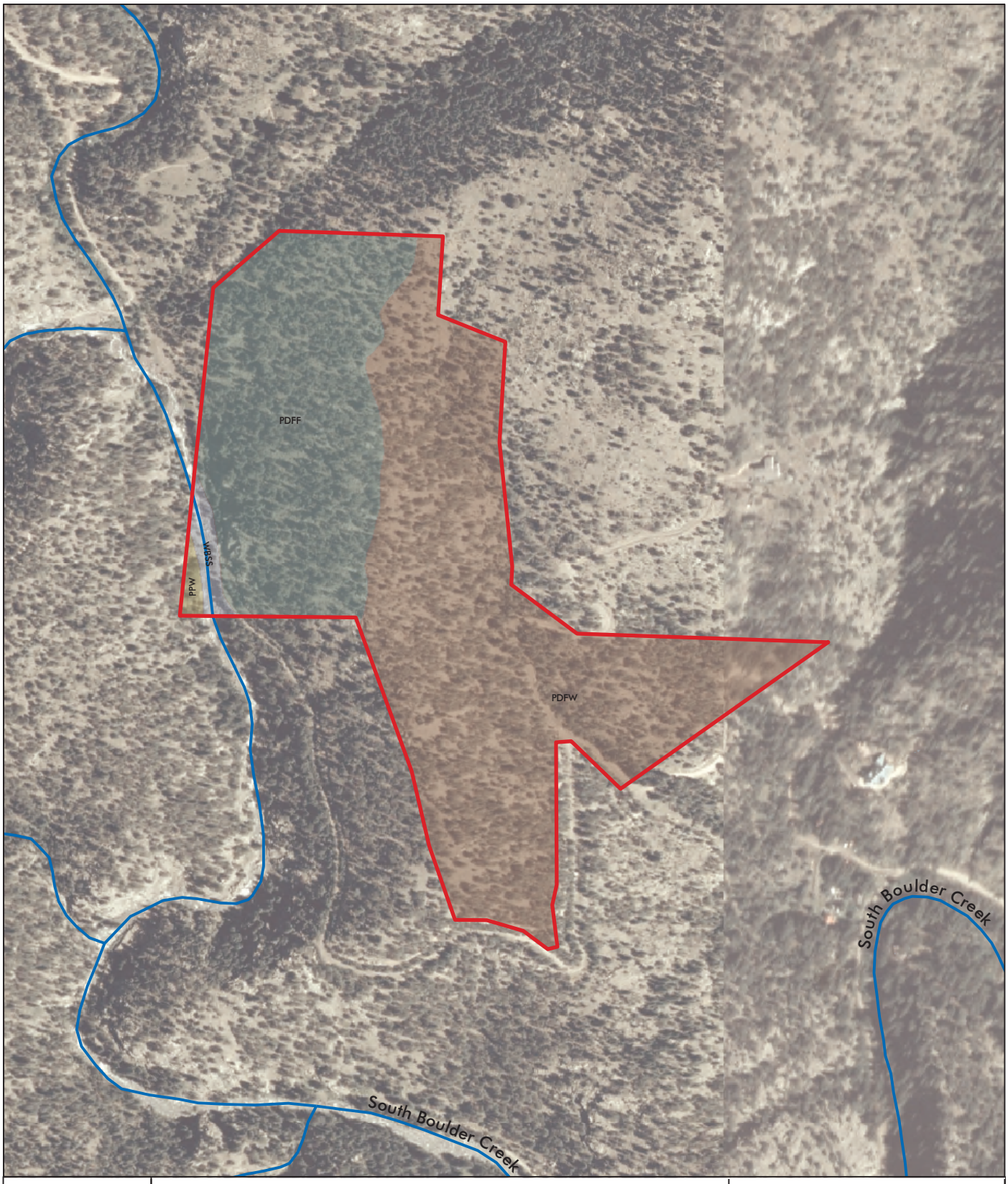
0 400 800 Feet

1 inch = 400 Feet

N

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)

0 400 800 Feet

1 inch = 400 Feet

N

Figure 5
Vegetation Communities

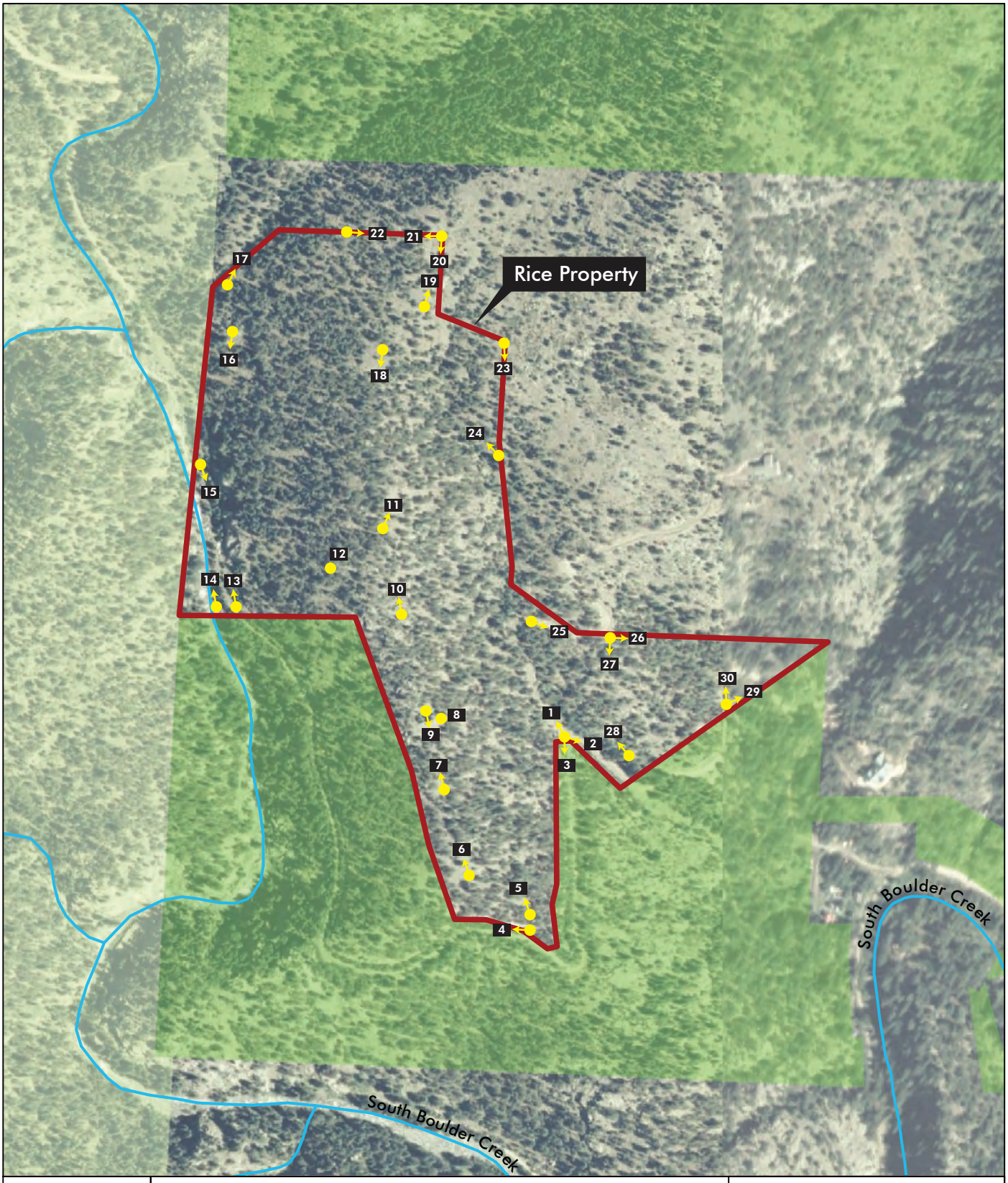
Prepared for: City of Boulder Open Space and Mountain Parks
File: 4089 Figure 5.mxd
June 2008

Vegetation Communities

Acronym, CmnName

- ADUD, Annual-domintated Upland Disturbance
- APS, American Plum Shrubland Alliance
- BBYH, Big Bluestem - (Yellow Indiangrass) Herbaceous Alliance
- BRSH, 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 / Smoothe Brome 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 Brome 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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Rice Property RRA and Management Plan

1 Photo Point

0 400 800 Feet

1 inch = 400 Feet

N

Appendix A
Photo Points

Prepared for: City of Boulder Open Space and Mountain Parks
File: 4089 Rice photo points.pdf
July 2008

Appendix B
Plant Species

APPENDIX B
PLANT SPECIES

Species Name	Synonym	Common Name	Ponderosa Pine - Douglas Fir Forest Allinace (PDFF)	Ponderosa Pine - Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine Woodland Allinace (PPW)	Water Birch Seasonlly Flooded Shrubland Allinace (WBSS)
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 tumblemustard		■	■	
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. pallida		pale bastard toadflax			■	
Erysimum capitatum		sanddune wallflower	■			

Species Name	Synonym	Common Name	Ponderosa Pine - Douglas Fir Forest Allinace (PDFF)	Ponderosa Pine - Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine Woodland Allinace (PPW)	Water Birch Seasonlly Flooded Shrubland Allinace (WBSS)
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		■	■	
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	■			
Introduced Perennial Forbs						
Breea arvensis	Cirsium arvense	Canada thistle	■	■		
Convolvulus arvensis		field bindweed	■	■		
Taraxacum officinale		common dandelion	■			
Native Perennial Cool Season Grass and Grasslike						
Carex geyeri		Geyer's sedge	■			
Ceratochloa carinata	Ceratochloa marginata	mountain brome, California brome	■			
Elymus glaucus		blue wildrye	■	■	■	
Elymus trachycaulus	Agropyron trachycaulum	slender wheatgrass	■	■	■	

Species Name	Synonym	Common Name	Ponderosa Pine - Douglas Fir Forest Allinace (PDFF)	Ponderosa Pine - Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine Woodland Allinace (PPW)	Water Birch Seasonlly Flooded Shrubland Allinace (WBSS)
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 Grasses						
Bromopsis inermis	Bromus inermis	smooth brome	■	■	■	
Dactylis glomerata		orchardgrass	■	■	■	
Phleum pratense		timothy	■			
Native Perennial Warm Season Grass						
Muhlenbergia montana		mountain muhly		■		
Native Shrubs						
Acer glabrum		Rocky Mountain maple	■	■	■	■
Alnus incana ssp. tenuifolia		thinleaf alder				■
Arctostaphylos uva-ursi		kinnikinnick	■			
Artemisia frigida		fringed sage	■	■	■	
Betula fontinalis	Betula occidentalis	water birch				■
Cercocarpus montanus		silver mountain mahogany	■	■	■	
Padus virginiana ssp. melanocarpa	Prunus virginiana ssp. melanocarpa	black chokecherry	■	■	■	
Ribes cereum		wax currant	■	■	■	
Native Trees						

Species Name	Synonym	Common Name	Ponderosa Pine - Douglas Fir Forest Allinace (PDFF)	Ponderosa Pine - Douglas Fir Woodland Alliance (PDFW)	Ponderosa Pine Woodland Allinace (PPW)	Water Birch Seasonlly Flooded Shrubland Allinace (WBSS)
Pinus contorta ssp. latifolia		lodgepole pine	■	■	■	
Pinus ponderosa ssp. scopulorum		ponderosa pine	■	■	■	
Populus angustifolia		narrowleaf cottonwood				■
Pseudotsuga menziesii		Douglas-fir	■	■	■	■
Sabina scopulorum	Juniperus scopulorum	Rocky Mountain juniper	■	■	■	■
Native Succulents and Agavoids						
Echinocereus viridiflorus		nylon hedgehog cactus	■			
Opuntia macrorhiza		twistspine pricklypear		■	■	
Yucca glauca		soapweed yucca	■	■	■	

Appendix C
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APPENDIX C
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Photo 1 - View of main road along the southeast boundary, looking north.

Photo 2 - View of main road along the southeast boundary, looking southeast.

Photo 3 - View south along east boundary and Kneale Road.

Photo 4 - View west from southernmost point, along Kneale Road.

Photo 5 - View northwest into property from southernmost point.

Photo 6 - Typical clearing near southernmost point, looking northwest.

Photo 7 - Along the ridgeline near the west boundary, looking north.

Photo 8 - Typical vegetation in clearings along ridgeline.

Photo 9 - View from rock outcrop on main ridgeline, looking south.

Photo 10 - Rock outcrop near west boundary, looking north.

Photo 11 - View north along main ridgeline.

Photo 12 - Old fire evidence along west-facing slope, near west boundary.

Photo 13 - Knapweed patch along Hestia Road along South Boulder Creek.

Photo 14 - South Boulder Creek corridor, near west property corner.

Photo 15 - View south along South Boulder Creek and Hestia Road, west boundary.

Photo 16 - Slopes near the northwest corner of property, looking south.

Photo 17 - Dense forest near northwest corner, looking northeast.

Photo 18 - Clearing in north-central portion of property.

Photo 19 - Open slopes in northeast corner, looking northeast.

Photo 20 - View south from northeast corner.

Photo 21 - View west from northeast corner.

Photo 22 - Drainage along north boundary, looking east.

Photo 23 - View south along east boundary.

Photo 24 - Narrow drainage along east boundary, looking northwest.

Photo 25 - Residential access road along boundary, looking east.

Photo 26 - View east along north boundary of east extension.

Photo 27 - View south from north boundary of east extension.

Photo 28 - Riparian vegetation in drainage, looking northwest.

Photo 29 - View northeast to east property corner.

Photo 30 - View north near east property corner.